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VALJOUX S.A.

LES BIOUX

13‴ **72**
13‴ **72c**
13‴ **88**
29.50 mm

Minute-recording chronograph with:

Hour-recording device (cal. 72 VZ H)

Hour-recording and calendar devices (cal. 72c VZ HC)

Hour-recording, calendar and moon phase devices (cal. 88 VZ HCL)

(Lever movement, sweep second, with calendar and moon phase devices, cal. 90)

Cal. 72, 72c, 88

Cal. 72

Cal. 72c

Cal. 88

Enlarged movements

TECHNICAL AND PRACTICAL COMMUNICATION FOR THE GUIDANCE OF WATCH REPAIRERS

11

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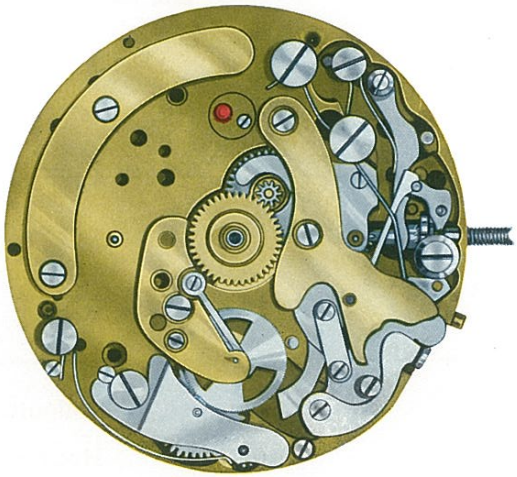
Minute-recording chronograph with hour-recording device

13‴ 72

Chronograph 72 is the same as caliber 23 (see Technical Communication No. 2), with the addition of an hour-recording device.



DISASSEMBLING:

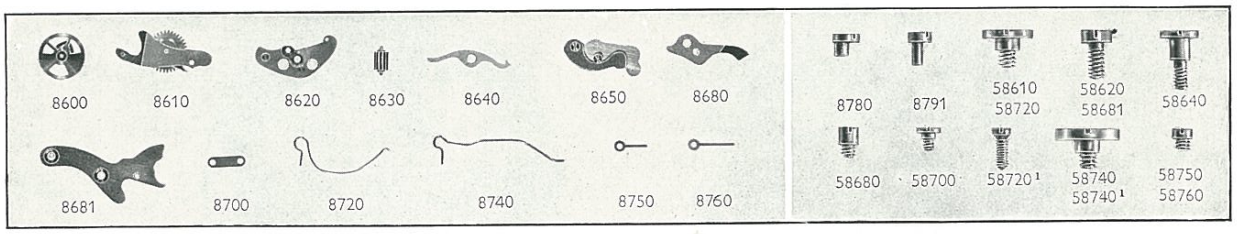
To gain access to the hour-recording device, it is first of all necessary to go through operations 1 to 4 for disassembling the chronograph mechanism (see under cal. 23), and then to remove switch 8640 and its screw. Then withdraw the parts of the recording device (dial side), in the following order: friction spring 8760 of hour-recording wheel, hour recorder bridge 8620, hour-recording runner 8600, end-shake bridle 8750 of conveyor wheel, conveyor spring 8720, conveyor 8610, driving pinion 8630, hour hammer cock 8681, pawl spring 8740, connecting plate 8700, pawl 8650 and hour hammer 8680. Check cleanness and wear of all parts.

ASSEMBLING:

First of all, go through operations 1 to 11 for assembling the chronograph mechanism, if it has been completely disassembled (see under cal. 23); fit switch 8640 and its screw, then replace the parts of the recording device (dial side), in the following order: pawl 8650, hour hammer 8680, hour hammer cock 8681, connecting plate 8700, pawl spring 8740, driving pinion 8630, conveyor 8610 and its spring 8720, end-shake bridle 8750 of conveyor wheel, hour-recording runner 8600, hour recorder bridge 8620 and friction spring 8760 of hour-recording wheel.

