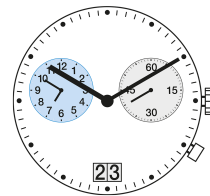
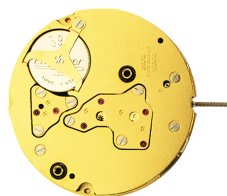


RONDA startech 4000

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

Caliber 4120.B – 12½'''



Product Specifications

Analog quartz movement

Line

startech

Caliber

4120.B

Size

12½'''

Version Swiss Made
Swiss Parts

7 Jewels / gold plated
3 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 pulled out stem: Reduction of consumption approximately 70%
- Very easy handling by one pusher

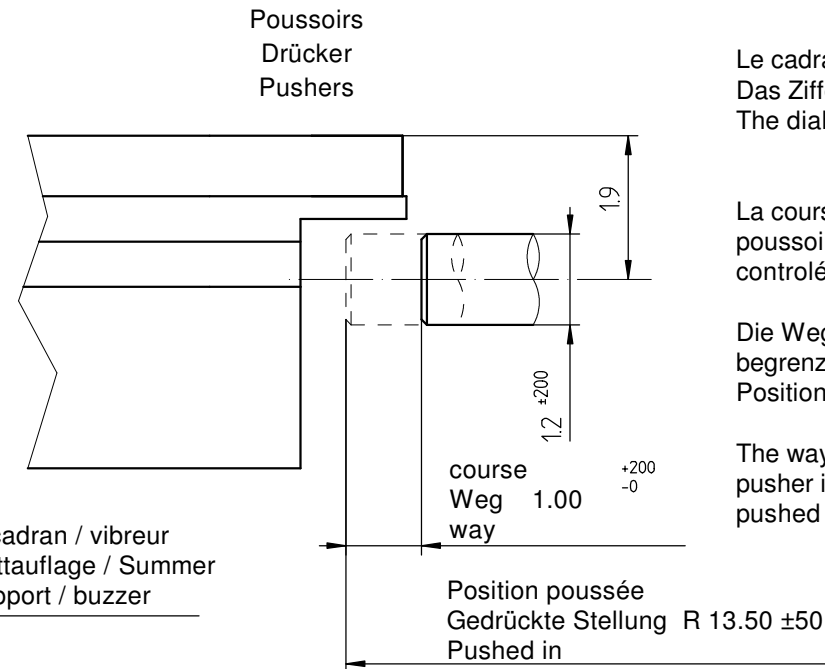
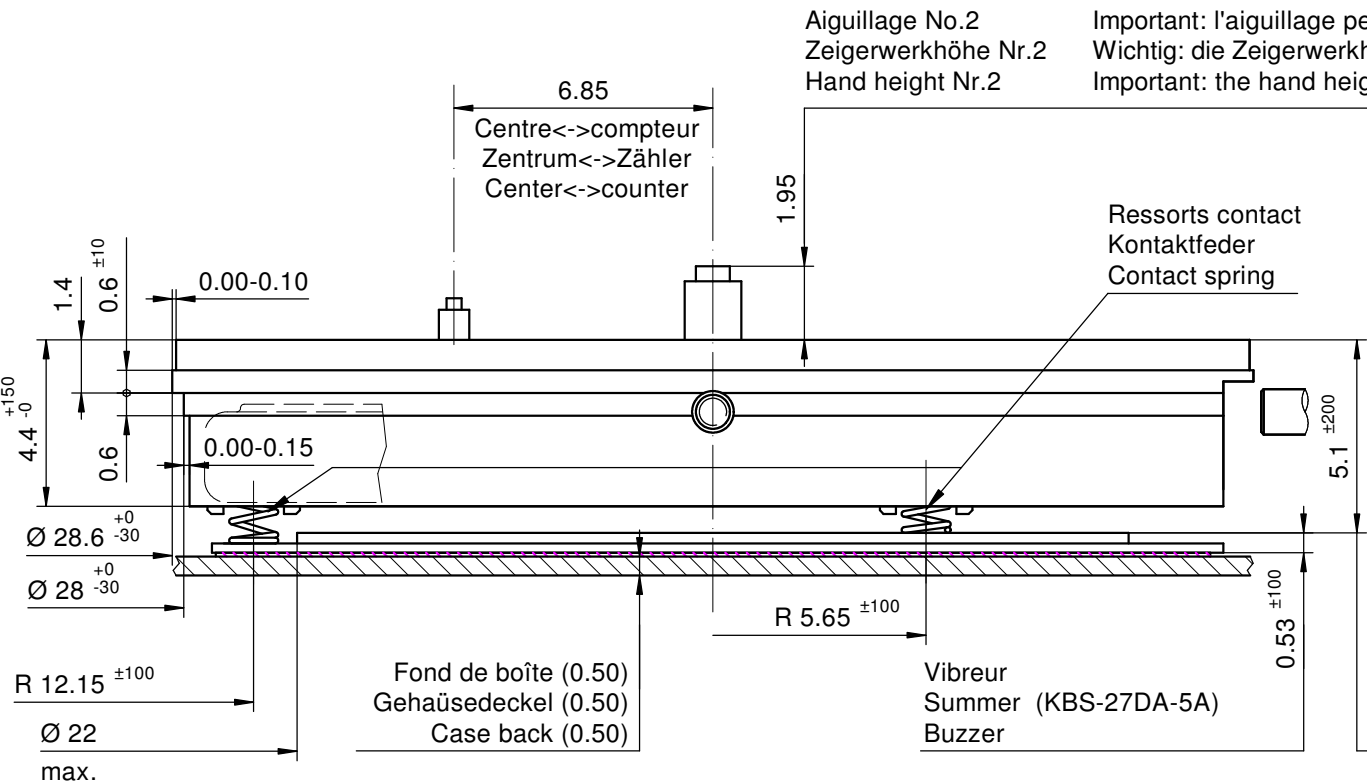
Functions

- Multifunction
- 2 eyes
- Alarm
- Big date
- Small second

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	1.42 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





