



CITIZEN
NEW PRODUCT DIGEST
CHRONOGRAPH

PREFACE

Citizen Watch Co., Ltd. has come up with a compact and automatic chronograph watch, the Citizen Chronograph. This guidebook has been compiled for the convenience of salesmen and gives detailed explanations on the mechanisms of the new product, with specifications, descriptions on special features, instructions on handling and a list of watch parts. We hope that the brochure will aid you in sales promotion activities.

SPECIFICATIONS

Caliber No.:	8100A	8110A
Number of jewels:	23	←
Movement size: Casing diameter Thickness	27.0mm ϕ 5.82mm	← 6.72mm
Number of oscillations:	28,800 oscillations/hour (8 beats/second)	←
Special features:		
Chronograph mechanism		
minute recorder (30-minute meter)	○	○
hour recorder (12-hour meter)		○
Automatic winding	○	○
Day-date mechanism	○	○
Easy day-date changing system	○	○
Regulating device for fine adjustment	○	○
Out of beat correcting device	○	○



Dial side for
Cal. No. 8100A



Bridge side for
Cal. No. 8100A

MAIN FEATURES

The leading features of Citizen Chronograph include the following:

a) Compact streamlined design, reliable automatic mechanism

It is a slim and compact automatic wristwatch with a built-in chronograph and a day-date mechanism. A watch with a universal appeal.



b) Convenient, easy-to-handle chronograph mechanism

Its second hand and minute-recorder hand (and hour-recorder hand) can be started, stopped or reset at any time, and in a number of different combinations to permit wide application of the watch.

c) Continuously moving minute-recorder hand (and hour-recorder hand)

The minute-recorder hand (and hour-recorder hand) set in continuous motion by means of pinion, ensure absolutely reliable performance with the absence of load fluctuations:

d) Zero-setting device equipped with a buffer system

The buffer system absorbs any shock that may be applied to the zero-setting button to protect the chronograph mechanism. The hands will not return to zero while the buffer system is functioning.

e) Resetting to zero of second hand and minute-recorder hand (and hour-recorder hand)

The second hand and minute-recorder hand (and hour-recorder hand) reset themselves to zero simply at a touch of a zero-setting button.

f) Streamlined mechanism for ease of overhaul

The principal parts of the chronograph mechanism can be handled as a single block for the convenience of cleaning and lubrication.

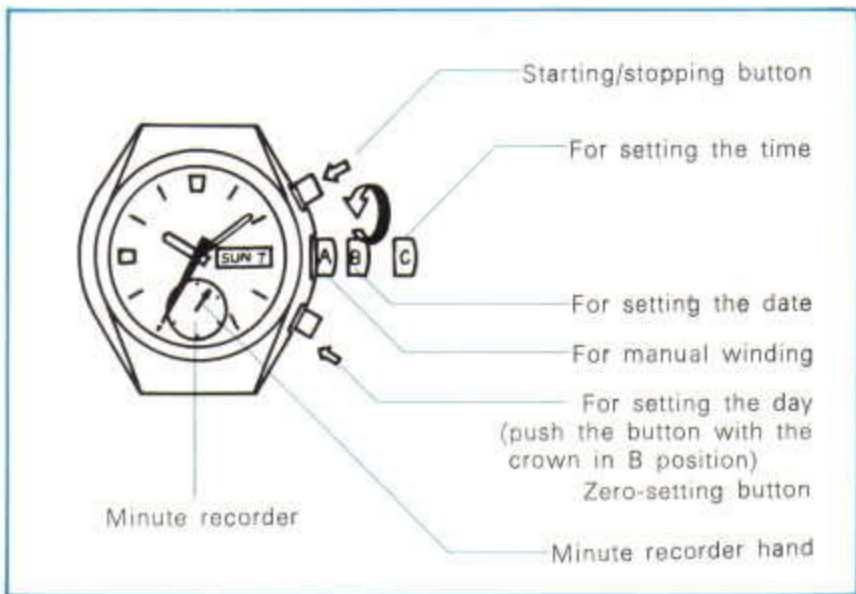
HANDLING PROCEDURES

The crown of this wristwatch can be pulled out in two steps (from position A to positions B and C in the diagram).

