

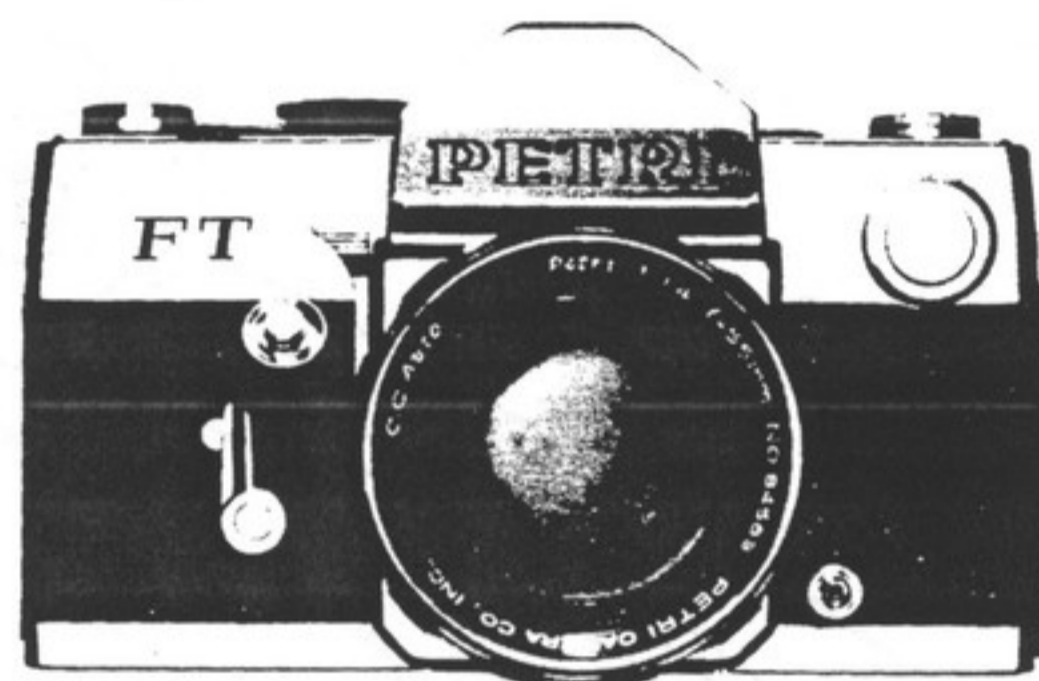
PETRI
REPAIR MANUAL
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PETRI CAMERA COMPANY, INC.

PETRI

PARTS LIST

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Inform us of the complete CAMERA MODEL, FIGURE NUMBER, PART NUMBER, DESCRIPTION and QUANTITY of each item as illustrated in this manual.

Individual components of some assemblies are not available unless shown separately in this manual. If the part you require is not listed, please ask us about its availability.

Since PETRI products are constantly being improved, the design of some parts shown in this manual may differ from those used on earlier models.

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PARTS LIST

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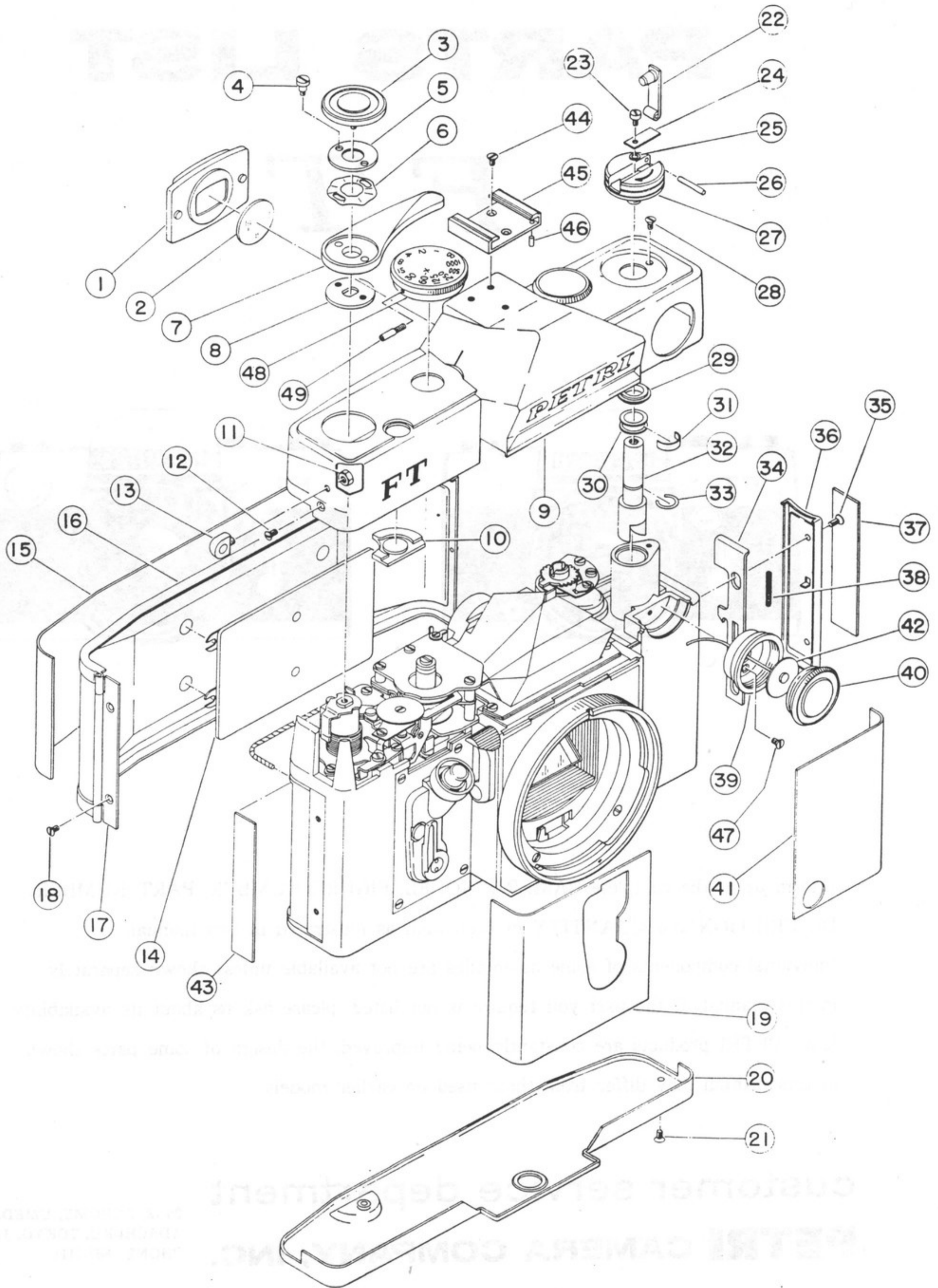


FIG.	PART NO.	DESCRIPTION	UNIT
1	SP2B-2	Eye-piece ring (接眼リング)	1
2	SP2L-3	Eye-piece lens (接眼丸ガラス)	1
3	SP2B-50	Wind lever mask (捲取レバー取付)	1
4	SPB-2	Wind lever screw (捲取レバー取付B)	2
5	SP-6	Clutch spring washer (レバーばね押え)	1
6	SP-7	Friction clutch spring (レバーばね)	1
7	SP2P-26	Wind lever (捲取レバー)	1
8	SP2P-28	Wind lever spacer (捲取バネ座A)	1
9	SP2TP-1	Top cover (カバー)	1
10	SP2TP-18	Film counter window (指数窓)	1
11	NPM-1004	Strap loop nut (吊環ナット)	2
12	SPB-135	Top cover screw 'A' (カバー取付)	3
13	NPM-1003	Strap loop (吊環)	2
14	SP-76	Pressure plate (圧板)	1
15	SP2K-3	Back cover leatherette (裏面凝革)	1
16	SP2P-4	Back cover (裏蓋)	1
17	L2P-6	Hinges (蝶番)	1
18	PU-1	Hinge screw (蝶番取付)	10
19	SP2K-1	Front leatherette 'A' (前面凝革A)	1
20	SP2P-3	Bottom cover (底板)	1
21	PM-19	Bottom cover screw (底板取付)	6
22	SP-139	Rewind lever (リターンレバー)	1
23	PD-122	Friction spring screw (リターンレバーばね取付)	1
24	SP-140	Friction spring (リターンレバーばね)	1
25	0405-30	Friction spring spacer (リターンレバーばね座金)	1
26	SPB-163	Rewind knob shaft (リターンレバー芯棒)	1
27	L4B-1	Rewind knob (リターンノブ)	1
28	SPVB-52	Top cover screw 'B' (幕ギヤー止取付)	2
29	L2B-15	Rewinder bearing (リターン芯棒軸受)	1
30	L2B-14	Rewind shaft collar (リターン芯棒カラー)	1
31	L2P-27	Rewinder friction spring (リターン芯棒ばね)	1
32	L4B-13	Rewind shaft (リターン芯棒)	1
33	L2W-2	Collar retainer spring (カラー押えSP)	1
34	L2P-4	Back cover latch (蓋止引出し)	1
35	PUB-6	Latch cover screw (蓋止取付)	2
36	L2P-3	Latch cover (蓋止カバー)	1
37	L2K-4	Latch cover leatherette (蓋止凝革)	1
38	PW-2	Back cover latch spring (蓋止SP)	1
39	SP2P-103	Battery compartment (電池ボックス)	1
40	SP2TB-21	Battery compartment cover (水銀電池キャップ)	1
41	SP2K-2	Front leatherette 'B' (前面凝革B)	1
42	SP2P-55	Battery contact (電池接点板)	1
43	SP2P-149	Light baffle (遮光布)	1
44	RB-19	Accessory shoe screw (差込座取付)	3
45	SP2TB-22	Accessory shoe (差込座)	1
46	SP2TB-11	Accessory shoe stopper (差込座ストッパー)	2
47	PU-1	Battery compartment screw (蝶番取付)	10
48	SP2B-63	Shutter speed dial (スピードダイヤル)	1
49	SPVB-31	Shutter speed dial screw (スピードダイヤルロック)	3

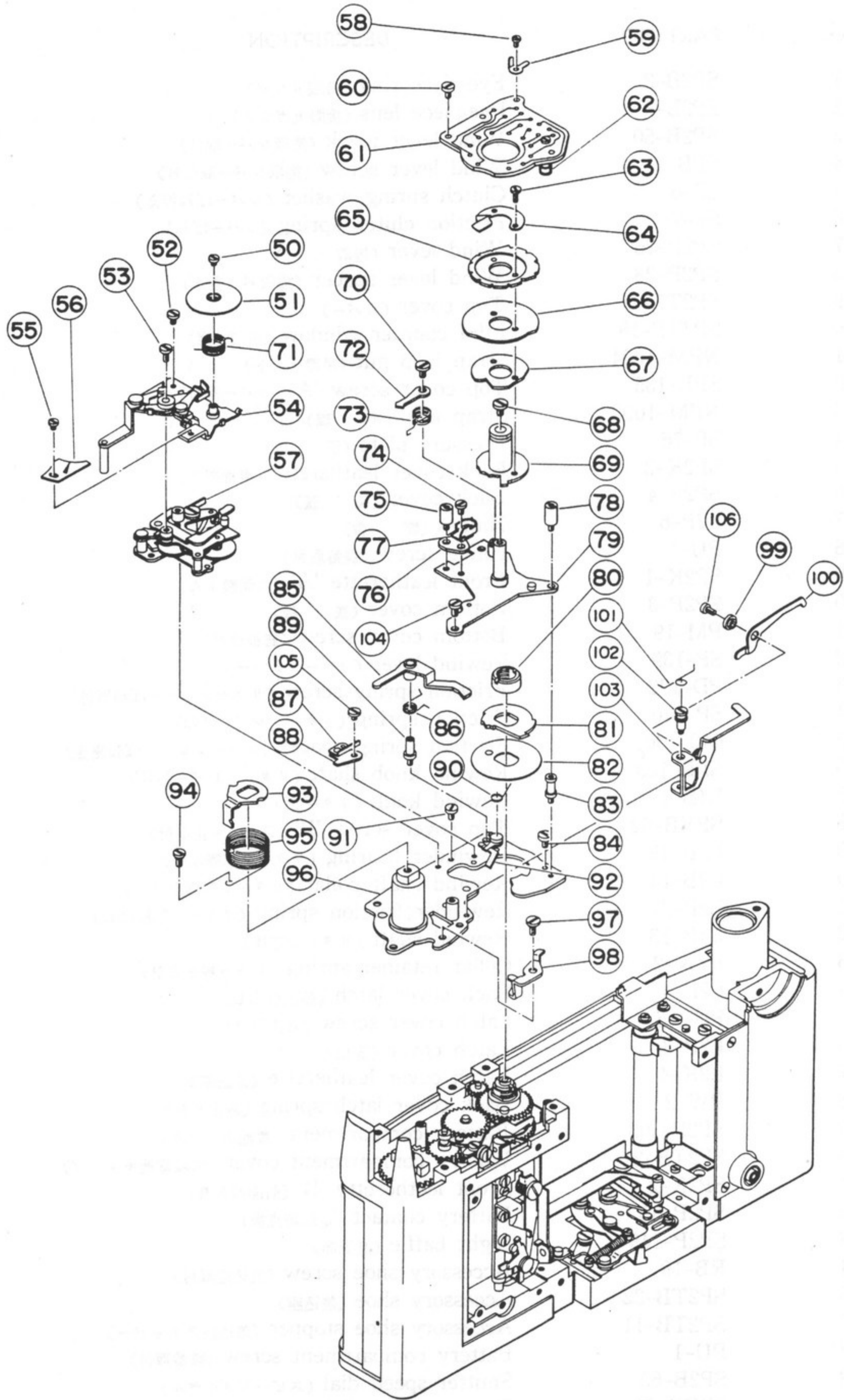


FIG.	PART NO.	DESCRIPTION	UNIT
50	SP2B-177	Film counter dial screw (指数ギヤ-取付)	1
51	SP2P-118	Film counter dial (指数ネーム板)	1
52	S-13-172852	Screw-13	32
53	SPB-145	Film counter base screw (ミラーギヤ-台取付)	1
54		Film counter assembly (カウンター一式)	1
55	SPB-87	Frame indicator screw (ミラー蝶番取付)	3
56	SP2P-117	Film frame indicator (指数示標)	1
57		Slow escapement assembly (秒ギヤ-一式)	1
58	MVB-111	Connector screw (中身取付A)	2
59	SP2TP-13	Connector (ラグ板)	4
60	S-13-172852	Screw-13	32
61	SP2TP-11	Rotary switch base 'A' (ST接点ベースA)	1
62	SP2TP-12	Rotary switch base 'B' (ST接点ベースB)	1
63	SP2B-64	Rotary contact screw (調速カム取付)	2
64	SP2P-36	Rotary contact (ST接片)	1
65	SP2P-35	Click plate (クリック板)	1
66	SP2NP-8	Slow escapement cam (アングル掛外シカム)	1
67	SP2NP-9	Slow speed cam (低速カム)	1
68	SPVB-3	High speed cam screw (先幕ギヤ-取付)	1
69	SP2TB-15	High speed cam (高速カム筒)	1
70	SP2B-61	Click pawl screw (クリック爪取付)	1
71	SP2W-17	Counter dial gear spring (指数ギヤ-SP)	1
72	SP2P-32	Click pawl (クリック爪)	1
73	SP2W-15	Click pawl spring (クリック爪SP)	1
74	SPB-87	X contact switch base screw (ミラー蝶番取付)	4
75	SP2B-59	Speed dial base screw 'B' (ダイヤルベース取付B)	1
76	SP2P-50	X contact switch base (切替接片ベース)	1
77	SP2P-51	X contact switch (切替接片)	1
78	SP2B-58	Speed dial base screw 'A' (ダイヤルベース取付A)	2
79	SP2P-30	Shutter speed dial base (ダイヤルベース)	1
80	SP2P-45	First blind gear nut (先幕ギヤ-ナット)	1
81	SP2P-18	Speed adjustment cam (調速カム)	1
82	SP2P-17	Adjustment cam washer (調速カム座金)	1
83	SP2B-31	Gear plate 'A' screw (ギヤ-プレートA取付)	1
84	S-13-172852	Screw-13	32
85	SP2NP-7	Slow escapement release bar (アングル掛外シレバーB)	1
86	SP2NW-3	Escapement release bar spring (アングル掛外シレバーB SP)	1
87	SP2P-49	X contact (X接片)	1
88	SP2P-48	X contact base (X接点ベース)	1
89	SP2NB-11	Gear plate 'A' screw 'B' (ギヤ-プレートA取付B)	1
90	SP2W-8	X contact lever spring (X接点レバーSP)	1
91	S-13-172852	Screw-13	32
92	SP2P-47	X contact lever (接片レバー)	1
93	SP2P-27	Wind spring base 'B' (捲取バネ座B)	1
94	SP2B-28	Spring retainer (バネ筒SP取付)	1
95	SP2W-1	Wind lever spring (捲取レバーSP)	1
96	SP2P-5	Gear plate 'A' assembly (ギヤ-プレートA一式)	1
97	SP2B-30	Counter lever 'A' screw (指数レバーA取付)	1
98	SP2P-116	Counter lever 'A' (指数レバーA)	1
99	SP2B-165	Eccentric washer (シャッターレバーBエキセン)	1
100	SP2P-13	First blind cam follower (シャッターレバーB)	1
101	SP2W-6	Cam follower spring (シャッターレバーA SP)	1
102	SP2B-36	Slow cam follower screw (シャッターレバーA取付)	1
103	SP2P-12	Slow cam follower (シャッターレバーA)	1
104	SPB-146	Speed dial base screw 'C' (プレート取付)	6
105	VEB-210	X contact base screw (絞り目盛環取付)	1
106	PU-1	Blind cam follower screw (蝶番取付)	10