CHECKING AND LUBRICATION:

When operating the fly-back action, see that the chronograph and hour-recording runners are blocked; on the other hand, the minute-recording runner should have slight side clearance (the hammer is not pressing on the heart). The hour hammer is adjusted by means of pawl eccentric 8780. The meshing of the conveyor wheel pinion and the hour-recording runner wheel is adjusted by means of banking eccentric 8791. Grease the hour hammer where it comes into contact with the heart; oil the friction spring of the hour-recording wheel where it comes into contact with the hour-recording runner; also oil the pivot of the hour-recording runner.



8600 Hour-recording runner, mounted
8610 Conveyor, mounted
8620 Hour recorder bridge
8630 Driving pinion
8640 Switch
8650 Pawl, mounted
8680 Hour hammer
8681 Hour hammer cock
8700 Connecting plate
8720 Conveyor spring
8740 Pawl spring
8750 End-shake bridle for conveyor wheel
8760 Friction spring for hour-recording wheel
8780 Pawl eccentric
8791 Banking eccentric for conveyor

58610 Conveyor screw - 58620 Hour recorder bridge screw - 58640 Switch screw - 58680 Hour hammer screw - 58681 Hour hammer bridge screw - 58700 Connecting plate screw - 58720 Screw for conveyor spring - 58720¹ Banking screw for conveyor spring - 58740 Screw for pawl spring - 58/40¹ Safety screw for pawl spring - 58750 Screw for end-shake bridle of conveyor wheel - 58760 Screw for friction spring of hour-recording wheel

Former types of parts and screws are illustrated on page 5 of this leaflet.

On page 6 it is shown how the parts and screws of the movement, chronograph mechanism and hour-recording device correspond.

Ebauches S.A., Neuchâtel/Switzerland

Minute-recording chronograph with hour-recording and calendar devices

13‴ 72c

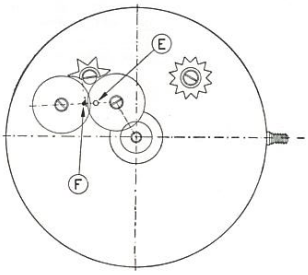
Chronograph 72c is the same as caliber 23 (see Technical Communication No. 2), with the addition of hour-recording and calendar devices. Its hour-recording device is the same as in caliber 72, only a few parts having been modified.

DISASSEMBLING:

To gain access to the calendar device, it is first of all necessary to go through operations 1 to 4 for disassembling the chronograph mechanism (see under cal. 23). The device can then be disassembled easily. Remember to check cleanness and wear of all parts.

ASSEMBLING:

The device is equally easy to assemble; but the following special point must be taken into account: date star driving wheel 2556 (see diagram) should be placed with its mark E opposite pin F of day star driving wheel 2560, on the line joining the centers of the two wheels.



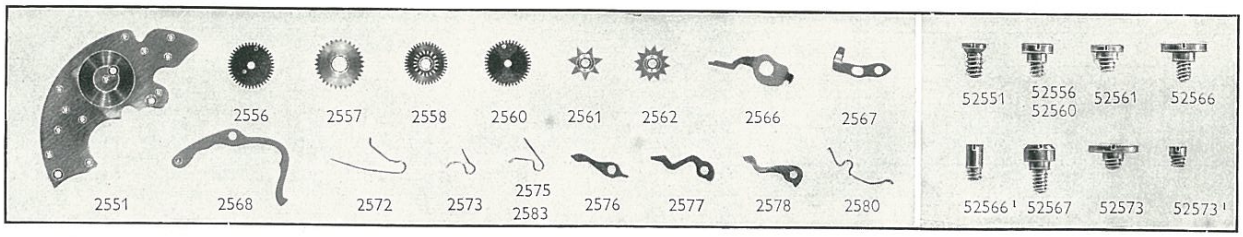
CHECKING AND LUBRICATION:

With the winding stem in the hand-setting position, make sure that the day and date stars "jump" simultaneously. Check the working by means of the correctors, then oil all pivot points of the correctors and jumpers; grease the friction points of the springs and jumpers.