I. How to set the time, date and day

a) Winding the mainspring

Wind the mainspring or shake the watch sufficiently. If the second hand has stopped, press the starting/ stopping button.



b) Setting the time

Pull out the crown two steps to position C, and advance the hands. If the date changes when the hands pass the 12 o'clock position, it indicates midnight, and if not, it indicates midday. Making sure of "a.m." or "p.m.", set the hands to the correct time.

c) Setting the date

Pushing the crown lightly from C to B position, rotate it toward you (anticlockwise direction) until you get the correct date.

d) Setting the day

With the crown still in B position, press the zero-setting button to set the day of the week.

II. How to operate the chronograph

a) Setting to zero

Stop the second hand and minute-recorder hand (and hour-recorder hand) by pressing the starting/stopping button. Then push the zero-setting button to return the hands to zero.

b) Starting

Push the starting/stopping button.

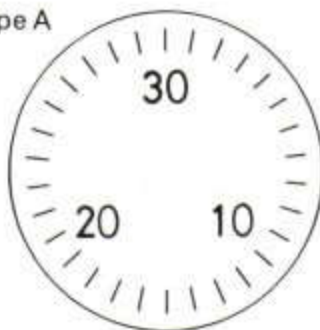
c) Stopping

Push the starting/stopping button once again. The second hand and minute-recorder hand (and hour-recorder hand) stop simultaneously to indicate the elapsed time.

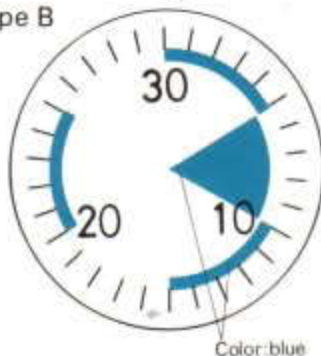
The minute recorder comes in two types to permit application in a wide variety of sporting events.

Type A (standard) is graduated plainly in minutes. Type B is graduated in minutes with different color markings used every five minutes to enable its user to tell at a glance the elapsed time of the race and also to observe the finishing time.

Type A



Type B



ADVANTAGES OF CHRONOGRAPH MECHANISM

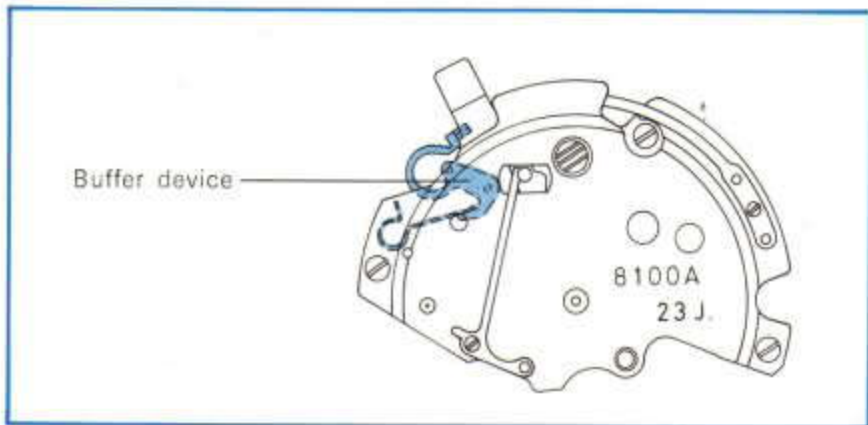
1. Easy-to-handle chronograph block.

The principal parts that compose the chronograph mechanism are arranged between the chronograph bridge and chronograph cover, permitting the mechanism to be handled as a single block. This arrangement facilitates not only disassembly and assembly operations, but also cleaning and lubrication. It also does away with complicated adjustments of numerous levers and springs.