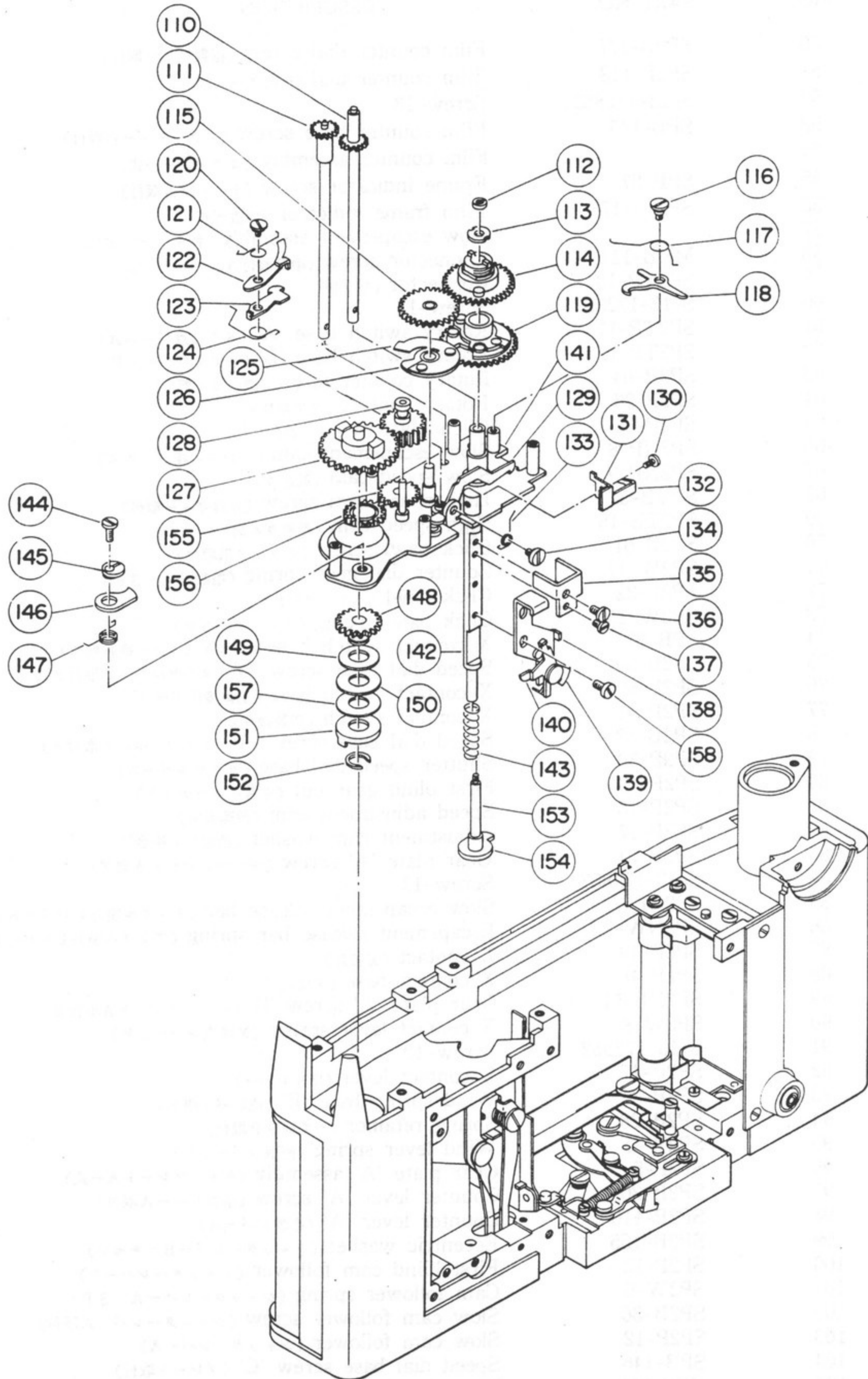


FIG.	PART NO.	DESCRIPTION	UNIT
110	SP2B-15	Second blind pinion shaft (后幕ピニオン)	1
111	SP2B-16	First blind pinion shaft (先幕ピニオン)	1
112	SP2B-72	Brake cam nut (ブレーキカム取付ナット)	1
113	SP2P-45	Brake cam washer (ブレーキカム座金)	1
114	SP2B-42	First blind gear (先幕ギヤ)	1
115	SP2P-109	Upper clutch gear (クラッチギヤ上)	1
116	SP2B-38	First blind stopper screw (先幕止取付)	1
117	SP2W-4	First blind stopper spring (先幕止SP)	1
118	SP2P-14	First blind stopper (先幕止)	1
119	SP2B-39	Second blind gear (后幕ギヤ)	1
120	SP2B-32	Gear stopper screw (捲上ストッパー取付)	1
121	SP2W-3	Gear stopper spring (捲上ストッパーAB SP)	1
122	SP2P-8	Second blind gear stopper (捲上ストッパーA)	1
123	SP2P-9	Clutch gear stopper (捲上ストッパーB)	1
124	SP2W-2	Blind gear stopper spring (捲取ストッパーA SP)	1
125	SP2P-10	Clutch spring (クラッチばね)	1
126	SP2B-22	Bottom clutch gear (クラッチギヤ下)	1
127	SP2B-168	Primary gear (一番ギヤ)	1
128	SP2B-20	Idle gear (アイドルギヤA)	1
129	SP2P-11	Second blind stopper (後幕止め)	1
130	SPB-87	Spring pawl screw (ミラー蝶番取付)	4
131	SP2P-20	Clutch spring pawl (クラッチバネ爪)	1
132	SP2P-158	Blind stopper release (后幕止フック)	1
133	SP2W-5	Second blind stopper spring (后幕止SP)	1
134	SP2B-34	Second blind stopper screw (后幕止取付)	1
135	SP2P-39	Release shaft bridge (リリース振れ止め)	1
136	S-13-172852	Screw-13	32
137	PU-1	Hinge screw (蝶番取付)	6
138	SP2P-59	Release arm 'A' (リリース板A)	1
139	SP2P-168	Clutch lever 'B' (クラッチレバーB)	1
140	SP2P-167	Clutch lever 'A' (クラッチレバーA)	1
141	SP2P-6	Gear plate 'B' assembly (ギヤプレートB一式)	1
142	SP2B-17	Shutter release shaft (リリース芯棒)	1
143	SP2W-34	Release shaft spring (リリース芯棒SP)	1
144	SP2B-47	Ratchet pawl screw (逆転止取付)	1
145	SP2B-46	Eccentric ratchet washer (逆転止エキセン)	2
146	SP2P-19	Ratchet pawl (逆転止爪)	2
147	SP2W-13	Ratchet pawl spring (逆転止SP)	2
148	SP2B-48	Take-up spool gear (リールギヤ)	1
149	SP2P-22B	Friction spring 'B' (フリクションバネB)	1
150	SP2P-22A	Friction spring 'A' (フリクションバネA)	1
151	SP2P-21	Friction ring (フリクションリング)	1
152	SP2P-23	Stopper ring (ストップリング)	1
153	SP2B-71	Brake cam shaft (ブレーキカム芯棒)	1
154	SP2P-4	Brake cam (ブレーキカム)	1
155	SP2P-108	Sprocket gear 'A' (スプロケットギヤ)	1
156	SP2B-140	Sprocket gear 'C' (スプロケットギヤC)	1
157	SP2P-22B	Friction spring (フリクションバネB)	2
158	S-13-172852	Screw-13	32

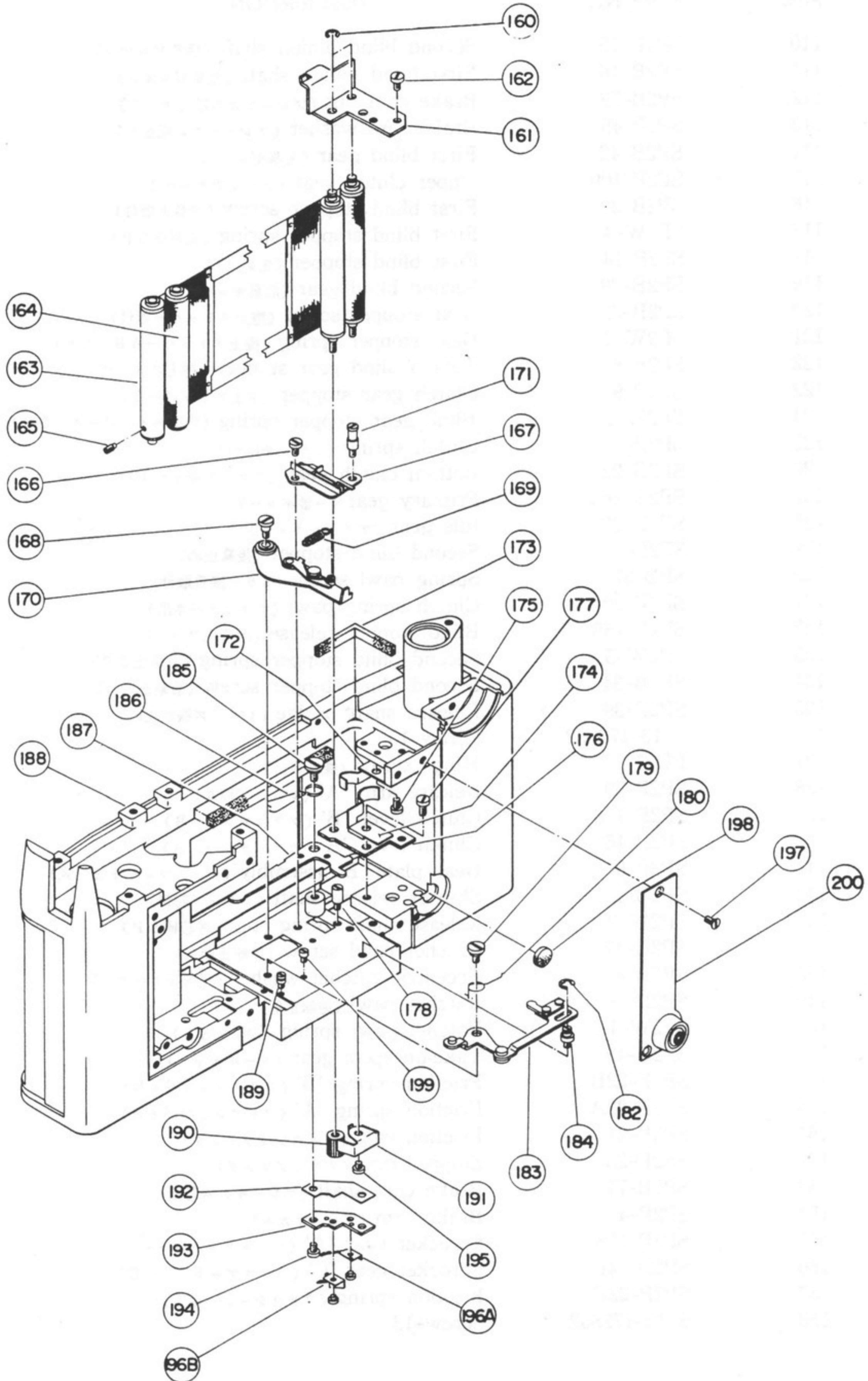


FIG.	PART NO.	DESCRIPTION	UNIT
160	E-1.2	1.2 E-Ring	5
161	SP2P-52	Upper drum bearing plate (幕軸台上)	1
162	S-13-172852	Screw-13	32
163	SP2B-76	Blind wind-up drum (捲付ドラム)	3
164	SP2B-170	Second blind wind-up drum (後幕捲付ドラム)	1
165	SPB-59	Wind-up drum nut (捲胴ノック)	2
166	S-13-172852	Screw-13	32
167		Meter switch contact assembly (スイッチ接片一式)	1
168	SPVB-35	Principal lever screw (メインレバー取付)	1
169	SPVW-1	Principal lever spring (メインレバーSP)	1
170	SP2P-69	Principal lever assembly (メインレバー一式)	1
171	SP2B-102	Mirror lever retainer stopper (Mレバー止ストッパー)	1
172	SP2P-161	Upper bounce stopper (バウンド止上)	1
173	SP2TP-35	Light baffle sponge (遮光バックング)	1
174	SP2P-162	Bottom bounce stopper (バウンド止下)	1
175	SPB-155	Bounce stopper screw (捲取座取付)	4
176	SP2P-53	Bottom drum bearing plate (幕軸台下)	1
177	SPB-155	Bounce stopper screw (捲取座取付)	4
178	SP2B-100	Mirror lever retainer base (Mレバー止台B)	1
179	SP2TB-6	Stop-down link 'A' screw (マニュアルリンクA取付)	1
180	SP2TW-3	Stop-down 'A' spring (マニュアルリンクA SP)	1
182	E-1.5	1.5 E-Ring	3
183		Stop-down link assembly (マニュアルリンク一式)	1
184	SP2TB-8	Stop-down 'B' base (マニュアルリンクB台)	1
185	SPB-73	Mirror lever retainer screw (Mレバー止取付)	1
186	SP2W-16	Mirror lever retainer spring (Mレバー止SP)	1
187	SP2P-64	Mirror lever retainer (Mレバー止)	1
188	SP2TDC-3	Body (ボデー本体)	1
189	SPVB-37	Principal lever spring pin (メインレバーSP掛)	2
190	SPB-62	Main shaft adjustment nut (主軸調節ナット)	2
191	SP2P-54	Main shaft adjustment spring (主軸調節バネ)	1
192	SP-90	FP contact insulator 'B' (絶縁ワッシャーB)	1
193	SP-89	FP contact base (FP接点ベース)	1
194	S-13-172852	Screw-13	32
195	RB-8	Adjustment plate-spring screw (調節板取付)	1
196 A	SP-87	FP contact 'A' (FP接点A)	1
196 B	SP-88	FP contact 'B' (FP接点B)	1
197	PU-1	Hinge screw (蝶番取付)	10
198	SP2P-159	Sync. plug insulator (シンクロプラグ絶縁布)	1
199	SPVB-40	Principal lever stopper (メインレバーストッパー)	1
200	SP2P-104	Front cover (前蓋)	1

