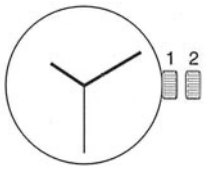
CALIBRE
1310
29 Q SCS CALD CORR CORH CORS STS 8 jewels
Folder 1 - Replacement of power cell

ø 29.00 mm	
Movement height	6.35 mm
Jewel number Frequency	8 32'768 A/h

IMPORTANT
To be observed strictly

The watch must in no case be demagnetized.

In order not to disturb the proper functioning of the watch the electronic module (fig. 1.1) must not be touched with the fingers.

The new power cell should be manipulated by means of tweezers with insulated tips (fig. 2.1).

Electronic module fig 1.1

EQUIPMENT

Insulated tweezers.

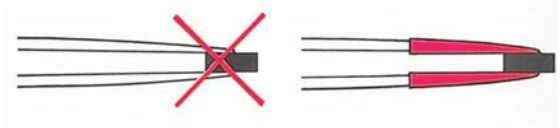


fig 2.1

REPLACEMENT OF POWER CELL

1.1. Open the case.

1.2. Remove and clean the back.

1.3. Remove magnetic protection.

1.4. Remove power cell bridle No. 1310.9179 by unscrewing its screw.

1.5. Remove by suction any possible metal waste caused by the screw of the power cell bridle.

1.6. Remove faulty power cell by turning the watch over.

1.7. Check cleanliness of the two power cell contacts. If necessary, clean them. If the contacts are oxidized, it is necessary in the case of :

the power cell bridle (positive pole): to replace the bridle No 1310.9179.

the lower power cell contact (negative pole): to clean carefully the bridle by means of a buff.

1.8. Check new power cell. Even if minute leakages are apparent, it should not be used. Place power cell No 9903 in position, positive pole (+) uppermost (fig. 3.1).

1.9. Refit power cell bridle and screw thoroughly.

1.10. Fit magnetic protection.

1.11. Grease water-resistance gasket. Close the case.

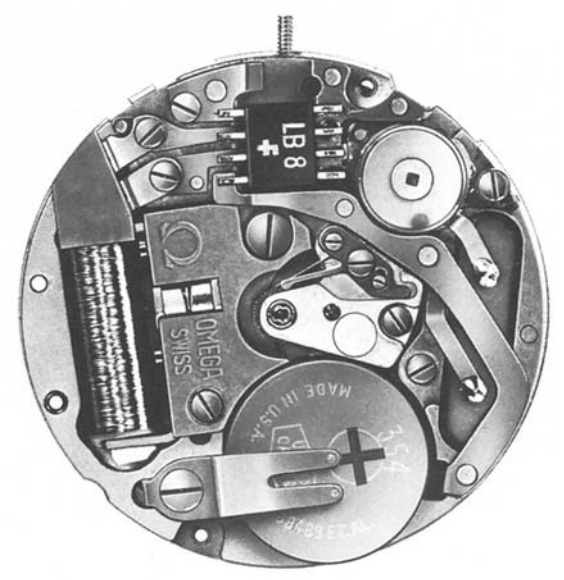


Fig. 3.1

COMPONENTS

No 1310.9179. Power cell bridle, with screw fitted.

No 9903. Power cell, tension 1.35 V.

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Folder 2 - Adjustment of the rate

IMPORTANT
To be observed strictly

The watch must in no case be demagnetized.

In order not to disturb the proper functioning of the watch, the electronic module (fig. 1.2) must not be touched either with a tool - except key for trimmer - or with the fingers.

EQUIPMENT

Key for trimmer
DELTATEST

Electronic module fig. 1.2

ADJUSTMENT OF THE RATE

2.1. Open the case.

2.2. Remove and clean the back.

2.3. Place watch on captor, movement side uppermost, and press button "l Hz" of DELTATEST.

Note

Generally, a measuring time of 10 seconds and a measuring accuracy of 1/100th second will be used.

2.4. Read instant rate shown on DELTATEST.

Note

Adjustment can only be effected if the daily rate is lower than the possibilities offered by the trimmer.

The guide-mark printed on the trimmer should not be moved outside the limits indicated by fig. 2.2. The total correction area allows a rate adjustment of 10 seconds.

If the daily rate is higher than the possible correction limits, the electronic module should be replaced (see folder 3-1310).

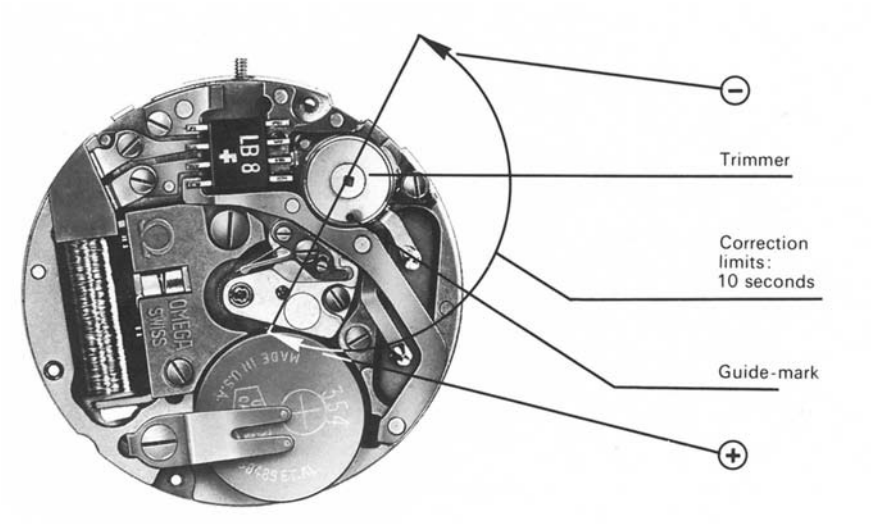

Fig. 2.2

2.5. Where correction of the daily rate is possible, adjust said rate by means of trimmer, using the key specially devised for this purpose (fig. 3.2). This key only must be used in order not to damage the trimmer. Excess pressure should be avoided during this operation.