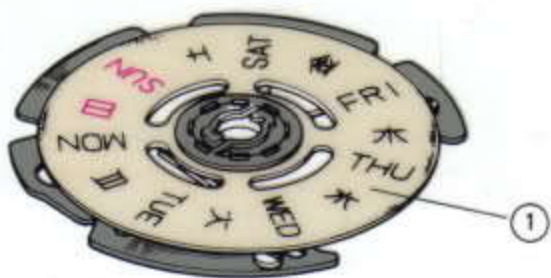
2. Buffer system

It is often pointed out that with conventional chronograph watches, sudden application of pressure on the zero-setting button causes disorder in the chronograph mechanism within. However, the zero-setting button of Citizen Chronograph is equipped with an effective buffer system. When a sudden pressure is applied on the zero-setting button, this buffer system functions to absorb the shock that is being transmitted to the chronograph runner and minute-recording wheel.

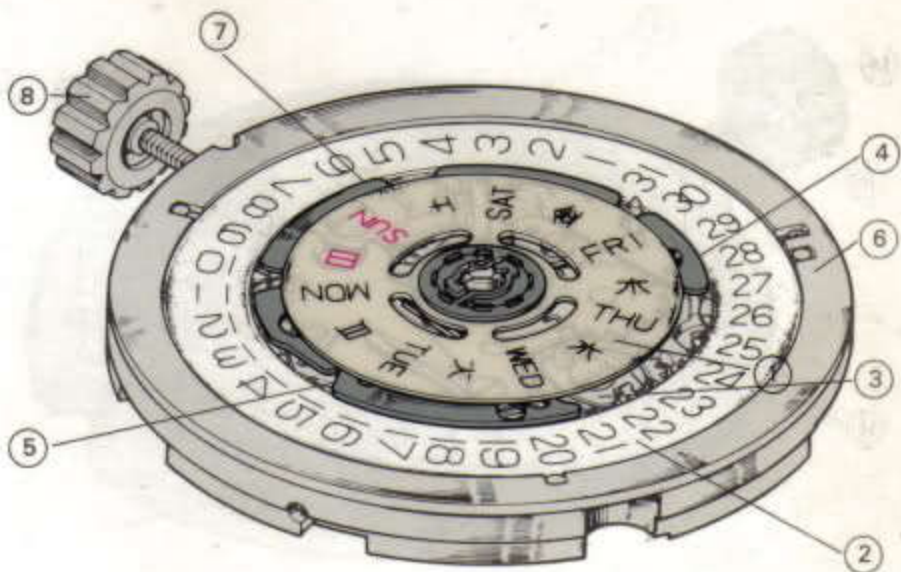


3. Chronograph mechanism that can be operated in a number of different ways.

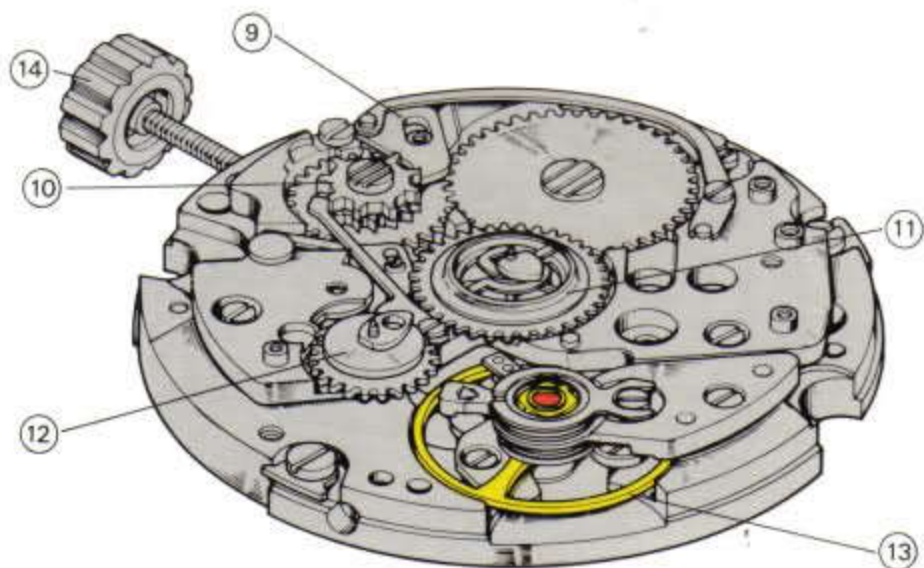
- a) By repeating the starting and stopping operations, it is possible to add the individual elapsed time to get the accumulative elapsed time.
- b) By pressing the zero-setting button while second hand and minute-recorder hand (and hour-recorder hand) are in motion, the hands are returned to zero position. The hands start again as soon as the finger is removed from the button. This feature comes in useful when it is necessary to reset the hands to zero and start the timer in a matter of seconds as when participants of an athletic event begin the race again after a bad start.



