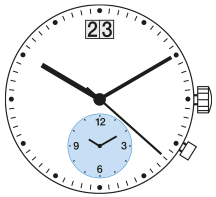
RONDA startech 4000

Multifunctions with Big Date, Alarm, 2nd Time Zone, Tide

Caliber 4210.B – 12½'''



Product Specifications

Analog quartz movement		
Line		startech
Caliber		4210.B
Size		12½'''
Version	Swiss Made	8 Jewels / gold plated
	Swiss Parts	4 Jewels / nickel plated
Standard battery life		50 months
Hand fitting height		2

Features

- Very long battery life
- Repairable metal watch movement
- Power saving mechanism with pullled out stem: Reduction of consumption approximately 70%
- Very easy handling by one pusher

Functions

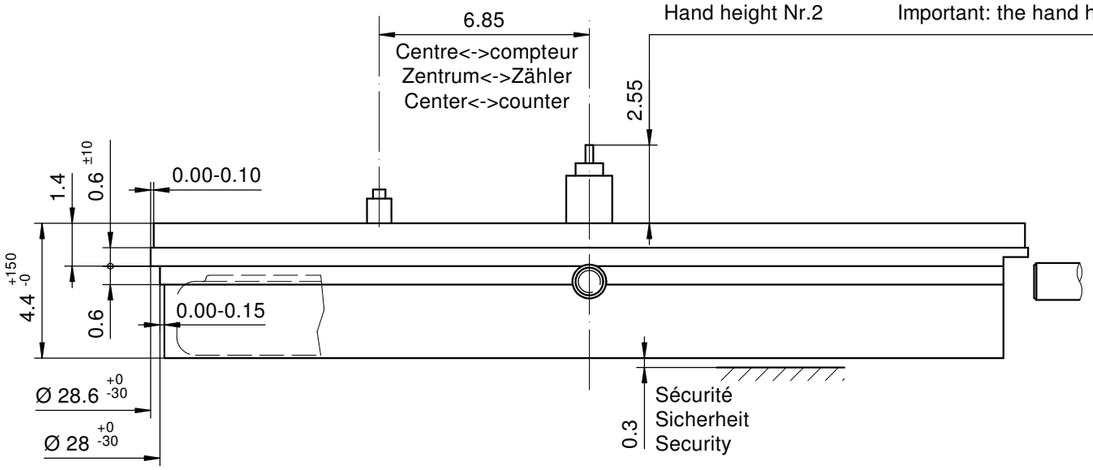
- Multifunction
- 1 eye
- Second time zone
- Big date

Technical Specifications

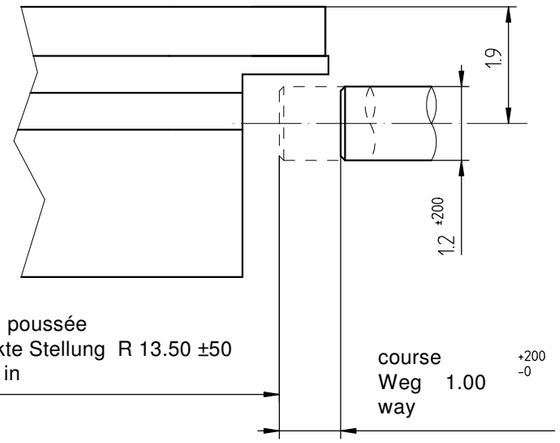
Diameter Total	28.60 mm
Case fitting	28.00 mm
Movement height	4.40 mm
Height over standard battery	4.40 mm
Movement rest	0.60 mm
Height over stem	1.90 mm
Length of stem travel	0.90 mm
Stem thread	0.90 mm
Standard battery	395
Standard battery life	50 months
Battery voltage	1.5 V
Current consumption – typical	1.32 µA (Date Mechanism not in Gear)
Current consumption – maximum	1.65 µA (Date Mechanism not in Gear)
Useful torque second – typical	6 µNm
Useful torque minute – typical	300 µNm
Operating temperature	0 - 50 °C
Instantaneous rate	-10/ +20 sec/month
Resistance to magnetic fields	18.8 Oe
Resistance against shock	NIHS 91-10

Aiguillage No.2
Zeigerwerkhöhe Nr.2
Hand height Nr.2

Important: l'aiguillage peut varier selon le modèle
Wichtig: die Zeigerwerkhöhe kann bei verschiedenen Modellen unterschiedlich sein
Important: the hand height can vary between different models



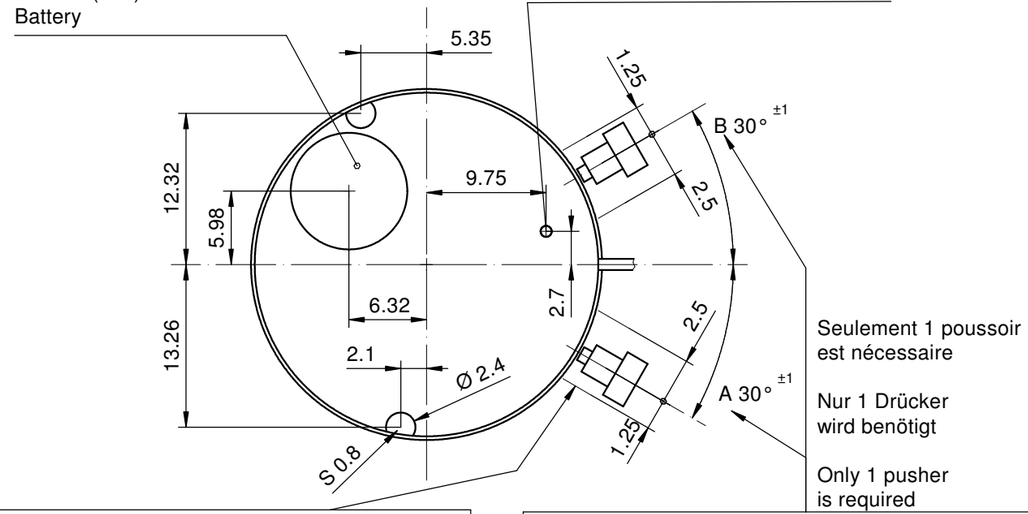
Poussoirs
Drücker
Pushers



Côté fond de boîte
Seite Gehäuseboden
Case back side

Pile
Batterie (395) Ø 9.50 x 2.60mm
Battery

Position pour extraire la tige
Position zum Entfernen der Stellwelle
Position to remove the stem



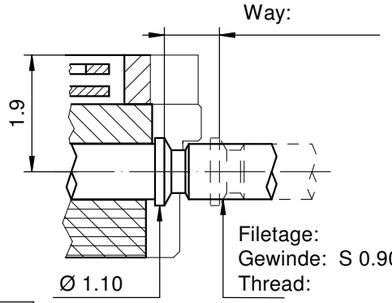
Seulement 1 poussoir
est nécessaire

Nur 1 Drücker
wird benötigt

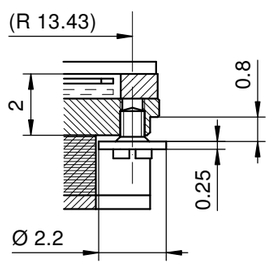
Only 1 pusher
is required

Stellwelle
Tige
Stem

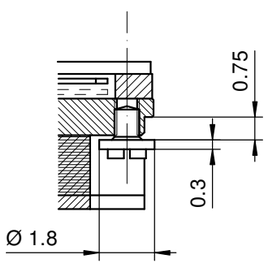
Chemin:
Weg: 0.90
Way:



