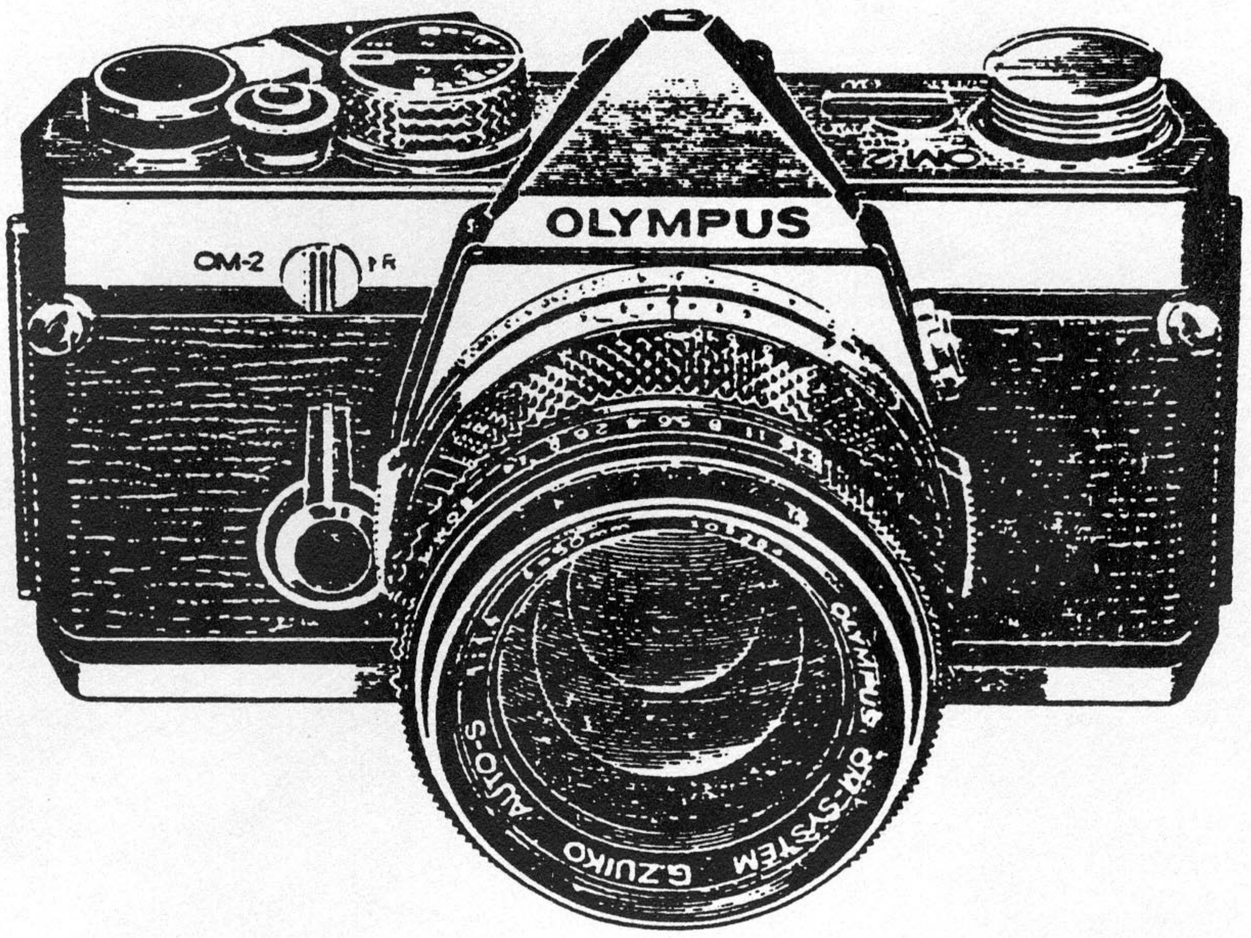
CONTENTS

OLYMPUS OM-2

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C O R R I G E N D A

Page	Column, Box & Line	Incorrect	Correct
37	Right C. 7th L. from bottom	without no friction	without friction
59	in Fig.	2.5 teeth	1.5 or 2.5 teeth
61, 70	16	CA9072 titled	CA9072 tilted
74	Right C. 2nd B. 3rd L.	by a 6V tester with	by a 3V tester with
77	Center C. bottom L.	0.7mm or more	0.4mm or more
95	3rd L. from bottom bottom L.	instead of V in 6 Defective Normal	instead of Ⓥ in ⑥ Normal Defective
104	Center C. bottom L.	Approx. 8mV--12mV	Approx. 8mA--12mA
108	Right C 1st L. Right C. 9th L.	Disconnect the black (2 wires of . . .	Disconnect the blue (2 index lines of ..
109	Center C. in Fig.	R305 R304	R306 R305
120	Center C. Fig.	Cemedine 3000RS	Concave (die casting)
121	Left C. 3rd L. Center C. 1st L. Center C. Fig.	R306 R306 ≒ 2.4 KΩ	R305 R305 ≒ 68.3 KΩ
122	Left C. 2nd B. 6th L.	2.5 teeth	1.5 or 2.5 teeth
15 76, 92, 94, 98, 99, 102, 103, 104, etc.	3rd L. in Fig.	Off Set OFF set "	Offset " "

OLYMPUS
OM-2

OUTLINE OF REPAIRS

PRECAUTIONS FOR REPAIRS

The Model OM-2 is designed for very weak electricity in its electronic parts of the automatic exposure device so that it can measure and control an extremly low level of luminance (-5.5EV at ASA 100).

The electronic parts thus tend to be affected by static electricity or a voltage larger than that of the batteries used, and to suffer easily performance degradation or breakage due to the static electricity that a human body usually possesses. (The OM-2, however, is designed so as not cause such disadvantage in a completed state.)

Because of the above reason, if you should handle the OM-2 in the same way as with other cameras in repairs, the electric parts may be broken causing serious trouble that requires replacement of the shutter amplifier (M circuit board).

Take particularly the following cautions in repairs.

1. For the troubleshooting of the shutter amplifier and related mechanism, be sure to ground all materials that come into contact with the electronic parts including the human body, repair tools and work bench, and commence repair work after making sure the condition free from static electricity is achieved. (The ICs of MOS FET and IR024 are particularly delicate.)

2. For the soldering work, use a three-wire type soldering iron with the tip grounded.

3. The electronic parts are weak against heat. Thus, the soldering work must be made securely in a short time, 3 seconds for one place as a rule.

4. The shutter amplifier (M circuit board) requires very high insulation resistance on its every part, and must be kept free from dust, smudges, etc.

5. For the soldering of the shutter amplifier (M circuit board), use solder containing silver. If ordinary solder should be used, the silver in the circuit pattern may be absorbed by the solder causing unstuck soldering.

6. When a constant-voltage power supply is used in the shutter amplifier (M circuit board) repair work, do not turn on and off the main switch of the power supply leaving it connected to the M circuit board. Back electromotive force may break the electronic parts.

7. When a continuity test is made in the shutter amplifier (M circuit board) repair work, avoid to use the 3V tester for the case other than specified in the OUTLINE OF REPAIRS. The electronic parts may be broken.

8. For other cautions, see each item in the OUTLINE OF REPAIRS.

OLYMPUS
OM-2

PARTS LIST & DRAWING

EXPLANATORY NOTES ON VARIOUS MARKS & NUMBERS USED IN IMPROVED PARTS TABLE & PARTS LIST

★ Only Body Die-Cast is not available in case of overseas.

❶ An assembled parts is supplied including parts marked with ①

① Single parts is supplied.

( ) Not to be supplied in single parts, but as an assembled parts.

Left-handed screw. (the mate screw hole is not marked particularly). All right-handed screws have no special indication.

< > Improved parts. Number shows INDEX in IMPROVED PARTS TABLE where more details are explained.

═══ No more available parts.

⇨ The place where parts have been improved.

[ ] Dimensions of improved parts and improved points.

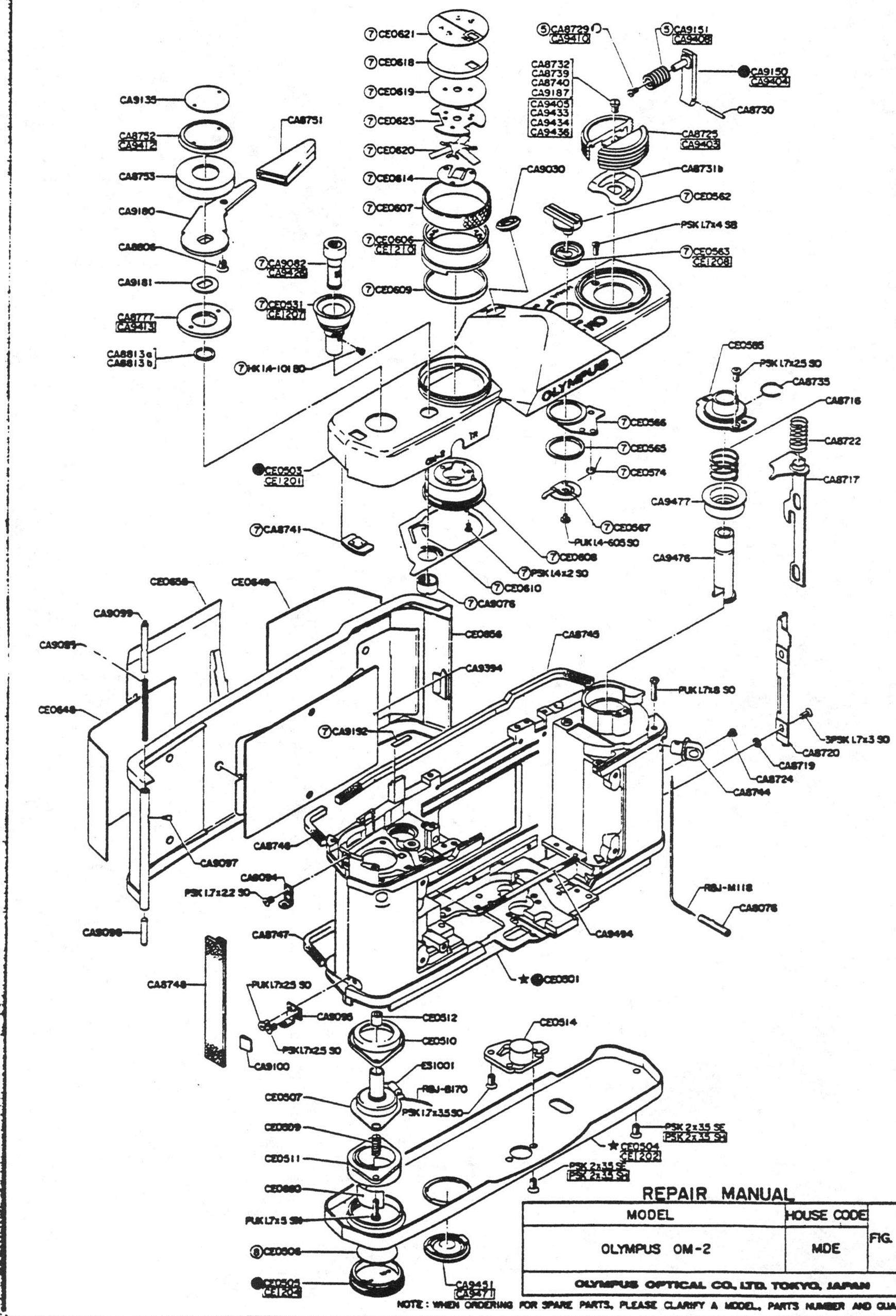
♡♤◇♧ Replacing parts of no more available parts marked with ═══.

※ How to replace parts or how to repair.

——— Original parts are also usable instead of improved parts.

✕ Printing error. No parts are built-in cameras.

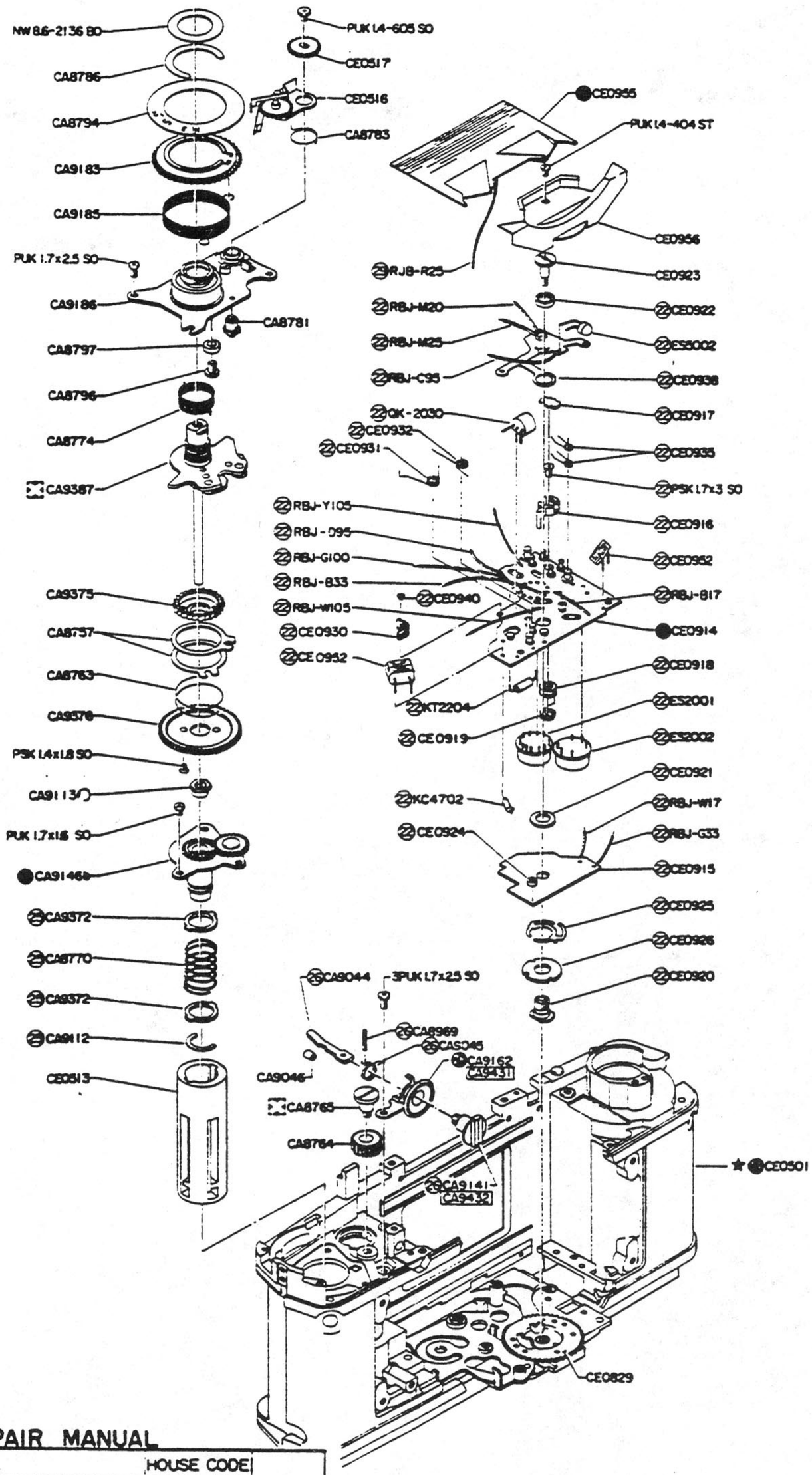
Clarify HOUSE CODE, PARTS NUMBER and QUANTITY in your ORDER SHEETS.



REPAIR MANUAL

MODEL	HOUSE CODE	FIG. 1/8
OLYMPUS OM-2	MDE	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

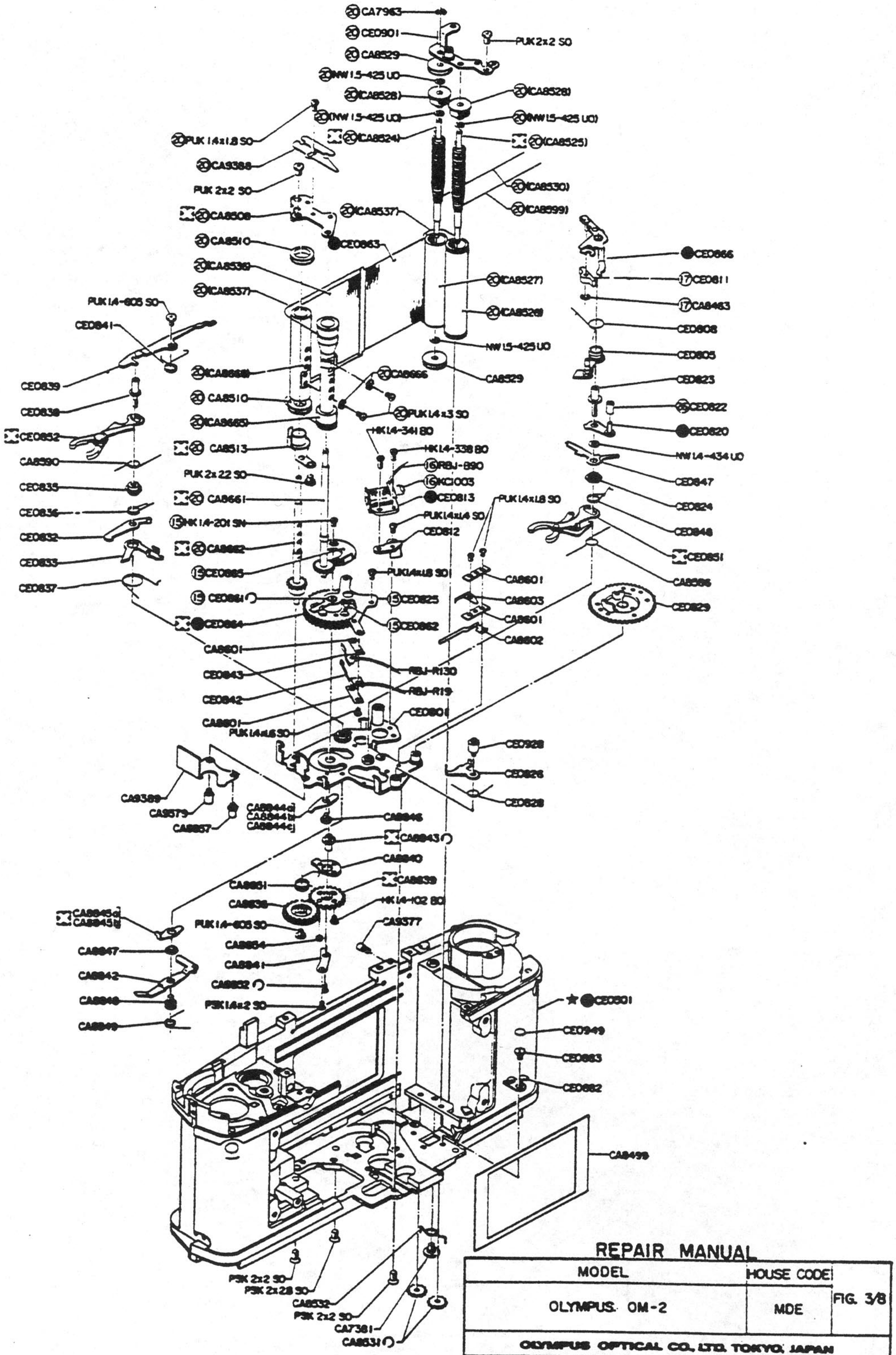
NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY.



REPAIR MANUAL

MODEL	HOUSE CODE	FIG. 2/8
OLYMPUS OM-2	MDE	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

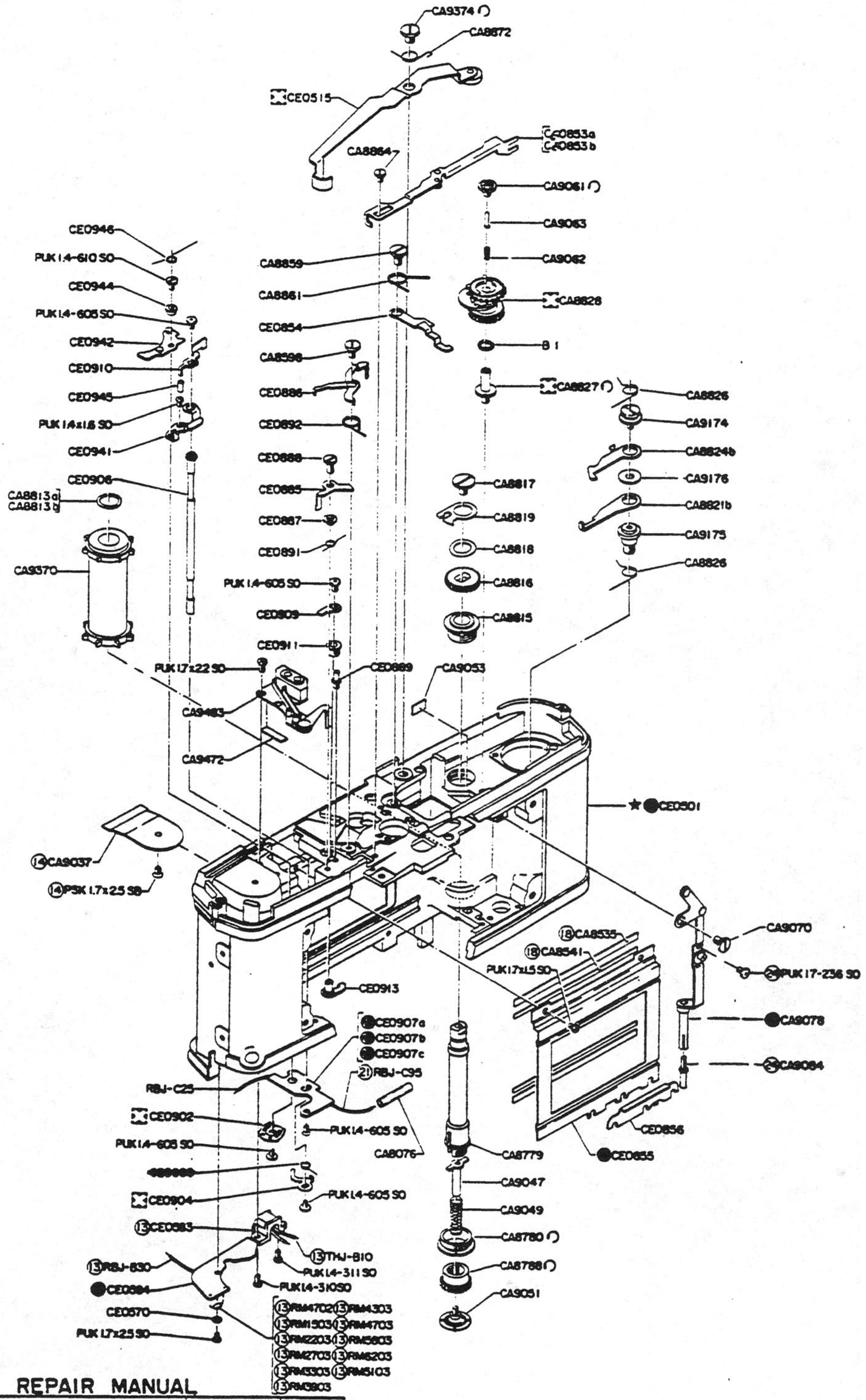
NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY.



REPAIR MANUAL

MODEL	HOUSE CODE	FIG. 3/8
OLYMPUS OM-2	MDE	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

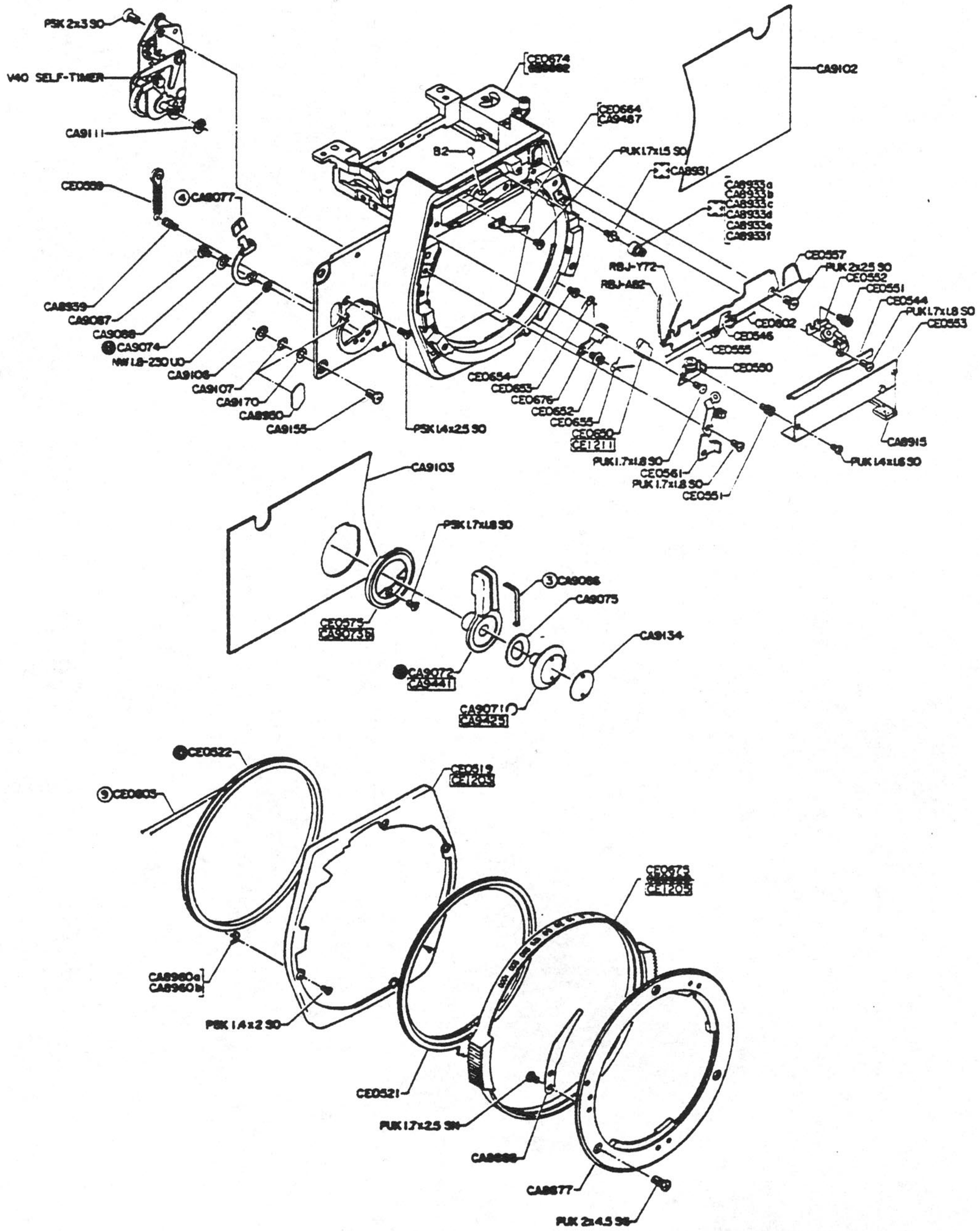
NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY.



REPAIR MANUAL

MODEL	HOUSE CODE	
OLYMPUS OM-2	MOE	FIG. 4/8
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

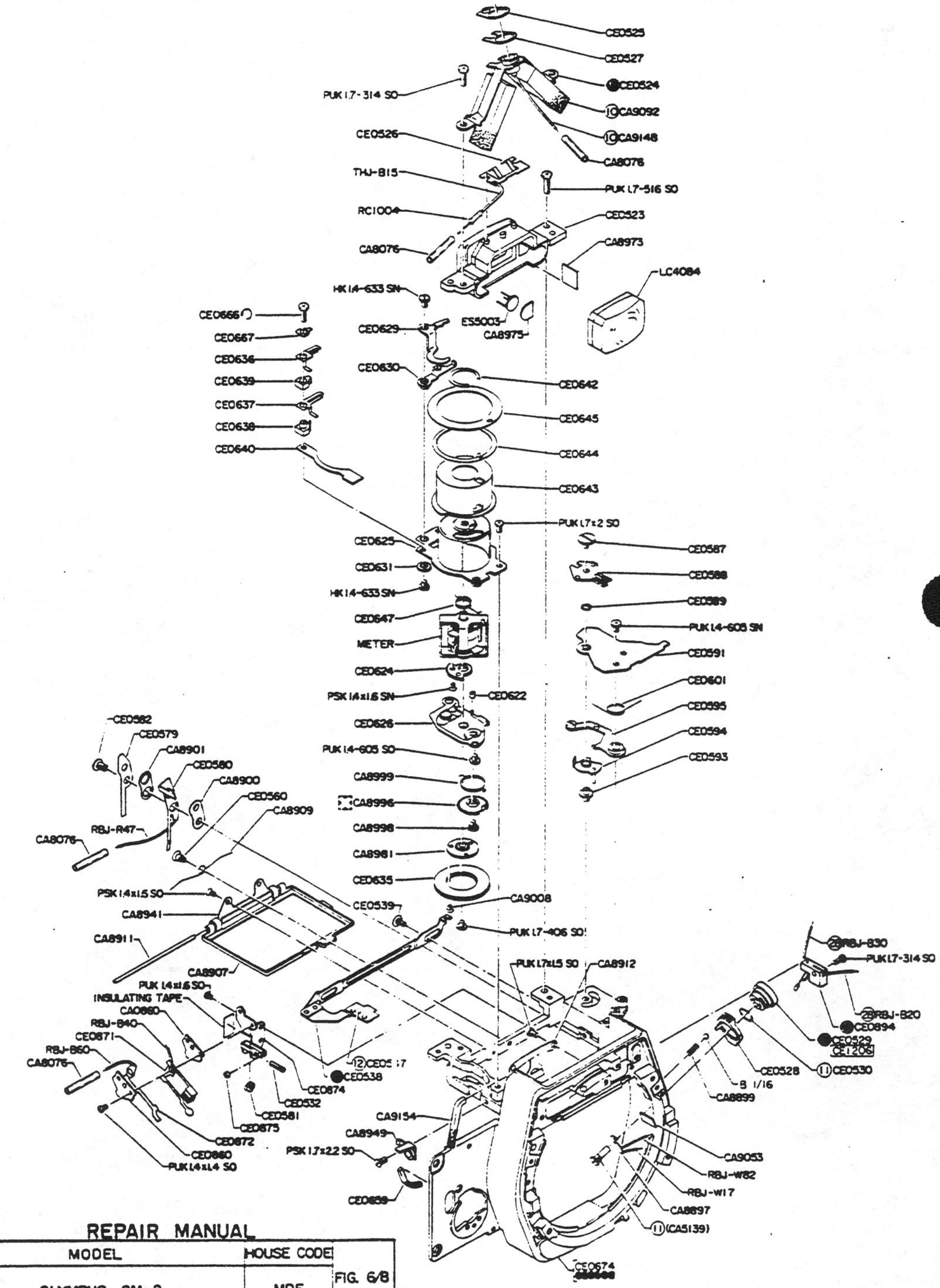
NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY.



REPAIR MANUAL

MODEL	HOUSE CODE	FIG. 5/8
OLYMPUS OM-2	MDE	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

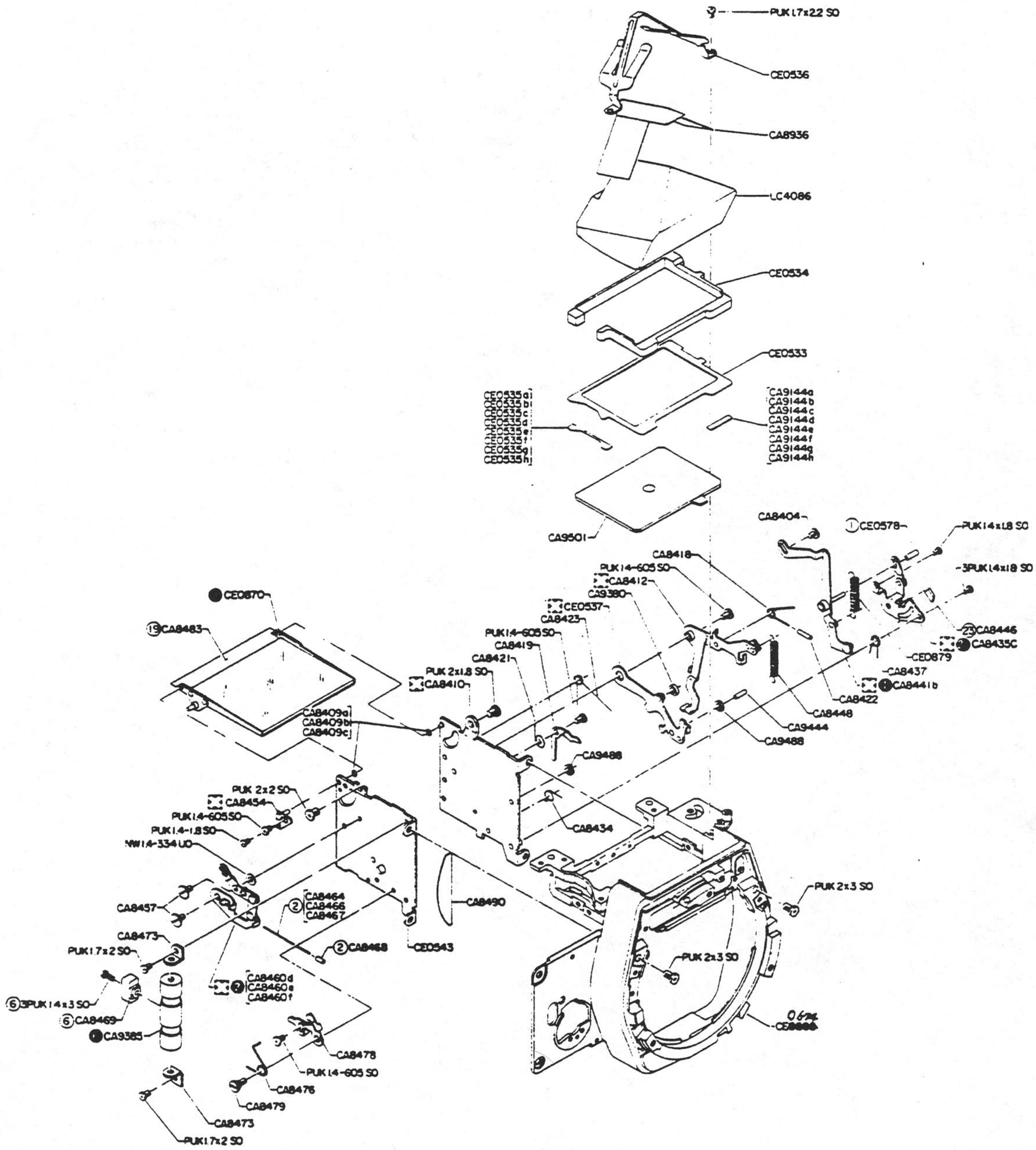
NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY.



REPAIR MANUAL

MODEL	HOUSE CODE	FIG. 6/8
OLYMPUS OM-2	MDE	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

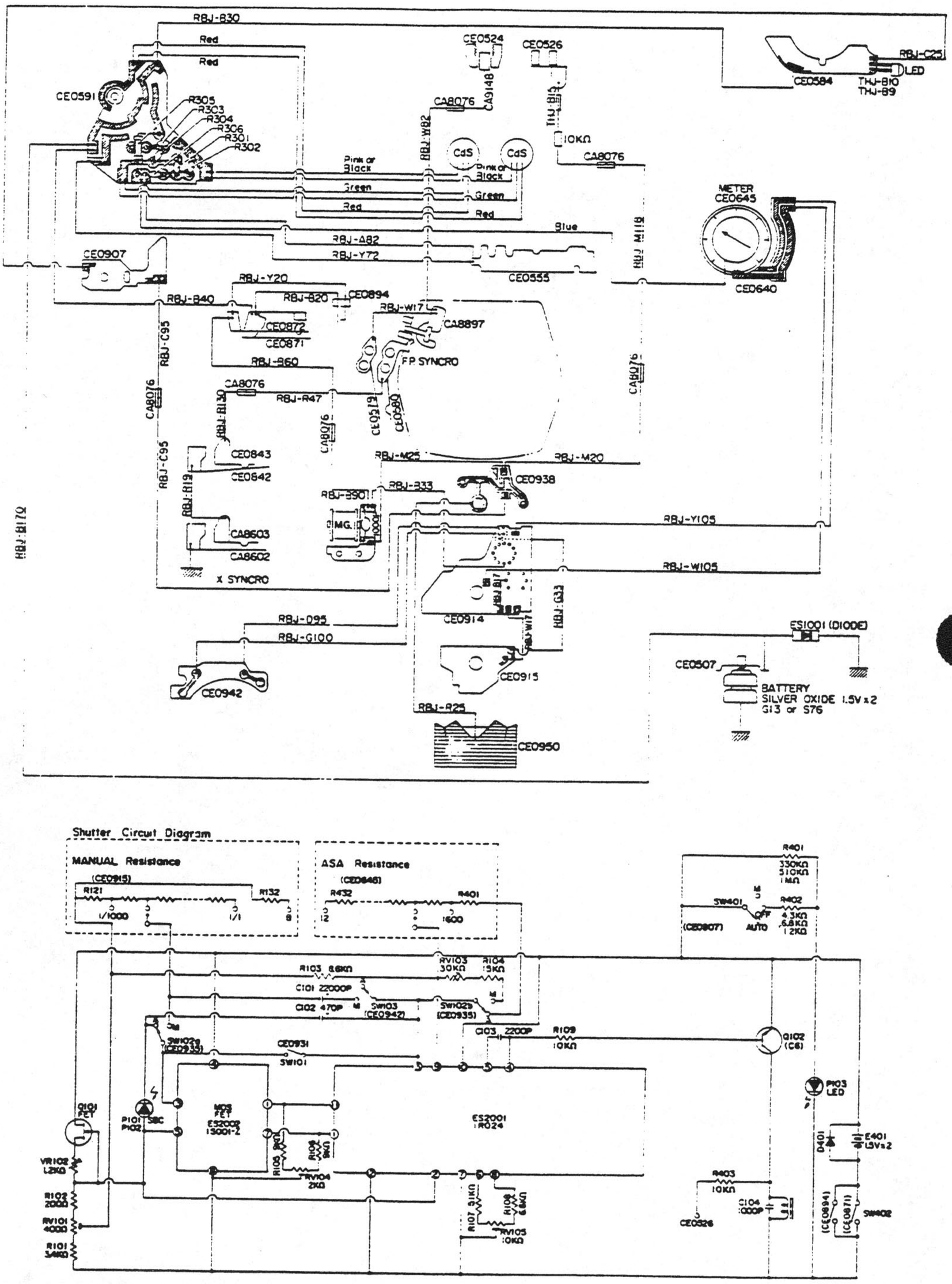
NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY.