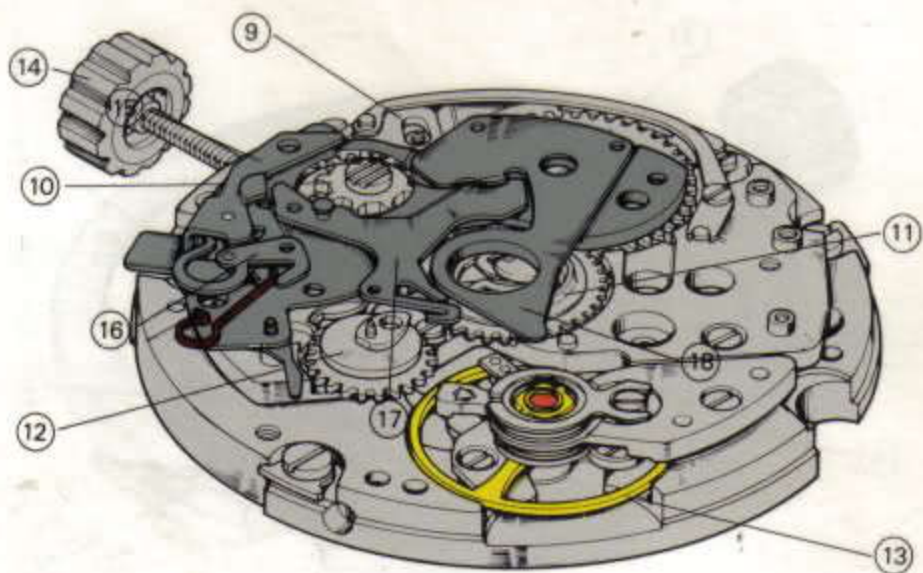
1 Day Dial



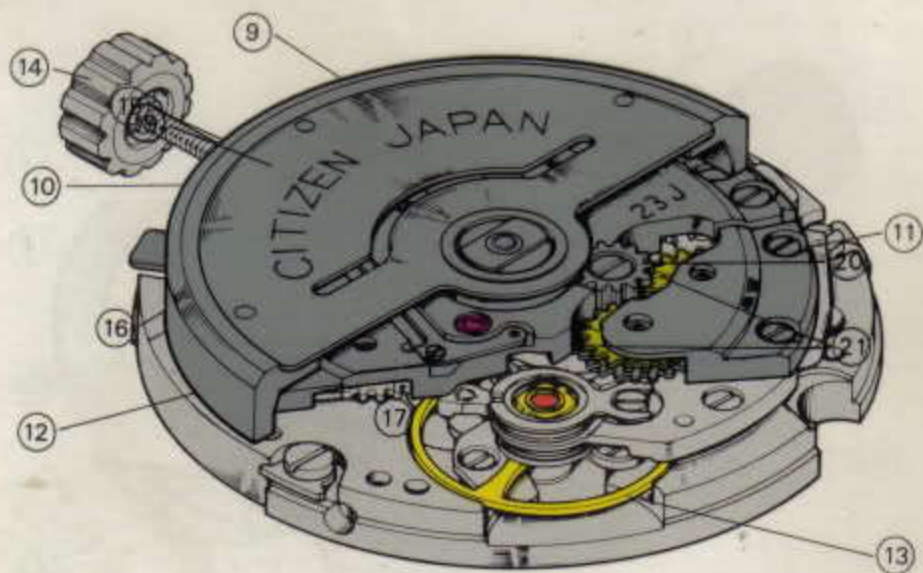
1 Day Dial



- 9 Operating lever
- 10 Pillar wheel
- 11 Chronograph runner
- 12 Minute-recording wheel
- 13 Balance with hairspring
- 14 Crown



- 15 Fly-back lever
- 16 Buffer lever
- 17 Hammer
- 18 Lever for chronograph clutch



19 Oscillating weight

20 Intermediate pawl winding wheel

21 Pawl winding wheel

SPARE PARTS LIST

Parts No.	Name of Parts	Caliber No./Number of Jewels	
		8100A-23	8110A-23
701	Barrel and train wheel bridge	222	—○
706	Automatic train bridge	059	—○
708	Pallet cock	062	—○
709	Balance cock	134	—○
716	Chronograph bridge	003	004
717	Chronograph cover	003	004
082	Casing clamp	09	—○
002	Mainspring	65	} 001-83
008	Barrel with arbor	60	
009	Barrel arbor	42	
012	Second wheel and pinion with cannon pinion	101	—○
017	Third wheel and pinion	69	—○
251	Chronograph runner	03	04
032	Escape wheel and pinion	99	—○
035	Jeweled pallet fork and staff	39	—○
039	Balance with hairspring, regulated	92	—○
043	Balance staff	50	—○
044	Roller with jewel	02	—○
051	Regulator	60	—○
055	Regulator for adjusting device	03	—○
056	Fine adjuster	04	—○
219	Stud holder	09	—○
058	Crown wheel	35	—○
059	Ratchet wheel	52	—○
060	Click	34	—○
	Click spring	902-92	—○
070	Setting lever axle	55	—○
119	Oscillating weight, complete	131	—○
168	Core for intermediate pawl winding wheel	02	—○
206	Intermediate pawl winding wheel	04	—○
141	Pawl winding wheel	16	—○
170	Additional pawl winding wheel	04	—○
088	Reduction wheel and pinion	08	—○
138	Driving gear for ratchet wheel	15	—○
204	Hammer	25	—○
255	Pillar wheel	03	—○
057	Core for pillar wheel	34	—○
257	Operating lever	02	—○
259	Hammer spring	05	—○
260	Fly-back lever	05	—○
	Spring for fly-back lever	903-56	—○