fig. 3.2

By moving the guide-mark of the trimmer in a clockwise direction, a gain is obtained; by moving it in the opposite direction, a loss.

Adjust the watch in relation to the ambient temperature, according to fig. 4.2.

In order that the temperature of the watch may be equal to the ambient temperature, it is necessary to wait about one hour before the measuring is effected.

The values indicated in fig. 4.2. are valid for a watch with closed back.

Turn the trimmer, bearing in mind a gain of 0.10 to 0.20 sec. as compared with the desired adjustment according to fig. 4.2, in order to compensate the loss caused by closing of the case.

2.6. Grease the water-resistance gasket. Close the case.

2.7. Set the watch and check frequency on DELTATEST after 24 hours.

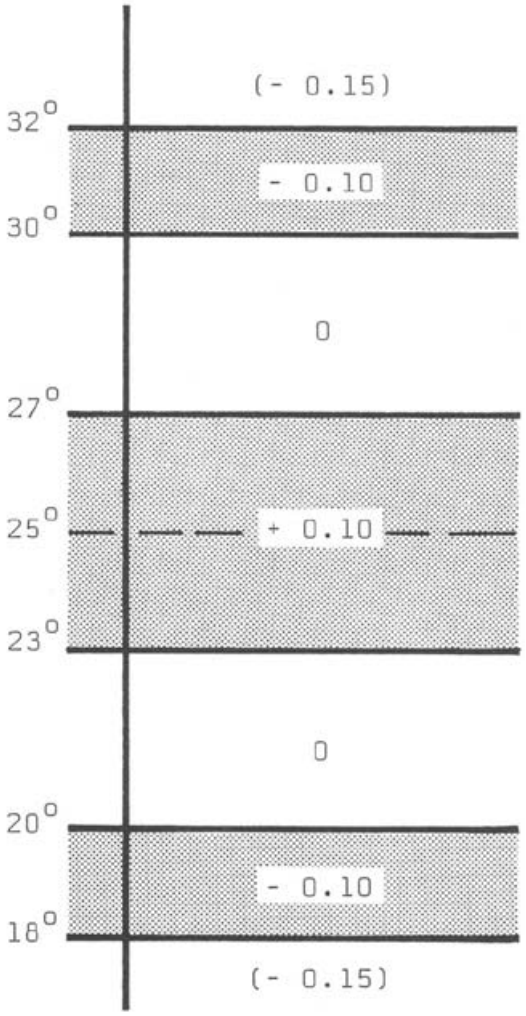

fig. 4.2

CALIBRE
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Folder 3 - Standard exchange of movement or modules

IMPORTANT
To be observed strictly

The watch must in no case be demagnetized.

Do not touch the electronic module with the fingers, nor unsolder the elements.

The motor module must IN NO CASE be disassembled; the characteristics of the magnetic circuit would be disturbed.

Do not clean the electronic module and motor module in bath:.

EQUIPMENT

Movement holder 1310.

Key for trimmer 1301.

Tool for adjusting motor eccentric.

Deltatest measuring apparatus.

Alitest checking apparatus.

Feed by substitute power cell 1310.

Microscope.

EXCHANGE OF MOVEMENT

3.1. Open the case.

3.2. Remove upper magnetic protection No. 1310.9230 by turning the watch over.

3.3. Remove hand-setting stem No. 1310.9030 by pressing the head of the setting lever staff (red plastic) No. 1310.9044.

3.4. Remove the two fixing bridle screws No. 2533 and the bridles.

3.5. Extract movement from case.

3.6. Take off the three hands.
Important : Avoid moving the second hand backwards so as not to damage the retaining click.

3.7. Remove simultaneously the dial, lower magnetic protection No. 1310.9225 and dial rest (green plastic) by lifting the whole with the aid of a screw-driver inserted near the dial feet in the two main plate countersinks.

3.8. Fit a power cell on the new movement (see folder 1-1310)

3.9. Pull the hand-setting stem and place dial and hands in position; turn hour and minute hands backwards in order to compensate the backlash before fitting the second hand. This latter hand will be fitted on an even number index.

3.10. Checking of the second hand jump; this latter hand being positioned on an even number, push the hand-setting stem; 1 second after this function the hand should make its first jump. If this is not so, take off the second hand and move it by 1 second before refitting.

3.11. Proceed with casing-up of movement.

3.12. Set up feed by substitute power cell and check by means of Alitest that the watch functions between 1.15 V and 1.40 V.