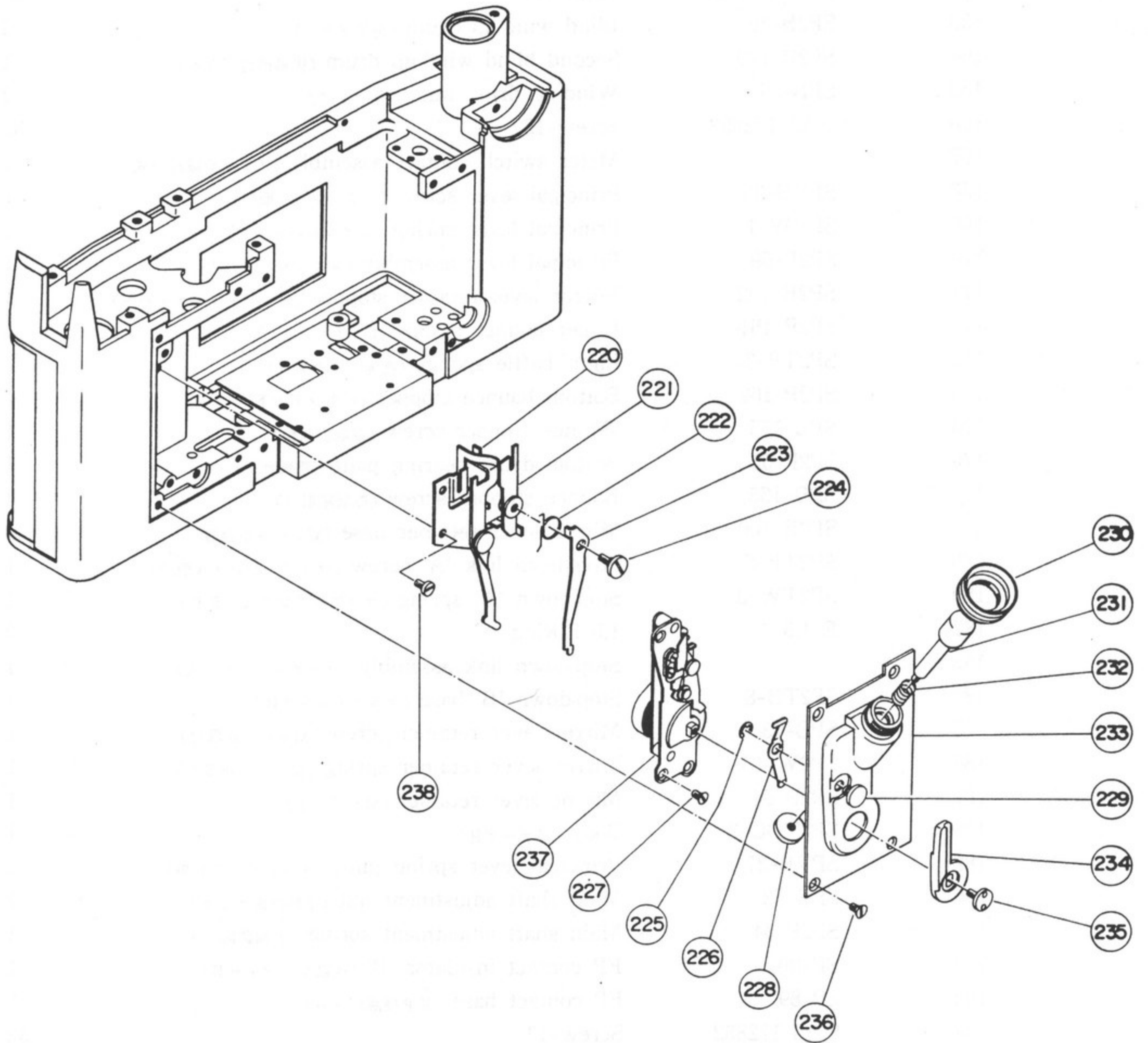


FIG.	PART NO.	DESCRIPTION	UNIT
220	SP2P-145	Release stopper (リリースストッパー)	1
221	SP2P-146	Release arm retainer 'A' (リリース板C押えA)	1
222	SP2W-27	Release stopper spring (リリースストッパーSP)	1
223	SP2P-147	Release arm retainer 'B' (リリース板C押えB)	1
224	SP2B-144	Arm retainer 'B' screw (リリース板C押えB取付)	1
225	E-1.2	1.2 E-Ring	5
226	SPV-43	Selftimer button plate-spring (始動釘バネ)	1
227	SPB-48	Selftimer screw (押しボタンカバー取付)	7
228	SP2B-135	Shutter button nut (押し釘芯棒)	1
229	SPVB-43	Selftimer release button (始動ボタン)	1
230	SPV6-1	Shutter button cap (押釘キャップ)	1
231	SP2B-134	Shutter button (押 釘)	1
232	SP2W-33	Shutter button spring (押釘SP)	1
233	SP2P-56	Shutter button base (押釘カバー)	1
234	SPVB-41	Selftimer lever (セルフレバー)	1
235	SPVB-42	Selftimer lever screw (セルフレバー取付)	1
236	SPB-48	Shutter button base screw (押しボタンカバー取付)	7
237		Selftimer gear assembly (セルフギヤ一式)	1
238	S-13-172852	Screw-13	32

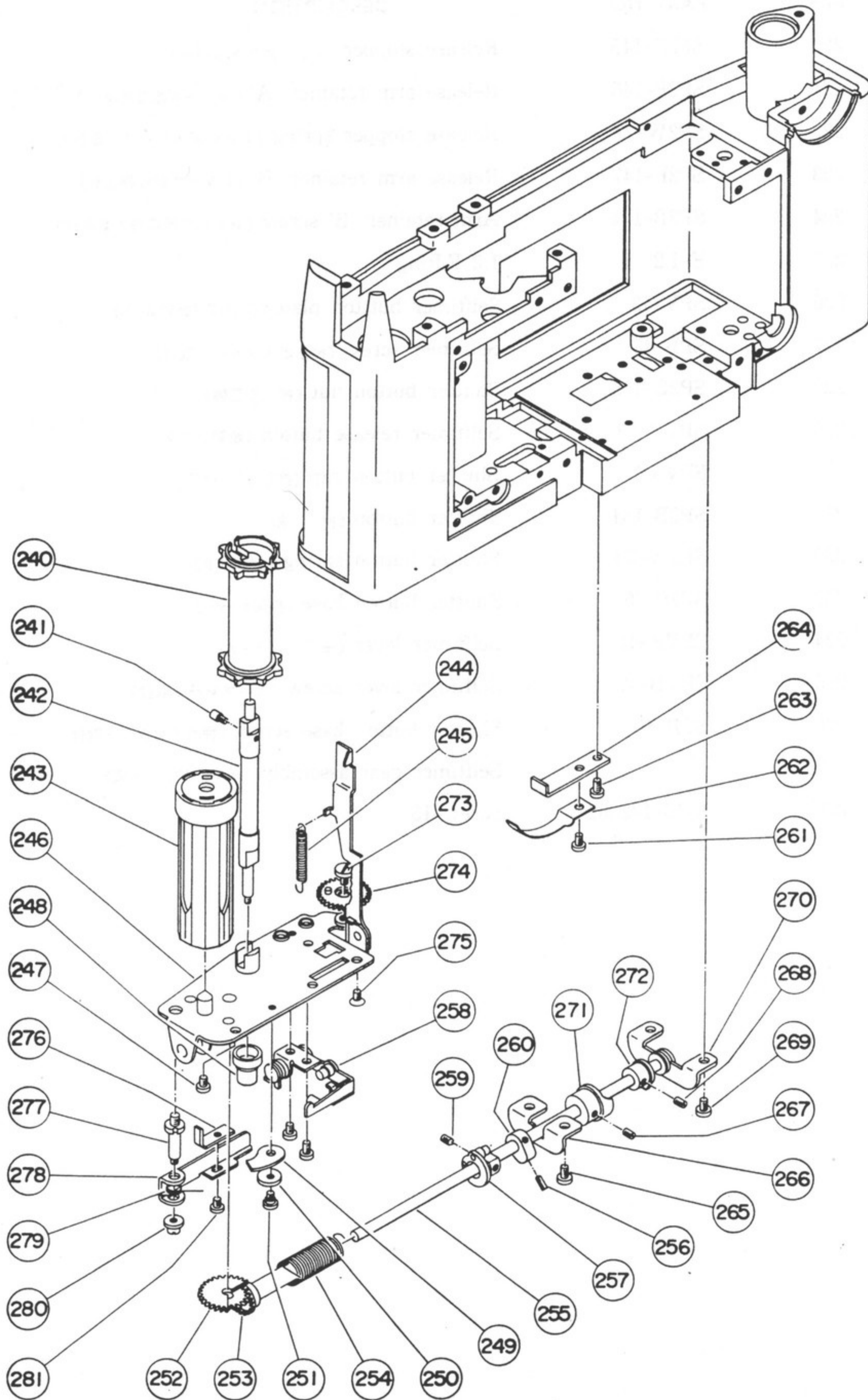


FIG.	PART NO.	DESCRIPTION	UNIT
240	SP2B-93	Sprocket (スプロケット)	1
241	SP2B-94	Sprocket shaft pin (スプロケットノック)	1
242	SP2B-92	Sprocket shaft (スプロケット芯棒)	1
243	SPV-70	Take-up spool (リール筒)	1
244	SP2P-58	Blind stopper release link (Sリンク)	1
245	SP2W-7	Release link spring (SリンクSP)	1
246	SP2P-7	Bottom gear plate assembly (ギヤプレート下一式)	1
247	S-13-172852	Screw-13	32
248	SP2B-91	Rewind button (リターンボタン)	1
249	SP2P-19	Ratchet pawl (逆転止爪)	2
250	SP2B-46	Eccentric ratchet bearing (逆転止エキセン)	2
251	SP2B-164	Ratchet pawl screw (逆転止取付B)	1
252	SP2B-87	Crank charge pinion (クラウンピニオン)	1
253	SP2B-86	Crank gear (クラウンギヤ)	1
254	SPW-26	Crank shaft spring (クランクSP)	1
255	SP2B-89	Crank shaft (クランク軸)	1
256	PM-39	Stopper release cam screw (スプロケット止ノック)	4
257	SP2B-90	Crank shaft stopper (クランク筒)	1
258	SP2P-60	Release arm 'C' (リリース板C)	1
259	SPB-165	Crank shaft stopper screw (クランク筒ネジ)	1
260	SP2B-123	Blind stopper release cam (起動カム)	1
261	S-13-172852	Screw-13	32
262	SP2P-63	Release arm spring (リリース板バネ)	1
263	S-13-172852	Screw-13	32
264	SP2P-165	Release arm retainer (CD抑え板)	1
265	S-13-172852	Screw-13	32
266	SP2P-128	Crank shaft bridge (振れ止)	1
267	SP2B-163	Crank shaft cam pin (ASAリンク止ノック)	2
268	SPB-32	FP cam pipe pin (マスターダイヤル押えネジ)	1
269	S-13-172852	Screw-13	32
270	SP-32	Crank shaft retainer (クランク軸受A)	1
271	SPVB-34	Stop-down cam (メインカム筒)	1
272	SPB-47	FP cam pipe (FPカムパイプ)	1
273	SPB-92	Mirror gear screw (ミラーギヤ取付)	1
274	SPG-16	Mirror gear (ミラーギヤ)	1
275	PU-1	Bottom gear plate screw (蝶番取付)	10
276	SP2P-173	Lock lever pawl (ロックレバー爪)	1
277	SP2B-180	Lock lever shaft (ロックレバー軸)	1
278	SP2P-172	Lock lever (ロックレバー)	1
279	SP2W-37	Lock lever spring (ロックレバーSP)	1
280	SPVB-15	Lock lever nut (シャッターレバー取付ナット)	1
281	S-11-142012	Screw-11	1

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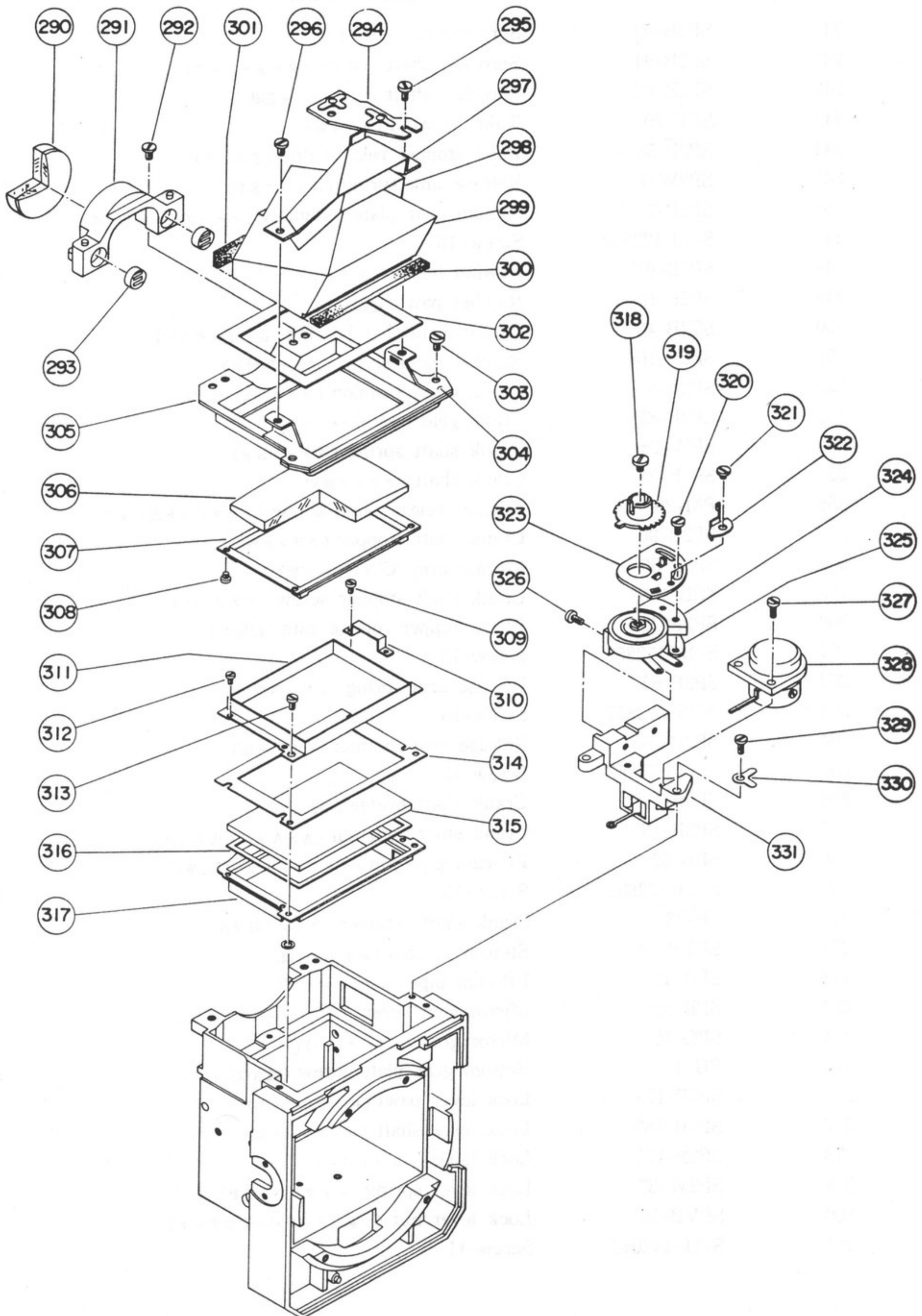


