Daniel J. Evans, CHP
8 White Oak Road
Ansonia, CT. 06401
July 23, 2015

Shirley Xu
Materials Safety Licensing Branch
Division of Material Safety, States, Tribal and Rulemaking Programs
Office of Nuclear Material Safety and Safeguards
Nuclear Regulatory Commission

Subject:
Voidance of License Application Request, PLUS, LLC
Application Dated October 1, 2014

Dear Shirley Xu:

There remain four separate points to address regarding the application filed on October 1, 2014. The four requests for additional information are addressed sequentially in this correspondence.

1. *"Please provide detailed information for these models, including the dimensions and the maximum activity for each model and the technical specifications of these sources published by the manufacturer."*
2. *"Submit the details of construction and design of each individual model of the watches that you plan to distribute. These include any associated diagrams and/or blueprints of each watch model."*
3. *"Describe the method of containment or binding of the byproducts material that will meet the requirements. Specifically, how the individual glass tritium tube is bonded in the product and how this binding method contributes to the overall safety of the handling/use of the timepiece(s)."*
4. *"Submit a proposed label for the container (e.g. drawing, imaging) that includes byproduct information."*

Section 1 -

Please provide detailed information for these models, including the dimensions and the maximum activity for each model and the technical specifications of these sources published by the manufacturer."

Watches offered for sale by Plus, LLC contain trigalight®, watch light - Gas tritium Light Sources (GTLS), manufactured by 'mb-microtec®. All GTLS with one of its dimension smaller than 1.0mm are classed as "watch lights". The GTLS are filled with hydrogen-3 (tritium) and coated on the inner wall with a thin layer of zinc-sulfide powder which serves to create the different colors and 'glow' of the GTLS.

The watches intended for distribution by PLUS, LLC (Luminox brand) utilize the following GTLS. (See Table 1-1)

- **T6080-1 - 12 pieces, one for each hour marker. 0.50mm diameter X 1.95mm length. Activity 1.2 mCi / 0.045 GBq.**
- **T6042-1 - One for the hour hand. 0.65mm diameter X 4.10mm length. Activity 2.2 mCi / 0.08 GBq.**
- **T6043-1 - One for the minute hand. 0.65mm diameter X 6.60mm length. Activity 3.6 mCi / 0.135 GBq.**

Listing of all watch light GTLS offered by Mb-Microtec table 1-2

Table 1-1

Luminox Watch Lights

Reference #	Dimension [mm] Dia.x L	Activity [mci]
~~T 6045-1~~	~~0.90 x 2.20~~	~~1.35~~
~~T 6040-1~~	~~0.90 x 2.50~~	~~0.8~~
~~T 6041-1~~	~~0.90 x 2.50~~	~~2.2~~
T 6042-1	**0.65 x 4.10**	**2.2**
T 6043-1	**0.65 x 6.60**	**3.6**
~~T 5648-1~~	~~0.50 x 1.30~~	~~0.5~~
~~T 6044-1~~	~~0.50 x 1.60~~	~~0.8~~
T 6080-1	**0.50 x 1.95**	**1.2**

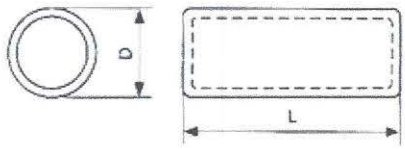


Table 1-3

Application Anwendung	Article Number Artikelnummer	Dimensions Dimension mm (D x L)	Colour Farbe	Activity Aktivität (mCi/GBq)	Price/Piec Preis/Stk. CHF
Watch dial Zifferblatt	T 6040-1/I	0.90 x 2.50	Green/Grün	1/0.037	0.67
	T 6040-1/II	0.90 x 2.50	Yellow/Gelb	1/0.037	0.83
	T 6040-1/III	0.90 x 2.50	Orange	1/0.037	0.83
	T 6040-1/IV	0.90 x 2.50	Red/Rot	1/0.037	0.83
	T 6040-1/V	0.90 x 2.50	Blue/Blau	1/0.037	0.83
	T 6040-1/VI	0.90 x 2.50	White/Weiss	1/0.037	0.83
	T 6040-1/VIII	0.90 x 2.50	Pink	1/0.037	0.83
	T 6040-1/VB2	0.90 x 2.50	Ice blue/Eisblau	1/0.037	0.83
	T 6041-1/III	0.90 x 2.50	Orange	2.3/0.085	0.73
	T 6045-1/I	0.90 x 2.20	Green/Grün	1.4/0.053	0.67
	T 6045-1/II	0.90 x 2.20	Yellow/Gelb	1.4/0.053	0.83
	T 6045-1/III	0.90 x 2.20	Orange	1.4/0.053	0.83
	T 6045-1/IV	0.90 x 2.20	Red/Rot	1.4/0.053	0.83
	T 6045-1/V	0.90 x 2.20	Blue/Blau	1.4/0.053	0.83
	T 6045-1/VI	0.90 x 2.20	White/Weiss	1.4/0.053	0.83
	T 6045-1/VIII	0.90 x 2.20	Pink	1.4/0.053	0.83
	T 6045-1/VB2	0.90 x 2.20	Ice blue/Eisblau	1.4/0.053	0.83
	T 6080-1/I	0.50 x 1.95	Green/Grün	1.2/0.045	0.67
	T 6080-1/II	0.50 x 1.95	Yellow/Gelb	1.2/0.045	0.83
	T 6080-1/III	0.50 x 1.95	Orange	1.2/0.045	0.83
	T 6080-1/IV	0.50 x 1.95	Red/Rot	1.2/0.045	0.83
	T 6080-1/V	0.50 x 1.95	Blue/Blau	1.2/0.045	0.83
	T 6080-1/VI	0.50 x 1.95	White/Weiss	1.2/0.045	0.83
	T 6080-1/VIII	0.50 x 1.95	Pink	1.2/0.045	0.83
	T 6080-1/VB2	0.50 x 1.95	Ice blue/Eisblau	1.2/0.045	0.83

Application Anwendung	Article Number Artikelnummer	Dimensions Dimension mm (D X L)	Colour Farbe	Activity Aktivität (mCi/GBq)	Price/Pie Preis/Stk CHF
Hour Hand Std. Zeiger	T 6042-1/I	0.65 x 4.10	Green/	2.2/0.08	0.67
	T 6042-1/II	0.65 x 4.10	Yellow/	2.2/0.08	0.83
	T 6042-1/III	0.65 x 4.10	Orange	2.2/0.08	0.83
	T 6042-1/IV	0.65 x 4.10	Red/	2.2/0.08	0.83
	T 6042-1/V	0.65 x 4.10	Blue/	2.2/0.08	0.83
	T 6042-1/VI	0.65 x 4.10	White/	2.2/0.08	0.83
	T 6042-1/VIII	0.65 x 4.10	Pink	2.2/0.08	0.83
	T 6042-1/VB2	0.65 x 4.10	Ice blue/	2.2/0.08	0.83
Minute Hand Min. Zeiger	T 6043-1/I	0.65 x 6.60	Green/	3.6/0.135	0.67
	T 6043-1/II	0.65 x 6.60	Yellow/	3.6/0.135	0.83
	T 6043-1/III	0.65 x 6.60	Orange	3.6/0.135	0.83
	T 6043-1/IV	0.65 x 6.60	Red/	3.6/0.135	0.83
	T 6042-1/V	0.65 x 6.60	Blue/	3.6/0.135	0.83
	T 6043-1/VI	0.65 x 6.60	White/	3.6/0.135	0.83
	T 6043-1/VIII	0.65 x 6.60	Pink	3.6/0.135	0.83
	T 6043-1/VB2	0.65 x 6.60	Ice blue/	3.6/0.135	0.83
Second Hand Sek. Zeiger	T 6044-1/I	0.50 x 1.60	Green/	0.96/0.035	1.24
	T 6044-1/II	0.50 x 1.60	Yellow/	0.96/0.035	1.40
	T 6044-1/III	0.50 x 1.60	Orange	0.96/0.035	1.40
	T 6044-1/IV	0.50 x 1.60	Red/	0.96/0.035	1.40
	T 6044-1/V	0.50 x 1.60	Blue/	0.96/0.035	1.40
	T 6044-1/VI	0.50 x 1.60	White/	0.96/0.035	1.40
	T 6044-1/VIII	0.50 x 1.60	Pink	0.96/0.035	1.40
	T 6044-1/VB2	0.50 x 1.60	Ice blue/	0.96/0.035	1.40
	T 5648-1/I	0.50 x 1.30	Green/	0.75/0.027	1.40
	T 5648-1/II	0.50 x 1.30	Yellow/	0.75/0.027	1.55
	T 5648-1/III	0.50 x 1.30	Orange	0.75/0.027	1.55
	T 5648-1/IV	0.50 x 1.30	Red/	0.75/0.027	1.55
	T 5648-1/V	0.50 x 1.30	Blue/	0.75/0.027	1.55
	T 5648-1/VB2	0.50 x 1.30	Ice blue/	0.75/0.027	1.55
Watch Dial Zifferblatt	T 5808-1/I	1.5 x 4.0 x 0.65	Green/	5.1/0.189	2.15
	T 5808-1/III	1.5 x 4.0 x 0.65	Orange	5.1/0.189	2.15
	T 5808-1/VB2	1.5 x 4.0 x 0.65	Ice blue/	5.1/0.189	2.15
Helios **Fibre Optic Ring**	H40		Green	22.7/0.84	12.50
	H103O		Green/Orange	22.7/0.84	12.50
	H103IB		Green/Ice blue	22.7/0.84	12.50

OUR SERVICES

Due to our experience in micro systems assembly and tritium handling we can offer you the following services or provide you further research and development in the following fields:

Assembling of micro mechanical and micro optical parts
The laboratories of mb-microtec run a hand assembly line with 10 work stations as well as high tech assembly robots which allow amongst others the monitoring of the dimensions, the brightness and spectral curves of not only trigalights but on any other light emitting component

Laser glass sealing, glass packing of micro-mechanical/micro optical parts, gases or others
The production line of specially modulated CO2 lasers are capable of the gas tight sealing of capillaries or glass vessels. This method allows high precision packing of gases or liquids as well as solid micro components or electronics.

Research and development in the field of GTLS and fibre optics applications
Research and development specifically in the field of optical gun sights which combine the use of a trigalight® and fibre optics including improved efficiency of existing systems, on day-night vision optics, on wave guide optics and more.

Radiation safety consulting
Our specialists will gladly give you support for licensing issues, planning of laboratory layouts, advice on the equipment needed for the safe handling of isotopes (mainly tritium and carbon 14) as well as tritium waste treatment and disposal (Switzerland only) including IATA DGR conform packing.

Component testing as to ANSI N43.4-2005 mil. spec. standard
Our test laboratory provides the possibility to run tests in accordance to Military specifications, such as ANSI N43.4 or N540, as well as to ISO 2919 standards. Please do not hesitate to request an individual quote.

mb-microtec ag

Freiburgstrasse 634
3172 Niederwangen
Switzerland

phone +41 31 980 20 20
fax +41 31 980 20 21
watchlights@mbmicrotec.com
www.mbmicrotec.com

SWISS MADE

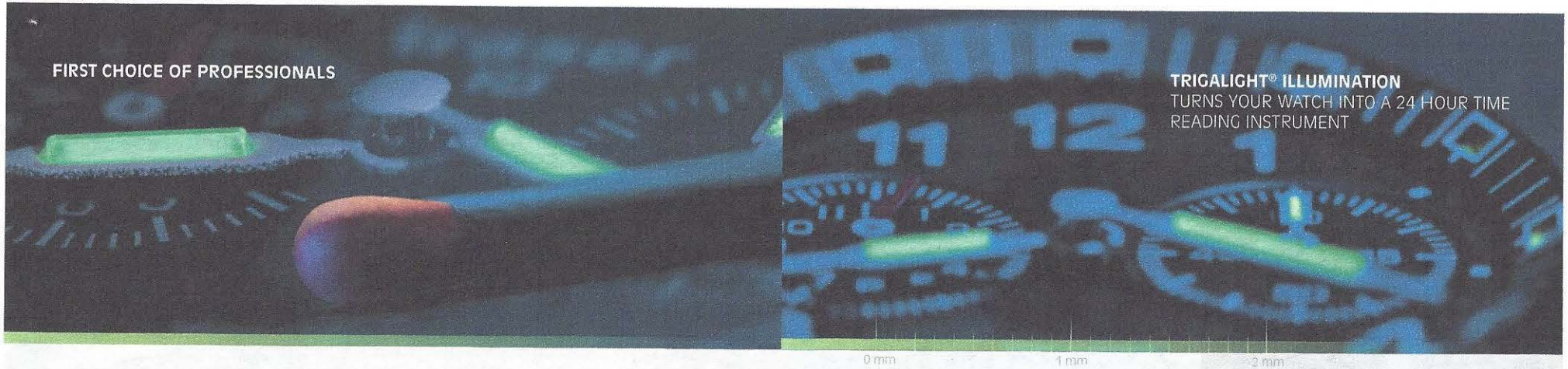
trigalight® technology

WATCHLIGHTS
TRIGALIGHT® ILLUMINATION –
NO COMPROMISE FOR YOUR CUSTOMER

PRODUCT INFORMATION

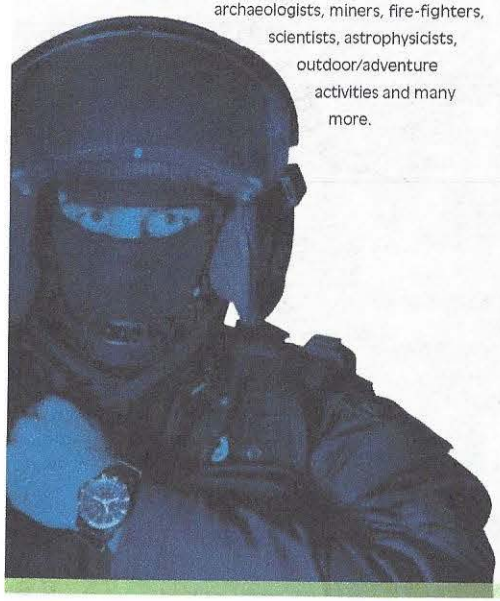
www.mbmicrotec.com

mb-microtec
self activated illumination



trigalight® illuminated watches are the first choice of professionals who need to rely on reading the time in a blink of an eye in every possible situation.

There is no power source of any kind required to activate the system, nor is the illumination system influenced by physically aggressive environments such as high or very low temperatures, humidity, vibration, or shock. Therefore it is the only true watch illumination system for police, military Special Forces, divers, underwater archaeologists, miners, fire-fighters, scientists, astrophysicists, outdoor/adventure activities and many more.



No other system in the world provides the same function, uses less energy or is more reliable than GTLS trigalight illumination. Every trigalight illuminated watch is not just a watch but a time reading instrument.

Take advantage from a widely employed and approved technology of permanent illumination.

mb-microtec trigalight for watch and instrument illumination are some of the worlds smallest self contained illuminations with just 0,5 mm in diameter and a length of 1,3 mm.

All trigalight® are completely maintenance free and have a guaranteed lifespan of at least 10 years.

The reliable trigalight technology (find out more on www.mbmicrotec.com) does not only allow you to read your watch under all light conditions, but also guarantees perfect protection against counterfeiting.
Let mb-microtec provide you with your own very personnel trigalight with a unique colour or dimensions. Further security features on the trigalight such as micro barcode engraving are available on request.

For further information scan our QR-code with your mobile device.
A free App (mobiletag) available for iPhone

Assembly methods

There are three different methods favoured for fitting a mb-microtec ag trigalight on hands and faces of watches.

- The lights are fitted to the hands and face using an elastic adhesive such as silicone.
- The lights are placed in a ring with the necessary openings for the light to escape.
- The lights can be laid in cut-outs in hands and faces (with the corresponding dimension) using a special adhesive foil, secured on the reverse side of these parts.

mb-microtec assembly service

One of our core competences is the fitting of trigalight to watch components such as hands, dials or bezels. Manual as well as robotic assembly is possible depending on quantities and the form of the watch parts. We will be more than pleased to provide you with a specific offer.

TRIGALIGHT® WATCH LIGHTS
(STANDARD PRODUCTION) ROUND SECTION

Reference	Dimension [mm] Dia. × L	Activity [GBq]
T 6045-1	0.90 × 2.20	0.053
T 6040-1	0.90 × 2.50	0.037
T 6041-1	0.90 × 2.50	0.085
T 6042-1	0.65 × 4.10	0.080
T 6043-1	0.65 × 6.60	0.135
T 5648-1	0.50 × 1.30	0.027
T 6044-1	0.50 × 1.60	0.035
T 6080-1	0.50 × 1.95	0.045

TRIGALIGHT® WATCH LIGHTS
(STANDARD PRODUCTION) RECTANGULAR SECTION

Reference	Dimension [mm] H × W × L	Activity [GBq]
T 5808	0.65 × 1.5 × 4.0	0.189

NON PERSONALISED LIGHTS ARE AVAILABLE IN THE FOLLOWING COLOURS:

Red · Orange · Yellow · Pink

White · Green · Ice blue · Blue

Reference Docket No. 030-38784
PLUS, LLC Distribution License Application Clarification

Section 2 –

Submit the details of construction and design of each individual model of the watches that you plan to distribute. These include any associated diagrams and/or blueprints of each watch model.

Reference Docket No. 030-38784
PLUS, LLC Distribution License Application Clarification

There are total of 53 watch models within 12 distinct groupings. Each of these watches utilizes the GTLS sources defined in section one of this correspondence.

- 3 Models with 0200 Grouping
- 2 Models with 4200 Grouping
- 5 Models with 6250 Grouping
- 2 Models with 6400 Grouping
- 4 Models with 7050 Grouping
- 6 Models with 8820 Grouping
- 6 Models with 3080 Grouping
- 8 Models with 3050 Grouping
- 3 Models with 3000 Grouping
- 6 Models with 1940 Grouping
- 6 Models with 1920 Grouping
- 2 Models with 1800 Grouping

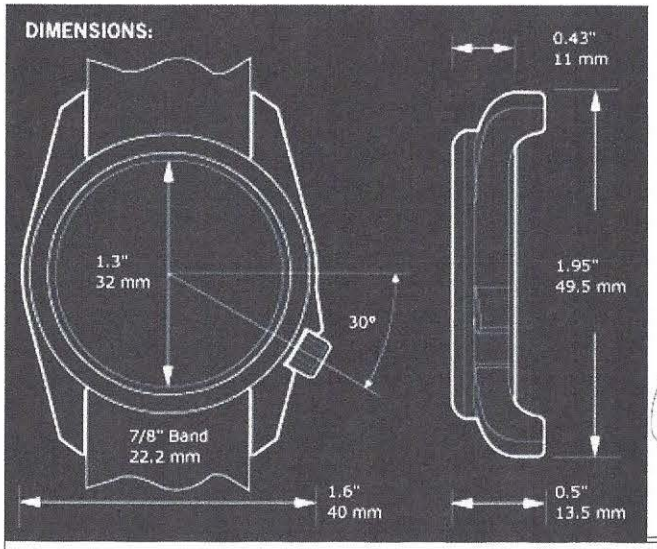
A complete description related to each one of these groupings is contained here.

CONSTRUCTION AND DESIGN

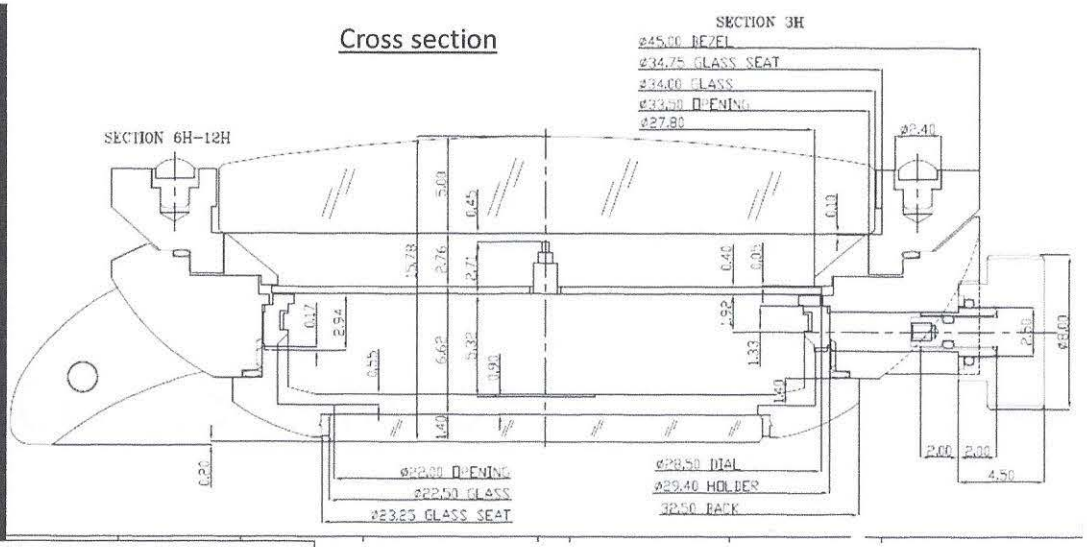
10 CFR 32.14(b)(2)

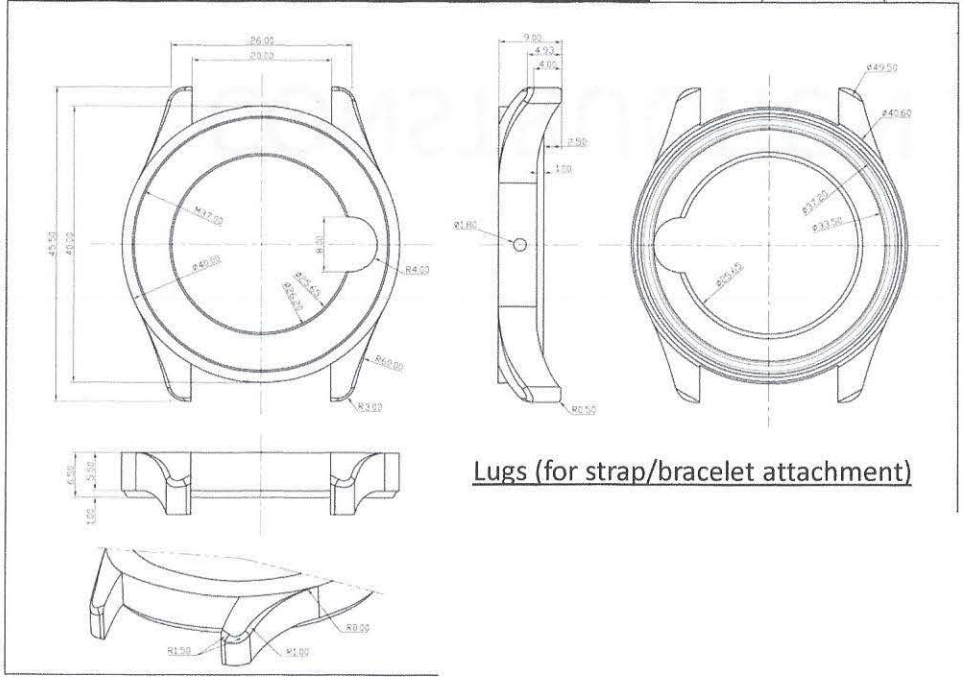
BLUEPRINT OF THE PRODUCT

Outer structure



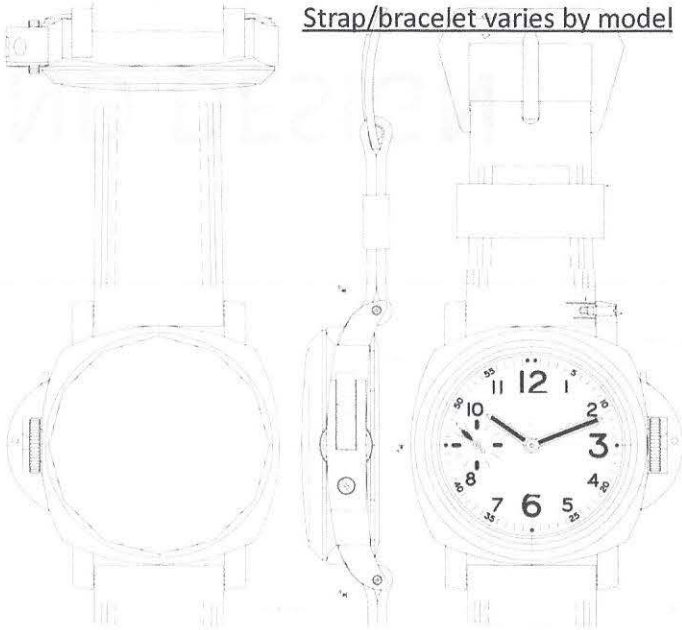
Cross section



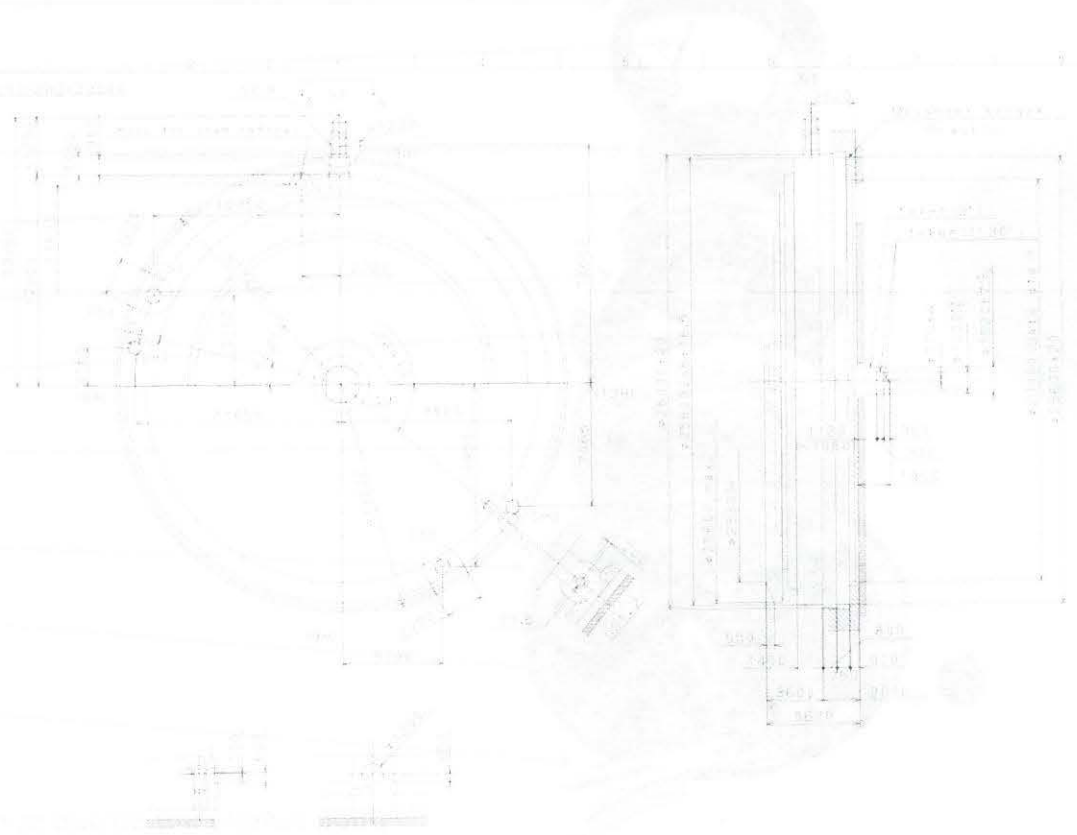


Lugs (for strap/bracelet attachment)

Strap/bracelet varies by model



TECHNICAL DIAGRAM OF THE OUTER FRAME



The outer structure of all the watch models is the same. Differences in models are due to variations in superficial aspects such as color, patterns, material of case or bracelet. These variations are described in the detailed overview of each model in subsequent slides. Also, the internal structure within each watch may differ between models, hence the blueprints for these have been attached separately in this section along with each model grouping in subsequent slides.

The basic components of each product, as indicated in the following illustration, remain consistent.

Crystal

14 tritium micro-gas tubes in glass housing:
One on each of the 12 hour markers, one on the hour hand, and one on the minute hand

Hands

Crown

Dial

Movement

Bezel

Case

Gasket

Case-back

Lugs

Strap/bracelet

Micro-gas tube in daylight

To the right is a 3-dimensional design of the watch →

The variations in each different product model come from –
> Changes in material or color of the strap/bracelet
> Changes in material or color of the case
> Changes in color and pattern printed on the dial-face
> Changes in size of the case
> Changes in movement

However, there are no changes in the models of the tritium gas-tubes or their positioning or binding across any of the product models. These remain uniform throughout. Within every product model, the tritium gas-tubes used are the following.

