OMEGA

A COMPANY OF THE SWATCH GROUP

CALIBRE
1525
R Q SCS STS CORS IFP BULL (172 x 129 x 75)

GENERAL DESCRIPTION

Marine chronometer containing high precision movement equipped with high frequency Quartz oscillator of 4,19 MHz of high thermic performance and stability.

Possibility of changing batteries without stopping the functioning of the movement.

DISPLAY analogue with hands

FUNCTIONS hour, minute, second, one step per second

OUTPUT 1 HZ at 1 volt under 2000 Ω
impulse 7,8 ms
connection LEMO No. 2P-0

CORRECTIONS

ELECTRONIC of the second by advancing at double speed or stopping it with the switch. Exact phase adjustment of the second-step upon starting it (synchronization of the second).

MECHANIC of the hour and the minute.

BATTERY LIFE INDICATOR
by voltmeter and incorporated push-button.

TECHNICAL SPECIFICATIONS

Typical stability at constant temperature

$\pm$ 0,01 s/d

Typical stability between 18°C and 22°C

$\pm$ 0,04 s/d

AGING 0,09 s/d/year

ISOCHRONISM between 1,5 V and 1,2 V per 100mV 0,008 s/d

ACCESSORIES inclined support armoured cable for output of 1 Hz

MEGAQUARTZ 4,19 MHz

Ref. 5806 civil version with Marine chronometer certificate of the Neuchâtel Observatory.

YEAR OF CONSTRUCTION 1980

Wooden case length 172 mm
Wooden case width 129 mm
Wooden case height 75 mm

OPERATING TENSION LIMITS
1.0 V to 1,8 V

CONSUMPTION typical 100 µA
maximum 120 µA

RUNNING TIME more than 24 months

TEMPERATURE FUNCTIONING LIMITS
from -10° to 60°C

RESISTANCE TO VIBRATIONS
between 5 Hz and 55 Hz; 0,3 mm point to point linear oscillations of 5 mn in 3 axes, 30 mn per axis.

RESISTANCE TO MAGNETIC FIELDS up to 100 Oe.

BATTERIES

REFERENCE 9935
TYPE 2 batteries LR6 - 1,5 V in parallel 2,7 Ah
LENGTH 50 mm
DIAMETER 15 mm

ELECTRONIC MODULE
Resonator type : lenticular quartz Resonator frequency : 4194304 Hz Type of frequency corrector : rotative air condensator adjustable between $\pm$ 0,9 s/d.

MOTOR

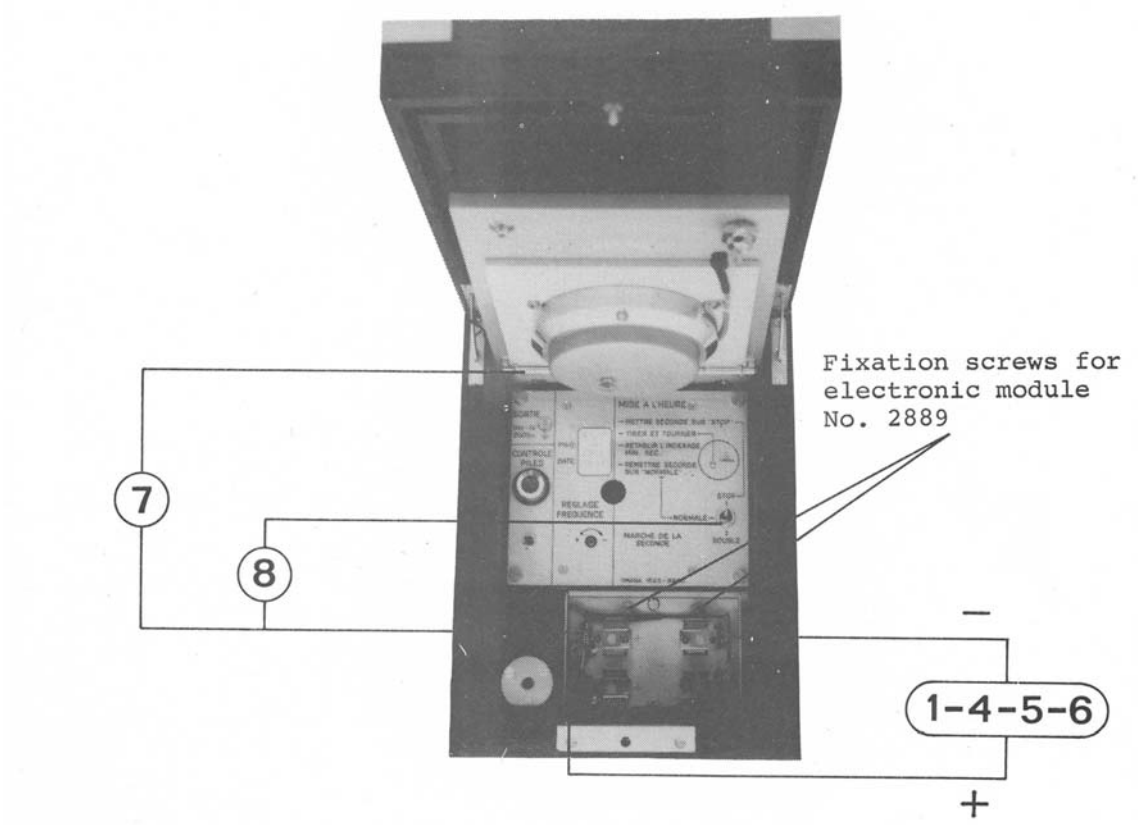
TYPE electromagnetic with axial field, step by step, 6 steps per revolution, unipolar impulses