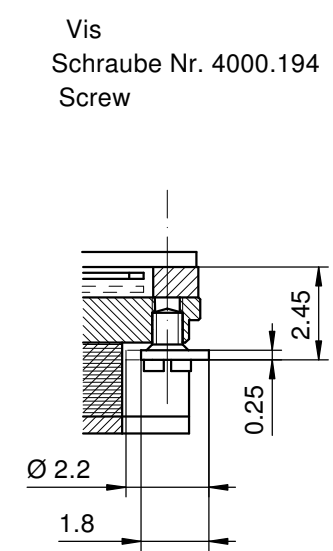
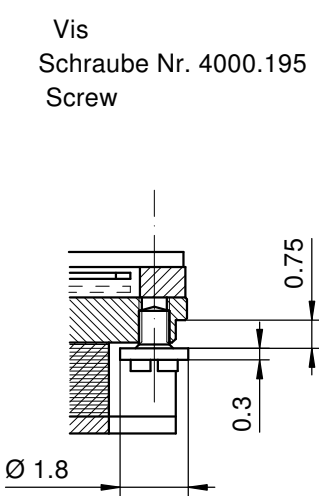
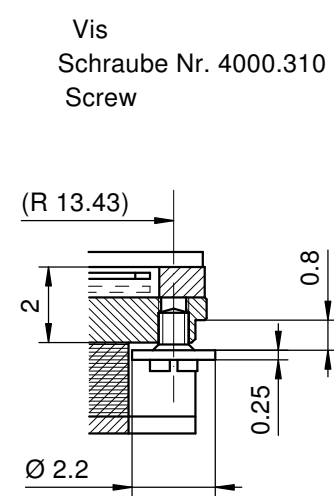
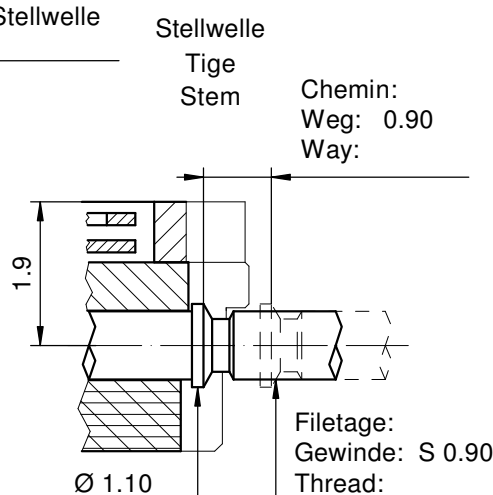
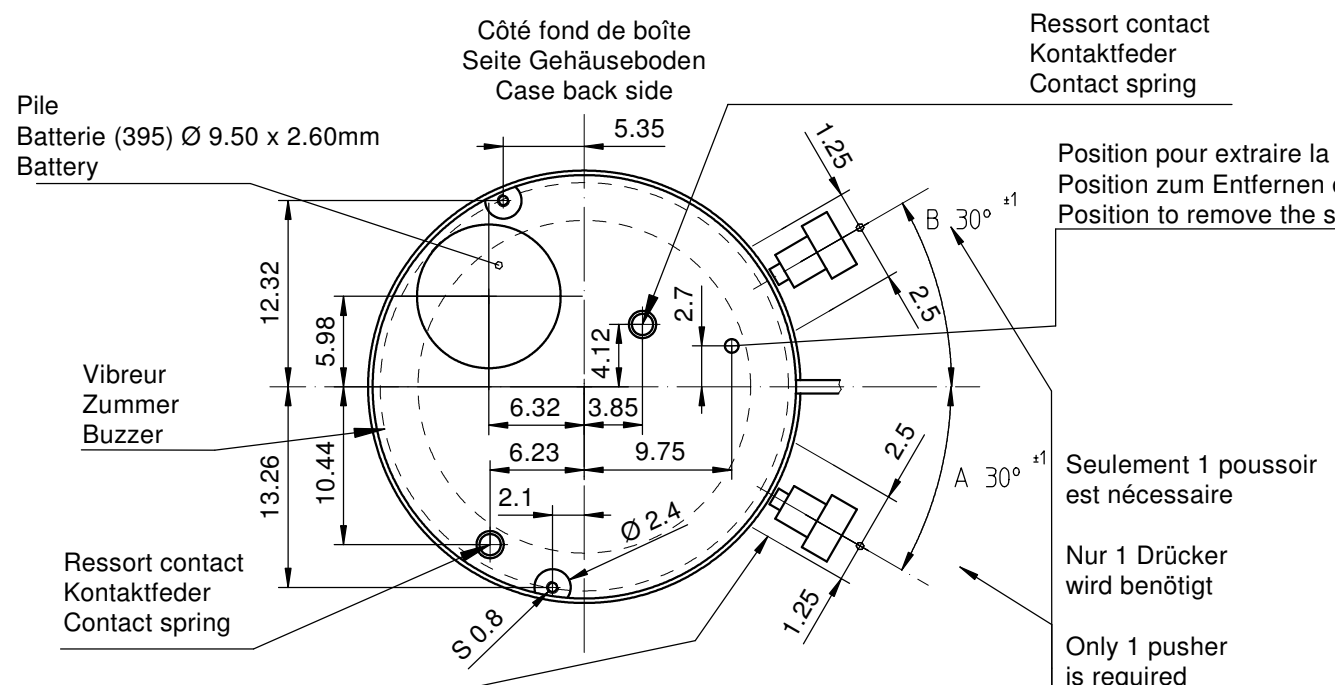
Sécurité entre l'aiguille des secondes et le verre:
 Sicherheit zwischen Sekundenzeiger und Glas: 0.30mm
 Security between second hand and glass:

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

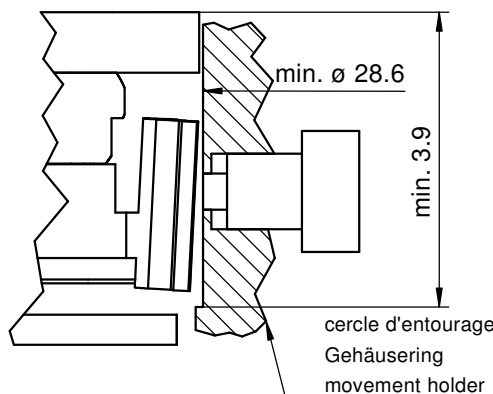
La course du poussoir doit être limitée dans le poussoir lui-même. Sa position poussée doit être contrôlée.

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 poussoirs 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

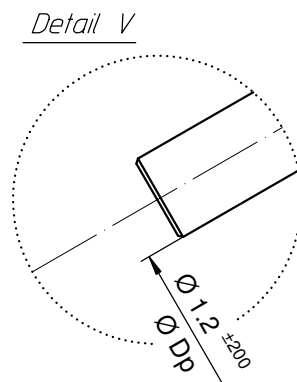
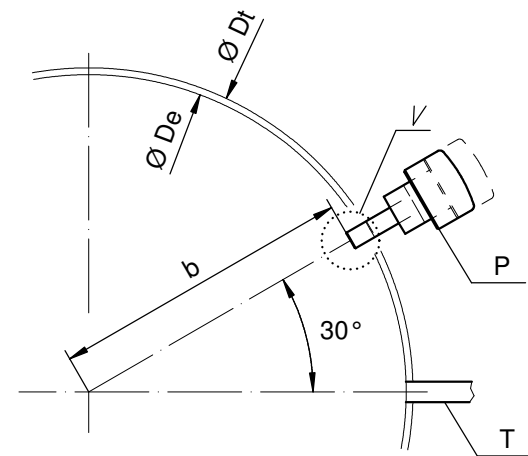
The indicated angle of the pusher direction and the position must be fulfilled. For pusher angles of 0° (pusher A and B), see drawing 5000.345.

Cage
 Urwerkgestell 12½"
 Frame

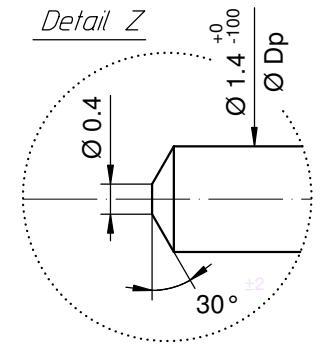
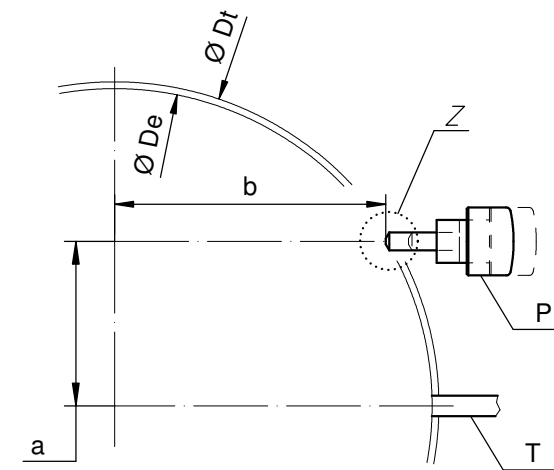
RONDA 4120.B

Issued	14 Nov 2003	mk
Modified	05 Sep 2016 ÄA 34777	dh
Released	YES	
Tolerance	+/- 20 µm	
Scale	10 : 1 (5 : 1) (A3H)	
Sous réserve de modifications Änderungen vorbehalten Modifications reserved		
No.	5000.322	08