REPAIR MANUAL

MODEL	HOUSE CODE	
OLYMPUS OM-2	MDE	FIG. 7/8
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY.



Shutter Circuit Diagram

REPAIR MANUAL

MODEL	HOUSE CODE	
OLYMPUS OM-2	MOE	FIG. 8/8
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY.

PARTS NO.	NAME OF PARTS	PARTS NO.	NAME OF PARTS
CA 7381	STOPPER SCREW	CA 8586	A LEVER SPRING
7963	RING E	8590	B LEVER SPRING
8076	TUBE	8598	S LEVER WASHER
		8601	STOPPER PLATE
8404	M LEVER SCREW	8602	"X" SYNCHRO CONTACT POINT
8409a	ADJUSTING WASHER a	8603	"FX" SYNCHRO CONTACT POINT
8409b	ADJUSTING WASHER b	8661	TUBE SHAFT A
8409c	ADJUSTING WASHER c	8662	TUBE SHAFT B
8410	LEFT SIDE PLATE	8666	ADJUSTING WASHER
8412	M CHARGING LEVER	8716	R COLLAR SPRING
8418	STOPPER SPRING	8717	KEY A
8419	M HOOKING LEVER	8719	KEY COLLAR
8421	HOOKING LEVER SPRING	8720	KEY COVER
8422	TUBE 2	8722	KEY SPRING
8423	RETURNING SPRING	8724	KEY POSITIONING SCREW
8434	HOOK SPRING	8725	R KNOB
8435c	M BASE PLATE c	8729	R PINCH SET SCREW
8437	MS SPRING	8730	R LEVER PIN
8441b	M LEVER b	8731	R LEVER SPRING
8446	M RING	8732	R LEVER WASHER
8448	CONNECTING LEVER SPRING	8735	R SPRING
8454	M PIVOT	8739	R LEVER WASHER 2
8457	LEVER SHAFT	8740	R LEVER STOPPER 3
8460d	LINK d	8741	FILM COUNTER COVER
8460e	LINK e	8744	STRAP EYELET
8460f	LINK f	8745	LIGHT PROOF L
8463	E RING 08	8746	LIGHT PROOF R
8464	SPRING 1	8747	LIGHT PROOF (LOWER)
8466	SPRING 2	8748	LIGHT PROOF (SIDE)
8467	SPRING 3	8751	FW LEVER COVER
8468	SPRING COVER	8752	FW LEVER HOLDER
8469	PIPE CONNECTOR	8753	FW LEVER DECORATION
8473	PIPE HOLDER (UPPER)	8757	F PLATE
8476	M POSITIONING SPRING	8763	F SPRING
8478	M POSITIONING PLATE	8764	ST IDLE
8479	M POSITIONING SHAFT	8765	IDLE SHAFT
8483	LIGHT PROOF PLATE	8770	SPOOL SPRING
8490	RIGHT COVERING PLATE	8774	FW SPRING
8499	B MASK	8777	FASTENING RING
8508	CURTAIN BASE R	8778	FC RETURNING LEVER
8510	ROLLER A	8779	ST SHAFT
8513	ROLLER HOLDER	8780	SPROCKET HOLDER (UPPER)
8529	ROLLER B	8781	FC GEAR SHAFT
8531	TENSION NUT	8783	FC RETURNING SPRING
8532	TENSION NUT STOPPER	8786	C RING
8535	FELT B	8788	ST GEAR
8541	FELT A	8794	FC PLATE

PARTS NO.	NAME OF PARTS	PARTS NO.	NAME OF PARTS
CA 8796	L STOPPER	CA 8915	DAMPER #2
8797	WASHER (RUBBER)	8931	PULLEY SHAFT
8806	FW LEVER COVER STOPPER	8933a	RETURNING ROLLER a
8813a	WASHER 1a	8933b	RETURNING ROLLER b
8813b	WASHER 1b	8933c	RETURNING ROLLER c
8815	SPROCKET HOLDER (LOWER)	8933d	RETURNING ROLLER d
8816	GEAR #1	8933e	RETURNING ROLLER e
8817	GEAR #1 SCREW	8933f	RETURNING ROLLER f
8818	GEAR #1 SPRING	8936	P COVER
8819	K CLAW	8939	B SPRING SHAFT
8821b	CHECKING LEVER b	8941	F HINGE
8824b	LOCK LEVER b	8949	B SPRING PLATE
8826	LOCK SPRING	8950	COVERING PLATE
8827	SHAFT #2	8960a	COVERING PLATE WASHER a
8828	GEAR #2 SHAFT	8960b	COVERING PLATE WASHER b
8836	GEAR #3	8969	STOPPER 61
8839	GEAR #4	8973	C LIGHT PROOF
8840	S WINDING PLATE	8975	C COVER
8841	GEAR #4 BASE	8981	M PULLEY HOLDER
8842	KS LEVER	8996	M LOWER PLATE GEAR
8843	SHAFT #4	8998	GEAR SHAFT
8844a	LEVER 1a	8999	GEAR SPRING
8844b	LEVER 1b	9008	PULLEY SCREW
8844c	LEVER 1c	9030	T NUT
8845a	LEVER #2a	9037	P PLATE
8845b	LEVER #2b	9044	K INNER PLATE
8846	LEVER STOPPER	9045	K LEVER SPRING
8847	KS HOLDER	9046	K PLATE HOLDER
8848	KS SHAFT	9047	ST CLAW
8849	KS SPRING	9049	ST SPRING
8851	GEAR #3 SPRING	9051	ST SCREW
8852	SHAFT #4 SCREW	9053	LEVER CUSHION
8854	S RING	9061	ME GUIDE
8857	BASE PLATE SHAFT	9062	COVER SPRING
8859	BULB PLATE SCREW	9063	COVER PIN
8861	RETURNING SPRING	9070	C SCREW
8864	KL SHAFT	9071	S LEVER STOPPER
8872	KM SPRING	9072	ST LEVER
8877	B MOUNT	9074	START LEVER
8888	B MOUNT SPRING	9075	F SPRING
8897	FP SYNCHRO CONTACT POINT	9076	RELEASE BASE NUT
8899	FX SYNCHRO CONTACT SPRING	9077	START LEVER CAP
8900	INSULATING PLATE	9078	S RELEASE PLATE
8901	INSULATING PLATE	9082	S RELEASE BUTTON
8907	F FRAME	9084	SR BUTTON SHAFT
8909	F SPRING	9086	S LEVER PLATE
8911	F SHAFT	9087	D SCREW
3912	F LOCK SCREW	9088	W SPRING

PARTS LIST

PARTS NO.	NAME OF PARTS
CA 9092	SM COVER
9093	SR BUTTON WASHER
9094	HINGE PIN HOLDER (UPPER)
9095	HINGE PIN HOLDER (LOWER)
9097	HINGE PIN SCREW
9098	HINGE PIN A
9099	HINGE PIN B
9100	COVERING PLATE
9102	LEFT SIDE LEATHER
9103	RIGHT SIDE LEATHER
9106	ADJUSTING WASHER NO. 1
9107	ADJUSTING WASHER NO. 2
9111	ST WASHER
9112	C WASHER
9113	GEAR FASTENER
9134	COVERING PLATE NO. 1
9135	COVERING PLATE NO. 2
9141	K PINCH
9144a	FRONT ADJUSTING PLATE a
9144b	FRONT ADJUSTING PLATE b
9144c	FRONT ADJUSTING PLATE c
9144d	FRONT ADJUSTING PLATE d
9144e	FRONT ADJUSTING PLATE e
9144f	FRONT ADJUSTING PLATE f
9144g	FRONT ADJUSTING PLATE g
9144h	FRONT ADJUSTING PLATE h
9146b	SPOOL SHAFT b
9148	LEAD WIRE (45mm long, BLACK)
9150	R LEVER
9151	R PINCH
9154	LIGHT PROOF PADDING (UPPER)
9155	FRONT CASTING SET SCREW
9156	LIGHT PROOF PADDING M
9162	K BASE PLATE
9170	ADJUSTING WASHER 3
9174	LEVER SHAFT
9175	M HOLDER
9176	LEVER SHAFT WASHER
9180	FILM WINDING LEVER
9181	LEVER WASHER
9183	FILM COUNTER GEAR
9185	COUNTER SPRING
9186	FC BASE PLATE
9187	R LEVER WASHER
9192	ADJUSTING PLATE
9370	SPROCKET
9372	SPOOL HOLDER
9374	M LEVER SHAFT
CA 9375	FW LC
9376	FW GEAR
9377	FILM GUIDE SCREW
9378	(COVERING PLATE NO. 3)
9379	3G HOOK SCREW
9380	LEVER COLLAR (RUBBER)
9385	A PIPE
9387	FW SHAFT
9388	STOPPER PLATE (UPPER)
9389	STOPPER PLATE (LOWER)
9394	PRESSURE PLATE
9444	TUBE 3
9451	M COVER
9472	SW WASHER
9476	R SHAFT
9477	R COLLAR
9483	SW BASE PLATE
9487	CLICK SPRING
9488	RUBBER RING 3
9494	FELT C
9501	FOCUSING SCREW
CE 0501	(DIE CAST BODY)
0502	FRONT CASTING
0503	TOP COVER
0504	BOTTOM PLATE
0505	BATTERY COMPARTMENT LID
0506	COVERING SEAL
0507	B COVER
0509	B CONTACT POINT
0510	INSULATION COVER
0511	B HOUSING
0512	COLLAR
0513	SPOOL B
0514	TRIPOD BASE
0515	KM LEVER
0516	FC RETURNING LEVER
0517	FC GEAR
0519	FRONT COVERING PLATE
0520	SHUTTER DIAL
0521	DIAL GEAR
0522	CONNECTING RING
0523	S FRAME
0524	S BASE
0525	S INSULATING WASHER
0526	S CONTACT POINT
0527a	T WASHER a
0527b	T WASHER b

PARTS NO.	NAME OF PARTS	PARTS NO.	NAME OF PARTS
CE 0528	FX SINCHRO KNOB	CE 0587	SLIDE SCREW
0529	SINCHRO SOCKET	0588	SLIDE PLATE
0530	P STOPPER SPRING	0589	SLIDE HOLDER
0531	BUTTON COVER	0591	SW CIRCUIT BOARD
0532	FP SCREW	0593	CAM SHAFT
0533	MASK	0594	CAM S
0534	PRISM WASHER	0595	CHENGE LEVER
0535a	REAR ADJUSTING PLATE a	0601	RETURNING SPRING
0535b	REAR ADJUSTING PLATE b	0602	B STRING 1
0535c	REAR ADJUSTING PLATE c	0603	B STRING 2
0535d	REAR ADJUSTING PLATE d	0604	SPRING HOLDER
0535e	REAR ADJUSTING PLATE e	0606	A DIAL
0535f	REAR ADJUSTING PLATE f	0607	RUBBER RING
0535g	REAR ADJUSTING PLATE g	0608	CLICK RING
0535h	REAR ADJUSTING PLATE h	0609	L NUT
0536	P STOPPER	0610	LOCK SPRING
0537	CONNECTING LEVER	0614	CAM SPRING
0538	SLIDER	0618	A CAP
0539	SL SHAFT	0619	A PLATE
0543	RIGHT SIDE PLATE	0620	MK PLATE
0544	GUIDE PLATE	0621	EV PLATE
0546	SL CONTACT	0622	INSULATION SHAFT
0547	INDICATION PLATE	0623	COVERING PLATE
0550	ROLLER	0624	M GEAR 2
0551	ROLLER SCREW	0625	M BASE
0552	RIGHT SIDE PLATE	0626	M LOWER PLATE
0553	COVERING PLATE.	0629	A LEVER 1
0555	CIRCUIT BOARD B	0630	A LEVER 2
0557	SPRING	0631	WASHER
0559	B SPRING	0635	PULLEY M
0560	F SPRING SHAFT	0636	A CONTACT 1
0561	STOPPER	0637	A CONTACT 2
0562	S LEVER	0638	CONTACT BASE 1
0563	SW WASHER	0639	CONTACT BASE 2
0565	NUT	0640	BASE PLATE A
0566	C BASE PLATE	0642	C WASHER
0567	K LEVER	0643	A CAM
0570	INSULATING WASHER	0644	WASHER
0574	C SPRING	0645	AR BASE PLATE
0575	S BASE COVER	0647	ST SPRING
0578	SR TUBE	0648	REAR RIGHT SIDE LEATHER
0579	F CONTACT (UPPER)	0649	REAR RIGHT SIDE LEATHER
0580	F CONTACT (LOWER)	0650	RESET BUTTON
0581	F NUT	0652	HOOK SHAFT
0582	F SCREW	0653	HOOK SPRING
0583	CL HOUSE	0654	BL SPRING HOLDER
0584	C CIRCUIT BOARD	0655	BL SPRING
0585	R SHAFT HOLDER	0656	REAR COVER ASS'Y

PARTS NO.	NAME OF PARTS	PARTS NO.	NAME OF PARTS
CE 0658	HOLDING SPRING	CE 0863	CURTAIN ASS'Y
0659	LIGHT PROOF PADDING (LOWER)	0864	GEAR AB
0660	B NAME PLATE	0865	GEAR PLATE B
0663	SL INSULATING PLATE	0866	REAR CLAW A
0664	CLICK SPRING	0870	M FRAME
0665	INSULATION PLATE	0871	M CONTACT 1
0666	A SCREW	0872	M CONTACT 2
0667	INSULATION PLATE	0874	M INNER PLATE
0674	FRONT CASTING	0875	M TUBE
0675	S DIAL	0879	M SPRING
0676	BL LEVER	0882	M RELEASE
0801	S BASE PLATE	0883	MR SHAFT
0805	HOOK LEVER	0885	TURN PLATE A
0808	SPRING A	0886	TURN PLATE B
0811	HOLDING PLATE	0887	TURN COLLAR
0812	MG BASE	0888	TURN SCREW
0813	MG PLATE	0889	SPRING STOPPER
0819	SPRING B	0891	TURN SPRING A
0820	TR PLATE	0892	TURN SPRING B
0822	T TUBE	0894	M2 WASHER
0823	REAR SHAFT	0901	PLATE L
0824	REAR NUT	0902	C CAM
0825	S PLATE (UPPER)	0904	C LEVER
0826	B LEVER	0906	C SHAFT
0828	B SPRING	0907a	C BASE a
0829	SPEED GEAR	0907b	C BASE b
0832	FIRST CLAW A	0907c	C BASE c
0833	FIRST CLAW B	0909	C PLATE 1
0835	FIRST SHAFT	0910	C PLATE 2
0836	FIRST SPRING A	0911	C BOSS
0837	FIRST SPRING B	0913	C PLATE 3
0838	B LEVER SCREW	0914	M CURCUIT BOARD
0839	M LEVER	0915	S CURCUIT BOARD
0841	M SPRING	0916	CAM SHAFT
0842	X CONTACT A	0917	PLASTIC CAP
0843	X CONTACT B	0918	CAM NUT
0847	LOCK LEVER	0919	C SPRING 2
0848	SL LEVER	0920	BASE TUBE
0851	A LEVER 2	0921	INSULATING PLATE
0852	B LEVER 2	0922	PLASTIC NUT
0853a	KL PLATE a	0923	SCREW
0853b	KL PLATE b	0924	STOPPER
0854	B PLATE	0925	SPEED PLATE
0855	F MASK	0926	POSITION NUT
0856	MASK STOPPER	0928	B SCREW
0860	STOPPER PLATE	0930	T FASTENER
0861	GEAR SCREW	0931	T CONTACT A
0862	B STOPPER RING	0932	T CONTACT B

PARTS LIST

OM-2

PARTS NO.	NAME OF PARTS
CE 0935	K CONTACT
0938	SUB CIRCUIT BOARD
0940	STOPPER
0941	C BASE PLATE
0942	C BASE
0944	C COLLAR
0945	C TUBE
0946	C SPRING 3
0949	RM PLATE
0952	L BASE
0955	COVERING PLATE
0956	LOWER COVER
LC 4084	EYE PIECE LENS
4086	PENTAPRISM
	EXPOSURE METER ASS'Y
V 40	SELF TIMER
ES 1001	DIODE
2001	IR-024
2002	IS-001Z
5002	L E D
5003	C d S
QK 2030	F E T
	CONDENSER
	KC 1003
	KC 4702
	KT 2204
	RESISTOR
	RC 1004
	RC 7174
	RM 1004
	1005
	1104
	1204
	1304
	1404
	1503
	1504
	1604
	RESISTOR
	RM 1704
	1804
	1805
	1904
	2004
	2203
	2204
	2304
	2403
	2404
	2504
	2604
	2703
	2704
	2705
	2804
	2904
	3004
	3104
	3204
	3303
	3304
	3404
	3504
	3604
	3903
	4303
	4702
	4703
	4705
	5103
	5603
	6203
	9103
	LEAD COIL
RBJ-A82	Blue
-B17	Black
-B20	Black
-B30	Black
-B33	Black
-B40	Black
-B60	Black
-B90	Black
-B170	Black

PARTS LIST

PARTS NO.	NAME OF PARTS
	LEAD COIL
RBJ-C25	Brown
-C95	Brown
-D95	Orange
-G100	Green
-M20	Purple
-M25	Purple
-M118	Purple
-R19	Red
-R25	Red
-R47	Red
-R130	Red
-G33	Green
-W17	White
-W82	White
-W105	White
-Y20	Yellow
-Y25	Yellow
-Y72	Yellow
-Y105	Yellow
	TUBE
THJ-B9	Black
-B10	Black
-B18	Black
	SET SCREW
	PUK1.4x 1.4SO
	PUK1.4x 1.6SO
	PUK1.4x 1.8SO
	PUK1.4x 3 SO
	PUK1.4-310SO
	PUK1.4-311SO
	PUK1.4-404ST
	PUK1.4-605SO
	PUK1.4-605SN
	PUK1.4-609SO
	PUK1.4-610SO
	PUK1.7x 1.5SO
	PUK1.7x 1.6SO
	PUK1.7x 1.8SO
	PUK1.7x 2 SO
	PUK1.7x 2.2SO
	PUK1.7x 2.5SO

PARTS NO.	NAME OF PARTS
	SET SCREW
	PUK1.7x 2.5SN
	PUK1.7x 5 SN
	PUK1.7x 8 SO
	PUK1.7-236SO
	PUK1.7-314SO
	PUK1.7-406SO
	PUK1.7-516SO
	PUK2x1.8SO
	PUK2x2 SO
	PUK2x2.2SO
	PUK2x2.5SO
	PUK2x3 SO
	PUK2x4.5SG
	PSK1.4x1.6SO
	PSK1.4x1.6SN
	PSK1.4x2 SO
	PSK1.4x2.5SO
	PSK1.7x1.8SO
	PSK1.7x2.2SO
	PSK1.7x2.5SO
	PSK1.7x2.5SB
	PSK1.7x3 SO
	PSK1.7x3.5SO
	PSK1.7x4 SB
	PSK2x2 SO
	PSK2x2.2SO
	PSK2x2.8SO
	PSK2x3 SO
	PSK2x3.5SE
	3PUK1.4x1.8SO
	3PUK1.4x3 SO
	3PUK1.7x2.5SO
	3PUK1.7x5 SN
	3PUK1.7x3 SO
	BALL
	B 1
	B 1/16
	B 2

PARTS NO.	NAME OF PARTS	PARTS NO.	NAME OF PARTS
SET SCREW		**BLACK FINISH**	
	HK1.4-101BO	CA 9073b	S BASE COVER
	HK1.4-102BO	9403	R KNOB
	HK1.4-201SN	9404	R LEVER
	HK1.4-338BO	9405	R LEVER WASHER
	HK1.4-341BO	9408	R PINCH
	HK1.4-633SN	9410	R PINCH SCREW
		9412	LEVER FASTENER
WASHER		9413	FASTENER
		9425	S LEVER STOPPER
	NW1.4-334UO	9426	SR BUTTON
	NW1.4-434UO	9431	KT HOLDER
	NW1.5-425UO	9432	K PINCH
	NW1.8-230UO	9433	R LEVER WASHER
	NW1.8-325BO	9434	R LEVER WASHER
	NW2.1-240PO	9436	R LEVER WASHER
	NW8.6-2136BO	9441	ST LEVER B
		9471	M CAP
		CE 1201	TOP COVER
		1202	BOTTOM PLATE
		1203	FRONT CASTING
		1204	B COMPARTMENT LID
		1205	SHUTTER DIAL
		1206	SYNCHRO SOCKET
		1207	BUTTON WASHER
		1208	SW WASHER
		1210	A DIAL
		1211	RESET BUTTON
		SET SCREW	
			PSK 2x3.5 SH

OLYMPUS
OM-2

GENERAL OUTLINE AND MECHANICAL FEATURES

GENERAL OUTLINE AND MECHANICAL FEATURES

1. GENERAL OUTLINES

HOUSE CORD: MDE

MODEL NAME: OM-2

2. MAIN SPECIFICATIONS

System: OLYMPUS OM System

Camera type: 35mm Single Lens Reflex with automatic exposure control electronic focal plane shutter.

Film format: 24mm x 36mm.

Lens mount: OLYMPUS OM Mount, bayonet type; rotation angle 70°, flange back 46mm.

Shutter: Focal plane shutter, automatic exposure control from several tens of seconds to 1/1,000 second (ASA 100. F1.2. at normal temperature and humidity). Manual exposure: B, 1-1/1,000 sec., ring mounted control.

Synch.: FP.X switch type contact, incorrect flash prevention.

Automatic exposure control: Aperture-preferred automatic exposure control electronic shutter type. TTL Direct Light Measuring System, center-weighted for bright. and averaging for dark conditions. Measuring range: ASA 100 F1.2 from several tens of seconds to F16, 1/1,000 seconds. (about EV-5.5 - EV 18) (at normal temperature and humidity). Light sensors: 2 SBC sensors. Large fine-exposure adjustment dial: ±2EV (within the ASA film speed range). Automatic flash exposure: Direct contacts for TTL Auto Flash.

Manual exposure: TTL type. Measuring system: Full aperture center-weighted metering. Measuring range: EV1.5 - EV17 (ASA 100 with F1.2 standard lens). Light sensors: 2 CdS sensors.
Zero-method with needle visible in viewfinder.

Film speed setting: ASA 12 — 1600, set by lifting and rotating film speed dial.

Auto/Manual selection: By switching lever.

Battery check: 3-stage battery check lamp (light emitting diode) indicates full voltage. depleted charge. and exhaustion of batteries. Shutter lock to limit drainage.

Power source: Two 1.5V silver oxide batteries (Eveready (or UCAR) S-76 or equivalents).

Viewfinder: Pentaprism type wide-vision finder.

Focusing screens: Wide selection of interchangeable screens. Standard type Focusing Screen 1-1 (microprism-matte type).

Finder view-field: 97% of actual picture field.

Apparent field view: Vertical 23°30', horizontal 35°.

Indicators in: 3-stage selector lever. (Auto: Shutter speed indicator. — Manual: exposure index. — Off: nothing).

Reflex mirror: Oversize. quick return type (without lock-up).

Film loading: OLYMPUS easy loading.

Manual film advance: Lever type with 150° angle for one long or several short strokes, pre-advance angle 30°, self cocking, double advance and double exposure prevention.

Motor drive: With Motor Drive 1 unit attached, single frame and continuous advance at speed of 5-frame per second (at exposures above 1/500 sec., with fresh batteries and at normal temperature and humidity).

Exposure counter: Progressive type with automatic reset.

Film rewind: Crank type. with rewind clutch setting, automatic return.

Self-timer: 4 - 12 second delay lever type with 180° maximum angle. stopped and reset after actuation.

Camera back: Removable hinge type. with memo holder.
Interchangeable with Recordata Back 1 and 250 Film Back 1.

Hot shoe socket: OLYMPUS accessory shoe (optional) attachable.

Dimensions and weights:

Body only:	136 x 83 x 50mm (5.35" x 3.27" x 1.97")	520g	(18.3 oz)
With F1.8 lens:	136 x 83 x 81mm (5.35" x 3.27" x 3.19")	690g	(24.3 oz)
With F1.4 lens:	136 x 83 x 86mm (5.35" x 3.27" x 3.39")	750g	(26.5 oz)
With F1.2 lens:	136 x 83 x 97mm (5.35" x 3.27" x 3.82")	830g	(29.3 oz)

3. CAUTION

AUTO: At "AUTO", the shutter speed varies automatically in response to the f/stop preselected and lighting conditions regardless of the shutter dial setting, except "B".

To release the shutter lock: When the shutter is locked due to improper battery condition, the lock can be released by resetting the shutter dial. (Align the reset marks, * and arrow, while depressing the reset button. At this point, the shutter dial is set to "B".)

When trouble occured: If the shutter is locked, the battery shall be depleted quickly. Therefore, release the lock immediately.

4. MECHANICAL FEATURES

CONTENTS

1 WX Mechanism

2 Shutter Lock and Lock Release

3 Automatic Synchronization

4 Battery Checker (3-level indication)

5 Light Measuring Method

6 Shutter Speed Adjusting Mechanism

7 Shutter Circuit Diagram

8 Description of Each Component

9 AUTO Circuit Diagram

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13 ASA Conversion and Decision Level

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16 Operation Sequence at MANUAL

17 Shutter Speed Circuit Board

18 Outline of Exposure Meter

19 Coupling Mechanism of Aperture Ring and Exposure Meter

20 Coupling Mechanism of Shutter Dial and Exposure Meter

21 ASA Conversion

22 F/stop Conversion

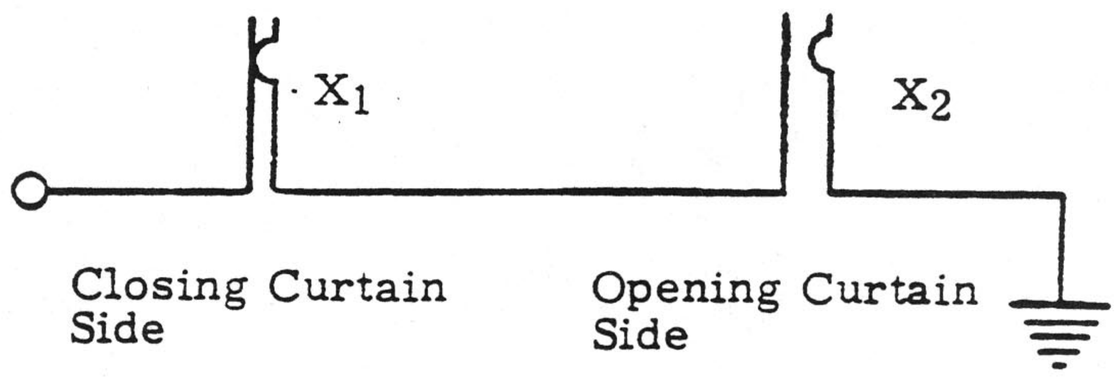
[1] WX Mechanism (Prevention of flashing at 1/125 sec. and faster)

The mechanism, in which the X contact is not turned on for the shutter speeds faster than 1/125 of a second, is called "WX mechanism".

The principle lies in the structure comprising two contact pieces; X_2 coupling with opening curtain and X_1 coupling with closing curtain, wired in series each other. When the shutter is charged, the contact piece X_2 is OFF, while X_1 is ON.

1/60 sec. or slower -----When the opening curtain fully run, X_2 is turned ON; at this point, the closing curtain doesn't start for a certain time (X_1 remains ON). Both contacts are thus ON at the same time.

1/125 sec. or faster -----The closing curtain runs before X_2 is turned on. (X_1 is OFF.) Both contacts are thus OFF at the same time.



[2] Shutter Lock and Lock Release

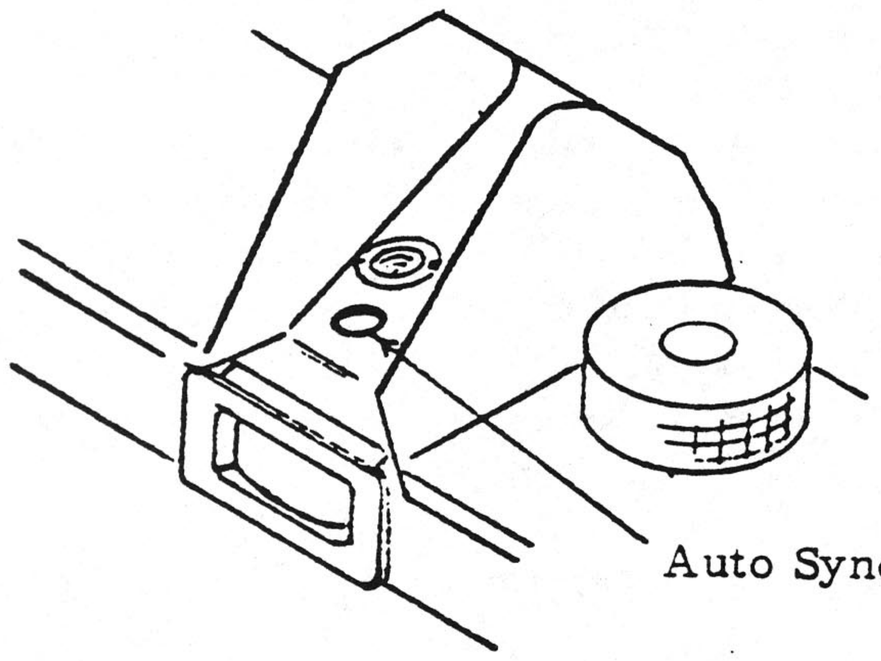
When the shutter cannot operate due to battery voltage drop and other battery troubles, the shutter lock is activated and the mirror is locked up midway. To return the mirror to the original position, turn the shutter dial to "B". Thereafter, load fresh batteries correctly. (See CAUTION at the top of this chapter.)

[3] Automatic Synchronization

The shutter of OM-2 is of an electric control type for both auto and manual. Whenever the closing curtain has run. MG (magnet) is turned from ON to OFF.

Since the MG takes a coil form, back electromotive force (caused by self-induction) is generated for the change in the current.

This back electromotive force is utilized to control a special electronic flash unit. Both the OM-2 and the special electronic flash unit are provided with an exclusive synch contact in addition to the conventional direct contact.



Auto Sync Contact

Merit: The flash light is measured based on the TTL method to control amounts of light. This assures real time light measurement and offers an ideal type of automatic flash.

〔4〕 Battery Checker (3-level indication)

When the switching lever is pressed to the "CHECK" position (the lever is automatically returned by releasing the finger), the red light-emitting diode provides three indications of ON. BLINK and OFF depending upon battery voltage.

QN ..... Normal (battery voltage 2.75V or higher)

BLINK ..... Better to replace (2.75V ± 0.04V or lower)
(Still provides about 20 rolls of 36-frame film.)

OFF ..... Replace (2.45V ± 0.04V or lower)

〔5〕 Light Measuring Method

The light measurement is performed through two CdSs in the eyepiece section and two SBCs (Silicon Blue Cell) in the mirror box. making a total of four light sensors.

The CdSs in the eyepiece section are connected only to the exposure meter visible in the viewfinder, and plays a role of controlling the pointer of the exposure meter.

The SBCs in the mirror box are used to measure the light at AUTO to control the shutter speed.

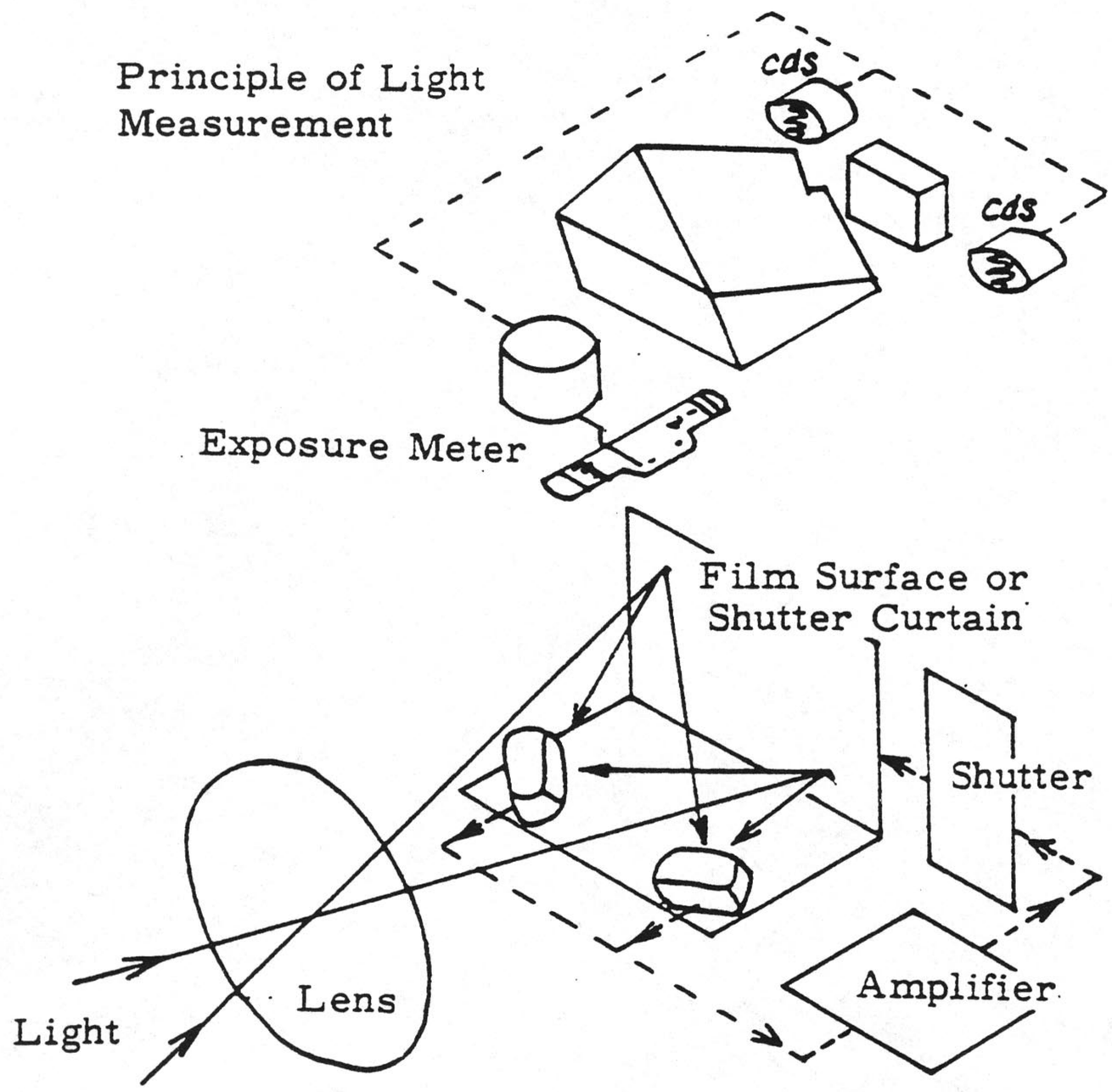
The SBCs face the film plane to measure the reflected light from the film surface (from shutter curtain at high shutter speeds).

Since the SBCs measure substantially the reflected light from the opening curtain at high shutter speeds, the shutter curtain is printed with a "random pattern" designed to achieve correct exposures. (Take care not to leave finger marks. nor smudge the curtain.)

The main switch of the SBCs is turned on when the shutter button is depressed and the mirror is being flipped up. The SBC's quick reaction speed (μ sec order) amply assures the control of shutter speed which is about 1/1000 sec. at the highest.

Therefore, unlike other single-lens reflex cameras with electronic shutter, the conventional memory device is needless; hence, correct exposures can always be obtained even when the subject or scene varies its brightness at the moment of shutter opening.

Principle of Light Measurement



Reflectance variations of various types of film is approximately ±0.3EV.

