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VALJOUX S.A.
LES BLOUX

13''' VZ 23
29.5 mm

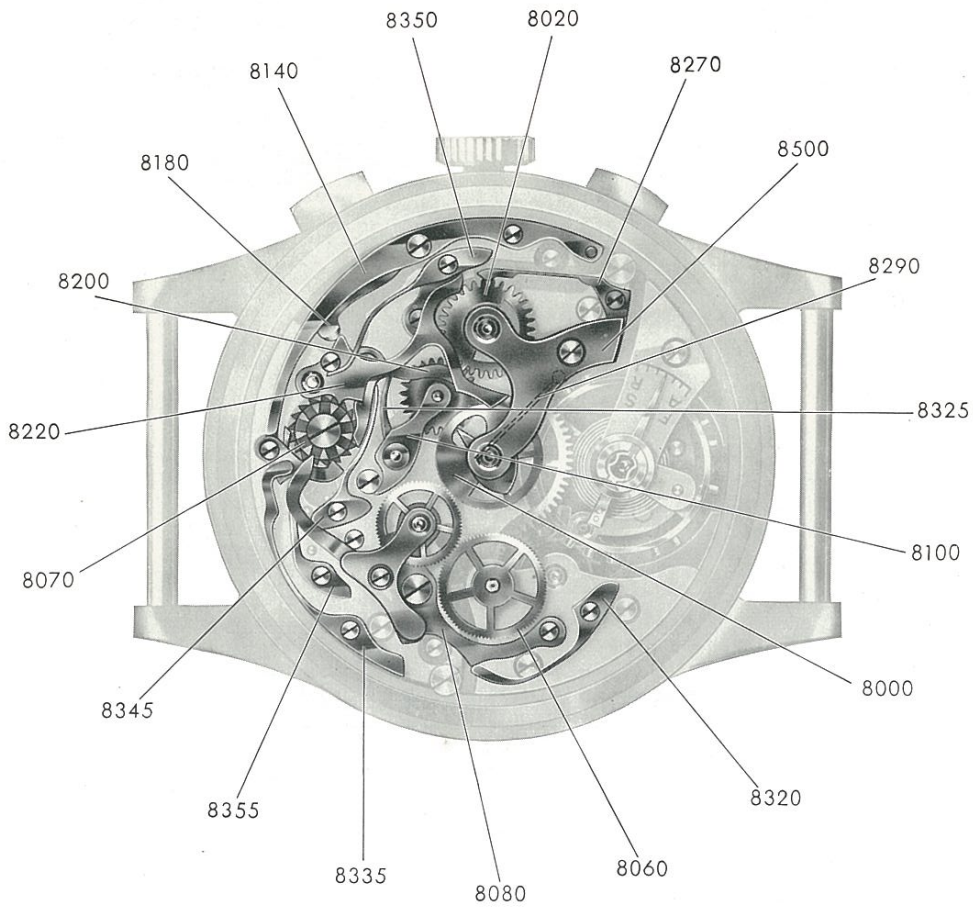
Recording chronograph with two pushers, with pillar wheel

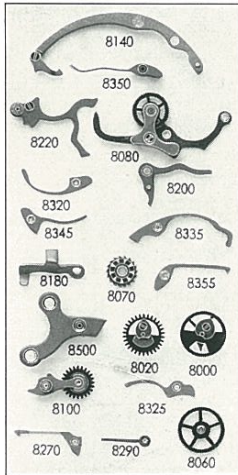


Enlarged movement

TECHNICAL AND PRACTICAL COMMUNICATION FOR THE GUIDANCE OF WATCH REPAIRERS

CAUTION: The 3 points marked in red below indicate eccentrics. These parts are not screws; therefore they should not be turned when disassembling.