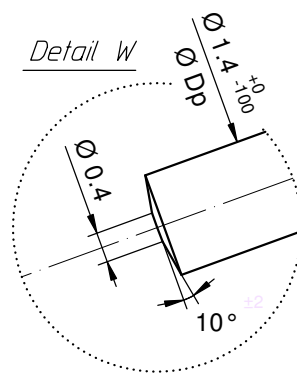
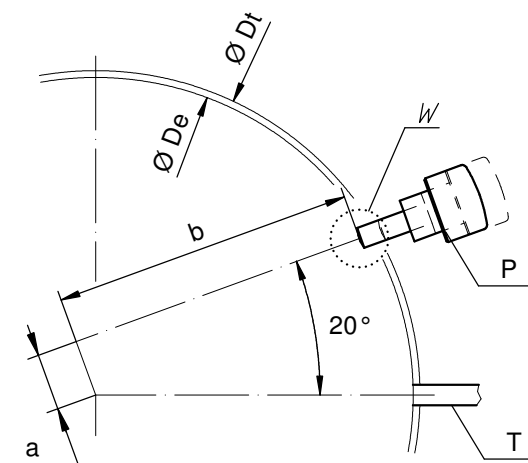
Angle Winkel Angle	30°	
Ø Dp	b	
1.00	13.50	
1.10	13.50	
1.20	13.50	
1.30	13.50	
1.40	13.50	



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



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

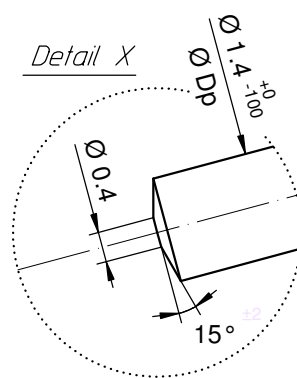
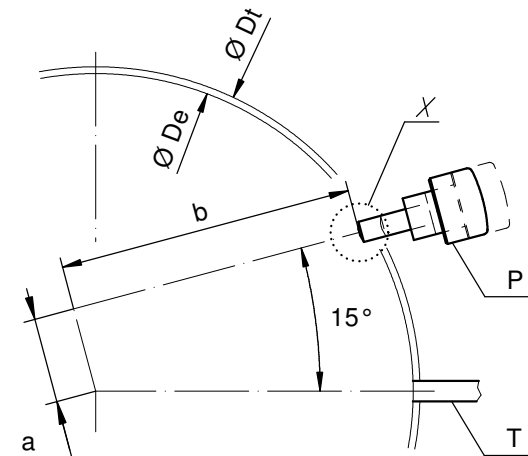
Ø Dp: diamètre du poussoir
Drückerdurchmesser
pusher-diameter

Ø Dt: diamètre total
Totaldurchmesser
total-diameter

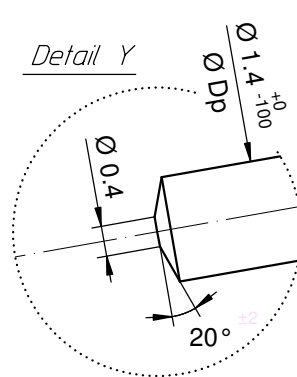
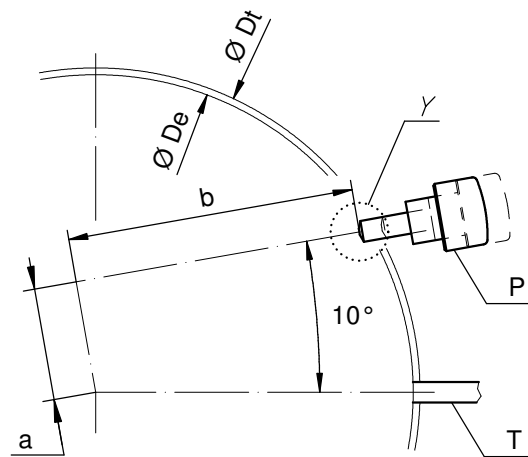
P: poussoir en position poussée
Drücker in gedrückter Stellung
pusher in pressed position

T: tige de mise à l'heure
Stellwelle
stem

Angle 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

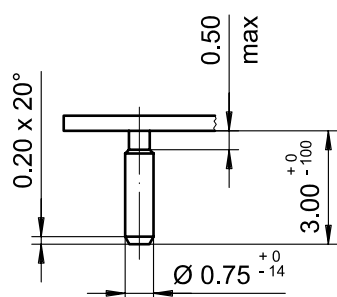
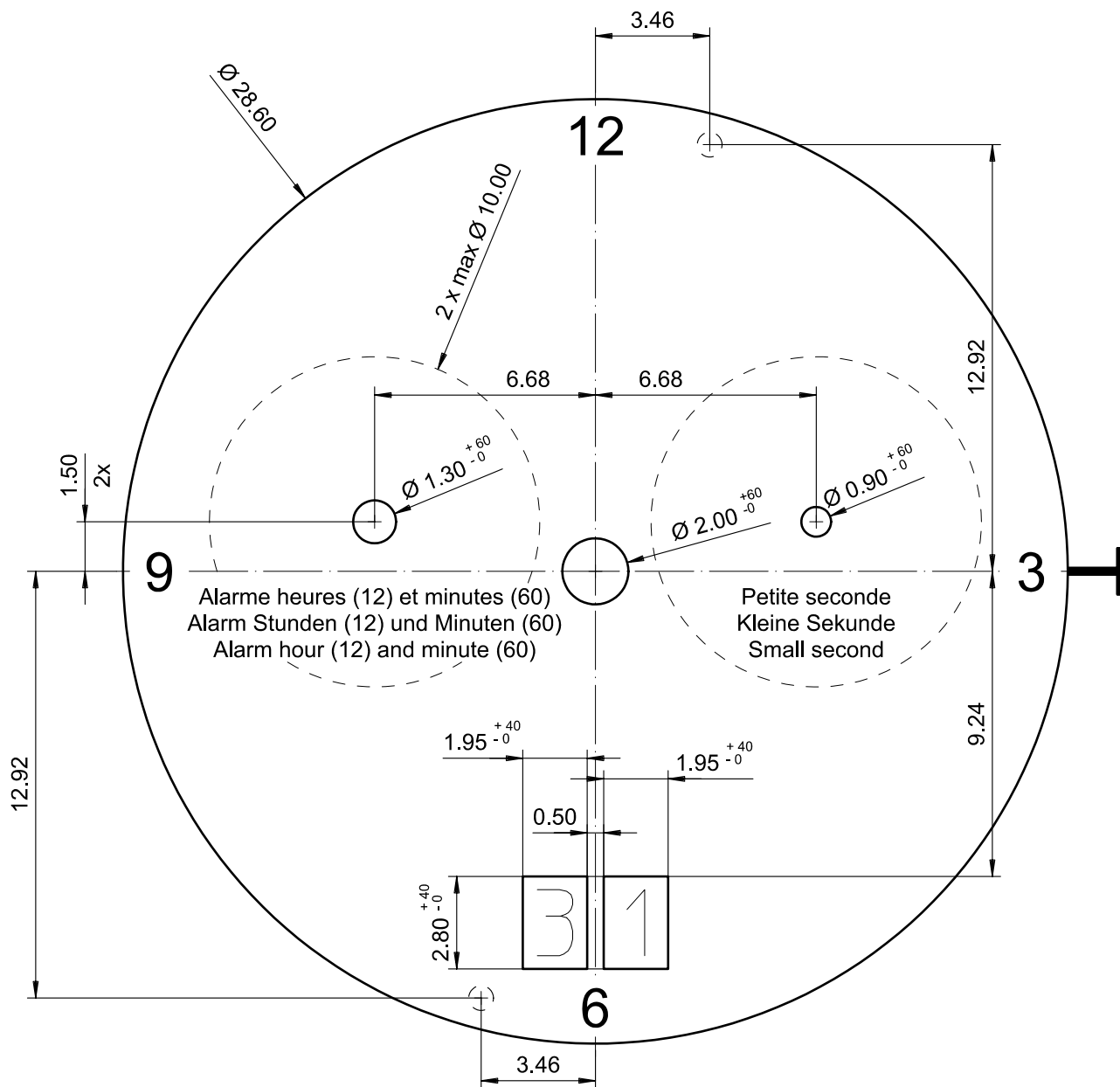