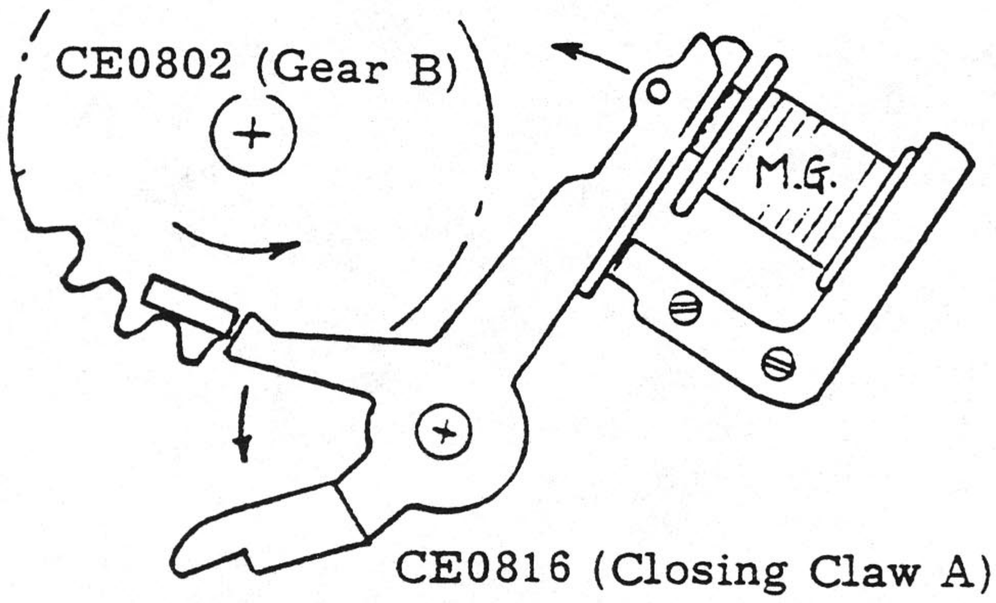
From among a number of patterns, the random pattern was selected which was found to yield best exposures.

[6] Shutter Speed Adjusting Mechanism

The shutter speed adjustment is done with a mechanical governor in OM-1. but is done with an electric governor (MG + Amplifier) in OM-2. The operation principle of the opening and closing curtains is as follow.

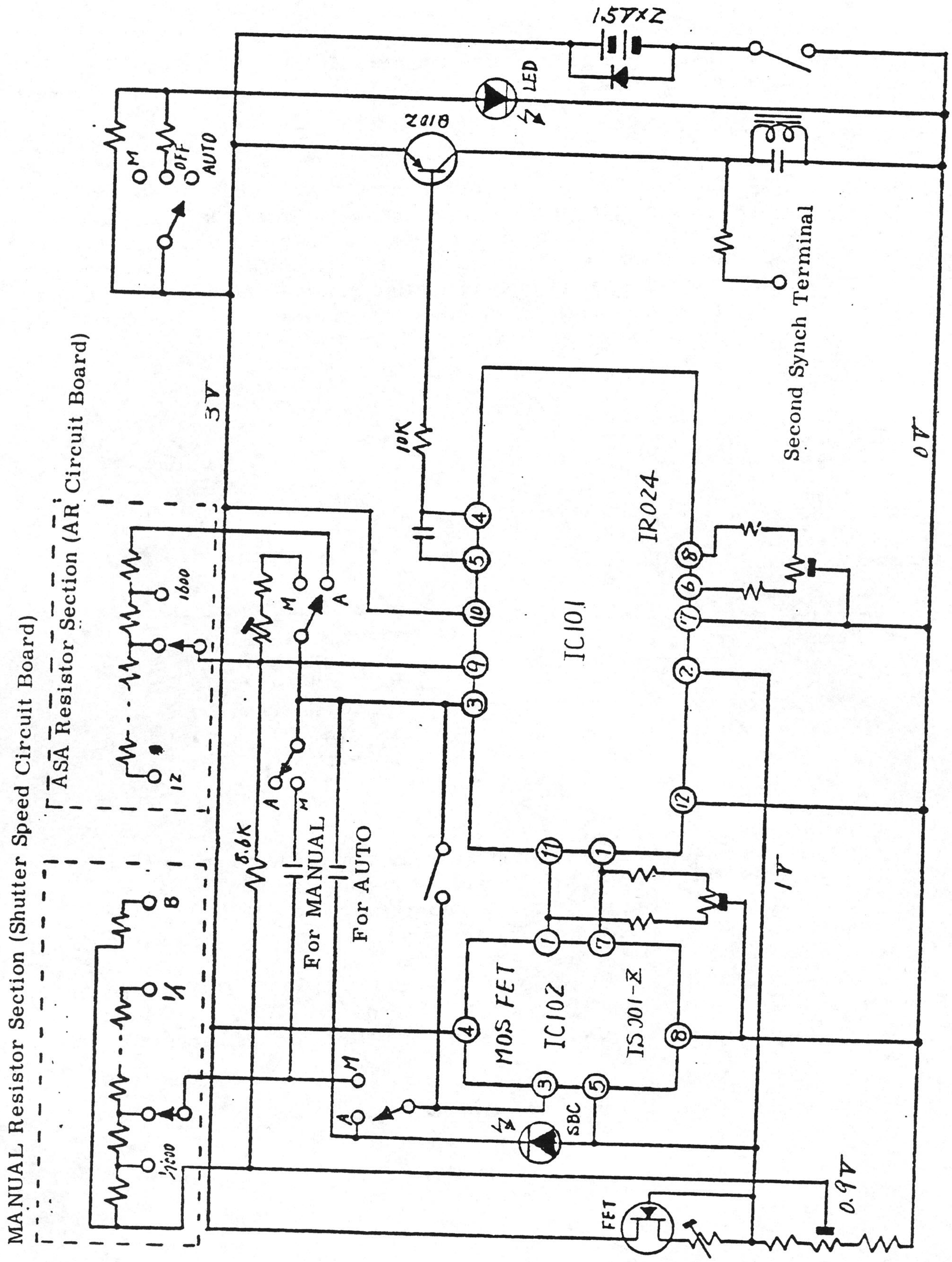
Opening Curtain ... Winding and running are performed with CA8547 (Gear A), same as in OM-1.

Closing Curtain ... The curtain is wound with CE0802 (Gear B), the gear is engaged by MG attractive force and the shutter speed is adjusted by amplifier. The OM-1 governor is replaced by MG and amplifier; others are same as in OM-1.



When MG is turned off, CE0816 (Closing Claw A) is disengaged from CE0802 (Gear B), CE0802 rotates in the arrow direction due to the tension of the closing curtain and the closing curtain starts running.

[7] Shutter Circuit Diagram



MANUAL Resistor Section (Shutter Speed Circuit Board)

ASA Resistor Section (AR Circuit Board)

〔8〕 Description of Each Component

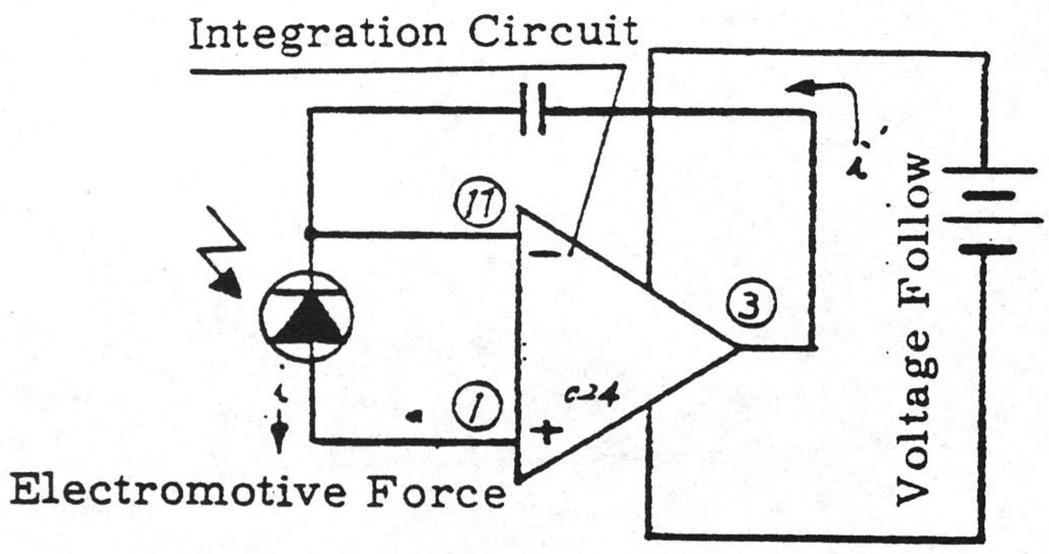
(1) IR 024 (IC 101)

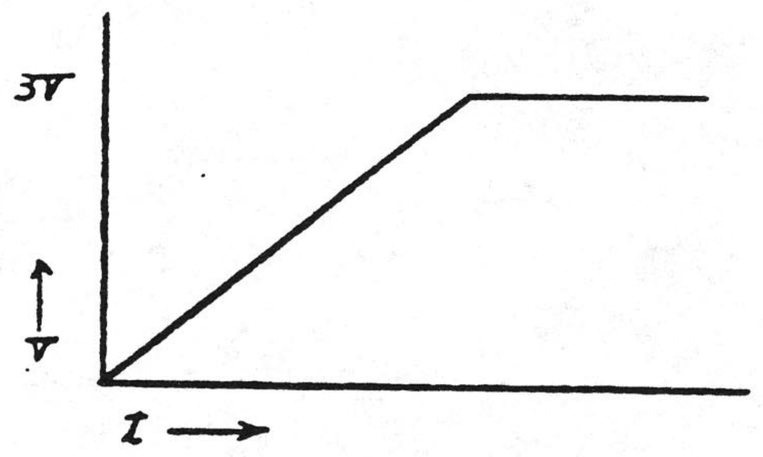
This IC includes four circuits: a) integration circuit, b) comparator, c) sub circuit and d) limiter.

a) Integration Circuit



This is also called an operational circuit. It makes the condenser to charge at a rate such that the relation between charging quantity and time can be expressed in a linear formula (straight line if expressed graphically). (i = i'; if i is constant. i' will also be constant.) When connected as in the illustration below. it acts to flow the current to the output pin ③ so that potential difference between two input pins. ① and ⑪ shall always becomes zero.





Relation between V and t of condenser is expressed by a straight line because of integration circuit.

b) Comparator

This is connected next to the integration circuit. The comparator acts to decide whether the electric signal transmitted has a potential greater than the rated voltage. and switches its output from 0V to 3V if the potential is greater than the rated voltage. The terminals for input electric signal consist of pins ⑨ and ② . while the output terminal of ④ . (As the potential difference of 3V is generated between the base (B) and emitter (E) of the switch transistor Q102 at a 0V output. MG is turned on. When the output is switched to 3V. MG is turned off because potential difference between B and E becomes zero.)

See Shutter Circuit Diagram in the preceding page.

c) Sub circuit

When battery power is depleted. the limiter described below operates to turn off the MG and the shutter is locked. However, if this condition were left as it is. the battery would recover and MG would repeat turning on and off. To prevent this. the sub circuit operates to shunt large current.

d) Limiter

When battery voltage drops below the rated value. the limiter operates to eliminate the potential difference between base and emitter to prevent turning on of MG.

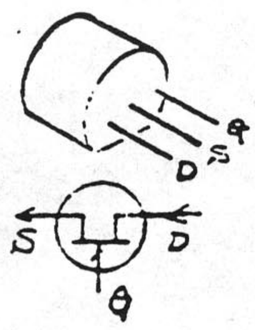
(2) MOS FET (Metal-Oxide-Semiconductor Field-Effect-Transistor)



This is connected between SBC and IC 024. Insulation resistance* on the input side of the integration circuit of IC 024 cannot be made ∞ due to structual reason. Thus. extremely weak currents like SBC's (approx. 10^{-11} A) cannot be dealt with accurately. MOS FET has a very high insulation resistance on its input interface. so that it can accurately catch the extremely weak currents and amplifies and sends them to the integration circuit.

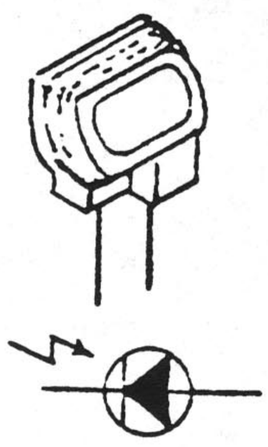
* Correctly. input impedance
MOS FET is destroyed with static electricity of 100V. so must be grounded.

(3) FET



This functions to make flow of electric current constant even when the battery voltage fluctuates. and makes the voltage constant. It is provided with 3 pins: source (S). drain (D) and gate (G). When the voltage between S and G is changed. the current flowing from D to S is changed.

(4) SBC (Silicon Blue Cell)



This is a photo-sensitive element. which generates electromotive force when receiving light.

Features

1. Very quick response speed (10^{-5} - 10^{-6} sec.) enables real time and unremitting light measurement.

2. Dark current is weak and accuracy on the low luminance level is high.

3. Electromotive current caused by incident light changes linearly ($\gamma = 1$).

therefore easy to compute.

4. Blue filter applied lowers the infrared-ray rate to below 14%.

(5) Condenser

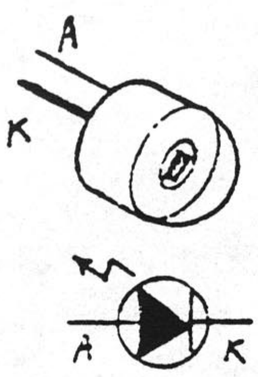
This plays an important role of deciding the exposure time. The potential between its electrodes is 0V before charging, and is increased in proportion to charging. When the charging current is large (i.e. when the subject or scene is bright), the voltage increase is rapid. Due to the integration circuit. the relation between the charging voltage increase and time is linear. Two condensers are provided for the following reason. In the AUTO mode. the current to be handled is weak because of SBC. so the condenser capacity is small. Whereas. in the MANUAL mode. the current value is designed large for safety purposes and the condenser capacity is made larger.

Condenser for AUTO ..... 470 pF

Condenser for MANUAL ..... 22000 pF

In addition to the above. two condensers are used; one for the prevention of comparator oscillation and the other for voltage adjustment of second synchro circuit.

(6) LED (Light-Emitting Diode)

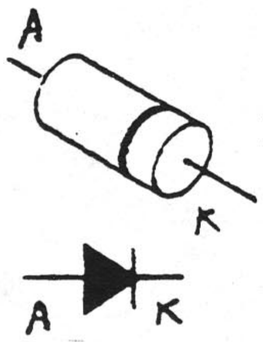


When the shutter is released in a dark place. the LED (positioned underneath SBC) illuminates the SBC to prevent the shutter from being left opened.

Connect (+) side to the anode (A) and (-) side to the cathode (K). respectively.

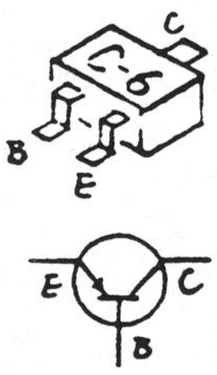
When the AUTO/MANUAL switching lever is set to the OFF position. the LED is lit brightly and the shutter can be released at about 1/15 sec. and faster even at OFF.

(7) Diode



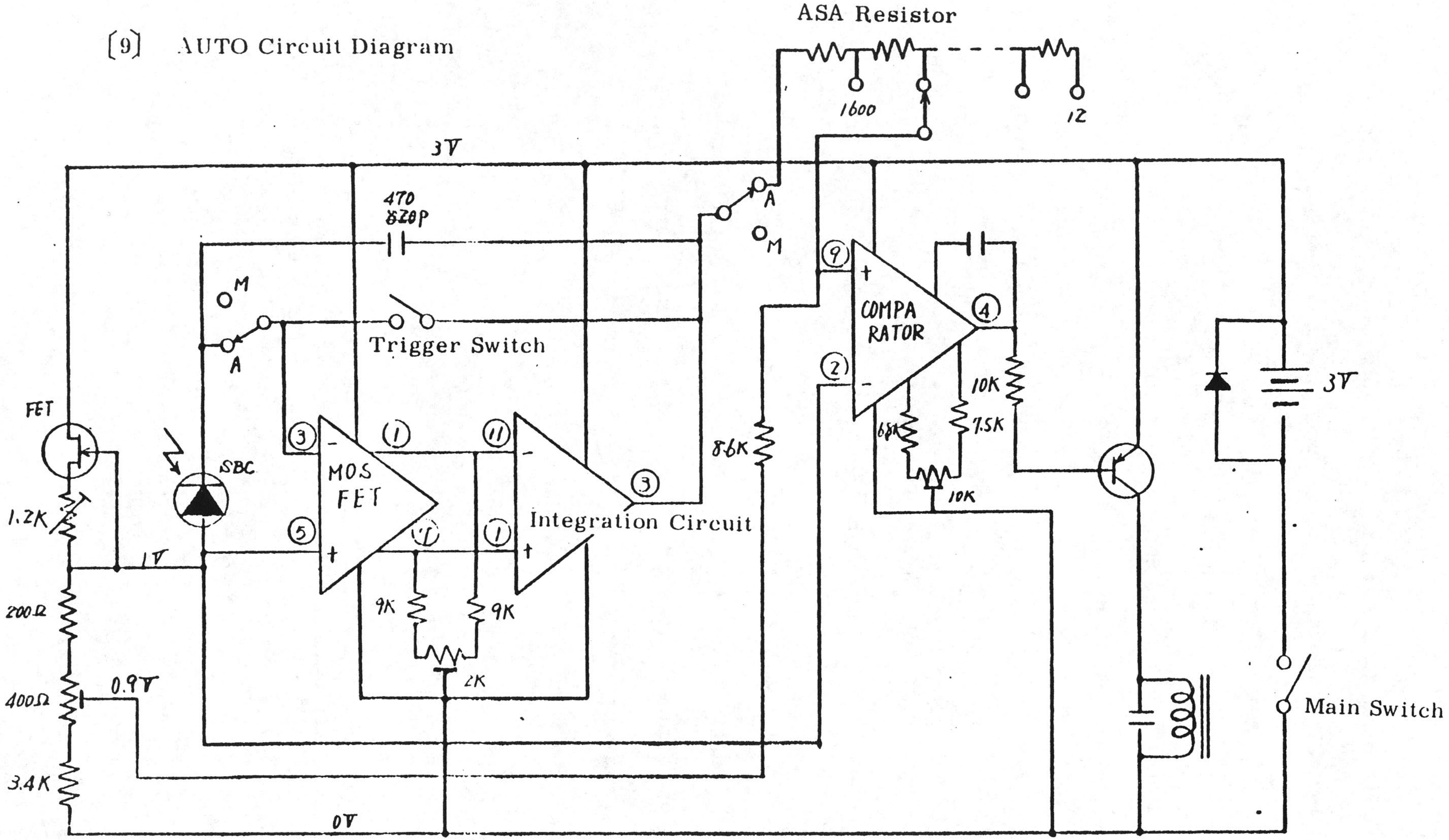
This is connected in the shortest distance between the batteries to prevent current flow when batteries are loaded upside down.

(8) Transistor



The transistor used in the M circuit board is for turning on and off of the magnet.

[9] AUTO Circuit Diagram



〔10〕 Operation Sequence at AUTO

1) Wind lever is advanced.

Trigger switch is turned ON.

2) Shutter is released and mirror is flipped up.

Main switch is turned on. MG is turned on and closing claw A is fixed (closing curtain is fixed).

3) Opening curtain runs.

(a) Trigger SW is turned off. and condenser for AUTO (470pF) starts charging.

(b) The voltage applied to ASA resistor is increased, and the current to flow through the resistor of 8.6KΩ is increased.

(c) The voltages applied to pins 2 and 9 of IC 024 become same level. (pin 9 becomes 1V)

(d) The voltage on pin 4 of IC 024 is increased from 0V to 3V. (comparator)

(e) The transistor ceases to flow current, and MG is turned off.

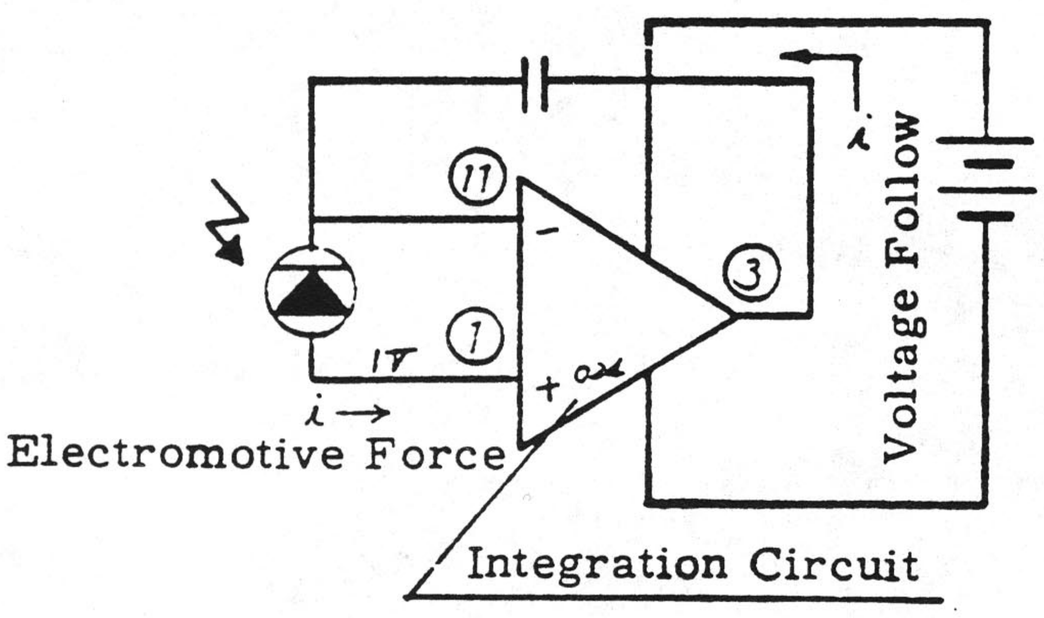
4) Closing claw is disengaged. and closing curtain runs.

5) Mirror flips down.

Main SW is turned off.

〔11〕 Supplementary Description of AUTO Circuit

1) Voltage Follow of Integration Circuit



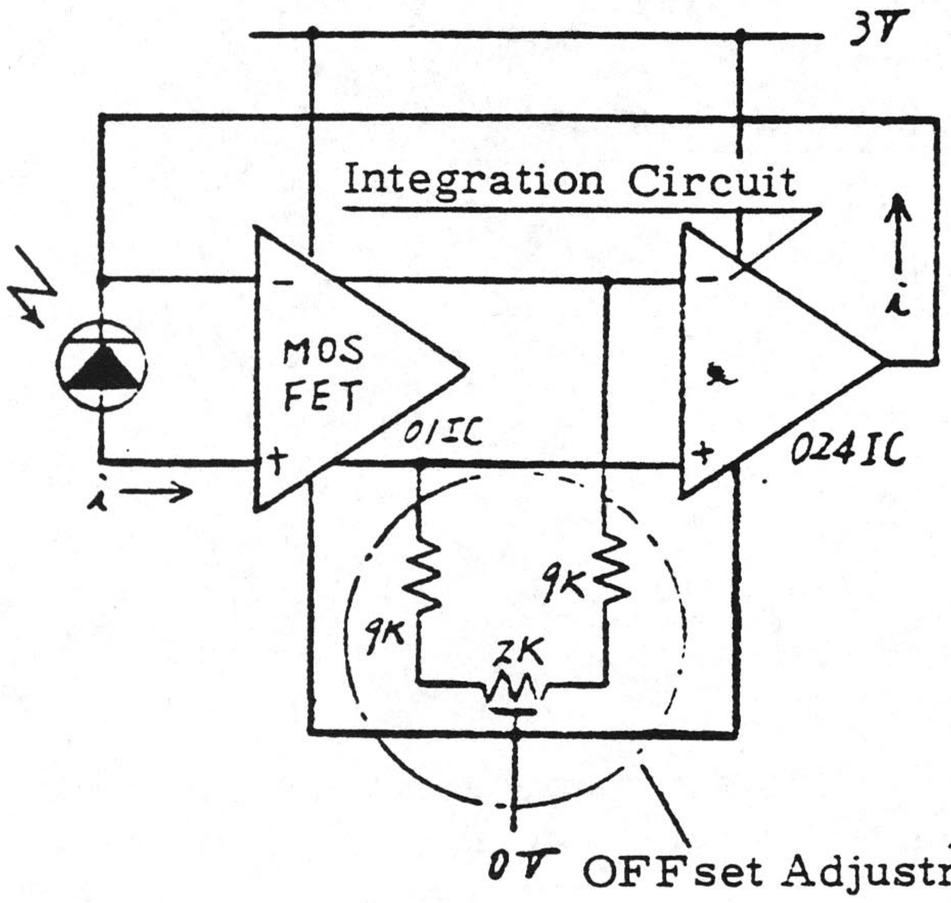
(a) When the SBC receives light. it permits electric current i to flow in the arrow direction because of its photo-electromotive property. (The current to flow is proportional to the amount of incident light.)

(b) The potential on the (+) side pin 1 of the integration circuit increases.

(c) The integration circuit has a property to draw current from the

circuit until potentials on the (+) and (-) pins become the same level (1V) to bring balance between (+) and (-). (This is called "voltage follow".)

2) Off Set Adjustment

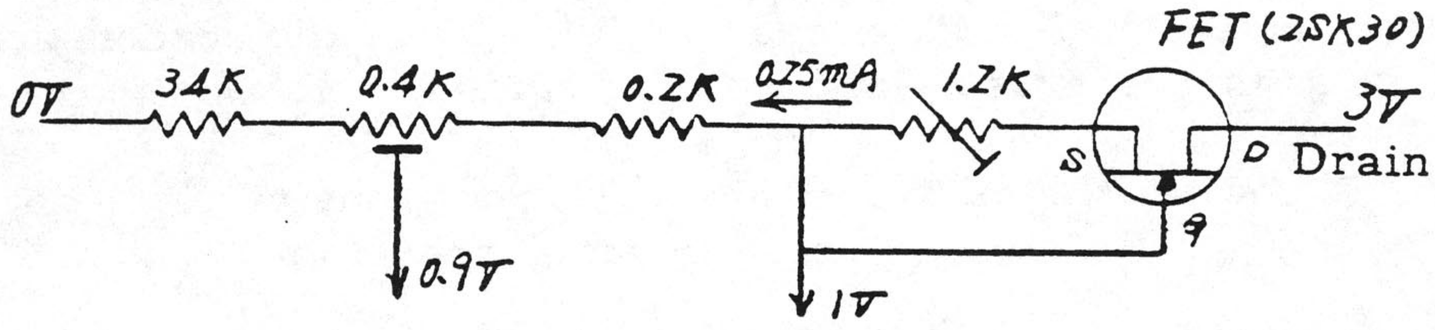


(a) Theoretically. same potential of 1V is to be applied to both (+) and (-) of IC 01. but this is not the case in actuality due to the inevitable variations in the properties of M circuit board, IC. etc. Thus. like in the circuit encircled. a variable resistor of 2KΩ is used to make the potential on both sides 1V.

(b) The 2KΩ variable resistor can adjust the range of about ±25mV.

(c) Improper OFF adjustment causes considerable affection to EE accuracy on the high ASA level.

3) Description of 1V and 0.9V Lines



(a) If the voltage between source (S) and gate (G) of FET is changed by means of the 1.2KΩ variable resistor. the current from S can be varied. The resultant current is constant even when the battery voltage 3V is changed. owing to the FET property. (The current is adjusted to 0.25mA.)

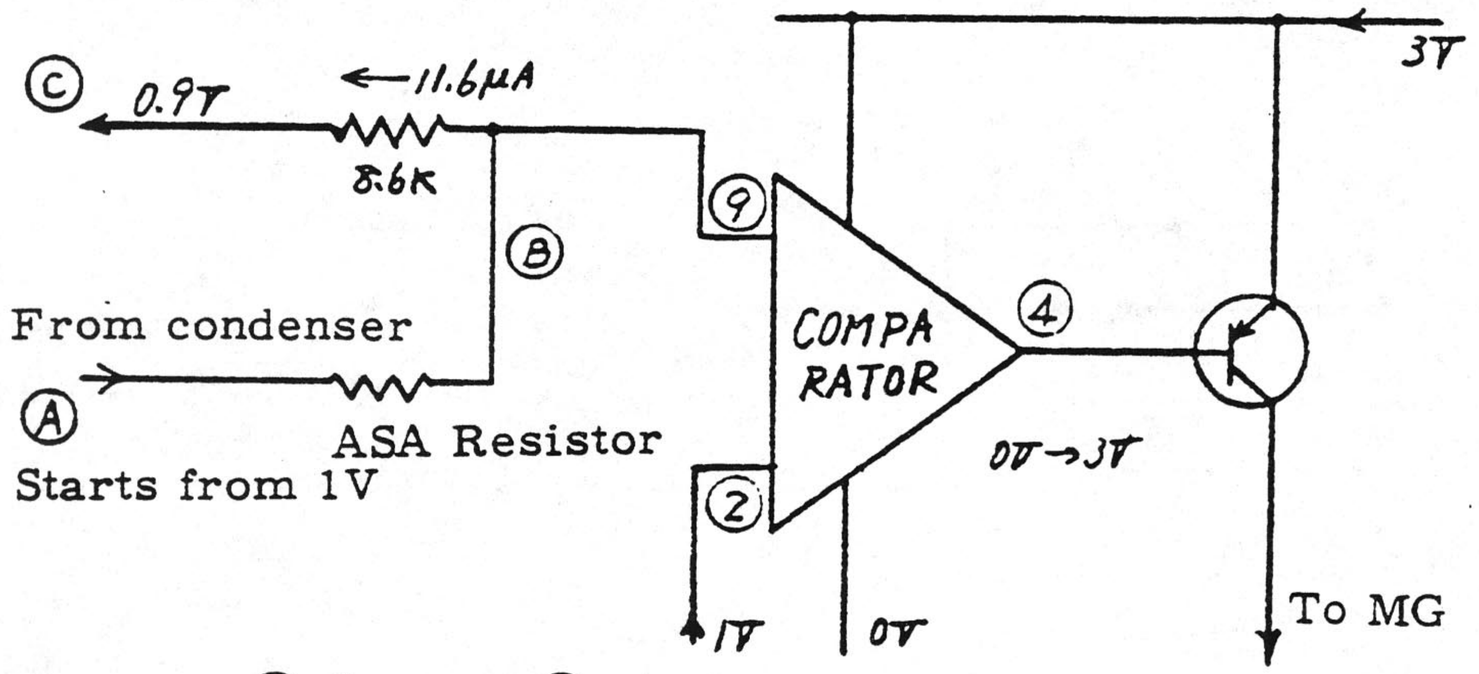
(b) 1V

(3.4KΩ + 0.4KΩ + 0.2KΩ) x 0.25mA = 1V

(c) 0.9V

(3.4KΩ + 0.4KΩ / 2) x 0.25mA = 0.9V

4) Comparator (Decision Circuit)



⑨< 1V --④→ 0V

⑨ < 1V --④→ 3V

(a) The comparator is connected as illustrated above. When the condenser is charged and its voltage is increased, voltages at B and 9 are also increased.

〔 Before charging A = 1V, so that 0.9V < B < 1V, and current flows in A → B → C . 〕

(b) As charging of condenser advances (the voltage at A increases), the voltage at B is increased to greater than 1V (⑨>②). The condenser charging voltage at this time is calculated as described below.

〔 The 1V at B lowers to 0.9V after passing through the resistor of 8.6KΩ . so the value of current flowing there through is:

$$\frac{1V - 0.9V}{8.6K\Omega} = 11.6\mu A$$

To flow the current of 11.6uA across ASA resistor (7.16KΩ at ASA 100) the increase in the voltage at A should be:

$$11.6uA \times 7.16K\Omega = 83mV$$

(condenser voltage becomes 1V + 83mV = 1.083V.)
The increment of 83mV is the charging voltage.
The charging voltage is also called "decision level" and is a very important value. See Section 〔13〕.

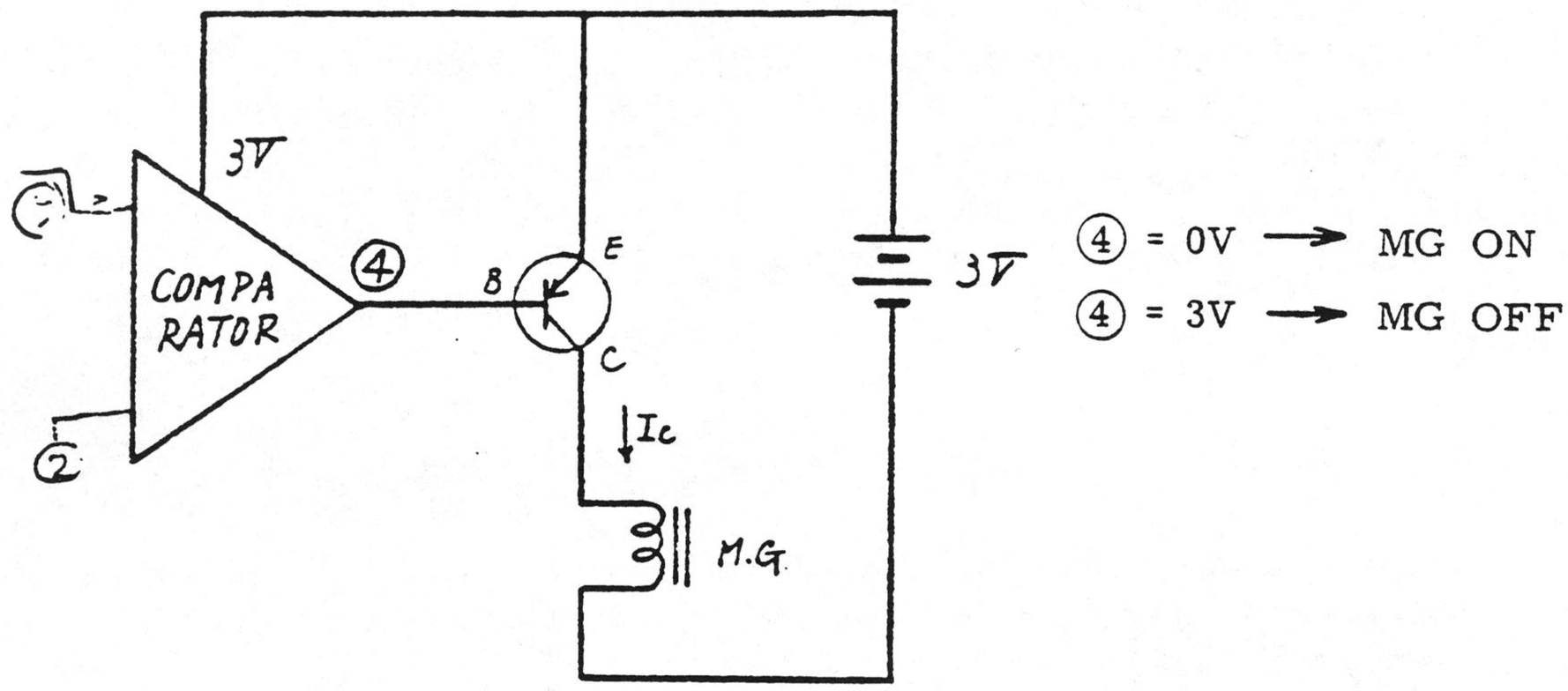
Note: Current flowing from B to 9 .
Since the impedance of the comparator is very high. the current across B - 9 can be considered zero and the above relation is established. 〕

(c) When the voltage at 9 of the comparator becomes greater than that at 2 , the output will be switched as follow.

⑨<②(=1V): Pin 4 on the output side has 0V ..... MG ON

⑨<②(=1V): Pin 4 " has 3V ..... MG OFF

5) ON and OFF of Magnet



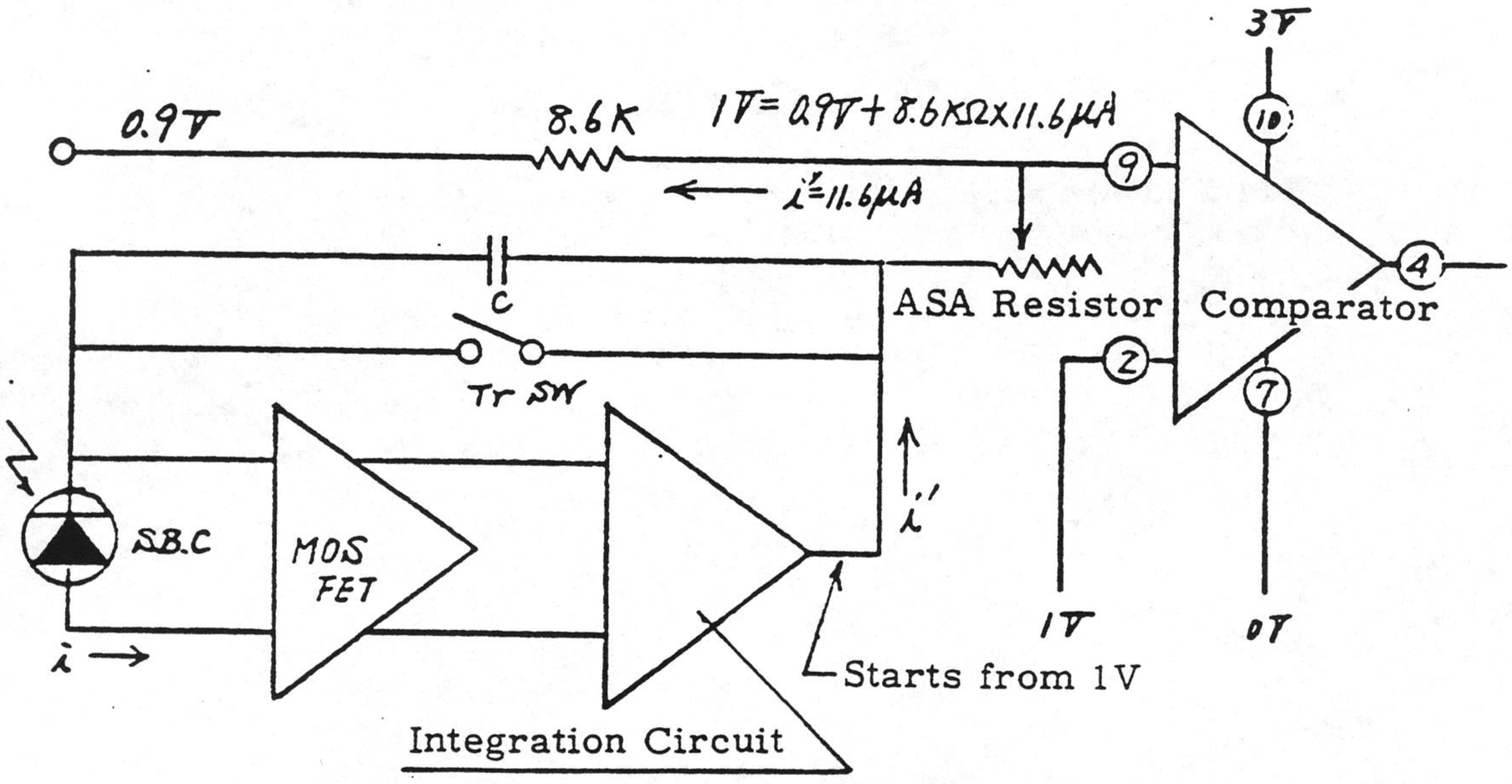
(a) MG ON

When pin 4 of comparator has 0V, the potential difference of 3V is generated between the base and emitter and current flows; hence, amplified current Ic flows into MG and MG is turned on.