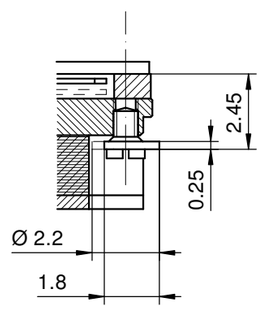
Vis
Schraube Nr. 4000.310
Screw



Vis
Schraube Nr. 4000.195
Screw



Vis
Schraube Nr. 4000.194
Screw



Sécurité entre l'aiguille des secondes et le verre:
Sicherheit zwischen Sekundenzeiger und Glas: 0.30mm
Security between second hand and glass:

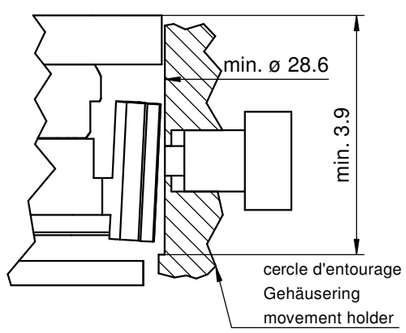
Le cadran doit être tenu par la boîte
Das Zifferblatt muss durch die Schale gehalten werden
The dial must be hold by the case

La course du poussoir doit être limitée dans le poussoir lui-même. Sa position poussée doit être controlée.

Die Weglänge des Drückers ist im Drücker selbst zu begrenzen. In der gedrückten Stellung ist seine Position zu kontrollieren

The way of the pusher has to be limited in the pusher itself. Its position must be checked while pushed in.

Dégagement cercle d'entourage pour poussoir
Freistellung Gehäusering für Drücker
Opening movement holder for pusher



L'angle indiqué pour la direction du poussoir et la position doivent être respectés.
Pour un angle de 0° des poussiors A et B, voir plan 5000.345

Der angegebene Winkel für die Drückerrichtung und die Position müssen eingehalten werden.
Für einen Drückerwinkel von 0° bei A und B, siehe Zeichnung 5000.345

The indicated angle of the pusher direction and the position must be fullfilled. For pusher angles of 0° (pusher A and B), see drawing 5000.345.

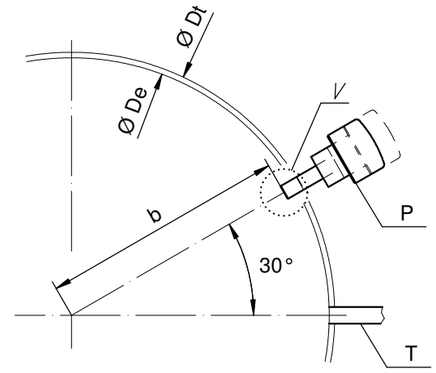
Cage
Uhrwerkgestell 12½'''
Frame

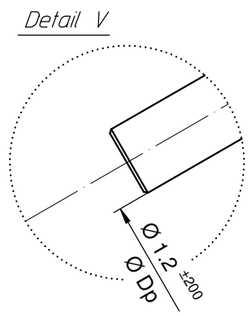
RONDA | 4210.B

Issued	02 Mär 2004	mg
Modified	05 Sep 2016 ÄA 34777	dh
Released	YES	
Tolerance	+/- 20 µm	
Scale	10 : 1 (5 : 1) (A3H)	

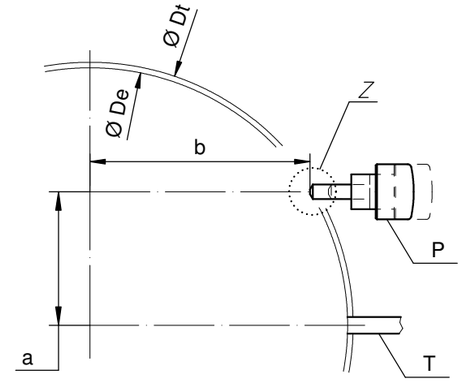
No. 5000.331 04

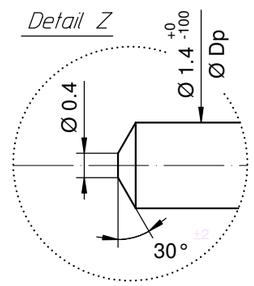
Angle Winkel Angle 30°	
Ø Dp	b
1.00	13.50
1.10	13.50
1.20	13.50
1.30	13.50
1.40	13.50



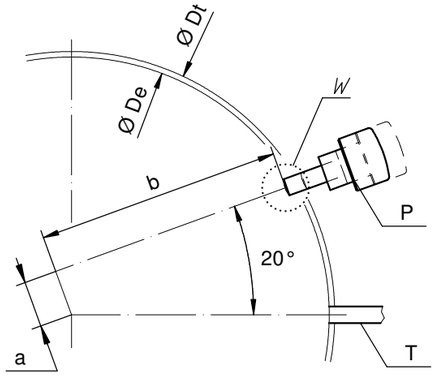


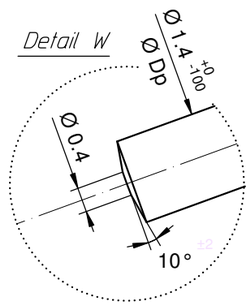
Angle Winkel Angle 0°		
Ø Dp	a	b
1.30	7.40	11.43
1.40	7.45	11.40



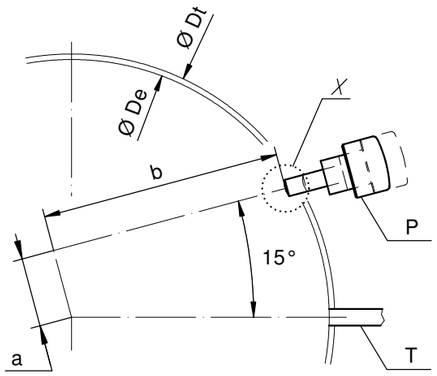


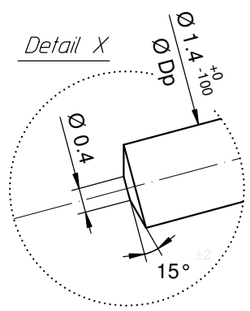
Angle Winkel Angle 20°		
Ø Dp	a	b
1.30	2.57	13.22
1.40	2.59	13.21



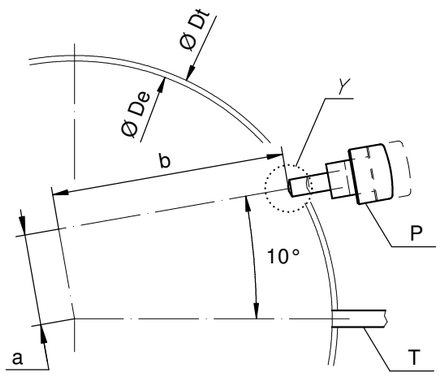


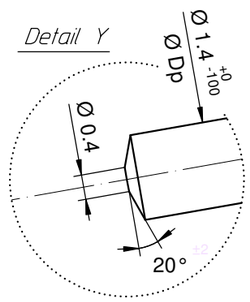
Angle Winkel Angle 15°		
Ø Dp	a	b
1.30	3.83	12.92
1.40	3.86	12.91





Angle Winkel Angle 10°		
Ø Dp	a	b
1.30	5.06	12.52
1.40	5.10	12.50





Ø De: diamètre d'encageage
Durchmesser der Gehäusepassung
fitting-diameter

Ø Dp: diamètre du poussoir
Drückerdurchmesser
pusher-diameter

Ø Dt: diamètre total
Totaldurchmesser
total-diameter

P: poussoir en position poussée
Drücker in gedrückter Stellung
pusher in pressed position