SPARE PARTS LIST (Dial side)

Parts No.	Caliber No./Number of Jewels Name of Parts	8100A-23	8110A-23
014	Cannon pinion	93	—○
016	Minute pinion	03	14
063	Winding pinion	24	—○
064	Clutch wheel	05	—○
065	Winding stem	178	—○
067	Setting lever	65	—○
071	Yoke	44	—○
072	Minute wheel and pinion	45	47
	Friction spring for minute wheel and pinion	902-113	—○
075	Hour wheel	103	106
076	Setting wheel	37	—○
077	Setting lever spring	60	—○
079	Minute wheel guard	39	42
100	Intermediate date wheel	13	—○
103	Date dial driving wheel	49	—○
109	Date jumper	27	29
110	Dial guard ring	13	—○
116	Day corrector	20	23
117	Day corrector guard	16	18
165	Rocking bar	13	17
	Rocking bar spring	902-114	—○
168	Rocking bar core	02	—○
172	Blocking lever for hour-recording wheel		02
174	Hammer for hour-recording		02
270	Fly-back lever for hour-recording wheel		03
	Spring for fly-back lever for hour-recording wheel		903-57
293	Date dial guard	11	12
294	Hour-recording wheel		01
	Screw for date dial driving wheel	922-27	—○
	Rocking bar screw	922-44	—○
	Screw for minute wheel guard	922-79	—○
	Screw for date dial guard	929-02	929-08
	Dial screw	929-19	—○
	Screw for setting lever spring	930-01	—○
	Screw for minute wheel guard	930-01	—○
	(PS) Lower cap jewel, mounted	094-04	—○
	(PS) Spiral spring with jewel	098-09	—○
	(PS) Lower end-piece	091-30	—○
	(PF) Lower cap jewel spring for escape wheel	914-11	—○
	(PF) Lower cap jewel for escape wheel	945-18	—○
	(PF) Lower end-piece for escape wheel	912-12	—○
272	Rocking lever for date corrector	08	—○
714	Dial guard		015
203	Day dial driving wheel		08
	Dial guard screw		923-55
	Screw for day dial driving wheel		934-21
	Screw for spring of fly-back lever for hour recording wheel		929-08
	* Note: (PS) Parashock (PF) Profix		

