

movement

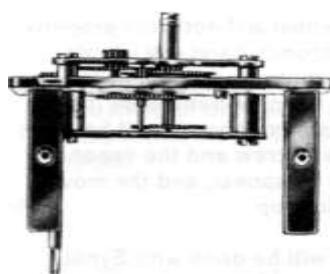
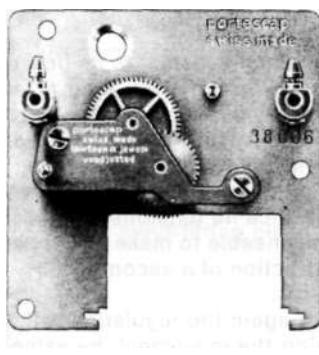
general description, systematic description
principle, service and spare parts

portescap

This Complete PORTESCAP® Service Section has been Specially Prepared and is included Through the Courtesy of "Universal Escapement, Ltd. — La Chaux-de-Fonda, Switzerland."

Service

Base plate with train wheels

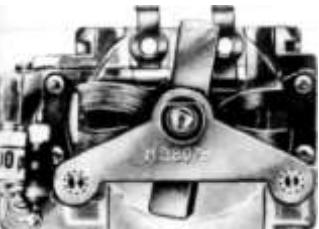
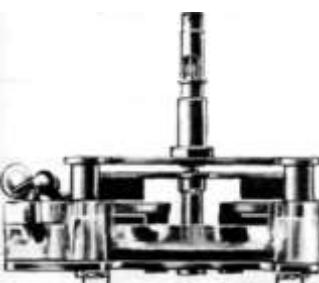


The unit with the train can be disassembled, cleaned and reassembled under usual procedure. Only the minute wheel should not be cleaned, since it works on greased friction.

For oiling, the manufacturers of the Portescap movement recommend the use of Synta-Visco-Lube oil for all pivots, and also for the minute stud.

After pushing back the guard ring of the minute wheel, check the end shake of the minute wheel.

Motor unit

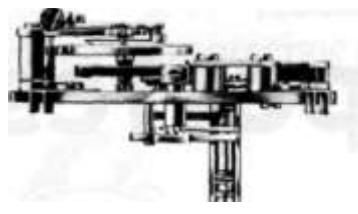


- 1 unscrew the two assembling screws to separate plate, frame, bridge and rotor
- 2 clean the Incabloc shock-absorber, using the method recommended by the manufacturers
- 3 clean the motor tube bearing
- 4 clean the rotor, making sure that no metal particles stick to the magnets
- 5 disassemble the winding pinion (this delicate operation should be done only by a watchmaker specially trained and with the proper tools)

- 6 carefully clean the frame of the electrical assembly; do not use liquids
- 7 put a drop of Synta-Visco-Lube oil in one of the notches of the oscillating pinion, put pressure to the pinion to make it rotate, in order to spread the oil evenly
- 8 reassemble the motor without separating or scratching the coil threads
- 9 oil the pivots with Synta-Visco-Lube oil. If a defect in the winding pinion, or in the electrical circuits is noticed, it is recommended that the complete unit be sent back to the factory.

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Regulating unit



Normally, cleaning and oiling the Incabloc shock-absorber (upper and lower) is sufficient, and there is no need to disassemble anything else.

If a thorough cleaning is necessary, proceed as follows:

- 1 open the regulator key
- 2 unscrew the stud screw of the hairspring
- 3 remove the balance bridge, then the hairspring balance wheel assembly
- 4 loosen the impulse spring stud screw
- 5 remove the bridge, then the detent, and the detent wheel (the permanent magnet should not be unscrewed)
- 6 wash all parts in benzine (the Incabloc shock-absorber should be cleaned separately)
- 7 replace the detent wheel, the detent and the bridge controlling the end shake (detent staff 2/100 to 4/100 mm, detent wheel 1/100 to 3/100 mm when the movable bridge is pressed down); the end shake of the detent wheel should be very slight because it is responsible for the movement of the seconds hand; if it goes beyond the tolerance indicated above, the hand will vibrate and not move with precision

8 replace the impulse spring stud and tighten its fitting screw, without altering the strength of the spring (only a specially trained watchmaker can control this)