Angle des poussoirs A et B
Winkel der Drücker A und B
Angle of pusher A and B

RONDA

4xxx.x, 5xxx.x

Issued	06 Sep 2004	mk
Modified	30.März 2005 ÄA 1784	mk
Released	YES	
Tolerance	+/- 20 µm	
Scale	10 : 1 (5 : 1) (A3H)	
Sous réserve de modifications Äenderungen 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	6H

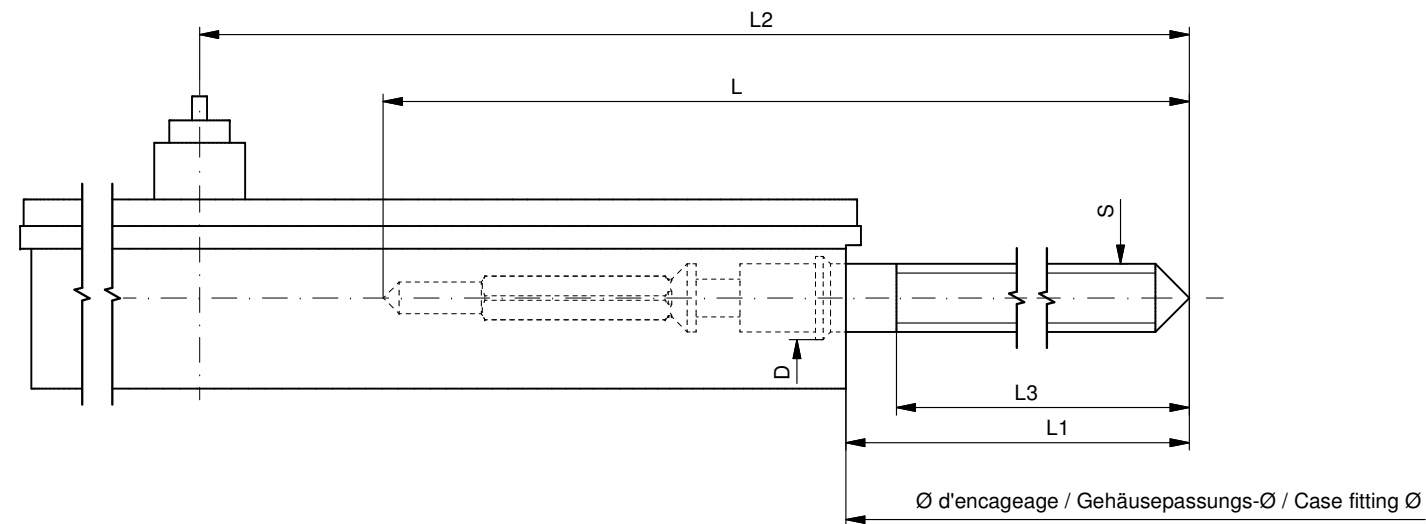
Cadran
Zifferblatt
Dial

12 1/2"

Issued	13 Dez 2006	cw
Modified	15.Dez.2006 ÄÄ ----	cm
Released	YES	
Tolerance	+/- 20 µm	
Scale	5 : 1 (A4V)	
Sous réserve de modifications Äenderungen vorbehalten Modifications reserved		
No.	5010.695	02

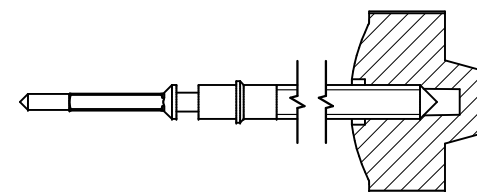
RONDA

4120.B



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

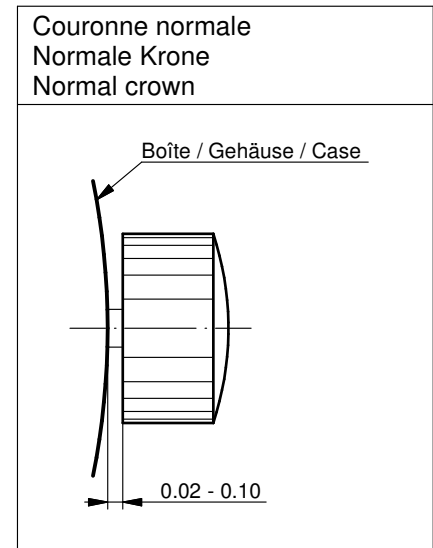
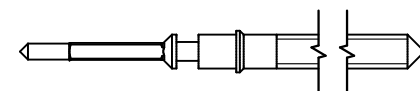
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.177.CO	20.00	10.23	24.23	10.15	0.90	1.10



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

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

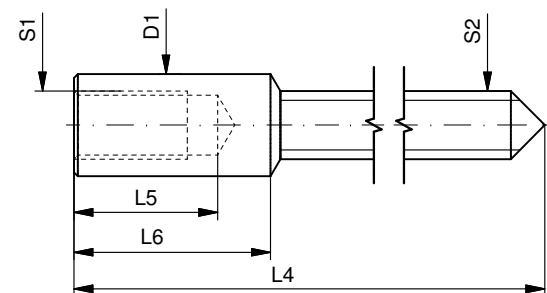
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.177	20.00	10.23	24.23	10.15	0.90	1.10
3000.191	32.00	22.23	36.23	22.15	0.90	1.10



Couronne 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 (dimensions / forces)
Stellwelle (Dimensionen / Kräfte)
Stem (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)	
Sous réserve de modifications Äenderungen vorbehalten Modifications reserved		
No.	5030.018	02

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

Display elements

Minute hand

Hour hand

Alarm and reference time (hour and minute)

Second hand

Date

Control buttons

Crown

Push-button

01

Setting the time

- Pull out the crown to position III (the watch stops).
- Turn the crown until you reach the correct time 8:45.
- Push the crown back into position I.

Please note:

* In order to set the time to the exact second, 1 must be pulled out when the second hand is in position «60». Once the hour and minute hands have been set, 2 must be pushed back into position I at the exact second.

02

Setting the date (quick mode)

- Pull out the crown to position II (the watch continues to run).
- Turn the crown until the correct date 01 appears.
- Push the crown back into position I.

Please note:

The date of the following day must be set in the calendar changing phase between approx. 9 PM and midnight.

Setting the date too quickly in quick mode can result in the incorrect date being displayed. Switching the date between 01 and 31 (position II) restores the synchronisation.

03

Setting the time and date

- Pull out the crown to position II (the watch continues to run).
- Turn the crown until yesterday's date appears 03.
- Pull out the crown to position III (the second hand stops. The display changes from alarm time to reference time.)
- Turn the crown until the correct date 04 appears.
- Continue to turn the crown until the current time 8:30 PM appears.
- Push the crown back into position I (the display changes from reference to alarm time).

Please note:

Resetting the time also requires the identical correction of the reference time. Please refer to «setting the reference times».

* Please observe the AM/PM clock rhythm.

04

Setting the alarm time

- Activate the setting mode
Press the push-button for at least 2 seconds. As soon as the small minute hand jumps forward 1 minute, this mode is active.
- Setting
Short pressing (less than 1 second): the alarm time is moved forward by the minute.
Long pressing (longer than 2 seconds): the alarm time is moved forward until the push-button is released.

Please note:

If the push-button is not activated for 10 seconds, the setting mode of the alarm time deactivates itself. At the same time, 2 beeps are emitted to indicate that the alarm is switched on.