CONCEPTION
integrated, can be disassembled.

English

1. DIAGNOSIS
(Seconds speed switch in "normal" position

POSITION	CONTROLS	MEASUREMENTS	INSTRUMENTS	REMARKS
1	BATTERY VOLTAGE	battery control indicator needle moves to the right		visual control by means of battery control push-button
		1.5 V	Alitest Checker I	measurement to terminals of fitted batteries
2	MOTOR IMPULSES	Alitest needle jumps every second	Alitest Checker I	measurement with batteries fitted
3	MOTORCOIL RESISTANCE	between 60 and 70 Ω	Checker I	measurement: -without batteries -without motor circuit
4	ELECTRONIC MODULE CONSUMPTION	maximum 40 µA	Checker I	measurement: -without batteries -without motor circuit
5	TOTAL CONSUMPTION	maximum 110 µA	Checker I	measurement without batteries
6	MINIMUM FUNCTIONING VOLTAGE	≤ 1.0 V	Alitest Checker I	measurement without batteries
7	GROUNDING OF FRONT PLATE	0 Ω	Alitest Checker I	measurement without batteries
8	GROUNDING OF ELECTRONIC MODULE	0 Ω	Alitest Checker I	measurement without batteries


Fixation screws for
electronic module
No. 2889
7
8
1-4-5-6
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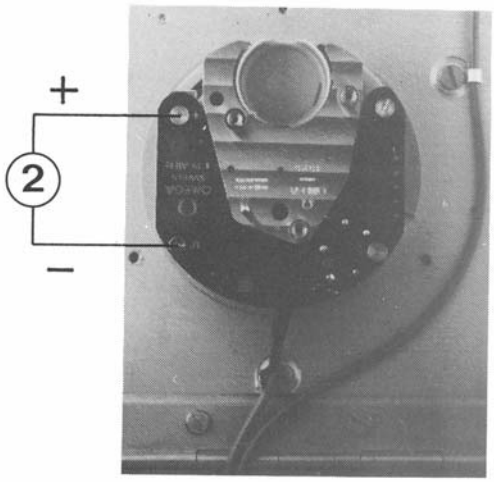
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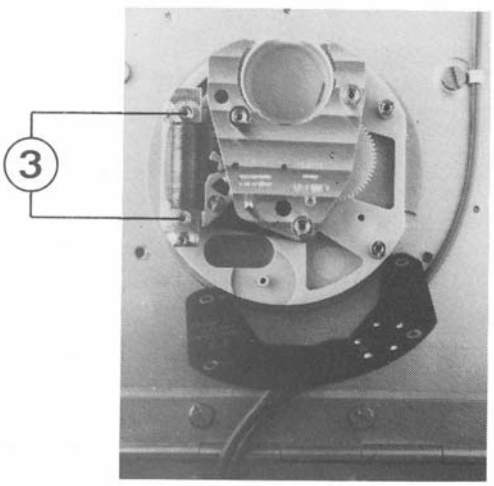
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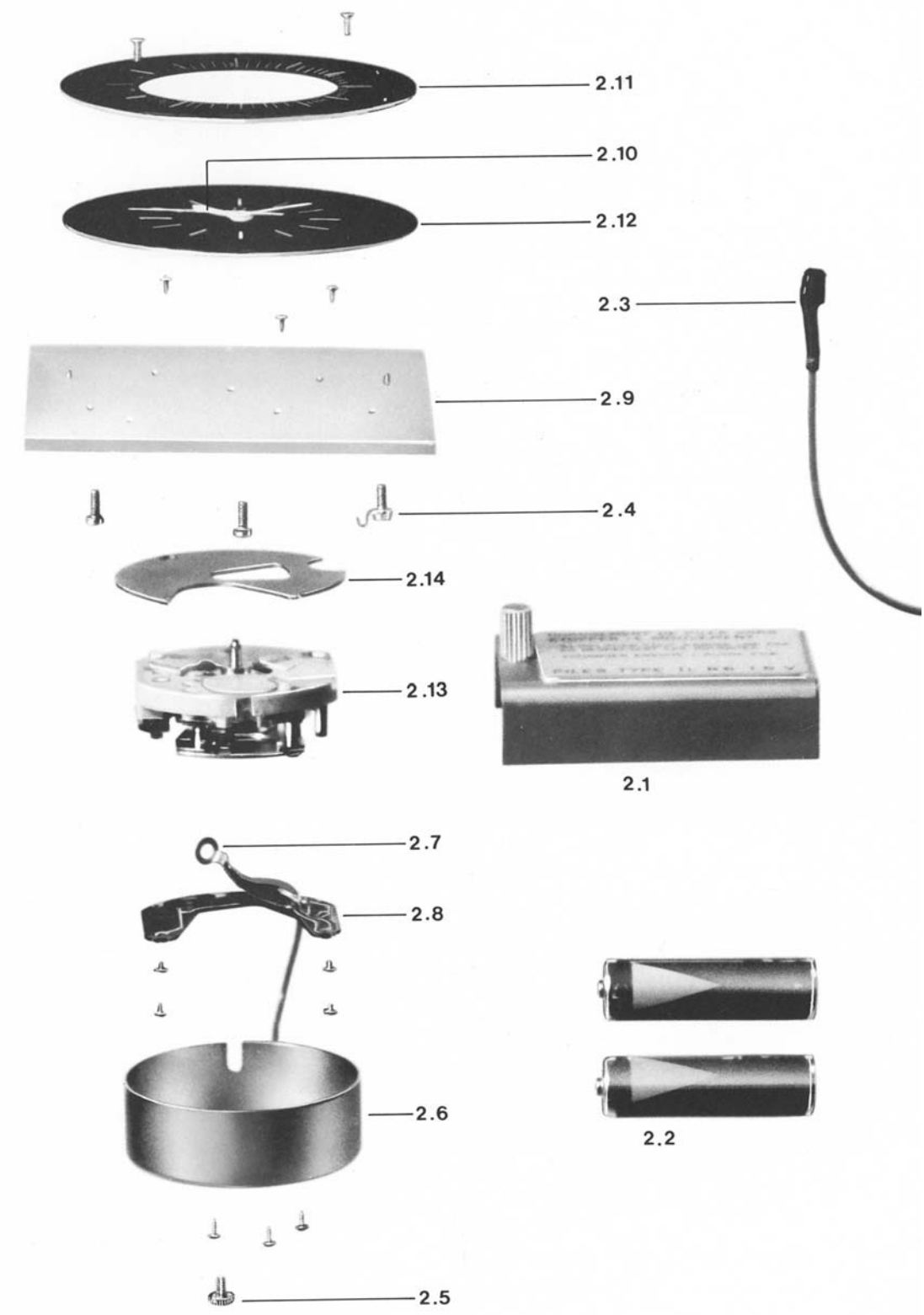
2. DISASSEMBLY - REASSEMBLY OF MOVEMENT IN THE CASE