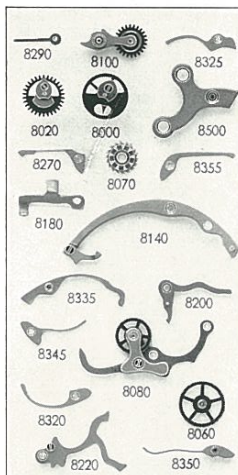


DISASSEMBLING :

1. Release mainspring by pressing on click indicated by arrow.
2. Remove balance wheel and pallet fork.
3. Remove winding stem.
4. If it is grooved, remove the operating lever pusher, remembering to lift up operating lever 8140, the peg of which fits into the pivot groove of the pusher; then take the movement out of the case. If the operating lever pusher is of the spring or lug type, remove the movement first and the pushers afterwards. Then, in either case, remove hands and dial.
5. Remove hammer spring 8350 and mounted hammer 8220.
6. Remove mounted coupling clutch 8080 and its spring 8320.
7. Remove blocking lever 8200 and its spring 8345.
8. Remove mounted operating lever 8140, its spring 8335 and fly-back lever 8180.
9. Remove pillar wheel 8070 and its jumper 8355.
10. Remove chronograph bridge 8500, minute-recording runner 8020 and chronograph runner 8000.
11. Remove mounted sliding gear 8100 and its spring 8325.
12. Remove minute-recording jumper 8270, friction spring 8290 and, by means of a fork-shaped lever, driving wheel 8060.
13. Disassemble the movement and clean all its parts in the ordinary way.

CHECKING A :

Check condition of finger and teeth of chronograph runner, coupling wheel and driving wheel. Remove bridge of coupling wheel, clean the bushings of the latter and see that it runs freely. Do the same for the sliding gear wheel, if necessary. Also clean center wheel tube and see that the inner bushing is in position. Reassemble the watch movement proper, oil all runners and wind mainspring one turn and a half to check the running. It is advisable to remove the balance wheel and pallet fork before reassembling the chronograph mechanism.



ASSEMBLING :

1. Screw on friction spring 8290.
2. Fit mounted sliding gear 8100 and its spring 8325 (the sliding gear should move freely).
3. Replace minute-recording runner 8020 and chronograph runner 8000, after oiling the long pivot of the latter (make sure that friction spring 8290 exerts normal pressure under runner 8000), then replace chronograph bridge 8500.
4. Screw on minute-recording jumper 8270; see that it is under slight tension.
5. Fit pillar wheel 8070, after greasing its screw, then fit its jumper 8355.
6. Fit fly-back lever 8180, then mounted operating lever 8140 and its spring 8335.
7. Screw on blocking lever 8200 and its spring 8345.
8. Oil short pivot of chronograph runner 8000 and both pivots of coupling wheel; then fit mounted coupling clutch 8080, with its screw, and screw on coupling clutch spring 8320. (Never oil pivots of minute-recording runner or of sliding gear wheel.)
9. Fit driving wheel 8060, which should be flush with the coupling wheel.
10. Fit mounted hammer 8220 and its spring 8350.
11. Make sure that all runners are perfectly free-acting, then replace pallet fork and balance wheel.

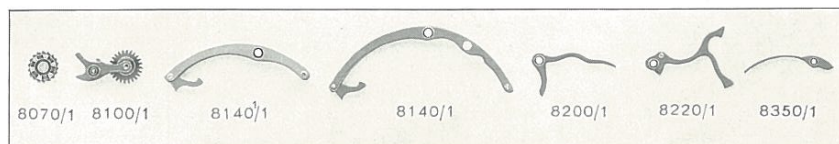
CHECKING B :

Check depth of gears (driving wheel - coupling wheel; coupling wheel - chronograph wheel) and penetration of finger into sliding gear toothings. When operating the fly-back action through pressure of the hammer on the hearts, see that the chronograph runner is blocked; on the other hand, the minute-recording runner should have slight side-shake (the hammer is not pressing on the heart). Also make sure that the sliding gear wheel is away from the finger, that the hammer arms do not foul the wheels or the bridge, and that the pillar wheel keeps the coupling wheel disconnected from the chronograph wheel. On pressing the zero-action pusher, make sure that the nose of the hammer pushes against the blocking lever pin at the beginning of the movement, and that the zero-action device is released when pressure is increased. Slightly grease the hammer where it comes into contact with the hearts, sliding gear and blocking lever pin; the coupling yoke where it comes into contact with the pillar wheel; the blocking lever where it comes into contact with the pillar wheel; the operating lever where it comes into contact with the operating lever hook; the pillar wheel jumper where it comes into contact with the pillar wheel toothings.