9 make sure that the detent blade is slightly detached 1
0 check the functioning of the wire spring of the movable bridge; its very weak tension should be exercised freely—if this tension is too weak, the gear of the endless screw and the seconds wheel will not work properly, and the seconds hand will vibrate; if, on the contrary, this tension is too great, the motor will increase its current consumption, the oil between the endless screw and the seconds wheel will disappear, and the movement could stop

11 the oiling will be done with Synta-Visco-Lube oil for the jewels of the upper and lower Incabloc shock-absorber upper and lower detent jewels upper and lower detent wheel jewels upper and lower pivots of the movable bridge
the flat of the detent jewel (without the oil touching the detent itself) behind the arms of the star the micrometric regulator screw notch the endless screw (it is advisable to

oil the endless screw sufficiently, as the use of the oil, at this point, is relatively high)

12 replace the hairspring balance wheel assembly and the balance wheel bridge, and tighten the hairspring stud screw

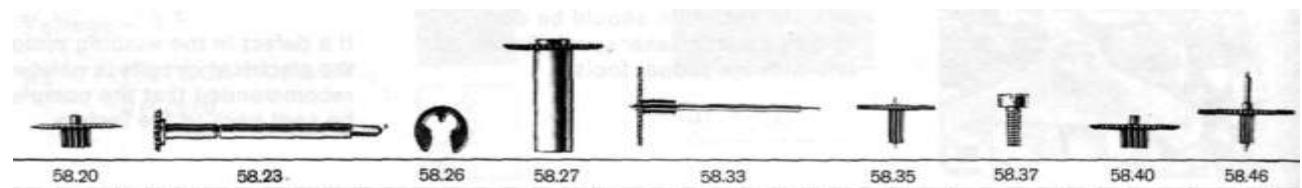
13 control the starting and the centering of the hairspring; turn the key leaving as little space as possible, without however impairing the free movement of the hairspring

14 place the movement in its final position and do not move it for at least 36 hours; this stabilization gives an opportunity for the oil to spread, the movable parts to reach their definite position, and the hairspring to balance its tensions, conditions indispensable to make any correction of a fraction of a second

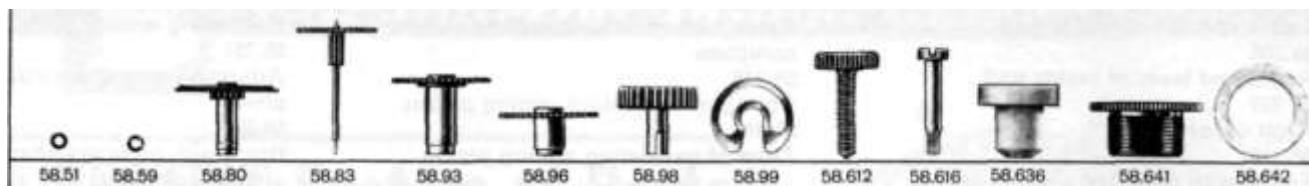
15 check again the regulation without moving the movement, by using the Vibrograf (oscillations 7200/h); because of the exceptional conception of the Portescap movement, the instantaneous reading corresponds to the actual running condition.