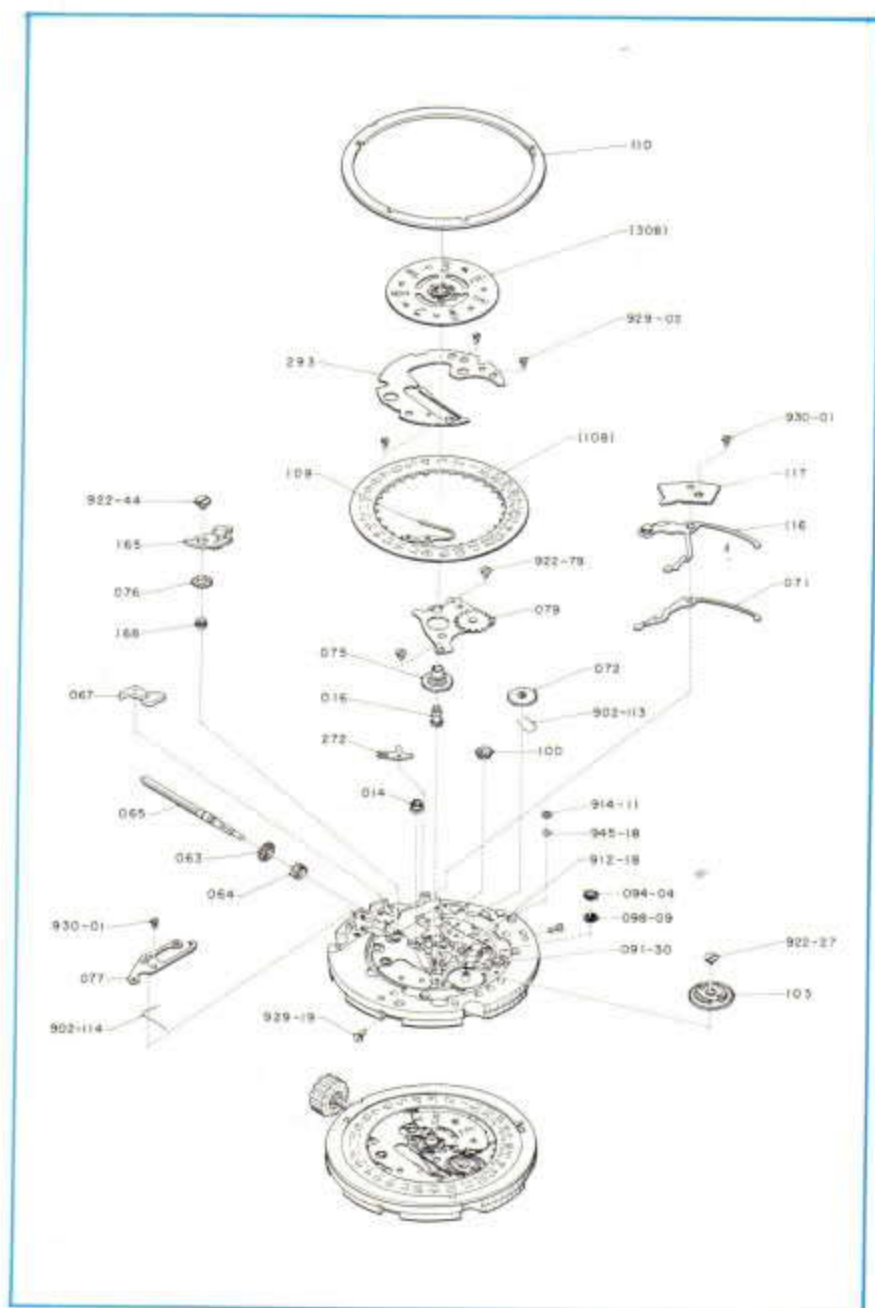
(Bridge side)