(b) MG OFF

When pin 4 has 3V. there is no potential difference between B and E and no current flows; hence, no Ic current flows and MG is turned off..

[12] Operation Sequence of M Circuit Board at AUTO



1) Main SW is turned on, and Tr SW (trigger switch) is turned off.

2) When SBC receives light and electromotive force i is generated, current i' flows from the integration circuit of IC 024 through the MOS FET, and current is charged in condenser (i = i').

3) The voltage of the condenser is increased in proportion to the quantity of the charging current.

4) When the voltage of the condenser is increased to 1.083V, the current, obtained by the formula (1), flows in the ASA resistors of 7.16KΩ (at ASA 100) and 8.6KΩ .

$$i'' = \frac{1.083V - 0.9V}{7.16K\Omega + 8.6K\Omega} = 11.6\mu A \quad \ldots\ldots\ldots\ldots\ldots (1)$$

5) The voltage at pin 9 is:

$$V_{⑨} = 0.9V + 8.6K\Omega \times 11.6uA = 1V \quad \ldots\ldots\ldots\ldots (2)$$

6) According to the property of comparator, when the voltage at pin 9 becomes greater than that at pin 2 (⑨>②), the voltage at the output pin 4 is switched from 0 to 3V.

7) For the turning on and off of MG. see preceding page.

8) ASA conversion is done by changing ASA resistance. thereby changing the charging voltage of the condenser which is necessary to flow the current of i'' = 11.6uA. (The charging time is changed, and thus the exposure time is changed.)

9) The shutter speed change corresponding to the change in the brightness of the subject or scene is done as follow.

When the light intensity received by the SBC changes. electromotive force i changes linearly (γ = 1) and the current i'' changes at the same time, and thus the charging time of the condenser is always properly controlled.

〔13〕 ASA Conversion and Decision Level

As the current of 11.6uA flows between the ASA resistor and the resistor of 8.6KΩ . the potential of 0.1V is generated there between. See Sections 〔11〕 - 4) and 〔12〕.

This current flows from the charged condenser through the ASA resistor. If the value of 11.6μA is constant and the value of the ASA resistor is changed. the charging voltage can also be changed according to the Ohm's law.

$$I = \frac{E}{R} = 11.6\mu A \text{ (constant)}$$

Due to the integration circuit, the following relationship is established between the charging voltage and time (light quantity is constant).

$y = x$

y: charging voltage

x: charging time

When charging voltage is doubled, charging time is also doubled. This enables ASA conversion.

Charging voltage for each ASA value is obtained by the following formula:

As the charging voltage is 83mV for ASA 100

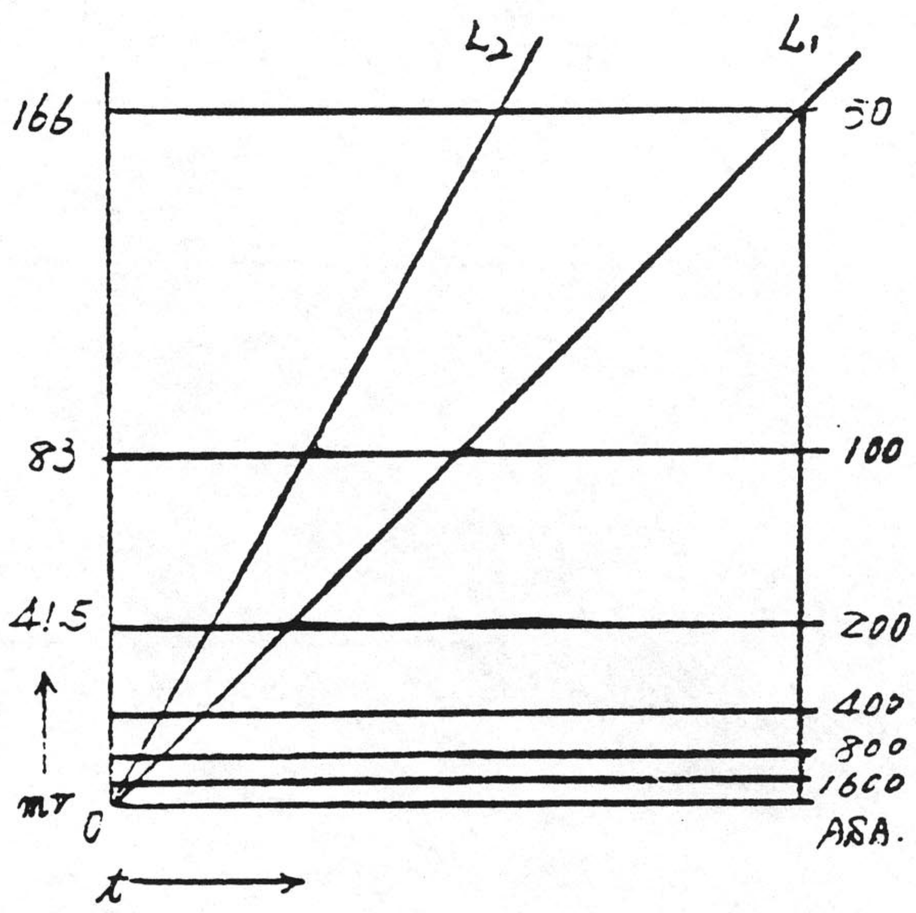
$$V = \frac{100}{ASA} \times 83mV$$

ASA: ASA sensitivity

"V" is called "decision level".

ASA	Theo-retical Value (mV)	Correct-ed Value	Resist-ance Value (KΩ)
12	664		57.2
25	332		28.6
50	166		14.3
100	83		7.16
200	41.5		3.58
400	20.8		1.79
800	10.4	11.9	1.02
1600	5.2	7.4	0.64

Decision Level and Resistance



ASA and Decision Level

(Subject luminance $L_2 > L_1$. ASA relation is the same.)

14 Shutter Curtain and "Off" timing of MG

There is the following relation between the shutter curtain and MG.

If T_1 is made equal to T_2. T_{MG} can be made equal to T_S where:

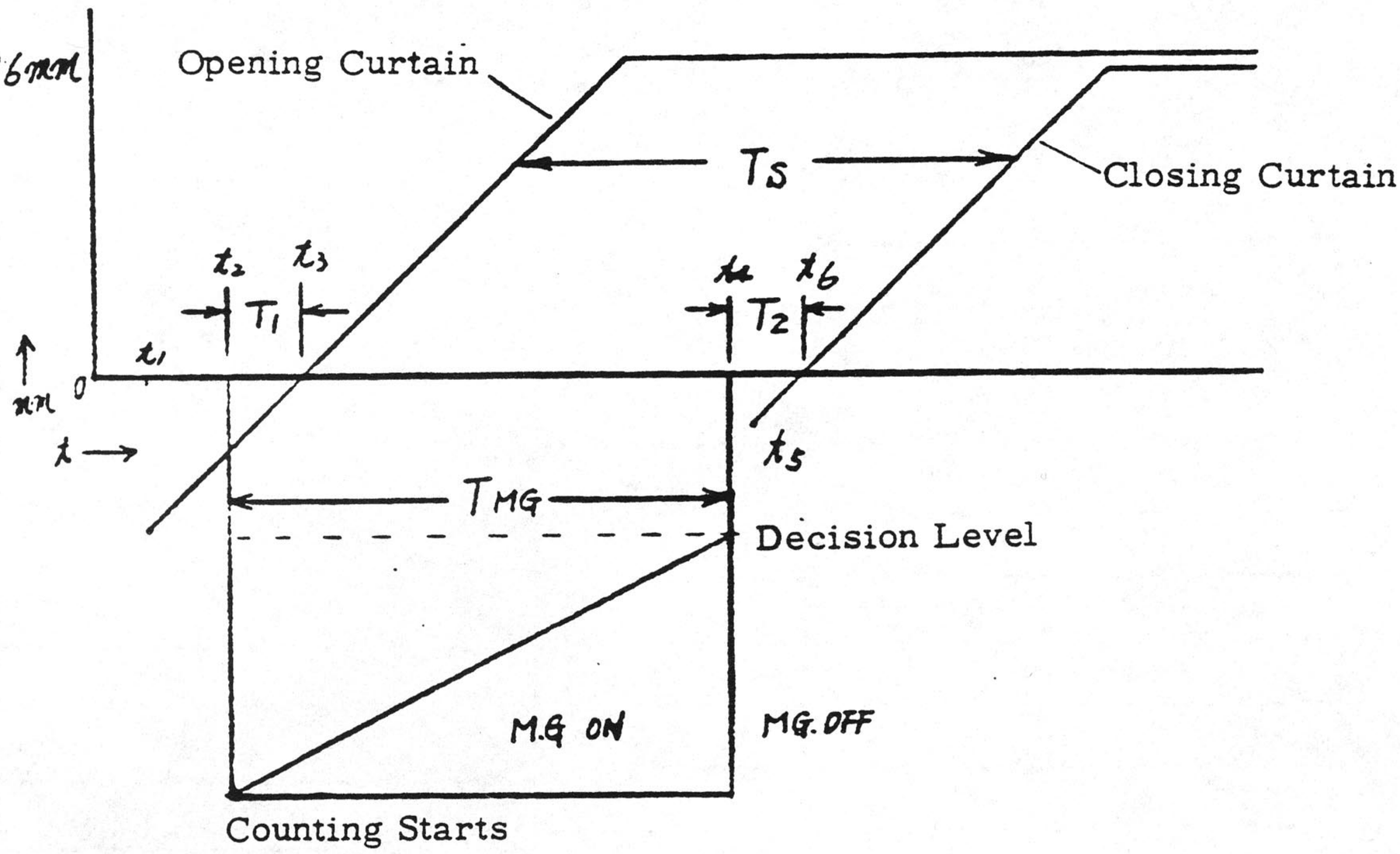
T_S .... Shutter speed ($t_3 - t_6$)

T_{MG} ... MG attractive time ($t_2 - t_4$)

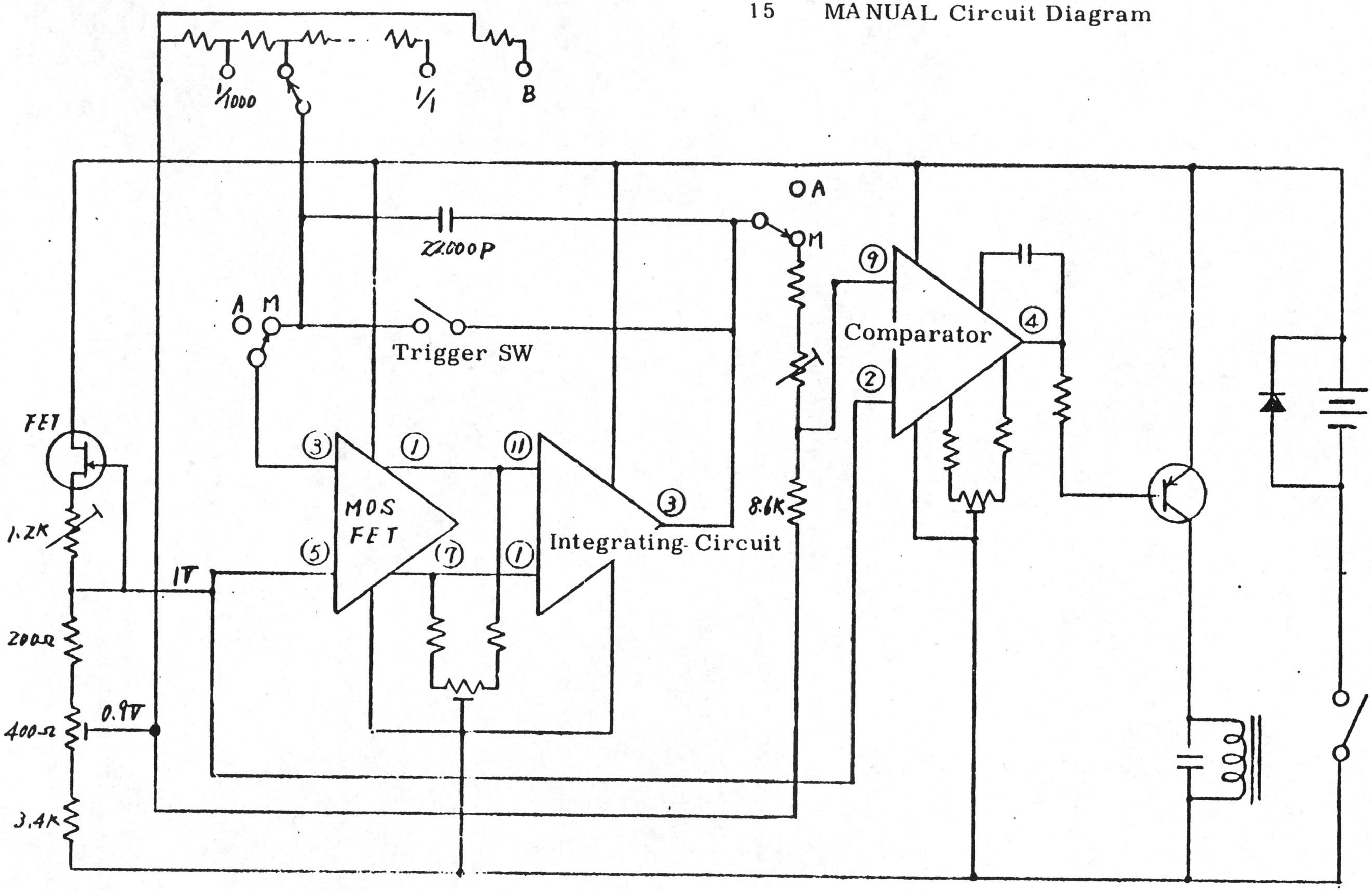
T_1 ..... Time required from the turning off of trigger switch to the start of exposing the screen (t_2 - t_3)

T_2 ..... Time required from the turning off of MG to the start of closing curtain (t_4 - t_6)

The adjustment of $T_1 = T_2$ is done by adjusting the timing of the trigger switch. The time t_4 - t_5 is a delay time due to the residual magnetism in the MG; etc.



t_1 ..... Opening curtain starts running.
t_2 ..... Trigger SW turns off.
t_3 ..... Exposure starts.
t_4 ..... MG turns off.
t_5 ..... Closing curtain starts running.
t_6 ..... Screen starts to be closed.


1/1000
1/1
B
OA
M
22.000P
A M
Trigger SW
FET
1.2K
200Ω
400Ω
3.4K
0.9V
1V
MOS FET
Integrating Circuit
Comparator
8.6K
3V

〔16〕 Operation Sequence at MANUAL

The operation of M circuit board is the only difference from at AUTO. Other shutter mechanisms operate in the same manner as at AUTO.

At AUTO:

(1) SBC converts the intensity of light to electrical quantity, and controls shutter speed.

(2) The condenser charging voltage is led into the comparator through the ASA resistor.

At MANUAL:

(1) SBC and ASA resistor are disconnected from the circuit.

(2) The shutter speed circuit board is connected to one pin of the MOS FET. The shutter speed is controlled by changing the current value, which is obtained by varing fixed resistance of shutter speed circuit board.

The operation sequence is as follow:

(1) Pin ⑤ of MOS FET is applied with 1V.
Pin ③ of MOS FET is connected to 0.9V through the shutter speed circuit board.

(2) Since there is a potential difference between the input pins of MOS FET, when the trigger switch is turned off. voltage follow is effected by the integration circuit.

(3) The condenser for MANUAL is charged and voltage of condenser is increased.

(4) When the voltage at pin ⑨ from integration circuit becomes 1V or greater. the comparator activates. and the voltage on pin ④ of comparator is switched from 0 to 3V. MG is then turned off.

(5) Closing curtain runs.

〔17〕 Shutter Speed Circuit Board

The shutter speed circuit board is directly connected to the speed gear. When the shutter dial is turned. the circuit board rotates to set a resistance value corresponding to each shutter speed. The resistors for individual shutter speeds are serially connected. The shutter speed of 1/1000 sec. is set to the minimum resistance value.

[18] Outline of Exposure Meter

As described in the preceding section, the exposure meter provides only the viewfinder information, and is separated from the automatic operation of the shutter.

Following points are the major differences as compared with OM-1.

(1) For coupling of aperture ring and exposure meter, the conventional cam is replaced by a cord for directly connecting each other.

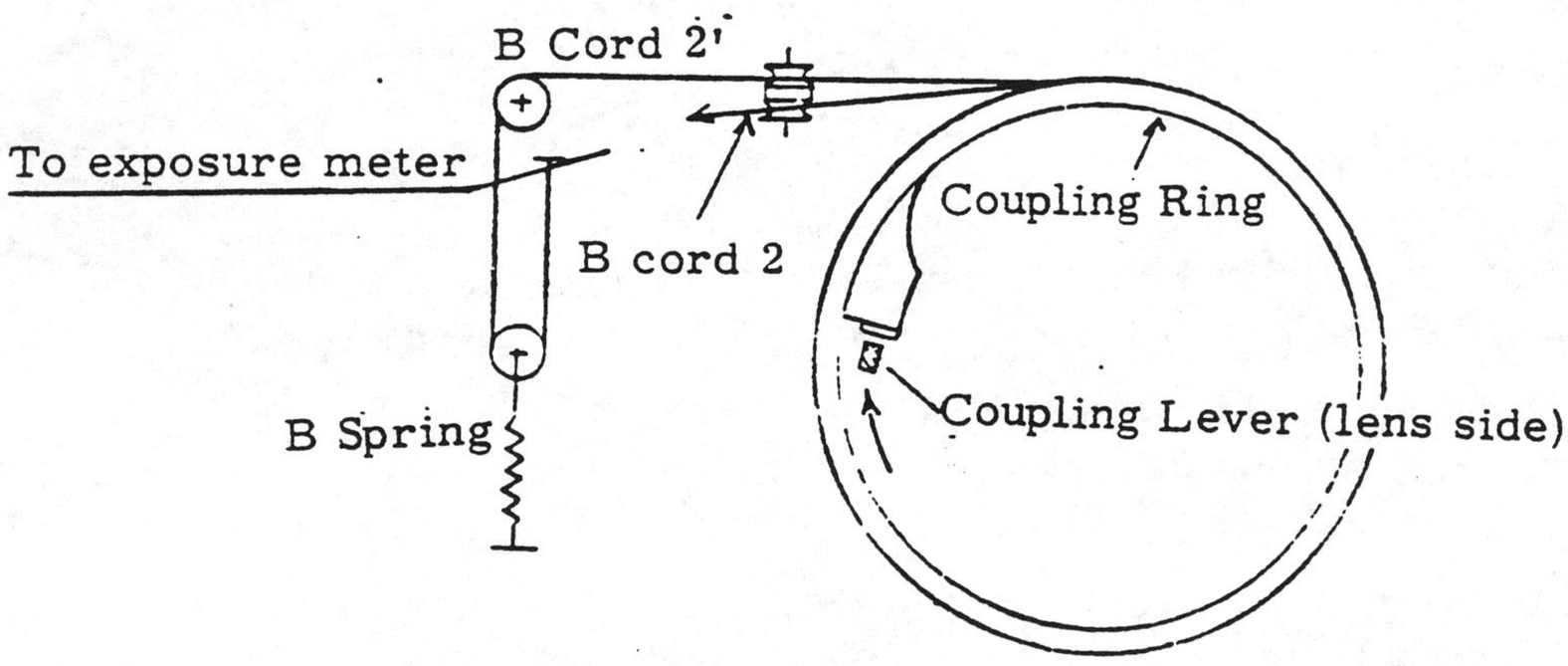
(2) Coupling of shutter dial and exposure meter has been changed from mechanical one to electrical resistor switching.

(3) Information display within viewfinder is different for AUTO and OFF.

[19] Coupling Mechanism of Aperture Ring and Exposure Meter

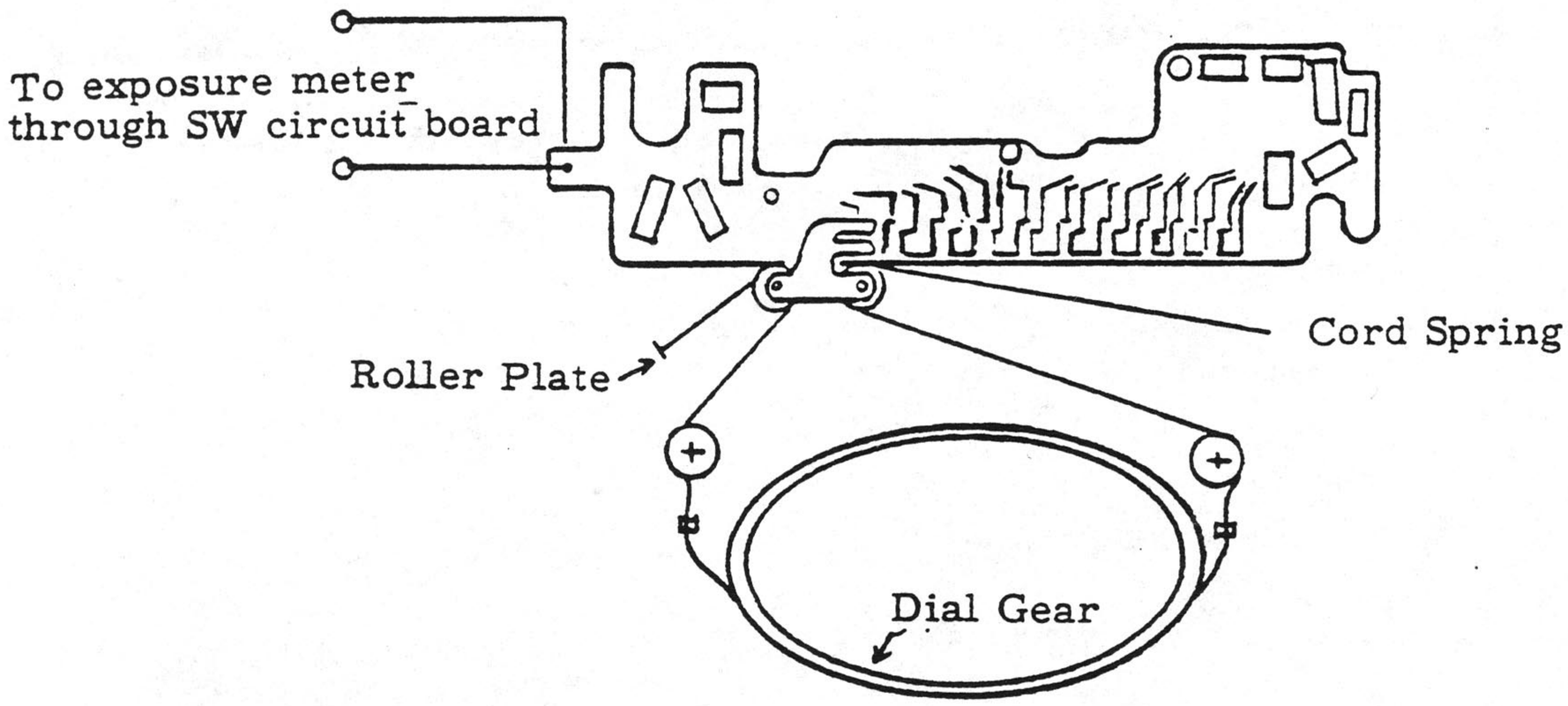
When aperture ring is turned, coupling lever (lens side) rotates the coupling ring. The rotation of the coupling ring winds the B cord 2 and turns the meter pulley.

At this point, B cord 2' adhered to the outer periphery of the coupling ring is simultaneously moved to pull on B spring. The projection of the coupling ring is assured of follow ability in that it is always brought to bear on the coupling lever of the lens. whenever the aperture ring is turned back.



[20] Coupling Mechanism of Shutter Dial and Exposure Meter

When shutter dial is turned. the directly connected dial gear rotates, the cord (B cord 1) adhered to the outer periphery of dial gear moves SL contact piece to change the resistance of B circuit board and meter deflection is changed.



〔21〕 ASA Conversion

(1) At AUTO, ASA conversion is made through resistors of AR circuit board glued to A cam.

(2) At MANUAL, ASA conversion is made by operating P lever by means of A lever 1 to deflect the exposure meter. (A-lever 1 makes one body with A-lever 2 which is brought to bear on A-cam.)

〔22〕 F/stop Conversion

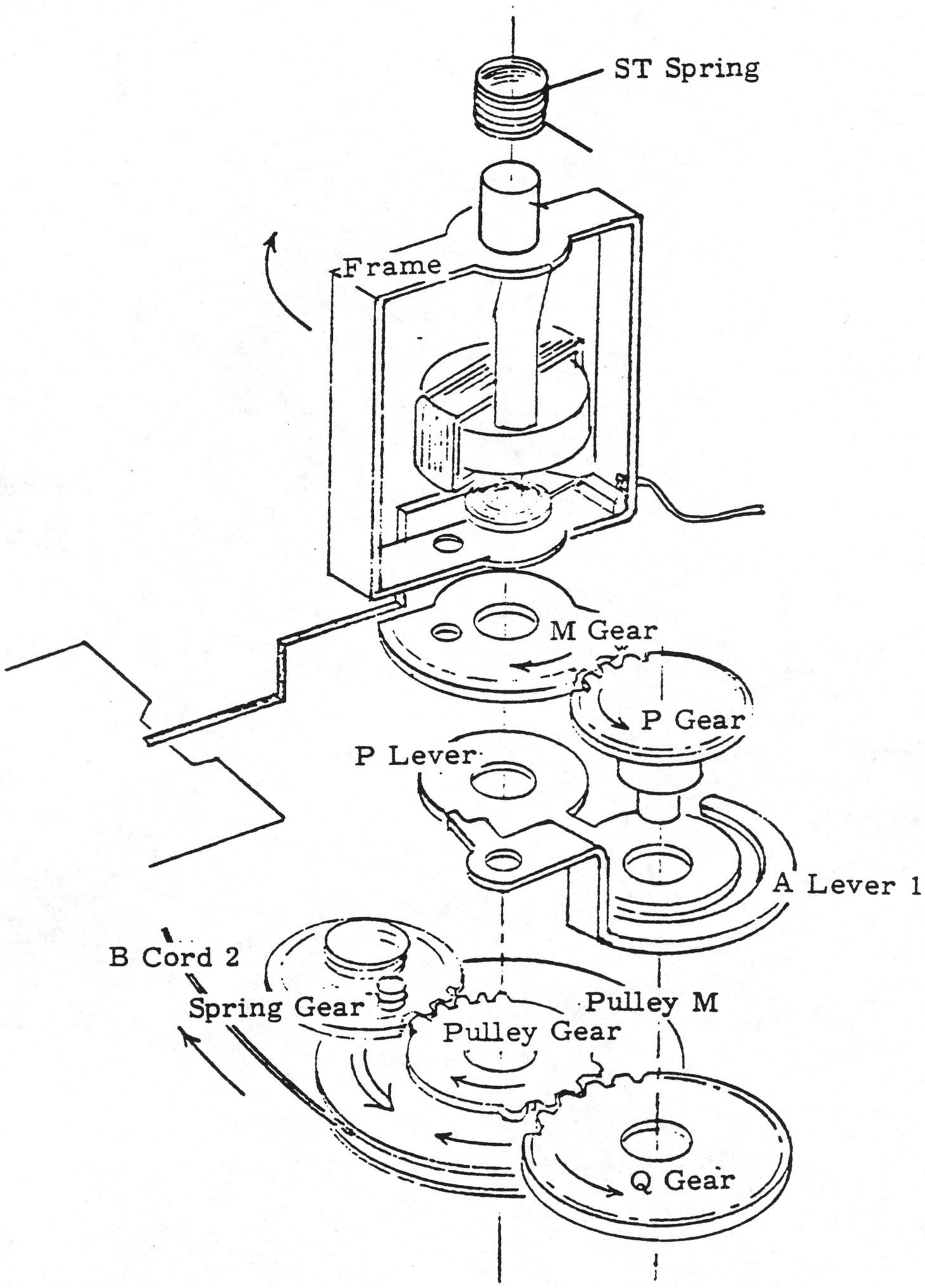
When aperture ring is turned from F16 to the maximum lens opening, the cord (B cord 1) moves in the arrow direction to rotate pulley M.

The pulley gear, which is made in one body with pulley M, rotates Q gear and turns M gear through P gear, which is made in one body with Q gear. The M gear is fixed via screw to meter frame and rotates the meter.

The pulley M is always tensioned in the arrow direction (⇒) by means of a spring, hooked to the spring gear, and ST spring. The cord (B cord 1) is always tensioned.

See next page.

Mechanism of Meter's Movable Parts



B cord 2 is interlocking with coupling ring

OLYMPUS
OM-2

CHECK POINTS (INSPECTION STANDARDS)

CHECK POINTS (INSPECTION STANDARDS)

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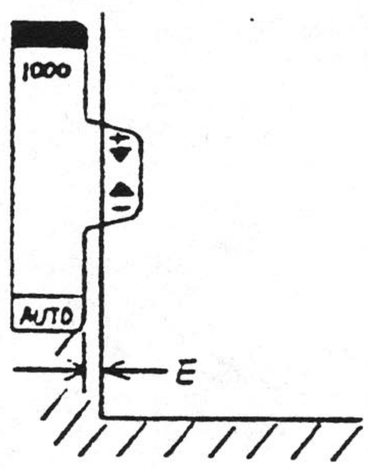
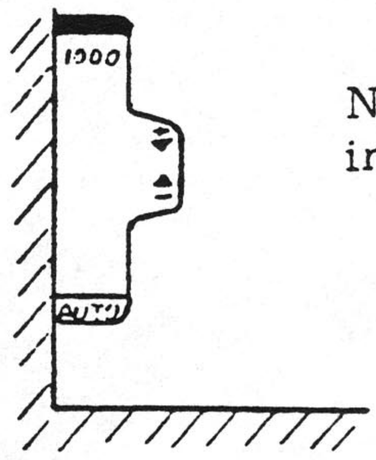
II. Functions and Features (Items to be checked by measuring instruments)

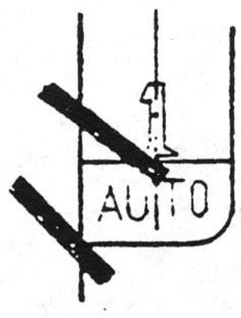
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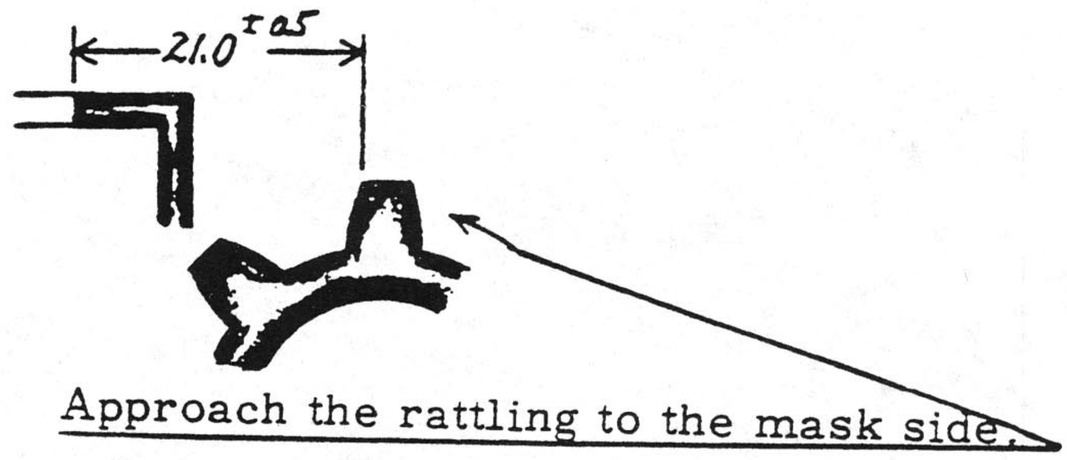
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I. Appearance and General Functions

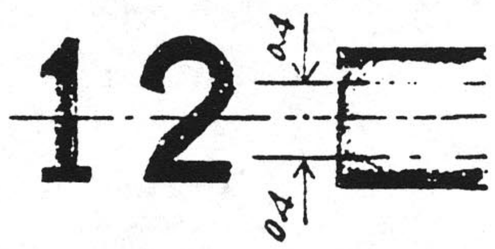
Major Check Point	Relative Functions to be checked	Checking Method or Points of Special Attention
1 View-finder	1) Viewfield	(1) No dirt or filth on it. (2) No image cut-off due to foreign substance. (3) The edge of the prism should not be observed conspicuously. (4) Viewfield Percentage: $97^{+1}_{-2}\%$ (with MS5018)
	2) Focus	(1) When focused at ∞ or at a distance desired. there should be no discrepancy between the reading on the focusing ring and the actual distance from subject to the film surface.
	3) Eyepiece Frame	(1) No deformation, rattling. nor space between the top cover. The magnifier should be mounted onto it firmly.
2 Exposure Meter	1) Position of the indication plate	(1) In case of MANUAL  $E \geq 0$
		(2) In case of AUTO  No excessive inclination
	2) Scratch and dirt of the indication plate	(1) Should not be observed conspicously.

Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
Exposure Meter	3) Assurance of coming in and out of the indication plate	(1) Should be surely interlocked with the operation of the selector lever.
	4) Smoothness of coming in and out of the indication plate	(1) Should not be unsmooth or with no friction against the meter needle.
	5) Play of the meter needle	(1) None
	6) Stuck of the meter needle	(1) Should not be stuck when deflecting to the middle of 1/2 - 1/4 (temporal).
	7) Length of the meter needle	(1) In case of AUTO. at the longer, should be lower than the dotted line. 
		(2) In case of AUTO. at the shorter, should be over the dotted line. 
	8) Deflection range of the meter needle	(1) Red zone  The needle should be within the red zone in its full width.
		(2) Blue zone  The needle should be within the range shown in the illustration.

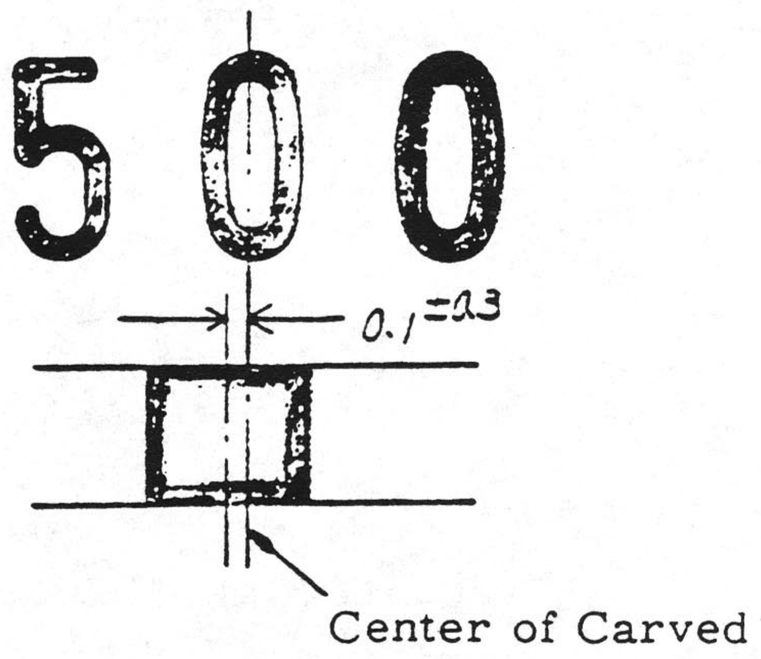
Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
3 R Knob	1) Rattling of the knob	(1) No rattling vertically. (2) Horizontal tolerance should be 0.1mm or less in the stored position. (3) Should be 0.3mm or less at the tip of the knob when pulled out.
	2) Operation of the knob	(1) Smooth and accurate rotation for rewinding with no excessive uneveness and squeak regardless of whether the film is loaded. (2) Surely pulled out (second step) and automatically returned to the original position.
	3) R knob pulling force	First step: 350 ±100g Second step: 1200 ±300g
4 Rear Cover	1) Horizontal rattling of the rear cover	(1) No rattling at the lock portion when locked regardless of whether there is patrone.
	2) Rattling of the hinge	(1) Slight up-down movement No friction on the end surfaces of the upper and lower plates. (2) Vertical tolerance 0.15 or less
	3) Assurance of opening and closing	(1) Smooth with no friction to the upper and lower plates.
	4) Demounting pin	(1) Should be depressed with no excessive unsmoothness and squeak. (2) Should be surely returned when released after the depression. (3) Pin Operating Force 350 ±80g
5 Pressure Plate	1) Mounting position	(1) Should be mounted with the fixed side come to the lock side.
	2) Flatness	(1) Should be 0 - -0.03. but the (-) should be concave against the lens.