3.13. Measure current. Consumption should not exceed 15 µA under a tension of 1.35 V. Should one of the conditions mentioned not apply, then the movement must be returned to the Omega agent.

3.14. Place power cell in position (see folder 1-1310).

3.15. Fit magnetic protection.

3.16. Proceed with adjustment of the rate (see folder 2-1310).

EXCHANGE OF ELECTRONIC MODULE

3.17. Open the case.

3.18. Remove upper magnetic protection No. 1310.9230 by turning the watch over.

3.19. Remove power cell bridle and power cell (point 1, fig. 1.3.)

3.20. Unscrew the 2 motor connecting screws No. 2377 (2), earth screw No. 2589 (3), electronic module screw No. 2589 (4) and electronic module screw No. 2377 (5).

3.21. Extract faulty electronic module No. 1310.9100.

3.22. Place new electronic module in position.

Important : For this operation, the hand-setting stem must be pushed in.

3.23. Tighten the 5 screws according to op. 3.20 and fig. 1.3.

3.24. Follow operations in the order 3.12 to 3.16.

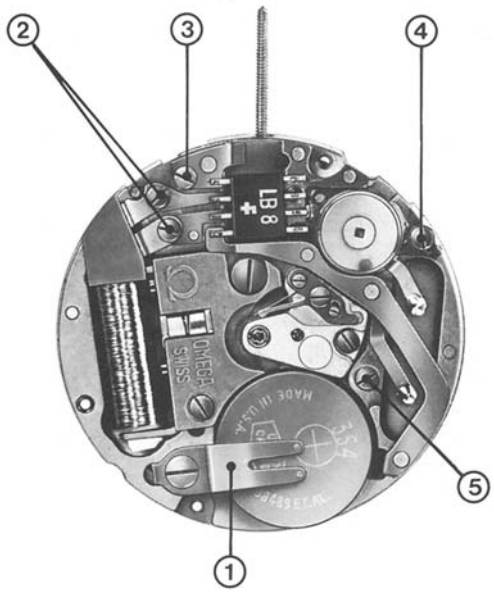


Fig. 1.3

EXCHANGE OF MOTOR MODULE

3.25. Follow operations in the order 3.1 to 3.5.

3.26. Release retaining click No. 1310.9028 (point 6, fig. 2.3.) by slightly turning the click stud (6a).

3.27. Remove the second hand.

3.28. Unscrew the wheel train bridge screw No. 2377 (7) and withdraw the wheel train bridge No. 1310.9001.

3.29. Remove second wheel No. 1310.9010 and third wheel No. 1310.9014.

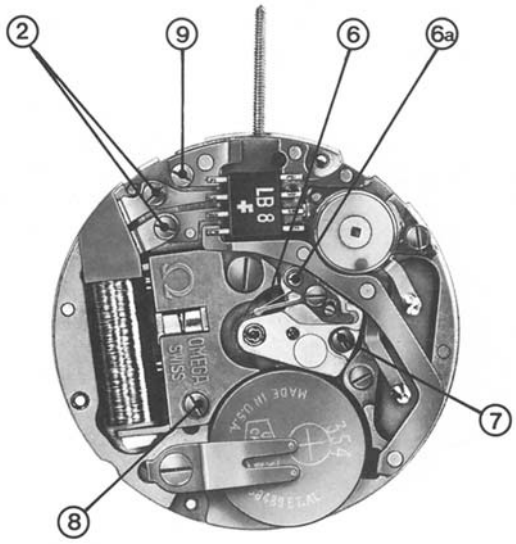


Fig. 2.3

3.30.
Unscrew the 2 motor connecting screws (2), motor module screw No. 2377 (8)
and motor eccentric locking screw No. 2582 (9).

3.31.
Extract faulty motor module No. 1310.9200.

3.32.
Place new motor module in position.

3.33.
Important : Screw very slightly the 2 motor connecting screws (2) and motor module screw (8).

3.34.
Fit simultaneously the third and second wheels.

3.35.
Fit wheel train bridge and tighten its screw.

3.36.
Adjustment of motor-second wheel backlash by motor eccentric No. 1310.9227. Turn motor eccentric clockwise until wheel train is stopped, using the tool specially devised for this purpose (fig. 3.3.). If locking of the motor is impossible, the eccentric should be left in its position of maximum eccentricity (fig. 3.3 (B). The following operation 3.37 will not be necessary.

3.37.
Turn eccentric slowly in the opposite direction until the wheel train
turns normally, i.e. always in the same direction (the wheel train is free, without backlash).

Important : Check rotation of wheel train curing one minute at least.

3.38.
The backlash between motor and second wheel is then obtained by turning the motor eccentric through an angle of 40°. To secure this angle accurately, place tool on eccentric, hold with one hand the upper part of the instrument, and with the other hand turn handle arrow-wise (fig. 3.3.) as far as tool banking.
For the movements which have not been stopped by operation 3.36, check that the wheeltrain is always turning in the same direction, then effect the 40° recoil.