Model	Quantity	Placement	Dimensions (mm)	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm diameter X 1.95 mm length	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm diameter X 1.95 mm length	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm diameter X 4.10 mm length	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm diameter X 6.60 mm length	3.6 mCi / 0.135 GBq

Details of construction and design of each product

53 WATCH MODELS WITHIN 12 GROUPINGS

3 models within **0200** grouping: 0201.SL, 0201.BO, 0215.SL

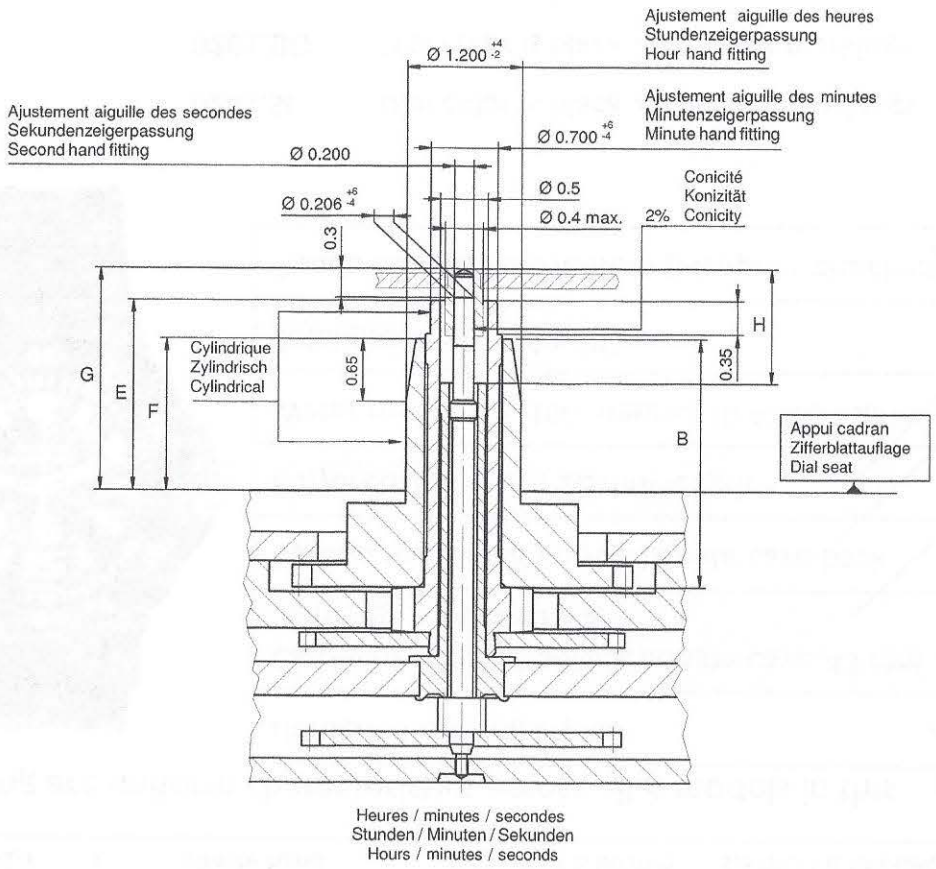
Tritium gas-tubes remain the same

Model	Qty	Placement	Diameter X Length	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm X 4.10 mm	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm X 6.60 mm	3.6 mCi / 0.135 GBq

Following are uniform characteristics across all 3 models in this

- Hardened mineral crystal
- Carbon reinforced polycarbonate case, 43 mm diameter X 14 mm height
- Carbon reinforced polycarbonate case-back
- Polyurethane strap, 22 mm length
- Water resistance: 100 meters, 10 ATM, 330 feet
- Total product weight 60 grams
- Ronda 515 HH6 movement (blueprint attached)

Model	Variation
0201.SL	Dial color is black with white markings
0201.BO	Dial color is black with black markings
0215.SL	Dial color is black with red markings



Heures / minutes / secondes
Stunden / Minuten / Sekunden
Hours / minutes / seconds

Aiguillage no Zeigerwerkhöhe Nr. Hand fitting height No	Dépassement Höhe über Zifferblattauflage Height over dial seat			Longueur Länge Length		Epaisseur max. (peinture comprise) Max. Dicke (inkl. Farbe) Max. thickness (paint included)			
						Cadran Zifferblatt Dial			Aiguilles Zeiger Hands
	Pignon des secondes Sekundentrieb Second pinion	Chaussée Minutenrohr Cannon-pinion	Roue des heures Stundenrad Hour wheel		Roue des heures Stundenrad Hour wheel	Sous l'aiguille des secondes Unter Sekundenzeiger Under second hand	Sous l'aiguille des minutes Unter Minutenzeiger Under minute hand	Sous l'aiguille des heures Unter Stundenzeiger Under hour hand	
	G	E	F	H	B				
6	2.31	1.98	1.58	1.19	2.58	1.80	1.55	0.40	0.15

	Aig. des secondes Sekundenzeiger Second hand		Aig. des minutes Minutenzeiger Minute hand	Aig. des heures Stundenzeiger Hour hand	Lors de la pose d'aiguilles, le mouvement doit être soutenu. Beim Zeigersetzen muss das Werk abgestützt werden. The movement needs to be supported for hand setting.
	503, 505, 513, 515	503S, 505S, 513S, 515S	Alle/Tous/All		Kaliber/Calibre/Caliber
mg max.	10	10	30	30	Masse / Masse / Weight *
µNm max.	0.08	0.08	0.70	0.70	Balourd / Unwucht / Unbalance *
gmm² max.	0.4	1.0	-	-	Inertie / Massenträgheit / Inertia *
N max.	30	30	40	40	Force de chassage / Aufpresskraft / Force

Sous réserve de toutes modifications Aenderungen vorbehalten All modifications reserved

Aiguillages
Zeigerwerkhöhen
Hand fitting heights

10½‴, 11½‴

RONDA

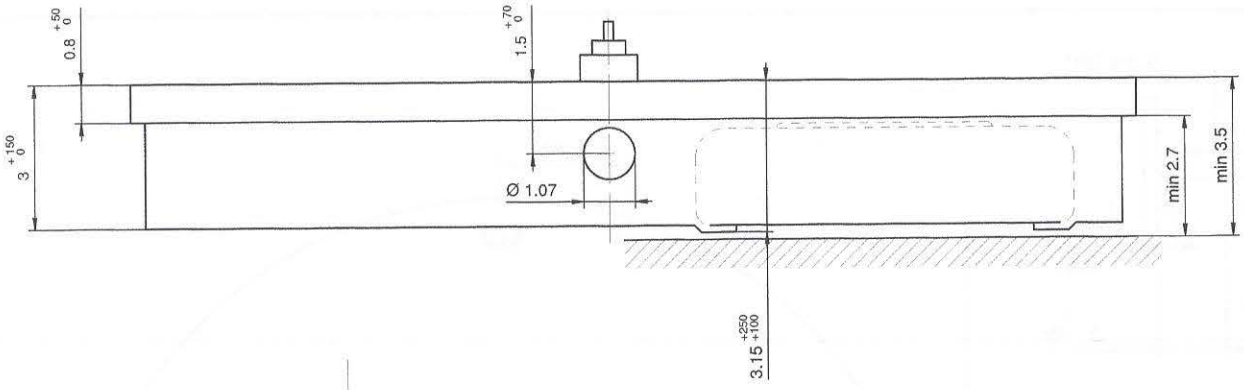
503, 503S, 505, 505S,
513, 513S, 515, 515S

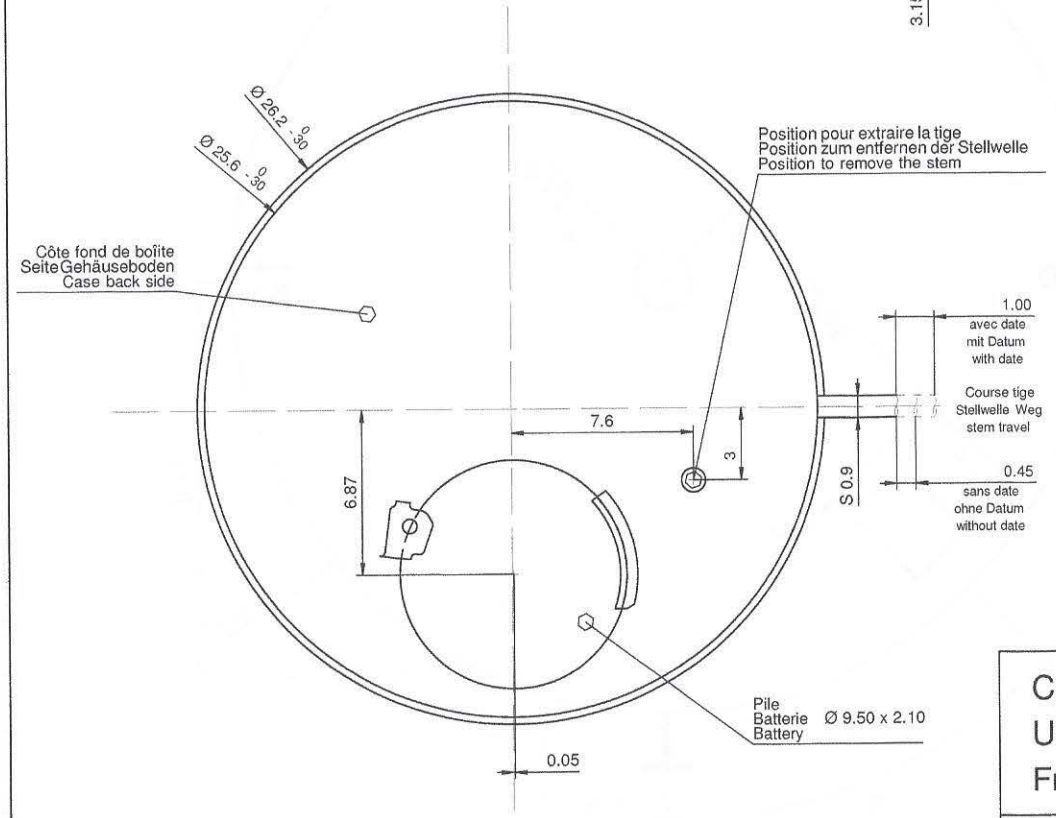
Issued	10 Mär 1999	gd
Modified	30 Aug 2012 ÄA 11646	dh
Released	Yes	
Tolerance	µm	
Scale	20 : 1 (A3H)	

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 3316.067 04

* En cas de données différentes, veuillez contacter le service après-vente * Bei abweichenden Werten, bitte technischen Kundendienst anfragen * In case of different values, please contact the customer service

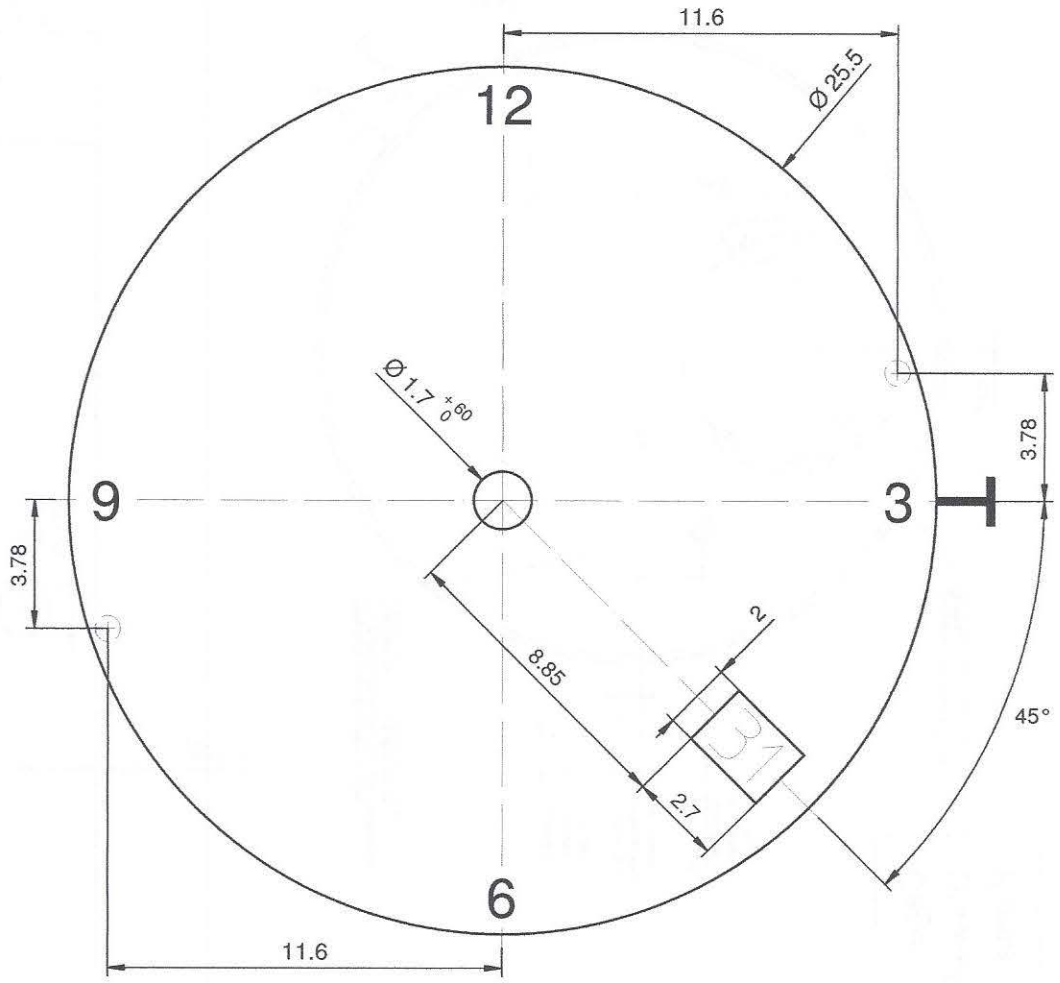


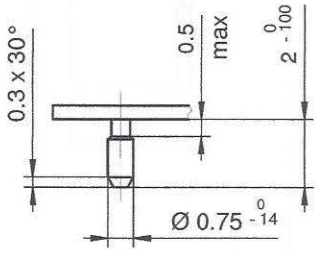


Sécurité entre aiguille seconde et verre : min 0.30 mm
Sicherheit zwischen Sekundenzeiger und Glas : min 0.30 mm
Security between second hand and glass : min 0.30 mm

Le cadran doit être maintenu en hauteur par la boîte.
Das Zifferblatt muss in der Höhe vom Gehäuse festgehalten werden.
The dial must be held in the height by the case.

Cage Uhrwerkgestell Frame	11½'''	Issued	10 Mär 1999	gd
		Modified	23 Jun 2011 ÄA 11169	dh
		Released	YES	
		Tolerance	+/- 20 µm	
		Scale	10 : 1 (5 : 1) (A3H)	
RONDA	512, 513, 513S, 515, 515S, 517, 519	Sous réserve de modifications Aenderungenvorbehalten Modificationsreserved		
		No.	5000.286	07





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	4½H

Cadran
Zifferblatt
Dial

11½'''

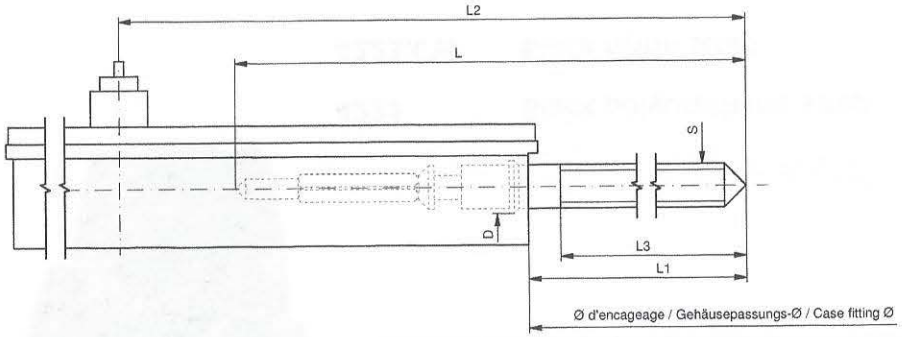
Issued	14 Dez 2006	cw
Modified	13 Aug 2012 ÄA 12806	mc
Released	YES	
Tolerance	+/- 20 µm	
Scale	5 : 1 (A4V)	

RONDA

515, 515S, 714, 715, 715Li

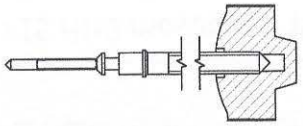
Sous réserve de modifications
Aenderungenvorbehalten
Modificationsreserved

No.	5010.580	04



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

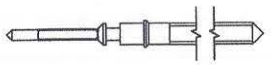
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.164.CO	20.50	9.92	22.72	11.83	0.90	1.05



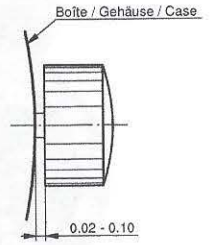
Couleur de la couronne Kronenfarbe Crown color	brun braun brown
Code	UN 8052

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

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.164	20.50	9.92	22.72	11.83	0.90	1.05
3000.171	32.50	21.92	34.72	23.83	0.90	1.05



Couronne normale
Normale Krone
Normal crown

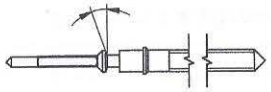


Couronne vissée
Geschraubte Krone
Screwed crown

Force ⇦ min. Kraft ⇦ min. Force ⇦ min.	10 N
Force ⇦ max. Kraft ⇦ max. Force ⇦ max.	15 N

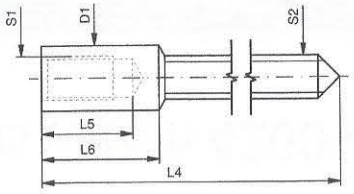
Tige (à arracher)
Stellwelle (Ausreissversion)
Stem (extractable version)

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.163	20.05	9.92	22.72	11.83	0.90	1.05
3000.196	32.50	21.92	34.72	23.83	0.90	1.05



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	2.45	0.90	0.90	1.35



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

RONDA

512, 513, 513S, 515, 515S, 515.24H, 515.24D, 517, 519

Issued	15 Aug 2012	ds5222
Modified	--- ÄA 11741	ds5222
Released	YES	
Tolerance	---	
Scale	10:1 (A3)	

No. 5030.002 00

2 models within **4200** grouping: 4221, 4221.CW

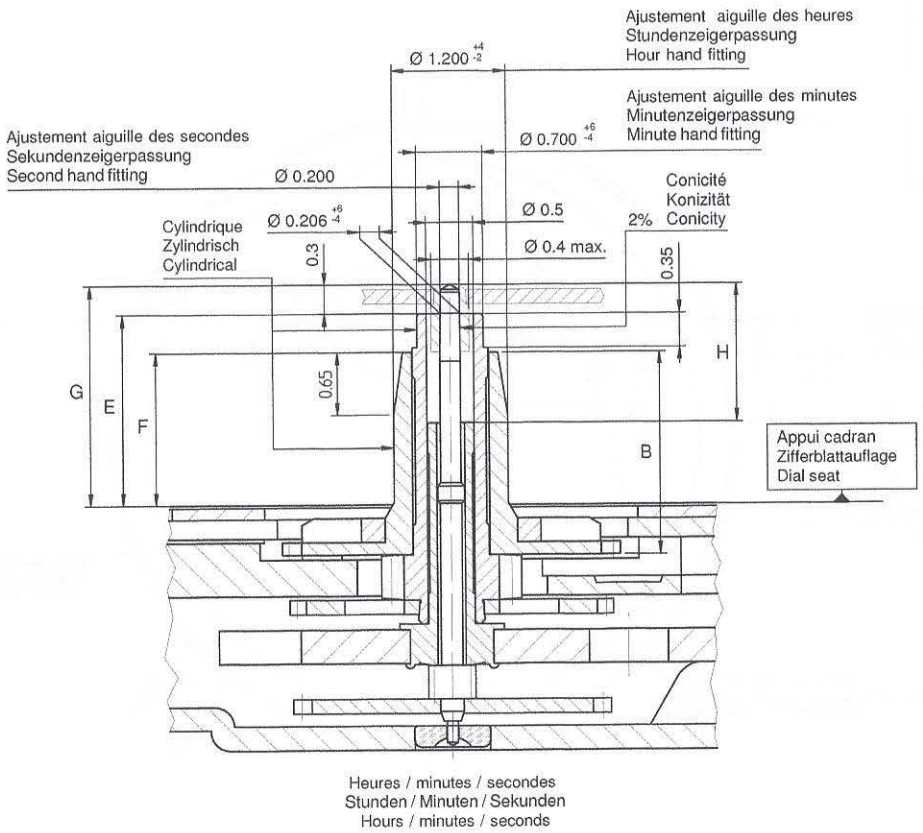
Tritium gas-tubes remain the same

Model	Qty	Placement	Diameter X Length	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm X 4.10 mm	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm X 6.60 mm	3.6 mCi / 0.135 GBq

Following are uniform characteristics across both models in this grouping

Sapphire glass
Stainless steel case, 45 mm diameter X 13 mm height
Stainless steel case-back
Water resistance: 200 meters, 20 ATM, 660 feet
Ronda 715 HH6 movement (blueprint attached)

Model	Variation
4221	Black polyurethane strap
4221.CW	Black nylon strap



Aiguillage no Zeigerwerkhöhe Nr. Hand fitting height No	Dépassement Höhe über Zifferblattauflage Height over dial seat			Longueur Länge Length		Epaisseur max. (peinture comprise) Max. Dicke (inkl. Farbe) Max. thickness (paint included)			
						Cadran Zifferblatt Dial			Aiguilles Zeiger Hands
	Pignon des secondes Sekundentrieb Second pinion	Chaussée Minutenrohr Cannon-pinion	Roue des heures Stundenrad Hour wheel		Roue des heures Stundenrad Hour wheel	Sous l'aiguille des secondes Unter Sekundenzeiger Under second hand	Sous l'aiguille des minutes Unter Minutenzeiger Under minute hand	Sous l'aiguille des heures Unter Stundenzeiger Under hour hand	
	G	E	F	H	B				
6	2.29	1.98	1.58	1.44	2.10	1.75	1.55	0.40	0.15
-									

	Aig. des secondes Sekundenzeiger Second hand		Aig. des minutes Minutenzeiger Minute hand	Aig. des heures Stundenzeiger Hour hand	Lors de la pose d'aiguilles, le mouvement doit être soutenu. Beim Zeigersetzen muss das Werk abgestützt werden. The movement needs to be supported for hand setting.
	775, 785	705, 715, 715Li	Alle/Tous/All		Kaliber/Calibre/Caliber
mg max.	10	10	30	30	Masse / Masse / Weight *
µNm max.	0.05	0.05	0.70	0.70	Balourd / Unwucht / Unbalance *
gmm² max.	0.2	0.4	-	-	Inertie / Massenträgheit / Inertia *
N max.	30	30	40	40	Force de chassage / Aufpresskraft / Force

Sous réserve de toutes modifications Aenderungen vorbehalten All modifications reserved

Aiguillages / Zeigerwerkhöhen / Hand fitting heights

7¾‴ , 8¾‴
10½‴ , 11½‴

RONDA

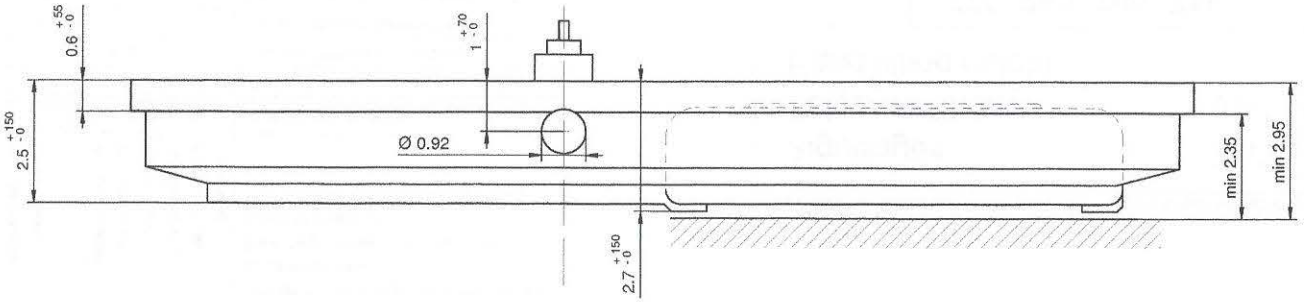
775, 785, 705, 715, 715Li

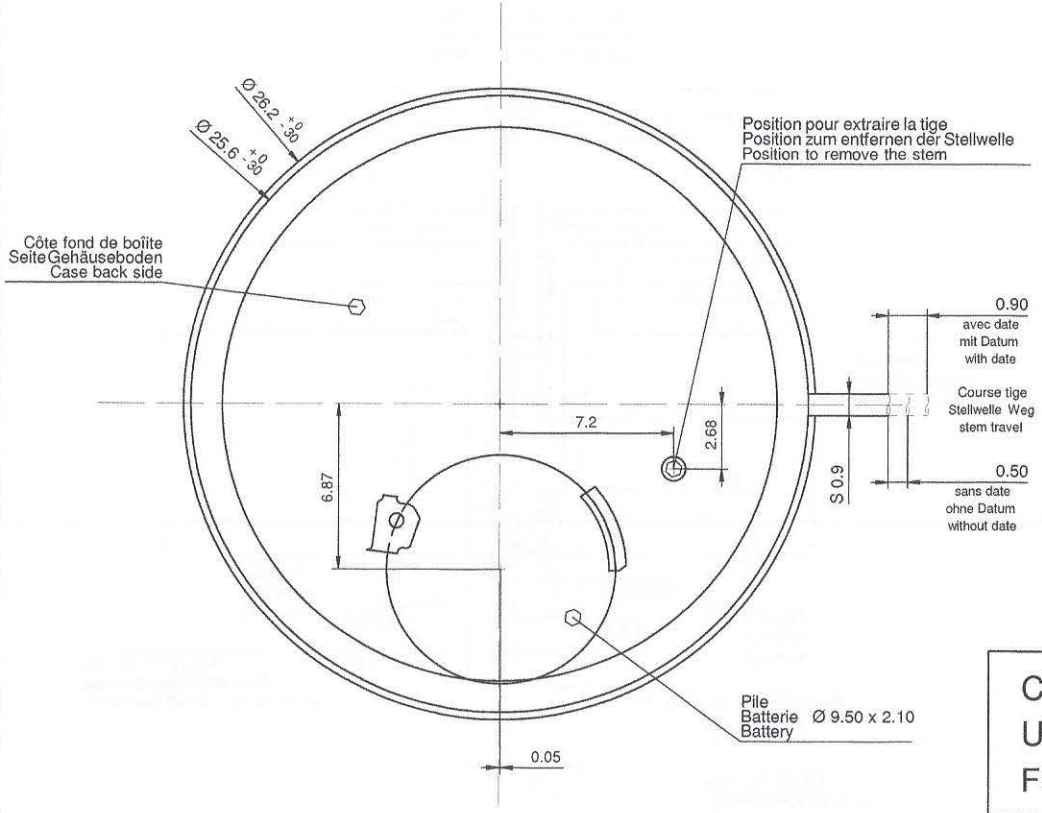
Issued	14 Okt 2002	cw
Modified	03 Feb 2012 ÄA 12073	ds
Released	Yes	
Tolerance	µm	
Scale	20 : 1 (A3H)	

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 3316.077 08

* En cas de données différentes, veuillez contacter le service après-vente * Bei abweichenden Werten, bitte technischen Kundendienst anfragen * In case of different values, please contact the customer service

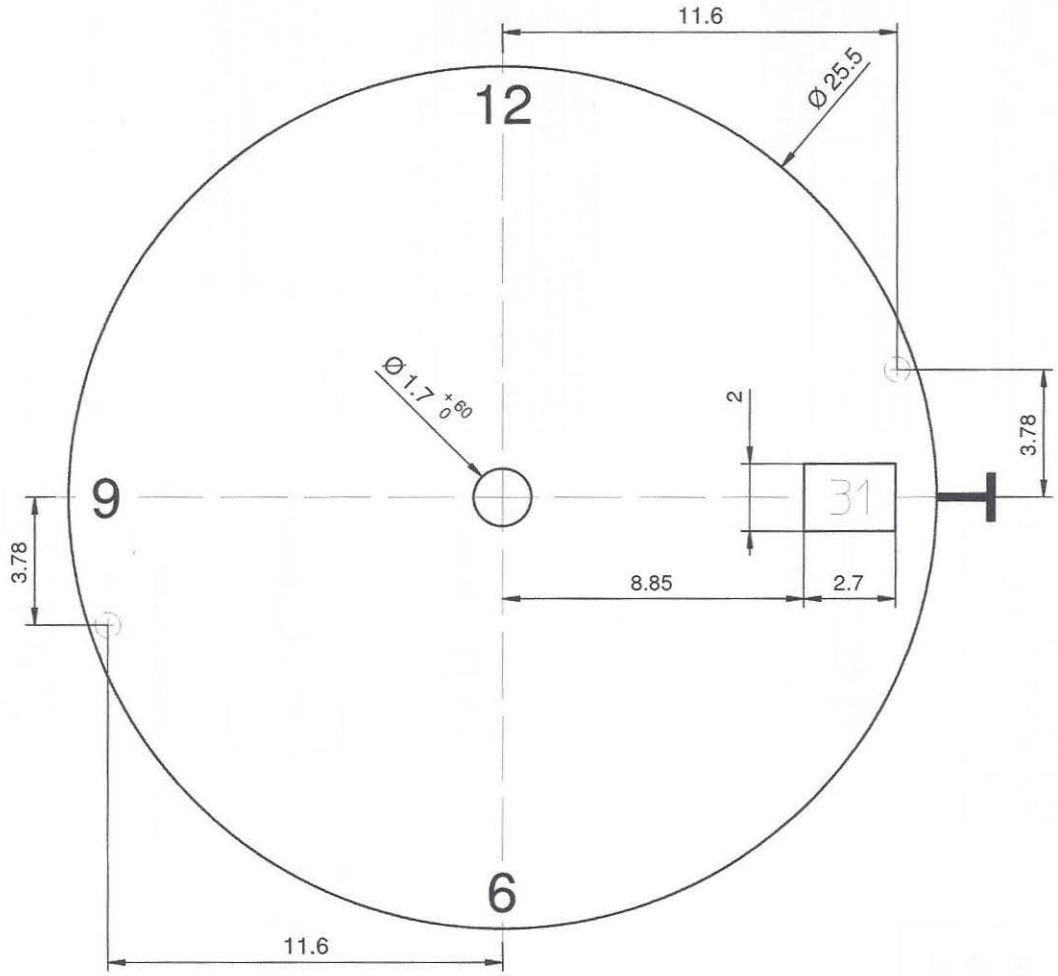


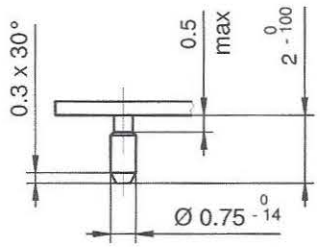


Sécurité entre aiguille seconde et verre : min 0.30 mm
Sicherheit zwischen Sekundenzeiger und Glas : min 0.30 mm
Security between second hand and glass : min 0.30 mm

Le cadran doit être maintenu en hauteur par la boîte.
Das Zifferblatt muss in der Höhe vom Gehäuse festgehalten werden.
The dial must be held in the height by the case.