Parts No.	Caliber No./Number of Jewels	
	Name of Parts	8100A-23 8110A-23
267	Additional fly-back lever spring	06 —○
269	Lever for chronograph clutch	14 —○
274	Buffer lever	08 —○
	Spring for buffer	902-115 —○
275	Spring for pillar wheel	05 —○
290	Intermediate minute-recording wheel	01 —○
291	Minute-recording wheel	01 02
078	Friction spring for minute-recording wheel	12 —○
292	Blocking lever for minute-recording wheel	01 —○
265	Connecting lever of hour blocking lever	08
	Hairspring stud screw	920-01 —○
	Click screw	921-02 —○
	Screw for intermediate pawl winding wheel	922-44 —○
	Pallet cock screw	922-79 —○
	Chronograph cover screw	922-79 —○
	Screw for pillar wheel jumper	934-22 —○
	Screw for barrel and train wheel bridge	923-55 —○
	Screw for automatic train wheel bridge	923-55 —○
	Balance cock screw	923-55 —○
	Chronograph bridge screw	923-55 —○
	Pillar wheel screw	923-56 —○
	Ratchet wheel screw	924-15 —○
	Case screw	925-48 —○
	Hammer spring screw	929-02 —○
	Screw for spring of fly-back lever	929-02 —○
	Screw for braking lever of minute-recording wheel	934-19 —○
	Screw for spring of pillar wheel	934-22 —○
	Screw for connecting lever of hour blocking lever	934-03
	Screw for additional fly-back lever spring	938-25 —○
	(PS) Upper cap jewel, mounted	094-01 —○
	(PS) Spiral spring with jewel	098-09 —○
	(PS) Upper end-piece	091-09 —○
	(PF) Upper cap jewel spring for escape wheel	914-11 —○
	(PF) Upper cap jewel for escape wheel	945-18 —○
	(PF) Upper end-piece for escape wheel	912-10 —○
	* Note: (PS) Parashock (PF) Profix	