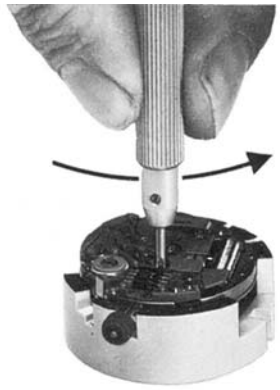
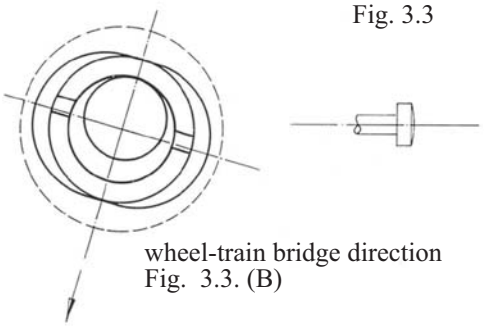


Fig. 3.3



wheel-train bridge direction
Fig. 3.3. (B)

Important : If a faulty operation has occurred in adjusting the backlash, it will be necessary to recommence the entire adjustment as from operation 3.36, and to follow the indications scrupulously.

3.39.
Tighten the motor eccentric locking-screw.

3.40.
Lock motor module screw and the 2 motor connecting screws.

3.41.
Adjustment of click by microscope : This operation is carried out in "stop second" position of the hand setting stem. Before adjustment, turn the hand setting stem arrow-wise in order to compensate the backlash.

3.42. Slightly unscrew the screw No. 2564 (point 11, fig. 4.3.) for retaining click plate.

3.43. Engage click (6) on retaining wheel (12). The tip of the blade must be at the top of a tooth, as close as possible, without touching it (position a, fig. 5.3.). If necessary, move retaining click plate No. 1310.9026 (13) by turning the eccentric of click bearing plate No. 1310.9029 (14).

3.44. Lock screw of retaining click plate. Check again the click position after having turned the stem according to fig. 5.3.

3.45. Start the watch by pushing hand setting stem. Engage click in retaining wheel by turning the click stud until the blade touches the tooth (c). Turn slightly further the click stud in order to tighten the blade (position b), and so that a space (d) appears between the end of the click and the tooth (e).

Important : The distance (d) between the end of the blade and the tooth (e) must be as small as possible. It is necessary to check during one minute at least the passage of the 60 teeth of the retaining wheel. The click must never touch the tooth at point (e).

3.46. Fit second hand according to op. 3.9. and 3.10.

3.47. Follow operation in the order 3.11 to 3.16.

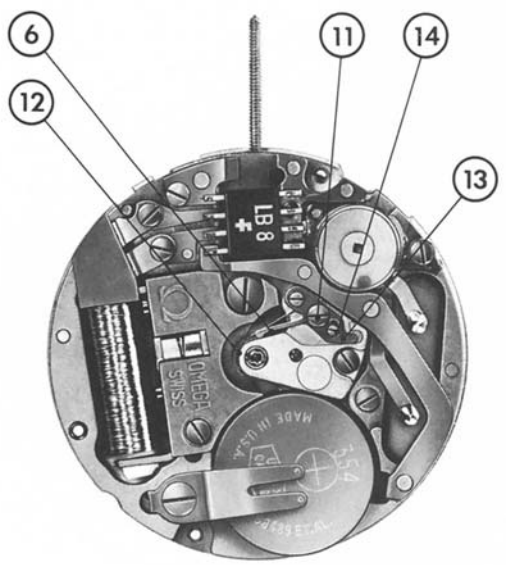


Fig. 4.3

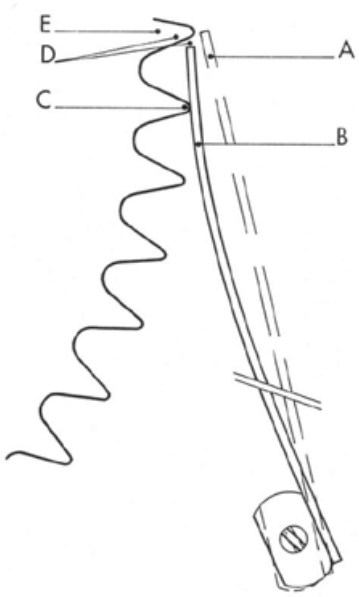


Fig. 5.3

CALIBRE
1310
29 Q SCS CALD CORR CORH CORS STS 8 jewels
Folder 4 - Diagnostic Disassembling Cleaning Reassembling and lubrication of movement

IMPORTANT - To be observed strictly

The watch must in no case be demagnetized.

Do not touch the electronic module with the fingers, nor unsolder the elements.

The motor module must IN NO CASE be disassembled; the characteristics of the magnetic circuit would be disturbed.

Do not clean the electronic module and motor module in baths.

EQUIPMENT

Movement holder 1310.

Key for trimmer 1301.

Tool for adjusting motor eccentric.

Deltatest measuring apparatus.

Alitest checking apparatus.

Feed by substitute power cell 1310.

Microscope.