Cage Uhrwerkgestell Frame	11½'''	Issued	09 Mrz 2000	cs
		Modified	07 Aug 2012 ÄA 12806	mc
		Released	YES	
		Tolerance	+/- 20 µm	
		Scale	10 : 1 (5 : 1) (A3H)	
RONDA	712, 713, 714, 715	Sous réserve de modifications Aenderungenvorbehalten Modificationsreserved		
		No.	5000.260	10





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	3H

Cadran
Zifferblatt
Dial

11½'''

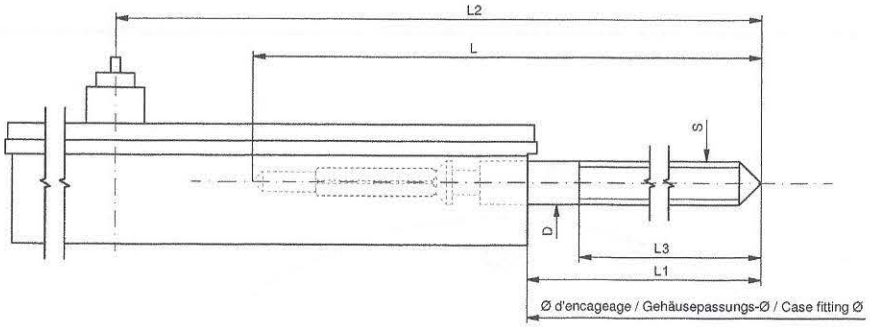
Issued	14 Dez 2006	cw
Modified	13 Aug 2012 ÄA 12806	mc
Released	YES	
Tolerance	+/- 20 µm	
Scale	5 : 1 (A4V)	

RONDA

515, 515S, 714, 715, 715Li

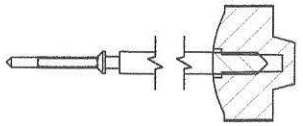
Sous réserve de modifications
Aenderungenvorbehalten
Modificationsreserved

No. 5010.417 09



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

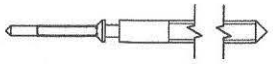
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.155.CO	20.24	10.11	22.91	9.82	0.90	0.90



Couleur de la couronne Kronenfarbe Crown color	rose foncé dunkelrosa dark pink
Code	FK 23.168

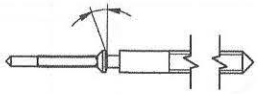
Tige (normale) / Stellwelle (normal) / Stem (normal)

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.155	20.24	10.11	22.91	9.82	0.90	0.90
3000.158	25.00	14.87	27.67	14.58	0.90	0.90
3000.138	32.00	21.87	34.67	20.28	0.90	0.90



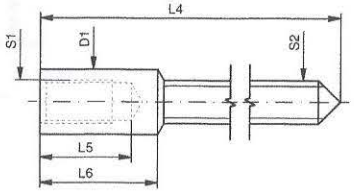
Tige (à arracher)
Stellwelle (Ausreissversion)
Stem (extractable version)

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.157	32.00	21.87	34.67	21.58	0.90	0.90

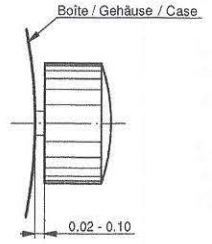


Rallonge de tige / Stellwelle Verlängerung / Stem extension

No. d'article Artikelnummer Part number	L4	L5 (min)	L6	S1	S2	D1
3000.040	12.00	1.90	2.45	0.90	0.90	1.35



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

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

RONDA 712, 713, 714, 715, 715Li

Issued	22 Aug 2012	ds5222
Modified	20 Sep 2013 ÄA 11741	ds5222
Released	YES	
Tolerance	---	
Scale	10:1 (A3)	

No. 5030.007 01

5 models within **6250** grouping: 6251, 6251.BO, 6252, 6252.BO, 6265

Tritium gas-tubes remain the same

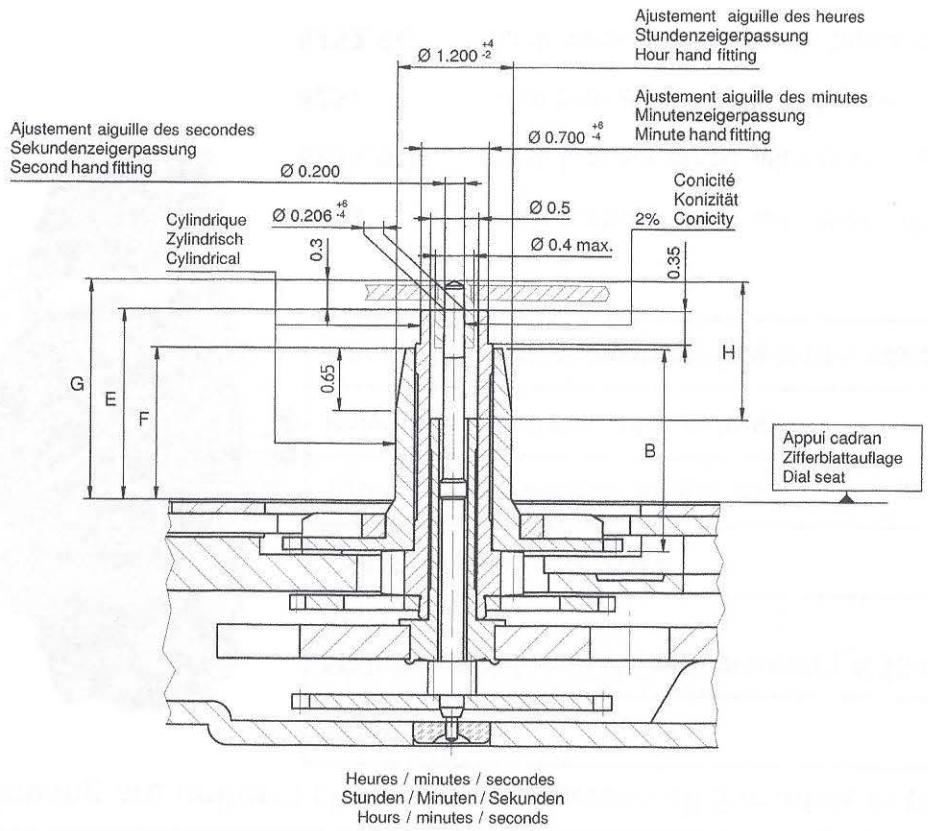
Model	Qty	Placement	Diameter X Length	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm X 4.10 mm	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm X 6.60 mm	3.6 mCi / 0.135 GBq

Following are uniform characteristics across all 5 models in this grouping

Sapphire glass
Stainless steel case, 45 mm diameter X 10 mm height
Stainless steel case-back
Total product weight: 98 grams
Polyurethane strap, 24 mm length
Ronda 715 HH6 movement (blueprint attached)

Model	Variation
6251	Black leather strap with black threading
6251.BO	Black leather strap with black case
6252	Steel bracelet with steel case
6252.BO	Black steel bracelet with black case
6265	Black leather strap with red threading

Dial



Heures / minutes / secondes
Stunden / Minuten / Sekunden
Hours / minutes / seconds

Aiguillage no Zeigerwerkhöhe Nr.: Hand fitting height No	Dépassement Höhe über Zifferblattauflage Height over dial seat			Longueur Länge Length		Epaisseur max. (peinture comprise) Max. Dicke (inkl. Farbe) Max. thickness (paint included)			
						Cadran Zifferblatt Dial			Aiguilles Zeiger Hands
	Pignon des secondes Sekundentrieb Second pinion	Chaussée Minutenrohr Cannon-pinion	Roue des heures Stundenrad Hour wheel		Roue des heures Stundenrad Hour wheel	Sous l'aiguille des secondes Unter Sekundenzeiger Under second hand	Sous l'aiguille des minutes Unter Minutenzeiger Under minute hand	Sous l'aiguille des heures Unter Stundenzeiger Under hour hand	
	G	E	F	H	B				
6	2.29	1.98	1.58	1.44	2.10	1.75	1.55	0.40	0.15
-									

	Aig. des secondes Sekundenzeiger Second hand		Aig. des minutes Minutenzeiger Minute hand	Aig. des heures Stundenzeiger Hour hand	Lors de la pose d'aiguilles, le mouvement doit être soutenu. Beim Zeigersetzen muss das Werk abgestützt werden. The movement needs to be supported for hand setting.
	775, 785	705, 715, 715Li	Alle/Tous/All		Kaliber/Calibre/Caliber
mg max.	10	10	30	30	Masse / Masse / Weight *
µNm max.	0.05	0.05	0.70	0.70	Balourd / Unwucht / Unbalance *
gmm² max.	0.2	0.4	-	-	Inertie / Massenträgheit / Inertia *
N max.	30	30	40	40	Force de chassage / Aufpresskraft / Force

Sous réserve de toutes modifications Aenderungen vorbehalten All modifications reserved

Aiguillages
Zeigerwerkhöhen
Hand fitting heights

7¾‴ , 8¾‴
10½‴ , 11½‴

RONDA

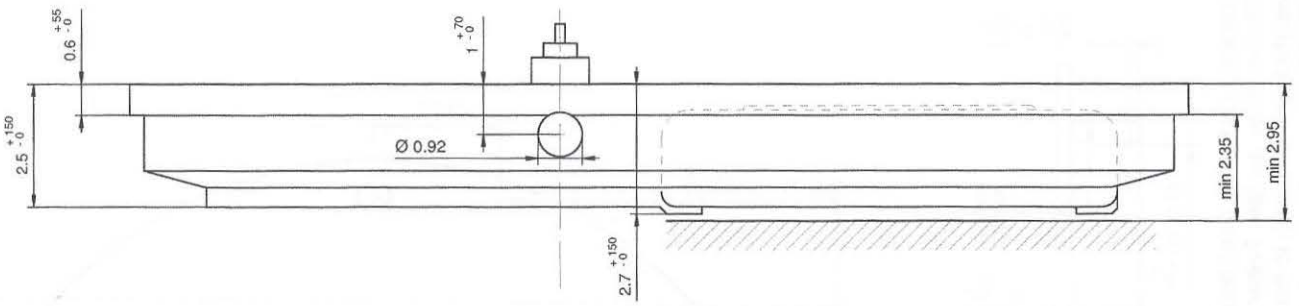
775, 785, 705, 715, 715Li

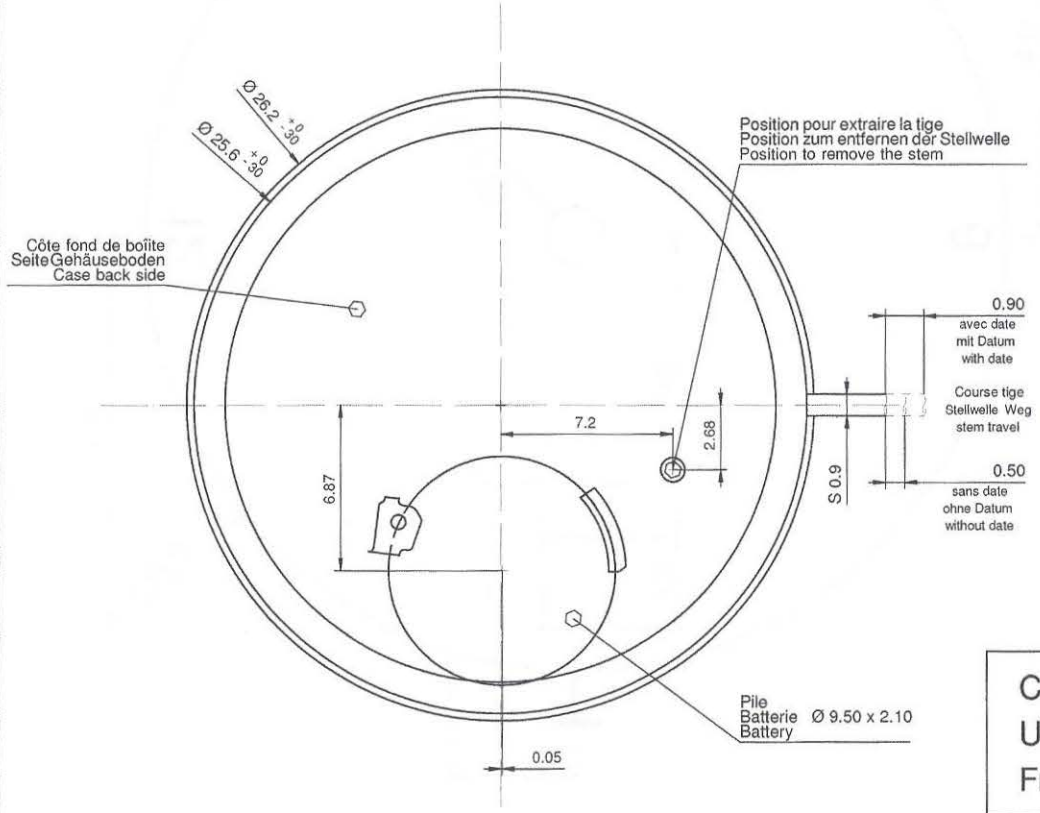
Issued	14 Okt 2002	cw
Modified	03 Feb 2012 ÄA 12073	ds
Released	Yes	
Tolerance	µm	
Scale	20 : 1 (A3H)	

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 3316.077 08

* En cas de données différentes, veuillez contacter le service après-vente * Bei abweichenden Werten, bitte technischen Kundendienst anfragen * In case of different values, please contact the customer service

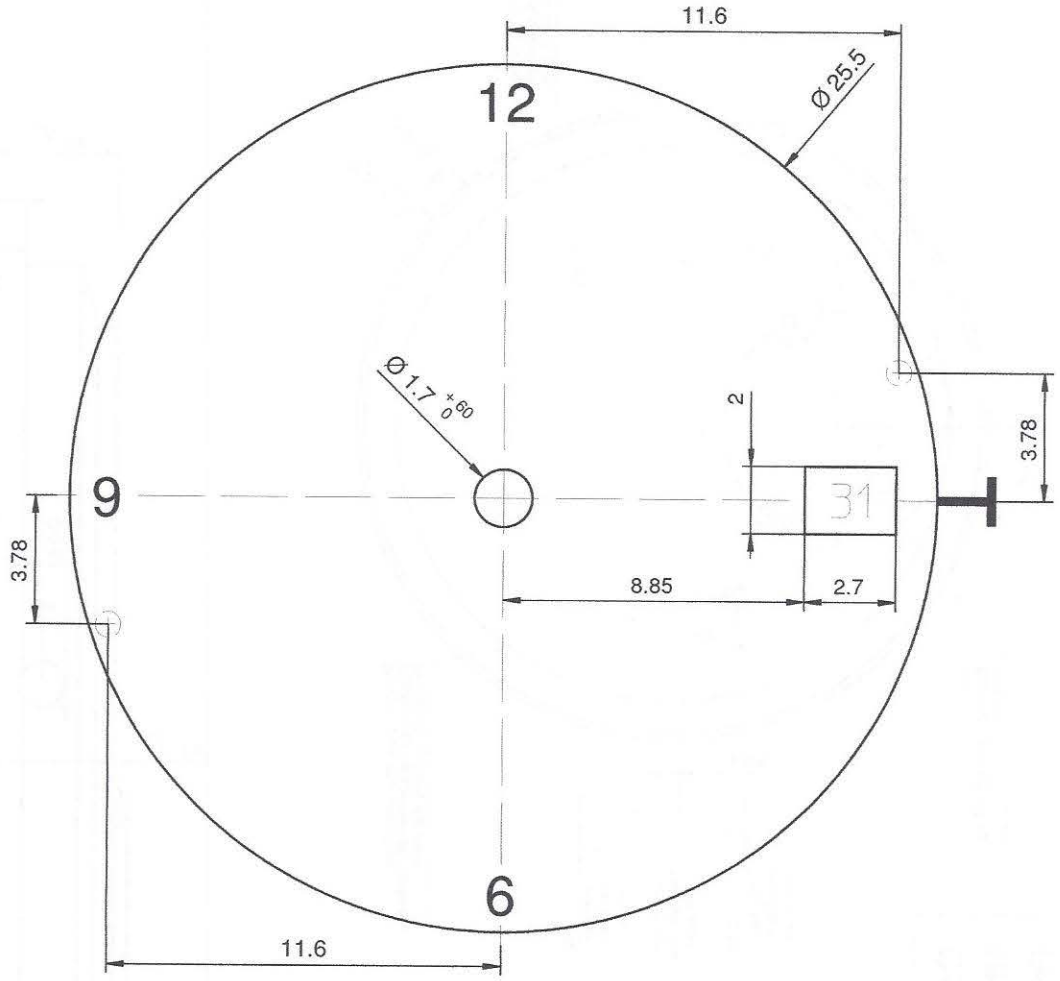


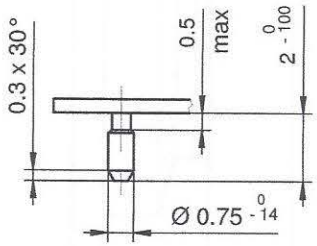


Sécurité entre aiguille seconde et verre : min 0.30 mm
Sicherheit zwischen Sekundenzeiger und Glas : min 0.30 mm
Security between second hand and glass : min 0.30 mm

Le cadran doit être maintenu en hauteur par la boîte.
Das Zifferblatt muss in der Höhe vom Gehäuse festgehalten werden.
The dial must be held in the height by the case.

Cage Uhrwerkgestell Frame	11½'''	Issued	09 Mrz 2000	cs
		Modified	07 Aug 2012 ÄA 12806	mc
		Released	YES	
		Tolerance	+/- 20 µm	
		Scale	10 : 1 (5 : 1) (A3H)	
RONDA	712, 713, 714, 715	Sous réserve de modifications Aenderungenvorbehalten Modificationsreserved		
		No.	5000.260	10





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	3H

Cadran
Zifferblatt
Dial

11½'''

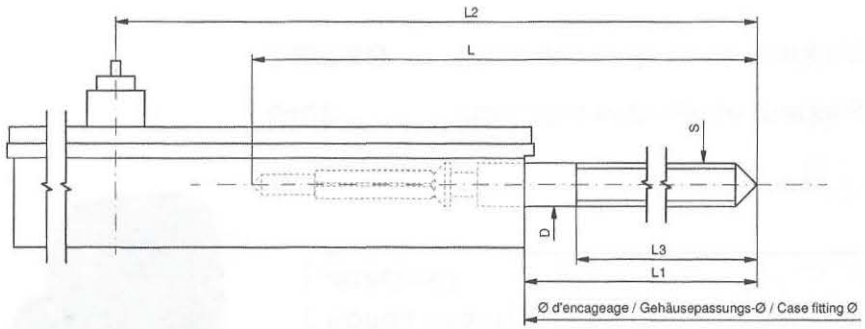
Issued	14 Dez 2006	cw
Modified	13 Aug 2012 ÄA 12806	mc
Released	YES	
Tolerance	+/- 20 µm	
Scale	5 : 1 (A4V)	

RONDA

515, 515S, 714, 715, 715Li

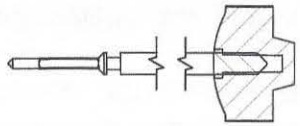
Sous réserve de modifications
Aenderungenvorbehalten
Modificationsreserved

No. 5010.417 09



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

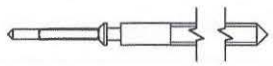
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.155.CO	20.24	10.11	22.91	9.82	0.90	0.90



Couleur de la couronne Kronenfarbe Crown color	rose foncé dunkelrosa dark pink
Code	FK 23.168

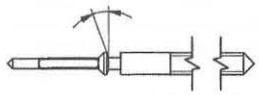
Tige (normale) / Stellwelle (normal) / Stem (normal)

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.155	20.24	10.11	22.91	9.82	0.90	0.90
3000.158	25.00	14.87	27.67	14.58	0.90	0.90
3000.138	32.00	21.87	34.67	20.28	0.90	0.90



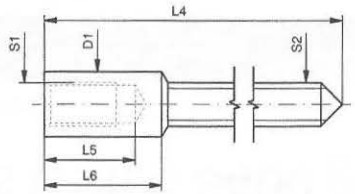
Tige (à arracher)
Stellwelle (Ausreissversion)
Stem (extractable version)

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.157	32.00	21.87	34.67	21.58	0.90	0.90

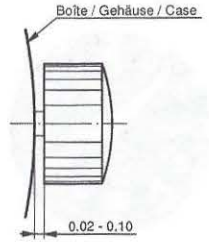


Rallonge de tige / Stellwelle Verlängerung / Stem extension

No. d'article Artikelnummer Part number	L4	L5 (min)	L6	S1	S2	D1
3000.040	12.00	1.90	2.45	0.90	0.90	1.35



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

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

RONDA | 712, 713, 714, 715, 715Li

Issued	22 Aug 2012	ds5222
Modified	20 Sep 2013 ÄA 11741	ds5222
Released	YES	
Tolerance	---	
Scale	10:1 (A3)	

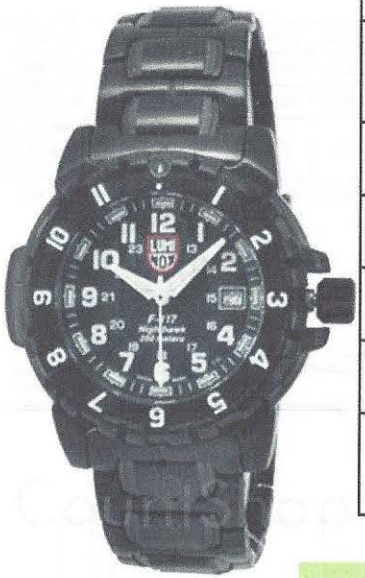
No. 5030.007 | 01

2 models within **6400** grouping: 6402, 6402.BO

Tritium gas-tubes remain the same

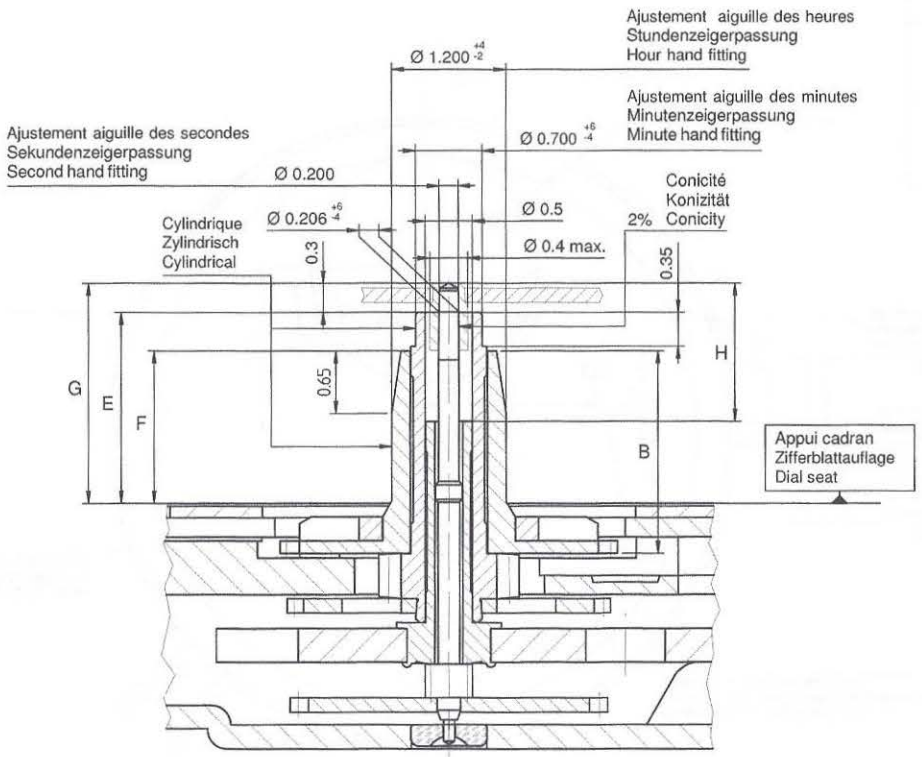
Model	Qty	Placement	Diameter X Length	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm X 4.10 mm	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm X 6.60 mm	3.6 mCi / 0.135 GBq

Following are uniform characteristics across both models in this grouping



- Sapphire glass
- Stainless steel case, 45 mm diameter X 12.38 mm height
- Stainless steel screwed case-back
- Stainless steel bracelet, 23 mm length
- Water resistance: 200 meters, 20 ATM, 660 feet
- Total product weight: 102 grams
- Ronda 715 HH6 Lithium movement (blueprint attached)

Model	Variation
6402	Black dial with white markings
6402.BO	Black dial with black markings



Heures / minutes / secondes
Stunden / Minuten / Sekunden
Hours / minutes / seconds

Aiguillage no Zeigerwerkhöhe Nr. Hand fitting height No	Dépassement Höhe über Zifferblattauflage Height over dial seat			Longueur Länge Length		Epaisseur max. (peinture comprise) Max. Dicke (inkl. Farbe) Max. thickness (paint included)			
						Cadran Zifferblatt Dial			Aiguilles Zeiger Hands
	Pignon des secondes Sekundentrieb Second pinion	Chaussée Minutenrohr Cannon-pinion	Roue des heures Stundenrad Hour wheel		Roue des heures Stundenrad Hour wheel	Sous l'aiguille des secondes Unter Sekundenzeiger Under second hand	Sous l'aiguille des minutes Unter Minutenzeiger Under minute hand	Sous l'aiguille des heures Unter Stundenzeiger Under hour hand	
	G	E	F	H	B				
6	2.29	1.98	1.58	1.44	2.10	1.75	1.55	0.40	0.15
-									

	Aig. des secondes Sekundenzeiger Second hand		Aig. des minutes Minutenzeiger Minute hand	Aig. des heures Stundenzeiger Hour hand	Lors de la pose d'aiguilles, le mouvement doit être soutenu. Beim Zeigersetzen muss das Werk abgestützt werden. The movement needs to be supported for hand setting.
	775, 785	705, 715, 715Li	Alle/Tous/All		Kaliber/Calibre/Caliber
mg max.	10	10	30	30	Masse / Masse / Weight *
µNm max.	0.05	0.05	0.70	0.70	Balourd / Unwucht / Unbalance *
gmm² max.	0.2	0.4	-	-	Inertie / Massenträgheit / Inertia *
N max.	30	30	40	40	Force de chassage / Aufpresskraft / Force

Sous réserve de toutes modifications Aenderungen vorbehalten All modifications reserved

Aiguillages 7¾‴ , 8¾‴
Zeigerwerkhöhen 10½‴ , 11½‴
Hand fitting heights

RONDA

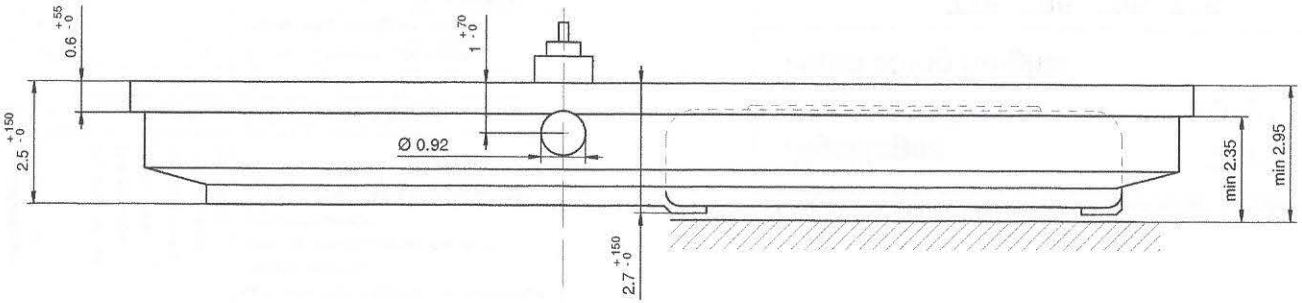
775, 785, 705, 715, 715Li

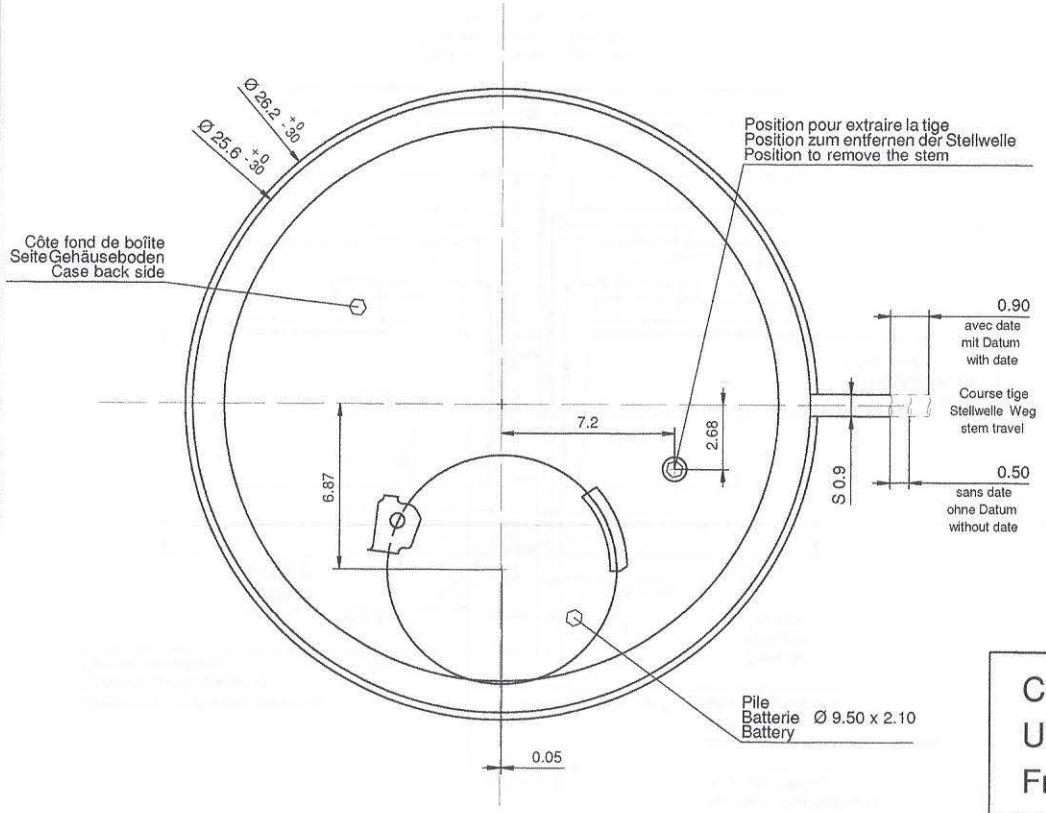
Issued	14 Okt 2002	cw
Modified	03 Feb 2012 ÄA 12073	ds
Released	Yes	
Tolerance	µm	
Scale	20 : 1 (A3H)	

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 3316.077 08

* En cas de données différentes, veuillez contacter le service après-vente * Bei abweichenden Werten, bitte technischen Kundendienst anfragen * In case of different values, please contact the customer service

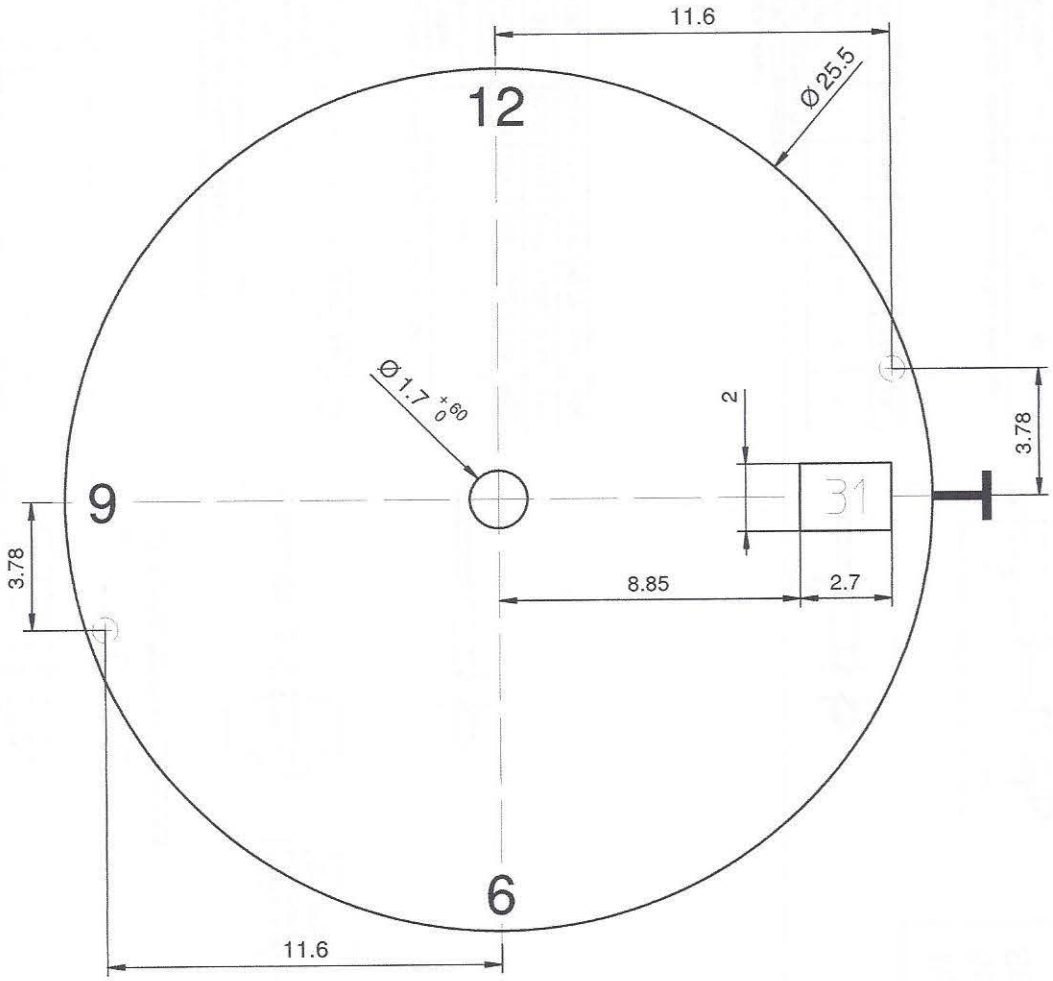


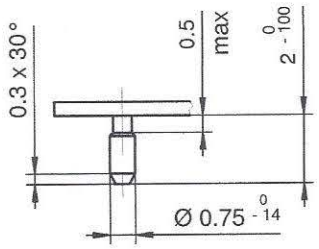


Sécurité entre aiguille seconde et verre : min 0.30 mm
Sicherheit zwischen Sekundenzeiger und Glas : min 0.30 mm
Security between second hand and glass : min 0.30 mm

Le cadran doit être maintenu en hauteur par la boîte.
Das Zifferblatt muss in der Höhe vom Gehäuse festgehalten werden.
The dial must be held in the height by the case.