T: tige de mise à l'heure
Stellwelle
stem

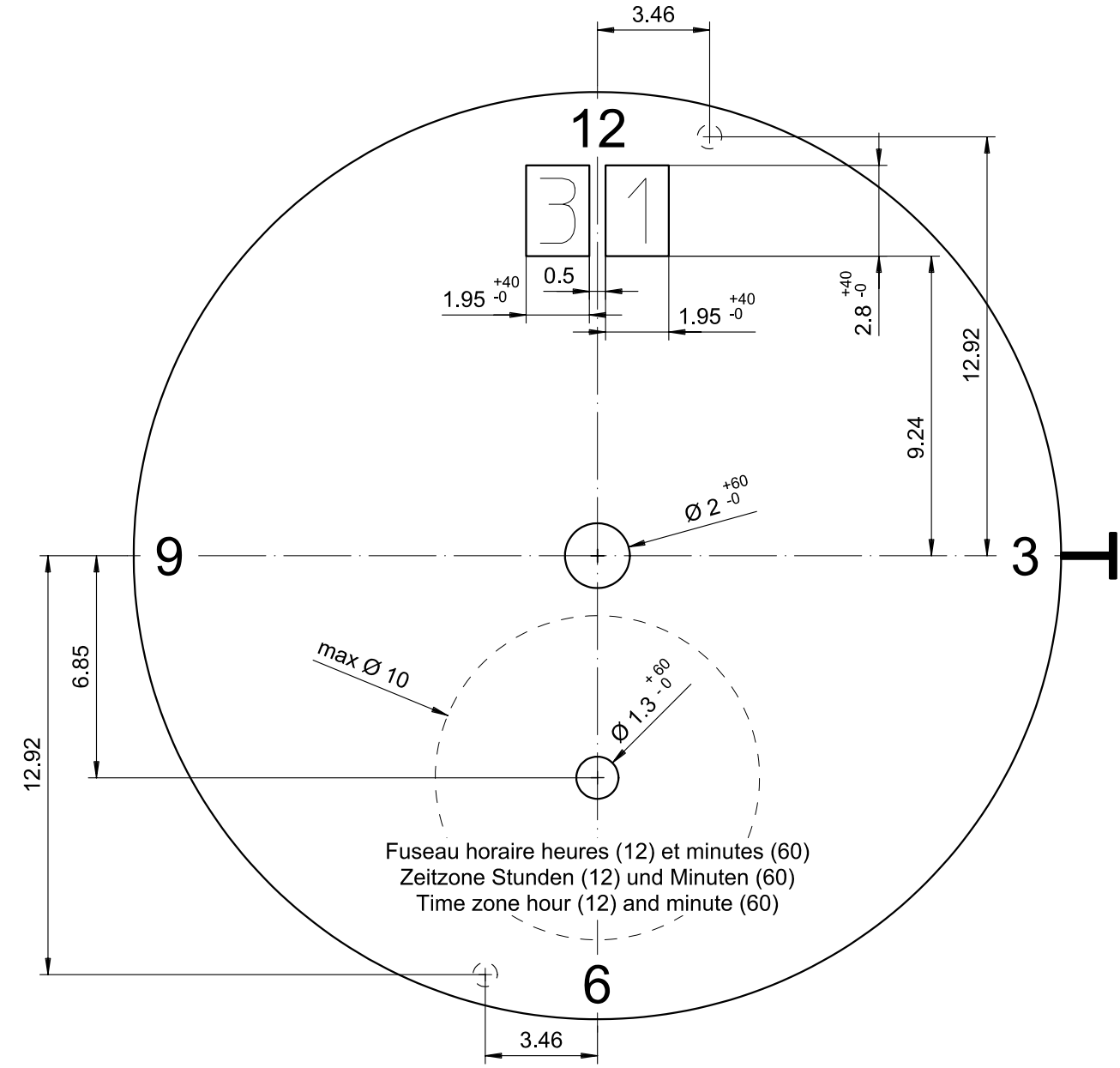
Angle des poussoirs A et B
Winkel der Drücker A und B
Angle of pusher A and B

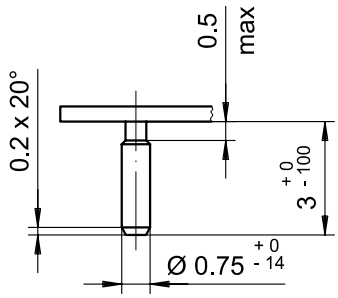
Issued	06 Sep 2004	mk
Modified	30.März 2005 ÄA 1784	mk
Released	YES	
Tolerance	+/- 20 µm	
Scale	10 : 1 (5 : 1) (A3H)	

RONDA | 4xxx.x, 5xxx.x

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 5000.345 01





Epaisseur du cadran selon hauteur de l'aiguillage
Zifferblattdicke gemäss Zeigerwerkhöhen
Dial thickness according to hand fitting heights

Tige	Date
Stellw.	Datum
Stem	Date
3H	12H

Cadran
Zifferblatt
Dial

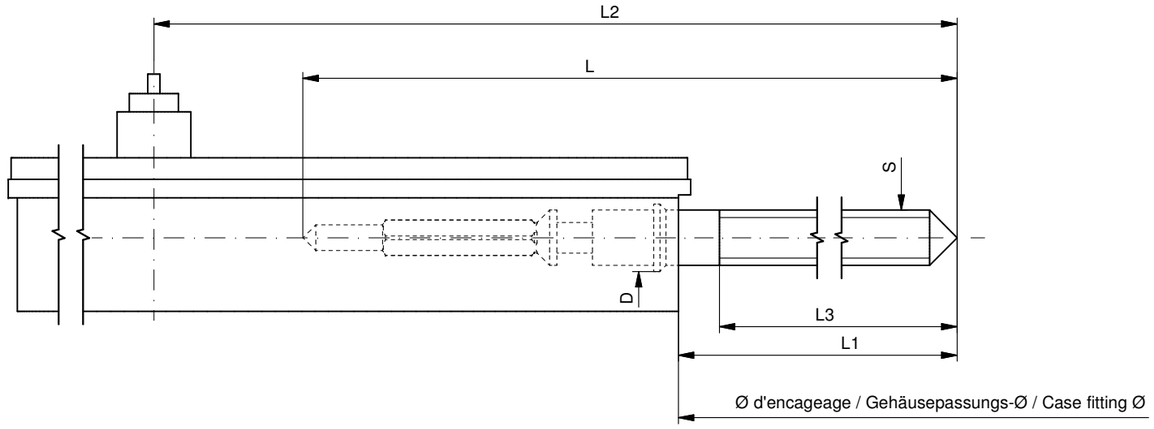
12½‴

Issued	13 Dez 2006	cw
Modified	15.Dez.2006 ÄA ----	cm
Released	YES	
Tolerance	+/- 20 µm	
Scale	5 : 1 (A4V)	

RONDA | 4210.B

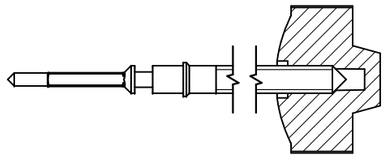
Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 5010.696 03



Tige de travail (intégrée dans le mouvement)
Arbeitstellwelle (im Werk eingebaut)
Working stem (implemented in the movement)