DISASSEMBLING

OP. NO.	ORDER OF OPERATIONS	PART NO.	FIXING DEVICE	LUBRICATION POINT	LUBRICATION CODE	REMARKS
4.1.0. CASE PARTS						
4.1.1.	OPEN THE CASE					
4.1.2.	UPPER MAGNETIC PROTECTION	1310.9230				
4.1.3.	HAND-SETTING STEM	1310.9030	PRESSURE LEVER			PRESS HEAD OF SETTING LEVER STAFF (RED PLASTIC)
4.1.4.	UNCASE		2 SCREWS 2533 - 2 BRIDLES			
4.1.5.	RELEASE RETAINING CLICK					SEE FOLDER 3-1310 - OP. (3.26)
4.1.6.	HANDS					
4.1.7.	DIAL		DIAL HOLDERS			
4.2.0. POWER CELL						
4.2.1.	POWER CELL BRIDLE	1310.9179	1 ADJOINING SCREW			
4.2.2.	POWER CELL	9903				
4.3.0. WHEEL TRAIN						
4.3.1.	WHEEL TRAIN BRIDGE	1310.9001	1 SCREW 2377			
4.3.2.	THIRD WHEEL	1310.9014				
4.3.3.	SECOND WHEEL	1310.9010				
4.4.0. MOTOR MODULE						
4.4.1.	MOTOR MODULE	1310.9200	1 SCREW 2582 - 3 SCREWS 2377 SEE FOLDER 3-1310			DO NOT DISASSEMBLE OR CLEAN MOTOR MODULE IN BATHS SEE 4.4.1.0.

OP.NO.	ORDER OF OPERATIONS	PART NO	FIXING DEVICE	LUBRICATION POINT	LUBRICATION CODE	REMARKS

4.5.0. ELECTRONIC MODULE

4.5.1.	ELECTRONIC MODULE	1310.9100	2 SCREWS 2589 1 SCREW 2377 SEE FOLDER 3-1310			DO NOT DIS- ASSEMBLE OR CLEAN ELECTRONIC MODULE IN BATHS. SEE 4.5.1.0.
4.5.2.	CLUTCH WHEEL	1310.9031				
4.5.3.	INSULATOR FOR POWER CELL CONTACT	1310.9182				

4.6.0. TIME DISPLAY

4.6.1.	HEAD OF SETTING LEVER STAFF	1310.9044				
4.6,2.	TURN MOVEMENT OVER					
4.6.3.	DAY DISC GUARD	1310.9070				
4.6.4.	DAY DISC	1310.9067				
4.6.5.	DATE INDICATOR GUARD	1310.9003	3 SCREWS 2487			
4.6.6.	DATE INDICATOR	1310.9066				
4.6.7.	HOUR WHEEL H1	1310.9025				
4.6.8.	DOUBLE DATE SETTING WHEEL	1310.9050				
4.6.9.	DRIVING GEAR	1310.9053				
4.6.10	DATE INDICATOR DRIVING WHELL AND DATE MALTESE CROSS	1310.9062 1310.9064				THE 2 COMPONENTS MAGNETICALLY COUPLED ARE RE-MOVED TOGETHER. CLEANING : SEE 4.6.10.0.
4.6.11.	DAY DISC DRIVING GEAR	1310.9057				
4.6.12.	THIRD WHEEL BRIDGE	1310.9002	1 SCREW 2487			
4.6.13.	MINUTE WHEEL	1310.9020				CLEANING : SEE 4.6.13.0
4.6.14.	CENTER WHEEL WITH CANNON PINION	1310.9017				

OP.NO.	ORDER OF OPERATIONS	PART NO	FIXING SERVICE	LUBRICATION POINT	LUBRICATION CODE	REMARKS

4.7.0. MECHANISM

4.7.1.	DATE CORRECTOR YOKE	1310.9080				
4.7.2.	YOKE COVER	1310.9042	1 SCREW 2377			
4.7.3.	SETTING LEVER SPRING	1310.9041	1 SCREW 2377			
4.7.4.	2 YOKE SPRINGS	1310.9040				
4.7.5.	MAIN YOKE	1310.9032				
4.7.6.	HAND-SETTING YOKE	1310.9039				
4.7.7.	SETTING LEVER	1310.9035				
4.7.8.	CONTACT SPRING	1310.9043				
4.7.9.	OPERATING LEVER FOR DATE CORRECTOR	1310.9081				
4.7.10.	OPERATING LEVER SPRING FOR DATE CORRECTOR	1310.9082				

CLEANING INSTRUCTIONS

4.4.1.0.
Motor module 1310.9200.

Do not disassemble or clean motor module in baths.
Standard exchange if necessary.

4.5.1.0.
Electronic module 1310.9100.

Do not disassemble or clean electronic module in baths.
Standard exchange if necessary.

4.6.10.0.
Date indicator driving wheel 1310.9062.
Date Maltese cress 1310.9064.

The cleaning machine is not recommended for these magnetic components. They should be cleaned in the appropriate benzine bath which must be absolutely clean and free from any metallic particles. Check, however, the cleanliness of the magnets.

4.6.13.0.
Minute wheel 1310.9020.

Important : NEVER clean minute wheel in the cleaning machine. Proceed as indicated under 4.6.10.0.

Furthermore, the following should not be cleaned in the baths
Day disc 1310.9967.
Date indicator 1310.9066.
Power cell 9903.
Upper magnetic protection 1310.9230.

The remainder of the movement, including the motor eccentric 1310.9227 left on the plate

(only remove it in case of replacement) may be cleaned in baths as per the usual procedure.