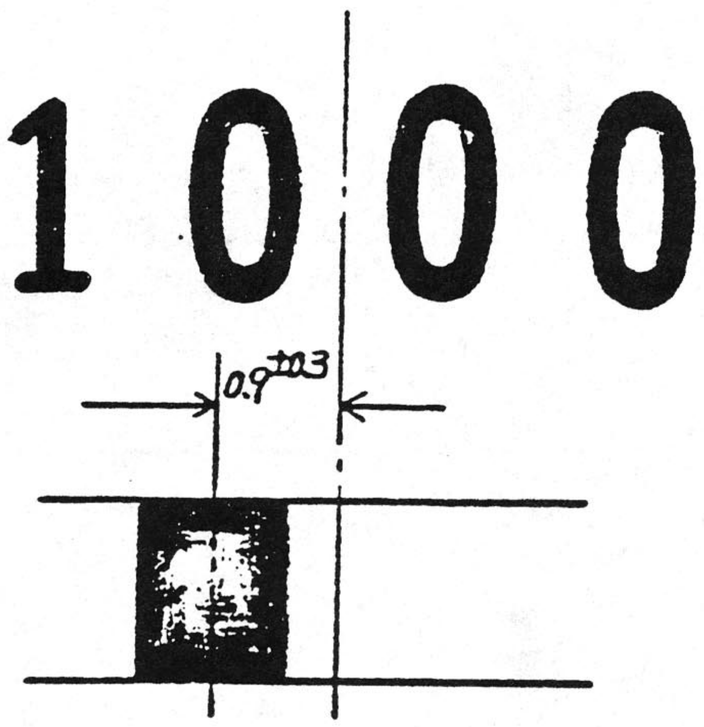
Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
6 Sprocket	1) Position of the teeth	
7 Spool	1) Rattling	(1) Vertical tolerance 0.3 or less (temporal)
		(2) Radial tolerance 0.25 or less (at the outer spool diameter)
		(3) Rotational direction 3 or less
	2) Operating force	(1) 180 - 350g x 6mm 180 - 400g x 6mm, temporal
8 Shutter Curtain	1) Appearance of Edge Metal	(1) Prior or subsequent to film advancement, the edge metal should not appear within the mask.
	2) Uneveness. blurring, unclearness and moire of the curtain	(1) Opening curtain should have no conspicuous uneveness. blurring. unclearness and moire.
	3) Position of the curtain	(1) Opening curtain should have no excessive inclination in the pattern. (2) Opening curtain should have no excessive vertical deviation.
	4) Assurance of the curtain tension	(1) The curtains should not be slanted nor loose.
9 Film Advance Lever	1) Rattling	(1) Vertical tolerance (at the center of the axis): 0.2 or less
		(2) Tolerance at the tip of the lever: 0.35 or less, temporal 0.7 or less
		(3) Horizontal and vertical tolerance (at the center of the axis): 0.1 or less

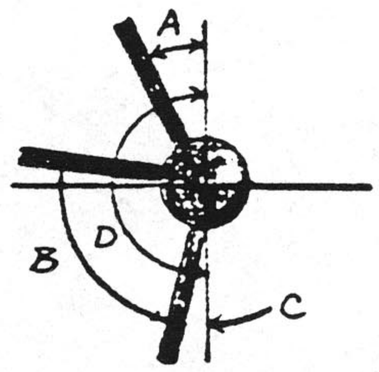
Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
Film Advance Lever	2) Assurance of operation	(1) Upon a full stroke or winding motion, film should be advanced by a full frame and the shutter and the mirror should be charged accurately. (2) Even with a quick winding, the shutter should be set accurately.
	3) Smoothness of operation	(1) Film should be advanced smoothly without difficulty at the start of the lever motion, an extreme friction, uneven movement, or squeaks.
	4) Operating force	(1) Should be 1000g or less at the tip of the lever, when film is loaded.
	5) Assurance of the film advance by short strokes	(1) Even with short strokes, the film should be advanced properly and locked in position accurately.
	6) Assurance of the prevention for double film-advance	(1) Film cannot be advanced consecutively for the second frame without shutter release.
	7) Assurance of the film release	(1) Upon shutter release. the film can be advanced for the subsequent frame.
	8) Shutter release prior to or during the film advancing motion	(1) It should not allow the shutter release action prior to or during the film advancing motion. Be cautions at the point immediately prior to completion of the film advancing motion, particularly.
	9) Pre-advancing force of the film winding lever	(1) Should be 25 - 50g at the tip of the lever.
10 Release Button	1) Rattling	(1) Vertical: No rattling (2) Slight up-down motion: 0.25 or less
	2) Assurance of operation	(1) Surely released. (2) Surely returned to the original position even when released slowly after depressed strongly.

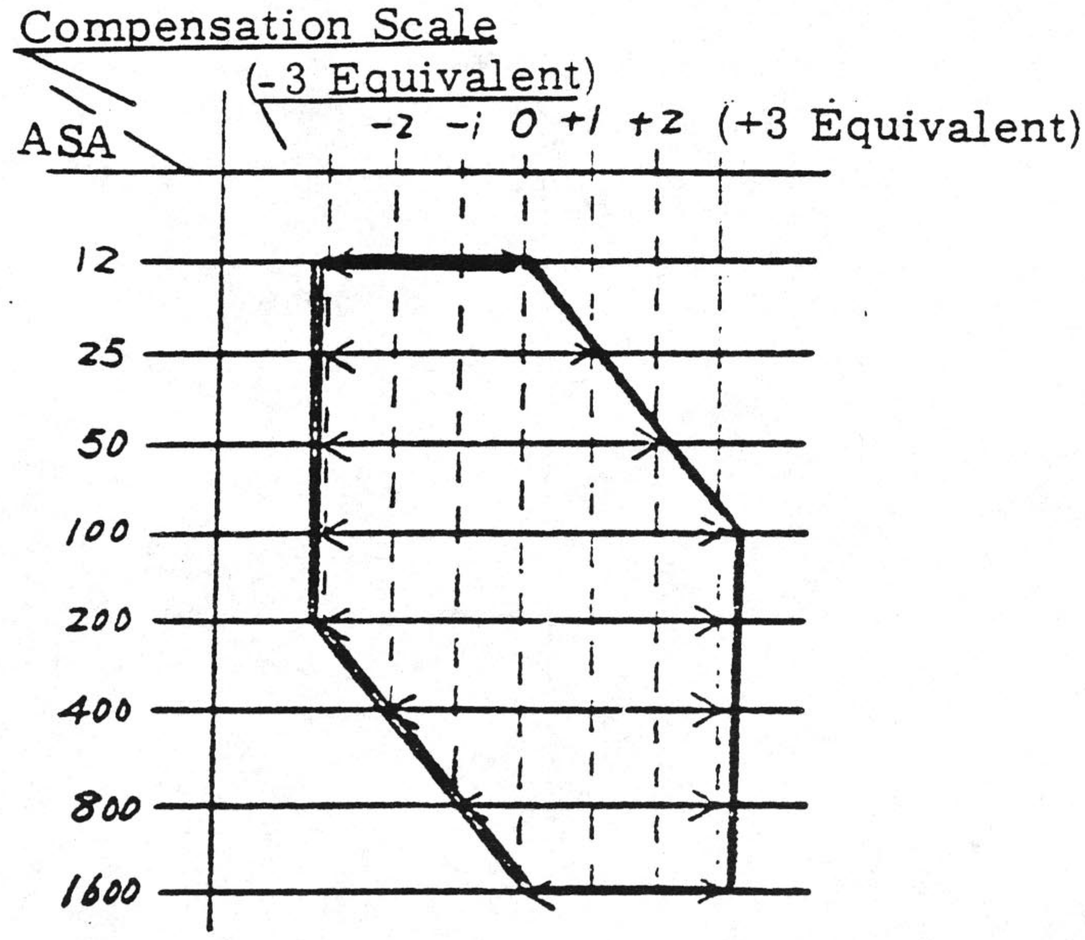
Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
Release Button	3) Smoothness of operation	(1) Should be smooth with no friction, uneven movement and squeaks.
	4) Rotation of the release button	(1) No rotation.
	5) Release force	(1) 240 ± 50g See the Product Standards.
	6) Button free height	(1) $+1.3 \pm 0.2$ (from the tip of the button base) (The plus sign (+) means that the button is extruding from the button base.)
	7) Release position	(1) -0.2 ± 0.15 (from the tip of the button base)
11 Film Counter	1) Accordance of index and frame number	(1) In case of the letter for the start:  After opening and closing of the rear cover, the index lines should not be out of S.
		(2) At "1" and even numbers:  Figure Width 0.8 The center of the index line should be within ± 0.4 from the center.
	2) Indication of No. 1	(1) Upon closure of the rear cover and completion of charging (or even without charging). the first figure ("1") should appear in the window after advancement of 3 frames.
	3) Stop position	(1) When the number plate stops at (37). "E" should be, visible.
	4) Assurance of returning	(1) When the rear cover is opened. the number should return accurately to the "S" position.
12 Film Rewinding Clutch	1) Inclination	(1) Should be $\pm 2°$ or less against the vertical in the normal state. and $90^{+10}_{-0}{}^{\circ}$ in the set state. The set position can be 85°. rarely.

Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
Film Rewinding Clutch	2) Space between the upper plate and the rewinding clutch base	(1) Between the upper plate: 0.2 or less
		(2) Between the frame: 0.3 or less
	3) Assurance of R side setting	(1) When turned 90° or beyond. it should be set accurately and should not return to the original position. (Setting can be performed even during the film-advancing motion.)
	4) Assurance of operation	(1) When the knob is set. the sprocket should be released and made free in motion.
	5) Smoothness of operation	(1) Should be surely returned to the original position in the early stage of the subsequent film-advance motion.
13 S Lever (AUTO/ MANUAL Selector Lever)	1) Rattling	(1) Vertical tolerance: 0.07 or less
		(2) Slight up-down motion: 0.25 or less at the tip of the lever
		(3) At the click time: No rattling
	2) Assurance of operation	(1) Clicking should be felt. Even if it goes beyond MANUAL. it should return to the clicking position when releasing the finger.
	3) Smoothness	(1) Smooth without extreme uneven movement and difficulty.
	4) Assurance of action	(1) The lever must be clicked into place at the MANUAL, AUTO, and OFF Positions Securely.
	5) Assurance of the interlock-ing of the indication plate	(1) The indications within the view-finder should surely be changed over in interlocking with the lever setting to the AUTO. MANUAL and OFF. respectively.
	6) Check stop position	(1) 20° ± 5°
	7) Assurance of returning from the check position	(1) Should be surely returned to the AUTO click position when releasing the finger.

Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
14 Checker	1) Temperature characteristic	(1) Within 100 mV/10° against the room temperature.
	2) Brightness of lighting	(1) The lighting (red light) should be discriminated even in the circumstance equivalent to BV15. The voltage is to be 2.65V.
	3) Limitation of lighting	(1) LED should surely light up when the S lever is set to the CHECK position with batteries of at least 2.75V loaded.
15 Shutter Dial	1) Marking	(1) B: Fluorescent red 1 - 60: Purple blue 125 - 1000: Black
	2) Rattling	(1) Horizontal: 0.15 or less
		(2) Click: 0.2 or less at the outer shutter dial diameter
		(3) Radial: 0.1 or less
	3) Accordance of graduation	(1) Discrepancy between the center of the index and that of the letter (B - 250) should be ±0.3 at the center of the carved letter. (500) 

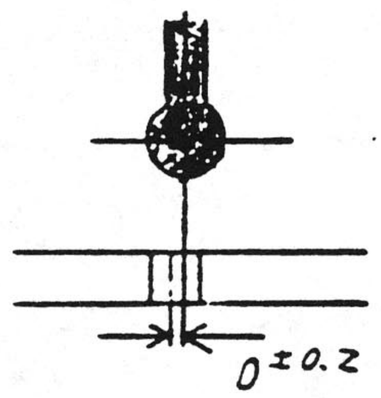
Major Check Point	Relative Function to be Checked	Checking Method or Points of Special Attention
Shutter Dial		(1000) 
	4) Change-over position	(1) Should be changed over at 2/3 ±1/3. Should be surely changed over at the 1/125 click position.
	5) Assurance of resetting	(1) Reset should be made surely.
	6) Position of resetting	(1) Should not be reset even if the S dial is turned to the stop position on the B side.
		(2) Reset should be made surely when the reset button is depressed to set to B.
16 Self-timer	1) Inclination of the lever	(1) Should be ±1° against the vertical in the state before setting.
		(2) Parallelism to the rewinding clutch should be observed normal.
	2) Smoothness of setting	(1) Setting should be made smoothly without no friction, extreme uneven movement and squeaks.
	3) Smoothness of the lever returning	(1) Upon setting of the self-timer, the setting lever alone will return to its original position smoothly with proper friction but without staggering by self-weight.

Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
Self-timer	4) Assurance of stopping in the middle of run and restarting	(1) If the start-lever is pushed to the left during the timer operation, the timer should be stopped. But when the lever is returned to the correct position again, the timer should resume operation accurately.
	5) Smoothness of operation	(1) The self-timer should operate smoothly without uneven movement such as hesitation or stoppage.
	6) Operation angle of the lever	 A: Unsettable range, not exceeding 40° (for reference) B: Release button operable range, 70 - 190° C: Slip range after setting, not exceeding 10° D: Charge side stop position, 190° ± 3°
	7) Operating time	(1) Full set: 12 ± 3 sec.
		(2) Allowance after release: 5 sec. or less
17 Exposure compen-sation Dial	1) Clearance	(1) No clearance between the dial and the rubber ring.
		(2) Clearance between the dial and the dial base should be 0.15 or less.
		(3) Clearance between the dial and the scale plate should be 0.07 or less.
	2) Accordance of the exposure compensation scale	(1) The index and the exposure compensation scale should not be disaccorded extremely by seeing from the directly above direction.

Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
Exposure Compensation Dial	3) Assurance of operation	(1) The stop function should surely effect. and the operation is allowed in the range indicated in the illustration below to make the proper exposure compensation. 
	4) Smoothness of operation	(1) Operation should be smooth without extreme uneven feeling and difficulty.
	5) Rotating force	(1) Click disengaged: 1000 ± 300g/cm
	6) Pulling-up force	(1) 500 ± 120g (at the lock released position)
	7) Accordance of the window of the exposure compensation plate and ASA index	(1) Cut-off should be within the width of the letter. But no cut-off at ASA 100.
18 Motor Drive Part	1) Motor Cover	(1) Protrusion from the lower plate to the cover: 0 ± 0.1
		(2) Eccentricity with the lower plate: 0.15 or less
		(3) It should be surely screwed in and unscrewed.

Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
Motor Drive Part		(4) Plating fineness should be same as that of the lower plate.
	2) Contact terminal	(1) Stage difference of the contact from the contact base: 0 ± 0.05
		(2) Depression of the contact base from the lower plate: 0.1 ± 0.2
		(3) Clearance between the lower plate and the contact base: 0.3 or less
		(4) There should be no clearance between the contact base and the contact.
	3) Assurance of switching of the contacts	(1) The contacts should be conductive except during the shutter operation.
		(2) After the shutter operation is started. two contacts should be insulated and the rear side of the movable terminal and the camera die-cast body should be shortcircuited.
	4) Conduction and insulation resistance of the contact	(1) Inner resistance upon conductive: 0.2Ω or less
		(2) Insulation resistance upon insulated: 500V 50MΩ or greater
	5) Operation of the release plate	(1) Should surely operate and make the release.
		(2) Operating force: 180 ± 20g
		(3) Stroke (release position): 2 ± 0.4mm Stroke (stop position): 2.5mm or more
19 Reset Button	1) Rattling	(1) 0.15 or less
	2) Assurance of operation	(1) It should surely come in and out. and the shutter dial should not reach the B when it is not depressed.
		(2) When it is depressed. the dial should be able to rotate.
		(3) When returning from the B to "1". the returning should be performed independently of the button.
	3) Operating force	(1) 120 ± 40g

Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
Reset Button	4) Stroke	(1) Standard dimensions  Lock released position: $0.3\ ^{+0.2}_{-0.1}$ Stop position: $0\ ^{+0.15}_{-0.2}$
	5) Clearance between the front cover	(1) 0.15 or less
20 Focusing Glass	1) Assurance of mounting	(1) The focusing glass should be surely pressed at the focal position in the condition with the F key effective.
	2) Assurance of the F key operation	(1) It should surely lock with "click" sound.
	3) Assurance of demounting	(1) The F key should be disengaged without extreme difficulty, and the focusing glass mounting frame should be lowered and the focusing glass should be removed.
21 Iris Lever	1) Rattling	(1) Position and dimensions including the rattling should be satisfied.
	2) Assurance of operation	(2) Operation should be sure. Use KC-0074G for the measurement of the position.
22 Iris Interlock Ring	1) Rattling	(1) Position and dimensions including the rattling should be satisfied.
	2) Assurance of operation	(1) The coupling ring should rotate to the stopper at B.
		(2) The coupling ring should surely return.
	3) Smoothness of operation	(1) The operation should be smooth without extreme uneven movement and difficulty.

Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
23 B Mount	1) Appearance	(1) The mount screw should be free from biting.
	2) Disaccordance of the shutter index and the index of the lens side	(1) When locking surely with the standard lens mount, the disaccordance of the index on the upper part of the body mount and the index of the lens side should be less than the illustrated value. 
	3) Smoothness of the lens mounting and demounting	(1) The lens should be mounted and demounted without extreme friction, uneven movement and squeaks.
		(2) Mounting and demounting rotational force should be 4 - 7kg/cm.
	4) Parallelism and flatness	(1) Parallelism and flatness to the film surface should be 0.02 or less (0.025 or less. temporal) anywhere within 20 in either side from the mask center on the basis of the B mount.
24 FX Knob	1) Biting of the slit of the socket base	(1) None.
	2) Rattling	(1) Vertical tolerance: 0.2 or less
		(2) Click: 0.2 or less
	3) Assurance of switching	(1) Switching should be made with the time lag indicated at the shutter.
	4) Position of the X/FP switching	(1) The switching should be made at the position near 2/3 to FP from the center of the X/FP.
25 Shutter Lock	1) Assurance	(1) When the battery voltage is 0V - 2.32 ± 0.06V or the battery is loaded inversely. the shutter lock should function.

Major Check Point	Relative Functions to be Checked	Checking Method or Points of Special Attention
26 WX	1) Assurance	(1) The X contact should flash at the shutter speed of 1/60 or slower in the manual mode, and not at 1/125 or faster.
27. Movable Mirror	1) Smoothness of operation	(1) It should operate without hesitation and stoppage and squeaks.

II. Functions and Features (Items to be checked by measuring instruments)

1. Film Advance Lever Operating Force ..... 1000g or less at the tip of the lever. when film is loaded.

2. Film Advance Lever Returning Force ..... 30^{+10}_{-6}g at the beginning of the return stroke or thereabout.

3. Film Advance Lever Pre-advancing Force ..... 25 - 50g at the tip of the lever.

4. Shutter Button Releasing Force ..... 240 ± 50g.

5. Shutter Button Free Height ..... +1.3 ± 0.2 from the tip of the button base (The plus sign (+) means that the button is extruding from the base.)

6. Shutter Button Release Position ..... -0.2 ± 0.15

7. Shutter Button Stopping Position ..... 0.5 and over in depth in relation with button seat top surface.

8. Release Button Shaft Depth of Action ..... 7 ± 0.3 from button top surface

9. R Knob Pulling Force ..... First Step: 350 ± 100g
Second Step: 1200 ± 300g

10. Self-timer setting Force ..... 600g or less at the tip of the lever.

11. Self-timer Start Lever Operating Force ..... 160 ± 80g at the tip of the lever.

12. FX Knob Operating Force ..... 700 ± 200g at the tip of the knob.

13. Shutter Dial Operating Force ..... Middle Position: 600 ± 300g/cm
Click Position: 1500 ± 500g/cm (1600 ± 650. temporal)

14. S Lever (AUTO/MANUAL Selector Lever) Operating Force .....
330 ± 70g at the tip of the lever upon the click released.
500 ± 150g upon complete pressing to CHECK.

15. Flange-back ..... 46.0 ± 0.02, 46.0 ± 0.025 temporal

16. Tunnel Interval ..... $0.2^{+0.02}_{-0.01}$

17. Accuracy of Meter Indications

a. Indication Difference in AUTO/MANUAL switching:

1/60; ±0.3EV, BV11 F5.6
Other than 1/60; ±0.5EV

b. Accuracy of Each Indication

K = 1.3 ASA100 Voltage; 3.15V ± 0.005

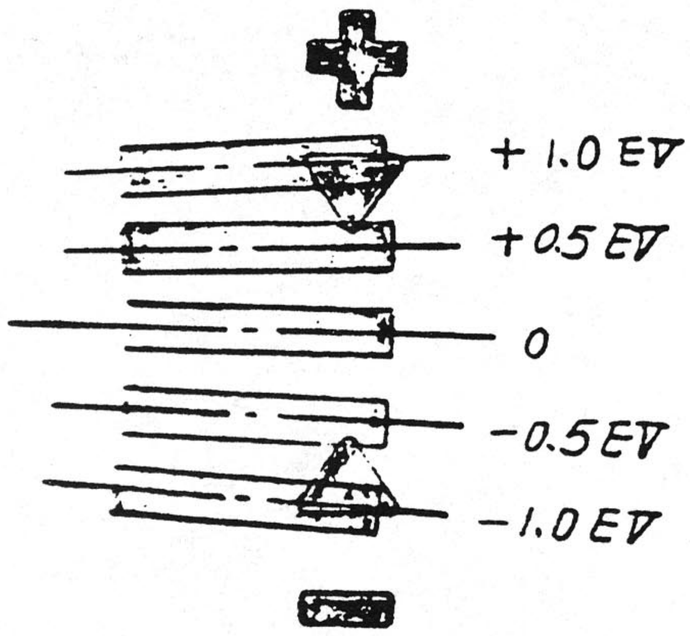
OM-2 EE Tester

BV	S.S	FNO	Accuracy of Indication	
4	1/2	2.8	±0.6EV	(Temporal)
8	1/30	2.8	±0.6EV	(")
11	1/60	5.6	±0.6EV	(")
14	1/125	11	±0.6EV	(")
16	1/500	11	±0.6EV	(")

Caution: The shutter dial should be rotated from the 1/1000 side.
The aperture ring should be turned from the F16 side.

In case of LSBL7 or LSBL1

6	1/2	5.6	±0.6EV	(Temporal)
8	1/2	11	±0.6EV	(")
9	1/4	11	±0.6EV	(")
10	1/125	11	±0.6EV	(")
12	1/125	5.6	±0.6EV	(")
14	1/125	11	±0.6EV	(")
15	1/500	8	±0.6EV	(")
16	1/500	11	±0.6EV	(")



Reading of the meter indication

18. Curtain Speed ..... At 1/1000: 11.5 + 0.1ms
The difference in the speeds of the curtains is $0\ ^{+0.15}_{-0}$. The opening curtain should be faster.

19. Manual Exposure Time

Setting	Exposure time	Guaranteed quality
1/1	1000 ms	871 - 1148 ms
1/2	500 "	436 - 574 "
1/4	250 "	218 - 287 "
1/8	125 "	109 - 144 "
1/15	62.5 "	54.5 - 71.8 "
1/30	31.2 "	27.2 - 35.9 "
1/60	15.6 "	13.6 - 17.9 "
1/125	7.81 "	6.81 - 8.97 "
1/250	3.91 "	3.40 - 4.49 "
1/500	1.95 "	1.59 - 2.40 "
		(1.53 - 2.49 " Temporal)
1/1000	0.98 "	0.77 - 1.43 "

20. Uneveness of Exposure

1/1 - 1/250: 0.15 EV or less
1/500: 0.3 EV or less
1/1000: 0.35 EV or less

21. Disorder of Exposure ..... 10 continuous measuring values of exposure time should be all within the above standards.

22. Contact Efficiency of X Contact ..... Max. 60% or above and minimum 50% or above at the interval of 1ms. in slow speed including 1/60 sec.

23. Contact Efficiency of FP Contact ..... 70% or above at the interval of 2.5ms.

24. Insulation Resistance and Contact Resistance ..... Insulation Resistance: 30MΩ at 500V
Contact Resistance: Ascertain continuity at 3V

25. Time Lag for X Contact ..... At 1/60 sec.. it should be switched in within 1.5ms of the closing action of the closing curtain. upon completion of the opening curtain opening.

26. Time Lag for FP Contact ..... It should be switched in at 8 - 14ms. prior to commencement of the first curtain action.

27. Accuracy of Automatic Exposure ..... ±0.6EV at 1/1000 sec. or equivalent and ±0.4EV at 1/500 sec. or slower in the range BV2 - BV16 at ASA100, K = 1.3 with fresh batteries (two).

28. Longest Exposure Time for AUTO ..... The shutter should be closed within 60 sec. - 20 min at ASA100 in complete darkness.
(30 - 60 sec. in temporal is also available.)

29. Longest Exposure Time for OFF ..... The shutter should be closed within 35ms - 140ms at ASA100 in complete darkness.

30. Temperature Characteristic, -20 - 60° ..... At ASA12 - 400. automatic exposure accuracy; the changing amount should be within the following value against the characteristic at the room temperature.

1/250 sec. or slower:	0.3EV
1/500 or equivalent:	0.4EV
1/1000 or equivalent:	0.5EV

31. Humidity Characteristic ..... After leaving in 20°C and 90% humidity for two hours. the changing amount in this condition should be within 0.5EV at ASA100 and 10 sec. or equivalent as compared with the characteristic in the normal humidity.

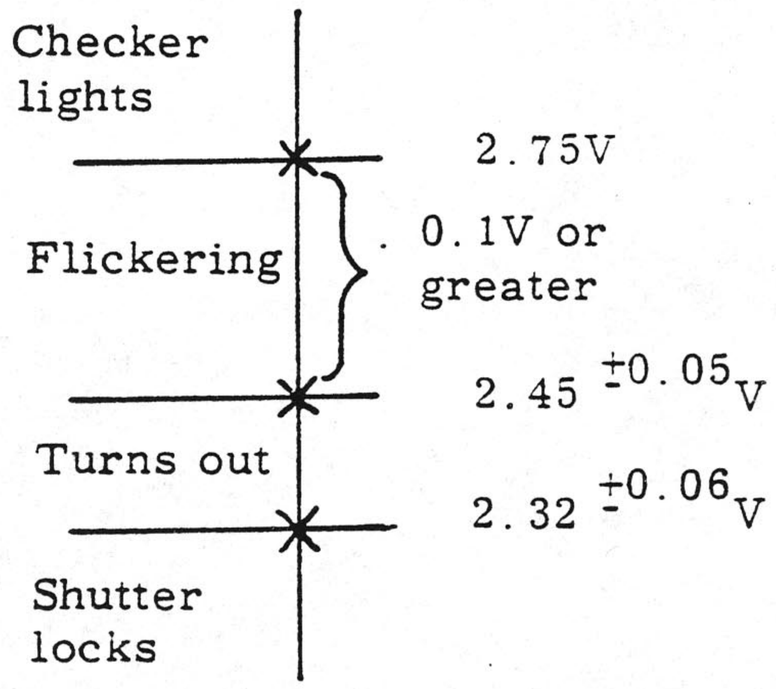
32. Difference between Automatic Exposure and Indication ..... Real exposure should be 20ms or longer when the exposure meter indicates 1/30.

33. Voltage Characteristic

a. The shutter lock should not activate in the voltage range of 3.2V - before-lock value.

b. The shutter lock should operate in the range of lock voltage - 0V.

c. The battery checker and the voltage should be as follow.



34. Change in Exposure against Voltage Fluctuation ..... The changing amount should be within 0.2EV for either AUTO or MANUAL in the range of 3.2V - lock voltage.

35. Current Consumption ..... At AUTO and MANUAL
12mA or less at 3.15V

At B
15mA or less at 3.15V

At CHECK
15 - 20mA at 3.15V

At meter
800μA at 1/1 sec.

36. Vertical Discrepancy in Positioning the Actual Picture ..... The actual picture should be beyond 0.3mm or more from the perforations.

37. Interval between Picture Frames ..... 1.85 ±0.5

OLYMPUS
OM-2

ORDER OF DISASSEMBLY

ORDER OF DISASSEMBLY

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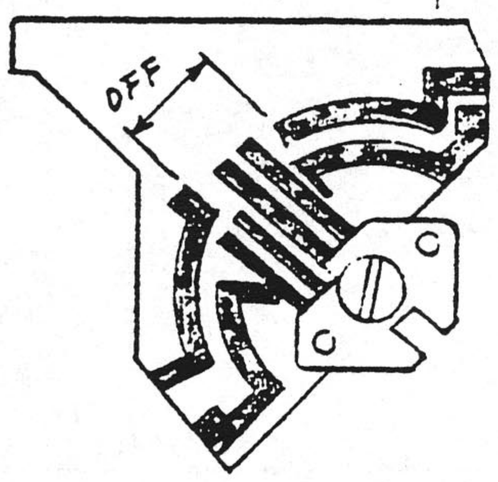
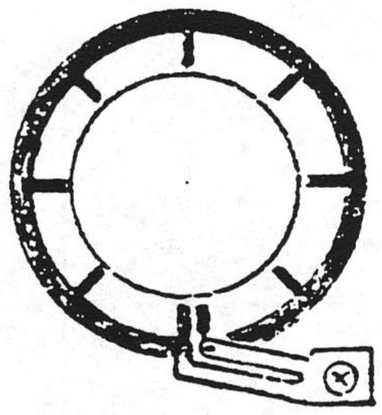
(1) Order of Assembling of Meter Movable Section 58

Caution: ☒

mark at the head of the part number shows the part which should not be touched directly by fingers. Be sure to cover fingers with rubber fingerstalls. and use new ones when they are discolored to prevent rusting.

1 Removal of CE0503

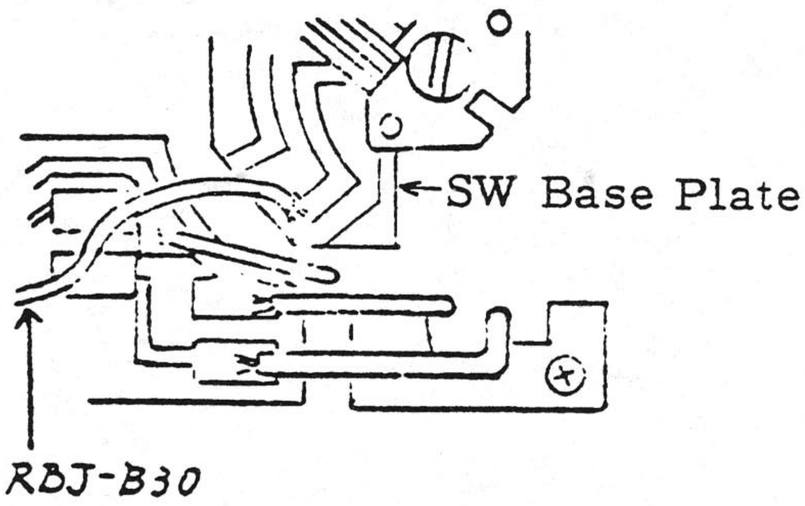
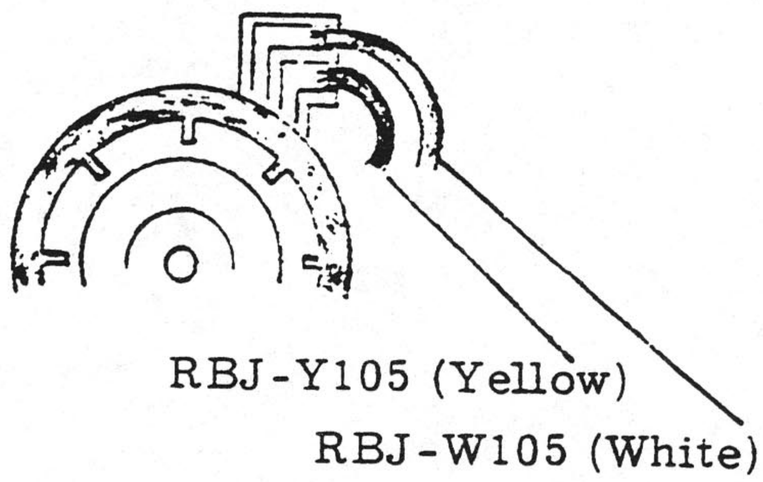
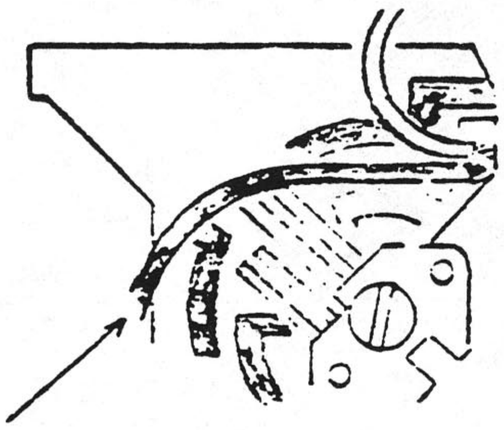
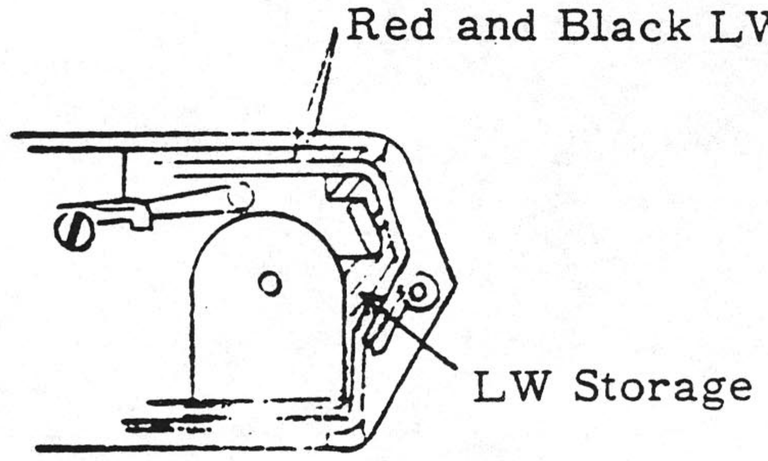
Parts to Remove	Q'ty	Tool Used	Removable Parts	Remarks
CA9030 (T nut)	1	KC-CA9030G (Screw driver)		
CA8752 (FW lever holder)	1	KC-CA8752G (Screw driver)	Single body { CA9135 CA8752 CA8753 Single body { CA9180 CA8751 CA8806 CA9181	Pin face hole of CA9135 and hole of CA8752 are accorded. and the parts are removable together in one body.
CA8777 (Fastening ring)	1	KC-CA8777G (Screw driver)		KC-CA8777G is made of aluminum. and take care not scratch.
CA8725 (R Knob)	1	KC-0071M (Wrench)	Single body { CA9150 CA8730 CA8731	CA8733 is easy to be deformed. and thus the jig at left must be used.
PSK1.7x 4SB (Screw)	2	Plus Screw-driver	CE0503 unit CE0525 CE0527 (0 - 3 ea.) CA8722 NW8.6-2136BO (0 - 1 ea.)	Prior to the removal of CE0503. set the switching lever to the OFF position and ASA to 100. The OFF and ASA 100 setting on the body side are as follow

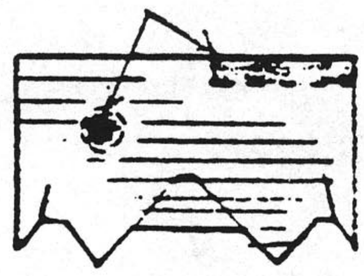
Parts to Remove	Q'ty	Tool Used	Removable Parts	Remarks
				Manual  OFF Position of SW base plate  ASA 100 Position of AR base plate

〔2〕 Separation of CE0502 (Front casting) from Die-cast Body

Basically. there is no difference as compared with OM-1. but the number of soldered portion is increased.

Parts to Remove	Q'ty	Tool Used	Removable Parts	Remarks
CE0524 Lead Wire	1	Soldering Iron	Thermo-constrictive Tube	CE0503 should be then being removed. Remove first from the vinyl tube portion. LW on the die-cast body side is white.
CE0526 Lead Wire	1	Unger Three-wire Soldering Iron	Thermo-constrictive Tube	Remove the portion between 10KΩ resistor and purple LW (RBJ-M115).