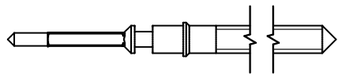
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.177.CO	20.00	10.23	24.23	10.15	0.90	1.10



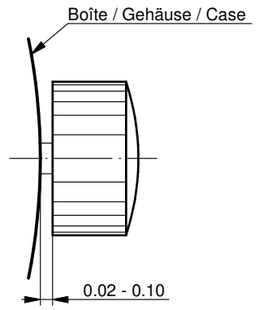
Couleur de la couronne Kronenfarbe Crown color	bleu foncé dunkelblau dark blue
Code	UN 5002

Tige (normale) / Stellwelle (normal) / Stem (normal)

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.177	20.00	10.23	24.23	10.15	0.90	1.10
3000.191	32.00	22.23	36.23	22.15	0.90	1.10



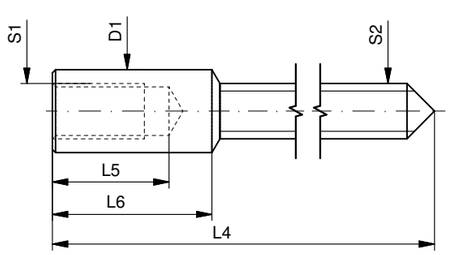
Couronne normale
Normale Krone
Normal crown



Couronne vissée Geschraubte Krone Screwed crown	
Force ⇦ min. Kraft ⇦ min. Force ⇦ min.	10 N
Force ⇦ max. Kraft ⇦ max. Force ⇦ max.	15 N

Rallonge de tige / Stellwelle Verlängerung / Stem extension

No. d'article Artikelnummer Part number	L4	L5 (min)	L6	S1	S2	D1
3000.040	12.00	1.90	2.60	0.90	0.90	1.35



Tige / Stellwelle / Stem
(dimensions / forces)
(Dimensionen / Kräfte)
(dimensions / forces)

RONDA

4002.B, 4003.B, 4120.B,
4210.B, 4220.B

Issued	05 Sep 2012	ds5222
Modified	17 Mär 2017 ÄA 34582	mg5224
Released	YES	
Tolerance	---	
Scale	10:1 (A3)	

No. 5030.018 02

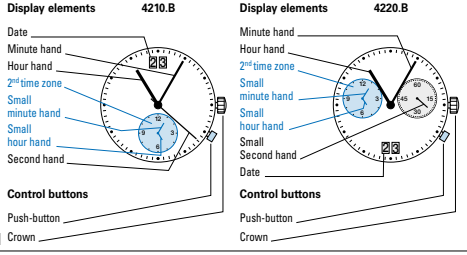
RONDA startech – Movement Cal. 4210.B & 4220.B

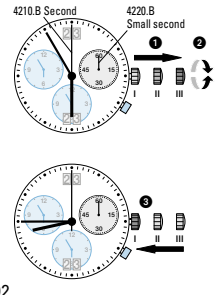
User's Manual English

You have decided to buy a watch, which was assembled by a watchmaker using a Ronda movement. Please note that no watches are produced or distributed under the Ronda brand.

In case of repairs, guarantee claims and questions concerning the functioning of a watch, purchasers and consumers should contact their retailer or the watch manufacturer, for which the relevant information can be found in the sales or guarantee documentation provided with the watch.

Description of the display and control buttons





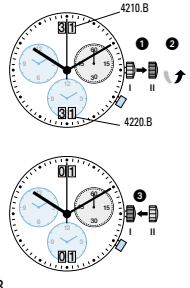
Setting the time

❶* Pull out the crown to position **III** (the watch stops).

❷ Turn the crown until you reach the correct time **8:45**.

❸* Push the crown back into position **I**.

Please note:
* In order to set the time to the exact second, ❶ must be pulled out when the second hand is in position «60». Once the hour and minute hands have been set, ❸ must be pushed back into position **I** at the exact second.



Setting the date (quick mode)

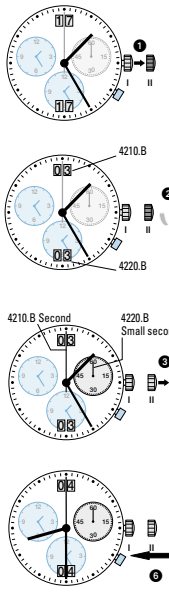
❶ Pull out the crown to position **II** (the watch continues to run).

❷ Turn the crown until the correct date 01 appears.

❸ Push the crown back into position **I**.

Please note:
During the date changing phase between approx. 9 PM and 12 PM; the date must be set to the date of the following day.

An extreme acceleration in setting the date with quick mode can induce a false date indication. The synchronization is re-established by setting the date from 01 till 31 (crown in position II).



Setting the date/time

Example:
– Date / time on the watch: 17 / 1:25 AM
– Present date / time: 04 / 8:30 PM

❶ Pull out the crown to position **II** (the watch continues to run).

❷ Turn the crown until yesterday's date appears 03.

❸* Pull out the crown to position **III** (the watch stops).

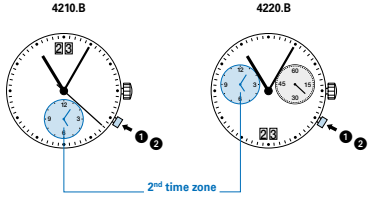
❹ Turn the crown until the correct date 04 appears.

❺** Continue to turn the crown until the correct time 8:30 PM appears.

❻ Push the crown back into position **I**.

Please note:
* To set your watch to the exact second, please refer to the chapter entitled «setting the time».
** Please observe the AM/PM clock rhythm.

Setting the 2nd time zone



Any 2nd time zone can be set using the small hour hand and small minute hand.

❶ **Activation**: Press the push button for at least 2 seconds.
As soon as the samll minute hand jumps forward one minute, this mode of operation is activated.

❷ **Brief pressing:** (less than 1 second)
Moves forward individual minutes.

Medium pressing: (1 to 2 second)
Moves forward 1 hour.

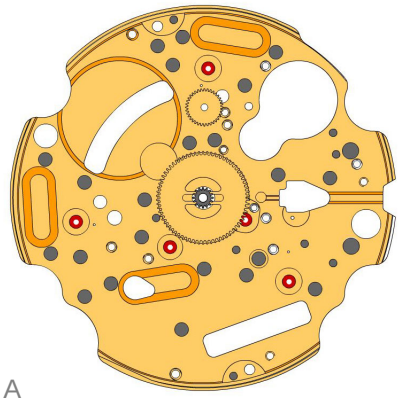
Long pressing (longer than 2 seconds)
The time zone is moved forward until the push button is released.

Please note:
If the push button is not pushed for ten seconds, the setting mode is deactivated.
Please see point no ❶ for activation.

CE

09/2017

Battery type: 395 / SR927SW
Accuracy: +20 / -10 seconds per month



A

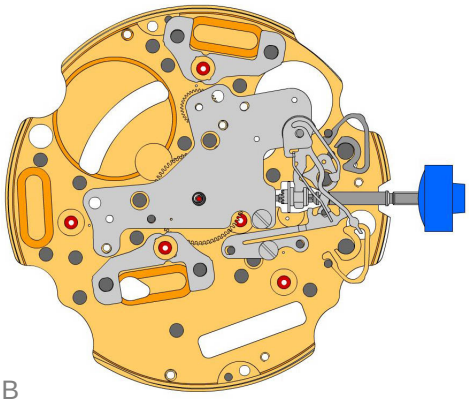
2000.574.G
1. Main plate

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

3301.243
3. Hour wheel (counter 12h)

2030.017.CO
4. Centre bridge
Centre bridge held by 1 screw 4000.250. Parts 2030.017.CO, 3004.223 and 3500.059 must be exchanged together.