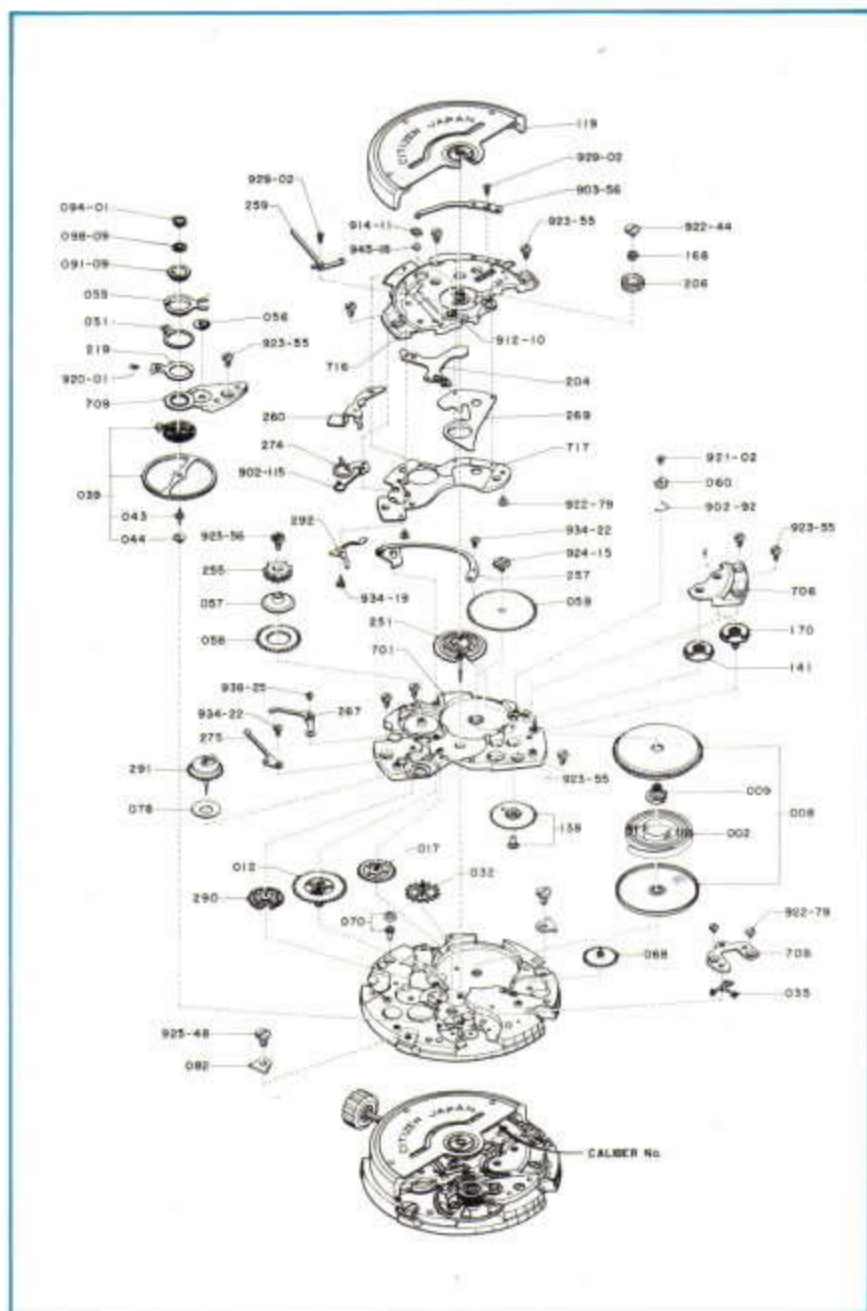
SPARE PARTS LIST OF JEWELS

Parts No.	Caliber No./Number of Jewels	8100A-23	8110A-23
	Name of Parts		
	Upper hole jewel for barrel arbor	944-60	—○
	Lower hole jewel for barrel arbor	944-23	944-61
	Upper hole jewel for second wheel	942-69	—○
	Lower hole jewel for second wheel	944-29	—○
	Upper hole jewel for third wheel	942-11	—○
	Lower hole jewel for third wheel	942-11	—○
	Upper hole jewel for chronograph runner	950-137	—○
	Upper hole jewel for escape wheel	912-10	—○
	Lower hole jewel for escape wheel	912-10	—○
	Upper hole jewel for jeweled pallet fork	942-10	—○
	Lower hole jewel for jeweled pallet fork	942-10	—○
	Upper hole bushing for pawl winding wheel	950-67	—○
	Lower hole bushing for pawl winding wheel	950-67	—○
	Upper hole bushing for additional pawl winding wheel	950-67	—○
	Lower hole bushing for additional pawl winding wheel	941-34	—○
	Upper hole jewel for reduction wheel	941-34	—○
	Lower hole jewel for reduction wheel	941-34	—○
	Upper hole bushing for intermediate minute-recording wheel	950-131	—○
	Lower hole bushing for intermediate minute-recording wheel	950-131	—○
	Upper hole jewel for minute-recording wheel	940-10	—○
	Lower hole bushing for minute-recording wheel	950-46	—○

EXPLODED VIEW OF MOVEMENTS (Dial side)



EXPLODED VIEW OF MOVEMENTS (Bridge side)



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