Parts to Remove	Q'ty	Tool Used	Removable Parts	Remarks
Remove the soldered checker LW (RBJ-B30) from CA9483 (SW base plate)	1	Soldering Iron of 20W or less		
Remove the soldered two LWs (RBJ-Y105. RBJ-W105) of CE0640 (Base plate A)	2	"		
Remove the battery compart-ment LW (RBJ-B170) from CA9483 (SW base plate)	2	"		
Remove the red LW (RBJ-R47) of the front casting and the red LW (RBJ-R125) of the die-cast body bottom.			Reference: ◦ Red LW of the front casting is removable from the FP contact piece. ◦ Red LW of the die-cast body bottom is remova-ble from the X contact piece.	Lower cover should be then being removed.  The above illustration shows the condition with the lower cover removed.

Parts to Remove	Q'ty	Tool Used	Removable Parts	Remarks
Remove the black LW (RBJ-B60) of the front casting and the black LW (RBJ-B100) of the die-cast body bottom.		◦ Black LW of the front casting is removable from the main switch. ◦ Black LW of the die-cast body bottom is removable from the MG.		
PUK1.4-404ST	1	Plus Screw-driver	CE0951	
CA9156 (Light proof padding)	2	Tweezers		Raise the movable mirror with finger before the removal.
CE0955 (Covering plate)	1		Caution: CE0955 is soldered to CE0914 with the lead wire. but the removal of the solder is unnecessary.	 Adhered to the arrowed portion with pliobond.
CA9155 (Screw)	4	Plus Screw-driver		Before removing the screw. peel off CA9102 and CA9103. For CA9103. it is sufficient to peel off the half from the strap eyelet R side in the self-lever direction.
PUK1.7-516SO (Screw)	2	Plus Screw-driver	SM Frame CE0502	

(1) Removal of CE0502 (Front casting)

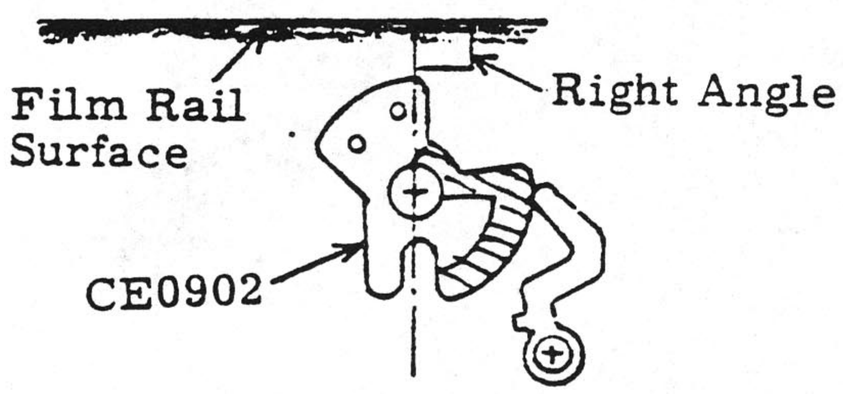
Set the SW base plate to the OFF position, keep the mirror up with the finger and remove while moving CE0502 slightly up and down so that its upper part is removed first. When the upper part has been removed, continue the removal so as to remove the part on the self-timer side. There is the possibility of breaking the vinyl covering of white and yellow LWs of CE640 when moving up and down. Thus, displace the LWs sideways to prevent the above. When CE0502 is removed, CE0955 may be hooked. In such case, thus. pay attention not to break the LW and make scratches on the mirror.

(2) Order of Docking

1) Preparation on the Die-cast Body Side

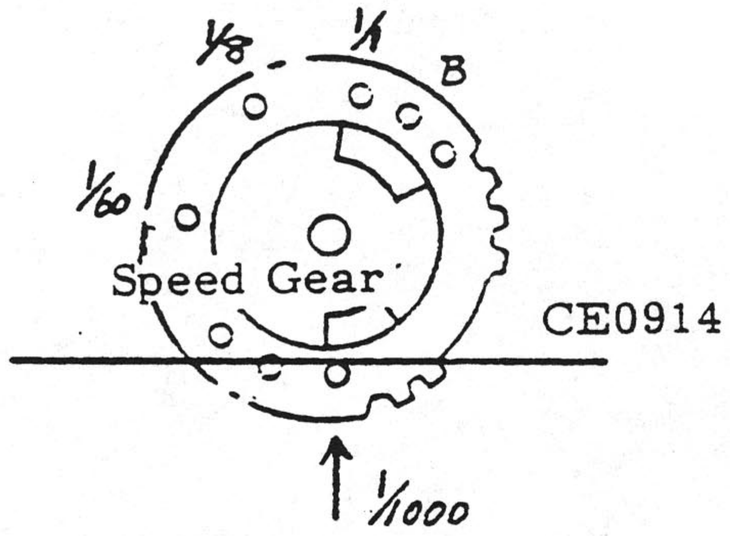
a) Set CE0902 to the OFF position.

Never turn CE0902. except the oblique line portion in the right illustration, to prevent the deformation of the contact piece.



b) Set CE0829 to 1/1000. After setting. keep it unmoved until four front screws are tightened.

c) Return to the pre-winding condition to protect the opening shutter curtain.



2) Preparation on the CE0502 Side

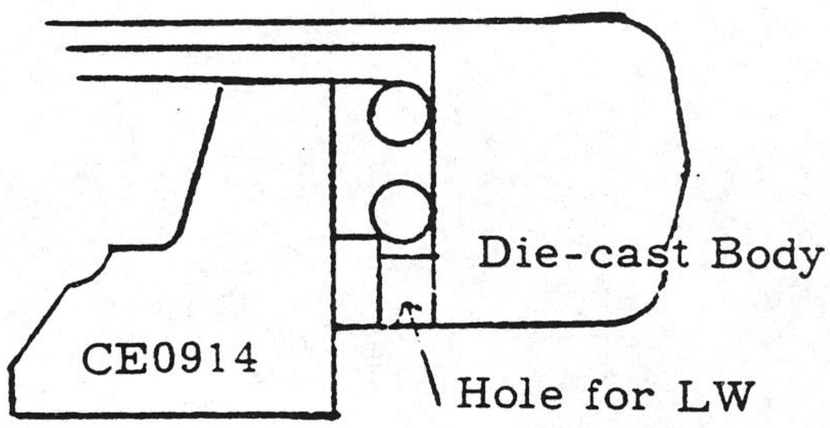
a) Set CA9483 to the OFF position.

b) Set the shutter dial to 1/1000.

c) Return to the condition before the mirror charge.

3) Docking

a) Pass the red and black LWs coming out below CE0502 through the LW hole of the body.



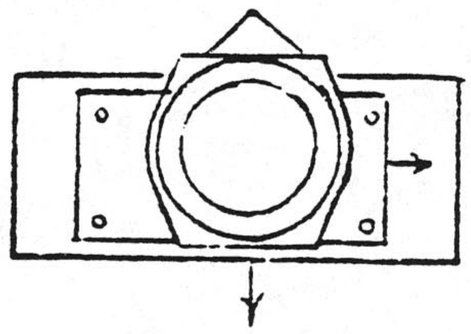
b) When CE0955 is wired by the LW. flip up the mirror with the finger and place it into the mirror box.

c) Insert CE0955 from the lower right portion into the body so as to insert the R shaft side first. (Take care not to jam each LW: pay attention because CE0902 is easy to move.)

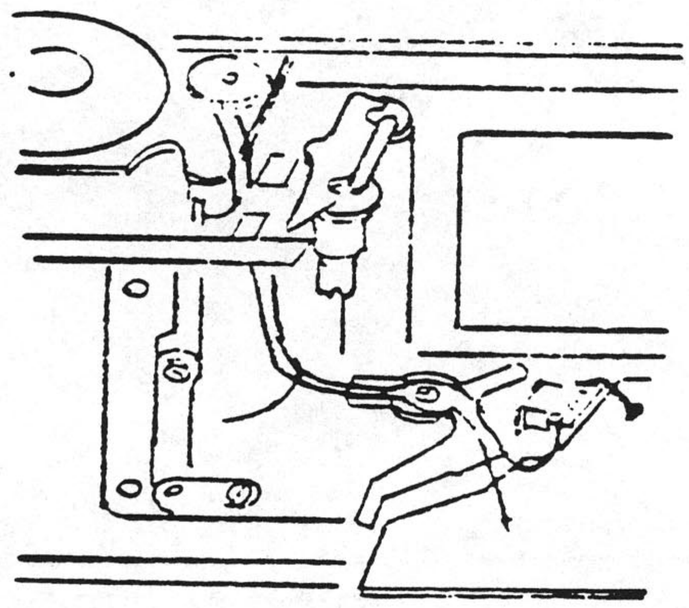
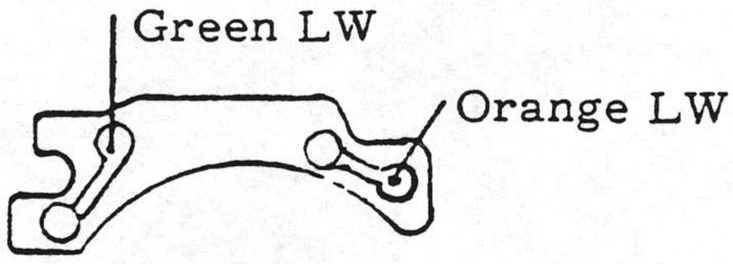
d) Make sure that the pin underneath CA9483 and the groove of CE0902 are accorded (verify switching).

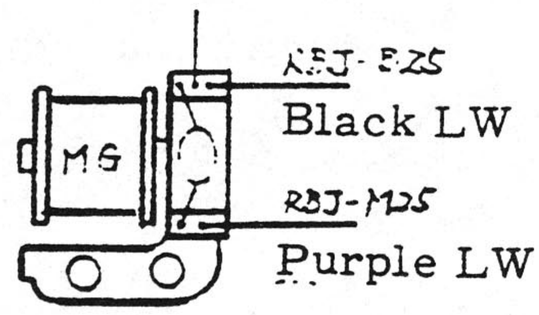
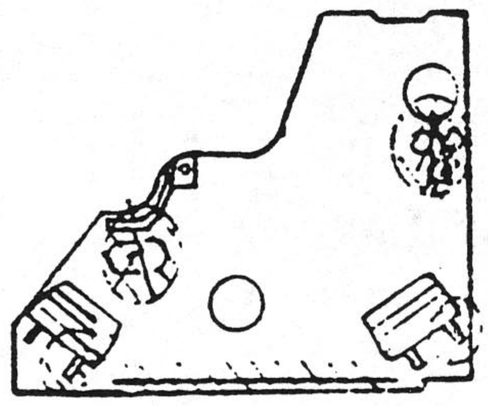
e) Hook the self-timer on the screw of the release plate.

f) Tighten four CA9155. Apply CE0502 to the lower right side. and fasten it in the diagonal direction.



〔3〕 Removal of CE0914 M circuit board (CE0502 should be being removed.)

Parts to Remove	Q'ty	Tool Used	Removable Parts	Remarks
Remove bonding of RBJ-W105 (white LW) and RBJ-Y105 (yellow LW)	1 each	Pincette		 Re-bonding must be made on the original bonding position.
Desolder green and orange LWs of CE0942.	1 each	Unger Three-wire Soldering Iron		
Desolder brown LW (RBJ-C95) on the die-cast body bottom.	1	"	CA8076	

Parts to Remove	Q'ty	Tool Used	Removable Parts	Remarks
Desolder purple LW(RBJ-M25) and black LW (RBJ-B25) of magnet.	1 each	Unger Three-wire Soldering Iron		
Desolder purple LW (RBJ-M115) of die-cast body and purple LW (RBJ-M20) of CE0938. Peel green. brown and orange LWs bonded to die-cast body bottom.	1	"	CA8076	After peeling off the bonding, pull each LW from under CE0515.
CE0923 (Screw)	1	Flat Compass	Single body CE0914 CE0938 CE0915 CE0829	Caution: (1) Rubber fingerstalls must be used. (2) The screwdriver-adjusting resistor must not be rotated. (3) The oblique line portions in the illustration below should never be smudged. 

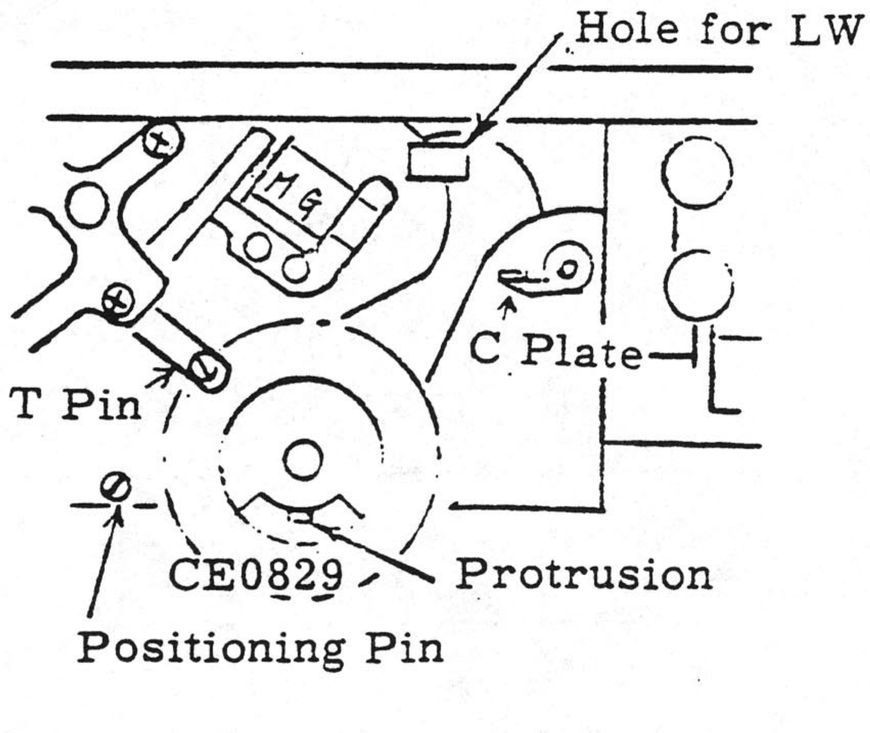
(1) Order of Placement of CE0914

(Use rubber fingerstalls.)

1) Pass brown, green and orange LWs of CE0914 through the LW hole of die-cast body.

2) Set the protrusion of CE0829 toward you and, with CE0914, the notch of CE0915 toward you.

3) Accord CE0913 with CE0916 of CE0914. (CE0913 is to be recommendably set to the MANUAL position.)
Push into CE0913 with CE0916.

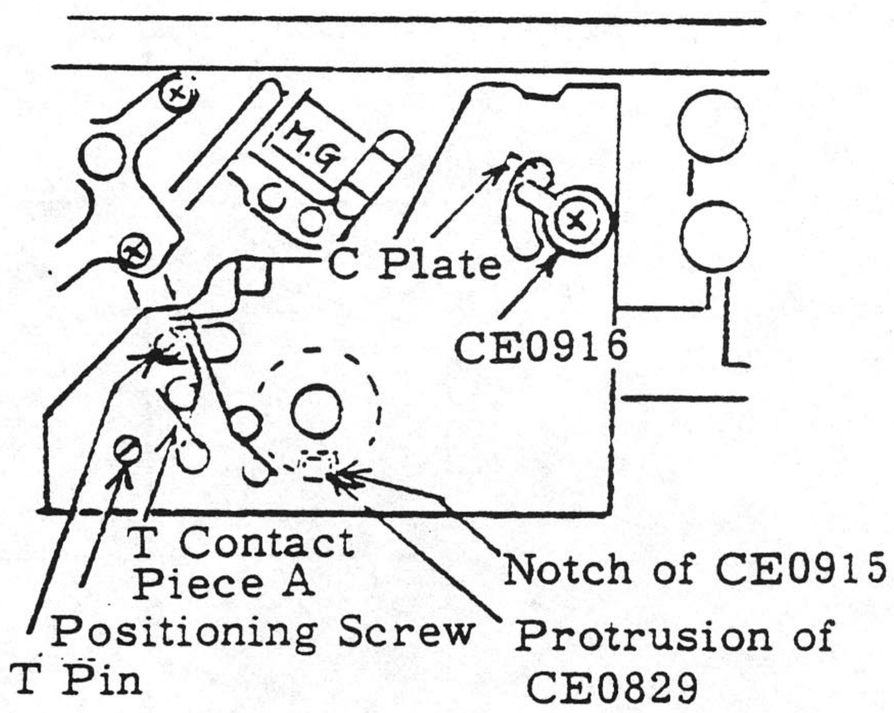


4) Match T pin with CE0931 of CE0914. (The released shutter condition is recommendable.)

5) Put the position hole of CE0914 on the positioning screw. and, at the same time, match CE0829 with CE0915.

6) Fix CE0914 to the die-cast body with CE0923.

7) Solder each LW referring to the preceding page. and adhere them to the predetermined position.



〔4〕 Disassembly of the Shutter (Part of the lower side of the die-cast body)

See the Repair Manual for OM-1.

〔5〕 Removal of the Shutter Curtain

See the Repair Manual for OM-1.

〔6〕 Removal of CE0801 (S base plate)

1) Disengage cylinders A and B of the shutter curtain.
(See the Repair Manual for OM-1)

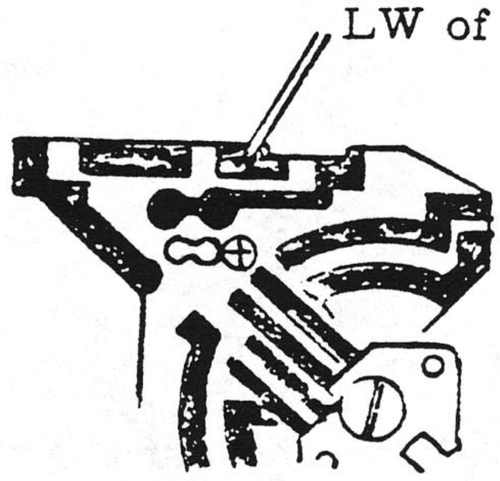
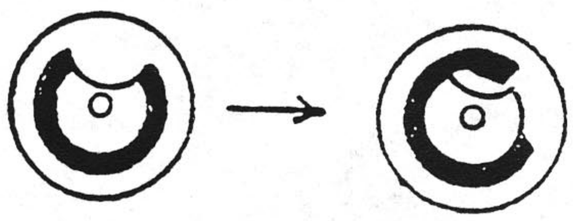
2) Remove two PSK1.7 x 3.5SO to take off CA8875.

3) Remove two PSK2 x 2SO. (Bellock is attached.)
Remove one PSK2 x 2.8SO. (Bellock is unusable.)
Then. CE0801 comes off.

〔7〕 Disassembly of the Film Wind Mechanism
See the Repair Manual for OM-1.

〔8〕 Disassembly of CE0502 (Front casting)
(CE0502 should be being separated from die-cast body.)

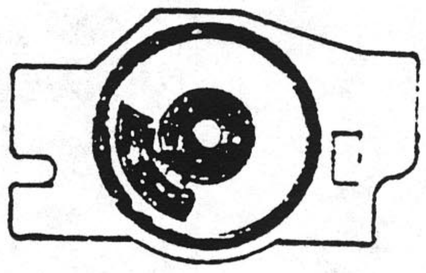
Main Parts	Parts to Remove	Q'ty	Removable Parts	Remarks
V 40 Self-timer	CA9077 (Pinch)	1		Remove CA9077 and PSK1.4 x 2.5SO with CA9111 fully lowered. After the removal. set CA9074 to the stop position to stop it in the set state, and then remove CA9071.
	PSK1.4 x 2.5SO	1		
	CA9071 (Stopper)	1	Single body 〔CA9072 CA9086 CA9075 CA9111	
	PSK2 x 3SO	2	V 40 Self-timer	Be sure to interlock CA9074 with self-timer when assembling.
LC4086 Penteprism	PUK1.7-314SO	2	CE0524 CE0526	
	PUK1.7 x 2.2SO	2	CE0536 CA8936 LC4086	Remove PUK screw from SW base plate side.
CE0547 (Indication plate) (CE0538)	CE0539 (SL shaft)	2	Single body 〔CE0538 CE0547	Remove from SW base plate side. Take sufficient care not to scratch CE0547. Clean with Ligroine if soiled.
Meter Movable Section (DS4001)	CA9008 (Pulley screw)	3	CE0635	

Main Parts	Parts to Remove	Q'ty	Removable Parts	Remarks
Meter Movable Section	PUK1.7 x 2SO	2	Single body CA8981 CE0626 Meter Movable Section	LW of Meter 
	Remove the soldering of CA9483. (SW base plate)	1		
	CE0642 (C washer)	1		 Remove in this state.
	CE0666 (A screw)	1	Single body CE0643 CE0645	Just loosen CE0666 (left-hand screw). Displace A contact piece 1 sideways. and remove A cam.
	HK1.4-633SN	1	CE0629	Just displace sideways not to hook when taking out the meter movable part in the next step.
	PUK1.4-605SO	2	CE0626 CE0647 Meter Movable Part	Take care not to lose teflon tube (CE0622). Take care not to break CE0640.

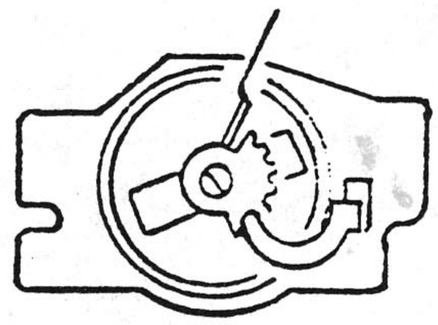
(1) Order of Assembly of Meter Movable Parts

1) Hook CE0647 to CE0625 as shown in the right illustration.

(CE0643 should be being disengaged and the stopper screw of CE0629 should be being removed.)



2) Apply thin coat of grease 023P to the part of the meter movable section to be inserted into the bearing of CE0625 and the part to be inserted into the bearing of CE0626. and insert them into CE0626.



3) Stop HK1.4-633SN of CE0629.

4) Place CE0626 and fix it with two bellock attached PUK1.4-605SO.

Setting Manner of CE0626

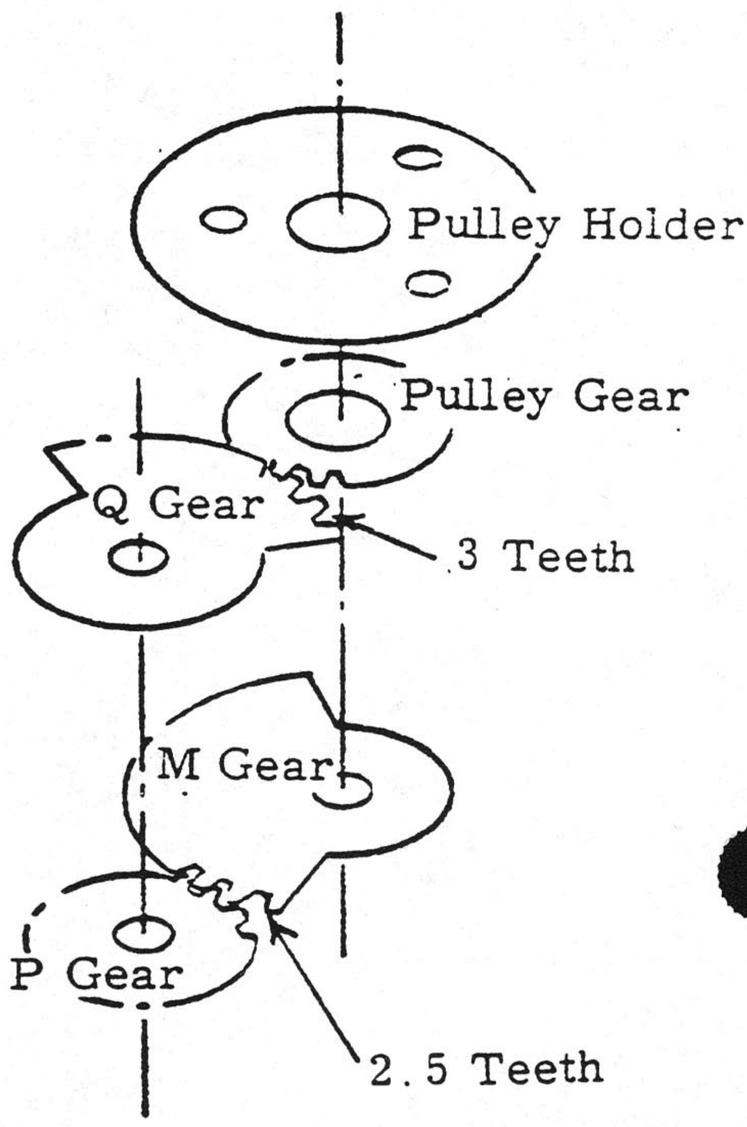
Place the half of CE0626 on the meter movable section and slide it under the A lever while pushing it downward.

5) Hook CE0647. which was hooked to CE0625, on the protrusion of the frame of the meter movable section.

6) Place CE0643. fix it with CE0642 and finally fix it with CE0666 (left-hand screw) after positioning for the A contact piece.

7) Remove PUK1.7-406SO. disengage the pulley gear. which is made in one body with CA8981. and decide the tooth position as shown in the right illustration.

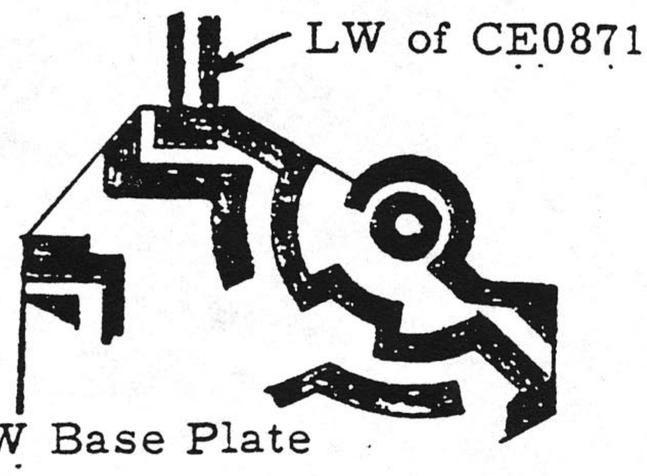
Note: At ASA 12. the eccentric of A lever 2 is centered.



See page 25.

Main Parts	Parts to Remove	Q'ty	Removable Parts	Remarks
CE0579 CE0580 (FP contact point)	Remove the white LW (BRJ-W17) of CE0579 (F contact)	1		
	CE0582 (T screw)	2	CE0579 CA8901 CE0580 CA8900	Take sufficient care when assembling CE0582 as it is easy to break. Glue the red LW to the original position when assembling.

<table>
<tr><th>Main Parts</th><th>Parts to Remove</th><th>Q'ty</th><th>Removable Parts</th><th>Remarks</th></tr>
<tr><td>CE0871
CE0872
(Main switch)</td><td>PUK1.4 x 1.6SO</td><td>2</td><td>Single body
{CE0871
CE0872
CE0874

Note that some are provided with a sub-switch.</td><td> 

Soldering Point of Black LW of Main Switch.

This should be done with CE0579 and CE0580 removed.</td></tr>
<tr><td rowspan="5">CE0555
(Circuit board B)</td><td>PUK2 x 4.5SG</td><td>3</td><td>Single body
{CA8877
CA8888

CE0520
CE0521
CE0522</td><td>

} Inseparable because these are combined with B cord.</td></tr>
<tr><td>PSK1.4 x 2SO</td><td>4</td><td>CE0519
CE0650</td><td>For the incorporation of the reset button. it is recommend-able to set it on the front cover and then provide to CE0502 together therewith.</td></tr>
<tr><td>PUK1.4 x 1.6SO</td><td>2</td><td>CE0553</td><td></td></tr>
<tr><td>PUK2 x 2.5 SO</td><td>2</td><td>CE0555</td><td>Loosen B cord of CE0546. and remove circuit board B and SL contact piece together.</td></tr>
<tr><td>CE0543
(Right side plate)</td><td colspan="4">See the Repair Manual for OM-1.</td></tr>
<tr><td>CA8410
(Left side plate)</td><td colspan="4">See the Repair Manual for OM-1.</td></tr>
</table>

OLYMPUS
OM-2

OTHERS

OUTLINE OF REPAIRS

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I. FILM WINDING & SHUTTER RELEASE MECHANISMS

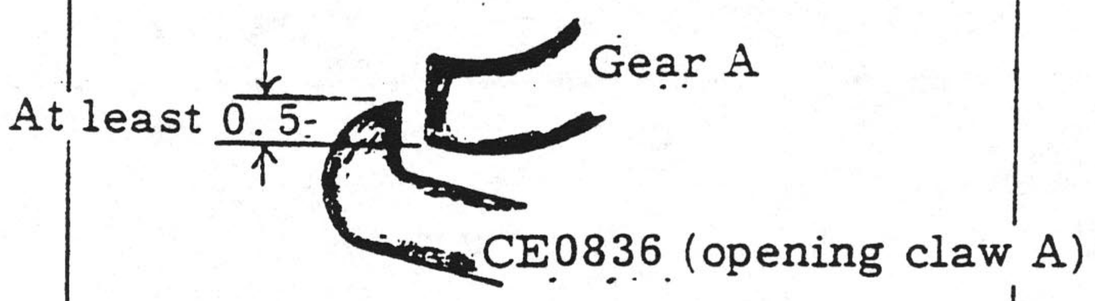
1. Winding binds

Cause	Remedy	Checkup
1) Improper selection of CA8844 (spring lever)	See the OM-1 Repair Manual.	See the OM-1 Repair Manual. (20 - I - D5)
2) Adjustment of brake force improper	See the OM-1 Repair Manual.	

2. Winding impossible

Cause	Remedy	Checkup
1) Parts (spring. screw. etc.) coming loose or fallen off	a. Check parts relative to film winding. b. Check if any shutter part dropped off. c. Check springs and screws of front plate parts for loosening or falling off. Make necessary repairs.	See the OM-1 Repair Manual. (20 - I - D6)
2) CA9051 (ST. screw) stuck with CA9044 (K. inner plate)	See the OM-1 Repair Manual.	
3) Defective CA8419 (lowering hook)	See the OM-1 Repair Manual.	See the OM-1 Repair Manual. (20 - I - D6. 6C)
4) Loosened CA9174 (L bearing)	See the OM-1 Repair Manual.	

3. Shutter automatically released (curtain runs) immediately upon completion of winding.

Cause	Remedy	Checkup
1) Insufficient engagement between CE0836 (opening claw A) and Gear A	a. If insufficient in horizontal direction; replace either CE0836 or Gear A (whole assembly of CE0802; Gears A and B).  b. If insufficient in vertical direction; ◦ Bend CE0836 opening claw to adjust. ◦ Adjust backlash of CE0836. ◦ Replace CE0836. ◦ Replace Gear A (whole assembly of CE0802; Gears A and B).	Curtain should not run and next winding should be impossible until release button is depressed.
2) Improper engagement of CE0839 (M. Lever) and CE0852 (B. Lever)	See the OM-1 Repair Manual.	See the OM-1 Repair Manual.

4. Excessive or insufficient winding

Cause	Remedy	Checkup
1) Improper adjustment of front eccentric	See the OM-1 Repair Manual.	Gently wind up and see if there is a 0.1 - 0.3mm clearance until CE0836 (opening claw) stops after it drops in Gear A.
2) Delayed release of CA8824 (lock lever)	See the OM-1 Repair Manual.	See the OM-1 Repair Manual.

5. Wind lock improper

Cause	Remedy	Checkup
1) Improper operation of related parts	See the OM-1 Repair Manual.	See the OM-1 Repair Manual.

6. Shutter can be released during or prior to winding

Cause	Remedy	Checkup
1) Improper operation of related parts	See the OM-1 Repair Manual.	See the OM-1 Repair Manual.

7. Ineffective detent

Cause	Remedy	Checkup
1) Improper operation or adjustment of CA8819 (K detent)	See the OM-1 Repair Manual.	See the OM-1 Repair Manual.

8. Winding not smooth

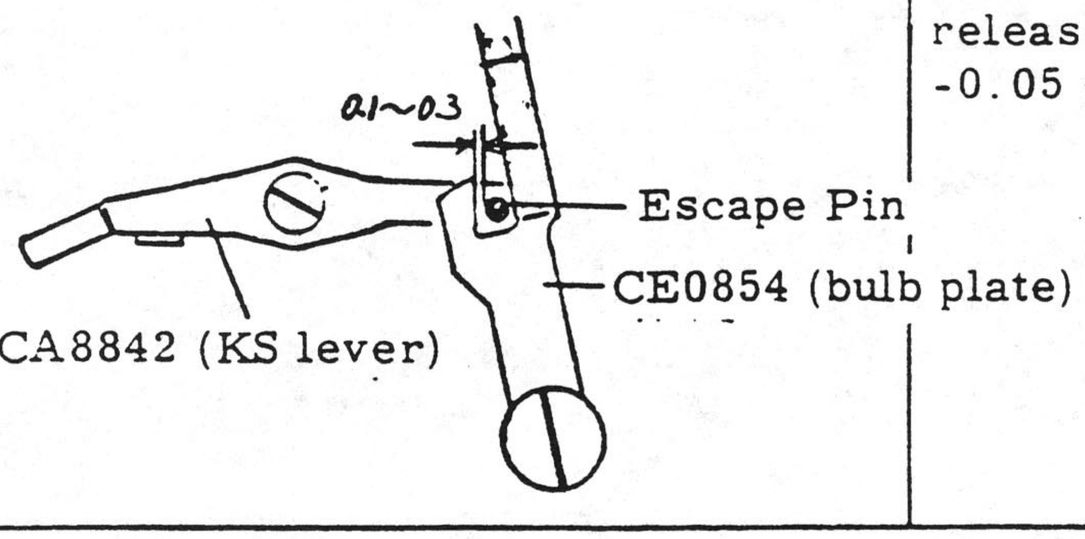
Cause	Remedy	Checkup
1) Engagement of CA8828 (2-gear) and CA8836 (3-gear) stuck together	Adjust at mounting position of CE0801 (S plate).	Winding shall be smooth without excess grating. squeak. etc.
2) Delayed release of CA8586 (A lever spring)	See the OM-1 Repair Manual.	
3) CE0851 (A fitting strip 2) stuck	Check related parts and repair.	
4) Heavy charging force of CA8412 (M charge)	See the OM-1 Repair Manual. (20 - I - D10)	The charging force should be 430 - 500g.

Cause	Remedy	Checkup
5) Engaging of each gear unsmooth	See the OM-1 Repair Manual. (20 - I - D10)	

9. Wind lever not return or binds

Cause	Remedy	Checkup
1) Top plate mounted off position	When CE0503 (Top-cover) is mounted off position, it will cause CA8753 (lever trimming) and CE0531 (button seat) to rub each other. The mounting position of CE0503 should be adjusted.	Wind lever should return surely no matter whether film is loaded or not.
2) CA8774 (lever spring) and CA9185 (frame spring) worn out. broken or entagled	See the OM-1 Repair Manual. (20 - I - D11)	
3) Loosened CA9113 (gear holder)	See the OM-1 Repair Manual. (20 - I - D11)	

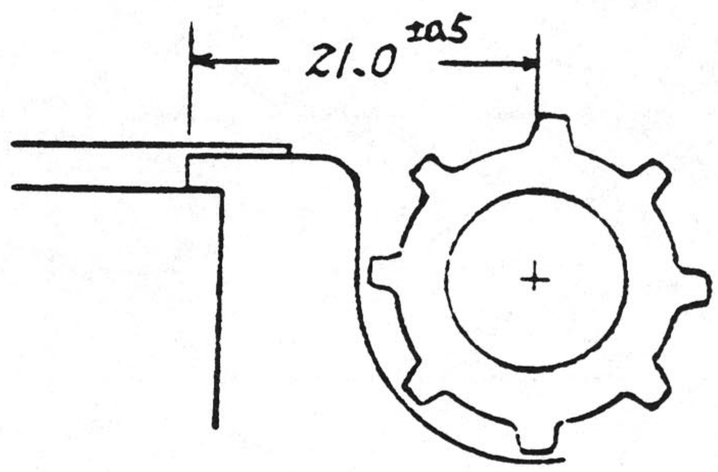
10. Shutter releasing position of button too deep or shallow.

Cause	Remedy	Checkup
1) Improper adjustment of CA9084 (button shaft)	With film wound condition. CA9084 or release screw should be adjusted so that clearance between CE0854 (bulb plate) and escape pin is 0.1 - 0.3. 	Taking the upper edge surface of CE0531 (button seat) as a reference. the shutter should be released within -0.05 ±0.15.

11. Heavy release button

Cause	Remedy	Checkup
1) Operation of release plate	Check and make necessary repairs.	Releasing force of button should be 240 ± 50grs.
2) Releasing force of lifting hook		Releasing force of lifting hook should be 50grs or less.
3) Operation of CE0853 (KL plate)		

12. Perforation position improper

Cause	Remedy	Checkup
1) Improper position of sprocket	See the OM-1 Repair Manual. (20 - I - D13) Note: CA8785 (claw gear) → CE0518	See the OM-1 Repair Manual.
2) Detent ineffective on the way of winding (See the OM-1 Repair Manual)		When sprocket is pressed toward mask in wound condition, the distance between edge of mask and sprocket tooth should be 21.0 ± 0.5mm.

13. Film counter plate not progress or return to "S"

Cause	Remedy	Checkup
1) Improper positioning of CE0518 (claw gear)	See the OM-1 Repair Manual. Note: CA8784 (frame gear) → CE0517 CA8785 (claw gear) → CE0518	See the OM-1 Repair Manual.