3001.055.FI
5. Sliding pinion



B

3000.177.CO
6. Setting stem

3017.049
7. Setting lever

3905.049
8. Setting lever jumper (3 positions)
Setting lever jumper held by 1 screw 4000.250.

4000.250
9. Screw

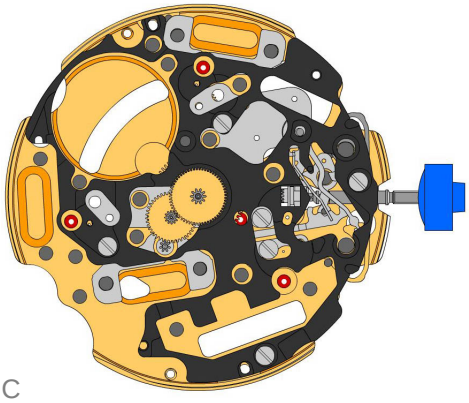
3015.081
10. Yoke (3 positions)
Parts 3015.081 and 3905.067 must be exchanged together.

3905.067
11. Yoke spring
Tensioning the spring arm. Parts 3015.081 and 3905.067 must be exchanged together.

3406.030
12. Pusher jumper B
Put the grey jumper between the two posts on the further side.

3406.038
13. Pusher jumper A
Put the yellow jumper between the two posts on the closer side.

3622.039
14. Stator (6h, 9h, chrono)



C

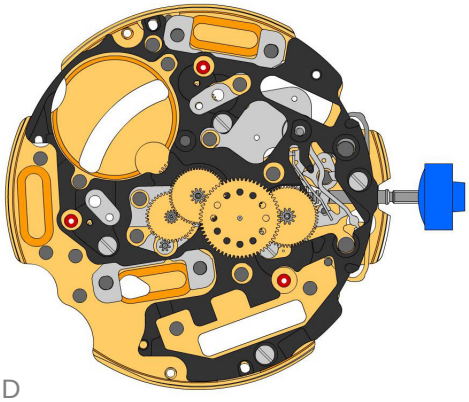
3603.079
15. Plastic bracket
Plastic bracket held by 4 screws 4000.250.

4000.250
16. Screw

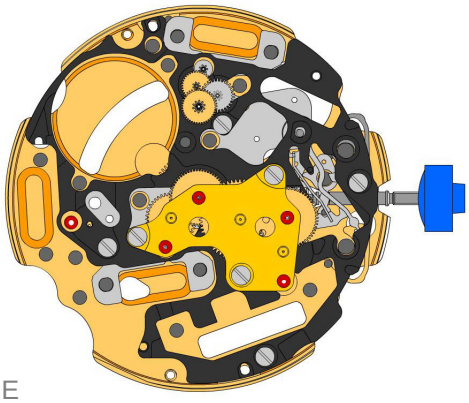
3715.094.RK
17. Rotor

3147.047.CO
18. Intermediate wheel (chrono)

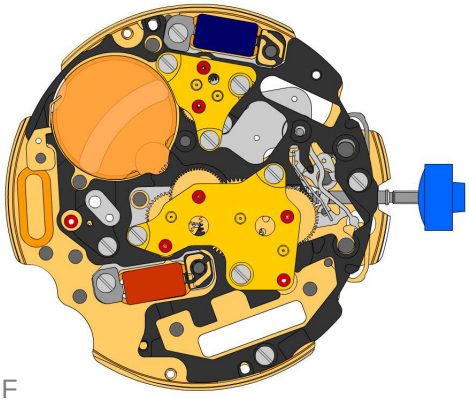
3136.156.CO
19. Second wheel (Aig.2)



D



E



F

3136.148.CO
20.

Chronograph wheel (Aig.2)

3122.056.CO
21.

Third wheel

2020.148.G
22.

Train wheel bridge
Train wheel bridge held by 3 screws 4000.250.

4000.250
23.

Screw

3715.095.RK
24.

Rotor

3147.048.CO
25.

Intermediate wheel (counter)

3007.055.CO
26.

Minute wheel (counter 12h)

3402.007.CO
27.

Minute counting wheel (12h)

2020.149.G
28.

Counter train wheel bridge
Counter train wheel bridge held by 3 screws 4000.250.

4000.250
29.

Screw

3621.055.RK
30.

Coil (counter 6h)
Attention: Please hold the coil only on the grey coil core. Coil held by 1 screw 4000.250.

3621.079.RK
31.

Coil (center)
Attention: Please hold the coil only on the grey coil core.

3503.071
32.

Tube

3601.118
33.

Contact strip
Contact strip held by 1 screw 4000.250.

4000.250
34.

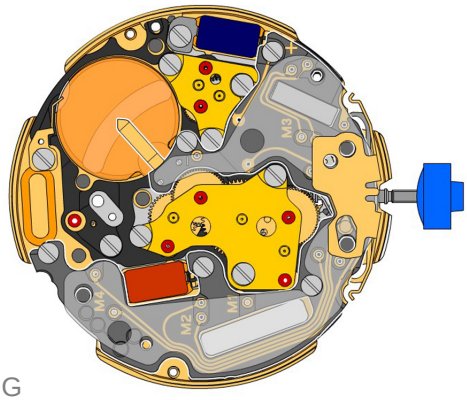
Screw

3603.034
35.

Battery insulator

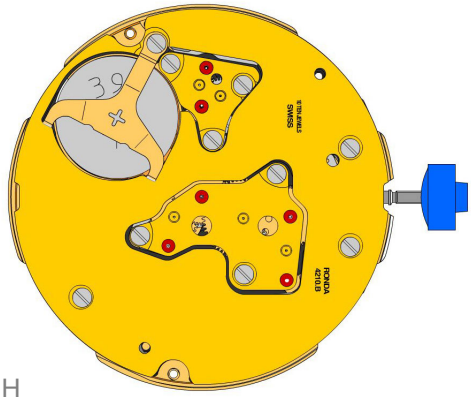
3503.054
36.

Tube



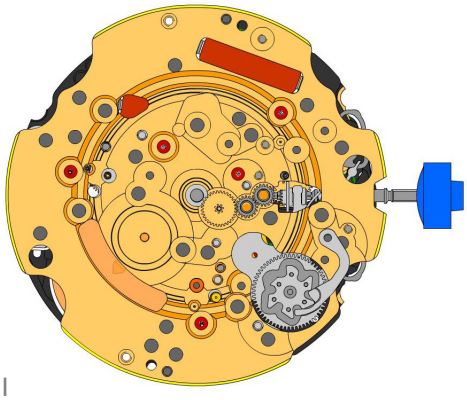
G

3612.146.4210 37.		Electronic module Electronic module held by 5 screws 4000.248. Electronic measurements may be realised now.
4000.248 38.		Screw
3603.069 39.		Circuit insulator
3601.107.G 40.		Pusher contact spring

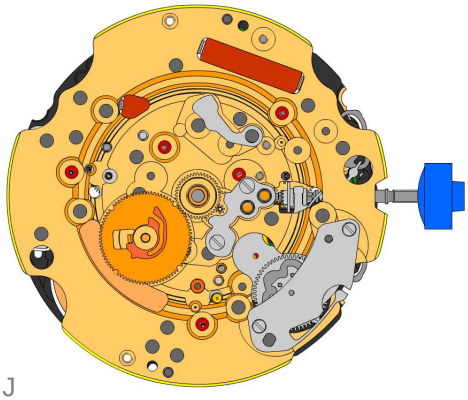


H

2130.139.G.M01.4210B 41.		Electronic module cover Electronic module cover held by 3 screws 4000.250.
3600.010.HGF 42.		Battery 395
3601.109.G 43.		Bridle + Bridle held by 1 screw 4000.250.
4000.250 44.		Screw