CASING :

Spring or lug pushers should be placed in position before casing the movement, but grooved pushers should be placed in position after casing, the operating lever and, if necessary, the fly-back lever having been unscrewed. Then, in either case, replace the winding stem, fit the 2 case screws and check the working by means of the pushers. Fit the dial and the hour, minute and second hands, then, with the hammer pressed against the hearts by the zero-action pusher, fit the sweep second and minute-recording hands.

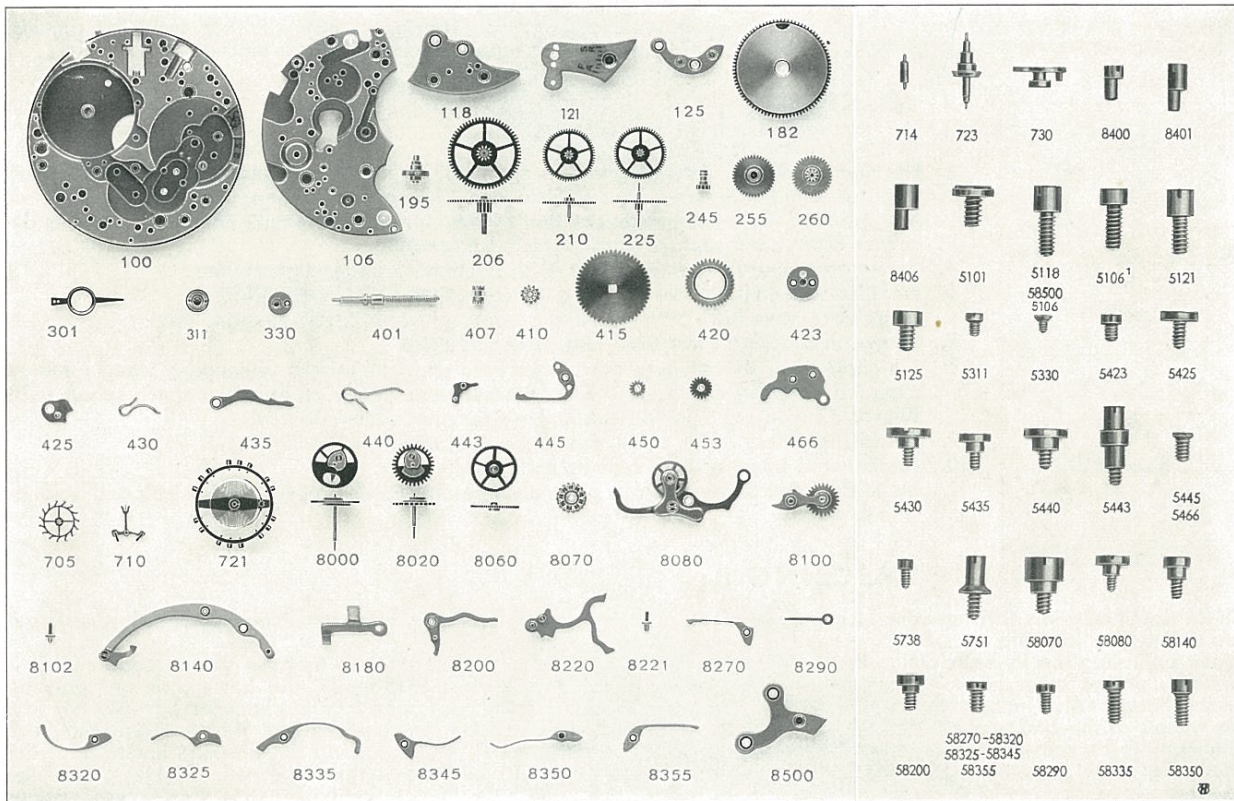
Note : This movement with 2 pushers has also been made with a single pusher (triple function). The parts shown below, with /1 added to their numbers, are specially designed for the single-pushers mechanism. Operating lever 8140/1 is used in the type with a pusher in the winding crown.