FIG.	PART NO.	DESCRIPTION	UNIT
290	SP2L-2	Eye-piece lens (接眼レンズ)	1
291	SP2TP-15	CdS cell base (CdS座)	1
292	S-12-174052	Screw-12	2
293	SP2T	CdS cell (CdS)	2
294	SP2TP-34	Connector base (ラグ板ベース)	1
295	S-13-172852	Screw-13	32
296	S-13-172852	Screw-13	32
297	SP2P-71	Prism fixing plate (プリズム押え板)	1
298	SP2P-71B	Prism protector (プリズム押え板B)	1
299	SPL-4	Prism (ペンタプリズム)	1
300	SP2P-157	Dust shield (防塵パッキング)	2
301	SP2P-157	Dust shield (防塵パッキング)	2
302	SP2P-166	Prism seat (プリズム座紙)	1
303	S-13-172852	Screw-13	32
304	SP2P-163	Prism fixing base (プリズム押え台)	1
305	SP2TP-17	Prism frame (プリズム枠)	1
306	SP2L-5	Condenser lens (コンデンサーレンズ)	1
307	SP2P-78	Condenser lens frame (コンデンサー枠)	1
308	PH2B-36	Condenser lens frame screw (前玉レバー取付)	5
309	SPB-87	Meter indicator frame screw (ミラー蝶番取付)	4
310	SP2P-155	Meter indicator frame (メーター指針枠)	1
311	SP2P-75	Dust mask (防塵マスク)	1
312	SPB-102	Dust mask screw (指数レバーストッパー)	11
313	SPB-98	Mirror box screw 'B' (ミラーボックス取付B)	9
314	SP2TP-16	Field mask (視野マスク)	1
315	SP2L-1	Fresnel lens (フレネルレンズ)	1
316	SP2P-73	Fresnel lens spring (フレネル押えバネ)	1
317	SP2P-72	Fresnel lens frame (フレネル枠)	1
318	SP2B-106	ASA click plate screw (ミラー枠調節板取付)	5
319	SP2TB-20	ASA click plate (ASAクリック板)	1
320	SPB-98	ASA click stopper screw (ミラーボックス取付B)	9
321	VEB-8	ASA click spring screw (移動接片取付)	1
322	SP2TP-24	ASA click spring (ASAクリックバネ)	1
323	SP2TP-25	ASA click stopper (ASAクリックストッパー)	1
324	SP2TP-28	Resistor case (抵抗ケース)	1
325	SP2TP-26	ASA click stopper nut (ASAクリックストッパー取付板)	1
326	SPB-98	Resistor case screw (ミラーボックス取付B)	9
327	SPB-98	Light-meter assembly screw (ミラーボックス取付B)	9
328		Light-meter assembly (メーター [シチズン製])	1
329	SPB-126	Light-meter base screw (プリズム台取付B)	2
330	SP2TP-13	Connector (ラグ板)	4
331	SP2TDC-2	Light-meter base (メーター地板)	1

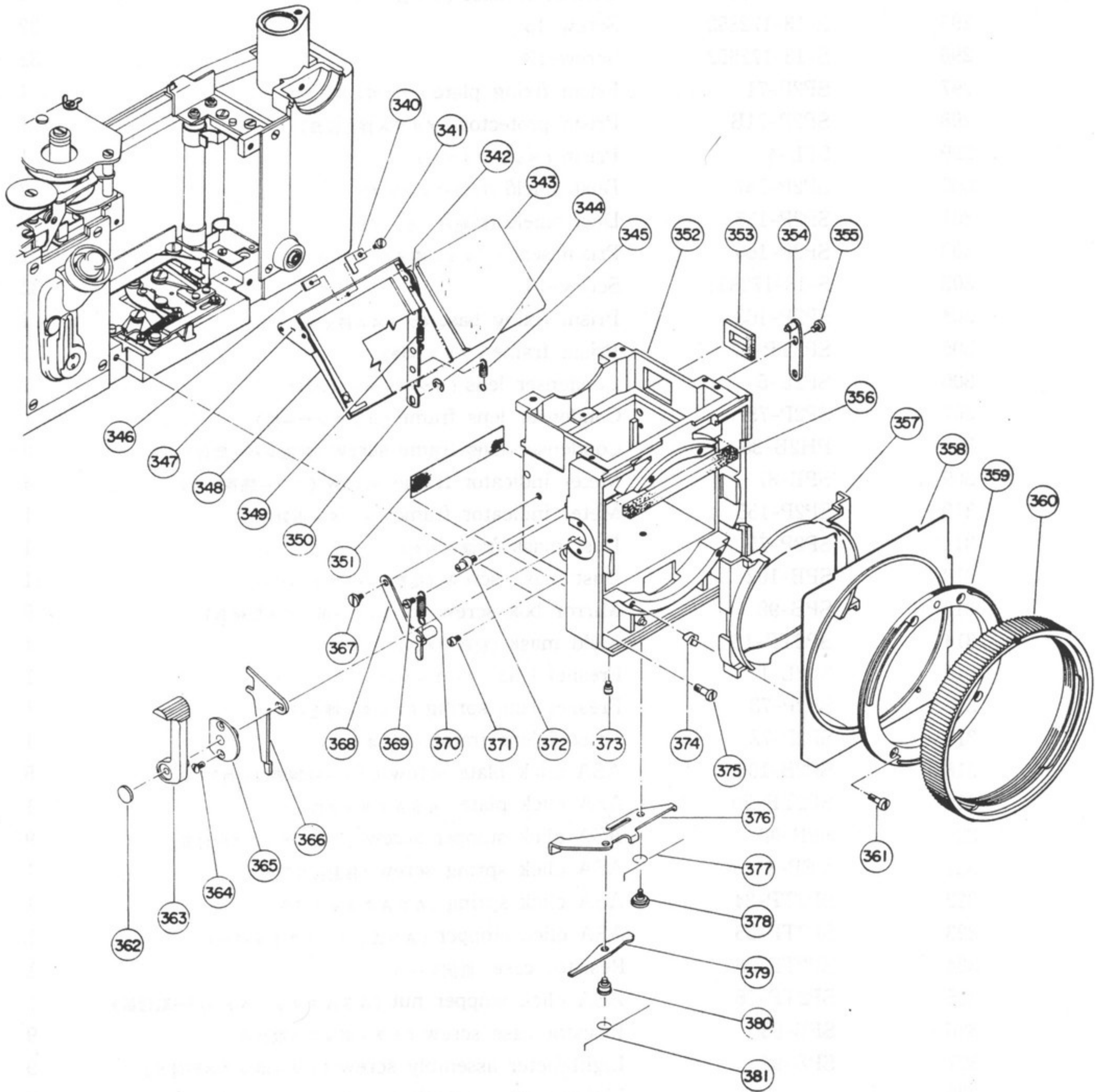


FIG.	PART NO.	DESCRIPTION	UNIT
340	SP2P-86	Mirror fix spring (ミラー押えばね)	1
341	SP2B-129	Mirror fix spring screw (ミラー押え取付)	1
342	SP2P-170	Mirror lever 'B' (Mレバー-B)	1
343	SP2L-7	Reflection mirror (反射鏡)	1
344	E-1.2	1.2 E-Ring	5
345	SP2W-35	Mirror lever 'B' spring (Mレバー-B S P)	1
346	SP2P-84	Mirror fix spacer (ミラー押え座金)	1
347	SP2P-85	Mirror frame base 'A' (ミラー枠受座A)	1
348	SP2P-82	Mirror frame (ミラー枠)	1
349	SP2W-36	Mirror lever connection spring (Mレバー-B C S P)	1
350	SP2P-81	Mirror lever 'A' (Mレバー)	1
351	SPP-119	Light baffle cloth (遮光布)	1
352	SP2TDC-4	Mirror box (ミラーボックス)	1
353	SP2TP-23	Meter needle dust shield (メーター指針防塵パッキング)	1
354	SP2P-80	Mirror frame adjuster (ミラー枠調節板)	1
355	SP2B-106	Mirror frame adjuster screw (ミラー枠調節板取付)	5
356	SP2P-142	Buffer (緩衝パッキング)	1
357	SP2P-79	Light baffle plate (遮光板)	1
358	SP2T-32	Front plate (前板)	1
359	SP2B-126	Flange (フランジ)	1
360	SP2B-125	Bayonet ring (バヨネットリング)	1
361	SP2B-127	Flange screw (フランジ取付)	4
362	SP2TK-1	Light-meter lever leatherette (マニュアルレバー凝革)	1
363	SP2TDC-1	Light-meter lever 'A' (マニュアルレバー-A)	1
364	PM-19	Lever bearing screw (底板取付)	6
365	SP2TB-2	Light-meter lever bearing (マニュアルレバー軸受)	1
366	SP2TP-2	Light-meter lever 'B' (マニュアルレバー-B)	1
367	SPB-88	Mirror frame stopper screw (ミラー止A取付)	2
368	SP2P-83	Mirror frame stopper (ミラー枠ストッパー)	2
369	SPB-102	Stopper spring pin (指数レバーストッパー)	11
370	SPW-28	Mirror frame stopper spring (ミラー枠ストッパー S P)	2
371	SPVB-62	Mirror frame stopper pin (ミラー枠ストッパー止め)	2
372	SP2TB-3	Light-meter lever stopper (マニュアルレバーストッパー)	1
373	SPVB-37	Light-meter 'C' spring pin (メインレバー S P 掛)	2
374	SP2P-164	Flange washer (フランジワッシャ)	4
375	SP2B-65	Mirror box screw (ミラーボックス取付)	4
376	SP2TP-3	Light-meter lever 'C' (マニュアルレバー-C)	1
377	SP2TW-2	Light-meter lever 'D' spring (マニュアルレバー-D S P)	1
378	SP2TB-4	Light-meter lever 'C' screw (マニュアルレバー-C取付)	1
379	SP2TP-4	Light-meter lever 'D' (マニュアルレバー-D)	1
380	SP2TB-5	Light-meter lever rivet (マニュアルレバー-Dカラクリ)	1
381	SP2TW-1	Light-meter lever 'C' spring (マニュアルレバー-C S P)	1

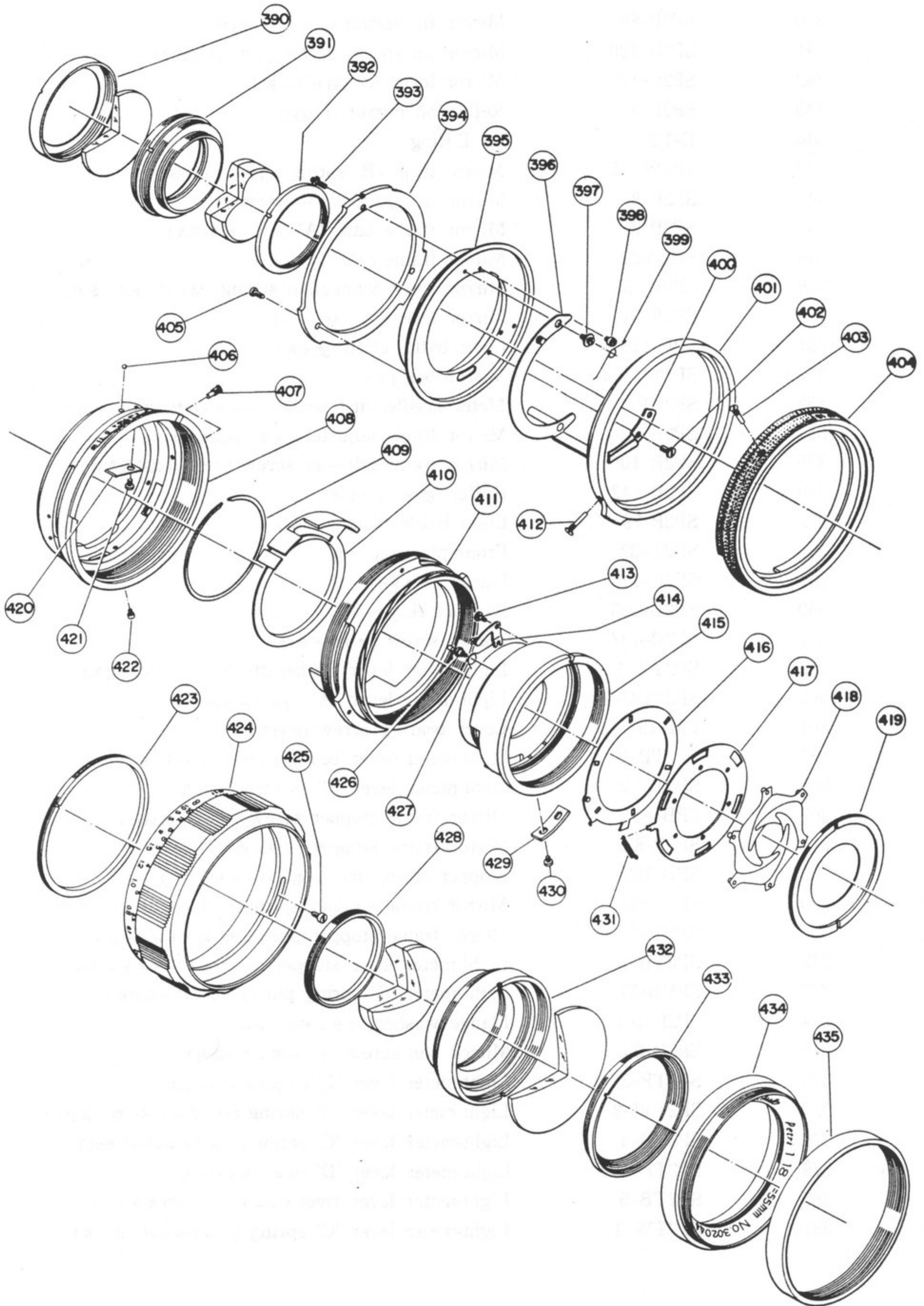


FIG.	PART NO.	DESCRIPTION	UNIT
390	SPFH-29	Rear frame ring 'A' (後枠リングA)	1
391	SPFH-28	Rear frame (後 枠)	1
392	SPFH-30	Rear frame ring 'B' (後枠リングB)	1
393	SPFH-9	Bayonet mount guide (外筒位置決めノック)	1
394	SPVH-1	Bayonet mount (バヨネット)	1
395	SPFH-2	Support ring (ヘリコイド外筒環)	1
396	SPFP-107	Diaphragm bracket (絞り作動アーム)	1
397	SPFH-19	Bracket screw (作動アーム取付)	1
398	SPFH-21	Bracket stopper (作動アームストッパー)	1
399	SPFW-3	Bracket spring (作動アームSP)	1
400	SPFP-108	Bracket supporter (作動アーム押え板)	1
401	SP2TH-2	Auto & Manual switch ring (マニュアルリング)	1
402	S-13-172852	Screw-13	32
403	SPVH-8	Diaphragm scale screw (プリセットノック)	1
404	SP2TH-1	Diaphragm scale (プリセットリング)	1
405	SPFH-8	Bayonet mount screw (ヘリコイド外筒環取付)	2
406	SPH-11	Click steel ball (クリック用鋼球)	1
407	SPH-7	Helical drum pin (ヘリコイド直進ノック)	1
408	SP2TH-6	Depth-of-field scale (ヘリコイド外筒)	1
409	SPVP-36	Diaphragm cam retainer (絞りカムリングばね)	1
410	SP2H-4	Diaphragm cam ring (絞りカムリング)	1
411	SP2H-7	Helical ring (ヘリコイド中筒)	1
412	SPVH-7	Stop-down pin (絞り込みノック)	1
413	SPFH-16	Diaphragm set lever screw (絞りセットレバー取付)	1
414	SPFH-106	Diaphragm set lever (絞りセットレバー)	1
415	SPFH-10	Diaphragm blade barrel (鏡 枠)	1
416	SPFP-104	Diaphragm operator 'A' (開閉板A)	1
417	SPFP-103	Diaphragm operator 'B' (開閉板B)	1
418	SPFP-109	Diaphragm blades (絞り羽根)	6
419	SPFH-11	Diaphragm operator retainer (開閉板押え)	1
420	SPFH-110	Steel ball holder (マニュアルクリックばね)	3
421	SPH-12	Steel ball holder screw (クリックばね取付)	3
422	SPVH-9	Diaphragm scale pin (プリセットストップビス)	2
423	SPFH-14	Diaphragm blade barrel retainer (鏡枠リング)	1
424	SP2TH-5	Diaphragm scale (ヘリコイドスケール)	1
425	PS-11	Distance scale screw (ヘリコイドスケール取付)	3
426	SPFH-18	Set lever spring pin (セットレバーSP掛)	1
427	SPFW-2	Diaphragm set lever spring (セットレバーSP)	1
428	SPH-28	No. 2 & 3 lens retainer (中枠リング)	1
429	SPFP-105	Diaphragm operator stopper (開閉板ストッパー)	1
430	MB-206	Operator stopper screw (SレバーC取付)	2
431	SPFH-4	Diaphragm operator spring (開閉板AB SP)	1
432	SPFH-13	Middle lens-frame (中 枠)	1
433	SP2H-3	Front lens-frame (前 枠)	1
434	SP2TH-3	Lens number ring (前枠リング)	1
435	SP2TH-4	Front display ring (前枠化粧リング)	1