REASSEMBLING

OP. NO.	ORDER OF OPERATIONS	PART NO	FIXING DEVICE	LUBRICATION POINT	LUBRICATION CODE	REMARKS

4.8.0. MECHANISM

4.8.1.	FIT MAIN PLATE ON MOVEMENT HOLDER					DIAL SIDE UP.
4.8.2.	OPERATING LEVER SPRING FOR DATE CORRECTOR	1310.9082		FUNCTION		
4.8.3.	OPERATING LEVER FOR DATE CORRECTOR	1310.9081		PIV. + FUNCTIONS	1.03	
4.8.4.	CONTACT SPRING	1310.9043				
4.8.5.	CLUTCH WHEEL	1310.9031		GROOVE	1.03	
4.8.6.	HAND-SETTING STEM	1310.9030		SQUARE, PIVOT, GROOVE	1.03	
4.8.7.	SETTING LEVER	1310.9035		PIV. + FUNCTIONS	1.03	
4.8.8.	HAND-SETTING YOKE	1310.9039		FUNCTIONS + PIV. SETTING WHEEL	1.03	
4.8.9.	MAIN YOKE	1310.9032		FUNCTIONS + PIV. SETTING WHEEL	1.03	
4.8.10.	2 YOKE SPRINGS	1310.9040		FUNCTIONS	1.03	
4.8.11.	SETTING LEVER SPRING	1310.9041	1 SCREW 2377	FUNCTIONS	1.03	
4.8.12.	YOKE COVER	1310.9042	1 SCREW 2377			
4.8.13.	DATE CORRECTOR YOKE	1310.9080		PIVOTING	1.03	

4.9.0. TIME DISPLAY

4.9.1.	CENTER WHEEL WITH CANNON PINION	1310.9017		FRICTION PIVOTING	2.13 1.02	
4.9.2.	MINUTE WHEEL	1310.9020		PIVOTING	1.02	
4.9.3.	THIRD WHEEL BRIDGE	1310.9002	1 SCREW 2487	JEWEL THIRD WHEEL	1.02	
4.9.4.	DAY DISC DRIVING GEAR	1310.9057				
4.9.5.	DATE MALTESE CROSS DATE INDICATOR DRIVING WHEEL	1310.9064 1310.9062				POSITIONING : SEE 4.9.5.0

OP. NO	ORDER OF OPERATIONS	PART NO	FIXING DEVICE	LUBRICATION POINT	LUBRICATION CODE	REMARKS
4.9.6.	DATE DRIVING GEAR	1310.9053				CHECK ON POSITIONING SEE 4.9.6.0.
4.9.7.	DOUBLE DATE SETTING WHEEL	1310.9050				
4.9.8.	HOUR WHEEL	1310.9025				
4.9.9.	DATE INDICATOR	1310.9066				ALIGN A DATE FIGURE WITH THE HAND SETTING STEM
4.9.10.	DATE INDICATOR GUARD	1310.9003	3 SCREWS 2487			
4.9.11.	DAY DISC	1310.9067				
4.9.12.	DAY DISC GUARD	1310.9070				
4.9.13.	TURN MOVEMENT OVER					
4.9.14.	HEAD OF SETTING LEVER STAFF	1310.9044				

4.10.0. ELECTRONIC MODULE

4.10.1.	INSULATOR FOR POWER CELL CONTACT	1310.9182				
4.10.2.	PUSH HAND-SETTING STEM					
4.10.3.	ELECTRONIC MODULE	1310.9100	2 SCREWS 2589 1 SCREW 2377			SEE FOLDER 3-1310 FIG. 1.3.

4.11.0 MOTOR MODULE

4.11.1.	MOTOR MODULE	1310.9200	3 SCREWS 2377			SEE FOLDER 3-1310 (3,33)

4.12.0. WHEEL TRAIN

4.12.1.	SECOND WHEEL	1310.9010		TOOTHING OF SECOND WHEEL PLATE (LOWER WHEEL, 3 SPOTS OF GREASE)	2.13	IMPORTANT : DO NOT OIL CENTER PIPE
4.12.2.	THIRD WHEEL	1310.9014				
4.12.3.	WHEEL TRAIN BRIDGE	1310.9001	1 SCREW 2377	INCABLOC + JEWEL	1.02	

OP. NO.	ORDER OF OPERATIONS	PART NO	FIXING DEVICE	LUBRICATION POINT	LUBRICATION CODE	REMARKS

4.13.0. POWER CELL

4.13.1.	POWER CELL	9903				
4.13.2.	POWER CELL BRIDLE	1310.9179	1 ADJOIN-ING SCREW			

4.14.0. ADJUSTMENT OF MOTOR ECCENTRIC AND CLICK

4.14.1.	ADJUST MOTOR BACKLASH- SECOND WHEEL PLATE					SEE FOLDER 3-1310 (3.36 TO 3.45)
4.14.2.	LOCK MOTOR ECCENTRIC		1 SCREW 2582			
4.14.3.	LOCK MOTOR					THE 3 SCREWS (4.11.1.)
4.14.4.	ADJUST RETAINING CLICK	1310.9026	1 SCREW 2564			SEE FOLDER 3-1310 (3.41 AND 3.45)

4.15.0. CASE PARTS

4.15.1.	DIAL					
4.15.2.	HANDS					SEE FOLDER 3-1310 (3.9 AND 3.10)
4.15.3.	CASE UP		2 BRIDLES 2 SCREWS 2533			
4.15.4.	CHECK FUNCTIONING AREAS AND CONSUMPTION					SEE FOLDER 3-1310 (3.12 AND 3.13)
4.15.5.	UPPER MAGNETIC PROTECTION	1310.9230				
4.15.6.	ADJUST THE RATE					SEE FOLDER 2-1310

4.9.5.0.