Cause	Remedy	Checkup
2) Improper positioning of CE0516 (FC returning lever)	See the OM-1 Repair Manual. Note: CA8775 → CA9186 CA8778 → CE0516	
3) Deformed CA8786 (C ring)	See the OM-1 Repair Manual.	
4) Improper positioning of frame stopper	See the OM-1 Repair Manual.	See the OM-1 Repair Manual.
5) Adjustment of E pin	See the OM-1 Repair Manual.	
6) Frame spring entangled	See the OM-1 Repair Manual.	
7) Frame window of top plate and frame plate rubbed each other	See the OM-1 Repair Manual.	

14. "S" mark out of position

Cause	Remedy	Checkup
1) Adjustment of CA9184 (KS pin)	See the OM-1 Repair Manual. Note: CA8807 (KS pin) → CA9184 CA8798 (KS shaft) → CA8848	See the OM-1 Repair Manual.
2) Improper gluing position of frame plate	Correct the position.	

15. Insufficient allowance after shutter release by self-timer

Cause	Remedy	Checkup
1) Adjustment of shutter matching	See the OM-1 Repair Manual.	See the OM-1 Repair Manual.

16. CA9072 (ST-lever) titled

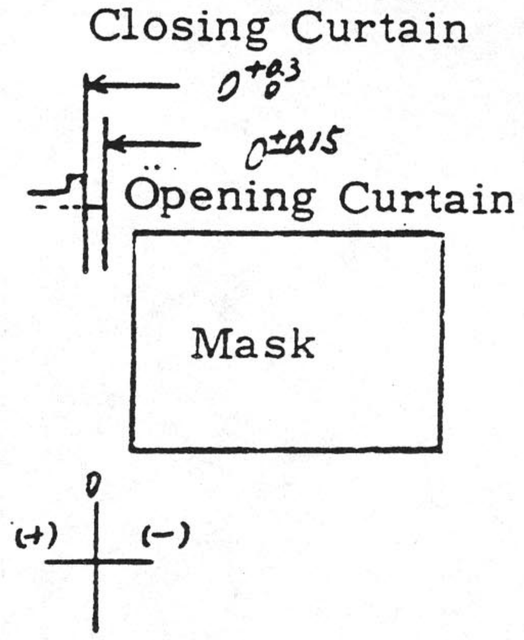
Cause	Remedy	Checkup
1) S-stopper pin of self-timer not properly adjusted	See the OM-1 Repair Manual.	See the OM-1 Repair Manual.

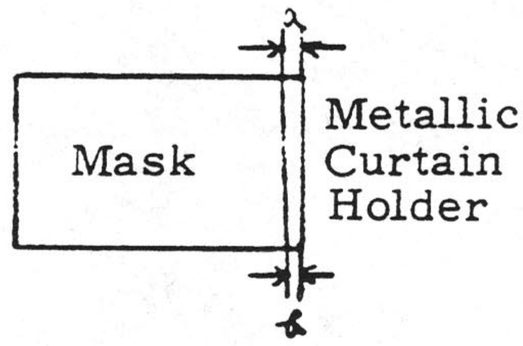
II. SHUTTER & MIRROR MECHANISMS

1. Curtain speed improper

Cause	Remedy	Checkup
1) Improper adjustment of CA8531 (tension nut)	See the OM-1 Repair Manual. Note: Never touch or smudge the curtain to prevent change in EE values.	The speed of both curtains should be 11.5 ±0.1ms. The speed of opening curtain is desirablly faster.

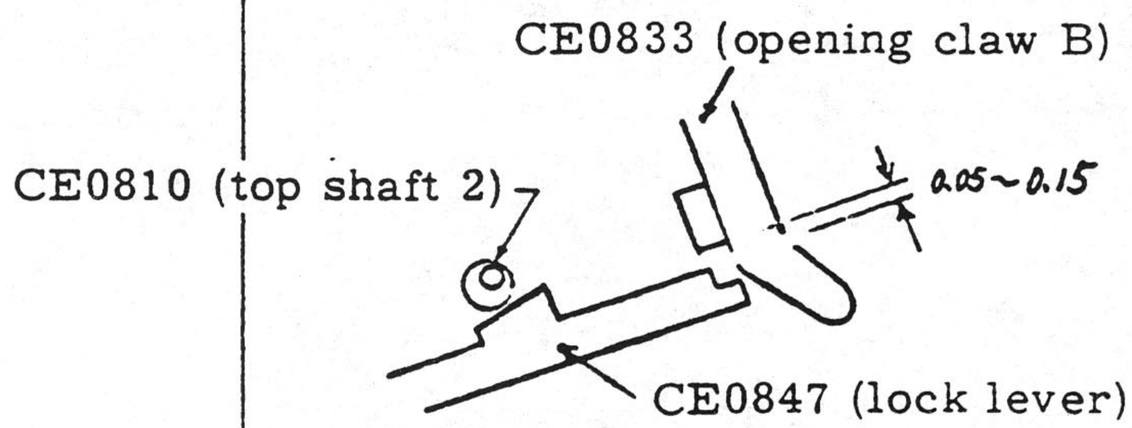
2. Opening curtain bounces

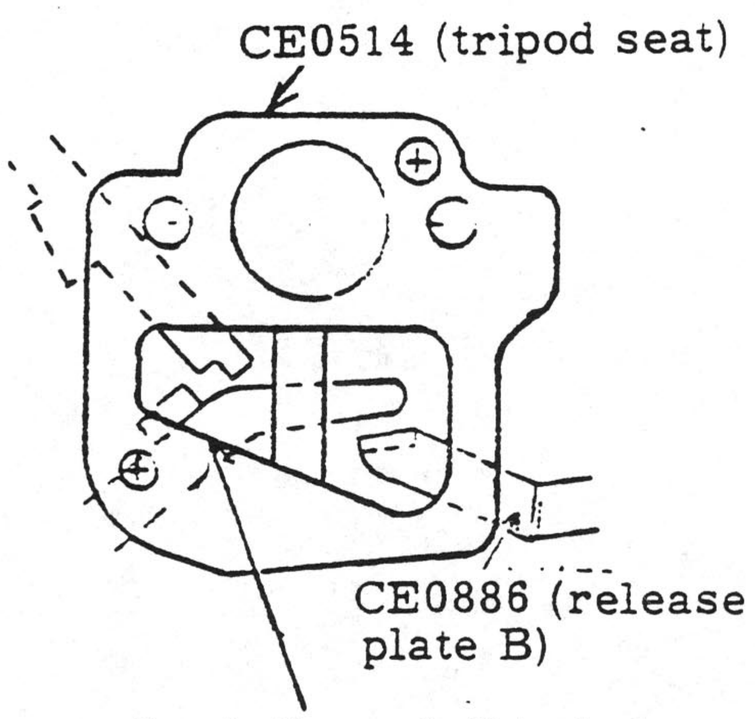
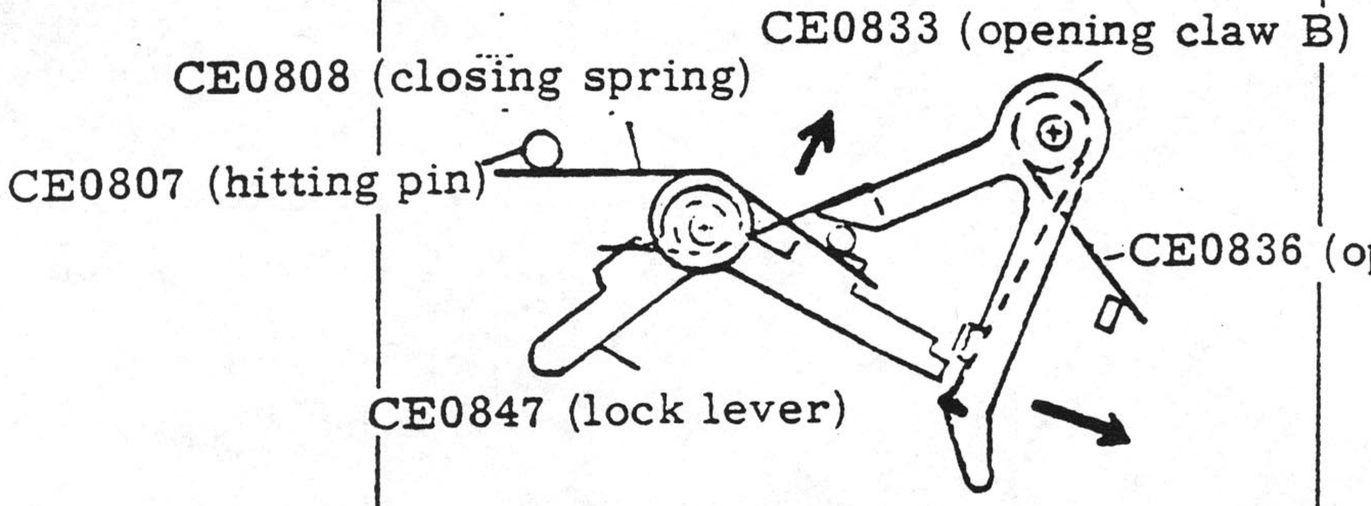
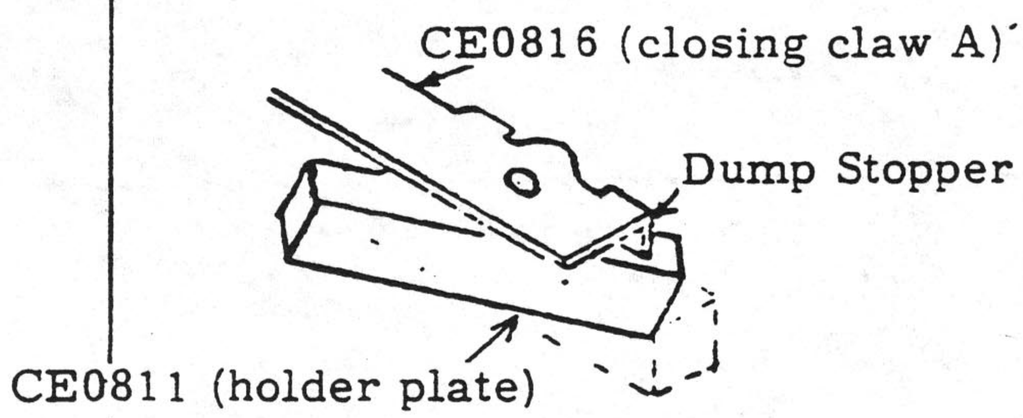
Cause	Remedy	Checkup
1) Adjustment of curtain position improper	See the OM-1 Repair Manual. Note: Do not touch or smudge the curtain. CA8519 (sylinder shaft A)→CA8661 CA8592 (opening claw) ⟶ CE0832 CA8520 (sylinder shaft B)→CA8662 CA8521 (bottom stopper)→CA9382 CA8522 (top stopper) ⟶ CA9388	

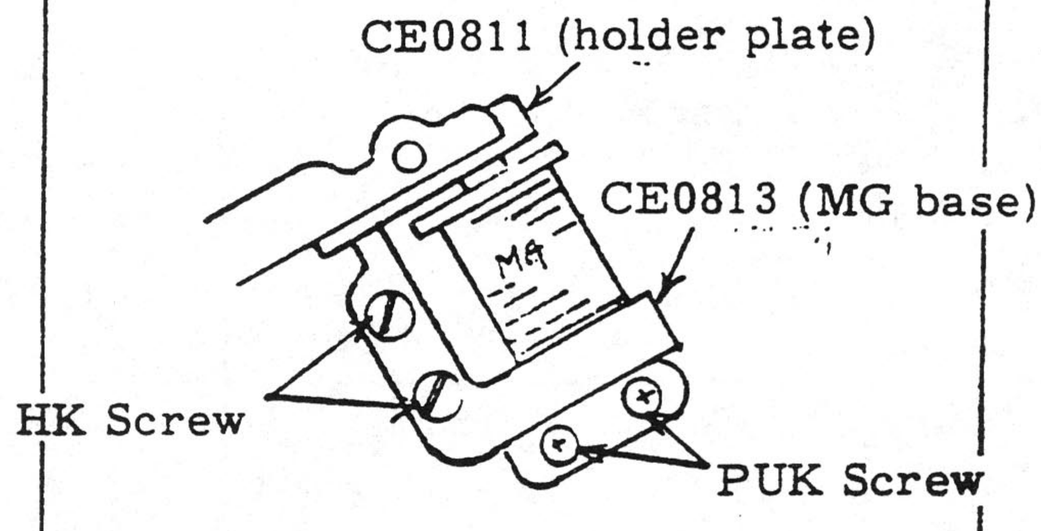
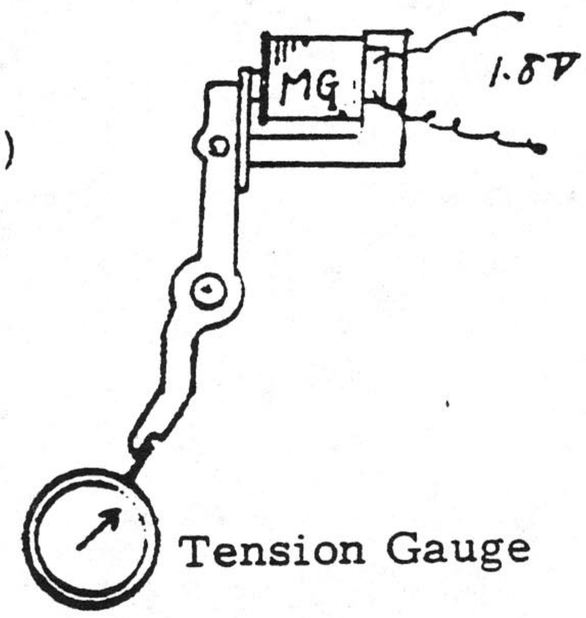
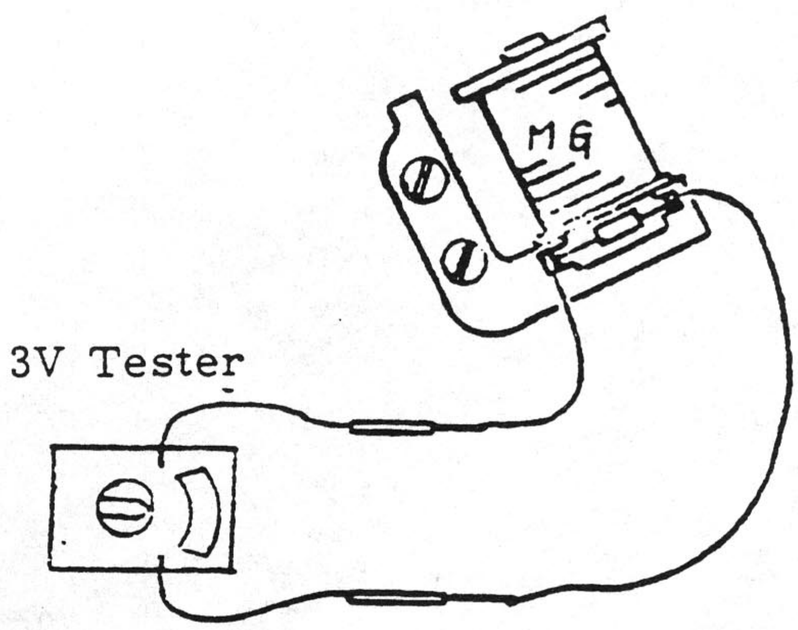
Cause	Remedy	Checkup
	Fine adjustment: Rotate CA8666 (locating seat) of cylinders A and B for fine adjustment of opening and closing curtain positions.	Inclination of curtain: The parallelism against camera mask should be 0.2 or less in the vertical direction.  Difference between a and b should be 0.2 or less. Overlapping of curtain holders: The overlapping of curtain holders should be 2.5mm or more at every position of the picture screen (the curtain holder width is 3mm.)
2) Opening curtain stops at improper position	See the OM-1 Repair Manual. Note: CA8538 (opening curtain) → CE0857 CA8519 (sylinder shaft A) → CA8661 CA8517 (sylinder stopper) → CA8666 (locating seat) CA8501 (S plate) ⟶ CE0801	3.7 ± 0.3 when the protrusion of gear A is struck against CE0801 (S plate). See the OM-1 Repair Manual.
3) Brake adjustment improper	See the OM-1 Repair Manual. Note: CA8501 (S plate) ⟶ CE0801 A-eccentric should be turned clockwise. The part. with which a clearance of 0.05 - 0.2mm is not obtained, is acceptable if its metallic striking noise against CE0801 (S plate) is not heard.	See the OM-1 Repair Manual.

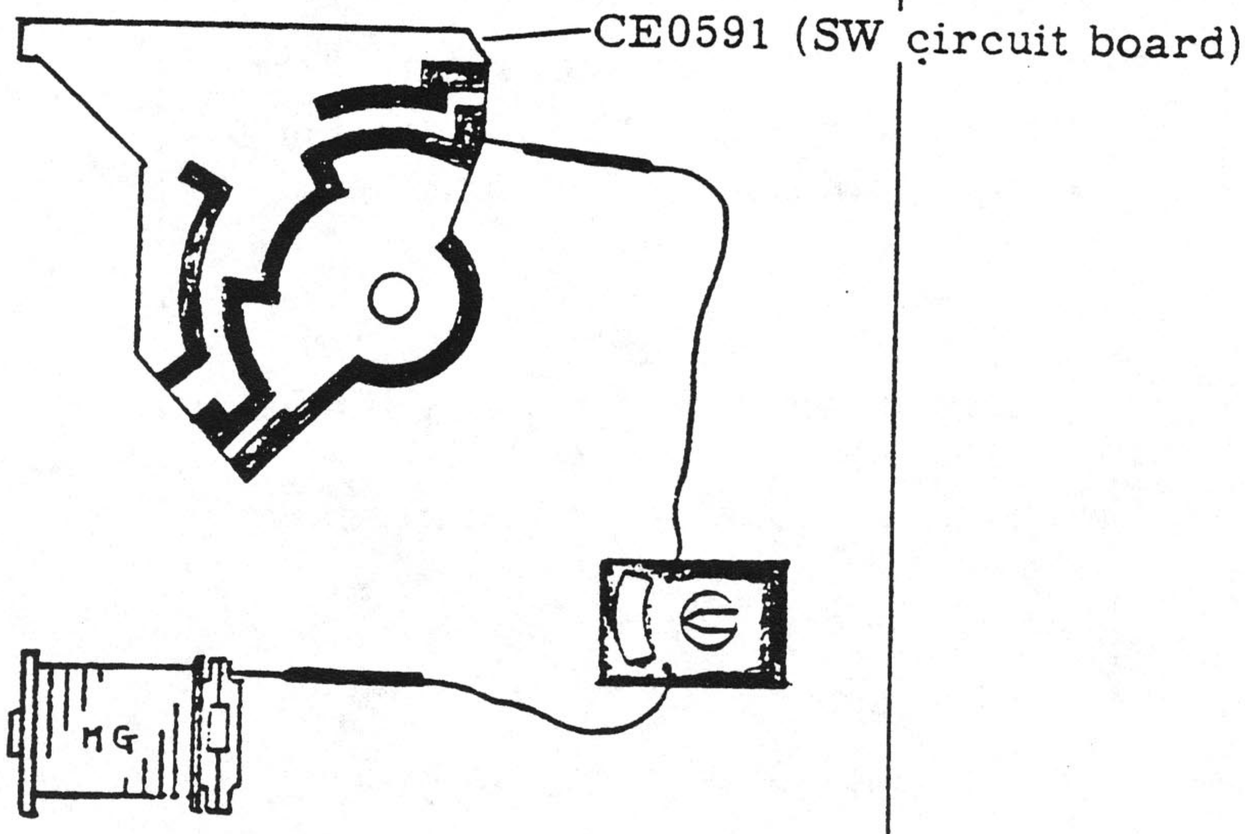
Cause	Remedy	Checkup
4) Spring tension of CA8586 weak	See the OM-1 Repair Manual. Note: CA8501 (S plate)→ CE0801	
5) A fitting strip 2 not operating properly	See the OM-1 Repair Manual.	
6) Inaccuracy in surface finish of friction ring of CA8661 (sylinder shaft A)	See the OM-1 Repair Manual.	

3. Shutter locked

Cause	Remedy	Checkup
1) Defective power supply	a. Check battery voltage. b. Check shortcircuit between metallic dowel of CE0942 (switching board) and CA9483 (SW plate). c. Check shortcircuit between CE0507 (cell cover) and PUK1.7-5SN.	The lock voltage is 2.34 ± 0.04V or less.
2) Defective CE0801 (S plate)	a. Check if clearance between CE0847 (lock lever) and CE0833 (opening claw B) is small. 	When CE0502 (front plate) is unremoved. remove CE0504 (bottom plate) and look through the hole of CE0514 (tripod seat). The use of loupe of 10 - 20 magnifications is recommendable.

Cause	Remedy	Checkup
	Set the shutter dial to any positions other than "B"; press closing claw A lightly to the MG and operate CE0833 (opening claw B) and confirm that the clearance is as above when CE0833 passes the tip of CE0847 (lock lever). This adjustment is to be done with CE0810 (top shaft 2). (CE0502 (front plate) should have been removed.)	
	b. CE0836 (opening spring A) is weaker than CE0808 (closing spring)  Replace CE0836 (opening spring A).	
	c. CE0811 (holder plate) rides over the dump stopper of CE0816 (closing claw A).  Replace CE0811, which is fixed to CE0816 with E ring.	Take care not to hurt the attractive surface of CE0811. If not. attractive force will be decreased.

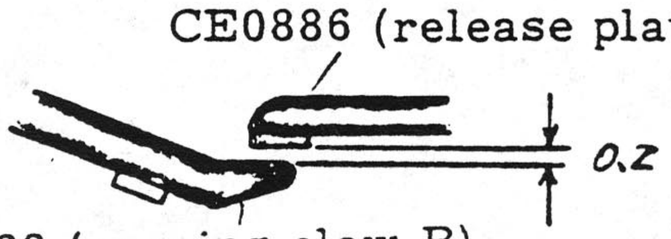
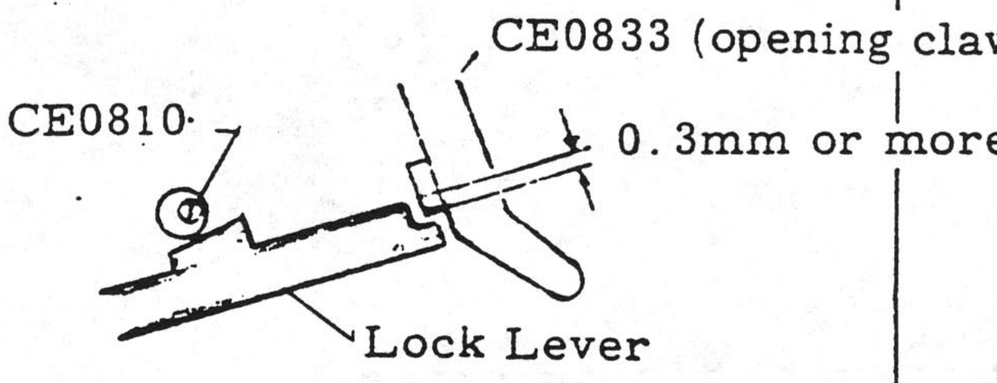
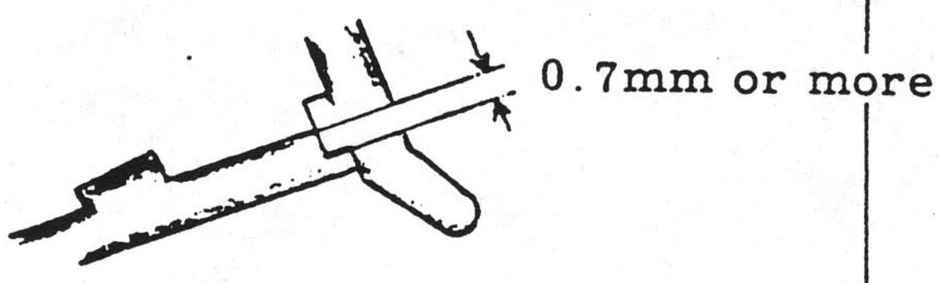
Cause	Remedy	Checkup
	d. MG attractive force is too weak. (Improper MG position)  Adjust PUK and HK screws so that MG plate is made parallel at the center of CE0811 (holder plate).	Attractive force should be 60grs or greater at 1.8V. 
	e. Coil is broken 	Normal if coil is conductive when checking by a 6V tester with about 600Ω resistance. If nonconductive. replace MG.
3) Defective main switch	a. Check for brakage of each contact piece of main switch. b. Solder of main switch is removed. c. The main switch is contacted improperly.	

Cause	Remedy	Checkup
	 Remove CE0503 (top plate) and CE0955 (mat) with the mirror kept up. and check by a tester if there is conduction.	Normal if resistance is ≒0 Ω .
4) Defective lead wire	a. Check RBJ-B170 (black LW) between the battery compartment and CE0591 for shortcircuit. b. CE0507 (cell cover) and PUK1.7-5SN are shortcircuited. c. The black lead wire is jammed between the main body and CE0502 (front plate) on the upper side of the main switch.	Take out batteries. disconnect the black lead wire from SW circuit board and check for shortcircuit with the body by a tester. Normal if resistance is ≒10 Ω . and ∞ on the reverse side. when measuring with the (-) probe of the tester applied to the black LW and the (+) probe to the body.
5) Defective CE0914 (M circuit board)	a. Check for the ineffective soldering on FET and correct the soldering. b. Shortcircuit with IS001: As the metal case of IC is applied with negative potential, it is shortcircuited if contacted to IS001 body.	

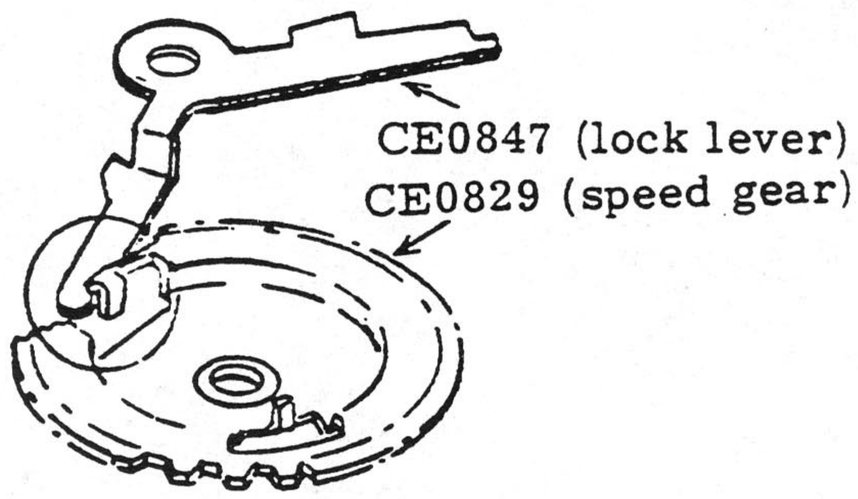
Cause	Remedy	Checkup
	Adjustment of IC height: The clearance between CE0914 (M circuit board) and IC is to be made about 0.3mm. (0.3-clearance jig is available.) c. Shortcircuit between CE0913 (change plate 3) and soldered portion. d. Shutter lock at high ASA setting due to OFFset change. See the section for OFFset adjustment. Check above and make necessary repair.	
6) Defective CE0645 (AR circuit board)	a. Shortcircuit between CE0636 (A-contact piece 1) and periphery of CE0644 (cam holder). b. Shortcircuit between the soldered portion of CE0637 (A-contact piece 2) and CE0643 (A cam). c. Shortcircuit between CE0637 and CE0644 (cam holder) due to the mounting of CE0503 (top plate). d. Shortcircuit between CE0645 (AR circuit board) and CE0501 (body). Check for above points and make necessary repair.	

4. Shutter not locked

Cause	Remedy	Checkup
1) Improper adjustment of CE0886 (release plate B)	a. The clearance between CE0833 (opening claw B) and CE0886 should be about 0.2mm when the shutter is charged. Adjust it by bending the tip of CE0886.	Look through the hole of CE0514 (tripod seat). See Section II - 3 -2) a.

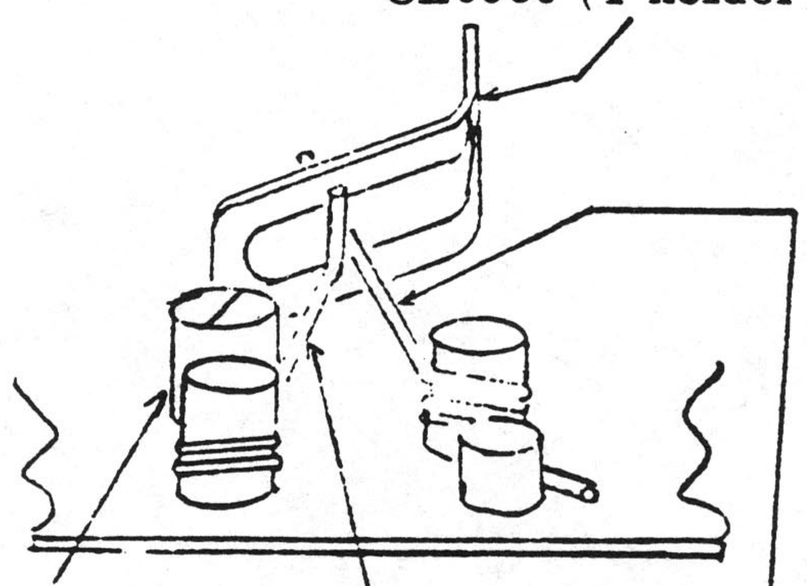
Cause	Remedy	Checkup
	 b. CE0886 should be disengaged from the hook of CE0885 (release plate B) smoothly when operating CE0885 in the film wound condition.	
	c. There should be a clearance between CE0833 (opening claw B) and CE0847 (lock lever) when striking the CE0816 (closing claw A) against MG. except at "B".	See Section II-3-2)-a).
	d. When CE0885 is disengaged by one step except at "B". CE0833 should be engaged by 0.3mm or more with a clearance at the notch of lock lever.	See through the hole of CE0514 using a magnifier and confirm. See Section II-3-2)-a).
	 Adjust with CE0810 (top shaft 2).	
	e. When CE0885 is disengaged by two steps. CE0833 should be locked by the notch of lock lever. 	

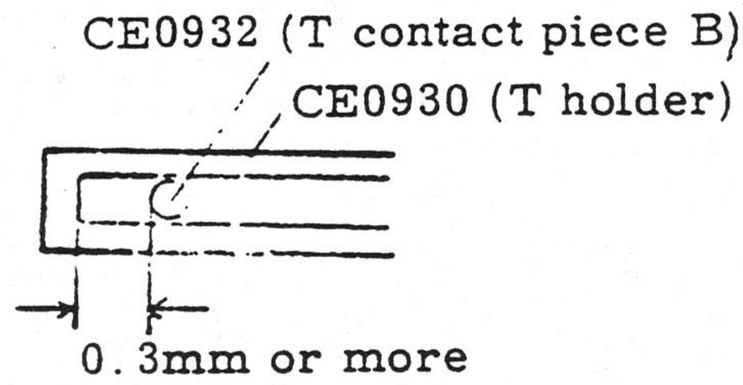
5. Shutter lock not released

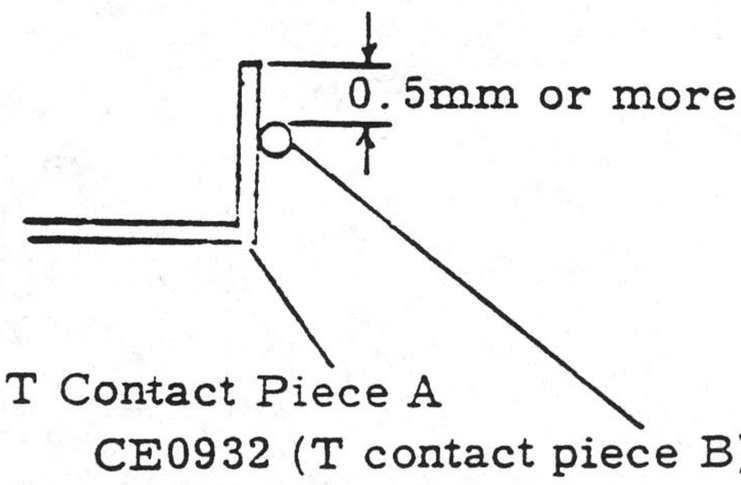
Cause	Remedy	Checkup
1) Defective CE0829 (speed gear)	a. CE0847 (lock lever) does not engage with CE0829.  Adjust the bending of CE0847, or replace CE0829 when the backlash of CE0829 is excessive. (The replacement should be done after CE0914 (M circuit board) is removed.)	Even when CE0829 is slightly moved up and down, CE0847 should be engaged therewith by more than 2/3 of the plate thickness.
2) Defective CE0886 (release plate B)	a. Insufficient driving force due to defective operation of CE0886. b. Excessive force of CE0833 (opening claw B). Clean or replace the part.	

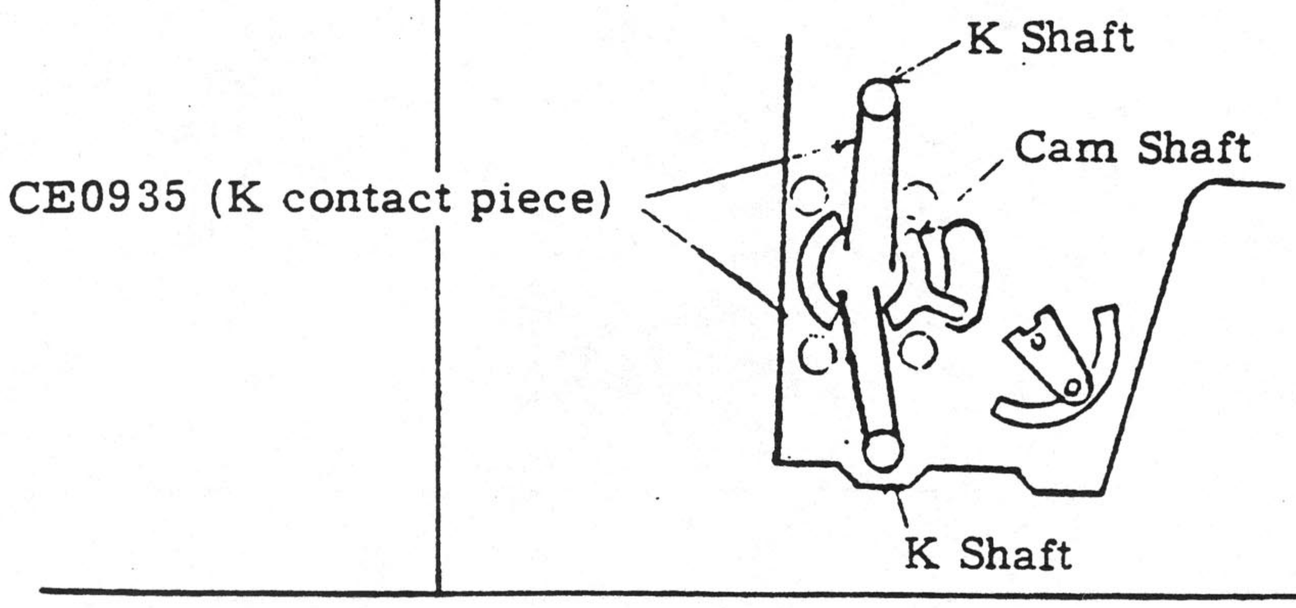
6. Shutter fully opened both at AUTO and MANUAL

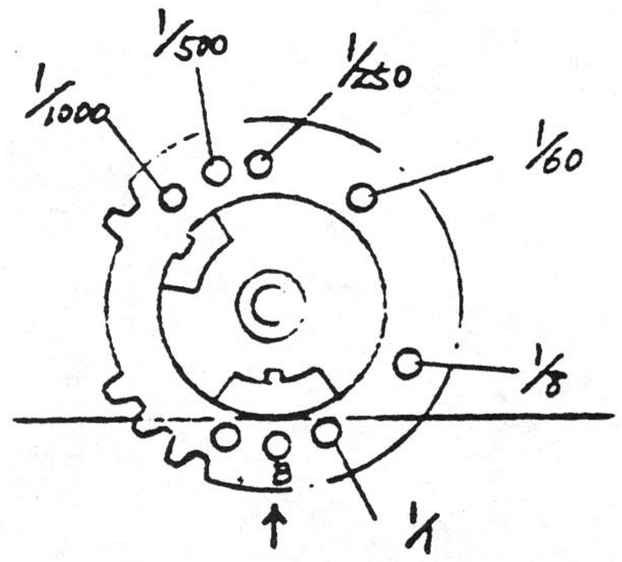
Cause	Remedy	Checkup
1) Lead wire and relateds	a. Shortcircuit between purple lead wire and main body.	Normal if resistance between auto synch contact (CE0526) and main body is $\fallingdotseq$10KΩ when measured by a tester.

<table>
<tr><th>Cause</th><th>Remedy</th><th>Checkup</th></tr>
<tr><td>2) Trigger and relateds</td><td>a. CE0932 (T contact piece B) is being disengaged from CE0930 (T holder) and always turned on.
 