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TROUBLE	CAUSE	REPAIR
POSSIBLE TO WIND	<ol style="list-style-type: none"> 1. Second blind does not return completely. <ol style="list-style-type: none"> 1-1. Bounce stopper is too strong. 1-2. Metal clasp of blinds catches each other. 2. Crank shaft spring (254) has been wound much more than regular turns (3 times). 3. Crank shaft spring (254) is loose. 4. Ratchet pawl (146) is slipped out of the fixed position. 5. Second blind gear stopper (122) and Clutch gear stopper (123) do not work smoothly. 6. Shutter button can be released on the way. <ol style="list-style-type: none"> 6-1. Release shaft bridge (135) and Release stopper (220) are slightly connected. 7. Clutch spring (125) is erroneously located. 8. Shutter release shaft (142) does not return. <ol style="list-style-type: none"> 8-1. Release shaft bridge (135) does not move smoothly in the ditch of Clutch base plate. 8-2. Shutter button (231) does not return. 9. Shutter is set too fast. 10. Shutter is set too slow. 	<p>Adjust Upper bounce stopper (172) so that it puts on the brake when Second blind returns to 2/3 of the film plane.</p> <p>Take Release arm retainer 'B' (223) out of Release arm 'C' (258) stop-plate. Repeat release action of interlocking Crank shaft stopper (257) and Release claw, and reduce the number of turns to zero. Then, push Mirror lever 'A' (350) to raise Mirror frame and repeat shutter release three times to obtain the fixed number of turns turns $3\frac{1}{2}$ turns. Make adjustment in accordance with 2,8,9 & 10 of SECTION II.</p> <p>After the adjustment by 8,9, & 10 of SECTION II, put back Crank shaft spring to the fixed number of turns.</p> <p>Referring to 3 of SECTION II, adjust the position right.</p> <p>Adjust them by cleaning up dust, rust and scraps.</p> <p>Referring to 7 of SECTION II, adjust the position right.</p> <p>Referring to 2 & 7 of SECTION II, adjust the position right.</p> <p>Set Release shaft bridge in the center of Clutch base plate.</p> <p>Refer to " SHUTTER BUTTON ".</p> <p>Referring to 8 of SECTION II, adjust the position right.</p> <p>Referring to 8 of SECTION II, adjust the position right.</p>

TROUBLE	CAUSE	REPAIR
	<p>11. Shutter cannot be set.</p> <p>11-1. Release arm spring (262) is too weak.</p> <p>11-2. Interlocking Crank shaft stopper pin (257) and Release arm 'C' is too strong.</p> <p>12. Gears of First blind gear (114), First blind pinion shaft (111) and Upper clutch gear (115) do not turn.</p> <p>12-1. A tooth is broken.</p> <p>12-2. Foreign matter is attached.</p> <p>12-3. A spring is jammed.</p> <p>13. The tape of either First blind or Second blind is cut, or peeled out of the drum.</p>	<p>Take it out and strengthen its spring.</p> <p>Referring to 10 of SECTION II, make adjustment.</p> <p>Replace the gear.</p> <p>Disassemble, clean up and assemble it again.</p> <p>Take out the spring (Usually First blind stopper spring (117)).</p> <p>Replace the blind. Note: Adjustment should be made that just before the metal clasp of blinds disappears from the film plane the metal clasp of First blind lags 0.4 mm behind that of Sedond blind.</p>
<p>WINDING</p>		
<p>Too heavy in winding</p>	<p>1. Crank shaft spring (254) is wound too much.</p> <p>2. Space between Crank charge pinion (252) and Crank gear (253) is not enough.</p> <p>3. Bounce stopper is too strong.</p> <p>4. Oil is short in the Clutch gear shaft of Gear plate 'B' assembly (141).</p> <p>5. When the film is loaded :-</p> <p>5-1. Rewind shaft (32) does not work smoothly.</p> <p>5-2. The dust adheres to the film running surface.</p> <p>5-3. Pressure plate (14) is not flat.</p>	<p>See 2 of "IMPOSSIBLE TO WIND".</p> <p>Make a minimum space by adjusting Crank shaft retainer (270).</p> <p>See 1-1 of "IMPOSSIBLE TO WIND".</p> <p>Wash Upper clutch gear (115) and Bottom clutch gear (126), and pour lubricant (M 8000) into the shaft.</p> <p>Wash it and put a little amount of glove oil (GO) into it, replace it.</p> <p>Clean it up.</p> <p>Adjust it or replace it.</p>
<p>Feeling rough in winding</p>	<p>1. Space between Crank charge pinion (252) and Crank gear (253) is not enough.</p>	<p>See 2 of "Too heavy in winding".</p>
<p>Feeling stuck in winding</p>	<p>1. Clutch spring (125) is deformed.</p> <p>2. Foreign matter is in the gears of rotating parts of winding mechanism.</p>	<p>Replace a set of Bottom clutch gear (126)</p> <p>Remove the foreign matter and clean it.</p>

TROUBLE	CAUSE	REPAIR
Racing	<ol style="list-style-type: none"> 1. Winding pawl does not work smoothly, or Winding pawl spring is off. 	Adjust the movement of Winding pawl or put back Winding pawl spring.
LEVER DOES NOT RETURN	<ol style="list-style-type: none"> 2. Clutch spring (125) does not hook Upper clutch gear (115). 	Referring to 2 of SECTION II, adjust the position right.
IMPOSSIBLE TO WIND LEVER	<ol style="list-style-type: none"> 1. Wind lever spring (95) is disconnected from Wind spring base 'B' (93), or it is broken. 	Fit Wind lever spring to Wind spring base 'B', or replace Wind lever spring.
	<ol style="list-style-type: none"> 2. Wind lever spacer (8) strikes Top cover (9) 	Adjust Top cover.
SHUTTER BUTTON	<ol style="list-style-type: none"> 1. Sprocket shaft pin (241) is off. 	Put it back.
	<ol style="list-style-type: none"> 2. Sprocket shaft pin (241) does not work smoothly. 	Remove dust, rust, and other foreign matter from the contact part between Sprocket shaft pin and Sprocket shaft (242), then put a little grease.
	<ol style="list-style-type: none"> 3. Rewind button (248) touches Bottom cover (20) 	Modify Bottom cover.
Too heavy in pressing Shutter button	<ol style="list-style-type: none"> 1. Roughness exists in the contact part between Crank shaft stopper (257) and Release pawl. 	Polish scratch on the contact part of Crank shaft stopper and Release pawl with oil stone. If the scratch is too deep, replace it.
	<ol style="list-style-type: none"> 2. Roughness exists between Shutter button (231) and the brim of Shutter button. 	Polish the inner part of the brim of Shutter button with a round pole.
Release button does not return.	<ol style="list-style-type: none"> 1. Foreign matter entered between Shutter button (231) and the brim of Shutter button. 	Remove the foreign matter and clean up.
Shutter cannot be released unless Shutter button is pressed too deeply.	<ol style="list-style-type: none"> 1. Release pawl is caught by Crank shaft stopper (257) too much. 	Referring to 9 of SECTION II, adjust the position right.
	<ol style="list-style-type: none"> 2. The position to fix Release arm 'A' (138) is out of place. 	Adjust the position right.
Shutter can be released too fast.	<ol style="list-style-type: none"> 1. Release pawl is caught by Crank shaft stopper (257) too little. 	Referring to 9 of SECTION II, adjust the position right.
When Shutter button is pressed slowly, the blind runs ahead.	<ol style="list-style-type: none"> 1. Either First blind stopper (118) is caught by First blind gear pin too little or is not caught. 	
	<ol style="list-style-type: none"> 1-1. First blind stopper does not work smoothly. 	Remove dust and rust from the base of First blind stopper and make it work smoothly.
	<ol style="list-style-type: none"> 1-2. Blind stopper release link (244) is bent and is released too fast. 	Referring to 4 of SECTION II, reform the bend and adjust the position right.

TROUBLE	CAUSE	REPAIR
<p>There is too much space around Shutter button.</p>	<p>1-3. Blind stopper release cam (260) is slipped out of place.</p>	<p>Adjust Blind stopper release cam so that Blind stopper release link may get maximum displacement at shutter speed 'B'.</p>
<p>FILM COUNTER</p> <p>Film counter does not advance.</p>	<p>1. There is too much space in the contact part between Release arm 'A' (138) and Shutter button nut (228).</p>	<p>Adjust the position of Release arm 'A' right. Note: Be sure to check when the shutter is released by Selftimer gear.</p>
<p>Film counter does not return.</p>	<p>1. Advance pawl is not engaged with Film counter gear.</p> <p>1-1. Advance pawl does not work smoothly.</p> <p>1-2. Advance pawl spring is off.</p> <p>2. Advance pawl does not advance properly.</p> <p>3. Stopper pawl is not engaged with Film counter gear.</p> <p>3-1. Stopper pawl does not work smoothly.</p> <p>3-2. Stopper pawl spring is off.</p> <p>3-3. Stopper pawl lever is not placed at the regular position.</p> <p>4. Film counter gear spring is off.</p>	<p>Remove dust and rust, and make it work smoothly.</p> <p>Put it back.</p> <p>Referring to 13 of SECTION II, make adjustment.</p> <p>Remove dust and rust, and make it work smoothly.</p> <p>Put it back.</p> <p>Referring to 13 of SECTION II, adjust the position right.</p> <p>Put it back and fix Film counter gear at the position where it has been wound one turn from a free position.</p>
<p>Film counter dial advances two graduations</p> <p>"B" functions at high speed.</p>	<p>1. Advance pawl does not work smoothly.</p> <p>2. Stopper pawl does not work smoothly.</p> <p>3. Stopper pawl lever does not work smoothly.</p> <p>4. Stopper pawl lever spring is off.</p> <p>5. Film counter gear spring is off.</p> <p>6. Film counter dial (50) strikes Film frame indicator (56)</p> <p>1. Film counter lever "B" advances too much.</p> <p>1. First blind cam follower (100) does not work smoothly.</p>	<p>Remove dust and rust, and adjust it to work smoothly.</p> <p>Same as above</p> <p>Same as above</p> <p>Put it back.</p> <p>Same as 4 of "Film counter does not advance".</p> <p>Adjust the position of the indicator right.</p> <p>Referring to 13 of SECTION II, make adjustment.</p> <p>Remove dust and rust on the base of First blind cam follower, and make it work smoothly.</p>

TROUBLE	CAUSE	REPAIR
No slit	<ol style="list-style-type: none"> 2. Second blind stopper (129) does not come off because of poor adjustment of First blind cam follower (100). 3. Fitting of First blind cam follower is loose. 4. Mal-adjustment of Blind stopper release link (244) 1. Mal-adjustment of First blind cam follower (100) 2. Second blind stopper (129) does not work smoothly. 3. Second blind stopper spring (133) is off. 4. Shutter is set too fast. 5. Ratchet pawl (146) is out of place. 	<p>Referring to 11 of SECTION II, make adjustment.</p> <p>Tighten Blind cam follower screw (106).</p> <p>Referring to 4 of SECTION II, adjust the position right.</p> <p>Referring to 11 of SECTION II, adjust the position right.</p> <p>Remove dust and rust, and make it work smoothly.</p> <p>Put it back to the normal position.</p> <p>Referring to 8 of SECTION II, adjust the position right.</p> <p>Referring to 3 of SECTION II, adjust the position right.</p>
Half slit	<ol style="list-style-type: none"> 1. Mal-adjustment of First blind cam follower (100) 2. Mal-adjustment of Release pawl of Release arm 'C' (258) when the shutter is released by Selftimer (237). 	<p>Adjust the position right.</p> <p>Referring to 9 of SECTION II, adjust the position right.</p>
"B" functions at low speed.	<ol style="list-style-type: none"> 1. Mal-adjustment of First blind cam follower (100) 2. First blind cam follower is too loose. 	<p>Referring to 11 of SECTION II, adjust the position right.</p> <p>Referring to 6 of SECTION II, tighten Blind cam follower screw (106).</p>
Mirror closes too fast at slow speed.	<ol style="list-style-type: none"> 1. Mal-function of Sector gear of Slow escapement assembly (57) 2. Mal-function of Slow escapement release bar A which is a part of Slow escapement assembly (57) 3. Escapement release bar spring (86) is off. 4. Mal-function of Slow escapement release bar (85) 5. Mal-adjustment of Slow escapement release bar (85) 	<p>Replace Slow escapement assembly.</p> <p>Remove dust and rust, and make it work smoothly.</p> <p>Put it back to the normal position.</p> <p>Remove dust and rust, and make it work smoothly.</p> <p>Referring to 11-3-2 of SECTION II, adjust as follows: When Slow escapement release bar is pushed by Speed adjustment cam (81), Star-type wheel of Slow escapement assembly (57) should be released from the ankle.</p>
Second blind does not close at slow speed.	<ol style="list-style-type: none"> 1. Mal-function of the ankle of Slow escapement assembly (57) 	<p>Replace Slow escapement assembly.</p>

TROUBLE	CAUSE	REPAIR
<p>"B" does not work properly.</p>	<ol style="list-style-type: none"> 2. The ankle is interlocked too deep. 3. Mal-function of Slow escapement assembly (57) 1. Mal-adjustment of First blind cam follower (100) 2. First blind cam follower (100) is loose. 3. First blind gear (114) is slipped out of place. 4. First blind stopper (118) does not enter. <ol style="list-style-type: none"> 4-1. Mal-function of First blind stopper 4-2. Mal-function of Blind stopper release link (244) 4-3. Blind stopper release cam (260) is slipped out of place. 5. Second blind stopper (129) is interlocked incompletely. 6. Adjustment cam washer (82) being not flat, First blind cam follower (100) bounces. 	<p>Referring to 11-3 of SECTION II, adjust the position right.</p> <p>Replace it.</p> <p>Referring to 11 of SECTION II, adjust the position right.</p> <p>Referring to 6 of SECTION II, tighten Blind cam follower screw (106).</p> <p>Referring to 3 of SECTION II, adjust the position right.</p> <p>Remove dust and rust, and adjust it to work smoothly.</p> <p>Referring to 4 of SECTION II, adjust the position right.</p> <p>Adjust Blind stopper release cam so that Blind stopper release link may get maximum displacement at shutter speed "B".</p> <p>Referring to 5 of SECTION II, adjust the position right.</p> <p>Adjust Adjustment cam washer.</p>
<p>Second blind does not close at "B".</p>	<ol style="list-style-type: none"> 1. Mal-adjustment of Blind stopper release (132) 2. When release shaft is not raised:- <ol style="list-style-type: none"> 2-1. Shutter release shaft (142) is not raised. 2-2. Shutter button (231) does not work smoothly. 2-3. Second blind stopper (129) does not work smoothly. 3. Second blind gear (119), Second blind pinion shaft (110), Mirror gear (274) and Mirror pinion do not turn. 	<p>Referring to 5 of SECTION II, adjust the position right.</p> <p>Adjust it to work smoothly by removing dust, rust and scraps.</p> <p>Same as above</p> <p>Same as above</p> <p>Clean them by removing dust, rust and scraps, and put "MOEBLUS" lubricant No.8000.</p>
<p>Mirror returns too fast.</p>	<ol style="list-style-type: none"> 1. Mirror lever retainer (187) does not work smoothly. 2. Mirror lever retainer (187) and Mirror lever 'A' (350) do not interlock enough. 	<p>Adjust it to work smoothly by removing dust, rust and scraps.</p> <p>Adjust them to interlock properly. The interlocked part between them should be the thickness of Mirror lever 'A' or 2/3 of Mirror lever 'A'.</p>