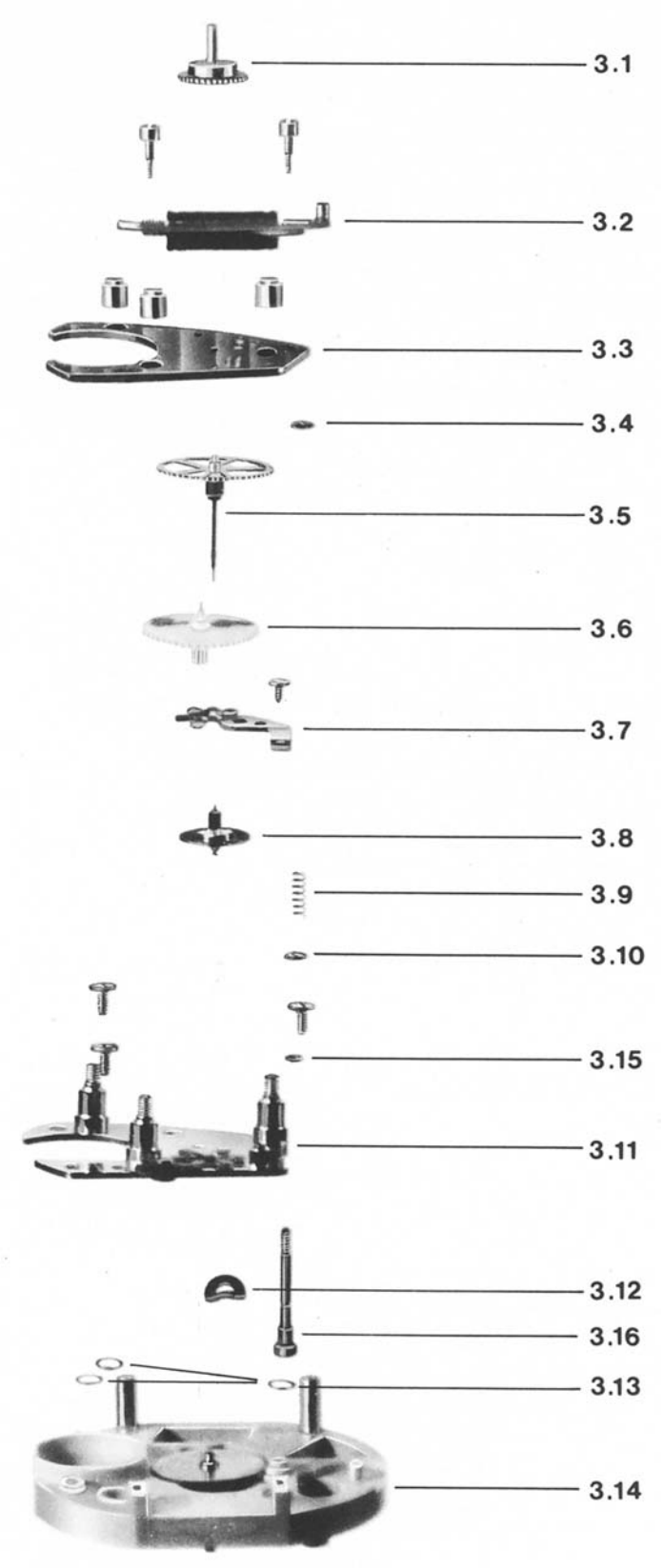


2. DISASSEMBLY - REASSEMBLY OF MOVEMENT IN THE CASE
(CONTINUATION)

No.	OPERATIONS	REMARKS
2.1	Remove cover of the battery compartment	
2.2	Remove batteries	
2.3	Remove connector 1 Hz	
2.4	loosen screw of bridle release the 1 Hz wire	1 screw
2.5	Remove the hand-setting button	
2.6	Unscrew, remove the movement from calotte	3 screws
2.7	Unscrew, remove ground connector clamp	1 screw, while maintaining the the bridle in position
2.8	Unscrew, remove the motor circuit	3 short screws, 1 long screw situated beside the impulse symbol
2.9	Unscrew the intermediary plate, release the plate and the movement	1 screw
2.10	Remove the hands	on Omega movement holder No. 1525.9000-8011
2.11	Unscrew, remove the minute track	
2.12	Remove the dial	Position of the ground-screw at 12.oo h
2.13	Unscrew, release the movement	3 screws on intermediary plate positioning pins on dial side
2.14	Remove magnetic screen	

To fit the movement in the box, carry out the operations in reverse order.