Spare parts

Gear-train unit

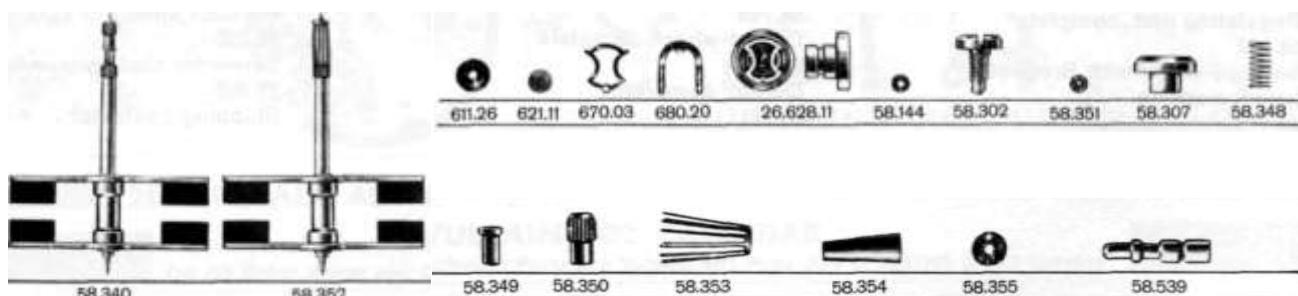
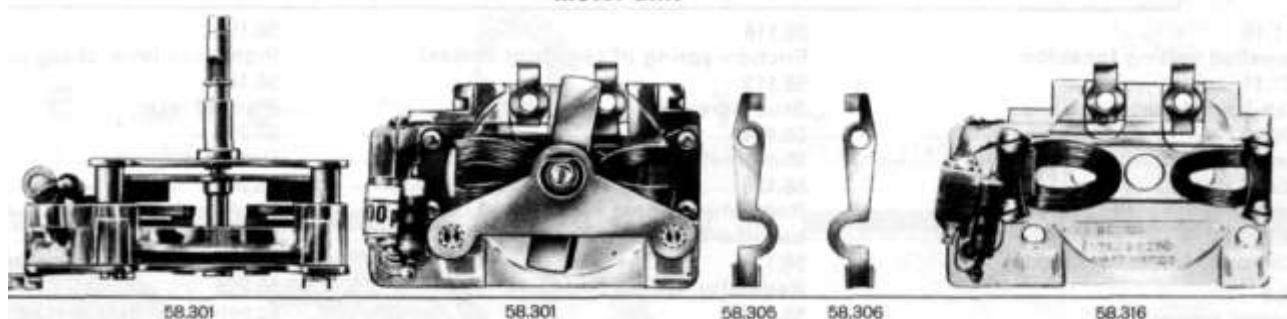


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58.3	Protecting sleeve for seconds pivot	58.20	Minute-wheel	58.59	Bushing of second-wheel, upper, long hand-fitting pipes with seconds
58.4	Adjusting ring of minute-wheel	58.23	Mounted hand-setting stem	58.80	Center-wheel with cannon-pinion, short hand-fitting pipes
58.5	Tube of hand-setting stem	58.26	Horse-shoe bolt of the spring of hand-setting stem	58.83	Second-wheel, short hand-fitting pipes
58.6	Spiral spring of the tube of hand-setting stem	58.27	Hour-wheel, long hand-fitting pipes without seconds	58.96	Hour-wheel, long hand-fitting pipes
58.7	Hour-wheel seat, long hand-fitting pipes without seconds	58.33	Second-wheel, long hand-fitting pipes	58.99	Hour-wheel, short hand-fitting pipes
58.8	Bridge screw	58.35	Second-wheel, long hand-fitting pipes without seconds	58.96	Hand-setting knob
58.9	Hour-wheel seat, hand-fitting pipes with seconds	58.37	Screw of hand-setting bridge	58.99	Horse-shoe bolt for fixing movement
58.11	Bridge with mounted hand-setting, exterior hand-setting	58.40	Minute-wheel, exterior hand-setting	58.612	Contact-knob
58.14	Center-wheel with cannon-pinion, long hand-fitting pipes without seconds	58.46	Third-wheel	58.616	Screw of protecting case
58.15	Center-wheel with cannon-pinion, long hand-fitting pipes with seconds	58.51	Bushing of third and second-wheels, upper and lower, short hand-fitting pipes	58.636	Insulator of protecting case screw
				58.641	Nut for central fixation
				58.642	Nut-washer for central fixation