TROUBLE	CAUSE	REPAIR
Mirror does not return.	3. When Mirror frame (348) is at the top point, there is no space between the cut of Mirror lever 'A' (350) and Mirror lever retainer (187)	Scrape Mirror lever 'A' to have 0.1 mm between them.
	1. When Second blind wind-up drum (164) does not move:-	
	1-1. Mirror lever retainer (187) does not work smoothly.	Refer to 1 of "Mirror returns too fast".
	1-2. Second blind stopper (129) does not work smoothly.	Refer to 2-3 of "Second blind does not close at "B".
	1-3. Second blind gear (119), Second blind pinion shaft (110 and Mirror gear (274) do not turn.	Refer to 3 of "Second blind does not close at "B".
	2. Mirror lever retainer (187) and Mirror lever 'A' (350) interlock deeply.	Adjust them to interlock properly; The interlocked part between them should be the thickness of Mirror lever 'A' or 2/3 of Mirror lever 'A'.
	3. Crank shaft spring (254) is loosened.	After making adjustment in accordance with 8,9, & 10 of SECTION II, make Crank shaft spring the fixed number of turns. (3½ turns).
	4. Incomplete connection between Mirror lever retainer (187) and Mirror gear pin due to transformation of Mirror lever retainer or looseness of Mirror lever retainer screw (185).	Correct the transformation of Mirror lever retainer and tighten Mirror lever retainer screw completely. But Mirror lever retainer must work smoothly after the adjustment.
	5. When shutter is not released in "Auto":-	
	5-1. Momentum of Principal lever assembly (170) is too much.	Referring to 14 of SECTION II, adjust the position right.
	5-2. Crank shaft spring (254) is loosened.	Refer to 3 of "Mirror does not return".
	5-3. Diaphragm bracket (396) does not work smoothly.	Refer to "Helicoid".
	5-3-1. Diaphragm operator 'B' (417) and Diaphragm operator (416) do not work smoothly.	When there are obstacles on the contact surface, remove them and adjust Diaphragm operator 'B' and Diaphragm operator to work smoothly. When there is curve, correct it.
	5-3-2. Diaphragm bracket (396) does not work smoothly.	Adjust it to work smoothly by removing dust, rust and scraps on the part to which Diaphragm bracket is fixed. When Bracket supporter (400) touches Diaphragm bracket strongly, correct to put them at the fixed position. The space between Bracket supporter and Diaphragm bracket must be 0.1mm.

TROUBLE	CAUSE	REPAIR
Mirror does not go up completely.	<p>5-4. Crank shaft (255) does not turn smoothly.</p> <p>1. The position where Mirror lever 'A' (350) is connected is low.</p> <p>2. The rivet of Mirror lever 'C' is loose.</p>	<p>Give least possible horizontal space, remove hitch and pour glove oil into the bearing.</p> <p>Lengthen the connected part of Mirror lever 'A' by striking with hammer.</p> <p>Rivet it again.</p>
Mirror is loose.	<p>1. Mirror lever 'B' spring (345) is off or broken.</p> <p>2. Mirror lever connection spring (349) is off or broken.</p> <p>3. Mirror lever 'A' (350) and Mirror lever 'B' (342) do not work smoothly.</p>	<p>Fix Mirror lever 'B' spring at the correct position. When it is broken, replace it.</p> <p>Same as above</p> <p>Adjust them to work smoothly by correcting the hook and curve of Mirror lever 'A' and Mirror lever 'B'.</p>
Mirror goes up too fast.	<p>1. Release arm 'C' (258) is not at the correct position.</p>	<p>Referring to 9 of SECTION II, correct to put Release arm 'C' at the fixed position.</p>
Mirror moves when lever is wound.	<p>1. Crank arm rivet of Crank shaft (255) hits the oval hole of Mirror lever 'A'.</p> <p>2. The range of movement of Crank arm is not correct.</p>	<p>File the rivet with diamond file. When this adjustment is impossible, replace Mirror lever 'A'.</p> <p>Adjust it or replace Crank shaft.</p>
<p>SELFTIMER</p> <p>Selftimer is not set.</p>	<p>1. When Selftimer (237) is not adjusted correctly:-</p> <p>1-1. Ankle stopper of Selftimer is not adjusted correctly.</p> <p>1-2. Release button shaft spring of Selftimer is broken.</p> <p>2. Selftimer release button (229) pushes Release button shaft spring too strongly.</p>	<p>Adjust the ankle stopper and the ankle rivet to contact each other when Selftimer is set.</p> <p>Replace Selftimer.</p> <p>Adjust the curve of the part of Shutter button base (233) on which Selftimer release button is fixed, or replace Shutter button base.</p>
Selftimer does not connect shutter mechanism properly.	<p>1. Clutch lever 'A' (140) does not connect Clutch cam of Selftimer (237) enough.</p> <p>2. Shutter cannot be released unless Shutter button is pressed too deeply.</p> <p>3. Clutch lever 'A' (140) does not work smoothly.</p>	<p>Adjust them to connect each other properly.</p> <p>Referring to 9 of SECTION II and "SHUTTER BUTTON", adjust it to be at the fixed position.</p> <p>Adjust it to work smoothly by removing dust, rust and scraps.</p>
Selftimer stops halfway.	<p>1. Clutch lever 'A' (140) connects Clutch cam of Selftimer (237) too deeply.</p>	<p>Referring to 15 of SECTION II, adjust them to connect each other properly.</p>

TROUBLE	CAUSE	REPAIR
<p>Selftimer does not start.</p>	<ol style="list-style-type: none"> 2. Release arm 'C' (258) and Crank shaft stopper (257) pin are not adjusted correctly. 3. Selftimer (237) is defective. 1. The momentum of Selftimer release button (229) is less. 2. When Selftimer (237) is not adjusted correctly:- <ol style="list-style-type: none"> 2-1. Ankle stopper of Selftimer is not adjusted correctly. 3. Selftimer (237) is defective. 	<p>Referring to 10 of SECTION II, adjust the position right.</p> <p>Replace it.</p> <p>Adjust the curve of the part of Shutter button base (233) on which Selftimer release button is fixed, or replace Shutter button base.</p> <p>Adjust it to make the ankle stopper disconnected from Ankle riveted part when Selftimer release button (229) is pressed through.</p> <p>Replace it.</p>
<p>EXPOSURE METER</p> <p>Light meter (328) does not work.</p>	<ol style="list-style-type: none"> 1. Lead wire is disconnected. 2. Wire is disconnected in the Light meter. 3. (-) lead wire of Battery contact (42) is short-circuited. 4. Current does not go through Meter switch contact (167). 5. Mercury battery is consumed. 	<p>Correct it by soldering.</p> <p>Correct it by soldering.</p> <p>Wire it again.</p> <p>Remove dust, rust and scraps on Meter switch contact, and clean it. When Meter switch contact is transformed, correct it to be the normal form.</p> <p>Replace it.</p>
<p>Meter needle is up.</p>	<ol style="list-style-type: none"> 1. CdS leading wire is disconnected. 2. ASA resister leading wire is disconnected. 	<p>Correct it by soldering or replace the CdS.</p> <p>Correct it by soldering.</p>
<p>Meter needle is down.</p>	<ol style="list-style-type: none"> 1. Rotary resister does not contact Rotary contact (64) well. 2. Rotary resister leading wire is disconnected. 3. Resister plate contact is out of place. 4. CdS is short-circuited. 	<p>Remove dust, rust and scraps, and clean it. When Rotary contact is transformed, correct it to be a normal form.</p> <p>Correct it by soldering.</p> <p>Replace it.</p> <p>Replace it.</p>
<p>L.V. is inferior.</p>	<ol style="list-style-type: none"> 1. Sensitivity of CdS is not correct. 2. One side of CdS leading wire is disconnected. 	<p>Correct the sensitivity by Resister plate or replace CdS.</p> <p>Replace CdS.</p>

TROUBLE	CAUSE	REPAIR
Meter needle hooks.	<ol style="list-style-type: none"> 3. Resister plate is not connected well. 4. Rotary resister does not contact Rotary contact (64) well. 5. Zero-position of Meter needle is out of place. 6. Lens aperture is not correct. 	<p>Replace it.</p> <p>Correct form of Rotary contact.</p> <p>Adjust Needle or Index of Meter.</p> <p>Correct the aperture by adjusting Diaphragm cam ring (410).</p>
Meter needle sticks.	<ol style="list-style-type: none"> 1. Foreign matter is in Meter. 2. Pivot is over-tightened. 3. Needle touches Index. 4. Needle touches Condenser lens (306). 	<p>Clean the inside of Meter.</p> <p>Adjust it.</p> <p>Correct the curve of Needle or Index.</p> <p>Correct the curve of Needle.</p>
Meter needle moves too slowly.	<ol style="list-style-type: none"> 1. Insulator is dirty. 2. The space between pivots of Meter is too much. 3. Pivot is dirty. 4. The inside of Meter is dirty. 	<p>Clean it.</p> <p>Adjust pivots.</p> <p>Replace Meter.</p> <p>Clean it.</p> <p>Replace it.</p>
<p>SYNCHRONIZATION : Its trouble and repair are to be referred to 16 of SECTION II.</p>		
<p>Helicod</p>		
Roughness, unevenness and creak in Helicoid.	<ol style="list-style-type: none"> 1. Foreign matter is in Helical ring (411) and Depth-of-field scale (408). 2. Rapping of Helicod is not complete. 3. Helicoid is transformed by a fall and an over-impact. 	<p>Wash them and put new grease.</p> <p>Rap it by using a polishing powder.</p> <p>Correct the transformed parts, and rap them or replace them.</p>
Helicoid is loose.	<ol style="list-style-type: none"> 1. Helical drum pin (407) is loose. 2. Helical drum pin (407) does not fit the inside ring of Helical ring (411) well. 3. The screw on Helicoid is loose. 	<p>Fix it.</p> <p>Strike the bottom of Helical drum pin to make it move smoothly.</p> <p>Replace Helicoid.</p>
Helicoid does not stop properly.	<ol style="list-style-type: none"> 1. The pin of Diaphragm scale (424) is loose. 2. The top of Distance scale screw (425) touches Lens number ring (434). 3. The pin of Diaphragm scale (424) touches Depth-of-field scale (408). 	<p>Rivet it again.</p> <p>Change the combination of the inside ring of Helical ring (411) and Depth-of-field scale (408)</p> <p>Same as above</p>

TROUBLE	CAUSE	REPAIR
<p>Diaphragm bracket does not work smoothly.</p>	<p>4. Diaphragm cam retainer (409) touches Bracket supporter (400) or Bracket stopper (398).</p> <p>1. The contact part of Bracket supporter (400) and Diaphragm bracket (396) is rough and sticky.</p> <p>2. Grease sticks to Diaphragm bracket (396).</p> <p>3. Diaphragm blade barrel (415) touches Inside ring of Helical ring (411) because of the deformation of Diaphragm bracket (396)</p> <p>4. Diaphragm operator 'B' (417) and Diaphragm operator 'A' (416) do not move smoothly.</p> <p>4-1. Diaphragm operator 'B' and Diaphragm operator 'A' are not flat.</p> <p>4-2. The inside surface of Diaphragm operator 'B' and Diaphragm operator 'A' is rough.</p> <p>4-3. Grease sticks to Diaphragm blades (418).</p>	<p>Fix Bracket supporter up again in the correct position or file the top of Bracket stopper.</p> <p>Remove dust, rust and scraps stuck to the contact part, and correct it to move lightly or adjust so that the space between Diaphragm bracket and Bracket supporter is kept 0.1 mm.</p> <p>Wash it.</p> <p>Adjust Diaphragm bracket to keep right angle between Diaphragm bracket and its pin.</p> <p>Correct them.</p> <p>Polish the surface.</p> <p>Wash it.</p>
<p>Diaphragm blades get out of place.</p>	<p>1. The pin of Diaphragm blades is off.</p>	<p>Fasten it or replace it.</p>
<p>Diameter of diaphragm is not correct.</p>	<p>1. Diaphragm operator stopper (429) is out of place because of loose screw.</p> <p>2. Mal-adjustment of Diaphragm set lever (414)</p>	<p>Put Diaphragm operator stopper in the right place and fasten Operator stopper screw (430). Adjust to position Diaphragm operator stopper at the angle of 200 degree from Bayonet mount guide (393).</p> <p>Correct it to be the regular diameter of diaphragm.</p>
<p>Diaphragm blades do not return.</p>	<p>1. The diameter of diaphragm at "16" being small, Diaphragm blades (418) bites each other.</p> <p>2. Diaphragm operator 'B' (417) and Diaphragm operator 'A' (416) do not work smoothly.</p> <p>3. The pin of Diaphragm blades (418) sticks to Diaphragm blades</p>	<p>Refer to "Diameter of diaphragm is not correct."</p> <p>Refer to CAUSE No. 4 of Helicoid.</p> <p>Fasten the pin.</p>
<p>Diaphragm blades move when shutter is released at "M" (Manual) position.</p>	<p>1. Diaphragm operator stopper (429) is not of place.</p>	<p>Refer to "Diameter of diaphragm is not correct."</p>

TROUBLE	CAUSE	REPAIR
<p>Diaphragm blades do not return.</p>	<ol style="list-style-type: none"> 2. Stop-down pin (412) is loose or deformed. 3. Diaphragm bracket (396) is loose vertically. 1. Diaphragm set lever (414) is not adjusted well. 2. Diaphragm operator stopper (429) is out of position. 3. Diaphragm scale screw (403) is bent. 4. Inside ring pin of Helical ring (411) comes off. 	<p>Tighten it again or correct it so that there is no looseness when Diaphragm scale (424) is at ∞ (infinity) or the near distance.</p> <p>Correct to keep 90° between Diaphragm bracket and its pin.</p> <p>Bend Diaphragm set lever to correct the diameter of diaphragm.</p> <p>Refer to "Diameter of diaphragm is not correct."</p> <p>Correct it.</p> <p>Fasten it.</p>
<p>OTHERS</p>		
<p>Main lever moves with the operation of Wind lever.</p>	<ol style="list-style-type: none"> 1. Stop-down cam (271) is not positioned right or Crank shaft cam pin (267) is loose. 	<p>Referring to 14 of SECTION II, adjust to place it at the right position.</p>
<p>Diameter of diaphragm at "16" is too large.</p>	<ol style="list-style-type: none"> 1. Diaphragm bracket (396) does not work well. 2. Momentum of Principal lever assembly (170) is not enough. 	<p>Refer to "Operation of diaphragm bracket is not good".</p> <p>Referring to 14 of SECTION II, adjust to place it at the right position.</p>
<p>Friction of Take-up spool does not work well.</p>	<ol style="list-style-type: none"> 1. Friction spring 'A' (150) is weak. 	<p>Replace the friction assembly.</p>
<p>Film winding is heavy.</p>	<ol style="list-style-type: none"> 1. Friction spring 'A' (150) is strong. 2. Rewind knob (27) does not work well. 	<p>Same as above</p> <p>Remove dust or other foreign matter from Rewind shaft (32), and put glove oil a little into the contact part of Rewind shaft collar (30) or replace Rewind shaft.</p>

1. Position of Primary gear (127)

As shown in Fig. 1, it must be positioned so that the center of Ratchet pawl screw (144) and the projecting parts of Primary gear (127) may be on one straight line. In this case, Ratchet pawl (146) must be placed between the teeth of Primary gear completely.