05

Switching the alarm on/off

- The alarm is switched on/off by briefly pressing the push-button:
2 beeps → alarm switched on
1 beep → alarm switched off

Please note:

The alarm can be set maximum 12 hours before the desired alarm time.

Once the set alarm time has been reached, a signal is emitted for 20 seconds. This signal is repeated after two minutes. Following brief pressing of the push-button, the signal is immediately switched off.

06

Setting the reference time

- Pull out the crown to position III (second hand stops. The display changes from alarm time to reference time.)
- Activating the setting mode
Press the push-button for at least 2 seconds. As soon as the small minute hand jumps forwards one minute, this mode is active.
- Short pressing** (less than 1 second): the reference time is moved forwards by the minute.
Medium pressing: (1-2 seconds): the reference time is moved forwards by the hour.
Long pressing (longer than 2 seconds): the reference time is moved forwards until the push-button is released.
- Push the crown back into position I (the display changes from reference time to alarm time).
A 1 beep signal indicates that the alarm is switched off.

Please note:

The reference time must display the same time as the current time. This means that resetting the current time also requires the identical correction of the reference time. Afterwards, the alarm time has to be reset.

What is the reference time?

The current time is displayed by means of the hour and minute hand.

Parallel to the current time, the reference time runs in the background: the alarm time refers itself to this reference time. Thus, resetting the time also requires the identical correction of the reference time.

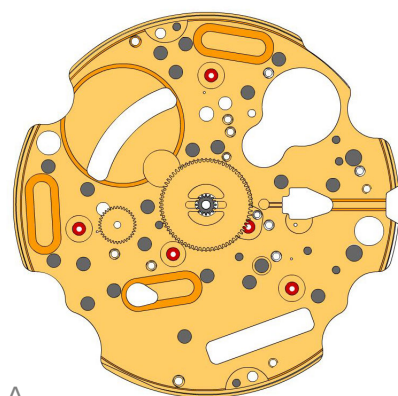
If the reference time is not synchronised with the current time, this results in the alarm signal being emitted at a different time to the set alarm time.

07

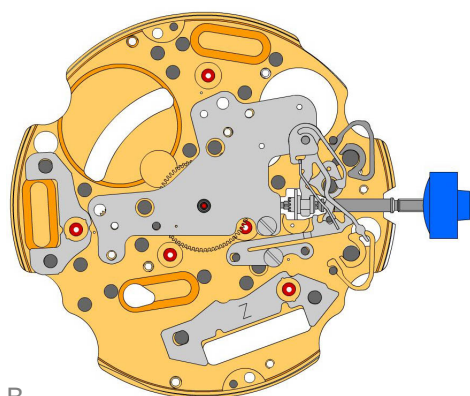
CE

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

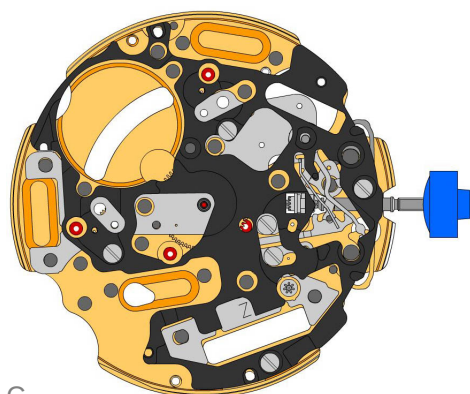
09/2017



A



B



C

2000.574.G		Main plate
1.		
3305.290.CO		Cannon pinion with driver (Aig.2, closed)
2.		
3301.243		Hour wheel (counter 24h)
3.		

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

4000.250		Screw
5.		

3001.055.FI		Sliding pinion
6.		

3000.177.CO		Setting stem
7.		

3017.049		Setting lever
8.		

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

4000.250		Screw
10.		

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

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

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

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

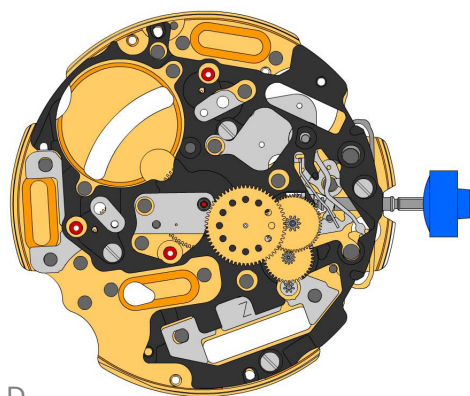
3622.040		Stator
15.		Mark [Z] on stator.

3622.039		Stator (counter 6h, 9h, chrono)
16.		

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

4000.250		Screw
18.		

3715.094.RK		Rotor
19.		

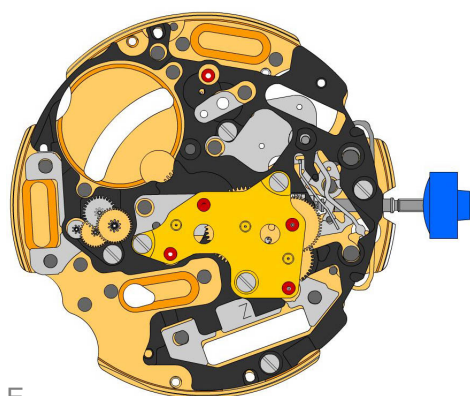


D

3147.046.CO
20.  Intermediate wheel

3136.142.CO
21.  Second wheel (long)

3122.056.CO
22.  Third wheel



E

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

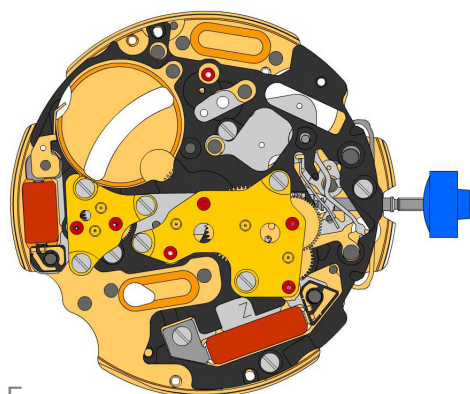
4000.250
24.  Screw

3715.095.RK
25.  Rotor

3147.048.CO
26.  Intermediate wheel (counter)

3007.055.CO
27.  Minute wheel (counter 24h)

3402.007.CO
28.  Minute counting wheel (24h)



F

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

4000.250
30.  Screw

3621.053.RK
31.  Coil
Attention: Please hold the coil only on the grey coil core. Coil held by 1 screw 4000.250.

3621.054.RK
32.  Coil (counter 9h, chrono)
Attention: Please hold the coil only on the grey coil core.

4000.250
33.  Screw

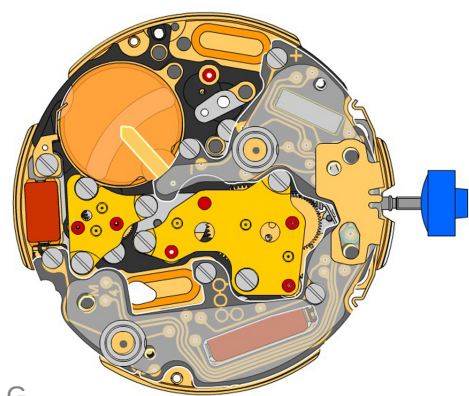
3601.118
34.  Contact strip
Contact strip held by 1 screw 4000.250.