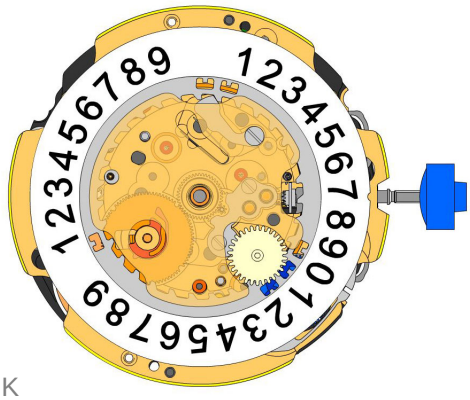


I



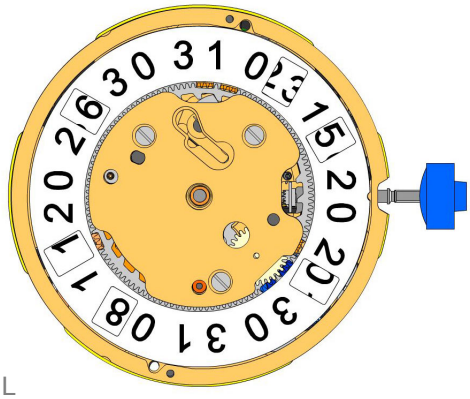
J

2000.574.G 45.		Main plate
3004.164 46.		Setting wheel
3007.054.CO 47.		Minute wheel
2130.143 48.		Minute train bridge Minute train bridge held by 2 screws 4000.305.
4000.305 49.		Screw
3004.223 50.		Tens indicator driving wheel Parts 2030.017.CO, 3004.223 and 3500.059 must be exchanged together. The short tooth of the tens indicator driving wheel must point to the center of the movement.
3500.059 51.		Tens jumper Parts 2030.017.CO, 3004.223 and 3500.059 must be exchanged together.
2130.142 52.		Tens jumper maintaining plate Tens jumper maintaining plate held by 2 screws 4010.306. Tensioning the spring arm.
4010.306 53.		Screw
3301.242 54.		Hour wheel (Aig.2)
3315.016 55.		Friction spring
3004.224.CO 56.		Date indicator driving wheel
3500.049 57.		Date jumper



K

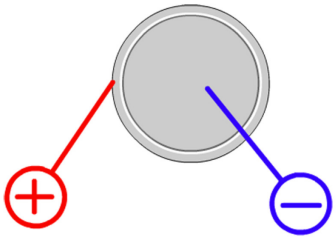
3504.214.AF.1.A 58.		Units indicator (standard) Nick of the indicator at 3 o`clock.
3147.054 59.		Tens intermediate wheel
2130.141 60.		Date indicator maintaining plate Date indicator maintaining plate held by 1 screw 4000.250.
3905.070 61.		Date jumper spring Insert the date jumper spring in the provided opening.



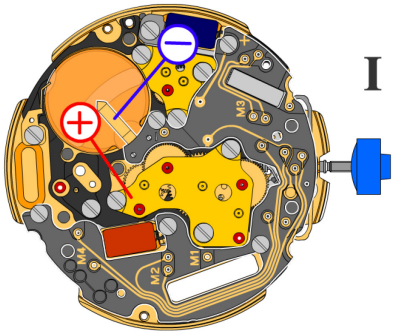
L

3504.216.AF.1.A 62.		Tens indicator (standard) Nick of the indicator at 3 o`clock.
2130.140.G 63.		Date mechanism maintaining plate Date mechanism maintaining plate held by 2 screws 4000.250.
4000.250 64.		Screw
3506.072.G 65.		Dial support

8200 66.		Moebius 8200
9014 67.		Moebius 9014
124 68.		Jismaa 124
9020 69.		Moebius 9020

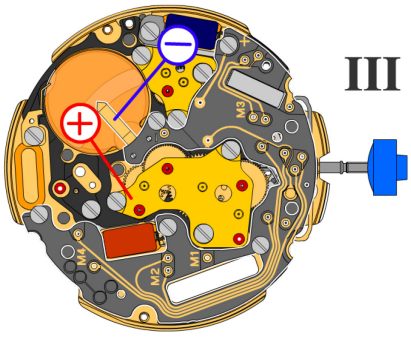


Battery	**395**
Voltage	**1.55 V**



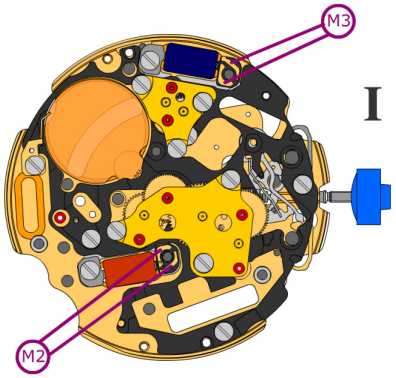
Setting stem in position I, calendar not in gear,
60 s measuring interval for rate and consumption:

Typical consumption	***1.32 µA***
Maximal consumption	***1.65 µA***
Rate	**-10s/M. .. +20s/M.**
Lower working voltage limit	**1.20 V**

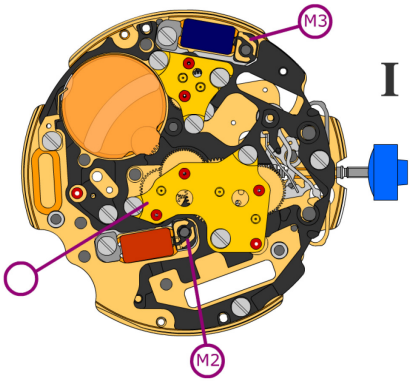


Setting stem in position III, 60 s measuring interval:

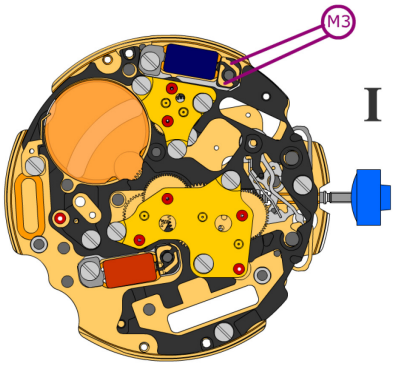
Typical consumption	***0.10 µA***
Maximal consumption	***0.30 µA***



Coil resistance M2	**2.20 kΩ .. 2.40 kΩ**
Coil resistance M3	**1.68 kΩ .. 1.88 kΩ**

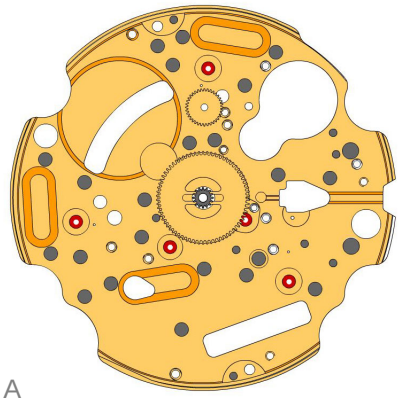


Coil isolation M2/M3	**∞ kΩ**

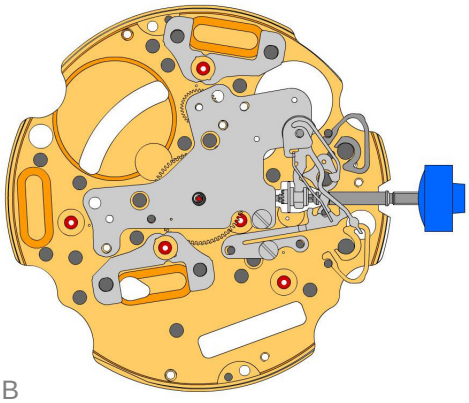


Signal generator (4.9 ms, 8 Hz):