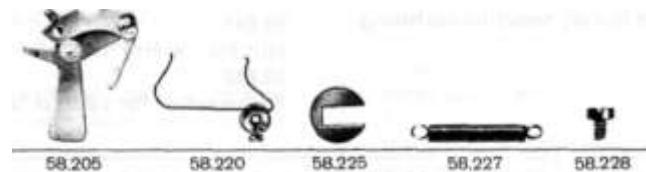
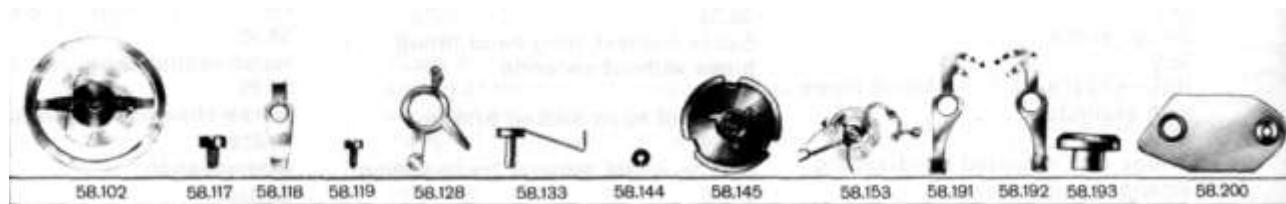
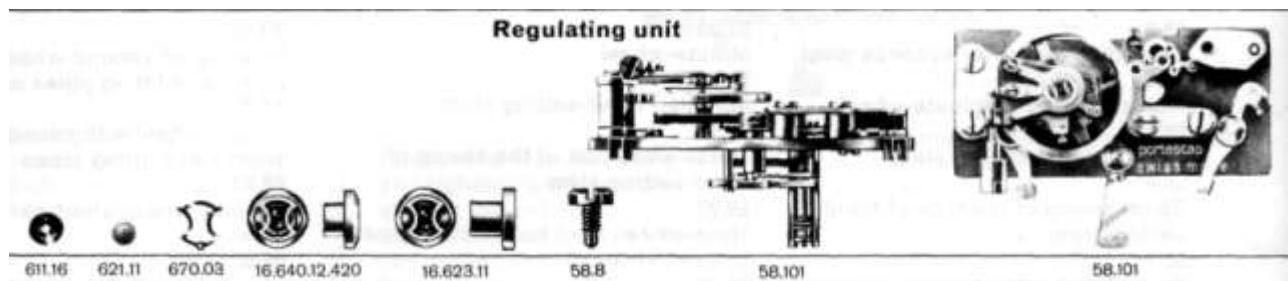
Motor unit



611.26	Jewelled setting Incabloc	680.20	Gib Incabloc	58.144	Rotor jewel, upper
621.11	Cap-jewel Incabloc	26.628.11	Complete Incabloc for rotor, without gib	58.301	Motor unit, complete
670.03	Cap-jewel spring Incabloc	58.349		58.302	Bridge screw
670.03	Cap-jewel spring Incabloc	58.350		58.351	
		58.353		58.352	
		58.354		58.355	
		58.356		58.357	
		58.358		58.359	

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58.305	58.340	58.350
Lefthand lever of motor unit	Rotor with oscillating arming pinion, complete	Oscillating arming pinion
58.306	58.348	58.351
Righthand lever of motor unit	Spring of oscillating arming pinion	Adjusting-ring of oscillating arming pinion
58.307	58.349	58.352
Rivet of lever	Tube of oscillating arming pinion	Rotor with umbrella-shaped arming pinion, complete
58.316		
Frame with mounted electric device		



611.16	58.118	58.192
Jewelled setting Incabloc	Friction-spring of regulator (index)	Righthand lever of regulating unit
621.11	58.119	58.193
Cap-jewel Incabloc	Stud-screw	Rivet of lever
670.03	58.124	58.200
Cap-jewel spring Incabloc	Micrometric screw of regulator (index)	Detent-magnet
16.640.12.420	58.128	58.205
Complete upper Incabloc	Regulator (index) for Breguet	Stop-lever
16.623.11	balance-spring	58.220
Complete lower Incabloc	58.133	Blade-shaped stop-spring
58.8	Regulator-spring (index-spring)	58.225
Bridge screw	58.144	Eccentric of detent-magnet
58.101	Jewel for detent and detent-wheel	58.227
Regulating unit, complete	58.145	Fly-back spring of stop-lever
58.102	Detent-wheel, complete	58.228
Balance-wheel with Breguet	58.153	Screw for blade-shaped stop-spring
balance-spring	Detent, complete	58.368
58.117	58.191	Shipping container
Screw for friction-spring of regulator (index)	Lefthand lever of regulating unit	