4000.250
35.  Screw

3603.034
36.  Battery insulator

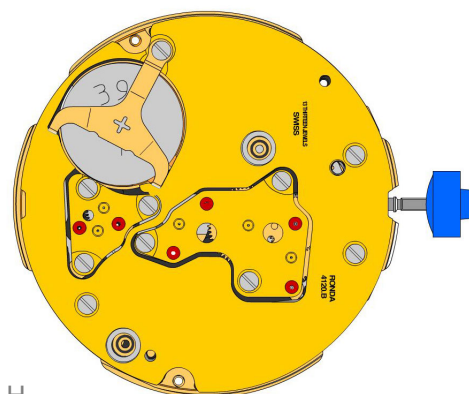
3503.054
37.  Tube

3503.054
38.  Tube



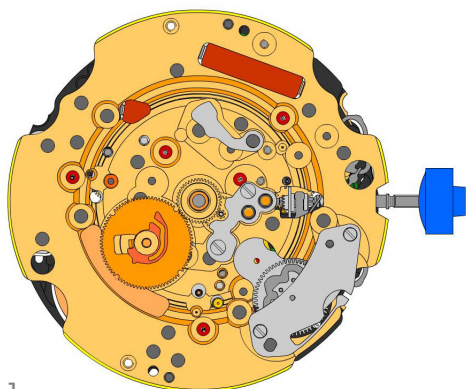
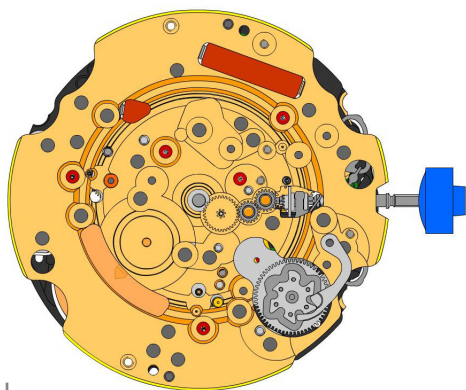
G

3612.176.4120 39.		Electronic module Electronic module held by 5 screws 4000.248. Electronic measurements may be realised now.
4000.248 40.		Screw
3603.069 41.		Circuit insulator
3603.070 42.		Contact insulator
3603.070 43.		Contact insulator
3601.107.G 44.		Pusher contact spring

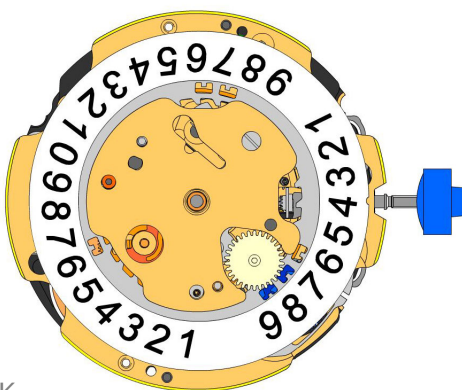


H

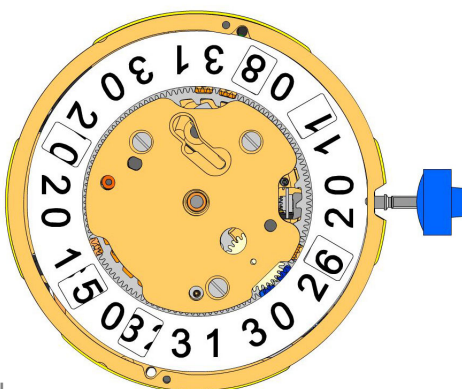
2130.160.G.M01.4120B 45.		Electronic module cover Electronic module held by 5 screws 4000.250.
3600.010.HGF 46.		Battery 395
3601.109.G 47.		Bridle + Bridle held by 1 screw 4000. 250.
4000.250 48.		Screw



2000.574.G 49.		Main plate
3004.164 50.		Setting wheel
3004.164 51.		Setting wheel
3007.054.CO 52.		Minute wheel
2130.143 53.		Minute train bridge Minute train bridge held by 2 screws 4000.305.
4000.305 54.		Screw
3004.223 55.		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 56.		Tens jumper Parts 2030.017.CO, 3004.223 and 3500.059 must be exchanged together.
2130.142 57.		Tens jumper maintaining plate Tens jumper maintaining plate held by 2 screws 4000.306. Tensioning the spring arm.
4010.306 58.		Screw
3301.242 59.		Hour wheel (Aig.2)
3315.016 60.		Friction spring
3004.224.CO 61.		Date indicator driving wheel
3500.049 62.		Date jumper



K

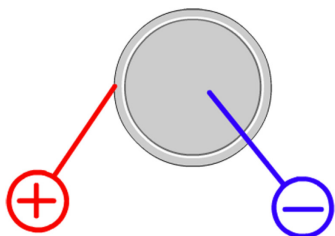


L

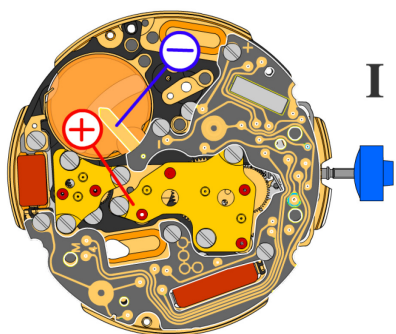
3504.214.AD.1.A 63.		Units indicator (standard) Nick of the indicator at 3 o'clock.
3147.054 64.		Tens intermediate wheel
2130.141 65.		Date indicator maintaining plate Date indicator maintaining plate held by 1 screw 4000.250.
3905.070 66.		Date jumper spring Insert the date jumper spring in the provided opening.

3504.215.AD.1.A 67.		Tens indicator (standard) Nick of the indicator at 3 o'clock.
2130.140.G 68.		Date mechanism maintaining plate Date mechanism maintaining plate held by 2 screws 4000.250.
4000.250 69.		Screw
3506.072.G 70.		Dial support

8200 71.		Moebius 8200
9014 72.		Moebius 9014
124 73.		Jismaa 124
9020 74.		Moebius 9020

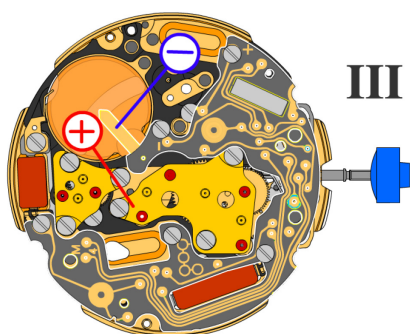


Battery	395
Voltage	1.55 V



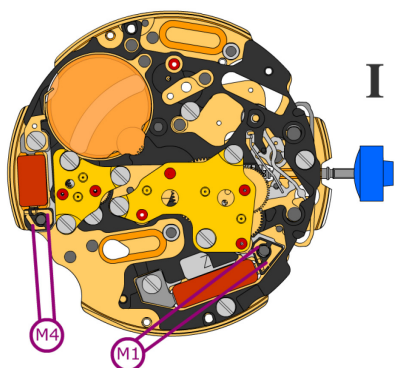
*Setting stem in position I, calendar not in gear,
60 s measuring interval for rate and consumption:*

Typical consumption	1.42 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:

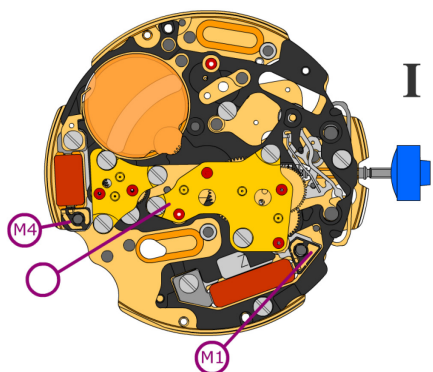
Typical consumption	0.10 μA
Maximal consumption	0.30 μA