Place one of the three fingers of the day disc driving gear No. 1310.9057 opposite the post of the date indicator driving wheel (magnetic mobiles Nos. 1310.9062 and 1310.9064). Fit the two magnetic mobiles Nos. 1310.9062 and 1310.9064.

Check on positioning : make the day disc driving gear No. 1310. 9057 turn slightly until the three fingers are visible; one of the three magnetic teeth must then be located under the upper pinion of the day disc driving gear No. 1310.9057.

4.9.6.0.

Fit the date driving gear No. 1310.9053.

Check on positioning : make the date driving gear No. 1310.9053 turn until the finger drives the two mobiles previously fitted. When the driving of these two mobiles is accomplished, one of the three magnetic teeth must again be located under the upper pinion of the mobile No. 1310.9057.

CALIBRE
1310

29 Q SCS CALD CORR CORH CORS STS 8 jewels
Folder 5 - 6 Application of Deltatest and Alitest

Note :

The numbers in parentheses ( ) refer to the numbers appearing in the instructions for use of the Deltatest ODT 3 and Alitest OAT 2 apparatus.

Indications in brackets [ ] refer to the Deltatest ODT 1 and Alitest OAT 1.

All apparatus which do not bear the model number on the back plate correspond with the ODT 1 and OAT 1.

5.1 Measuring of the rate (Deltatest)

Press key (2) of keyboard " < 15' Hz" ["1 Hz ".]

Move the watch in order to secure maximum signal.

Regulate amplification (6) by observing the level control provided by the instrument hand (7). Optimal adjustment is secured when the hand is at the beginning of the black zone [green zone]

Select by means of (3) the measuring time of 12 [10] seconds.

Select by means of (4) the measuring accuracy of .99 [1/100.]

6.1 Measuring of the power cell tension (Alitest)

With power cell placed on table, connect black probe to top of power cell (-) and red probe to its case (+).

The tension value must be in the region of 1.35V; if it is below 1.25V, the power cell must be replaced.

6.2 Measuring of the current (Alitest)

This measuring is effected by using substitute power cell feed (15) connected with "Output" by means of the feeding clip (13).

Press buttons (2) [1.35 V] relating to feed tension of the watch and (8) [µA] enabling the current to be measured.

The value measured should not exceed 15 µA.

6.3 Checking of the functioning limit tensions (Alitest)

This checking is effected by using substitute power cell feed (15) connected with "Output" by means of the feeding cable (13).

Press buttons (4) [Uadj] and (9) [Vadj].

Check proper functioning of movement within the tension limits of 1.15 V and 1.40 V (tensions are regulated by means of knob (5)).

Note

The motor is said to function normally when the second wheel makes one complete revolution in one minute. It is important to check the passage of each of the 60 teeth.

6.4 Analysis of motor - measuring of the coil resistance

Note:

If the movement is under tension, it is necessary to isolate the electronic module before measuring the resistance.

Unscrew the two motor connecting-screws.

Slide an insulating leaf under the terminals of the module (A and B).

Measure R by applying the probes (16) to the terminals A and B.

The resistance of the motor

should be between 2 and 2.2 K. If this is not the case, the motor module must be changed.

6.5 Measuring of the rate on Deltatest using feed from Alitest

Connect Alitest to "Input"
of Deltatest by means of the special cable.

Proceed in identical manner to 6.2 : Measuring of the current.

Press button Atten. Deltatest (12) [Switch on back of Alitest in position 1].

CALIBRE
1310
29 Q SCS CALD CORR CORH CORS STS 8 jewels
Technical information No. 8

CALIBER 1310

SUPPLEMENT TO DIAGNOSIS AND ANALYSIS ACCOMPANYING THE TECHNICAL GUIDE

Following up requests by our General Agents, we are presenting a refined check-method to make servicing of
caliber 1310 easier. The contents of the technical guide, folder 0 to 6, remain valid.

1. CHECK DELTATEST

Accepted rate : + 0.10 at + 0.30 s./d.
Regulation beyond the range of the Trimmer : replace electronic module.

2. BATTERY : 1,35 V

Out of tolerance . replace battery SSIH 9903
(or Vartachron 508)
(Check cleanliness of battery contact points)

3. MOTOR COIL RESISTANCE : approximately 2,2 k

Out of tolerance : exchange motor module (1310-9200)

4. CONSUMPTION OF WHOLE WATCH

Limits : maximum 15 µA with bi-polar circuit (straight connections)

maximum 7.5 µA C-Mos circuit (T-shaped connections)

Above accepted limit : slide insulator blade between motorcontacts, detect and replace definitive module. (Limit for motor only 3 µA)

5. FUNCTIONING LIMITS (WHOLE WATCH)

Lower limit : 1.20 V upper limit : 1.40 V

Beyond accepted limits :

Check

a) position and tension of retaining click
b) backlash of motor screw and second wheel (see pt. 9)
c) endshake and freedom of rotor
d) cleanliness of motor worm-gear

6. FUNCTIONING LIMITS MOTOR MODULE WITHOUT WHEEL TRAIN

Lower limit 1.15 V upper limit : 1.45 V
Beyond accepted limits : exchange motor module (1310-9200)

7. WHEEL TRAIN AND CALENDAR CHECKING

Motor module removed. Make wheels spin by means of a dust blower - they must spin freely and make the date change with only small force from dust blower.