WORKING AND SETTING THE CALENDAR:

After fitting the dial, turn the winding stem until the day disk jumps forward; fit the date hand, then the hour and minute hands pointing to 12, and then fit the second hand; using the fly-back pusher to hold the hammers against the hearts, fit the counter hands and the sweep second hand. Set the watch to the correct time and the calendar to the correct date by means of the pushers, remembering that the hands have been set to zero hours. Do not use the pushers to work the calendar between 8 p.m. and 2 a.m., when the automatic "jumping" takes place.

In this caliber, pusher A works the date hand, while pusher BC works the month disk when pushed in slightly and the day disk when pushed home.



2551 Calendar plate
2556 Date star driving wheel
2557 Date star
2558 Double-toothing hour wheel
2560 Day star driving wheel
2561 Day star
2562 Month star
2566 Date corrector
2567 Day corrector
2568 Month corrector
2572 Date corrector spring
2573 Day jumper spring
(2575/2583 Spring with 2 functions)
2575 Date jumper spring
2576 Date jumper
2577 Day jumper
2578 Month jumper
2580 Month corrector spring
2583 Month jumper spring

52551 Calendar plate screw - 52556 Date star driving wheel screw - 52560 Day star driving wheel screw - 52561 Day star screw - 52562 Month star screw - 52566 Date corrector screw - 52566¹ Banking screw for date corrector - 52567 Day corrector screw - 52568 Month corrector screw - 52573 Screw for day jumper spring - 52573¹ Banking screw for day jumper spring - 52576 Date jumper screw - 52577 Day jumper screw - 52578 Month jumper screw - 52580 Screw for month corrector spring - 52583 Screw for month jumper spring.

Former types of parts and screws are illustrated on page 5 of this leaflet.

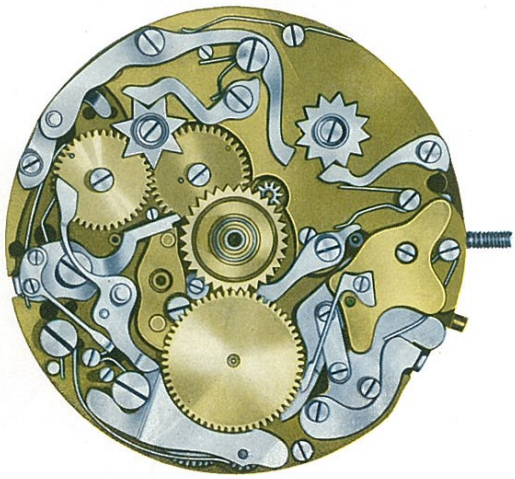
It is shown on page 6 how the parts and screws of the movement, chronograph mechanism and hour-recording and calendar devices correspond.

Ebauches S.A. Neuchâtel/Switzerland

Minute-recording chronograph with hour-recording, calendar and moon phase devices

13‴ 88

Chronograph 88 is the same as caliber 23 (see Technical Communication No. 2), with the addition of hour-recording, calendar and moon phase devices. Its hour-recording device is the same as in calibers 72 and 72c; its calendar device is the same as in caliber 72c. Only a few parts of these devices have been modified.



DISASSEMBLING AND ASSEMBLING:

To gain access to the moon phase device, it is first of all necessary to go through operations 1 to 4 for disassembling the chronograph mechanism (see under cal. 23). The device can then be disassembled and assembled again easily.

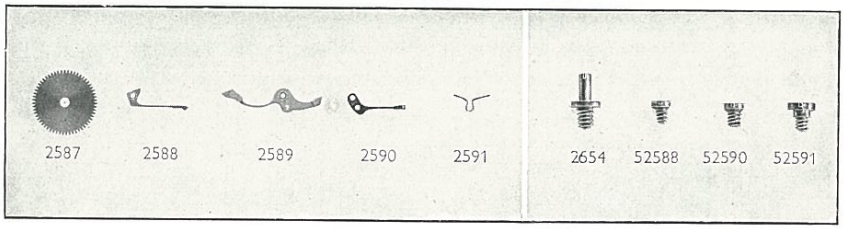
CHECKING AND LUBRICATION:

With the winding stem in the hand-setting position, check the correct "jumping" of the moon phase star; check its working by means of the corrector; oil the pivot point of the moon phase yoke and grease the friction points of the springs.