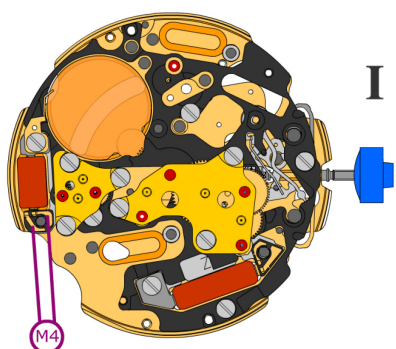
Coil resistance M1

1.90 k Ω .. 2.10 k Ω

Coil resistance M4

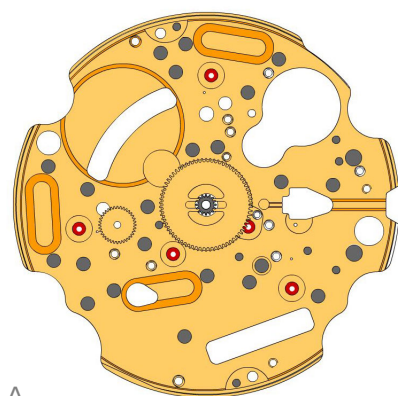
1.68 k Ω .. 1.88 k Ω


Coil isolation M1/M4

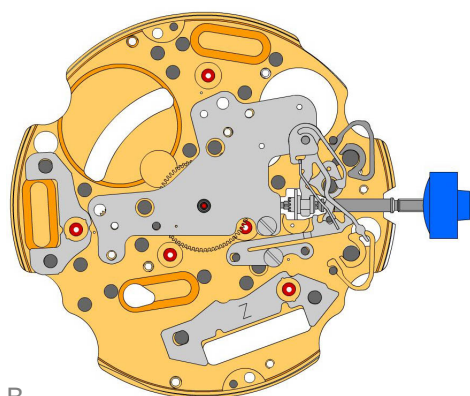
 ∞ k Ω

Signal generator (4.9 ms, 8 Hz):

Lower working voltage limit M4

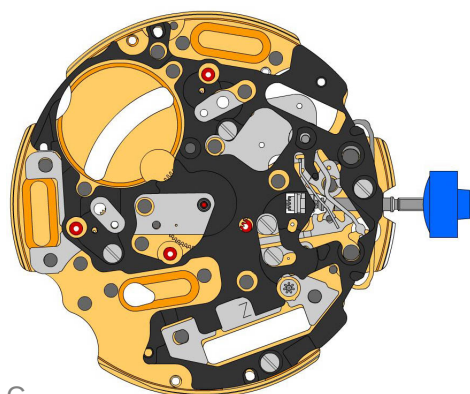
1.20 V



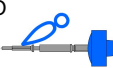
A

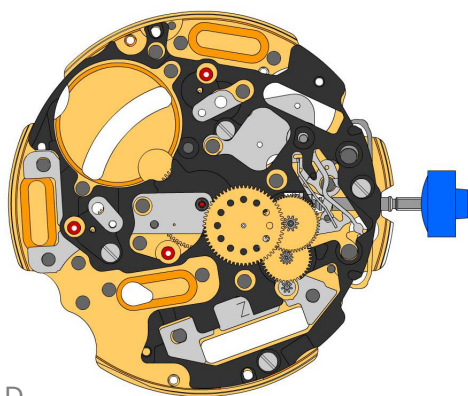


B

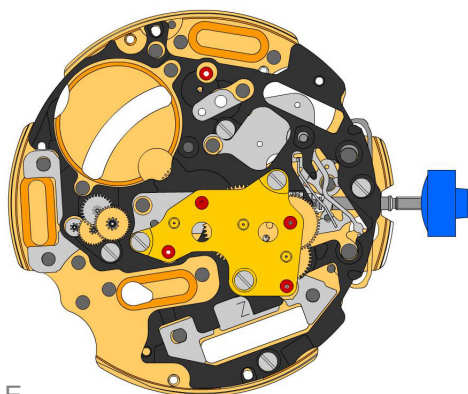


C

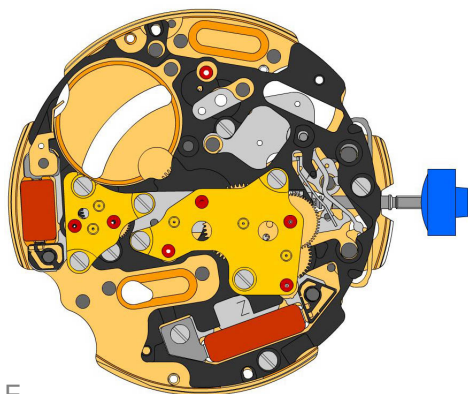
2000.574.G 1.		Main plate
3305.290.CO 2.		Cannon pinion with driver (Aig.2, closed)
3301.243 3.		Hour wheel (counter 24h)
2030.024.CO 4.		Centre bridge Center bridge held by 1 screw 4000.250.
4000.250 5.		Screw
3001.055.FI 6.		Sliding pinion
3000.177.CO 7.		Setting stem
3017.049 8.		Setting lever
3905.049 9.		Setting lever jumper (3 positions) Setting lever jumper held by 1 screw 4000.250.
4000.250 10.		Screw
3015.081 11.		Yoke (3 positions)
3905.067 12.		Yoke spring Tensioning the spring arm.
3406.030 13.		Pusher jumper B Put the grey jumper between the two posts on the further side.
3406.038 14.		Pusher jumper A Put the yellow jumper between the two posts on the closer side.
3622.040 15.		Stator Mark [Z] on stator.
3622.039 16.		Stator (counter 6h, 9h, chrono)
3603.079 17.		Plastic bracket Plastic bracket held by 4 screws 4000.250.
4000.250 18.		Screw
3715.094.RK 19.		Rotor



D



E



F

3147.046.CO
20.  Intermediate wheel

3136.142.CO
21.  Second wheel (long)

3122.056.CO
22.  Third wheel

2020.148.G
23.  **Train wheel bridge**
Train wheel bridge held by 3 screws 4000.250.

4000.250
24.  Screw

3715.095.RK
25.  Rotor

3147.048.CO
26.  Intermediate wheel (counter)

3007.055.CO
27.  Minute wheel (counter 24h)

3402.007.CO
28.  Minute counting wheel (24h)

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

4000.250
30.  Screw

3621.053.RK
31.  **Coil**
Attention: Please hold the coil only on the grey coil core. Coil held by 1 screw 4000.250.

3621.054.RK
32.  **Coil (counter 9h, chrono)**
Attention: Please hold the coil only on the grey coil core.

4000.250
33.  Screw

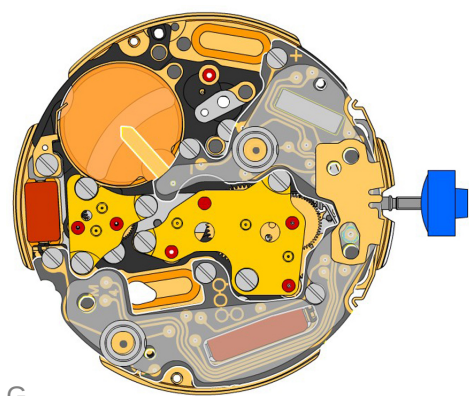
3601.118
34.  **Contact strip**
Contact strip held by 1 screw 4000.250.