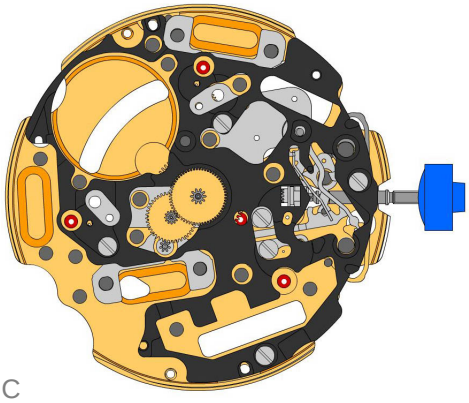
Lower working voltage limit M3	**1.20 V**



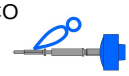
A

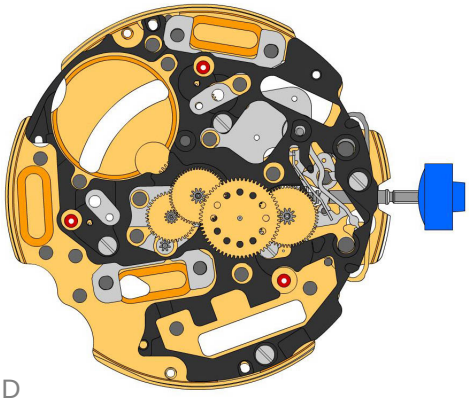


B

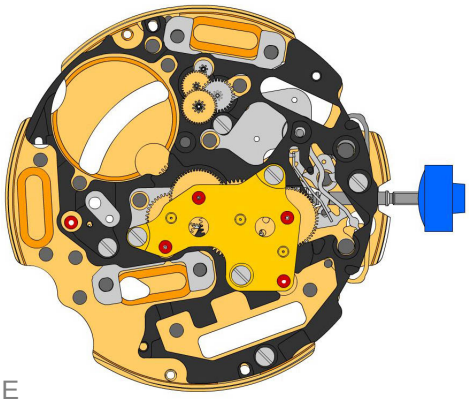


C

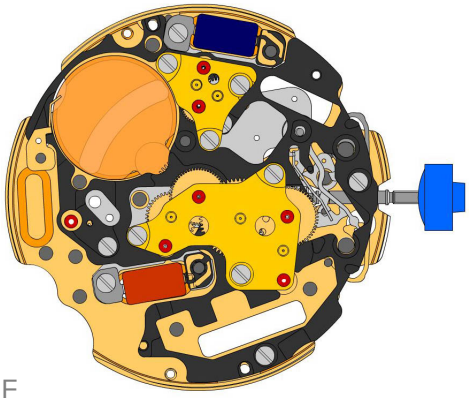
2000.574.G 1.		Main plate
3305.282.CO 2.		Cannon pinion with driver (Aig.2)
3301.243 3.		Hour wheel (counter 12h)
2030.024.CO 4.		Centre bridge Centre bridge held by 1 screw 4000.250.
3001.055.FI 5.		Sliding pinion
3000.177.CO 6.		Setting stem
3017.049 7.		Setting lever
3905.049 8.		Setting lever jumper (3 positions) Setting lever jumper held by 1 screw 4000.250.
4000.250 9.	 	Screw
3015.081 10.		Yoke (3 positions)
3905.067 11.		Yoke spring Tensioning the spring arm.
3406.030 12.		Pusher jumper B Put the grey jumper between the two posts on the further side.
3406.038 13.		Pusher jumper A Put the yellow jumper between the two posts on the closer side.
3622.039 14.		Stator (6h, 9h, chrono)
3603.079 15.		Plastic bracket Plastic bracket held by 4 screws 4000.250.
4000.250 16.	 	Screw
3715.094.RK 17.	 	Rotor
3147.047.CO 18.	 	Intermediate wheel (chrono)
3136.156.CO 19.	 	Second wheel (Aig.2)



D



E



F

3136.148.CO
20.
Chronograph wheel (Aig.2)

3122.056.CO
21.
Third wheel

2020.148.G
22.
Train wheel bridge
Train wheel bridge held by 3 screws 4000.250.

4000.250
23.
Screw

3715.095.RK
24.
Rotor

3147.048.CO
25.
Intermediate wheel (counter)

3007.055.CO
26.
Minute wheel (counter 12h)

3402.007.CO
27.
Minute counting wheel (12h)

2020.149.G
28.
Counter train wheel bridge
Counter train wheel bridge held by 3 screws 4000.250.

4000.250
29.
Screw

3621.055.RK
30.
Coil (counter 6h)
Attention: Please hold the coil only on the grey coil core. Coil held by 1 screw 4000.250.

3621.079.RK
31.
Coil (center)
Attention: Please hold the coil only on the grey coil core.

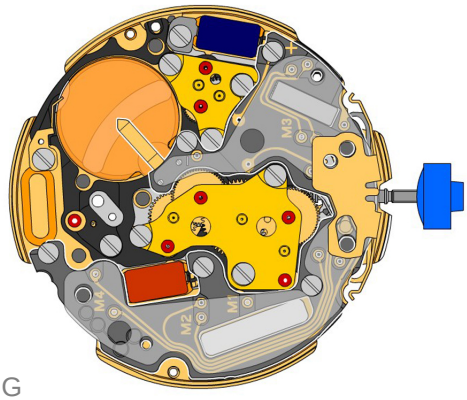
3503.071
32.
Tube

3601.118
33.
Contact strip
Contact strip held by 1 screw 4000.250.

4000.250
34.
Screw

3603.034
35.
Battery insulator

3503.054
36.
Tube



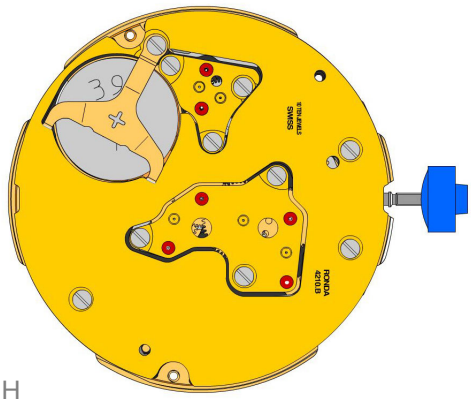
G

3612.146.4210 37. Electronic module
Electronic module held by 5 screws 4000.248. Electronic measurements may be realised now.

4000.248 38. Screw

3603.069 39. Circuit insulator

3601.107.G 40. Pusher contact spring



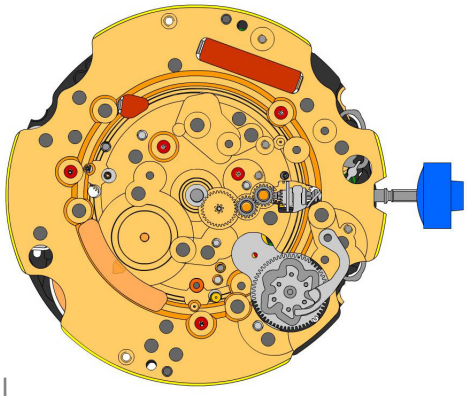
H

2130.139.G.M01.4210B 41. Electronic module cover
Electronic module cover held by 3 screws 4000.250.