WORKING AND SETTING THE MOON PHASE DEVICE:

After fitting the dial and hands, check the working of the calendar device (see under cal. 72c), then set the moon phase disk to the right quarter, which can be ascertained from an almanac. Pusher AD works the moon phase disk when pushed in slightly and the date hand when pushed home.

In this caliber, do not use the pushers to work the day, month and date indicators between 8 p.m. and 2 a.m., or to work the date and moon phase indicators between 10 a.m. and 2 p.m., when the automatic "jumping" takes place.



2587 Moon phase star
2588 Moon phase jumper
2589 Moon phase yoke
2590 Moon phase corrector
2591 Moon phase yoke spring
2654 Moon phase yoke stud

52588 Moon phase jumper screw - 52590 Moon phase corrector screw - 52591 Screw for moon phase yoke spring

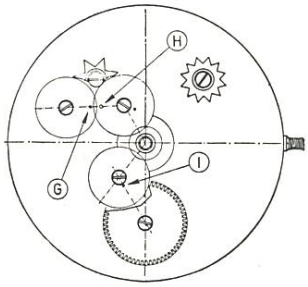
It is shown on page 6 of this leaflet how the parts and screws of the movement, chronograph mechanism and hour-recording, calendar and moon phase devices correspond.

Ebauches S.A., Neuchâtel/Switzerland

Lever movement, sweep second, with calendar and moon phase devices

13‴ 90

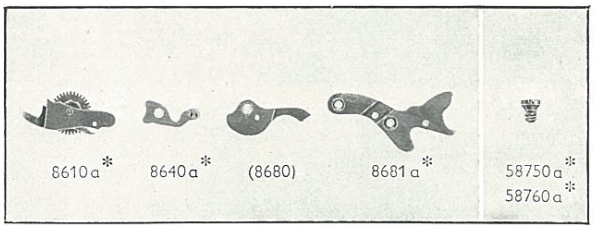
Caliber 90 has a calendar mechanism with or without moon phase device. It is based on caliber 23, without chronograph mechanism.



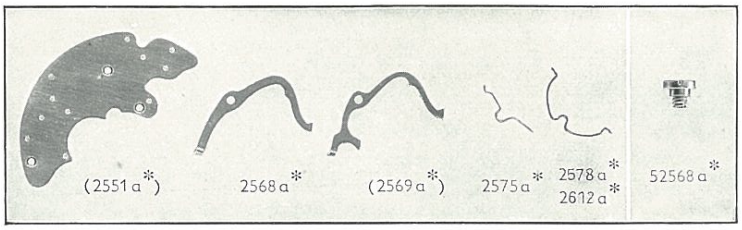
Note: When assembling, bear in mind the following special point: date star driving wheel 2556 (see diagram) should be placed with its mark H opposite pin G of day star driving wheel 2560; furthermore, moon phase star driving wheel should be placed with its pin I on the line joining the center of the wheel and that of moon phase star 2587.

Former types of parts used in calibers 72 and 72c

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 there is no *, the types are completely interchangeable; if the number is followed by *, they are not interchangeable. If the number is between brackets, the part in question is no longer manufactured.



Former types of parts used in caliber 72



Former types of parts used in caliber 72c

Ebauches S.A., Neuchâtel/Switzerland

Correspondence of parts and screws of movement, chronograph mechanism and hour-recording, calendar and moon phase devices of calibers 23 (Technical Communication No. 2) **and 72, 72c, 88 and 90.** (Parts of former types [see Technical Communication No. 2 and also this leaflet] are not included in the following table.)