4000.250
35.  Screw

3603.034
36.  **Battery insulator**

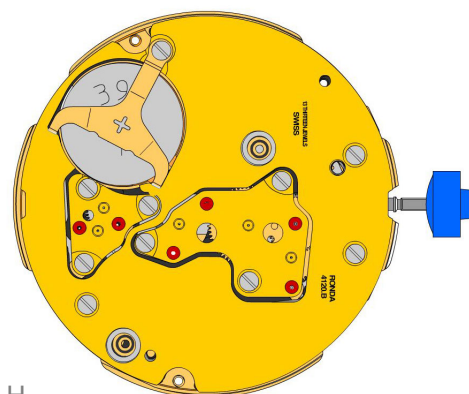
3503.054
37.  Tube

3503.054
38.  Tube



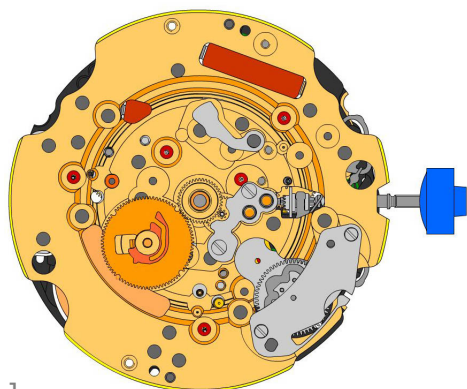
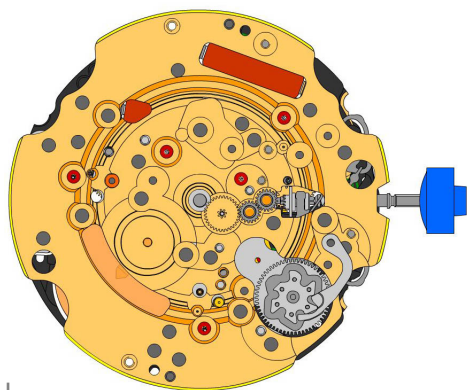
G

3612.176.4120 39.		Electronic module Electronic module held by 5 screws 4000.248. Electronic measurements may be realised now.
4000.248 40.		Screw
3603.069 41.		Circuit insulator
3603.070 42.		Contact insulator
3603.070 43.		Contact insulator
3601.107.G 44.		Pusher contact spring

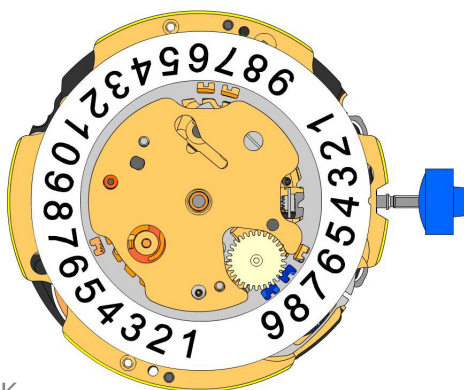


H

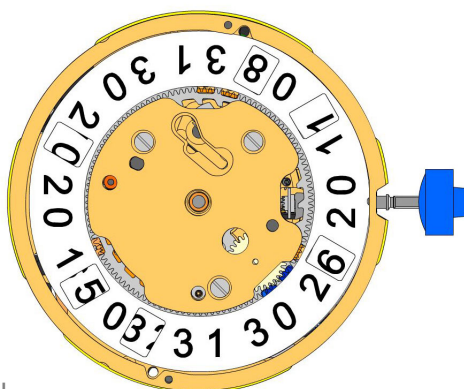
2130.160.G.M01.4120B 45.		Electronic module cover Electronic module held by 5 screws 4000.248.
3600.010.HGF 46.		Battery 395
3601.109.G 47.		Bridle + Bridle held by 1 screw 4000. 250.
4000.250 48.		Screw



2000.574.G 49.		Main plate
3004.164 50.		Setting wheel
3004.164 51.		Setting wheel
3007.054.CO 52.		Minute wheel
2130.143 53.		Minute train bridge Minute train bridge held by 2 screws 4000.250.
4000.305 54.		Screw
3004.227 55.		Tens indicator driving wheel The short tooth of the tens indicator driving wheel must point to the center of the movement.
3500.075 56.		Tens jumper
2130.142 57.		Tens jumper maintaining plate Tens jumper maintaining plate held by 2 screws 4000.306. Tensioning the spring arm.
4010.306 58.		Screw
3301.242 59.		Hour wheel (Aig.2)
3315.016 60.		Friction spring
3004.224.CO 61.		Date indicator driving wheel
3500.049 62.		Date jumper



K



L

3504.214.AD.1.A
63. Units indicator (standard)
Nick of the indicator at 3 o'clock.



3147.054
64. Tens intermediate wheel



2130.141
65. Date indicator maintaining plate
Date indicator maintaining plate held by 1 screw 4000.250.



3905.070
66. Date jumper spring
Insert the date jumper spring in the provided opening.



3504.215.AD.1.A
67. Tens indicator (standard)
Nick of the indicator at 3 o'clock.



2130.140.G
68. Date mechanism maintaining plate
Date mechanism maintaining plate held by 2 screws 4000.250.



4000.250
69. Screw



3506.072.G
70. Dial support



8200
71. Moebius 8200



9014
72. Moebius 9014

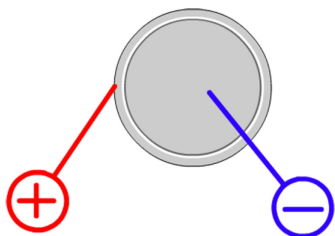


124
73. Jismaa 124

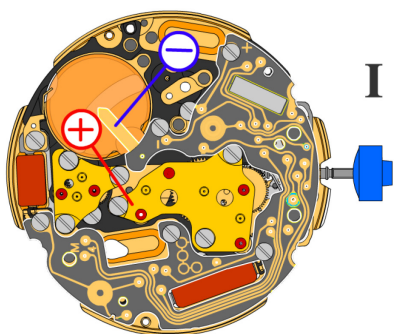


9020
74. Moebius 9020



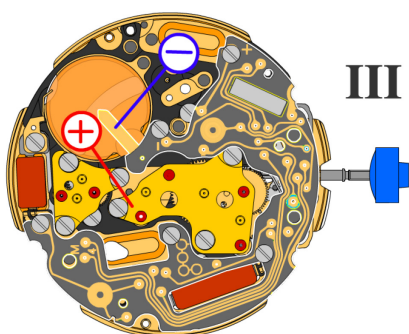


Battery	395
Voltage	1.55 V



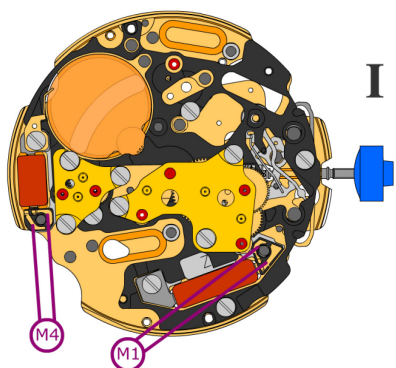
*Setting stem in position I, calendar not in gear,
60 s measuring interval for rate and consumption:*

Typical consumption	1.42 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:

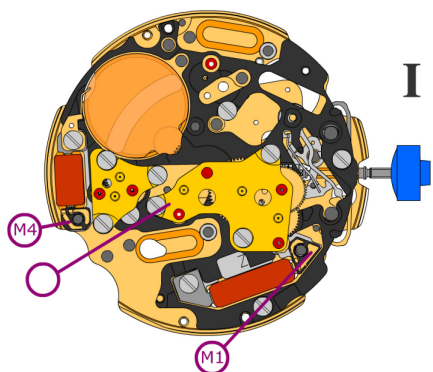
Typical consumption	0.10 μA
Maximal consumption	0.30 μA



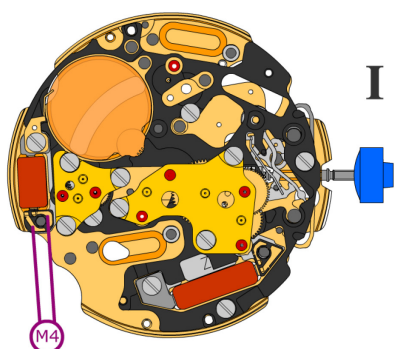
Coil resistance M1

1.90 k Ω .. 2.10 k Ω

Coil resistance M4

1.68 k Ω .. 1.88 k Ω


Coil isolation M1/M4

 ∞ k Ω

Signal generator (4.9 ms, 8 Hz):

Lower working voltage limit M4

1.20 V