Cage Uhrwerkgestell Frame	11½'''	Issued	09 Mrz 2000	cs
		Modified	07 Aug 2012 ÄA 12806	mc
		Released	YES	
		Tolerance	+/- 20 µm	
		Scale	10 : 1 (5 : 1) (A3H)	
RONDA	712, 713, 714, 715	Sous réserve de modifications Aenderungenvorbehalten Modifications reserved		
		No.	5000.260	10





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	3H

Cadran
Zifferblatt
Dial

11½‴

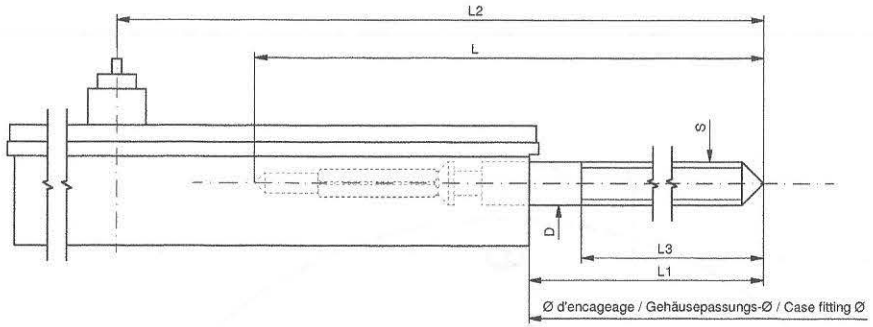
Issued	14 Dez 2006	cw
Modified	13 Aug 2012 ÄA 12806	mc
Released	YES	
Tolerance	+/- 20 µm	
Scale	5 : 1 (A4V)	

RONDA

515, 515S, 714, 715, 715Li

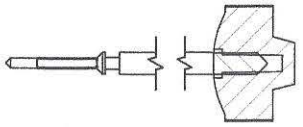
Sous réserve de modifications
Aenderungenvorbehalten
Modificationsreserved

No. 5010.417 09



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

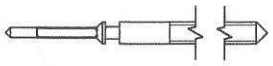
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.155.CO	20.24	10.11	22.91	9.82	0.90	0.90



Couleur de la couronne Kronenfarbe Crown color	rose foncé dunkelrosa dark pink
Code	FK 23.168

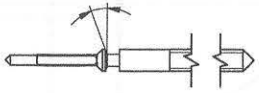
Tige (normale) / Stellwelle (normal) / Stem (normal)

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.155	20.24	10.11	22.91	9.82	0.90	0.90
3000.158	25.00	14.87	27.67	14.58	0.90	0.90
3000.138	32.00	21.87	34.67	20.28	0.90	0.90



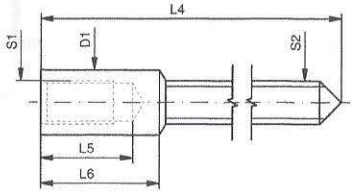
Tige (à arracher)
Stellwelle (Ausreissversion)
Stem (extractable version)

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.157	32.00	21.87	34.67	21.58	0.90	0.90

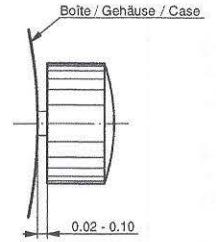


Rallonge de tige / Stellwelle Verlängerung / Stem extension

No. d'article Artikelnummer Part number	L4	L5 (min)	L6	S1	S2	D1
3000.040	12.00	1.90	2.45	0.90	0.90	1.35



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

Tige / Stellwelle / Stem (dimensions / forces)

RONDA 712, 713, 714, 715, 715Li

Issued	22 Aug 2012	ds5222
Modified	20 Sep 2013 ÄA 11741	ds5222
Released	YES	
Tolerance	---	
Scale	10:1 (A3)	

No. 5030.007 01

4 models within **7050** grouping: 7051, 7051.BO, 7065, 7057.WO

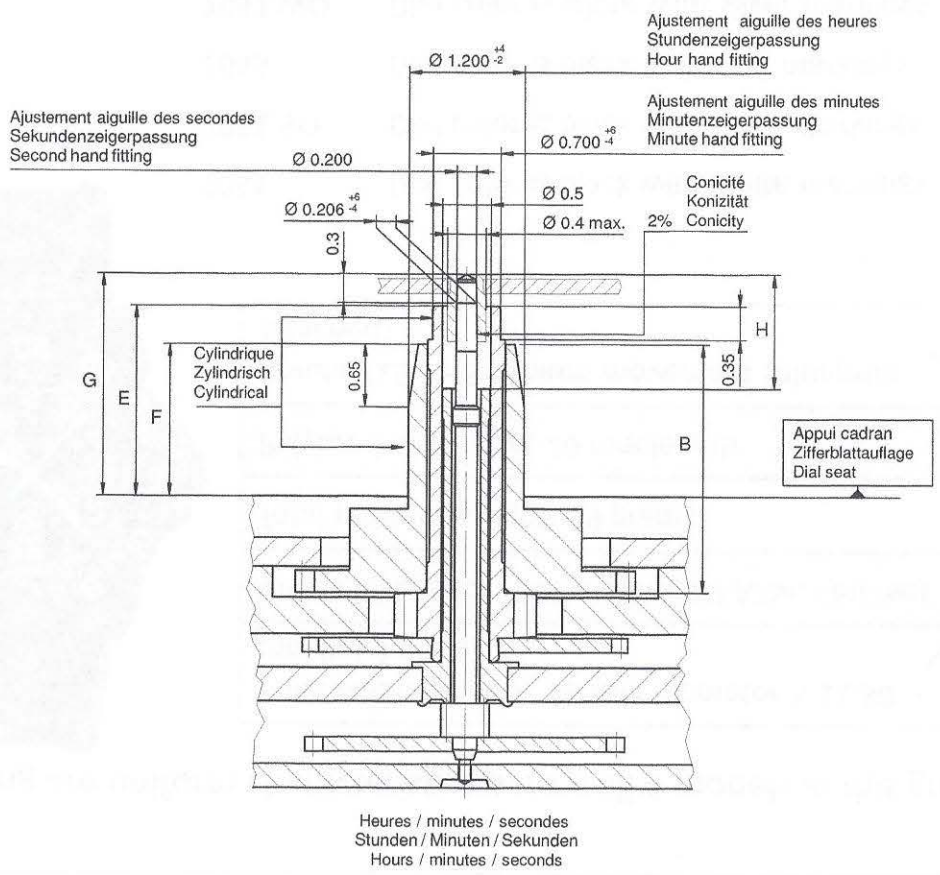
Tritium gas-tubes remain the same

Model	Qty	Placement	Diameter X Length	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm X 4.10 mm	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm X 6.60 mm	3.6 mCi / 0.135 GBq

Following are uniform characteristics across all 4 models in this grouping

Polycarbonate case, 38 mm diameter X 11.80 mm height
Water resistance: 200 meters, 20 ATM, 660 feet
Total product weight: 39 grams
Polyurethane strap, 20 mm length
Ronda 715 HH6 Lithium movement (blueprint attached)

Model	Variation
7051	Dial color is black with white markings
7051.BO	Dial color is black with black markings
7065	Dial color is black with pink markings
7057.WO	Dial color is white with silver markings



Aiguillage no Zeigerwerkhöhe Nr. Hand fitting height No	Dépassement Höhe über Zifferblattauflage Height over dial seat			Longueur Länge Length		Epaisseur max. (peinture comprise) Max. Dicke (inkl. Farbe) Max. thickness (paint included)			
						Cadran Zifferblatt Dial			Aiguilles Zeiger Hands
	Pignon des secondes Sekundentrieb Second pinion	Chaussée Minutenrohr Cannon-pinion	Roue des heures Stundenrad Hour wheel		Roue des heures Stundenrad Hour wheel	Sous l'aiguille des secondes Unter Sekundenzeiger Under second hand	Sous l'aiguille des minutes Unter Minutenzeiger Under minute hand	Sous l'aiguille des heures Unter Stundenzeiger Under hour hand	
	G	E	F	H	B				
6	2.31	1.98	1.58	1.19	2.58	1.80	1.55	0.40	0.15

	Aig. des secondes Sekundenzeiger Second hand		Aig. des minutes Minutenzeiger Minute hand	Aig. des heures Stundenzeiger Hour hand	Lors de la pose d'aiguilles, le mouvement doit être soutenu. Beim Zeigersetzen muss das Werk abgestützt werden. The movement needs to be supported for hand setting.
	503, 505, 513, 515	503S, 505S, 513S, 515S	Alle/Tous/All		Kaliber/Calibre/Caliber
mg max.	10	10	30	30	Masse / Masse / Weight *
µNm max.	0.08	0.08	0.70	0.70	Balourd / Unwucht / Unbalance *
gmm² max.	0.4	1.0	-	-	Inertie / Massenträgheit / Inertia *
N max.	30	30	40	40	Force de chassage / Aufpresskraft / Force

Sous réserve de toutes modifications Aenderungen vorbehalten All modifications reserved

Aiguillages
Zeigerwerkhöhen
Hand fitting heights

10½‴, 11½‴

Issued	10 Mär 1999 gd
Modified	30 Aug 2012 ÄA 11646 dh
Released	Yes
Tolerance	µm
Scale	20 : 1 (A3H)

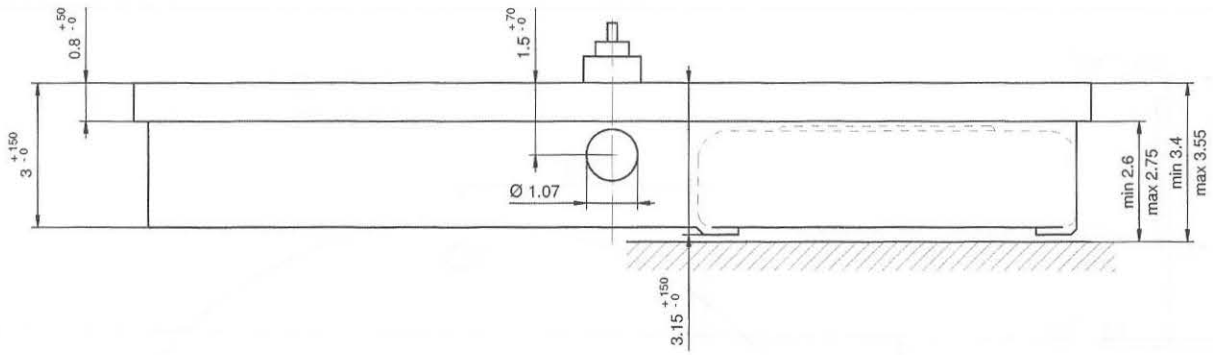
RONDA

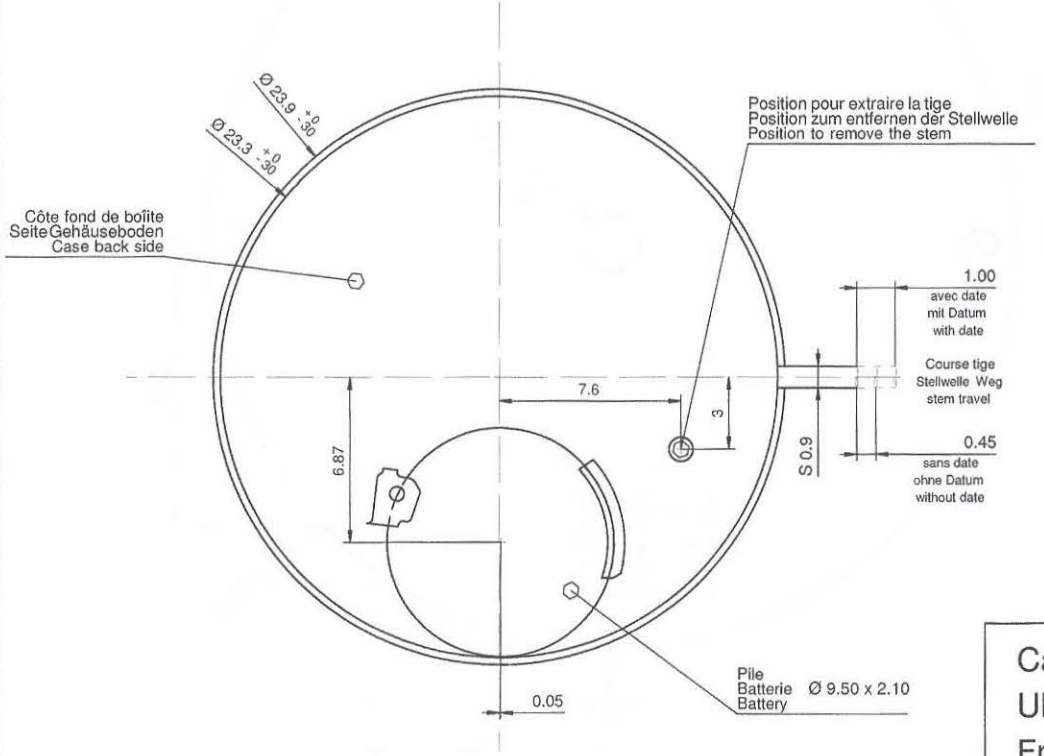
503, 503S, 505, 505S,
513, 513S, 515, 515S

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 3316.067 04

* En cas de données différentes, veuillez contacter le service après-vente * Bei abweichenden Werten, bitte technischen Kundendienst anfragen * In case of different values, please contact the customer service

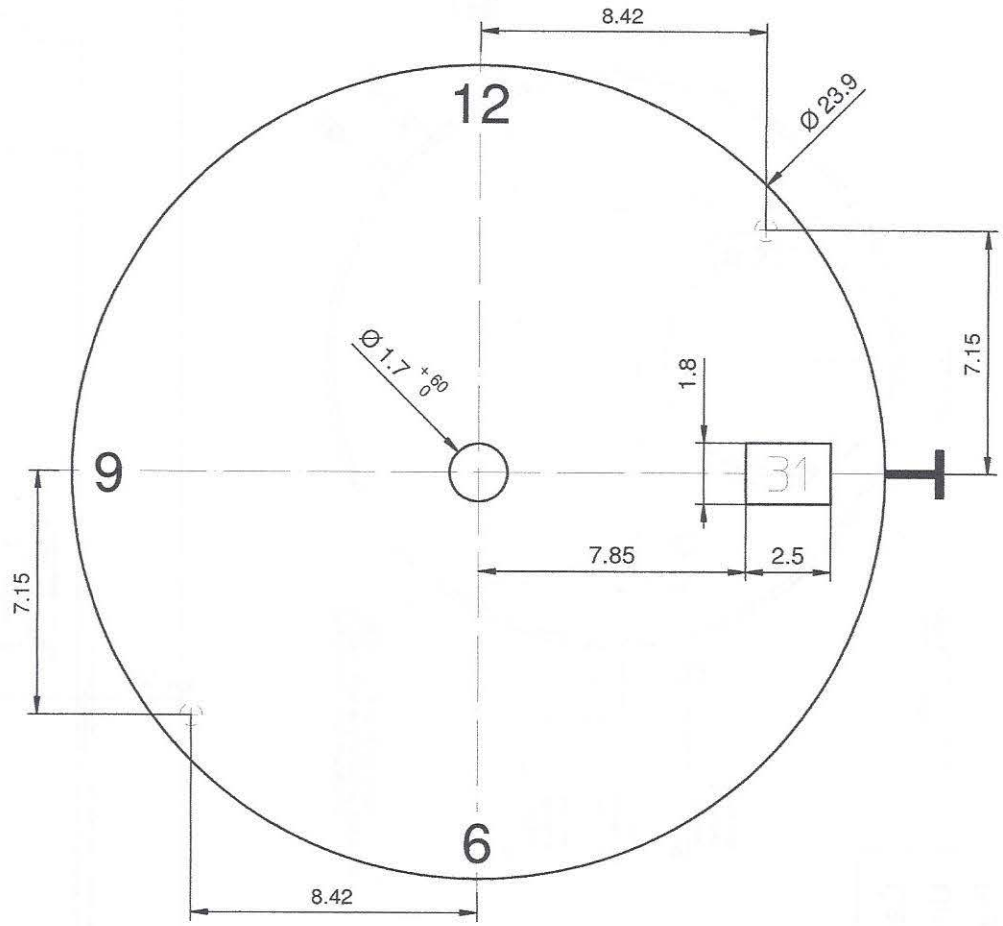


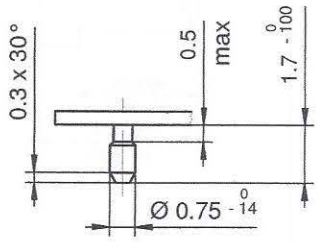


Sécurité entre aiguille seconde et verre : min 0.30 mm
Sicherheit zwischen Sekundenzeiger und Glas : min 0.30 mm
Security between second hand and glass : min 0.30 mm

Le cadran doit être maintenu en hauteur par la boîte.
Das Zifferblatt muss in der Höhe vom Gehäuse festgehalten werden.
The dial must be held in the height by the case.

Cage Uhrwerkgestell 10½''' Frame		Issued	09 Feb 2000	cs
		Modified	23 Jun 2011 ÄA 11169	dh
		Released	YES	
		Tolerance	+/- 20 µm	
		Scale	10 : 1 (5 : 1) (A3H)	
RONDA	502, 503, 503S, 505, 505S, 507, 509	Sous réserve de modifications Aenderungenvorbehalten Modificationsreserved		
		No.	5000.284	06





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	3H

Cadran
Zifferblatt
Dial

10½'''

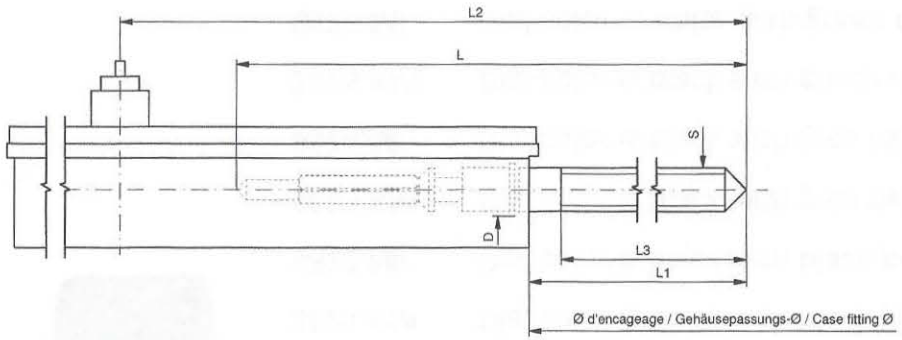
Issued	14 Dez 2006	cw
Modified	20 Aug 2012 ÄA 12806	mc
Released	YES	
Tolerance	+/- 20 µm	
Scale	5 : 1 (A4V)	

RONDA

505, 505S, 704, 705, 705Li

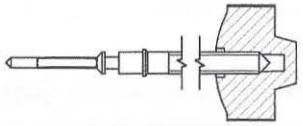
Sous réserve de modifications
Aenderungenvorbehalten
Modificationsreserved

No.	5010.360	07



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

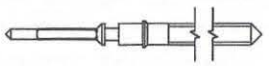
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.164.CO	20.50	11.09	22.74	11.83	0.90	1.05



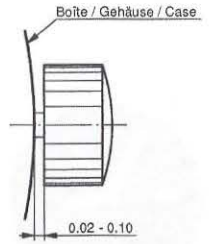
Couleur de la couronne Kronenfarbe Crown color	brun braun brown
Code	UN 8052

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

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.164	20.50	11.09	22.74	11.83	0.90	1.05
3000.171	32.50	24.34	34.74	23.83	0.90	1.05

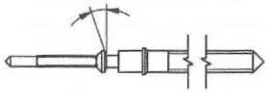


Couronne normale
Normale Krone
Normal crown



Tige (à arracher)
Stellwelle (Ausreissversion)
Stem (extractable version)

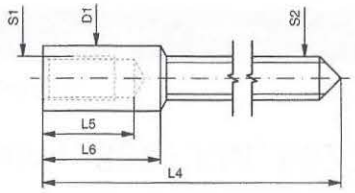
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.163	20.50	12.34	22.74	11.83	0.90	1.05
3000.196	32.50	24.34	34.74	23.83	0.90	1.05



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	2.45	0.90	0.90	1.35



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

RONDA

502, 503, 503S, 505, 505S, 505.24H, 505.24D, 507, 509

Issued	05 Jul 2012	ds5212
Modified	--- ÄA 11741	ds5212
Released	YES	
Tolerance	---	
Scale	10:1 (A3)	

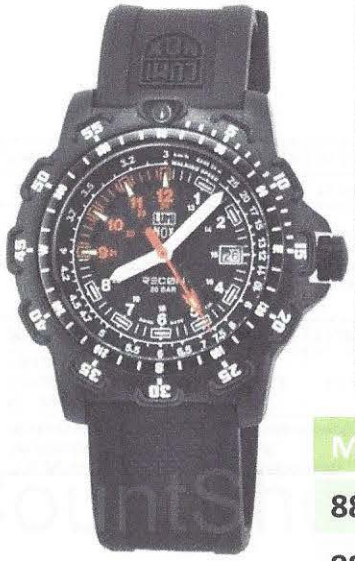
No. 5030.001 00

6 models within **8820** grouping: 8821.KM, 8822.MI,8823.KM, 8824.MI, 8824.KM, 8826.MI

Tritium gas-tubes remain the same

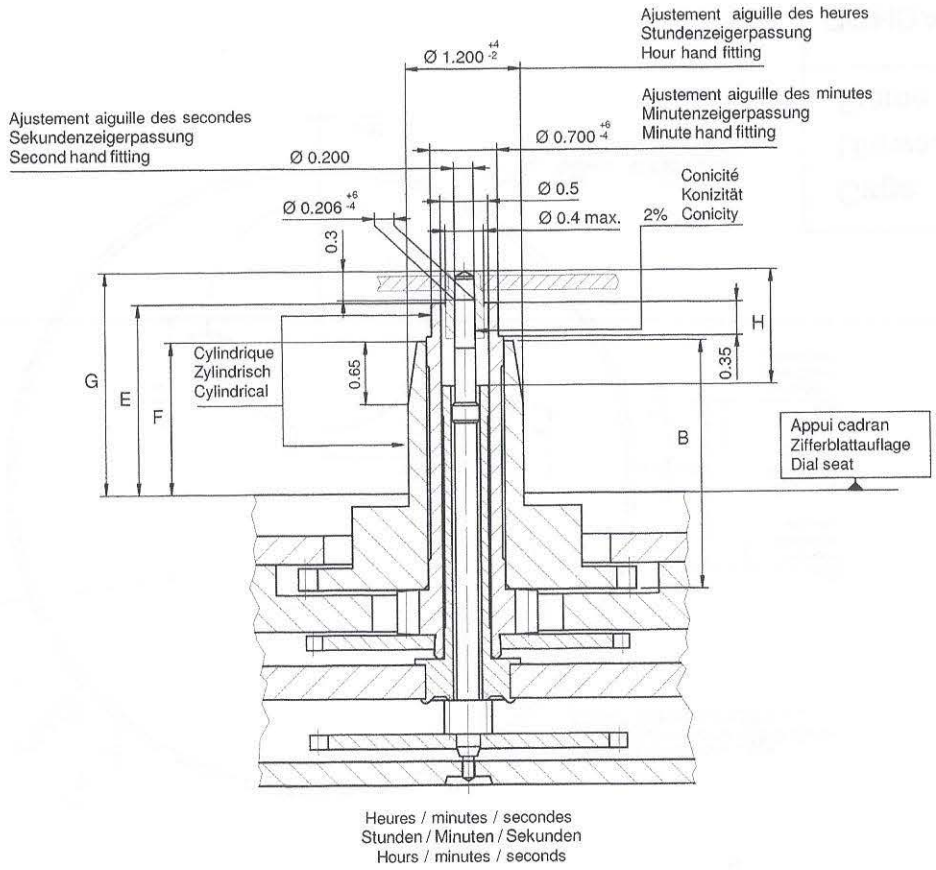
Model	Qty	Placement	Diameter X Length	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm X 4.10 mm	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm X 6.60 mm	3.6 mCi / 0.135 GBq

Following are uniform characteristics across all 6 models in this grouping



Sapphire glass
Polycarbonate case, 45 mm diameter X 13.10 mm height
Water resistance: 200 meters, 20 ATM, 660 feet
Total product weight: 72 grams
Ronda 515 HH6 movement (blueprint attached)

Model	Variation
8821.KM	Dial color is black with black polyurethane strap
8822.MI	Dial color is black with black polyurethane strap
8823.KM	Dial color is black with grey nylon strap
8824.MI	Dial color is black with grey nylon strap
8825.KM	Dial color is black with green nylon strap
8826.MI	Dial color is white with green nylon strap



Aiguillage no Zeigerwerkhöhe Nr. Hand fitting height No	Dépassement Höhe über Zifferblattauflage Height over dial seat			Longueur Länge Length		Epaisseur max. (peinture comprise) Max. Dicke (inkl. Farbe) Max. thickness (paint included)			
						Cadran Zifferblatt Dial			Aiguilles Zeiger Hands
	Pignon des secondes Sekundentrieb Second pinion	Chaussée Minutenrohr Cannon-pinion	Roue des heures Stundenrad Hour wheel		Roue des heures Stundenrad Hour wheel	Sous l'aiguille des secondes Unter Sekundenzeiger Under second hand	Sous l'aiguille des minutes Unter Minutenzeiger Under minute hand	Sous l'aiguille des heures Unter Stundenzeiger Under hour hand	
	G	E	F	H	B				
6	2.31	1.98	1.58	1.19	2.58	1.80	1.55	0.40	0.15

	Aig. des secondes Sekundenzeiger Second hand		Aig. des minutes Minutenzeiger Minute hand	Aig. des heures Stundenzeiger Hour hand	Lors de la pose d'aiguilles, le mouvement doit être soutenu. Beim Zeigersetzen muss das Werk abgestützt werden. The movement needs to be supported for hand setting.
	503, 505, 513, 515	503S, 505S, 513S, 515S	Alle/Tous/All		Kaliber/Calibre/Caliber
mg max.	10	10	30	30	Masse / Masse / Weight *
µNm max.	0.08	0.08	0.70	0.70	Balourd / Unwucht / Unbalance *
gmm² max.	0.4	1.0	-	-	Inertie / Massenträgheit / Inertia *
N max.	30	30	40	40	Force de chassage / Aufpresskraft / Force

Sous réserve de toutes modifications Aenderungen vorbehalten All modifications reserved

Aiguillages
Zeigerwerkhöhen
Hand fitting heights

10½‴, 11½‴

RONDA

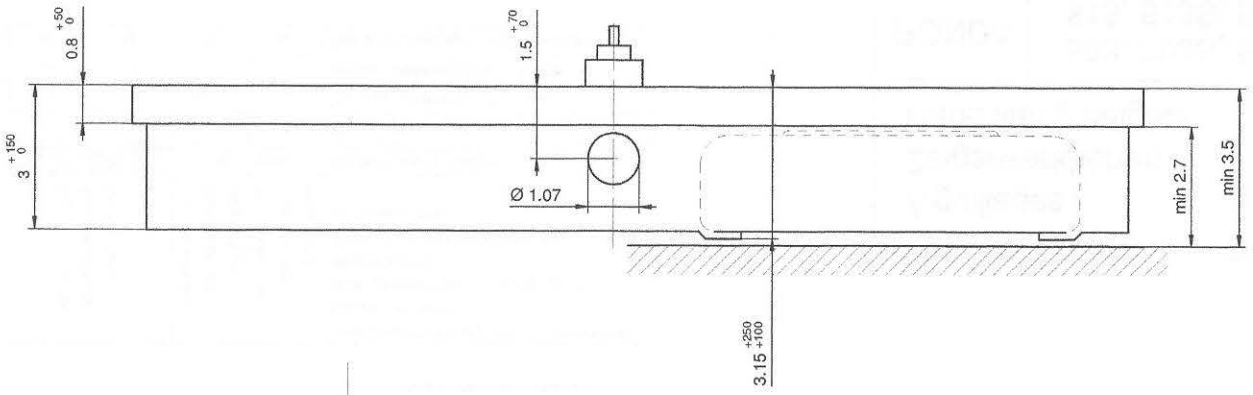
503, 503S, 505, 505S,
513, 513S, 515, 515S