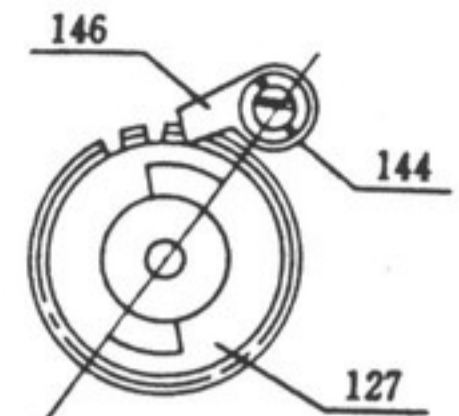


Fig. 1

2. Position of First blind gear (114) and Upper clutch gear (115)

2-1. Bottom clutch gear (126) is hooked by Clutch gear stopper (123). Insert First blind gear (114) when the stopper touches the part marked * of Gear plate 'A' assembly (96). The space between the pin of Upper ratchet gear (115) and Clutch spring (125) must be 0.2 mm. Clutch spring must be hooked at 1/3 of the pin of Upper ratchet gear.

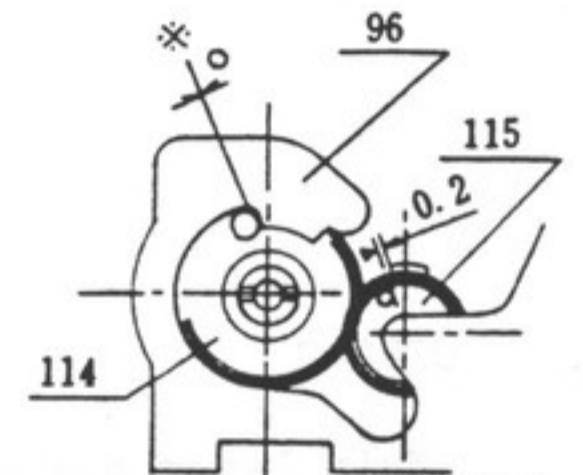


Fig. 2

2-2. Position of First blind gear (114) and Upper clutch gear (115) when wound up:-

When First blind stopper (118) hooks First blind gear, the space between the pin of First blind gear and Gear plate 'A' assembly (96) must be 0.25 mm - 0.3 mm.

3. Adjustment of Position of Ratchet pawl (146) when setting First blind stopper (118)

3-1. Just before Wind lever (7) is wound up, check as follows:-

3-1-1. Ratchet pawl (146) falls to the bottom of the teeth of Primary gear (127).

3-1-2. Soon after 3-1-1, First blind stopper (118) hooks the pin of First blind gear (114).

3-2. When Wind lever (7) is wound up fully, Ratchet pawl (146) must be positioned at about 2/3 of the bottom of teeth of Primary gear (127).

4. Adjustment of Blind stopper release link (244)

4-1. Blind stopper release link is pushed up by Blind stopper release cam (26), releasing First blind gear (114) from First blind stopper (118). This must be done at the position between 1/2 - 3/4 as shown in Fig. 3.

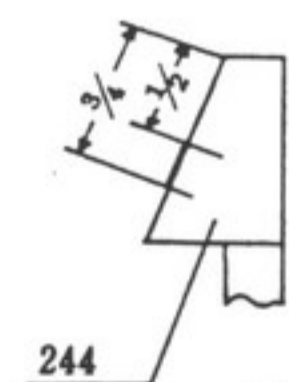


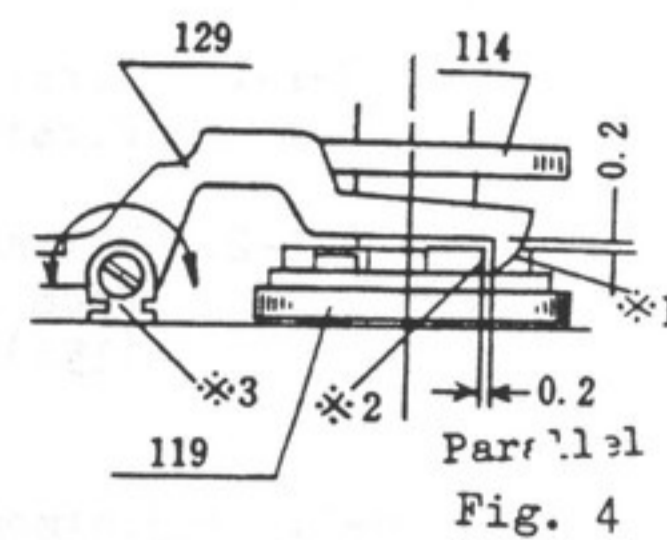
Fig. 3

4-2. Checking

Check the release timing of First blind gear (114) as follows: Set the shutter first. Holding Stop-down cam (271) so that Crank shaft (255) may turn very slowly, then release the shutter.

5. Adjustment of Second blind stopper (129)

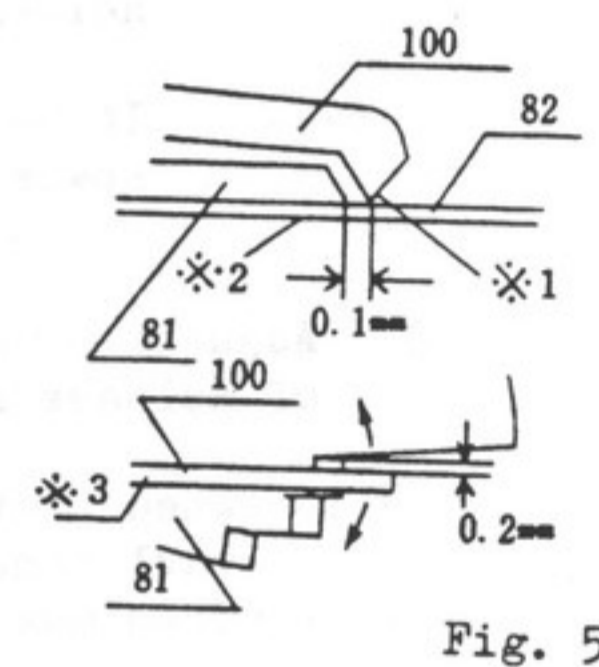
5-1. Make *1 of Second blind stopper and *2 of Second blind gear plate parallel with each other and the space between them must be 0.2 mm. Make this space by bending *3 of Gear plate 'B' assembly (141).



5-2. When Second blind stopper is raised by the arm of Blind stopper release (132) to the top, the space between Second blind stopper and First blind gear (114) must be 0.2 mm.

6. Adjustment of First blind cam follower (100)

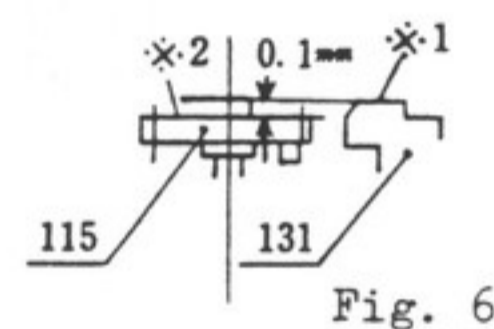
6-1. Set the shutter speed at 1/1000 sec., and adjust First blind cam follower so that *1 may mount *2 as shown in Fig. 5. This should be done by bending *3 of First blind cam follower with a tool (Driver B for First blind cam follower).



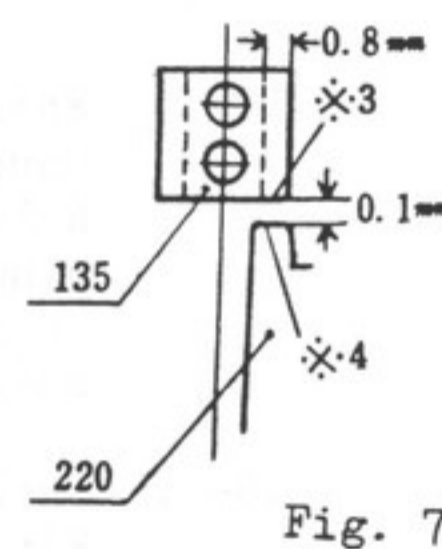
6-2. Set the shutter speed at 1/1000 sec., and adjust so that the space between *1 of First blind cam follower and *2 of Speed adjustment cam (81) may be 0.1 mm.

7. Position of Release shaft bridge (135)

7-1. Make a space of 0.1 mm between Clutch spring pawl (131) and *1, also between *2 and *3, then fasten Release shaft bridge (135).



7-2. The extent of intelocking between Release shaft bridge (135) and Release stopper (220) must be the thickness of Release shaft bridge, 0.8 mm. Adjustment must be made by bending Release shaft bridge.



8. Adjustment of Release arm retainer 'A' (221)

8-1. Adjust as following order just before Wind lever (7) is wound up.

8-1-1. First blind stopper (118) hooks the pin of First blind gear (114).

8-1-2. Release arm retainer 'B' (223) is released from Release arm 'C' stopper by Brake cam (154) and Release arm retainer 'A' (221).

8-2. Adjustment of 8-1

8-2-1. If 8-1-2 is done before 8-1-1, adjust by narrowing the space between two forks of Release arm retainer (221).

8-2-2. If 8-1-2 delays too much, adjust by widening the space between two forks of Release arm retainer (221).

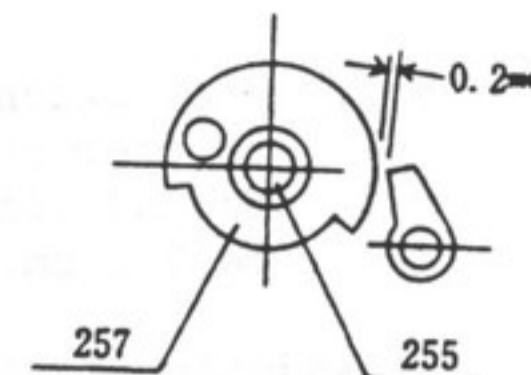


Fig. 8

9. Adjustment of Crank shaft stopper (257) and Release pawl of Release arm 'C' (258)

9-1. When Shutter button (231) is push fully and Release pawl comes off Crank shaft stopper, the space between them must be 0.2 mm.

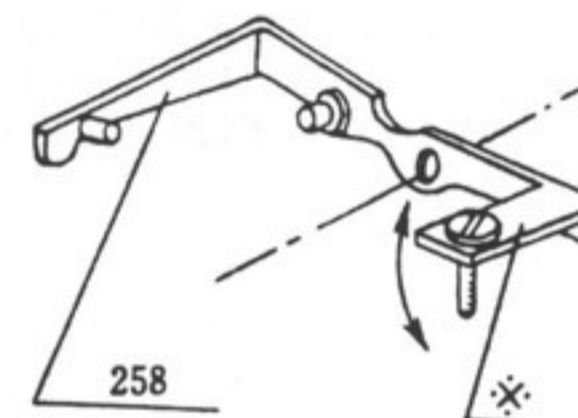


Fig. 9

9-2. When 9-1 is not satisfied, keep pushing Shutter button (231) and adjust by bending * part of Release arm 'C' (258).

10. Adjustment of Crank shaft stopper (257) pin and Release arm 'C' (258)

10-1. When the shutter is released, Crank shaft (255) turns around once and stops when Crank shaft stopper knocks against Release arm 'C'. Then wind up again. Just before the wind-up is over, when Release arm retainer 'B' (223) is released from Release arm 'C' stopper, Crank shaft stopper pin should leave Release arm 'C' pin.

10-2. Checking
Wind up Shutter button (7) and turn Mirror lever 'A' (350) with the thumb and check whether Crank shaft stopper pin touches Release arm 'C' (258) pin slightly or not.

11. Adjustment of Exposure time

Adjust as follows:-

11-1. Blind speed adjustment

11-1-1. Blind speed means the time for the blind to run across the film plane, and that of FT is 10.0-10.5 ms.

11-1-2. Adjustment

Set the shutter speed at 1/1000 sec. and adjust the speed by turning Main shaft adjustment nut (190).

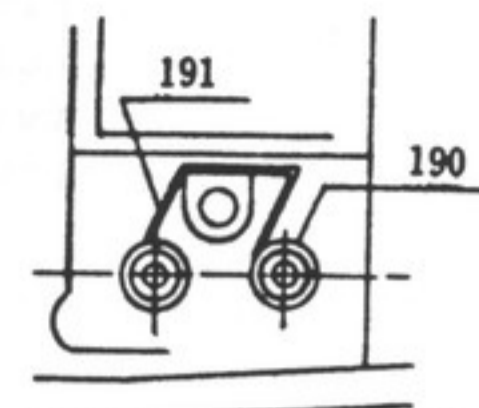


Fig 10

11-2. Adjustment of High speed exposure (1/1000-1/60 sec.)

11-2-1. High speed exposure time is adjusted by changing the slit between First blind and Second blind.

11-2-2. Set the shutter speed at 1/1000 sec. and adjust by bending * part of First blind cam follower (100) as indicated in Fig. 11. (Use Driver A for First blind cam follower.)

Bend it upward and exposure time becomes longer, downward, shorter.

When this adjustment is done, other shutter speeds are automatically decided by Speed adjustment cam (81).

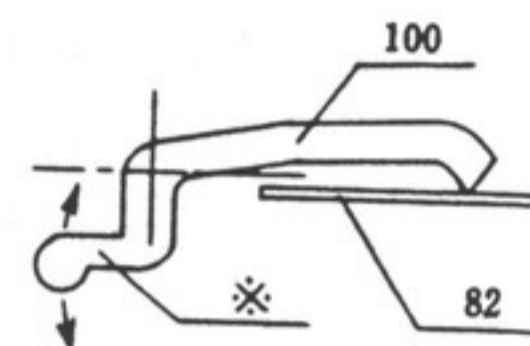


Fig. 11

11-3. Adjustment of Slow speed exposure time (1/30-1/1 sec.)

11-3-1. Slow speed exposure time is decided by Slow escapement assembly (57) which delays the start of Second blind.

11-3-2. Adjustment

Set the shutter speed at 1/8 sec., and adjust the location of Speed adjustment lever at the proper position. Then set the shutter speed at 1/1 sec. and adjust by bending *1 of Slow escapement release bar 'A' which is in Slow escapement assembly (57). Repeat the adjustment of the location of Speed adjustment lever to get a proper exposure for 1/8 and 1/1 sec. When these two speeds are adjusted well, other speeds are automatically adjusted by Slow speed cam (67). When *1 part is bent inside, exposure time becomes longer, outside, slower.

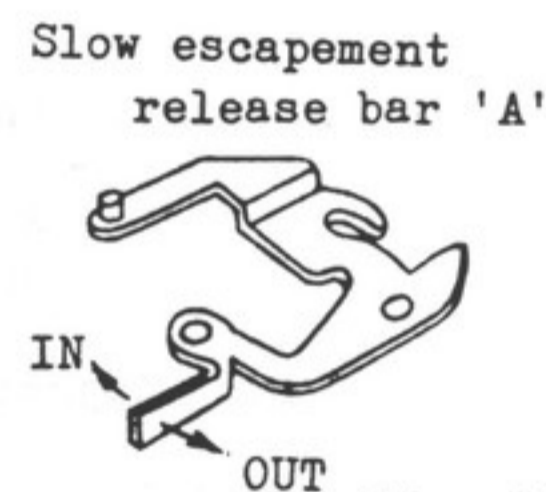


Fig. 12

12. Adjustment of Exposure meter

Set the shutter speed and ASA dial in accordance with the table below, then set at the following three apertures by adjusting Resister plate.

LV	ASA Dial	Speed Dial	Aperutre	Specification	Reference
					Brightness cd/m ²
LV 7	25	1/4	2.8	1.8-4	17.91
LV10	100	1/30	5.6	4-8	143.3
LV15	200	1/1000	8	5.6-11	4585.0

When making this adjustment, push Light-meter lever 'A' (363) to switch on.

13. Adjustment of Film counter (54)

13-1. The position of Film counter dial

Fix Film counter dial when its spring is turned around once.

13-2. The position of Stopper claw

Stopper claw must fall into the bottom of 5th gear tooth. Make this by twisting *1 part of Film counter plate stopper of the head of Stopper claw. When the head of Claw does not reach the bottom of the tooth, twist *2 part of Stopper claw lever, keeping Back cover closed.