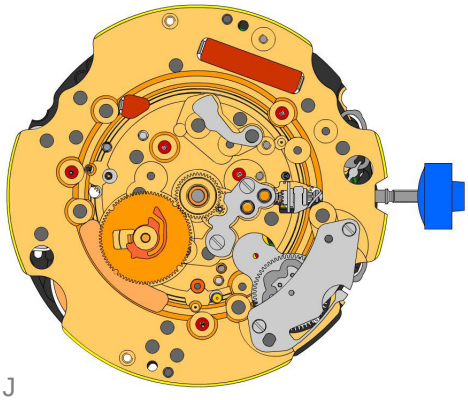
3600.010.HGF 42. Battery 395

3601.109.G 43. Bridle +
Bridle held by 1 screw 4000.250.

4000.250 44. Screw

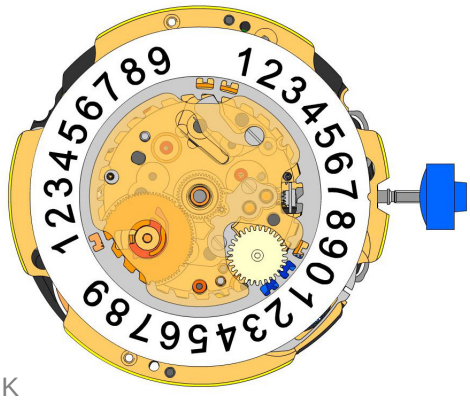


I



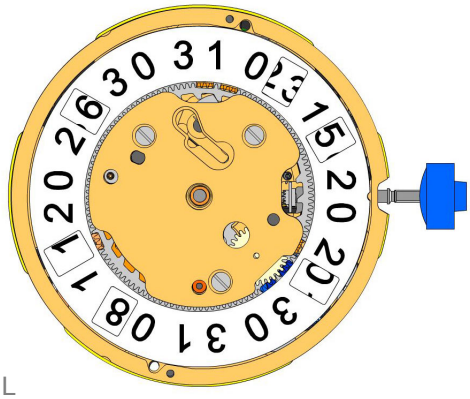
J

2000.574.G 45.		Main plate
3004.164 46.		Setting wheel
3007.054.CO 47.		Minute wheel
2130.143 48.		Minute train bridge Minute train bridge held by 2 screws 4000.305.
4000.305 49.		Screw
3004.227 50.		Tens indicator driving wheel The short tooth of the tens indicator driving wheel must point to the center of the movement.
3500.075 51.		Tens jumper
2130.142 52.		Tens jumper maintaining plate Tens jumper maintaining plate held by 2 screws 4000.306. Tensioning the spring arm.
4010.306 53.		Screw
3301.242 54.		Hour wheel (Aig.2)
3315.016 55.		Friction spring
3004.224.CO 56.		Date indicator driving wheel
3500.049 57.		Date jumper



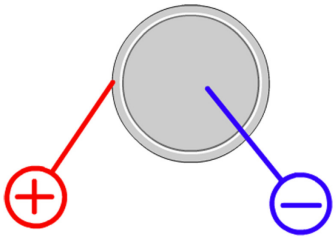
K

3504.214.AF.1.A 58.		Units indicator (standard) Nick of the indicator at 3 o`clock.
3147.054 59.		Tens intermediate wheel
2130.141 60.		Date indicator maintaining plate Date indicator maintaining plate held by 1 screw 4000.250.
3905.070 61.		Date jumper spring Insert the date jumper spring in the provided opening.

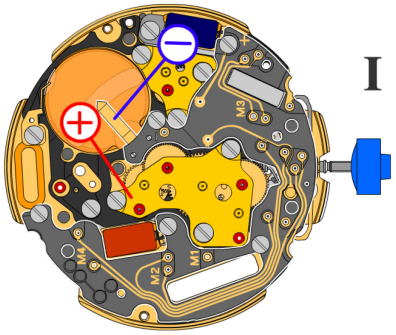


L

3504.216.AF.1.A 62.		Tens indicator (standard) Nick of the indicator at 3 o`clock.
2130.140.G 63.		Date mechanism maintaining plate Date mechanism maintaining plate held by 2 screws 4000.250.
4000.250 64.		Screw
3506.072.G 65.		Dial support
8200 66.		Moebius 8200
9014 67.		Moebius 9014
124 68.		Jismaa 124
9020 69.		Moebius 9020

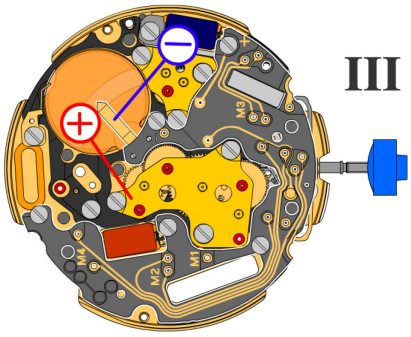


Battery	**395**
Voltage	**1.55 V**



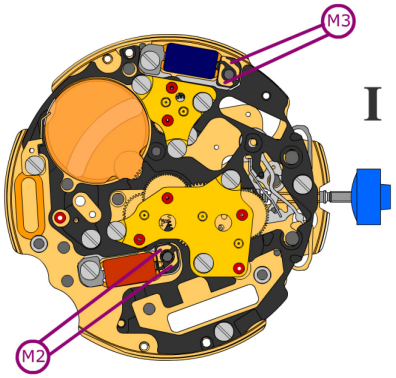
Setting stem in position I, calendar not in gear,
60 s measuring interval for rate and consumption:

Typical consumption	***1.32 µA***
Maximal consumption	***1.65 µA***
Rate	**-10s/M. .. +20s/M.**
Lower working voltage limit	**1.20 V**

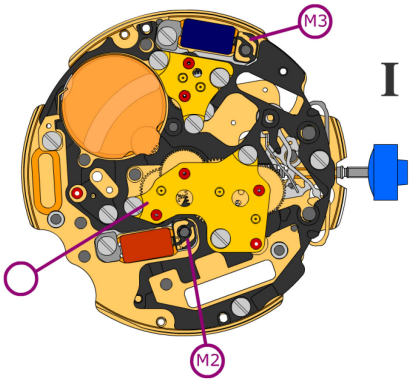


Setting stem in position III, 60 s measuring interval:

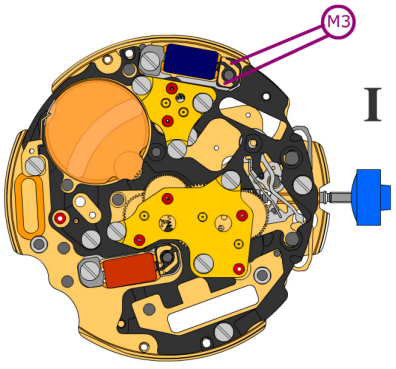
Typical consumption	***0.10 µA***
Maximal consumption	***0.30 µA***



Coil resistance M2	**2.20 kΩ .. 2.40 kΩ**
Coil resistance M3	**1.68 kΩ .. 1.88 kΩ**



Coil isolation M2/M3	**∞ kΩ**



Signal generator (4.9 ms, 8 Hz):

Lower working voltage limit M3	**1.20 V**