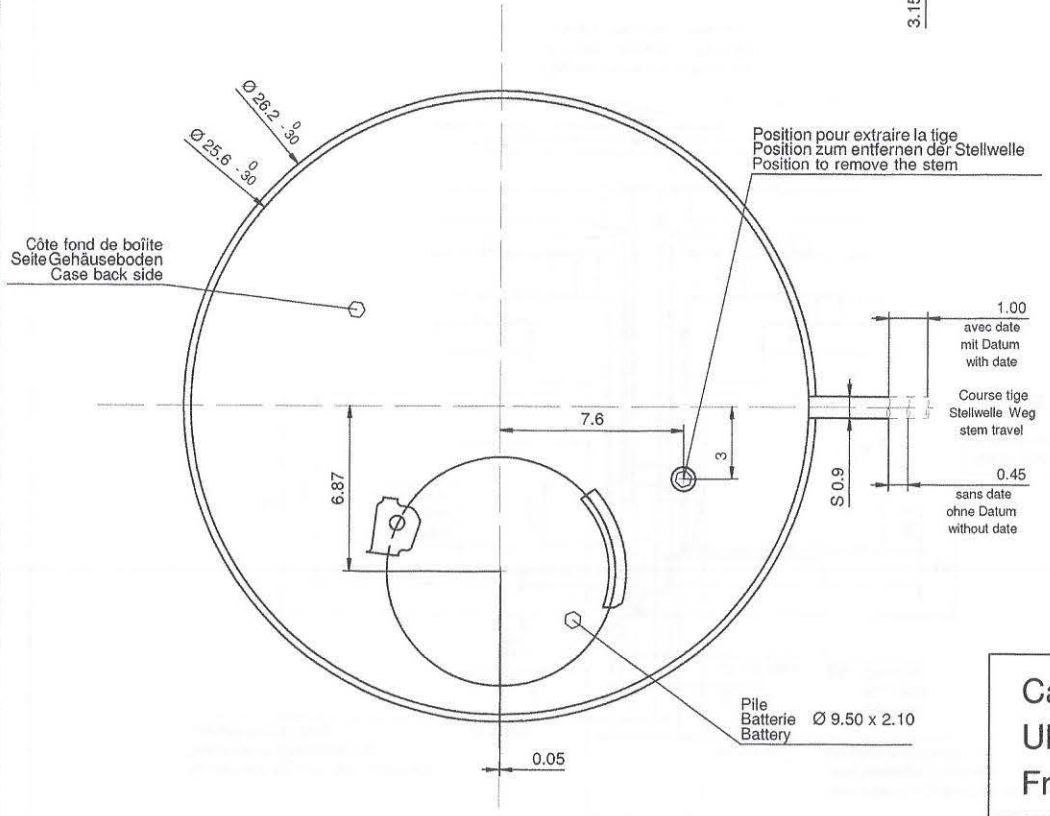
Issued	10 Mär 1999	gd
Modified	30 Aug 2012 ÄA 11646	dh
Released	Yes	
Tolerance	µm	
Scale	20 : 1 (A3H)	

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 3316.067 04

* En cas de données différentes, veuillez contacter le service après-vente * Bei abweichenden Werten, bitte technischen Kundendienst anfragen * In case of different values, please contact the customer service

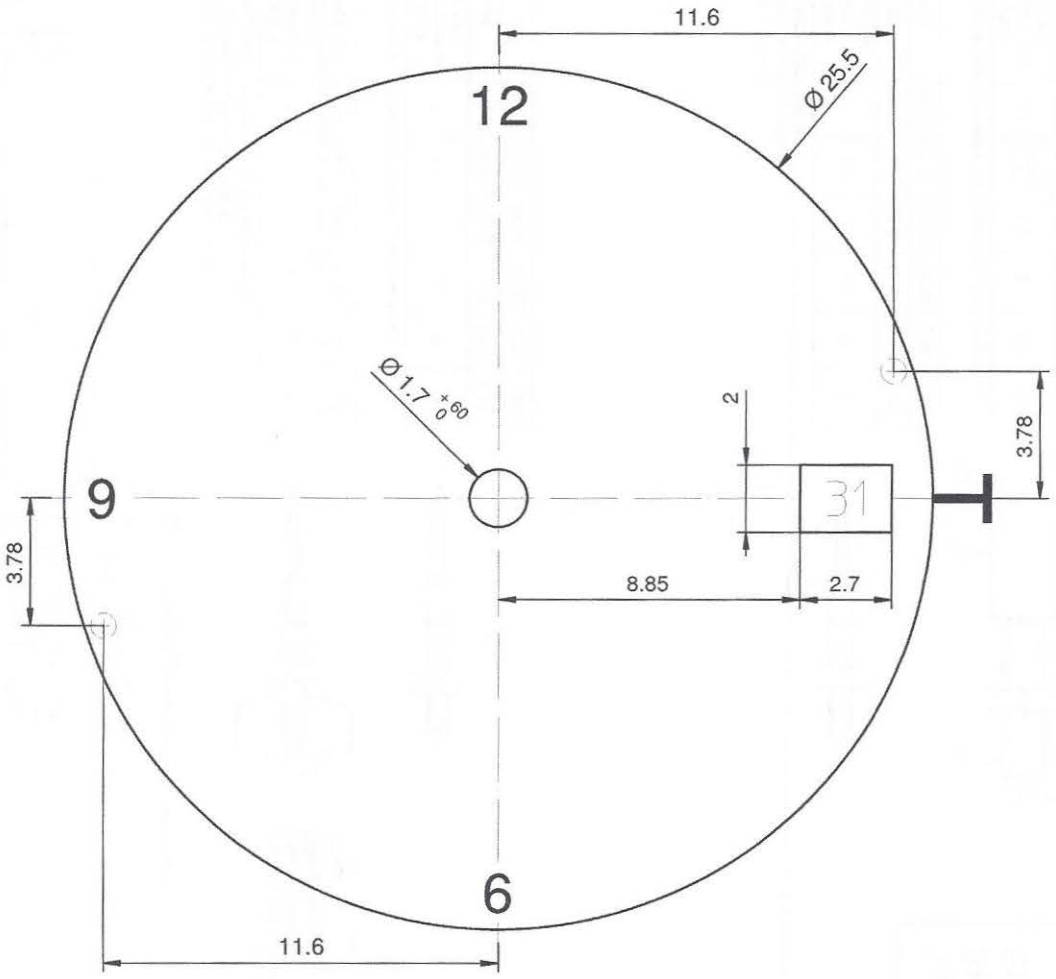


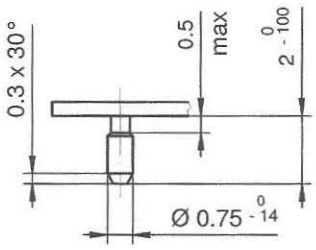


Sécurité entre aiguille seconde et verre : min 0.30 mm
Sicherheit zwischen Sekundenzeiger und Glas : min 0.30 mm
Security between second hand and glass : min 0.30 mm

Le cadran doit être maintenu en hauteur par la boîte.
Das Zifferblatt muss in der Höhe vom Gehäuse festgehalten werden.
The dial must be held in the height by the case.

Cage Uhrwerkgestell Frame	11½'''	Issued	10 Mär 1999	gd
		Modified	23 Jun 2011 ÄA 11169	dh
		Released	YES	
		Tolerance	+/- 20 µm	
		Scale	10 : 1 (5 : 1) (A3H)	
RONDA	512, 513, 513S, 515, 515S, 517, 519	Sous réserve de modifications Aenderungenvorbehalten Modificationsreserved		
		No.	5000.286	07





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	3H

Cadran
Zifferblatt
Dial

11½'''

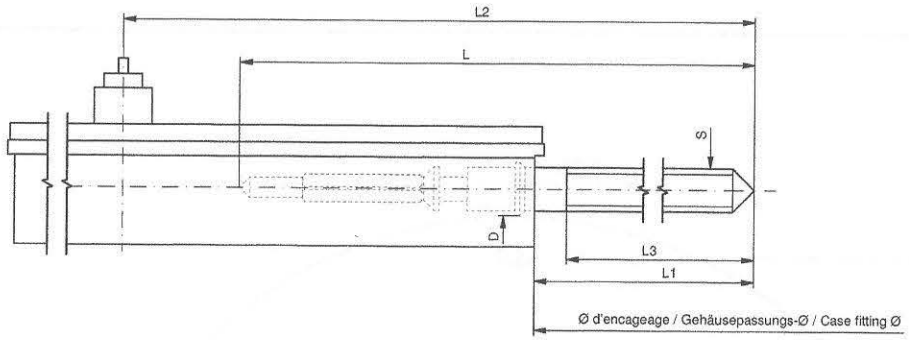
Issued	14 Dez 2006	cw
Modified	13 Aug 2012 ÄA 12806	mc
Released	YES	
Tolerance	+/- 20 µm	
Scale	5 : 1 (A4V)	

RONDA

515, 515S, 714, 715, 715Li

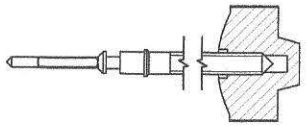
Sous réserve de modifications
Aenderungenvorbehalten
Modificationsreserved

No. 5010.417 09



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

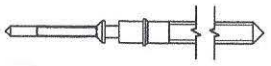
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.164.CO	20.50	9.92	22.72	11.83	0.90	1.05



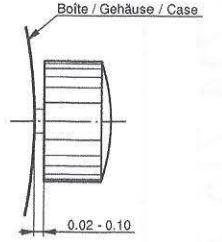
Couleur de la couronne Kronenfarbe Crown color	brun braun brown
Code	UN 8052

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

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.164	20.50	9.92	22.72	11.83	0.90	1.05
3000.171	32.50	21.92	34.72	23.83	0.90	1.05



Couronne normale
Normale Krone
Normal crown

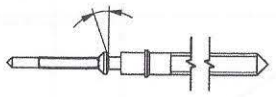


Couronne vissée
Geschraubte Krone
Screwed crown

Force ⇦ min. Kraft ⇦ min. Force ⇦ min.	10 N
Force ⇦ max. Kraft ⇦ max. Force ⇦ max.	15 N

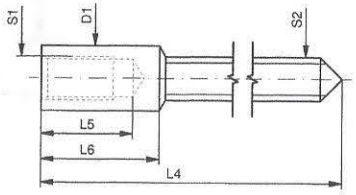
Tige (à arracher)
Stellwelle (Ausreissversion)
Stem (extractable version)

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.163	20.05	9.92	22.72	11.83	0.90	1.05
3000.196	32.50	21.92	34.72	23.83	0.90	1.05



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	2.45	0.90	0.90	1.35



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

RONDA

512, 513, 513S, 515, 515S,
515.24H, 515.24D, 517, 519

Issued	15 Aug 2012	ds5222
Modified	--- ÄA 11741	ds5222
Released	YES	
Tolerance	---	
Scale	10:1 (A3)	

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 5030.002 00

6 models within **3080** grouping: 3081, 3081.BO, 3082, 3082.BO, 3083, 3089

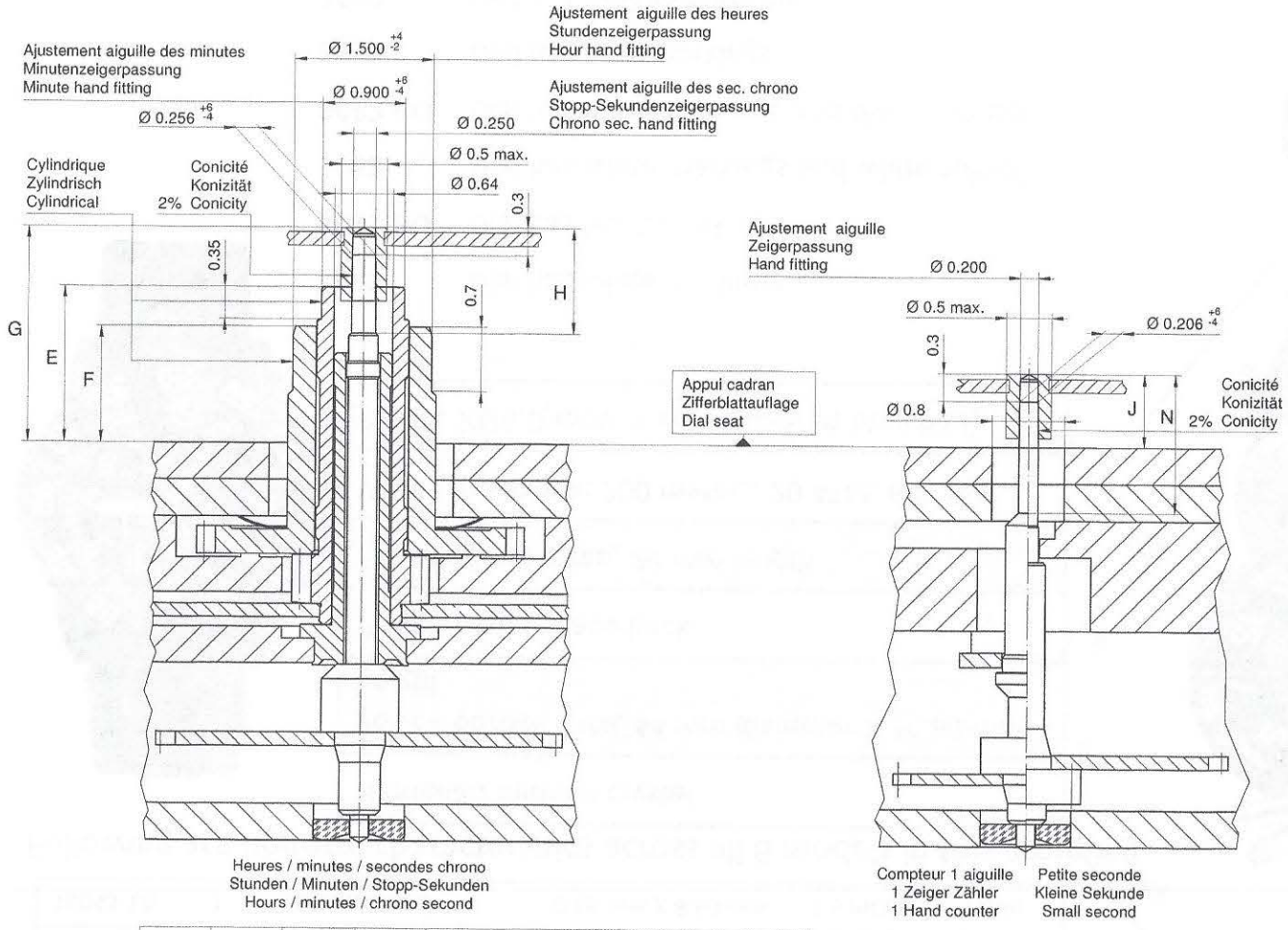
Tritium gas-tubes remain the same

Model	Qty	Placement	Diameter X Length	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm X 4.10 mm	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm X 6.60 mm	3.6 mCi / 0.135 GBq

Following are uniform characteristics across all 6 models in this grouping

Hardened mineral crystal
Polycarbonate case, 44 mm diameter X 14.60 mm height
Polycarbonate case-back
Polyurethane strap, 22 mm length
Water resistance: 200 meters, 20 ATM, 660 feet
Ronda 5030.D movement (blueprint attached)

Model	Variation
3081	Dial has white markings
3081.BO	Dial has black markings
3082	Dial has white markings and white sub-dial
3082.BO	Dial has black markings and black sub-dial
3038	Dial has blue markings
3089	Dial has orange markings



	Aig. des sec. chrono Stopp-Sekundenzeiger Chrono second hand	Aig. des minutes Minutenzeiger Minute hand	Aig. des heures Stundenzeiger Hour hand	Aig. petite secondes Kleine Sekundenzeiger Small second hand	Aiguille compteur (1 aig.) Zähler Zeiger (1 Zeiger) Counter hand (1 hand)	Lors de la pose d'aiguilles, le mouvement doit être soutenu. Beim Zeigersetzen muss das Werk abgestützt werden. The movement needs to be supported for hand setting.
mg max.	10	30	30	10	10	Masse / Masse / Weight *
µNm max.	0.06	0.80	0.80	0.07	0.03	Balourd / Unwucht / Unbalance *
gmm² max.	1.0	-	-	0.4	1.0	Inertie / Massenträgheit / Inertia *
N max.	30	40	40	30	30	Force de chassage / Aufpresskraft / Force

Aiguillages
Zeigerwerkhöhe
Hand fitting height

No	G	E	F	H	N	J	J
	Dépassement Höhe über Zifferblattauflage Height over dial seat						
	Pignon des secondes chrono Stopp-Sekundentrieb Chrono second pinion	Chaussée Minutenrohr Cannon-pinion	Roue des heures Stundenrad Hour wheel			Petite seconde Kleine Sekunde Small second	Pignon compteur Zählertrieb Counter pinion (1 aig. 1 Zeiger 1 Hand)
1	2.35	1.70	1.27	1.15	1.50	0.80	0.80
-							

Aiguillages
Zeigerwerkhöhe
Hand fitting height

No	Sous l'aiguille des secondes chrono Unter Stopp-Sekundenzeiger Under chrono second hand	Sous l'aiguille des minutes Unter Minutenzeiger Under minute hand	Sous l'aiguille des heures Unter Stundenzeiger Under hour hand	Sous l'aiguille de petite seconde Unter kleine Sekundenzeiger Under small second hand	Sous l'aiguille compteur 1 aiguille Unter Zeiger 1 Zeiger Zähler Under hand 1 hand counter	Epaisseur des aiguilles Zeigerdicke Hands thickness
	Peinture comprise / inkl. Farbe / Paint included — Epaisseur maximum du cadran Maximale Zifferblattdicke Maximum dial thickness					
1	1.85	1.30	0.85	0.40	0.40	0.15
-						

Aiguillages
Zeigerwerkhöhen 12½'''
Hand fitting heights

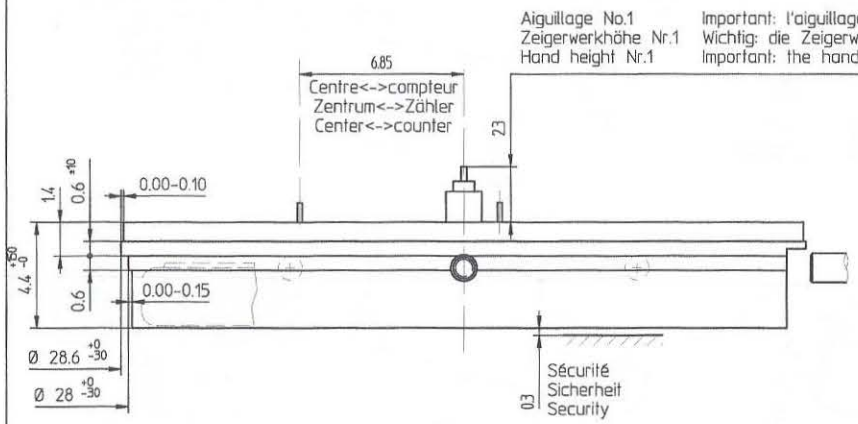
RONDA | 5030.D

Issued	07 Juli 2009	ps
Modified	15 Okt 2014 ÄA 13275	dh
Released	Yes	
Tolerance	µm	
Scale	20 : 1 (A3H)	

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 3316.132 02

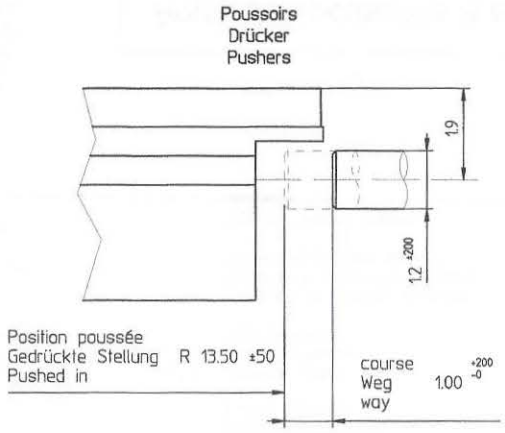
* En cas de données différentes, veuillez contacter le service après-vente * Bei abweichenden Werten, bitte technischen Kundendienst anfragen * In case of different values, please contact the customer service



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

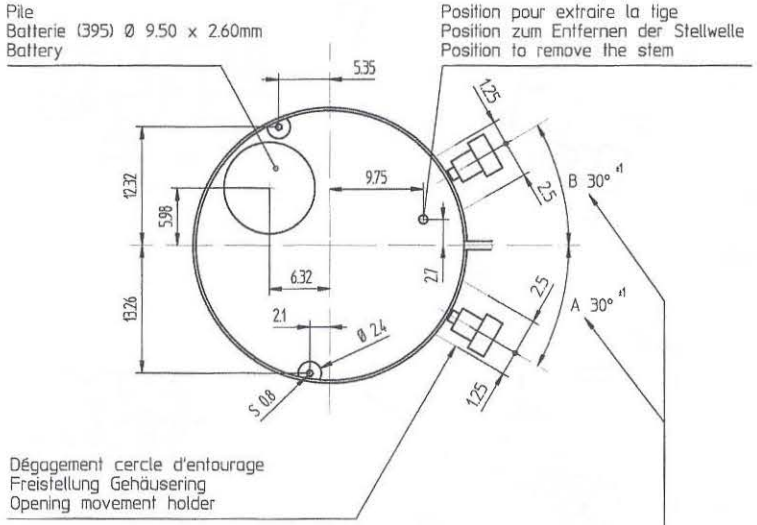
Sécurité entre l'aiguille des secondes et le verre:
Sicherheit zwischen Sekundenzeiger und Glas: 0.30mm
Security between second hand and glass:

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

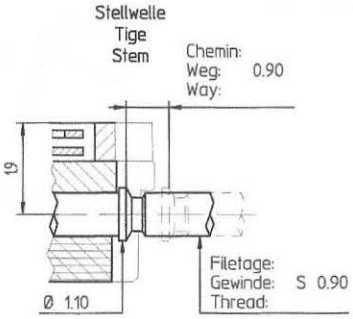


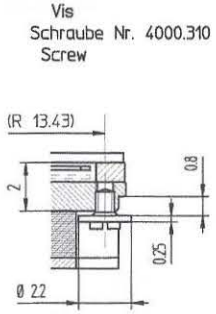
La course du poussoir doit être limitée dans le poussoir lui-même. Sa position poussée doit être controlée.
Die Weglänge des Drückers ist im Drücker selbst zu begrenzen. In der gedrückten Stellung ist seine Position zu kontrollieren
The way of the pusher has to be limited in the pusher itself. Its position must be checked while pushed in.

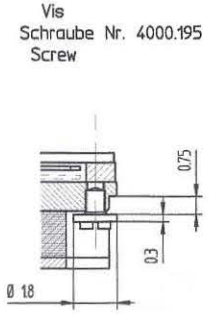
Côté fond de boîte
Seite Gehäuseboden
Case back side

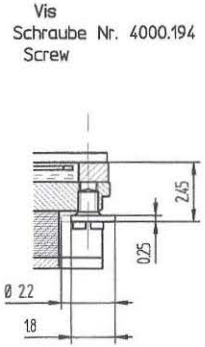


L'angle indiqué pour la direction du poussoir et la position doivent être respectés. Pour un angle de 0° des poussoirs A et B, voir plan 5000.345
Der angegebene Winkel für die Drückerrichtung und die Position müssen eingehalten werden. Für einen Drückerwinkel von 0° bei A und B, siehe Zeichnung 5000.345
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
Uhrwerkgestell
Frame

12½'''

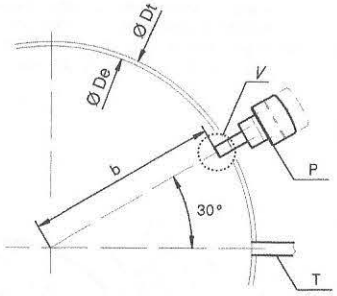
RONDA

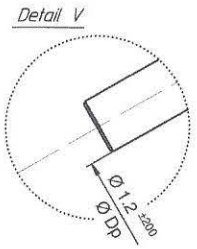
5040.B, 5040.D, 5030.D, 5021.D, 5040.E

Issued	08 Jan 2001	mg
Modified	08 Mär 2012 ÄA 11867	dh
Released	YES	
Tolerance	+/- 20 µm	
Scale	10 : 1 (5 : 1) (A3H)	

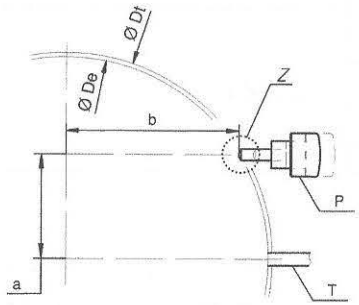
No. 5000.315 09

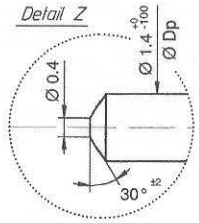
Angle Winkel Angle 30°	
Ø Dp	b
1.00	13.50
1.10	13.50
1.20	13.50
1.30	13.50
1.40	13.50



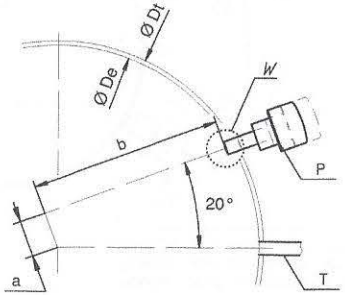


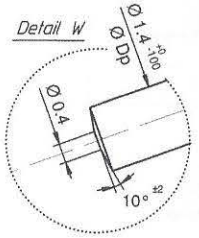
Angle Winkel Angle 0°		
Ø Dp	a	b
1.30	7.40	11.43
1.40	7.45	11.40



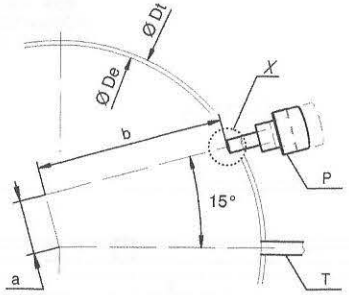


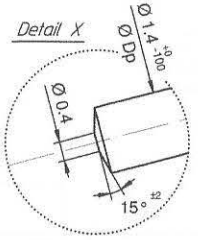
Angle Winkel Angle 20°		
Ø Dp	a	b
1.30	2.57	13.22
1.40	2.59	13.21



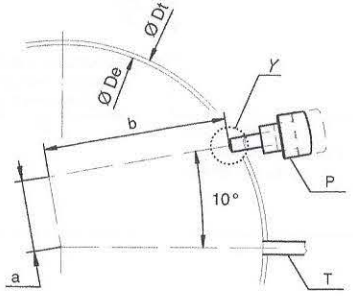


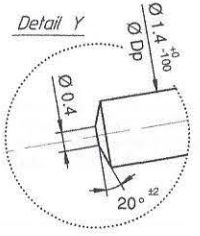
Angle Winkel Angle 15°		
Ø Dp	a	b
1.30	3.83	12.92
1.40	3.86	12.91





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

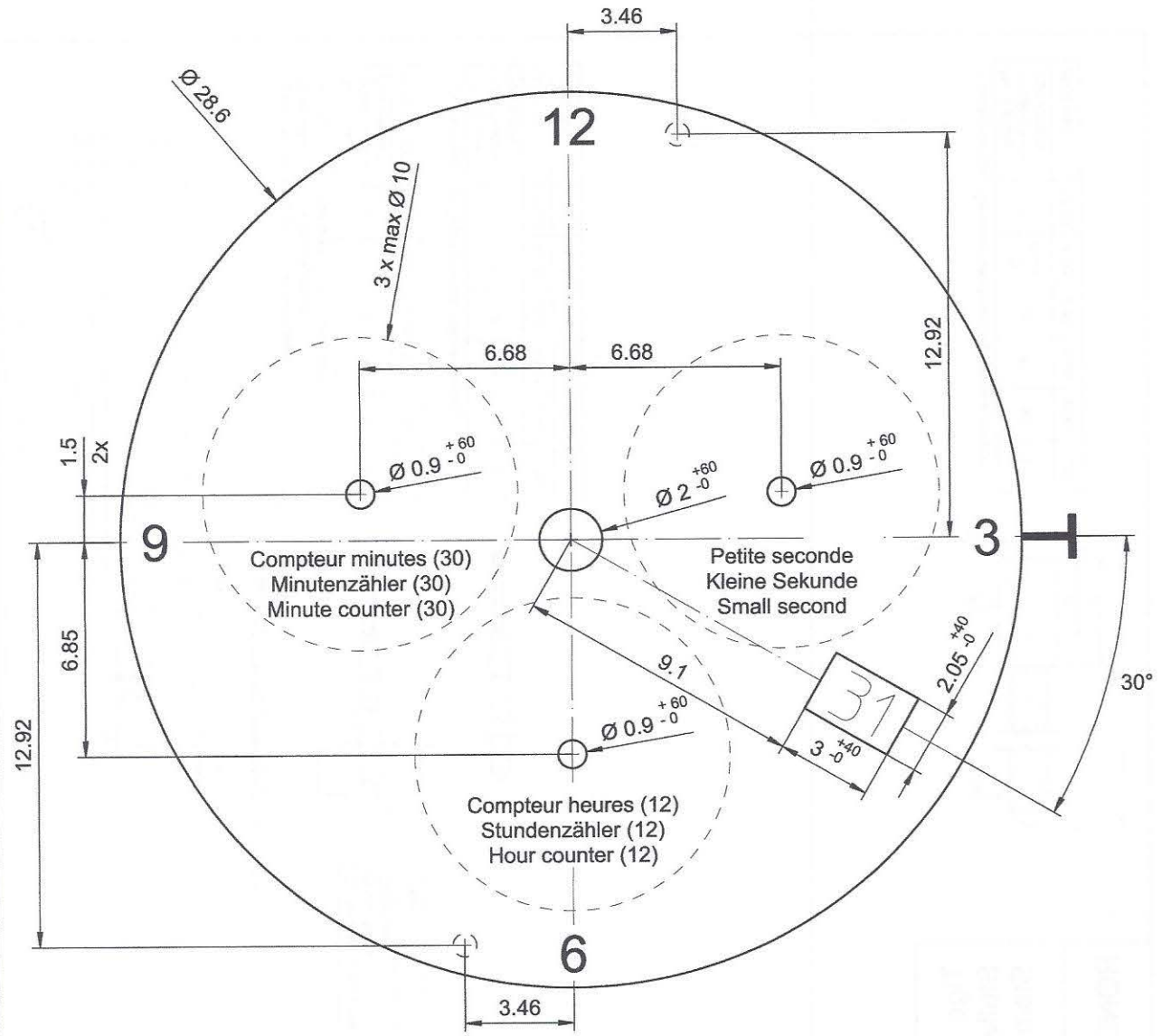
T: tige de mise à l'heure
Stellwelle
stem

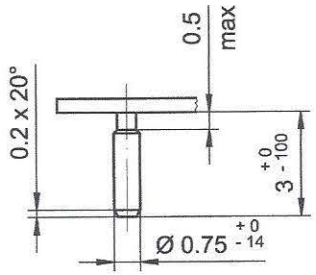
Angle des poussoirs A et B
Winkel der Drücker A und B
Angle of pusher A and B

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)	

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	4H

Cadran
Zifferblatt
Dial

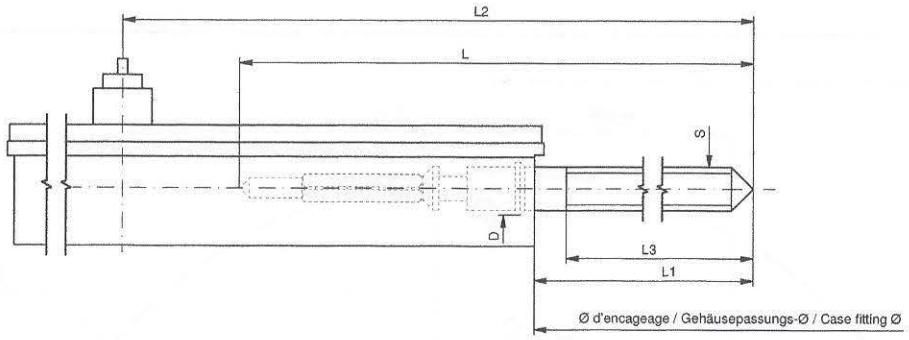
12½‴

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

RONDA | 5030.D

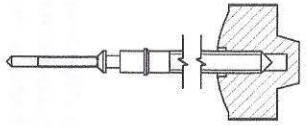
Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 5010.652 | 03