8. CHECK OF PARTS : CONDITION, CLEANLINESS

Change defective parts, clean movement if necessary (see technical guide 4.4.1.0)

9. ADJUSTEMENT

To insure a perfect backlash between the second wheel and the motor worm gear, proceed with operations 3.36 to 3.38 of the technical guide 3-1310 and check thereafter the following procedure .

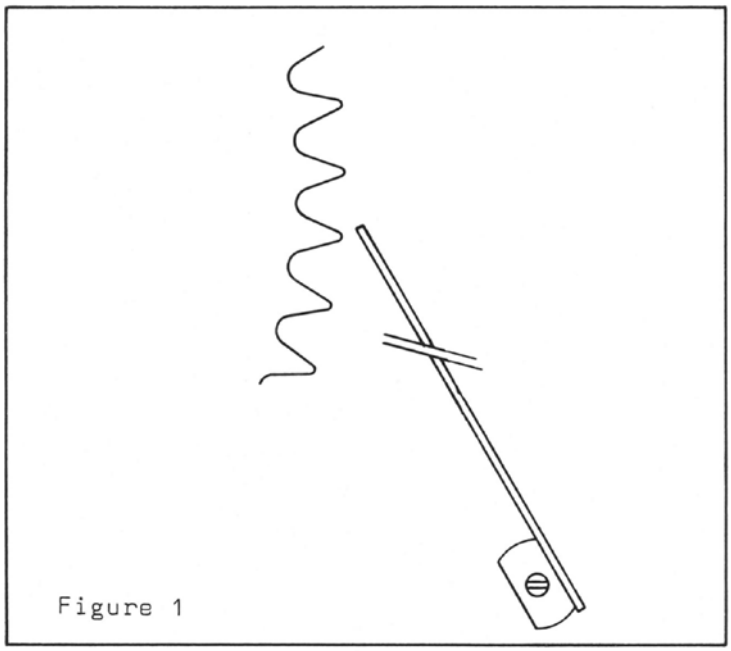


Figure 1

9.1. Adjust the retaining click into position shown by figure 1, the end of the click to be used as guiding-mark to observe the movement of the second wheel.

9.2. Put hand setting stem into setting position and turn it slightly in both directions to observe the movement of the second wheel in comparison with the click; to be suitable, this movement must be 1/4 to 1/2 of the distance between two teeth (figure 2). Repeat this control twice after 20 seconds
(= 120°).

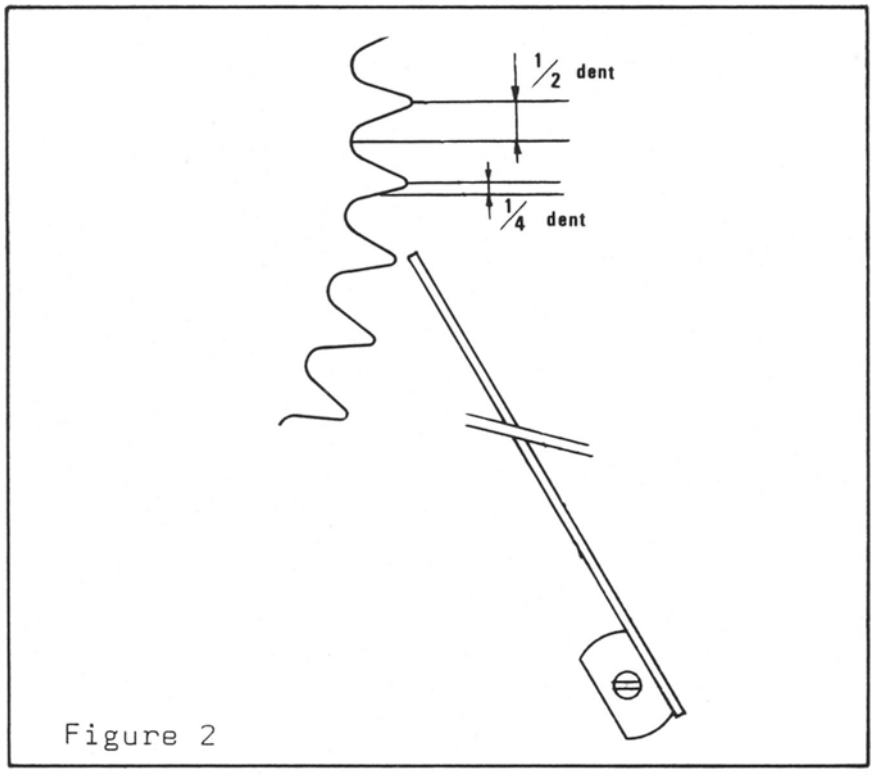


Figure 2

9.3. If the backlash has to be modified, turn the eccentric for motor in the direction suitable to the required correction.

IMPORTANT

Whilst moving the crown, a displacement of the rotor might be observed by microscope; this deplacement increases the movement of the second wheel and therefore, falsifies the measuring. The first movement of the wheel must be considered and not the movement caused by addition of the endshake of the rotor.