3. DISASSEMBLY OF THE MOVEMENT



3. DISASSEMBLY OF MOVEMENT (CONTINUATION)

No.	OPERATIONS	REMARKS
3.1	Remove the hour wheel	
3.2	Unscrew, remove the coil	2 gilt screws
3.3.	Unscrew, remove the train wheel bridge	3 nuts for train wheel bridge
3.4.	Remove washer of the hand-setting stem	
3.5.	Remove second wheel	
3.6.	Remove third wheel	
3.7.	Unscrew, remove the upper stator	1 steel screw on the pillar of the lower train wheel bridge
3.8	Remove the rotor	
3.9	Remove the spring of the hand-setting stem	
3.10	Remove the lower washer of the hand-setting stem	
3.11	Unscrew, remove the lower train wheel bridge	3 gilt screws
3.12.	Remove the friction-spring of the minute wheel	
3.13	Remove the distance pieces of the main plate	3 distance pieces seated on the main plate which support the lower train wheel bridge
3.14	Remove the main plate (on lower train wheel bridge)	DO NOT REMOVE THE CENTRE TUBE AND THE MINUTE WHEEL FOR CLEANING
3.15	Remove the spring-clip of the hand-setting stem	
3.16	Remove hand-setting stem	

4. CLEANING

Dry cleaning Coil and rotor (use cleaning paste for the rotor magnet)
Main plate (can be cleaned with freon)

Cleaning in conventional baths
Bridges, wheel train, stator, hand-setting stem, etc.

5. LUBRICATION


1.15 Synt-A-Lube 9010
2.01 Moebius 8200

When cleaning the main plate, it is important to lubricate the friction of the centre wheel situated between the collet and the centre wheel plate. (lubricant 1. 15)

6. REASSEMBLY OF THE MOVEMENT

NO	OPERATIONS	REMARKS - CONTROLS - LUBRICATION
	Pre-assembly of the lower train wheel bridge	
6.1	Fix the hand-setting stem	Lubricant 2.01
6.2	Fix spring-clip of the hand-setting stem	
6.3	Assemble main plate	Omega movement holder No. 1525.9000-8011
6.4	Fix the main plate washers	3 distance pieces on main plate which support the lower train wheel bridge
6.5	Fix the friction spring of the minute wheel	

6. REASSEMBLY OF THE MOVEMENT (CONTINUATION)

No.	OPERATIONS	REMARKS - CONTROLS - LUBRICATION
6.6	Fix, screw the lower train wheel bridge	3 gilt screws. Check the end-shake of the centre wheel, the wheel train and their freedom
6.7	Fix the lower washer of the hand-setting stem	
6.8	Fix the spring of the hand-setting stem	
6.9	Fix the rotor	Check the cleanliness of the rotor
6.10	Fix, screw the upper stator	1 steel screw on the pillar of the lower train wheel bridge. Check the air-gap of the stators 1.7 mm with the Omega gauge No. 1525.9000-8012
6.11	Fix the third wheel	
6.12	Fix the second wheel	
6.13	Fix the upper washer of the hand-setting stem	
6.14	Fix, screw train wheel bridge	3 nuts of upper bridge. ATTENTION, when fixing the bridge : - plastic wheel - settings with plastic bearings Check the endshake of the minute wheel, the second wheel, the rotor and their freedom. Check carefully the rotor height between the stators. Lower and upper air-gap equal.
6.15	Fix, screw the coil	2 gilt screws
6.16	Fix the hand-setting button	(uniquely for control)
6.17	Fix the hour wheel	Check the truth of the tube. Check the hand-setting function

Then, refer to "Reassembly of the movement in the Case", operations 2.1 to 2.14

7. DISASSEMBLY - REASSEMBLY OF ELECTRONIC MODULE IN THE CASE

(Please refer to working schedule "disassembly-reassembly of the movement in the case", operations 2.1 to 2.8, then,)

No.	OPERATIONS	REMARKS
7.1	Unscrew support plate for electronic module and battery-case (electronic module side) pull forward and lift; the electronic module and power supply unit are released.	2 screws No. 2889 (position indicated on page 2)

To reassemble the electronic module in the case, carry out the operations in reverse order.

8. DISASSEMBLY OF THE POWER SUPPLY UNIT

No.	OPERATIONS	REMARKS
8.1	Unsolder the contact wires	observe the polarities
8.2	Unscrew, remove the battery-case	2 screws

To reassemble the power supply unit, carry out the operations in reverse order.

9. ADJUSTMENT

By means of the adjustable condenser, connect the 1 Hz output plug on the front plate to an outside reference (e.g. Deltatest), adjust to + 0.003 s/day at a temperature of 18°C.

10. CONTROLS

Electrical controls see page 2

Function controls - mechanical hand-setting "double" speed, "stop"

Battery controls

Control of the cleanliness of battery contacts.