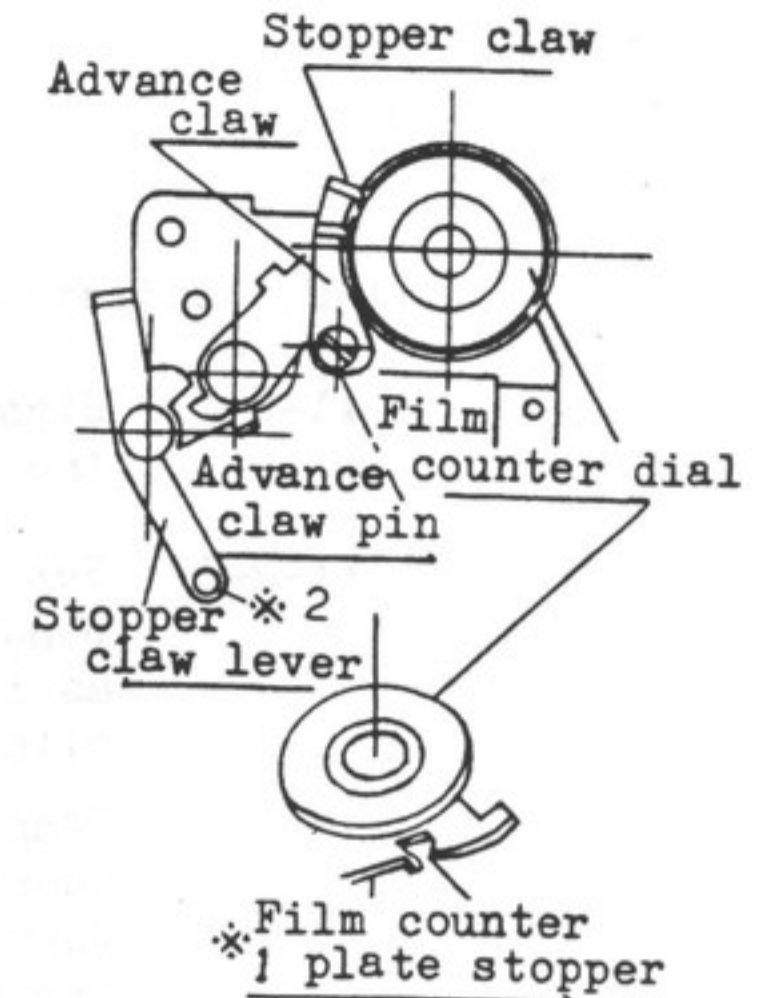


Fig. 13

13-3. The position of Advance claw

It must be put at 1/2-1/3 of 2nd tooth of Film counter dial and also touch the slope of 3rd tooth. Make this adjustment by Advance claw pin.

13-4. Adjustment of momentum of Film counter dial

This must be done by adjusting *part of Counter lever 'B' attached to Counter lever 'A' (98) to advance one tooth and a half.

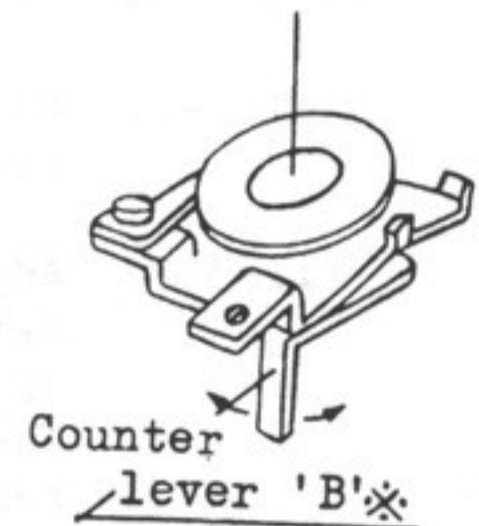


Fig. 14

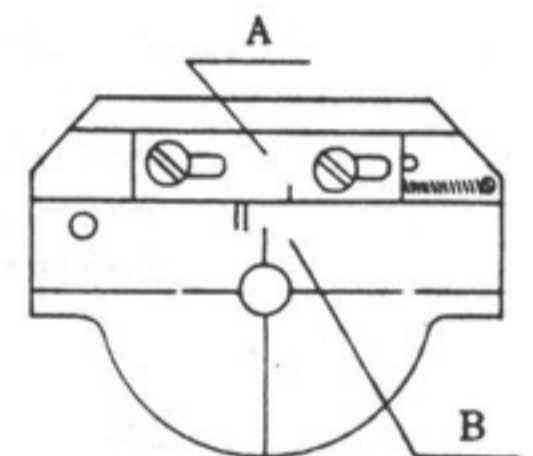
13-5. Checking

Advance Film counter dial to 36, open Back cover slowly and check that Film counter dial returns to S position smoothly.

14. Adjustment of position of Principal lever 'A' (170)

14-1. Use Position gauge for the adjustment.

Letting the shutter open at "B", set a line of A between two lines of B, Make *part of Stop-down cam (271) touch Stop-down cam roller, and fix to Crank shaft (255).

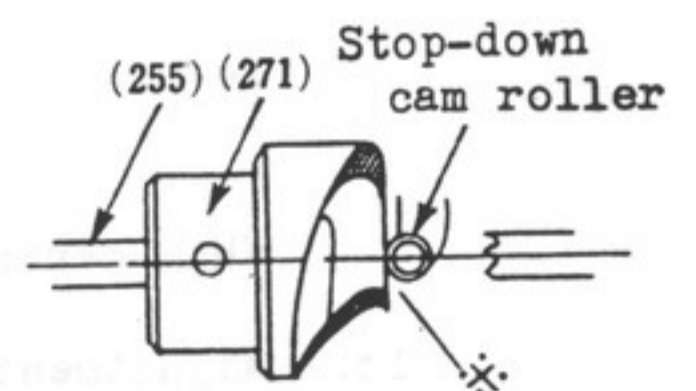


14-2. Checking

Check whether Principal lever assembly (170) moves or not when the shutter is set. If Principal lever assembly moves more or less, turn Stop-down cam (271) to the opposite direction of the turn of Crank shaft (255).

15. Adjustment of interlocking of Clutch lever 'A' (140) and Clutch cam of Selftimer gear assembly (237)

15-1. Loosen Screw-13 (158) and adjust the interlocking between Clutch lever 'A' and Clutch cam by sliding Release arm 'A' (138) to both sides. The time of exposure should be more than 1/2 sec. when the shutter is released by Selftimer at "B", and the shutter speed being released at 1/1000 sec., there should be a regular slit between First blind and Second blind.



15-2. Checking

Without setting the shutter when operating Selftimer, Clutch lever 'A' (140) should not touch Clutch cam of Selftimer.

16. Adjustment of X & FP contact

16-1. Adjustment of X contact

Adjust that X contact switches on at the moment when First blind fades out from the film plane.

16-2. Adjustment of FP contact

After the shutter is released at the moment when Mirror is raised to the top of Crank shaft (255), FP contact 'A' (196A) should touch FP contact 'B' (196B).

16-3. Adjustment of X & FP switch contact

X contact : (B-1/60 sec.)
Click pawl (72) and X contact switch (77) must not contact each other.

FP contact : (1/120-1/1000 sec.)
Click pawl and X contact switch must contact each other.

16-4. Time lag

X : 0.1 - 3 ms
FP : 7 - 14 ms

SECTION III: FINAL INSPECTION

Repairs and assembly being finished, the final inspection follows:-

Such a strict inspection as done in the manufacturing process is not necessary. Hereunder are the points necessary for the final inspection.

1. Wind Lever

Wind lever must operate from start to finish, smoothly without feeling rough, stuck or sticky. Next, make sure that Wind lever spring returns Wind lever, and also Winding pawl returns completely.

2. Shutter Button

Shutter button must operate smoothly without feeling rough, stuck or sticky. When Shutter button is pressed down slowly, Mirror jumps up and the shutter begins to function. After the shutter starts to function, Shutter button should be pressed further about 0.2 mm.

3. Film Counter

The shutter being released, confirm that the graduation of Counter dial advances one by one and that each graduation is in conformity with the indicator. Next, make sure that the opening of Back cover brings Film counter back to zero.

4. Shutter Speed Dial

Shutter speed dial must rotate without feeling rough, stuck or sticky, and the click stop must be accurate. Make sure that each Shutter speed dial corresponds with the indicator.

5. ASA Dial

ASA dial must rotate without feeling rough, stuck or sticky, and the click stop must be accurate. Make sure that each ASA dial corresponds with the indicator.

6. Shutter

Measure the time of exposure at speeds of 1/1000, 1/8, 1/1 sec. Make sure whether or not there remains dirt, scratch or slack on First and Second blinds, and, further-more, unusual noise when the slow escapement is used. The Slow escapement must function properly from start to finish.

7. Mirror

As to the mirror operation, check the following points.

7-1. Make sure that Mirror jumps up and down smoothly without being stuck on the way.

7-2. Confirm the dead point where Mirror goes up.

7-3. Check if Mirror frame (348) touches Mirror frame stopper (368) on both sides.

7-4. Confirm that Mirror never moves in winding Wind lever.

8. Selftimer

Make sure that Selftimer is set when Selftimer lever is moved up, and that Selftimer functions smoothly without being stopped halfway or making unusual noise and so forth. Next, confirm that Selftimer works well in connection with the shutter mechanism.

9. Principal Lever

Check whether Principal lever (170) rolls on either side or not when operating the Wind lever. Make sure that Principal lever does not get stuck halfway, or stop and yet safely returns even with a slight touch of a finger.

10. Focus and Finder

Make sure that the focus is adjusted by the help of "collimator" or an object at a distance of 200 meters away from the aiming spot. Make sure that there is no dirt or dust in the view-finder.

11. Rewinding Mechanism

Check that when the sprocket is free, there should be felt nothing rough or stuck when Rewind button is pressed down.

12. Helicoid Operation

Check that Helicoid rotates smoothly without feeling rough, stuck or sticky, and that the lens opening at F 16 is correct. When moving the auto & manual switch ring, Diaphragm blades must operate without a hitch at all times.

13. Exposure Meter

Set Shutter speed and ASA dial at the points described in 12 of SECTION II, Adjustment of Exposure Meter, and check LV indication error, and also check if Meter needle sticks or jumps.

14. Insulation Resistance and Contact Efficiency

Check the following with the insulation resistance tester and the contact efficiency meter.

1) The Insulation Resistance should be more than 30M

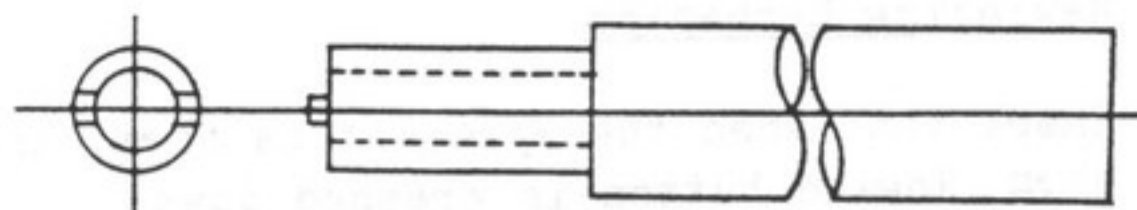
Condition : Temperature 20 + 15
Moisture 65% + 20%
DC 500 volt Insulation Resistance

2) Contact Efficiency

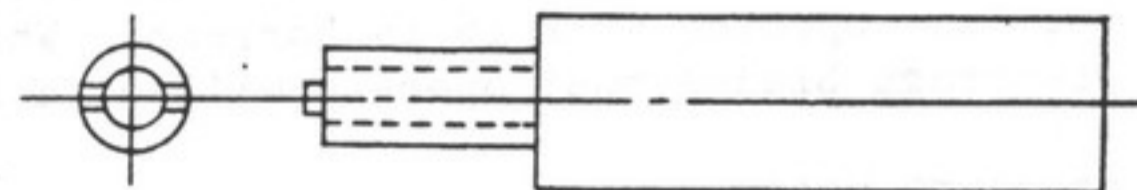
Measured time 2.5ms over 70%

15. Check winding and rewinding with film loaded.

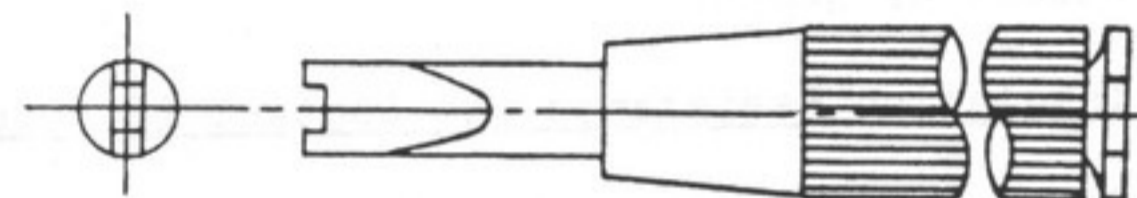
Driver for 277



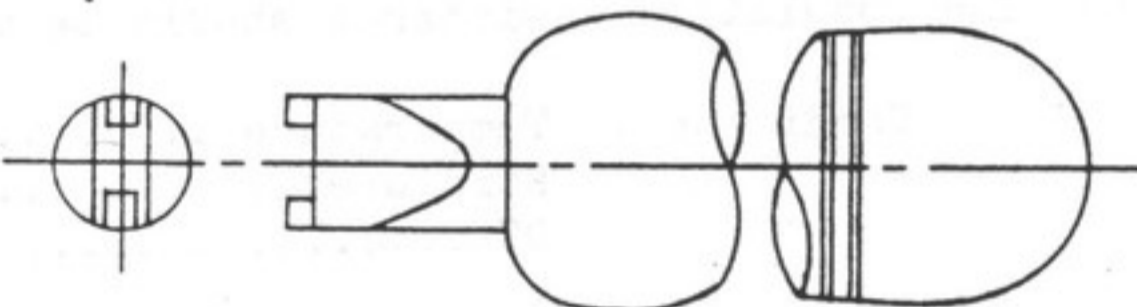
Driver for 89



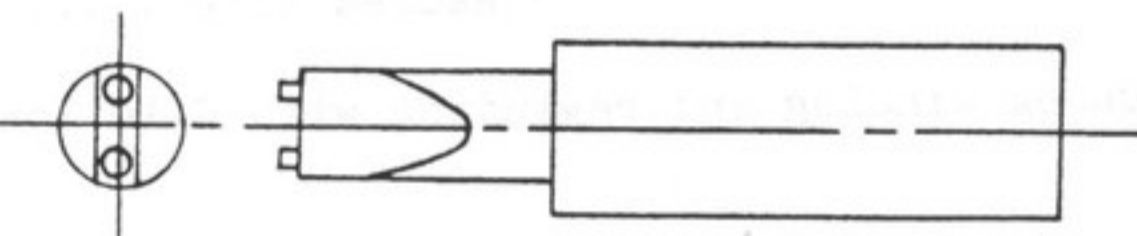
Driver for 112



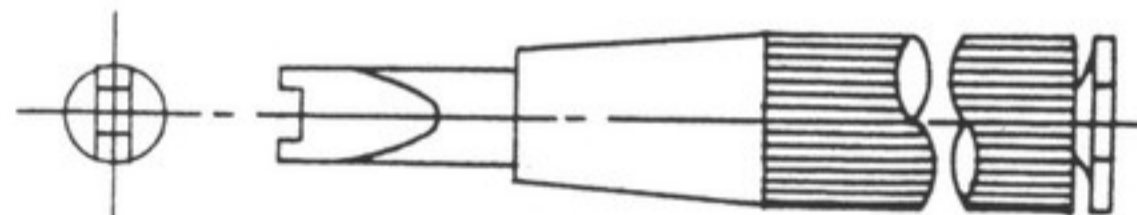
Driver for 80



Driver for 235



A Driver for 100



B Driver for 100