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

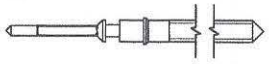
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.177.CO	20.00	10.23	24.23	10.15	0.90	1.10



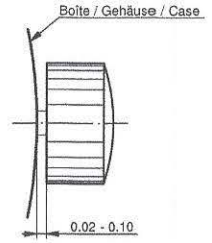
Couleur de la couronne Kronenfarbe Crown color	bleu foncé dunkelblau dark blue
Code	UN 5002

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



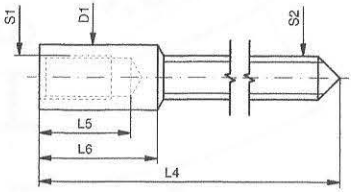
Couronne normale
Normale Krone
Normal crown



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	2.45	0.90	0.90	1.35



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

RONDA

5010.B, 5020.B, 5021.D, 5030.D,
5040.B, 5040.D, 5040.E, 5040.F,
5050.B, 5050.C, 5051.C, 5130.B, 5130.D

Issued	05 Sep 2012	ds5222
Modified	--- ÄA 11741	ds5222
Released	YES	
Tolerance	---	
Scale	10:1 (A3)	

No. 5030.019 00

8 models within **3050** grouping: 3051, 3051.BO, 3052, 3052.BO, 3053, 3057.WO, 3059, 3067

Tritium gas-tubes remain the same

Model	Qty	Placement	Diameter X Length	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm X 4.10 mm	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm X 6.60 mm	3.6 mCi / 0.135 GBq

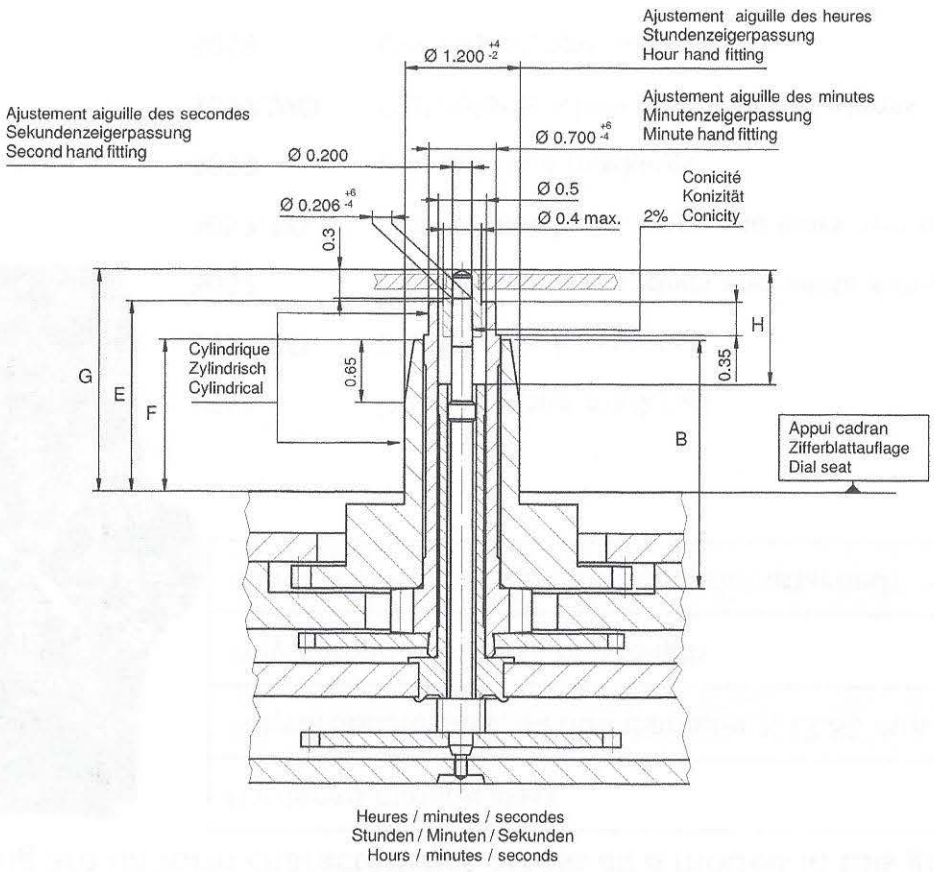
Following are uniform characteristics across all 8 models in this grouping

Hardened mineral glass
Polycarbonate case, 44 mm diameter X 13.88 mm height
Polyurethane strap, 23 mm length
Ronda 515 HH6 movement (blueprint attached)

Model	Variation
3051	Dial has white markings
3051.BO	Dial has black markings
3052	Dial has white markings and white sub-dial
3052.BO	Dial has black markings and black sub-dial
3053	Dial has blue markings
3057.WO	Dial color is white with silver markings
3059	Dial has orange markings
3067	Dial has green markings

Dial

Bezel



Heures / minutes / secondes
Stunden / Minuten / Sekunden
Hours / minutes / seconds

Aiguillage no ZeigerwerkhöheNr. Hand fitting height No	Dépassement Höhe über Zifferblattauflage Height over dial seat			Longueur Länge Length		Epaisseur max. (peinture comprise) Max. Dicke (inkl. Farbe) Max. thickness (paint included)			
						Cadran Zifferblatt Dial			Aiguilles Zeiger Hands
	Pignon des secondes Sekundentrieb Second pinion	Chaussée Minutenrohr Cannon-pinion	Roue des heures Stundenrad Hour wheel		Roue des heures Stundenrad Hour wheel	Sous l'aiguille des secondes Unter Sekundenzeiger Under second hand	Sous l'aiguille des minutes Unter Minutenzeiger Under minute hand	Sous l'aiguille des heures Unter Stundenzeiger Under hour hand	
	G	E	F	H	B				
6	2.31	1.98	1.58	1.19	2.58	1.80	1.55	0.40	0.15

	Aig. des secondes Sekundenzeiger Second hand		Aig. des minutes Minutenzeiger Minute hand	Aig. des heures Stundenzeiger Hour hand	Lors de la pose d'aiguilles, le mouvement doit être soutenu. Beim Zeigersetzen muss das Werk abgestützt werden. The movement needs to be supported for hand setting.
	503, 505, 513, 515	503S, 505S, 513S, 515S	Alle/Tous/All		Kaliber/Calibre/Caliber
mg max.	10	10	30	30	Masse / Masse / Weight *
µNm max.	0.08	0.08	0.70	0.70	Balourd / Unwucht / Unbalance *
gmm² max.	0.4	1.0	-	-	Inertie / Massenträgheit / Inertia *
N max.	30	30	40	40	Force de chassage / Aufpresskraft / Force

Sous réserve de toutes modifications Aenderungen vorbehalten All modifications reserved

Aiguillages
Zeigerwerkhöhen
Hand fitting heights

10½‴, 11½‴

Issued	10 Mär 1999 gd
Modified	30 Aug 2012 dh ÄA 11646
Released	Yes
Tolerance	µm
Scale	20 : 1 (A3H)

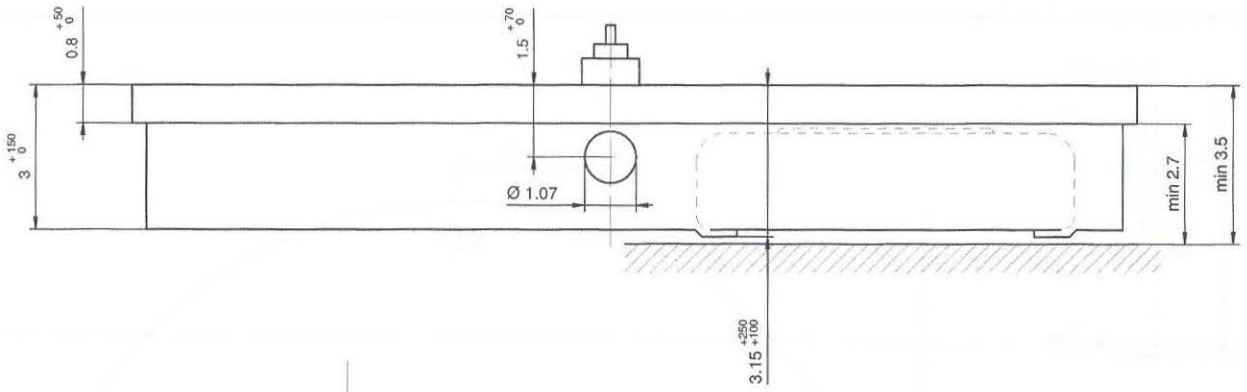
RONDA

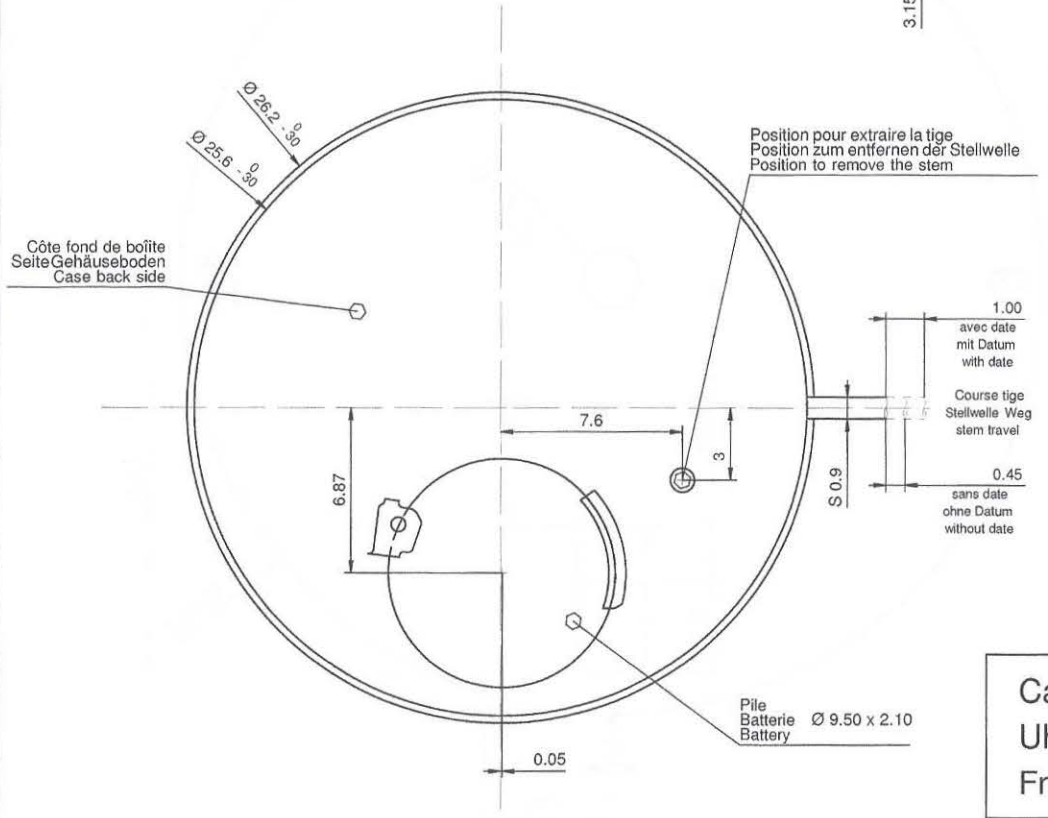
503, 503S, 505, 505S,
513, 513S, 515, 515S

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 3316.067 04

* En cas de données différentes, veuillez contacter le service après-vente * Bei abweichenden Werten, bitte technischen Kundendienst anfragen * In case of different values, please contact the customer service

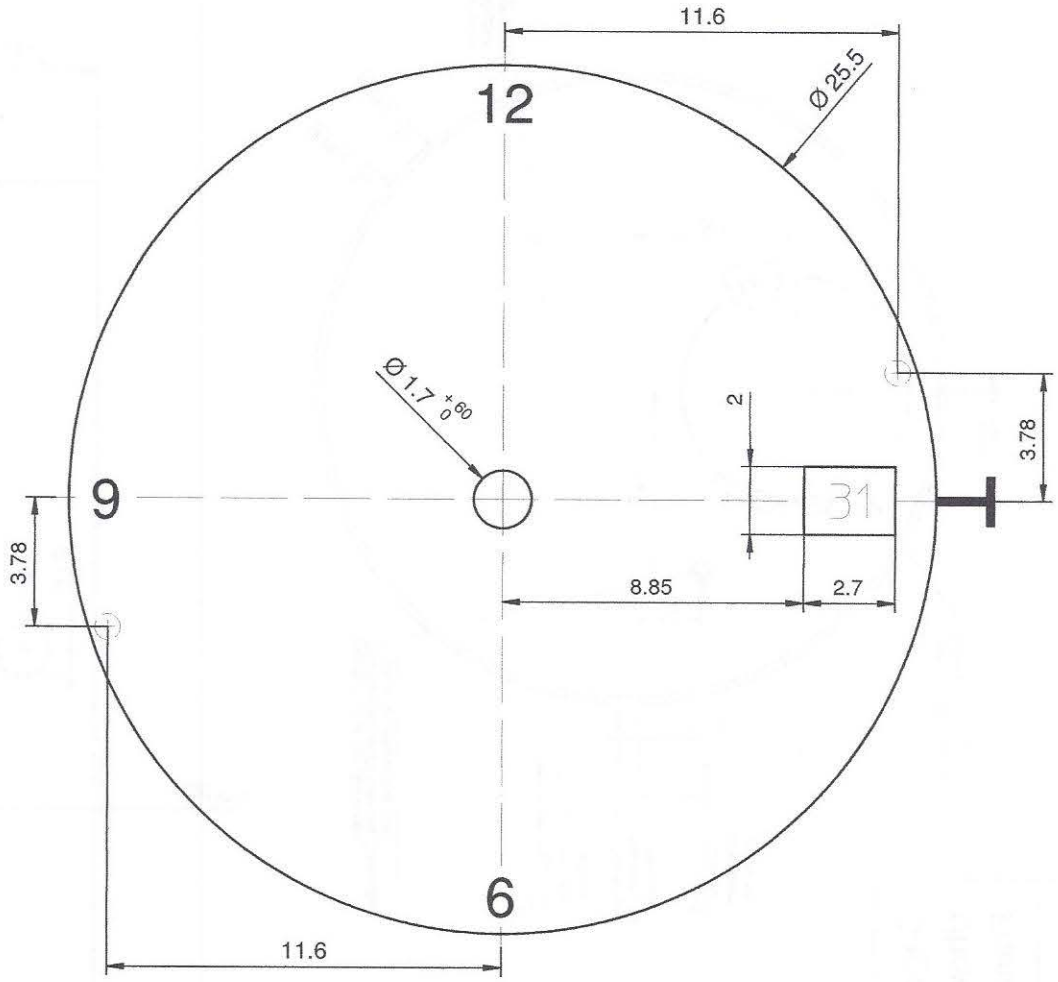


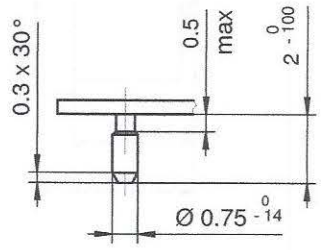


Sécurité entre aiguille seconde et verre : min 0.30 mm
Sicherheit zwischen Sekundenzeiger und Glas : min 0.30 mm
Security between second hand and glass : min 0.30 mm

Le cadran doit être maintenu en hauteur par la boîte.
Das Zifferblatt muss in der Höhe vom Gehäuse festgehalten werden.
The dial must be held in the height by the case.

Cage Uhrwerkgestell Frame	11½'''	Issued	10 Mär 1999	gd
		Modified	23 Jun 2011 ÄA 11169	dh
		Released	YES	
		Tolerance	+/- 20 µm	
		Scale	10 : 1 (5 : 1) (A3H)	
RONDA	512, 513, 513S, 515, 515S, 517, 519	Sous réserve de modifications Aenderungenvorbehalten Modificationsreserved		
		No.	5000.286	07





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	3H

Cadran
Zifferblatt
Dial

11½'''

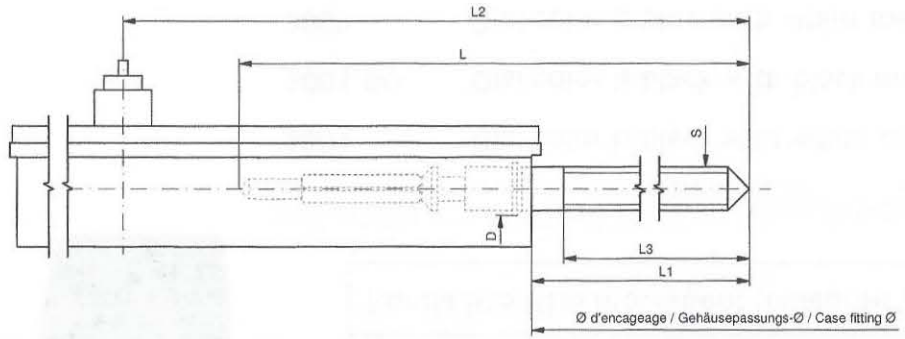
Issued	14 Dez 2006	cw
Modified	13 Aug 2012 ÄA 12806	mc
Released	YES	
Tolerance	+/- 20 µm	
Scale	5 : 1 (A4V)	

RONDA

515, 515S, 714, 715, 715Li

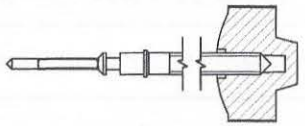
Sous réserve de modifications
Aenderungenvorbehalten
Modificationsreserved

No.	5010.417	09



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

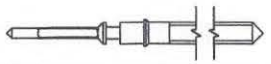
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.164.CO	20.50	9.92	22.72	11.83	0.90	1.05



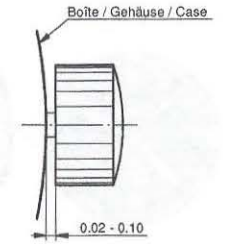
Couleur de la couronne Kronenfarbe Crown color	brun braun brown
Code	UN 8052

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

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.164	20.50	9.92	22.72	11.83	0.90	1.05
3000.171	32.50	21.92	34.72	23.83	0.90	1.05



Couronne normale
Normale Krone
Normal crown

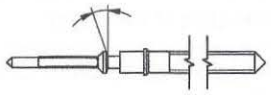


Couronne vissée
Geschraubte Krone
Screwed crown

Force ⇦ min. Kraft ⇦ min. Force ⇦ min.	10 N
Force ⇦ max. Kraft ⇦ max. Force ⇦ max.	15 N

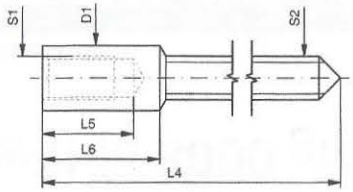
Tige (à arracher)
Stellwelle (Ausreissversion)
Stem (extractable version)

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.163	20.05	9.92	22.72	11.83	0.90	1.05
3000.196	32.50	21.92	34.72	23.83	0.90	1.05



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	2.45	0.90	0.90	1.35



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

RONDA

512, 513, 513S, 515, 515S,
515.24H, 515.24D, 517, 519

Issued	15 Aug 2012	ds5222
Modified	--- ÄA 11741	ds5222
Released	YES	
Tolerance	---	
Scale	10:1 (A3)	

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 5030.002 00

3 models within **3000** grouping: 3001, 3001.BO, 3003

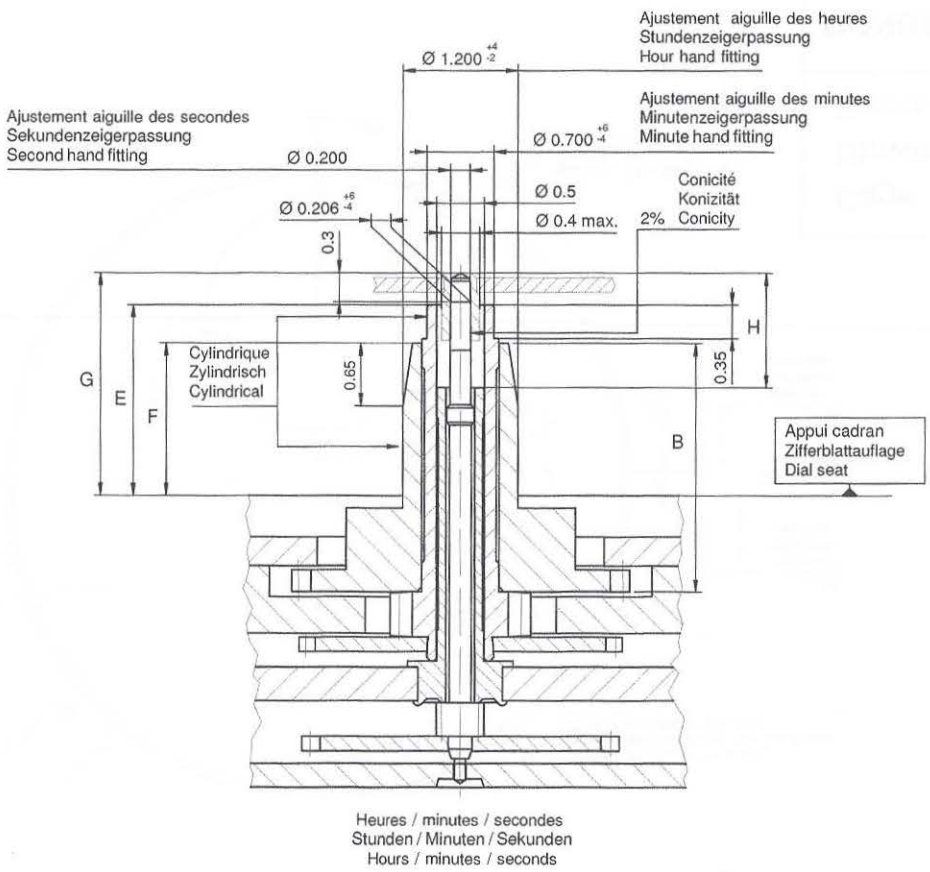
Tritium gas-tubes remain the same

Model	Qty	Placement	Diameter X Length	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm X 4.10 mm	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm X 6.60 mm	3.6 mCi / 0.135 GBq

Following are uniform characteristics across all 3 models in this grouping

Hardened mineral crystal
Polycarbonate case, 43 mm diameter X 10.97 mm height
Polycarbonate case-back
Polyurethane strap, 22 mm length
Water resistance: 200 meters, 20 ATM, 660 feet
Total product weight 46 grams
Ronda 515 HH6 movement (blueprint attached)

Model	Variation
3001	Dial color is black with white markings
3001.BO	Dial color is black with black markings
3003	Dial color is blue with white markings



Heures / minutes / secondes
Stunden / Minuten / Sekunden
Hours / minutes / seconds

Aiguillage no Zeigerwerkhöhe Nr. Hand fitting height No	Dépassement Höhe über Zifferblattauflage Height over dial seat			Longueur Länge Length		Epaisseur max. (peinture comprise) Max. Dicke (inkl. Farbe) Max. thickness (paint included)			
						Cadran Zifferblatt Dial			Aiguilles Zeiger Hands
	Pignon des secondes Sekundentrieb Second pinion	Chaussée Minutenrohr Cannon-pinion	Roue des heures Stundenrad Hour wheel		Roue des heures Stundenrad Hour wheel	Sous l'aiguille des secondes Unter Sekundenzeiger Under second hand	Sous l'aiguille des minutes Unter Minutenzeiger Under minute hand	Sous l'aiguille des heures Unter Stundenzeiger Under hour hand	
	G	E	F	H	B				
6	2.31	1.98	1.58	1.19	2.58	1.80	1.55	0.40	0.15

	Aig. des secondes Sekundenzeiger Second hand		Aig. des minutes Minutenzeiger Minute hand	Aig. des heures Stundenzeiger Hour hand	Lors de la pose d'aiguilles, le mouvement doit être soutenu. Beim Zeigersetzen muss das Werk abgestützt werden. The movement needs to be supported for hand setting.
	503, 505, 513, 515	503S, 505S, 513S, 515S	Alle/Tous/All		Kaliber/Calibre/Caliber
mg max.	10	10	30	30	Masse / Masse / Weight *
µNm max.	0.08	0.08	0.70	0.70	Balourd / Unwucht / Unbalance *
gmm² max.	0.4	1.0	-	-	Inertie / Massenträgheit / Inertia *
N max.	30	30	40	40	Force de chassage / Aufpresskraft / Force

Sous réserve de toutes modifications Aenderungen vorbehalten All modifications reserved

Aiguillages
Zeigerwerkhöhen
Hand fitting heights

10½‴, 11½‴

RONDA

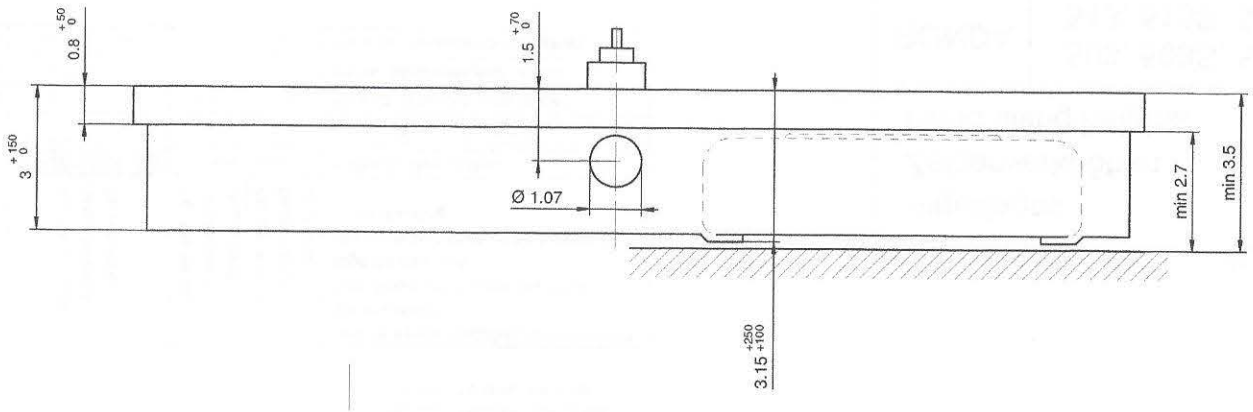
503, 503S, 505, 505S,
513, 513S, 515, 515S

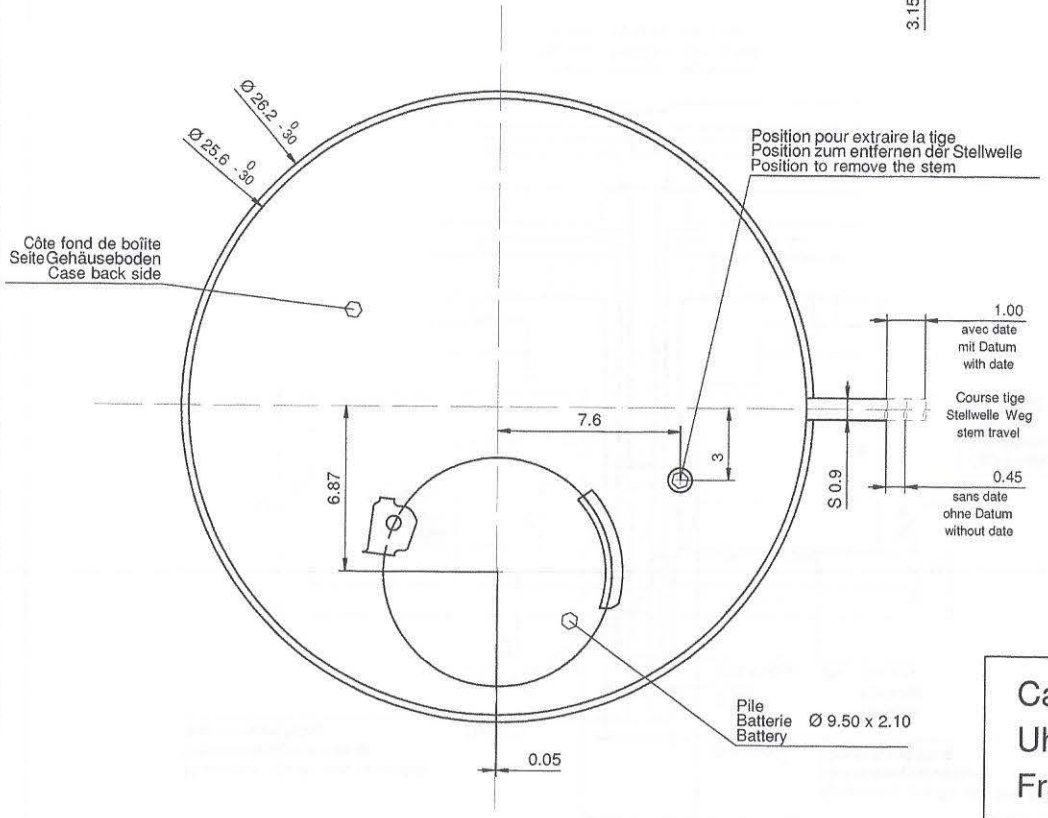
Issued	10 Mär 1999	gd
Modified	30 Aug 2012 ÄA 11646	dh
Released	Yes	
Tolerance	µm	
Scale	20 : 1 (A3H)	

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 3316.067 04

* En cas de données différentes, veuillez contacter le service après-vente * Bei abweichenden Werten, bitte technischen Kundendienst anfragen * In case of different values, please contact the customer service

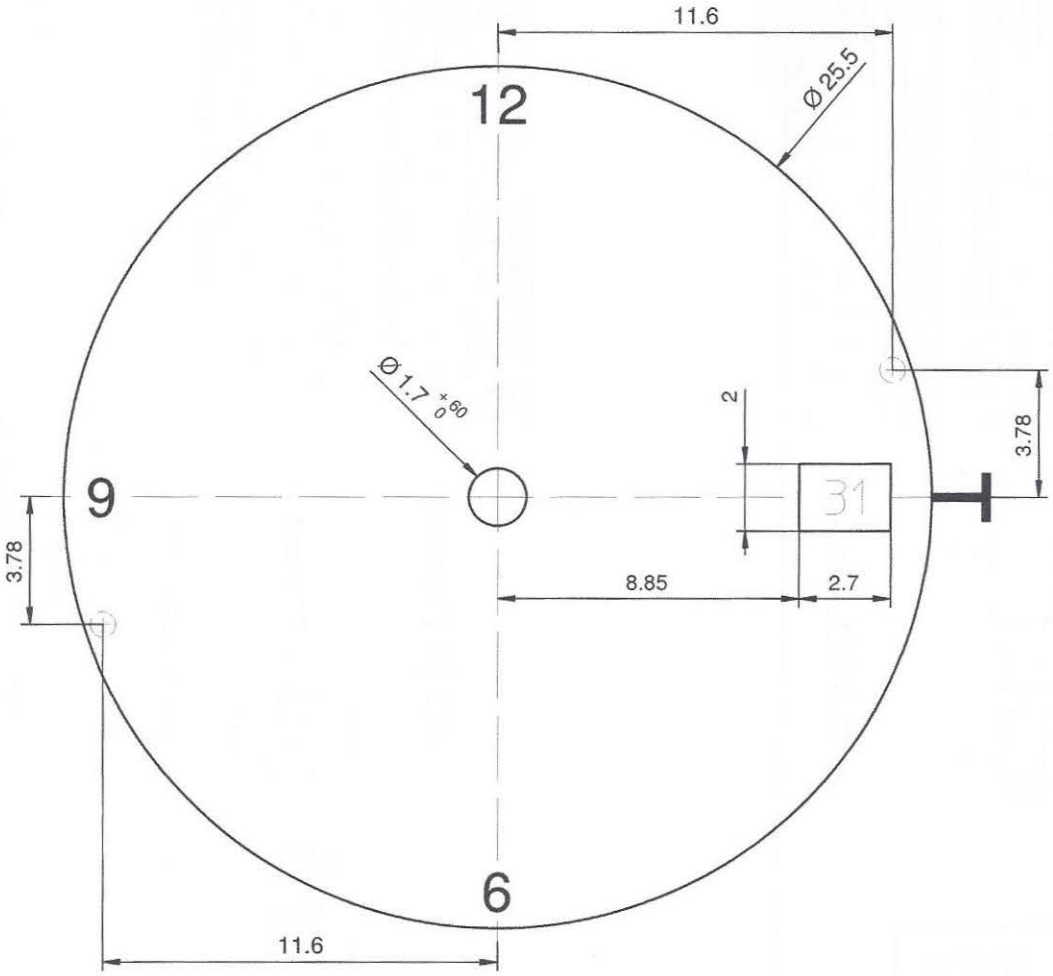


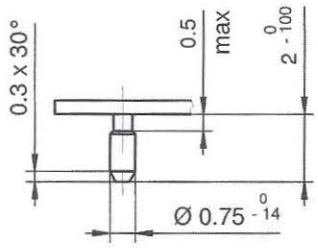


Sécurité entre aiguille seconde et verre : min 0.30 mm
Sicherheit zwischen Sekundenzeiger und Glas : min 0.30 mm
Security between second hand and glass : min 0.30 mm

Le cadran doit être maintenu en hauteur par la boîte.
Das Zifferblatt muss in der Höhe vom Gehäuse festgehalten werden.
The dial must be held in the height by the case.