Correspondence of parts of the 5 calibers

Ex. There are special types of plate 100 for each of the 5 calibers. There are special types of barrel bridge 106 for calibers 23 and 90, but calibers 72c and 88 have the same type as caliber 72. Balance cock 121 is identical in the 5 calibers. It should also be noted that certain parts have 2 functions, e.g. date jumper spring 2575, which also acts as month jumper spring 2583.

	100	106	118	121	122	125	127	145	182	195	205	210	214	220	225	230	255	260	275	283	301	302	311	330	336
23	23	23	23	23	23	23	—	—	23	23	23	23	—	—	23	23	23	23	—	—	23	23	23	23	—
72	72	72	23	23	23	23	—	72	23	23	72	23	—	—	23	23	72	72	—	—	23	23	23	23	—
72c	72c	72	23	23	23	23	—	—	23	23	72c	23	—	—	23	23	—	72	—	—	23	23	23	23	—
88	88	72	23	23	23	23	—	—	23	23	88	23	—	—	88	23	—	72	—	—	23	23	23	23	—
90	90	90	90	23	23	23	90	90	23	23	90	—	90	90	—	90	—	72	90	90	23	23	23	23	90

	401	407	410	415	420	423	425	430	435	440	443	445	450	453	466	471	705	710	714	721	722	723	730	770	2551
23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	—	23	23	23	23	23	23	23	23	—
72	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	—	23	23	23	23	23	23	23	23	—
72c	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	—	23	23	23	23	23	23	23	23	72c
88	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	—	23	23	23	23	23	23	23	23	72c
90	90	90	23	23	23	23	23	23	23	23	23	23	23	23	23	90	90	23	23	23	23	23	23	23	72c

	2556	2557	2558	2560	2561	2562	2566	2567	2568	2572	2573	2575	2576	2577	2578	2580	2583	2587	2588	2589	2590	2591	2592	2593	2596
23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	—	—	—	—	—	—	—	—
88	72c	88	88	88	88	88	88	72c	72c	72c	72c	72c	88	72c	72c	72c	72c	88	88	88	88	88	—	—	—
90	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	72c	90	90	—	90	—	90	90	90

	2597	2654	2689	8000	8020	8060	8070	8080	8100	8102	8106	8140	8142	8180	8200	8220	8221	8222	8270	8290	8320	8325	8335	8345	8350
23	—	—	—	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
72	—	—	—	72	72	23	23	23	23	23	23	23	72	23	23	23	23	23	23	23	23	23	23	72	23
72c	—	—	—	72	72	23	23	23	23	23	23	23	72	23	23	23	23	23	23	23	23	23	23	72	23
88	—	88	88	72	72	23	23	23	23	23	23	23	72	23	23	23	23	23	23	23	23	23	23	72	23
90	90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

	8355	8400	8401	8406	8500	8600	8610	8620	8630	8640	8650	8680	8681	8682	8700	8720	8730	8740	8750	8760	8780	8790	8791
23	23	23	23	23	23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
72	23	23	23	23	23	72	72	72	72	72	72	72	72	72	72	72	72	—	72	72	72	72	72
72c	23	23	23	23	23	72	72	72c	72	72	72	72	72c	72	72	72	—	72c	72	72c	72	72	72
88	23	23	23	23	23	88	72	88	72	72	72	72	88	72	72	72	—	72c	72	72c	72	72	72
90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Correspondence of screws of the 5 calibers

The following table is arranged in the same way as the table of parts given above; however, certain screws, identical in several calibers, are also identical with other screws; this is indicated by a number between brackets, placed after the caliber number, e.g. screw 5106 is identical with screw 5118, as the same number (7) appears after the caliber number.