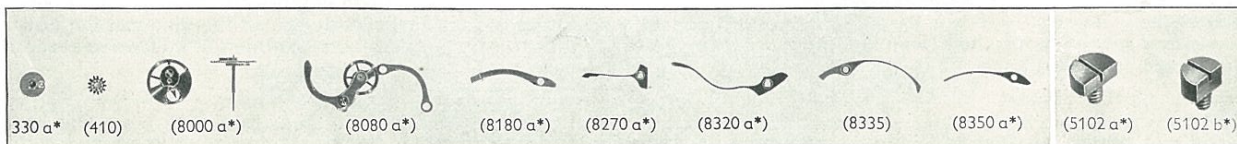
Description and numbering of spare parts according to the "Technological Dictionary of Watch Parts", 2nd edition.

100 Plate	415 Ratchet wheel	8070 Pillar wheel
106 Barrel and train wheel bridge	420 Crown wheel	8080 Coupling clutch, mounted
118 Combined bridge	423 Crown wheel core	8100 Sliding gear, mounted, 30 m.
121 Balance cock for flat hairspring	425 Click	8102 Sliding gear stud
125 Pallet cock	430 Click spring	8140 Operating lever, mounted
182 Barrel and cover	435 Yoke	8180 Fly-back lever
195 Barrel arbor	440 Yoke spring	8200 Blocking lever
206 Center wheel and pinion	443 Setting lever	8220 Hammer, mounted
210 Third wheel and pinion	445 Setting lever spring	8221 Hammer stud
225 Fourth wheel and pinion	450 Setting wheel	8270 Minute-recording jumper
245 Cannon pinion	453 Additional setting wheel	8290 Friction spring for chronograph runner
255 Hour wheel	466 Winding assembly lid	8320 Coupling clutch spring
260 Minute wheel	705 Escape wheel and pinion	8325 Sliding gear spring
301 Regulator for flat hairspring	710 Jewelled pallet fork and staff	8335 Operating lever spring
311 Upper cap jewel with end-piece, for balance	714 Pallet staff	8345 Blocking lever spring
330 Lower cap jewel with end-piece, for balance	721 Balance with flat hairspring	8350 Hammer spring
401 Winding stem	723 Balance staff	8355 Pillar wheel jumper
407 Clutch wheel	730 Roller	8400 Pivoting eccentric for coupling clutch
410 Winding pinion	8000 Chronograph runner, mounted	8401 Banking eccentric for coupling clutch
	8020 Minute-recording runner, mounted, 30 m.	8406 Finger-depth eccentric
	8050 Driving wheel	8500 Chronograph bridge

5101 Case screw - 5106 Screw for barrel and train wheel bridge (high head) - 5106¹ Screw for barrel and train wheel bridge (low head) - 5118 Screw for combined bridge - 5121 Balance cock screw - 5125 Pallet cock screw - 5311 Upper end-piece screw - 5330 Lower end-piece screw - 5423 Crown wheel core screw - 5425 Click screw - 5430 Screw for click spring - 5435 Yoke screw - 5440 Screw for yoke spring - 5443 Setting lever screw - 5445 Screw for setting lever spring - 5466 Winding assembly lid screw - 5738 Hairspring stud screw - 5751 Dial key - 58070 Pillar wheel screw - 58080 Coupling clutch screw - 58140 Operating lever screw - 58200 Blocking lever screw - 58270 Minute-recording jumper screw - 58290 Screw for friction spring - 58320 Screw for coupling clutch spring - 58325 Screw for sliding gear spring - 58335 Screw for operating lever spring - 58345 Screw for blocking lever spring - 58350 Screw for hammer spring - 58355 Pillar wheel jumper screw - 58500 Chronograph bridge screw.



As a result of technical improvements, certain parts of this caliber have been modified in the successive series manufactured. There are therefore several different types; to distinguish between those that are not interchangeable, letters have been added to the basic numbers of the parts in question. Special signs used in conjunction with the numbers give the necessary explanations. If the number is followed by *, the types are not interchangeable. If the number is between brackets, the part in question is no longer manufactured. Moreover, there exist certain parts of obsolete type and different from those illustrated in this leaflet; as these are completely interchangeable, they are not included in the illustrations.



When ordering parts for a shock-protecting device, make certain to specify its exact type. For further details of the description and numbering of spare parts, see the "Technological Dictionary of Watch Parts", 2nd edition, published by Ebauches S. A.

Order repair parts through your jobber, giving the numbers and designations, thus insuring prompt and efficient deliveries.