Cage Uhrwerkgestell Frame	11½'''	Issued	10 Mär 1999	gd
		Modified	23 Jun 2011 ÄA 11169	dh
		Released	YES	
		Tolerance	+/- 20 µm	
		Scale	10 : 1 (5 : 1) (A3H)	
RONDA	512, 513, 513S, 515, 515S, 517, 519	Sous réserve de modifications Aenderungenvorbehalten Modificationsreserved		
		No.	5000.286	07





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	3H

Cadran
Zifferblatt
Dial

11½'''

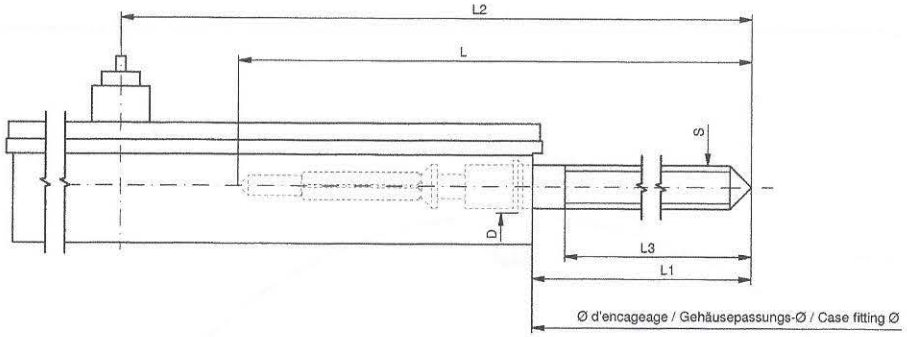
Issued	14 Dez 2006	cw
Modified	13 Aug 2012 ÄA 12806	mc
Released	YES	
Tolerance	+/- 20 µm	
Scale	5 : 1 (A4V)	

RONDA

515, 515S, 714, 715, 715Li

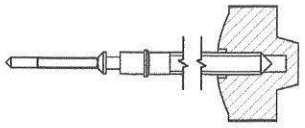
Sous réserve de modifications
Aenderungenvorbehalten
Modificationsreserved

No. 5010.417 09



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

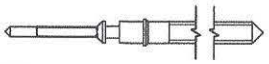
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.164.CO	20.50	9.92	22.72	11.83	0.90	1.05



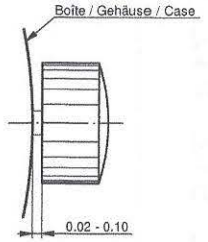
Couleur de la couronne Kronenfarbe Crown color	brun braun brown
Code	UN 8052

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

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.164	20.50	9.92	22.72	11.83	0.90	1.05
3000.171	32.50	21.92	34.72	23.83	0.90	1.05

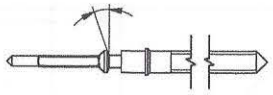


Couronne normale
Normale Krone
Normal crown



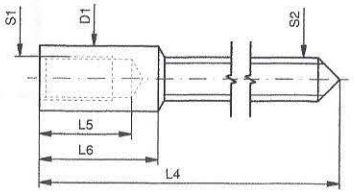
Tige (à arracher)
Stellwelle (Ausreissversion)
Stem (extractable version)

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.163	20.05	9.92	22.72	11.83	0.90	1.05
3000.196	32.50	21.92	34.72	23.83	0.90	1.05



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	2.45	0.90	0.90	1.35



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

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

RONDA

512, 513, 513S, 515, 515S, 515.24H, 515.24D, 517, 519

Issued	15 Aug 2012	ds5222
Modified	--- ÄA 11741	ds5222
Released	YES	
Tolerance	---	
Scale	10:1 (A3)	

No. 5030.002 00

6 models within **1940** grouping: 1941, 1941.BO, 1942, 1943, 1945, 1947

Tritium gas-tubes remain the same

Model	Qty	Placement	Diameter X Length	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm X 4.10 mm	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm X 6.60 mm	3.6 mCi / 0.135 GBq

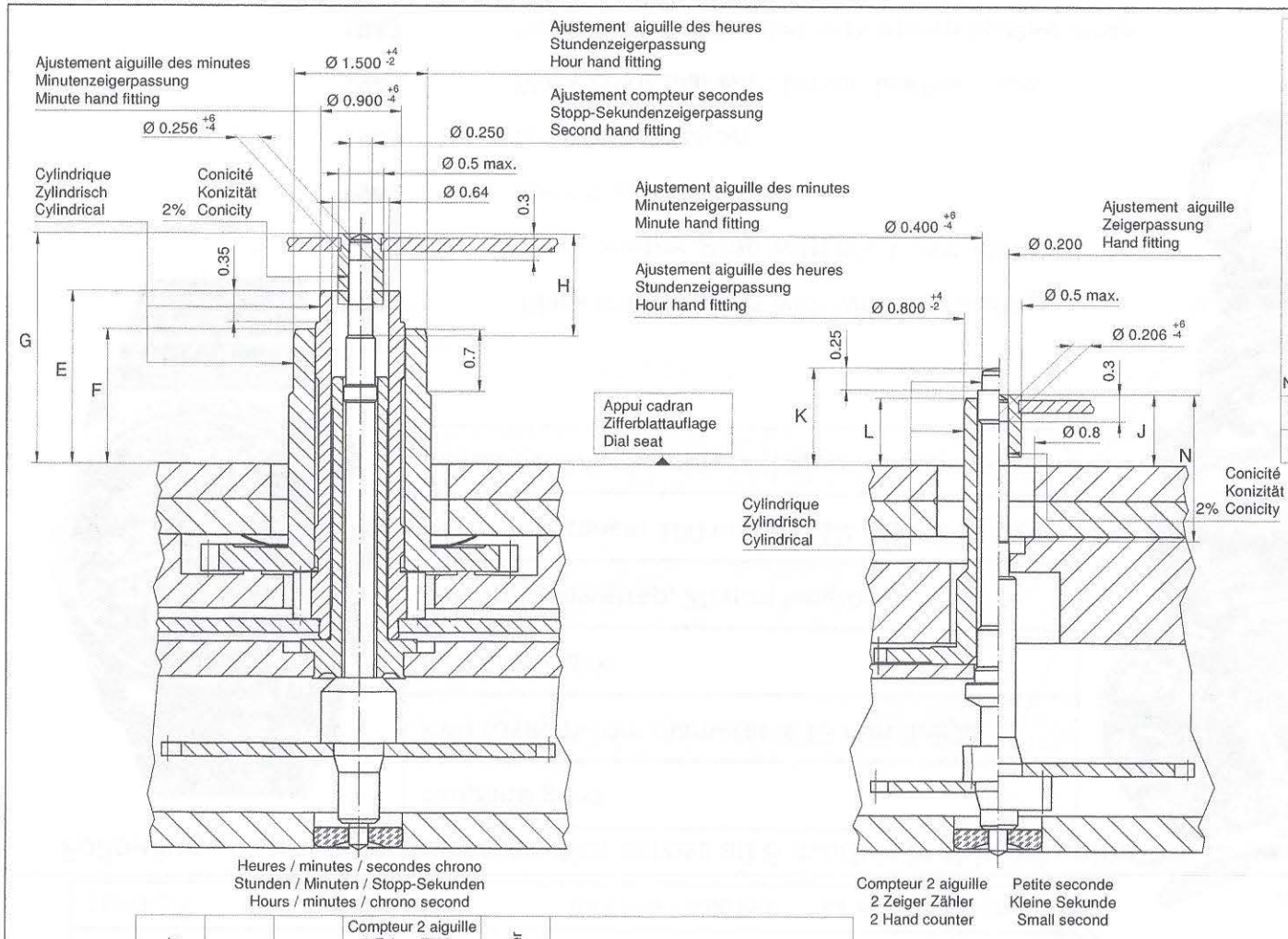
Following are uniform characteristics across all 6 models in this grouping

Sapphire glass
PVD case, 45 mm diameter X 13 mm height
PVD case-back
Polyurethane strap, 26 mm length
Water resistance: 100 meters, 10 ATM, 330 feet
Ronda 5130.D movement (blueprint attached)

Model	Variation
1941	Black leather strap with white threading
1941.BO	Black leather strap with black threading
1942	Steel bracelet
1943	Grey leather strap
1945	Black color dial with brown leather strap
1947	Ivory brown color dial with brown leather strap

Dial

Bezel



Aiguillages
Zeigerwerkhöhe
Hand fitting height

	Dépassement Höhe über Zifferblattauflage Height over dial seat							
						Compteur 2 aig. 2 Zeiger Zähler 2 Hand counter		
No	Pignon des secondes chrono Stopp-Sekundentrieb Chrono second pinion G	Chaussée Minutenrohr Cannon-pinion E	Roue des heures Stundenrad Hour wheel F	H	N	Chaussée Minutenrohr Cannon-pinion K	Roue des heures Stundenrad Hour wheel L	Petite seconde Kleine Sekunde Small second J
2	2.60	1.95	1.52	1.15	1.65	1.10	0.76	0.80
-								

Aiguillages
Zeigerwerkhöhe
Hand fitting height

	Peinture comprise / inkl. Farbe / Paint included						
	Epaisseur maximum du cadran Maximale Zifferblattdicke Maximum dial thickness						
				Compteur 2 aig. 2 Zeiger Zähler 2 Hand counter			
No	Sous l'aiguille des secondes chrono Unter Stopp-Sekundenzeiger Under chrono second hand	Sous l'aiguille des minutes Unter Minutenzeiger Under minute hand	Sous l'aiguille des heures Unter Stundenzeiger Under hour hand	Sous l'aiguille des minutes Unter Minutenzeiger Under minute hand	Sous l'aiguille des heures Unter Stundenzeiger Under hour hand	Sous l'aiguille de petite seconde Unter kleine Sekundenzeiger Under small second hand	Epaisseur des aiguilles Zeigerdicke Hands thickness
2	2.10	1.55	1.10	0.70	0.40	0.40	0.15
-							

Lors de la pose d'aiguilles, le mouvement doit être soutenu.
Beim Zeigersetzen muss das Werk abgestützt werden.
The movement needs to be supported for hand setting.

		Aig. des sec. chrono Stopp-Sekundenzeiger Chrono second hand	Aig. des minutes Minutenzeiger Minute hand	Aig. des heures Stundenzeiger Hour hand	Compteur 2 aiguille 2 Zeiger Zähler 2 Hand counter: Aig. des minutes Minutenzeiger Minute hand	Compteur 2 aiguille 2 Zeiger Zähler 2 Hand counter: Aig. des heures Stundenzeiger Hour hand	Aig. petite secondes Kleine Sekundenzeiger Small second hand	
mg	max.	10	30	30	10	10	10	Masse / Masse / Weight *
µNm	max.	0.06	0.80	0.80	0.03	0.03	0.07	Balourd / Unwucht / Unbalance *
gmm²	max.	1.0	-	-	1.0	-	0.4	Inertie / Massenträgheit / Inertia *
N	max.	30	40	40	30	30	30	Force de chassage / Aufpresskraft / Force

Aiguillages
Zeigerwerkhöhe 12½'''
Hand fitting heights

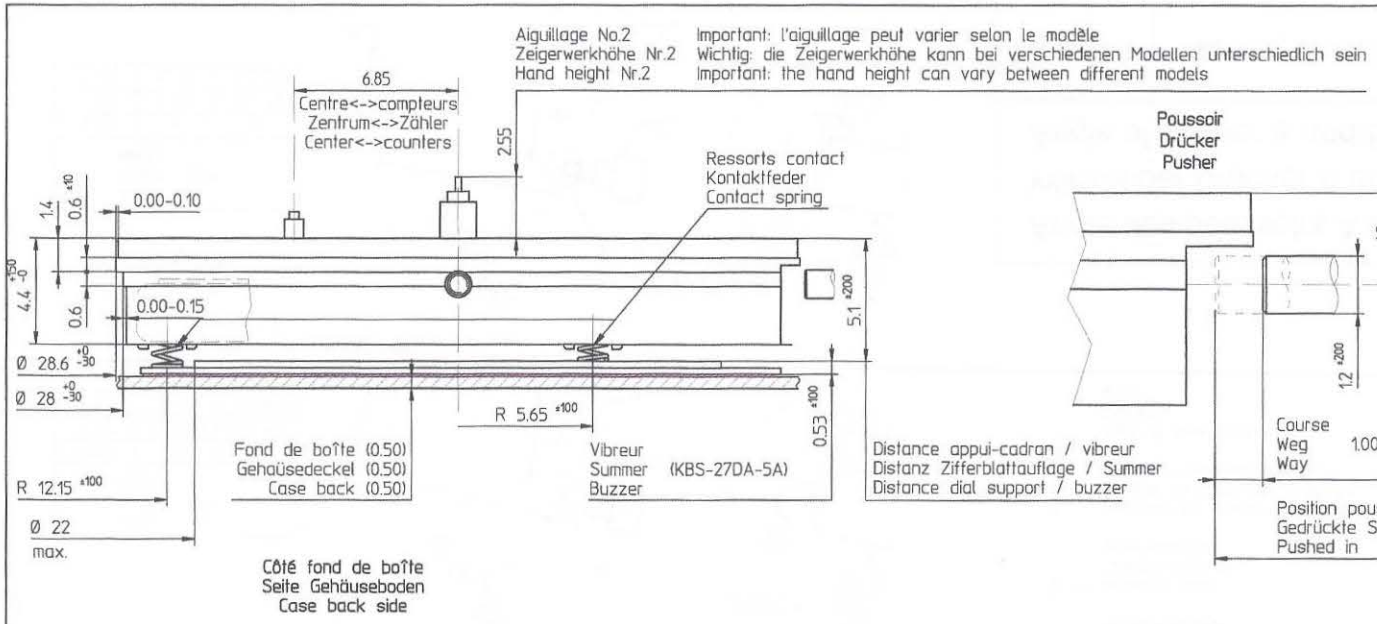
Issued	14 Nov 2003	mk	
Modified	15 Okt 2014 ÄA 13275	dh	
Released	Yes		
Tolerance	µm		
Scale	20 : 1 (A3H)		

RONDA | 5020.B, 5130.D, 5130.B

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 3316.081 | 07

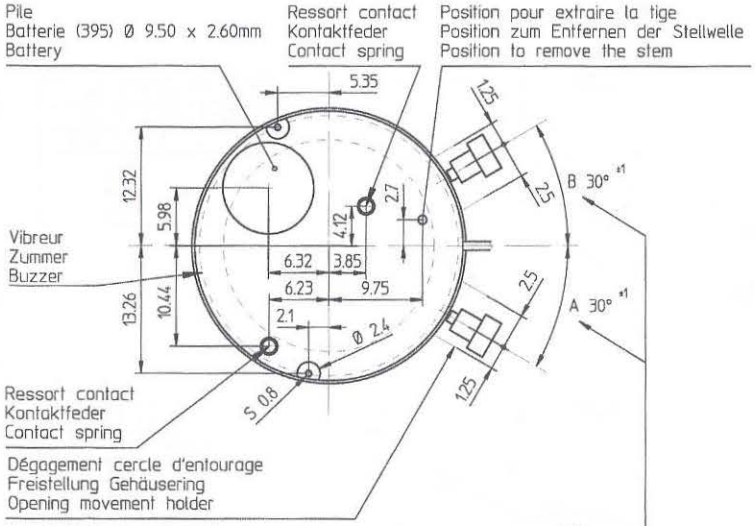
* En cas de données différentes, veuillez contacter le service après-vente
* Bei abweichenden Werten, bitte technischen Kundendienst anfragen
* In case of different values, please contact the customer service



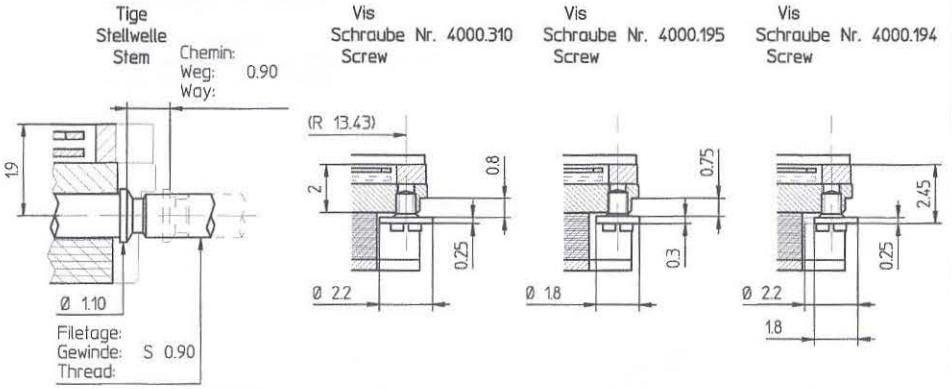
Sécurité entre l'aiguille des secondes et le verre:
Sicherheit zwischen Sekundenzeiger und Glas: 0.30mm
Security between second hand and glass:

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.



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
Uhrwerkgestell
Frame

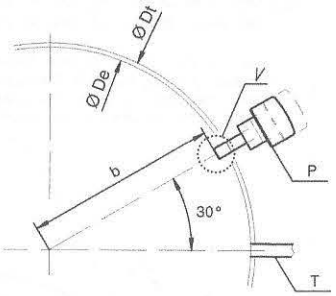
12½'''

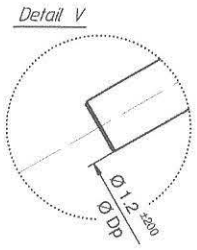
RONDA | 5130.B, 5130.D

Issued	16 Jan 2006	mg
Modified	20 Sep 2010 ÄA 8621	dh
Released	YES	
Tolerance	+/- 20 µm	
Scale	10 : 1 (5 : 1) (A3H)	

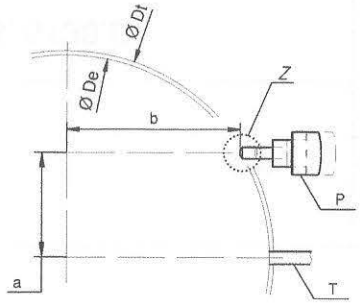
No. 5000.355 04

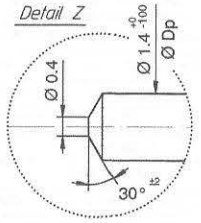
Angle Winkel Angle 30°	
Ø Dp	b
1.00	13.50
1.10	13.50
1.20	13.50
1.30	13.50
1.40	13.50



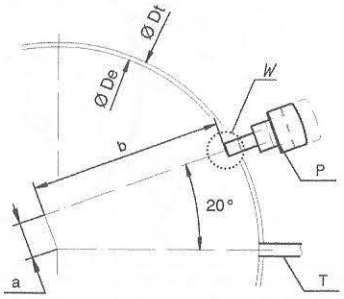


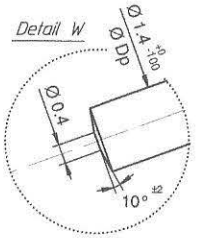
Angle Winkel Angle 0°		
Ø Dp	a	b
1.30	7.40	11.43
1.40	7.45	11.40



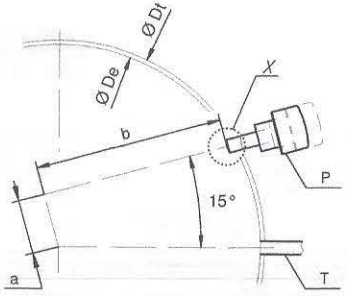


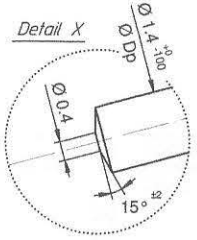
Angle Winkel Angle 20°		
Ø Dp	a	b
1.30	2.57	13.22
1.40	2.59	13.21



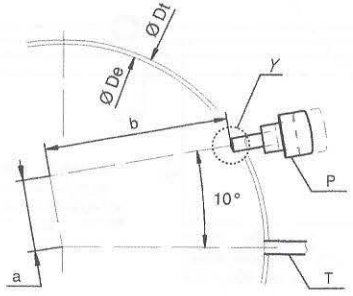


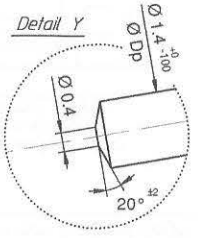
Angle Winkel Angle 15°		
Ø Dp	a	b
1.30	3.83	12.92
1.40	3.86	12.91





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

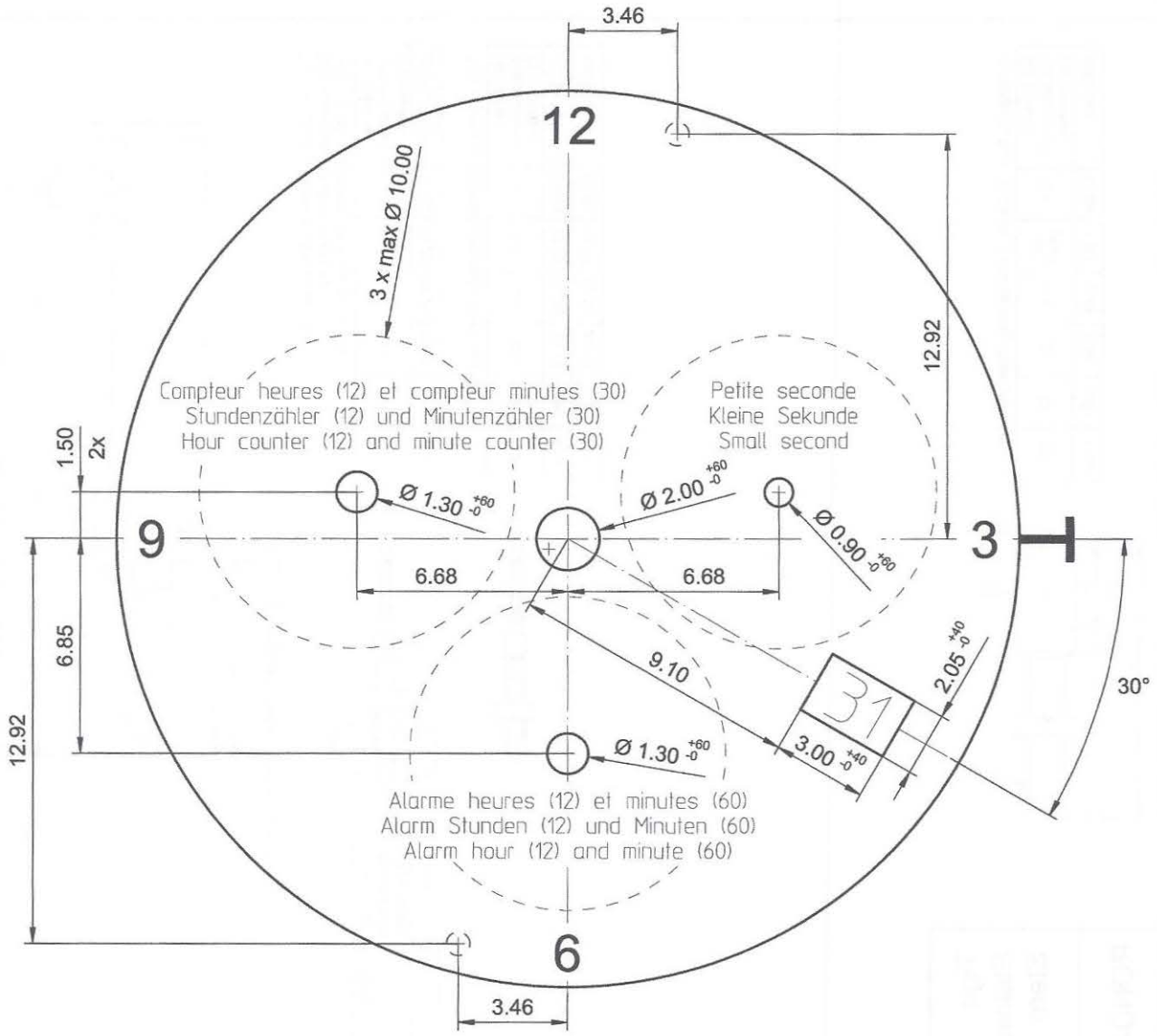
T: tige de mise à l'heure
Stellwelle
stem

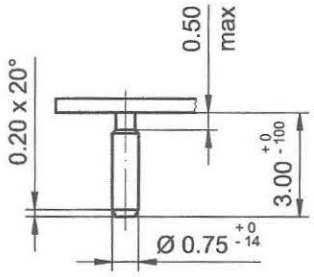
Angle des poussoirs A et B
Winkel der Drücker A und B
Angle of pusher A and B

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)	

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	4H

Cadran
Zifferblatt
Dial

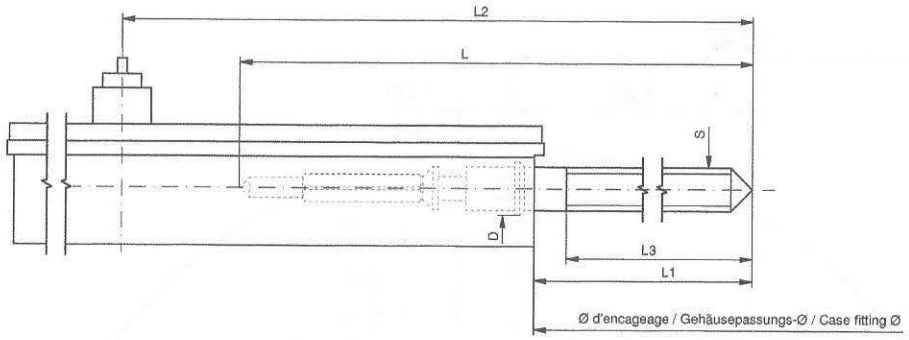
12½‴

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

RONDA | 5130.D

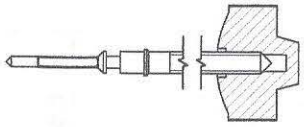
Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 5010.618 01



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

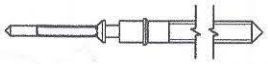
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.177.CO	20.00	10.23	24.23	10.15	0.90	1.10



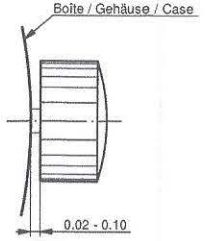
Couleur de la couronne Kronenfarbe Crown color	bleu foncé dunkelblau dark blue
Code	UN 5002

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



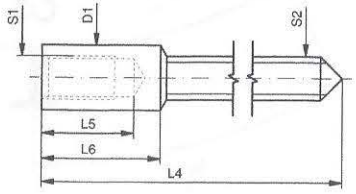
Couronne normale
Normale Krone
Normal crown



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	2.45	0.90	0.90	1.35



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

RONDA

5010.B, 5020.B, 5021.D, 5030.D,
5040.B, 5040.D, 5040.E, 5040.F,
5050.B, 5050.C, 5051.C, 5130.B, 5130.D

Issued	05 Sep 2012	ds5222
Modified	--- ÄA 11741	ds5222
Released	YES	
Tolerance	---	
Scale	10:1 (A3)	

No.	5030.019	00

6 models within **1920** grouping: 1921, 1921.BO, 1922, 1923, 1925, 1927

Tritium gas-tubes remain the same

Model	Qty	Placement	Diameter X Length	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm X 4.10 mm	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm X 6.60 mm	3.6 mCi / 0.135 GBq