	5101	5106	5106[1]	5118	5121	5122	5125	5127	5145	5145[1]	5311	5330	5336	5410	5423	5425	5430
23	23	23 (7)	23	23 (7)	23 (12)	23 (12)	23 (2)	—	—	—	23	23 (6)	—	—	23 (3)	23	23 (11)
72	23	23 (7)	23	23 (7)	23 (12)	23 (12)	23 (2)	—	72 (1)	—	23	23 (6)	—	72	23 (3)	23	23 (11)
72c	23	23 (7)	23	23 (7)	23 (12)	23 (12)	23 (2)	—	—	—	23	23 (6)	—	—	23 (3)	23	23 (11)
88	23	23 (7)	23	23 (7)	23 (12)	23 (12)	23 (2)	—	—	—	23	23 (6)	—	—	23 (3)	23	23 (11)
90	23	23 (7)	—	23 (7)	23 (12)	23 (12)	23 (2)	90	90 (3)	90 (2)	23	23 (6)	90 (6)	—	23 (3)	23	23 (11)

	5435	5440	5443	5445	5466	5471	5738	5751	5752	5752[1]	52551	52556	52560	52561	52562	52566	52566[1]
23	23	23	23	23 (5)	23 (5)	—	23	23	—	—	—	—	—	—	—	—	—
72	72	23	23	23 (5)	23 (5)	—	23	23	72	—	—	—	—	—	—	—	—
72c	23	23	23	23 (5)	23 (5)	—	23	23	72	72c	72c (8)	72c (15)	72c (15)	72c (19)	72c (19)	72c (11)	72c
88	23	23	23	23 (5)	23 (5)	—	23	23	88	—	72c (8)	88 (18)	88 (18)	88 (17)	88 (17)	72c (11)	72c
90	23	23	23	23 (5)	23 (5)	90 (20)	23	90	—	—	72c (8)	72c (15)	72c (15)	72c (19)	72c (19)	72c (11)	72c

	52566[2]	52567	52568	52573	52573[1]	52575	52576	52577	52578	52580	52583	52587	52588	52589	52590	52590[1]	52591
23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
72c	—	72c	72c (19)	72c	72c (9)	72c (19)	72c (19)	72c (19)	72c (19)	72c (19)	72c (19)	—	—	—	—	—	—
88	—	88	88 (17)	72c	72c (9)	88 (17)	88 (17)	88 (17)	88 (17)	88 (17)	88 (17)	—	88	88	88	—	88
90	90	72c	72c (19)	72c	72c (9)	72c (19)	72c (19)	72c (19)	72c (19)	72c (19)	72c (19)	90	90 (19)	—	90 (19)	90 (9)	—

	52592	52593	52596	52597	58070	58080	58082	58140	58141	58200	58220	58270	58290	58320	58325	58335	58345
23	—	—	—	—	23	23	23	23	23 (13)	23	23	23 (4)	23 (20)	23 (4)	23 (4)	23	23 (4)
72	—	—	—	—	23	23	23	23	23 (13)	23	23	23 (4)	23 (20)	23 (4)	23 (4)	23	23 (4)
72c	—	—	—	—	23	23	23	23	23 (13)	23	23	23 (4)	23 (20)	23 (4)	23 (4)	23	23 (4)
88	—	—	—	—	23	23	23	23	23 (13)	23	23	23 (4)	23 (20)	23 (4)	23 (4)	23	23 (4)
90	90 (19)	90 (19)	90 (8)	90 (15)	—	—	—	—	—	—	—	—	—	—	—	—	—

	58350	58355	58500	58610	58612	58620	58640	58650	58680	58681	58700	58720	58720[1]	58730	58740	58750	58760
23	23	23 (4)	23 (7)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
72	23	23 (4)	23 (7)	72 (10)	72	72 (1)	72	72	72	72 (1)	72 (13)	72 (10)	72	72	—	72 (20)	72 (20)
72c	23	23 (4)	23 (7)	72 (10)	72	72 (1)	72	72	72	72c (3)	72 (13)	72 (10)	72	—	72c (19)	72 (20)	72c (4)
88	23	23 (4)	23 (7)	72 (10)	72	72 (1)	72	72	72	72c (3)	72 (13)	88	72	—	88 (16)	72 (20)	72c (4)
90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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 Technical Communication No. 2 (Valjoux, cal. 23) or 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.

Hertig+Co. S.A., Bienne