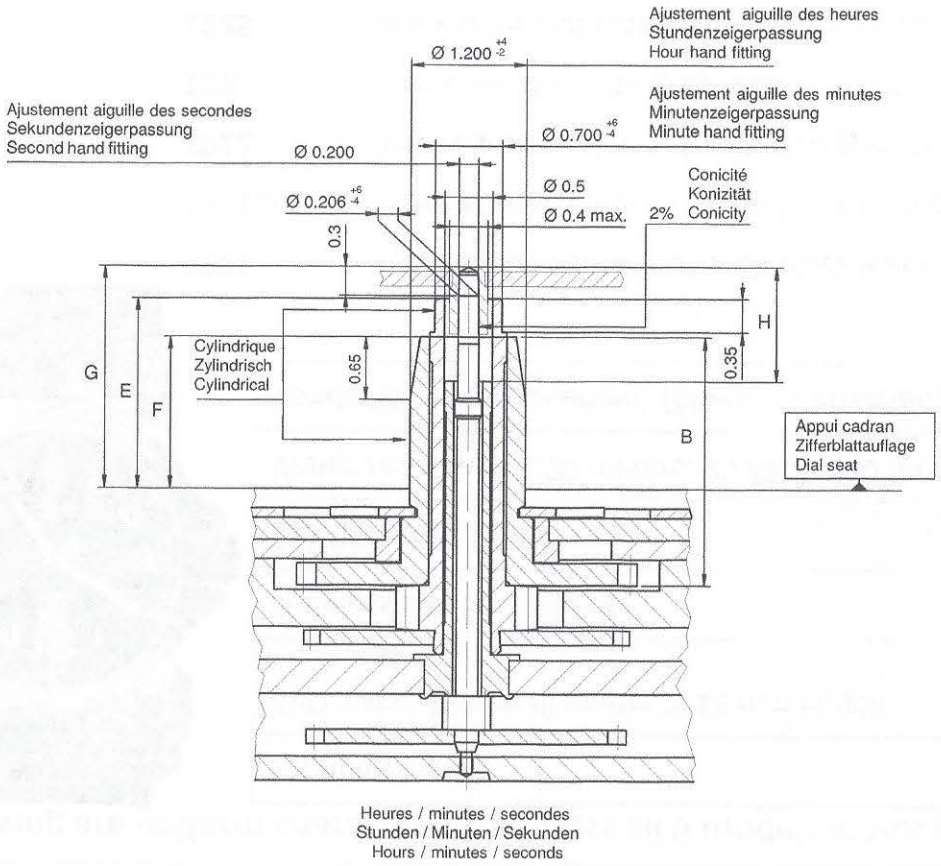
Following are uniform characteristics across all 6 models in this grouping

Sapphire glass
PVD case, 45 mm diameter X 13 mm height
Stainless steel case-back
Leather strap, 26mm
Water resistance: 200 meters, 20 ATM, 660 feet
Ronda 517 HH6 movement (blueprint attached)

Model	Variation
1921	Black carbon color dial with black leather strap
1921.BO	Black carbon color dial with black leather strap
1922	Black carbon color dial with PVD gun strap
1923	Blue color dial with grey leather strap
1925	Black color dial with brown leather strap
1927	Ivory brown color dial with brown leather strap

Dial

Bezel



Aiguillage no Zeigerwerkhöhe Nr. Hand fitting height No	Dépassement Höhe über Zifferblattauflage Height over dial seat			Longueur Länge Length		Epaisseur max. (peinture comprise) Max. Dicke (inkl. Farbe) Max. thickness (paint included)			
						Cadran Zifferblatt Dial			Aiguilles Zeiger Hands
	Pignon des secondes Sekundentrieb Second pinion	Chaussée Minutenrohr Cannon-pinion	Roue des heures Stundenrad Hour wheel		Roue des heures Stundenrad Hour wheel	Sous l'aiguille des secondes Unter Sekundenzeiger Under second hand	Sous l'aiguille des minutes Unter Minutenzeiger Under minute hand	Sous l'aiguille des heures Unter Stundenzeiger Under hour hand	
	G	E	F	H	B				
6	2.31	1.98	1.58	1.19	2.58	1.80	1.55	0.40	0.15

	Aig. des secondes Sekundenzeiger Second hand	Aig. des minutes Minutenzeiger Minute hand	Aig. des heures Stundenzeiger Hour hand	Lors de la pose d'aiguilles, le mouvement doit être soutenu. Beim Zeigersetzen muss das Werk abgestützt werden. The movement needs to be supported for hand setting.
mg max.	10	30	30	Masse / Masse / Weight *
µNm max.	0.08	0.70	0.70	Balourd / Unwucht / Unbalance *
gmm² max.	0.4	-	-	Inertie / Massenträgheit / Inertia *
N max.	30	40	40	Force de chassage / Aufpresskraft / Force

Sous réserve de toutes modifications Aenderungen vorbehalten All modifications reserved

Aiguillages
Zeigerwerkhöhen
Hand fitting heights

10½‴, 11½‴

RONDA

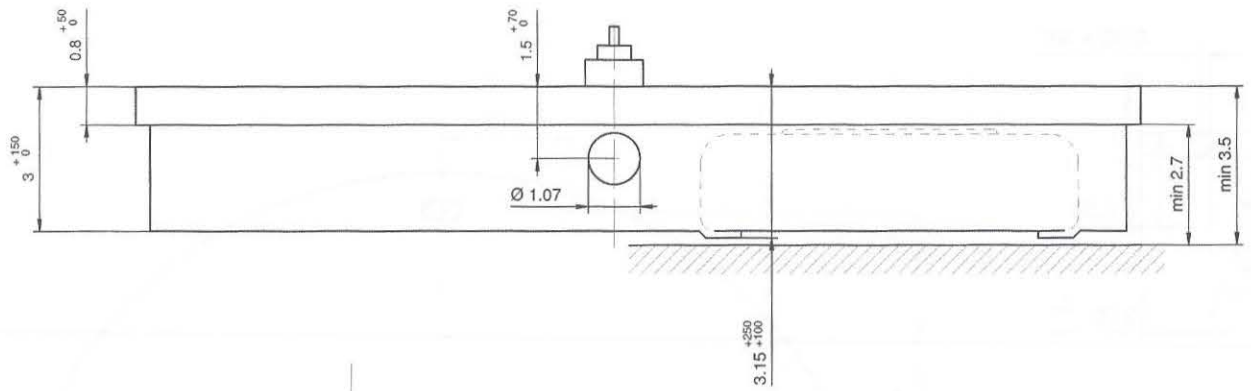
507, 509, 517, 519
505.24D, 515.24D

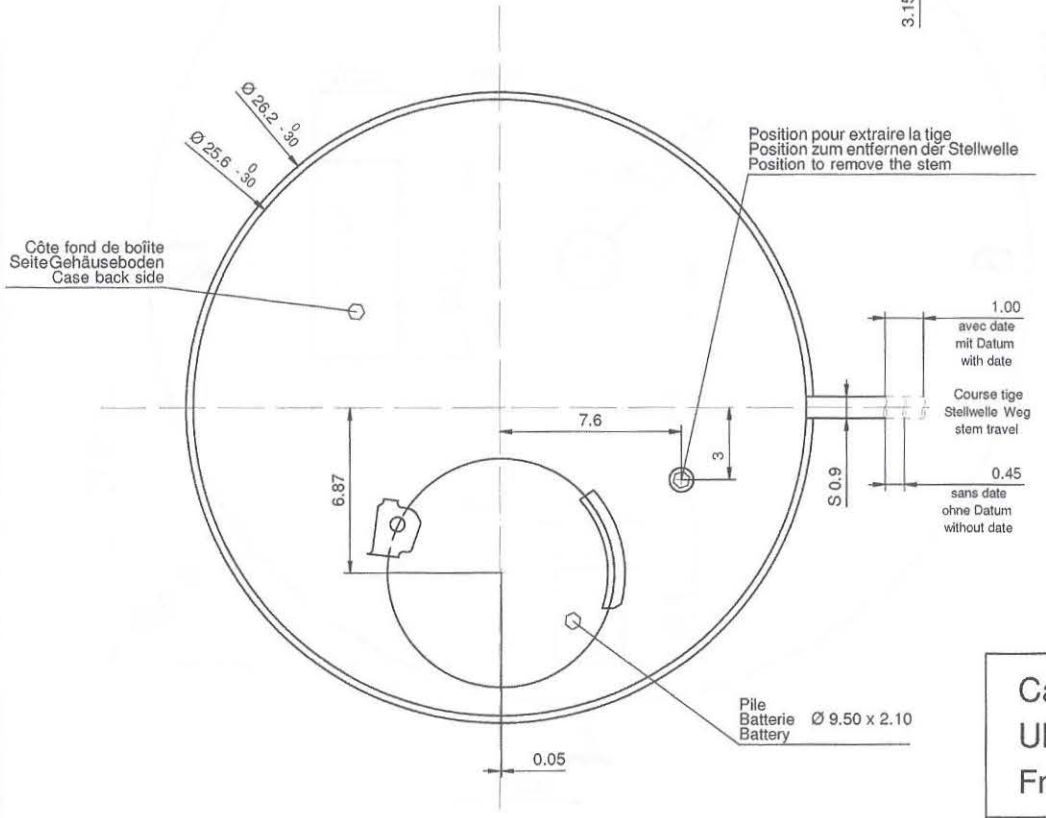
Issued	23 Mai 2011	dh
Modified	24 Mai 2011 ÄA 11034	dh
Released	Yes	
Tolerance	µm	
Scale	20 : 1 (A3H)	

Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 3316.157 00

* En cas de données différentes, veuillez contacter le service après-vente * Bei abweichenden Werten, bitte technischen Kundendienst anfragen * In case of different values, please contact the customer service

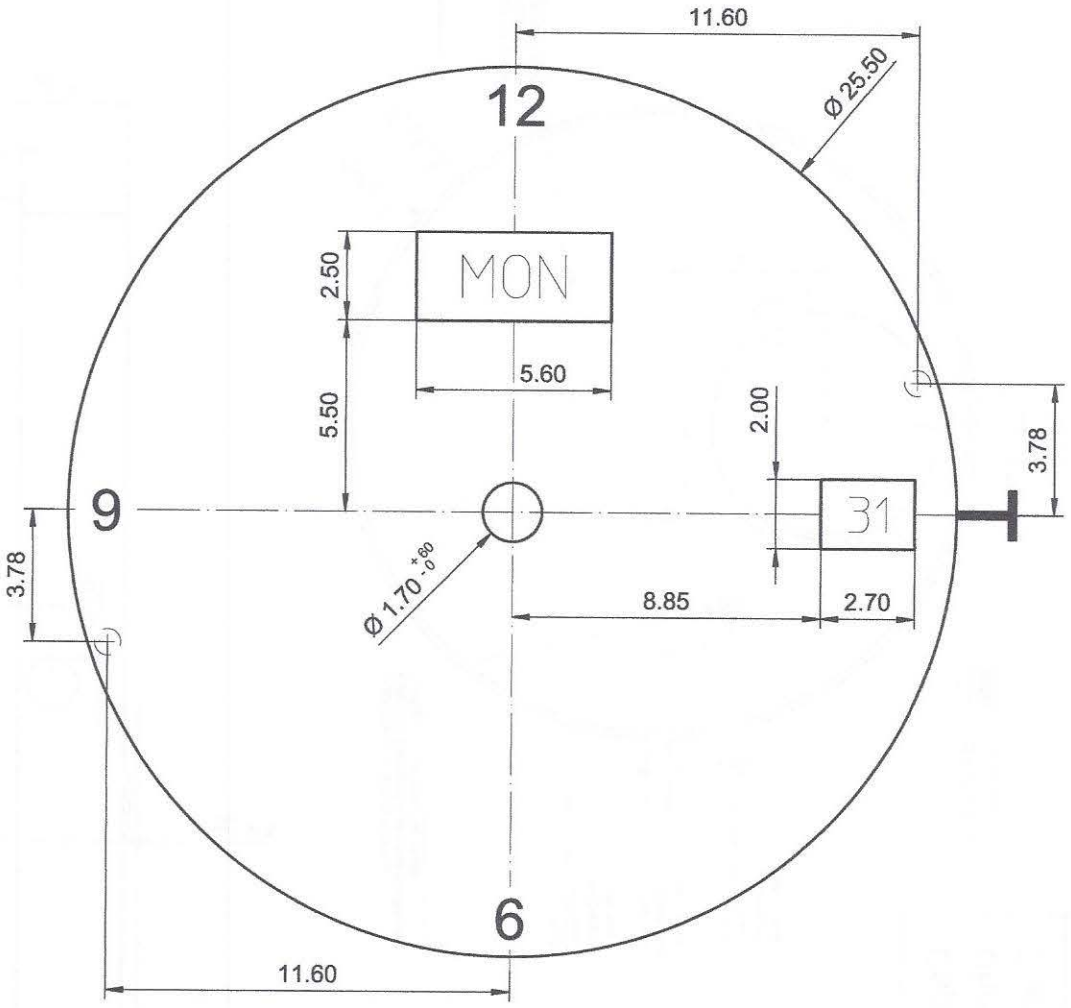


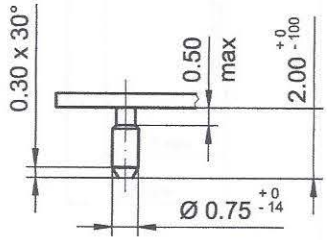


Sécurité entre aiguille seconde et verre : min 0.30 mm
Sicherheit zwischen Sekundenzeiger und Glas : min 0.30 mm
Security between second hand and glass : min 0.30 mm

Le cadran doit être maintenu en hauteur par la boîte.
Das Zifferblatt muss in der Höhe vom Gehäuse festgehalten werden.
The dial must be held in the height by the case.

Cage Uhrwerkgestell Frame	11½'''	Issued	10 Mär 1999	gd
		Modified	23 Jun 2011 ÄA 11169	dh
		Released	YES	
		Tolerance	+/- 20 µm	
		Scale	10 : 1 (5 : 1) (A3H)	
RONDA	512, 513, 513S, 515, 515S, 517, 519	Sous réserve de modifications Aenderungenvorbehalten Modificationsreserved		
		No.	5000.286	07





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

Tige	Date	Jour
Stellw.	Datum	Tag
Stem	Date	Day
3H	3H	12H

Cadran
Zifferblatt
Dial

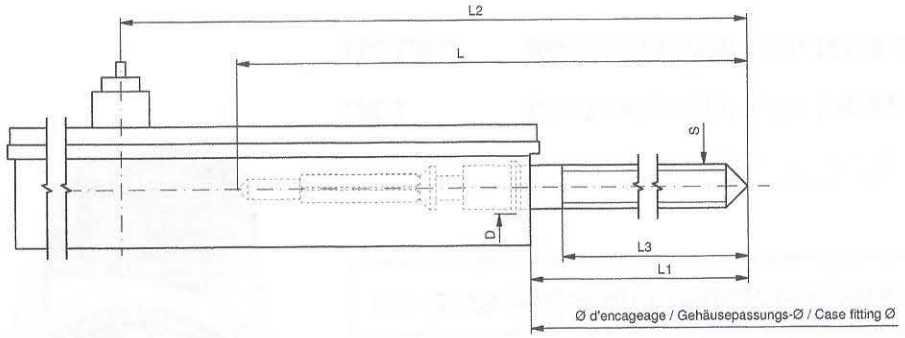
11½'''

Issued	14 Dez 2006	cw
Modified	15.Dez.2006 ÄA ----	cw
Released	YES	
Tolerance	+/- 20 µm	
Scale	5 : 1 (A4V)	

RONDA | 517

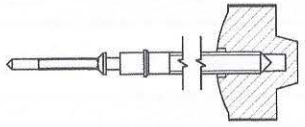
Sous réserve de modifications
Aenderungen vorbehalten
Modifications reserved

No. 5010.556 01



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

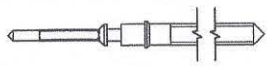
No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.164.CO	20.50	9.92	22.72	11.83	0.90	1.05



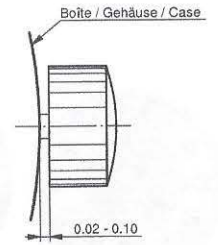
Couleur de la couronne Kronenfarbe Crown color	brun braun brown
Code	UN 8052

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

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.164	20.50	9.92	22.72	11.83	0.90	1.05
3000.171	32.50	21.92	34.72	23.83	0.90	1.05



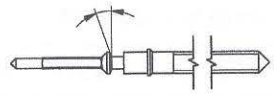
Couronne normale
Normale Krone
Normal crown



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

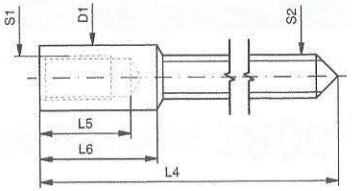
Tige (à arracher)
Stellwelle (Ausreissversion)
Stem (extractable version)

No. d'article Artikelnummer Part number	L	L1	L2	L3	S	D
3000.163	20.05	9.92	22.72	11.83	0.90	1.05
3000.196	32.50	21.92	34.72	23.83	0.90	1.05



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	2.45	0.90	0.90	1.35



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

RONDA

512, 513, 513S, 515, 515S,
515.24H, 515.24D, 517, 519

Issued	15 Aug 2012	ds5222
Modified	--- ÄA 11741	ds5222
Released	YES	
Tolerance	---	
Scale	10:1 (A3)	

No. 5030.002 00

2 models within **1800** grouping: 1801, 1801.BO

Tritium gas-tubes remain the same

Model	Qty	Placement	Diameter X Length	Activity
T6080-1/III	1	12 o'clock marker	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6080-1/I	11	1-11 o'clock markers	0.50 mm X 1.95 mm	1.2 mCi / 0.045 GBq
T6042-1/I	1	Hour hand	0.65 mm X 4.10 mm	2.2 mCi / 0.08 GBq
T6043-1/I	1	Minute hand	0.65 mm X 6.60 mm	3.6 mCi / 0.135 GBq

Following are uniform characteristics across both models in this grouping

Sapphire glass
Stainless steel case, 43 mm diameter X 13.3 mm height
Stainless steel case-back
Black leather strap, 23 mm length
Water resistance: 100 meters, 10 ATM, 330 feet
Total product weight 91 grams
ETA 2878 movement (illustration attached)

Dial

Bezel

Model	Variation
1801	Black color dial with brown leather strap
1801.BO	Black color dial with black leather strap

Reference Docket No. 030-38784
PLUS, LLC Distribution License Application Clarification

Section 3 –

Describe the method of containment or binding of the byproducts material that will meet the requirements. Specifically, how the individual glass tritium tube is bonded in the product and how this binding method contributes to the overall safety of the handling/use of the timepiece(s).

Reference Docket No. 030-38784
PLUS, LLC Distribution License Application Clarification

Mb-Microtec has been manufacturing GTLS devices for watches since 1969. They manufacture the GTLS for a number of different watch companies including their own brand Traser that are currently marketed and distributed in the United States market. They are the only company on the market today that is capable of manufacturing these barely visible glass tubes and filling them with tritium, thanks to their special know-how for working with glass cylinders of this size. Therefore, MB-Microtec is claimed to be the sole supplier to any and all watch brands who use tritium gas tubes for their watches.

The radioactivity of tritium is so weak that it can be stopped by a 5mm-thick plexiglass. If a wearer consumed all the tritium in their watch at once, that would account for the same amount of radioactivity (40 mSv, i.e., 40 microsievert) as they would be exposed to when flying from New York to Los Angeles. In other words, 40 microsievert is 1/45th of the average annual background radiation that the average person is exposed to each year.

The final step in the manufacturing process of the GTLS at the Mb-Microtec lab involves the workers cutting long strips of filled glass tubes down individually, using a small torch which melts the glass and, as such, immediately seals the tube as well, locking the gas inside. While it is difficult to detect any leakage from the tubes using standard radiological measuring instruments due to the extremely low energy of the emitted Beta particle, the tubes can best be inspected visually for leakage. If the tube 'glows' the tritium is contained inside. The GTLS are sealed by the melted glass ends at either side and contain the gaseous tritium inside.

Because the watch is intended to be worn on the wrist, it is not normally expected to encounter any conditions more severe than those to which a human arm is subjected to such as temperature, shock, chemical etc. The watch is manufactured and marketed as an extremely durable and rugged piece of equipment. The main housing is constructed of sturdy steel backing plates and a 1.2mm thick cover made of mineral glass in most models and sapphire glass in some models. Sapphire and mineral glass are both tested by dropping a 2.25 ounce (approx. 63 grams) steel ball on a representative crystal from varying heights until the crystal breaks and the total amount of energy needed to break the glass can be calculated. The mineral glass absorbs 1600 to 2100x10^- 4 Newton-Meters, while sapphire glass absorbs 800 to 1800x10^-4 Newton-Meters. The glass is break resistant, measuring very high at 9 on the Mohs scale (hardness), a rating measure of the relative hardness of various materials. Underneath the glass cover, the GTLS are attached using the glue described in section 3 and contained between these two sturdy components. The watches are marketed and tested to remain waterproof to

a depth of 100-200 meters (145-290 psi). The watches are subject to a factory QA verification program that includes dropping the watch from a height of three feet onto a steel plate. No cracking of face, damage to watch operating functions or dislodgment of GTLS is acceptable in this testing process.

The GTLS are glued to the watch itself using a special glue manufactured by **Loctite**. This glue is specially formulated for the characteristic of bonding to glass. The specifications related to the glue itself are included in section 3 of this correspondence (refer to the next page).

PLUS, LLC inspects each batch of arriving watches in accordance with submitted Quality Assurance plan for:

- All GTLS are in assigned location. (Glued Securely)
- All GTLS exhibit no leakage (All GTLS glow brightly indicating that gaseous tritium is contained)

LOCTITE®

Product 350

August 2003

PRODUCT DESCRIPTION

LOCTITE® Adhesive/Sealant 350 provides the following product characteristics:

Technology	Acrylic
Chemical Type	Modified acrylic
Appearance (uncured)	Transparent dark amber liquid[LMS]
Components	One component - requires no mixing
Viscosity	Medium
Cure	Ultraviolet (UV) Light
Application	Bonding, Encapsulating or Sealing
Operating Temperature	-54°C to +150°C

Product 350 is is a medium viscosity adhesive that forms tough, flexible bonds with excellent adhesion to glass, metal and certain thermoplastic substrates. Strength retention is excellent when exposed to water or humidity. The product has a long open working time, making it applicable for screen printing operations.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25°C	1.01
Flash Point (TCC), °C	>93
Viscosity @ 25°C, mPa·s:	
Brookfield RVT:	
Spindle 5 @ 20 rpm	3,500 to 6,000[LMS]

TYPICAL CURING PERFORMANCE

Cure rate and ultimate depth of cure depend on light intensity, spectral distribution of the light source, exposure time and light transmittance of the substrate through which the light must pass

Fixture Time

UV Fixture Time vs source intensity

UV Fixture Time, seconds:	
UV Light Source Intensities:	
6 mW/cm² @ 365 nm	15
12 mW/cm² @ 365 nm	10
100 mW/cm² @ 365 nm	5

UV Fixture Time on glass microscope slides, 0 gap

UV Fixture Time, seconds:	
UV Light Source Intensities:	
6 mW/cm² @ 365 nm	≤20[LMS]

Full Cure Time (approximate)

UV Cure Time vs source intensity

UV Light Source Intensities:	
6 mW/cm² @ 365 nm	90
12 mW/cm² @ 365 nm	60
100 mW/cm² @ 365 nm	30

Note:
Surface can be cured tack free with 60 mW/cm² or greater intensity

PERFORMANCE OF CURED MATERIAL

Adhesive Properties:

Shear Strength, ASTM D 1151, N/mm² :

ABS to glass:	
RT control	4.97
Aged for 30 days in 95% RH at 35°C	4.48
PVC to glass:	
RT control	5.34
Aged for 30 days in 95% RH at 35°C	4.97
Polycarbonate to glass:	
RT control	5.38
Aged for 30 days in 95% RH at 35°C	5.10
Polystyrene to glass:	
RT control	1.38
Aged for 30 days in 95% RH at 35°C	1.52
Acrylic to glass:	
RT control	5.07
Aged for 30 days in 95% RH at 35°C	2.48
Polyester glass to glass:	
RT control	5.28
Aged for 30 days in 95% RH at 35°C	4.28
Epoxyglass to glass:	
RT control	4.83
Aged for 30 days in 95% RH at 35°C	4.32

Cured @ 6 mW/cm² @ 365nm for 3 minutes.

Adhesive Properties:

Torsional Shear Strength, N.m:

Aluminum Hex Button to Glass:

≥61.00[LMS]

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Material Safety Data Sheet (MSDS).

Where aqueous washing systems are used to clean the surfaces before bonding, it is important to check for compatibility of the washing solution with the adhesive. In some cases these aqueous washes can affect the cure and performance of the adhesive.

This product is not normally recommended for the use on plastics (particularly thermoplastic materials where stress cracking of the plastic could result). Users are recommended to confirm compatibility of the product with such substrates.

Directions for use

For best strength and aging properties, bonding surfaces should be clean and dry. When cured under low intensity light, excess adhesive will remain uncured and can be removed with a chlorinated solvent wipe.

Coverage:

@ 0.127mm bondline - 78.7cm² /ml
@ 0.254mm bondline - 39.4cm² /ml

Loctite Material Specification[LMS]
LMS dated June 1, 1999. Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Loctite Quality.

Storage
Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.
Products shall be maintained at temperatures between 8°C to 28°C unless otherwise labeled, or, specified. Storage, at temperatures below 8°C, or greater than 28°C, is not recommended. Temperatures below 8°C and above 28°C can adversely affect product properties
Material removed from containers may be contaminated during use. Do not return product to the original container. Loctite cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions
(°C x 1.8) +32 = °F
kV/mm x 25.4 = V/mil
mm x 0.039 = inches
mPas = cP
N/mm^2 x 145 = psi
N x 0.225 = lbs

Note
The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Loctite Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Loctite Corporation's products. Henkel Loctite Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Loctite Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage
LOCTITE is a Trademark of Henkel Loctite

Reference 0.0

Section 4

Submit a proposed label for the container (e.g. drawing, imaging) that includes byproduct information).

Reference Docket No. 030-38784
PLUS, LLC Distribution License Application Clarification

As required in the regulation 10 CFR 32.14.b.6

The proposed method of labeling or marking each unit, except timepieces or hands or dials containing tritium or promethium-147, and its container with the identification of the manufacturer or initial transferor of the product and the byproduct material in the product;

(Underline emphasis added)

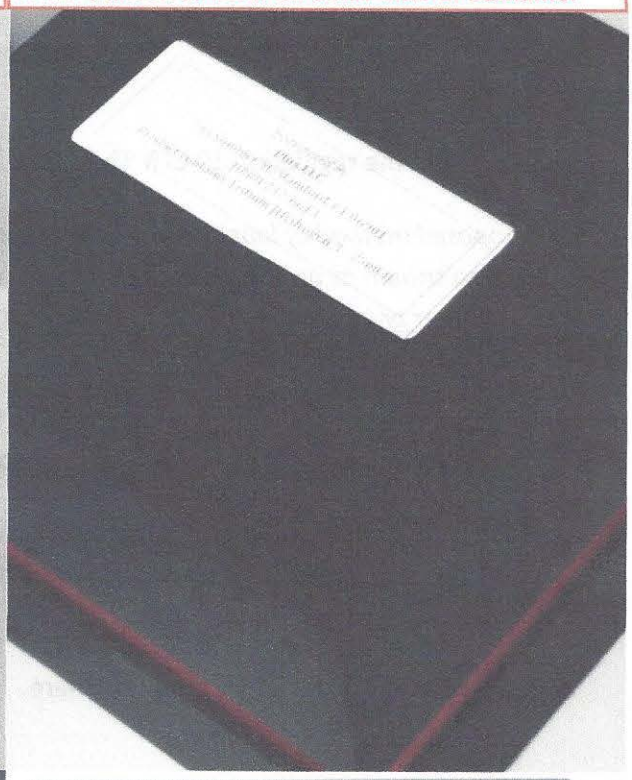
It is the intention of PLUS, LLC to label each watch delivered to end consumer with:

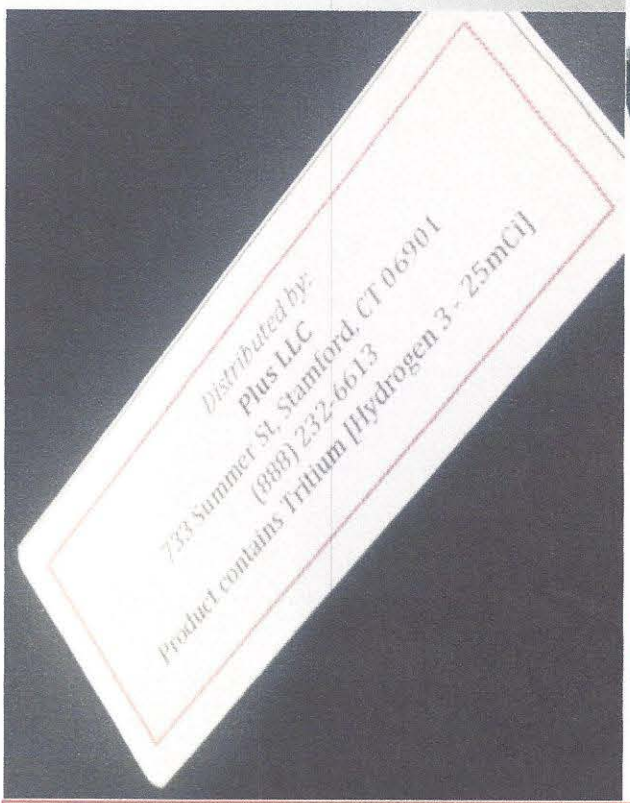
1. Contact information for PLUS, LLC
2. Isotope (Byproduct Material) included in the package.
3. Total activity of the included isotope.

A copy of the proposed label is attached here.

Manufacturer brand on one side of container

Initial transferor label on other side of container





Details of initial transfer included in label

Timepiece secured within container

I believe I have addressed all concerns and requests for additional information related to this application for exempt material distribution license in accordance with:

- NUREG 1556 Volume 3 - Applications for Sealed Source and Device Evaluation and Registration
- NUREG 1556 Volume 8 – Program-Specific Guidance About Exempt Distribution Licenses
- NUREG 1556 Volume 12 Program-Specific Guidance About Possession Licenses for Manufacturing
- and Distribution
- 10 CFR 30 - Rules Of General Applicability To Domestic Licensing Of Byproduct Material

If you require any additional information or clarification please contact me directly and I will correct immediately. I appreciate your patience and your assistance in working with me in the pursuit of this application. Your assistance and guidance has been invaluable.

Sincerely,

Danny Evans – CHP
sss@simplesmartsafety.com
203-906-8047

FROM:
PLUS LLC
(212) 380-1561
733 SUMMER STREET
STAMFORD CT 06901

1 LBS 1 OF 1

MD 201 9-83

UPS NEXT DAY AIR 1
TRACKING #: 1Z 2V3 758 01 5524 0525

SHIP TO:
SHIRLEY XU
MAILSTOP: T8E18
OFFICE OF NMSS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON DC 20555

30/Jul/2015 08:37 2019

IP
1:

US NUCLEAR REGULATOR
11555 ROCKVILLE PIKE
ROCKVILLE MD 20852 2739

MD 207 9-78

1Z2V37580155240525

BILLING: P/P

WS 16.0.30 Foxit Reader 66.0A 07/2015

US NUCLEAR REGULATOR
11555 ROCKVILLE PIKE
ROCKVILLE MD 20852

P: SEVEN S: ORANGE I: CLK

NIB-NIB

1Z2V3758015524 0525

TLL1NNH MDLDC293 Jul 30 08:37:16 2015
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P:<P> S:<S> I:<I>

No PFT Data

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DEVICE: XLE02 Jul 31 03:45:02 2015
HIP 1.13 SATO 8485 US

US NUCLEAR REGULATOR
11555 ROCKVILLE PIKE
ROCKVILLE MD 20852

P: SEVEN S: ORANGE I: CLK

NIB-NIB

58015524 0525
MDLDC293 Jul 30 08:37:17 2015
HIP 15.9.3 LP2844