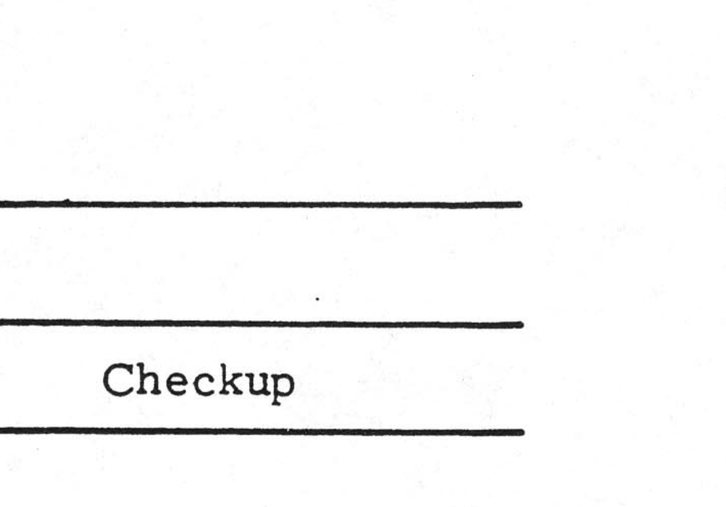
The above illustration shows the condition of CE0930 and T contact pieces A and B after winding the film.</td><td> 

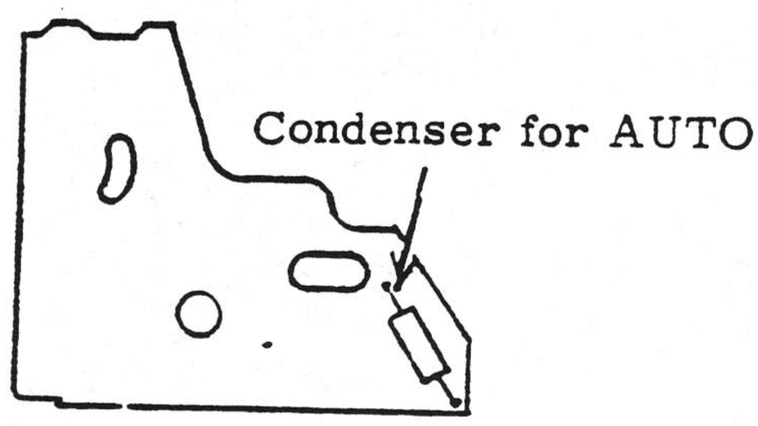
The above illustration shows the position of CE0932 after winding.
 

The above illustration shows the position of T contact pieces A. B after winding the film.
After the opening curtain runs. the contacts should positively be turned off.</td></tr>
<tr><td></td><td>b. CE0931 (T holder) contacts CE0930 (T contact piece A).
c. The T contact pieces A and B are not separated.
Adjustment should be made as above.</td><td></td></tr>
<tr><td>3) Defective CE0914 (M circuit board)</td><td>a. Improper soldering of FET (defective 1V line).
b. Defective IS001 (OFFset displaced).
c. Broken or disengaged CE0935 (K contact piece).
 
</td><td></td></tr>
</table>

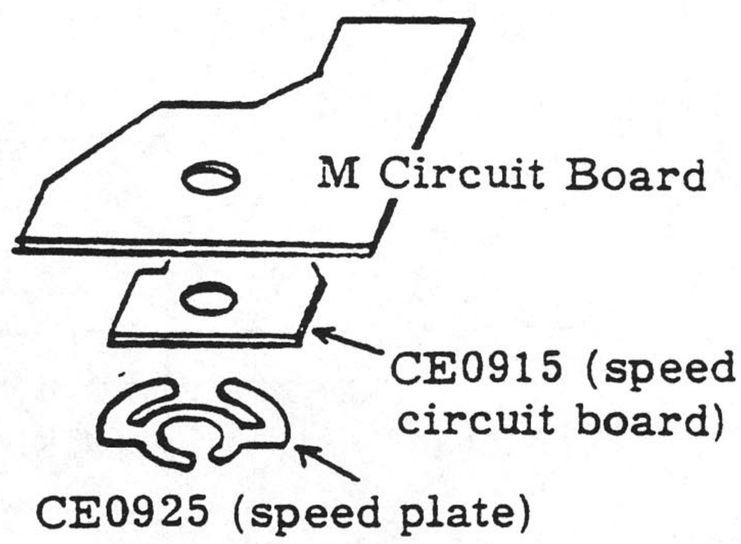
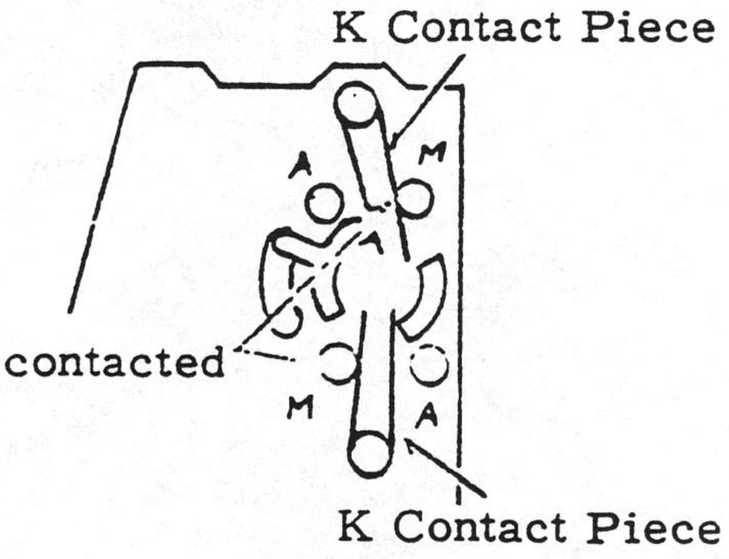
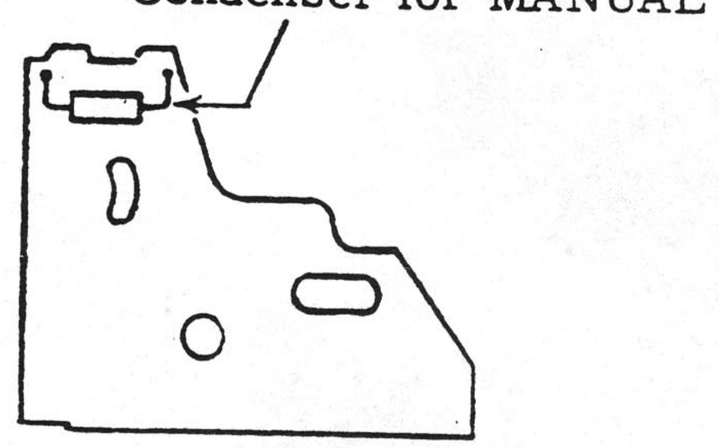
Cause	Remedy	Checkup
	d. Displaced position of CE0829 (speed gear).  When each hole comes to the front (arrowed location), corresponding shutter speed is set. The above illustration shows "B" setting.	
	e. Pattern to K-shaft is broken. See the illustration in c.	

7. Shutter fully opened at AUTO

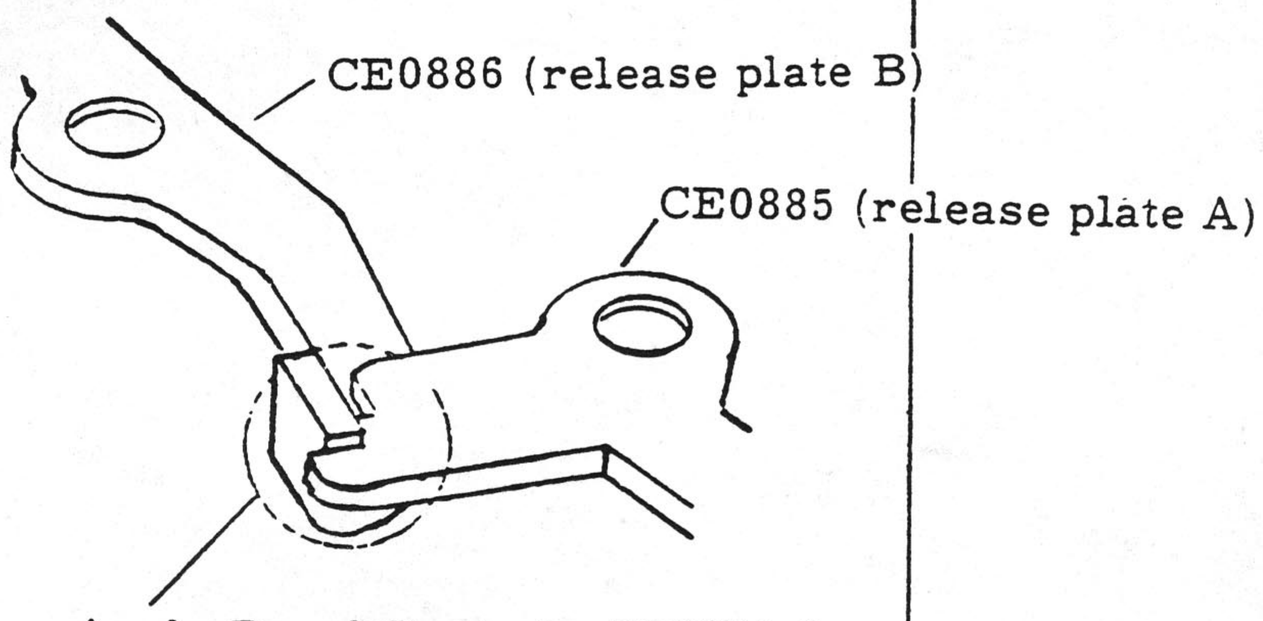
Cause	Remedy	Checkup
1) Broken wire or contact failure of ASA resistor	a. White LW (RBJ-W105) or yellow LW (RBJ-Y105) of CE0640 (circuit board A) is broken or poorly soldered. b. Broken pattern due to damaged CE0640. c. Contact failure of CE0636 and CE0637 (A contact pieces 1, 2).	
2) Contact failure of CE0935 (K contact piece)	a. Insufficient switching due to insufficient adjustment of CE0910 (charge plate 2). b. Soiled or dusty contacting surface.	

Cause	Remedy	Checkup
3) Defective condenser for AUTO	a. The condenser for AUTO is disconnected or poorly soldered. b. Shortcircuit in the condenser for AUTO.	

8. Shutter fully opened at MANUAL

Cause	Remedy	Checkup
1) Defective CE0915 (speed circuit board)	a. White LW (RBJ-W20) or yellow LW (RBJ-Y30) of CE0915 is broken or poorly soldered. b. Contact failure of CE0925. c. Broken pattern of CE0915.	
2) Contact failure of CE0935 (K contact piece)	a. Soiled or dusty contacting surface.	
3) Defective condenser for MANUAL	a. The condenser is disconnected or poorly soldered. b. Shortcircuit in the condenser.	

9. Shutter not released (mechanical fault)

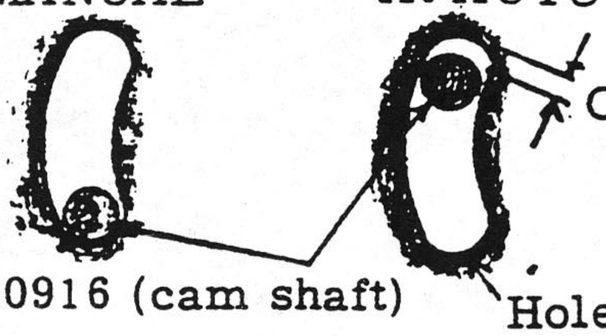
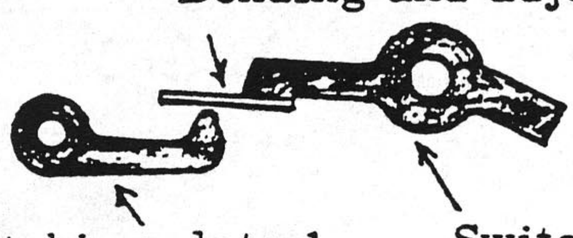
Cause	Remedy	Checkup
1) Defective mirror movement	a. There is no backlash in the left- and -right direction of CE0870 (M frame). Loosen the screw of side plate and adjust the position.	
2) Insufficient CE0886 (release plate B) force	a. Disengaging force of CE0832 (opening claw A) excessive.	
	b. CE0886 operates improperly.	
3) Insufficient CA8439 (S-release) force	a. Tensile force of CA8447 (M spring) is insufficient. Replace it.	
	b. CA8439 rubs against the body. Adjust the position.	
4) Excessive disengaging force of CE0885 (release plate A)	a. Absence of lubricant at the hooking portion with CE0886 (release plate B)  Apply Rocol Paste to CE0885 for about 1mm (B1).	
	b. Tensile force of CE0891 (release spring A) is excessive. c. Surface finish accuracy of the hooking portion of CE0885 is insufficient.	

Cause	Remedy	Checkup
	d. CE0885 operates improperly.	CE0885 should operate smoothly and return with the spring force.

10. Defective shutter speed at AUTO

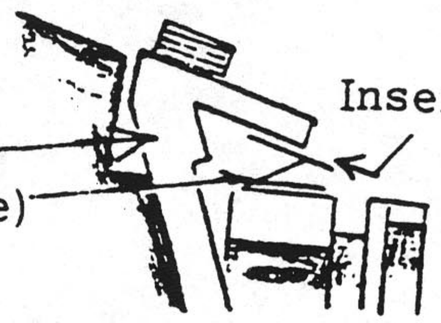
Cause	Remedy	Checkup
1) Defective CE0942 (switching board)	a. Poor soldering of CE0942. b. AUTO/MANUAL switching is defective.	
2) Defective CE0914 (M circuit board)	a. CE0935 (K-contact piece) is disconnected. b. IC is defective. c. SBC is defective. d. Poor soldering on FET.	
3) Defective CE0645 (AR circuit board)	a. CE0636 and CE0637 (A-contact piece 1, 2) are shortcircuited. b. Resistors of CE0645 is short-circuited with body. c. CE0630 (A lever 2) is submerged.	
4) Defective CE0885/0886 (releasing plates) engagement	a. Insufficient charge due to improper adjustment of CE0886. Bend and adjust to meet the following condition. When the wind lever is advanced and CE0886 is set to the 1st step of CE0885. there should be 0.2 - 0.4 mm allowance.	When wound. CE0886 should surely hook on the 1st step of CE0885 with the allowance described at left. There should be allowance between CE0886 and the body.

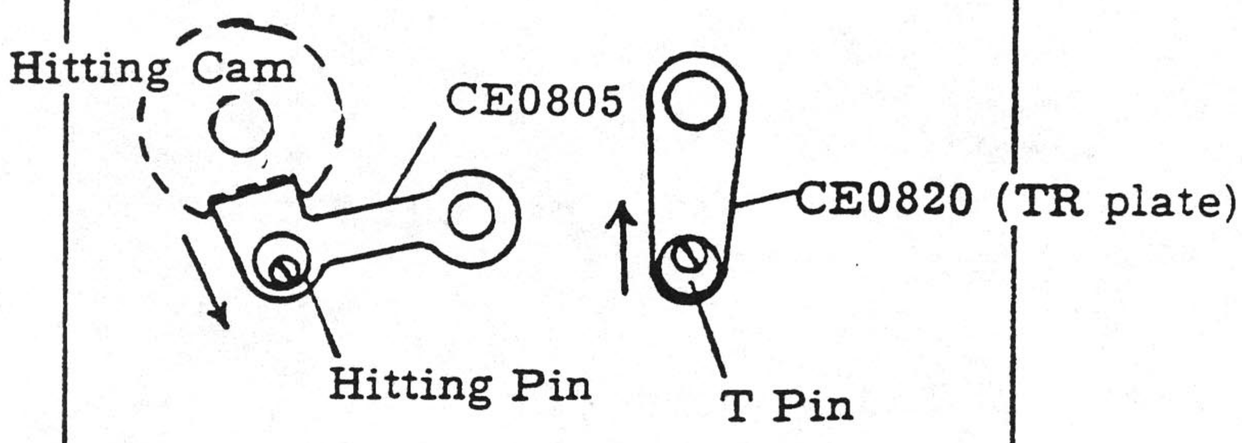
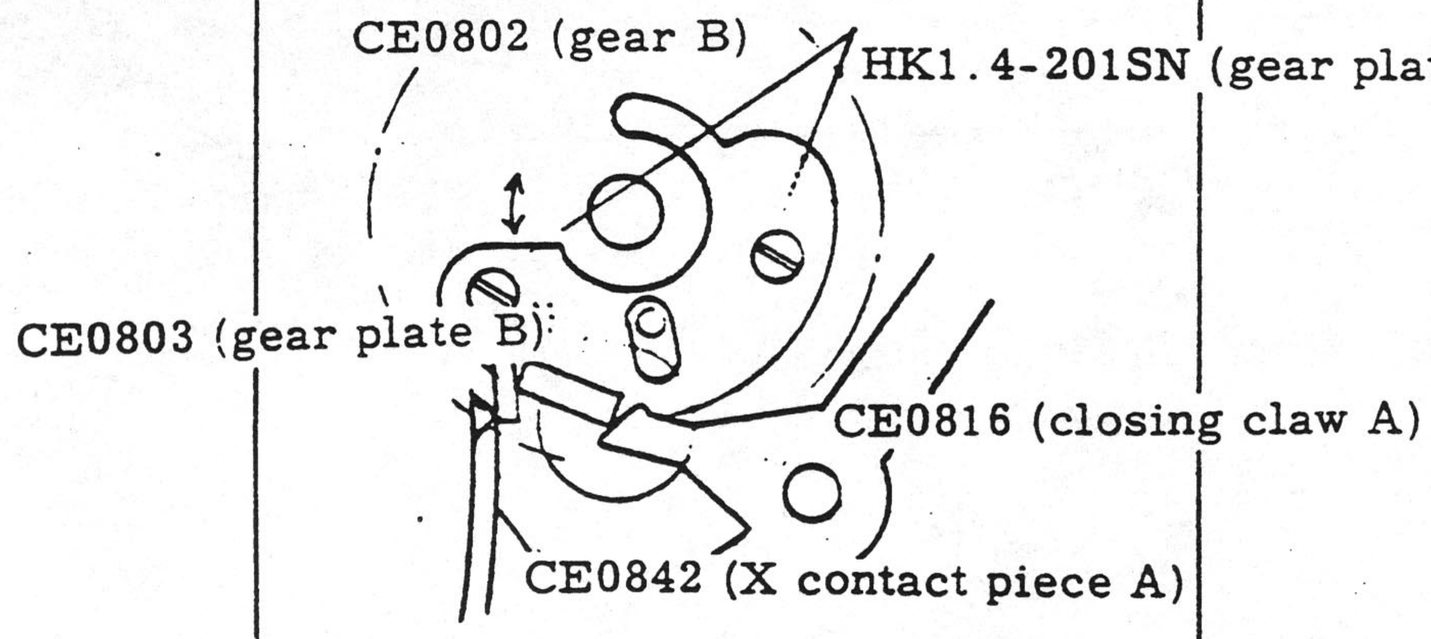
11. Defective shutter speed at MANUAL

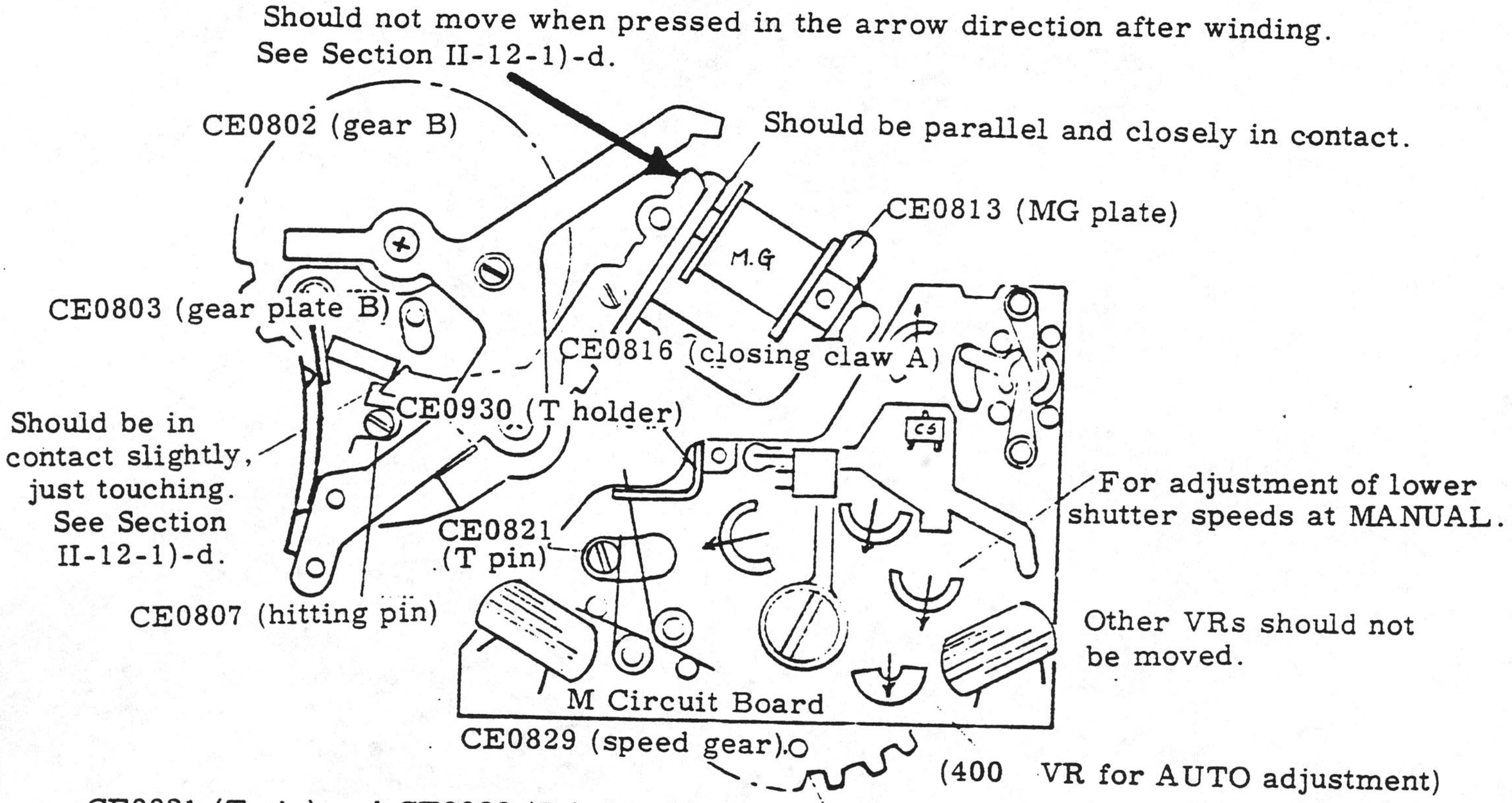
Cause	Remedy	Checkup
1) Defective CE0910 (switching plate) of CE0942 (switching board)	a. Poor soldering of CE0942. Solder it sufficiently. b. CE0910 operates improperly. At MANUAL At AUTO  As seen from lower side. Bend and adjust CE0910 to have the above illustrated condition. Bending and adjusting portion  	
2) Defective CE0885/0886 (release plates) engagement	a. CE0886 is charged insufficiently. See Section II-10-4).	
3) MG related parts	a. MG attractive force is too weak. The surface of CE0811 (attractive plate) is soiled or scratched. ..... Clean or replace CE0811. Note: CE0811 and CE0813 are finished into a mirror surface to increase attractive force. The force lowers considerably if the surface is smudged or scratched.	The attractive force should be 60grs or more at 1.8V. See Section II-3-2)-d.

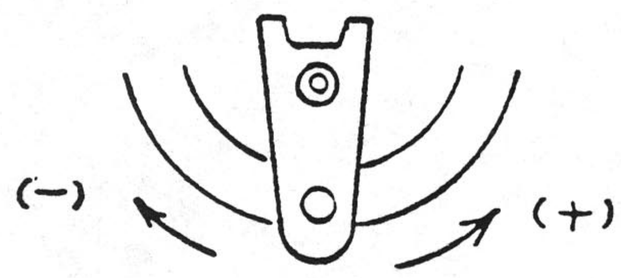
Cause	Remedy	Checkup
4) Defective main switch	a. CE0871 and CE0872 (M contact piece 1. 2) are contacted improperly. See page 74.	
5) Defective M circuit board	a. Poor soldering on FET. Correct soldering. b. CE0925 (speed plate) and CE0915 (shutter speed circuit board) are contacted improperly. Clean CE0915 or replace CE0925. c. Pattern to K shaft is broken. The soldered spot of white LW coming from CE0915. d. Shortcircuit between CE0913 (switching plate 3) and C101 (condenser for MANUAL). e. CE0935 (K contact piece) is detached.	

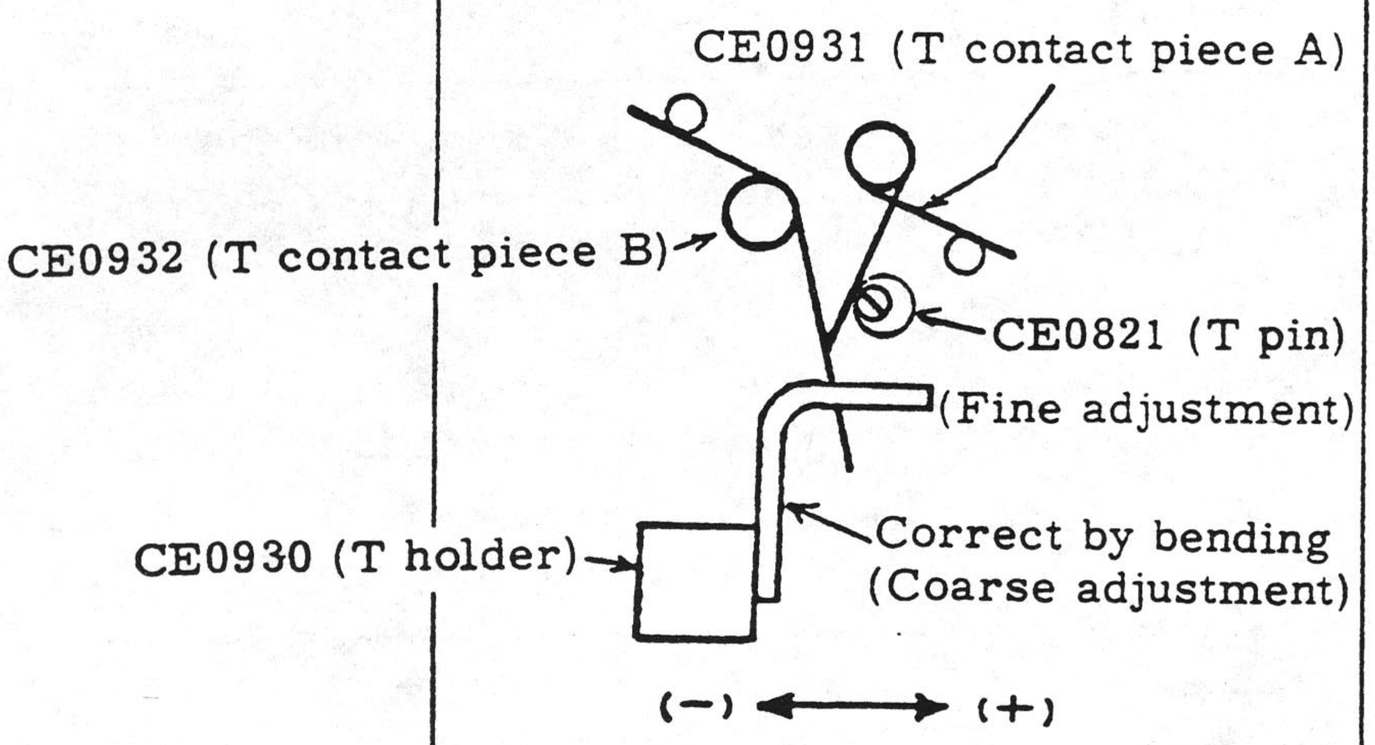
12. Manual shutter speed adjustment

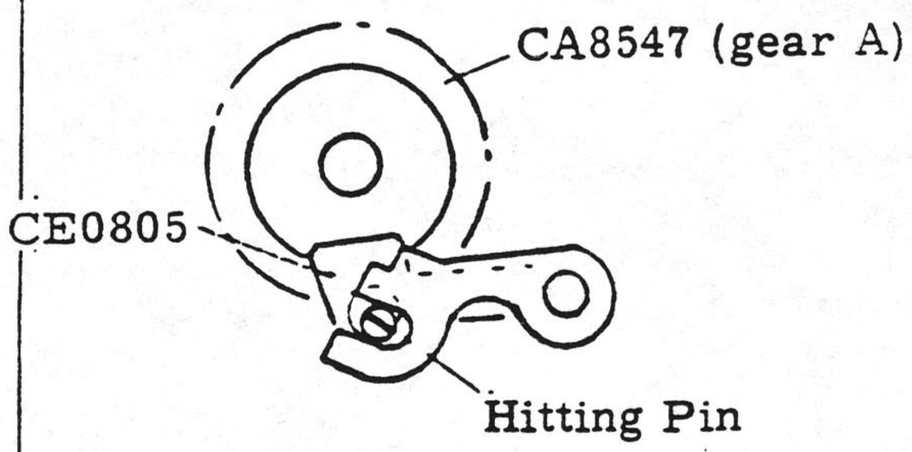
Cause	Remedy	Checkup
1) Preparation for adjustment	a. Power supply voltage is 3.10 ±0.04V. b. When CE0503 (top plate) is removed. insulate CE0524 (S base) from CE0526 (S-contact piece).  	Silver-oxide batteries may be used as the power supply.

Cause	Remedy	Checkup
	c. Adjust the eccentrics of the hitting pin of CE0805 and the T pin of CE0820 (TR plate).  Locate the screw head of eccentrics in the arrowed direction.	
	d. Adjust the clearance between CE0803 (gear plate B) and CE0816 (closing claw A). Loosen CE0803 and fix it in such a degree that it is contacted to CE0816 by the pressure of CE0842 (X contact piece A).  	After winding, carefully return CE0816 (closing claw A) in the spring force effecting direction. Improper if 0816 moves even slightly when it is pressed against MG. Make re-adjustment. See next page.



Cause	Remedy	Checkup
2) Temporary setting of curtain speed	Set the shutter speed to 1/8 sec. (See Section II-6-3)-d if the shutter dial is not attached.) Turn CA8531 (tension nut) of sylinder shafts C & D to have the curtain speed described at right. See the OM-1 Repair Manual. 20-I-D18.	The curtain speed should be 11.5 ± 0.2ms for both the opening and closing curtains. (The speed of opening curtain is recommendably faster.)
3) Setting to 1/8 sec. (Adjustment for lower speeds)	Adjust to 125 ± 5ms with the 30K Ω VR of CE0914 (M circuit board). 	125 ± 5ms

Cause	Remedy	Checkup
4) Adjustment of 1/500 sec.	a. Verify the difference between each shutter speed of 1/500, 1/1000 and 1/250.	2ms between 1/500 sec. and 1/250 sec. 1ms between 1/500 sec. and 1/1000 sec. Note: If the difference is less 2ms between 1/250 sec. and 1/500 sec.. it is acceptable if there is not 1ms difference between 1/500 sec. and 1/1000 sec. (Influence of mini shutter speed. 0.5 - 1.42ms at AUTO)
	b. Adjustment of curtain speed at 1/500 sec. Adjust as described at right with CA8531.	11.5 ± 0.1ms The opening curtain should run faster than the closing curtain. The difference should be 0.15ms or less.
	c. Adjustment of 1/500 sec. shutter speed  	1.96 ± 0.1ms (Adjust to 2 ± 0.5ms coarsely with CE0830 (T holder) and then make fine adjustment with CE0821 (T pin).) See Section II-6-2) for the locational relations between CE0832. CE0831 (T contact pieces A. B) and CE0830. Caution: CE0830 (T holder) is easy to become loose. and thus care should be taken when bending.
	d. Inspect 1/8 sec. if 1/8 sec. is out of 125 ± 5ms, re-adjust with the 30KΩ VR and then adjust 1/500 sec. again.	

Cause	Remedy	Checkup
5) Check of 1/1000 sec.	a. If the difference is greater than 1/1000 between 1/500 sec. and 1/1000 sec.: Minimize the engagement and clearance between CE0816 (closing claw A) and CE0803 (gear plate B). Make the engaging extent to 0.4 - 0.5mm.	See Section II-12-1)-d.
	b. When the difference is smaller than 1/1000 due to smaller mini shutter speed: Adjust with the hitting pin of CE0805. See Section II-12-1)-c. c. When the difference between 1/500 sec. and 1/1000 sec. is smaller than 1/1000:	
6) Adjustment of mini shutter speed	Set to the AUTO mode and short-circuit yellow and white ASA lead wires by placing a 1KΩ resistor in-between.  The hitting pin is an eccentric.	Should be within 0.5 - 1.42ms. (Make 0.8ms as a target.) Fluctuations are acceptable if they are within the shutter speed standards.
7) Check of 1/1000 sec. and 1/500 sec.	Measure 1/8 sec.. high shutter speeds, curtain speeds and mini shutter speed for more than 5 times.	See Specification Standards on the next page.

Specification Standards for Manual Shutter Speed

1. Shutter Curtain Speed

The curtain speed should be 11.5 ± 0.1ms for both opening and closing curtains. The difference in the curtain speed at 1/1000 sec. should be $0\ ^{+0.15}_{-0}$, and the opening curtain should be faster.

2. Exposure Time

Shutter Speed	Unit	Guaranteed Quality	Standard
1/1	1000 ms	871 - 1148 ms	±0.2EV
1/2	500 "	436 - 574 "	"
1/4	250 "	218 - 287 "	"
1/8	125 "	109 - 144 "	"
1/15	62.5 "	54.5 - 71.8 "	"
1/30	31.2 "	27.2 - 35.9 "	"
1/60	15.6 "	13.6 - 17.9 "	"
1/125	7.81 "	6.81 - 8.97 "	"
1/250	3.91 "	3.40 - 4.49 "	"
1/500	1.95 "	1.59 - 2.40 "	±0.3EV
1/1000	0.98 "	0.77 - 1.43 "	±0.1 ±0.45EV

3. Exposure Uneveness

a. At 1/1000, the difference between MAX and MIN of the channels A. B and C should be 0.4EV or less (in the range).

b. At 1/500, 0.3EV or less.

c. At 1/250 - 1/1. 0.15EV or less.

4. Fluctuations

a. Should be 0.55EV or less in the 1/1000 range.

b. Should be 0.3EV or less in the 1/500 - 1/1 range.

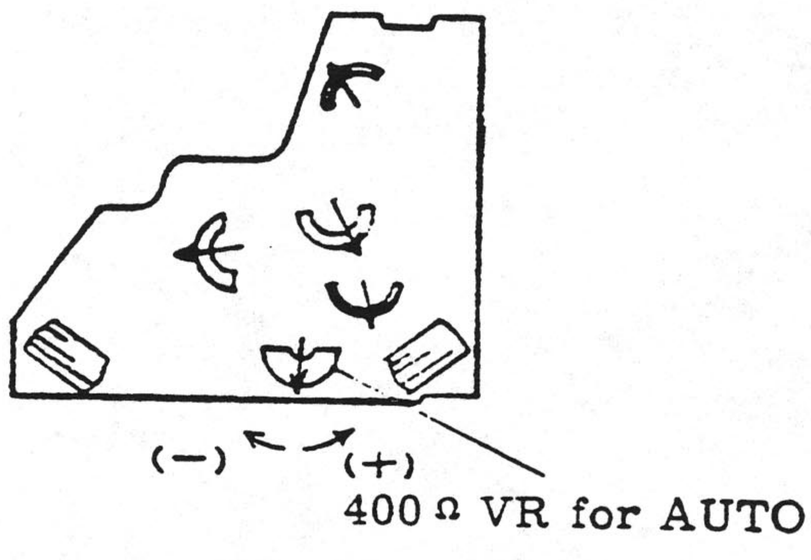
5. Mini Shutter Speed

a. 0.5ms or faster for all channels A, B and C.

b. Exposure time should be 0.5 - 1.42ms (for channel B).

c. Exposure uneveness should be 0.6EV or less.

13. Automatic shutter speed adjustment

Cause	Remedy	Checkup
1) Preparation for adjustment	a. Manual shutter speed adjustment should have been completed. b. Power voltage should be 3.10 ±0.04V. c. Mount an F5.6 jig lens. d. Install CE0955 (mat). e. When CE0503 (top plate) is removed, insulate the 2nd synch terminal.	Silver-oxide batteries may be used as the power supply. When using a constant voltage power supply, NEVER turn on and off the power switch, after the power supply is wired to the camera.
2) Adjustment at BV 11	Make the adjustment with the 400 Ω VR of CE0914 (M circuit board) to 0 ± 0.1EV.  Do not move other VRs.	Within 0 ±0.1EV
3) Adjustment at BVs 14 and 15		BV 14: Within 0 ±0.2EV BV 15: Within 0 ±0.4EV
4) Adjustment at BVs 8 and 4		Within 0 ±0.3EV

Cause	Remedy	Checkup
5) ASA conversion accuracy	Check at BV 8.	

ASA	12	50	100	200	400	800	1600
Accuracy (EV)	0±0.25	0±0.25	Reference	0±0.3	0±0.45	+0.2±0.5	+0.5±0.5
Stage Difference	← 0.7EV or greater →				← 0.5 or greater →		← 0.3 or greater

6) Check of current consumption	Remove the battery compartment cover and place an ampere meter between the bottom plate and the battery.	The current should be 9mA or less at AUTO BV 4 and 13mA or less at Bulb (B).
7) High luminance EV faulty at high ASA settings	This is caused by displacement of OFF set of CE0914 (M circuit board). Readjust the OFF set. Then, conduct the manual shutter speed adjustment and subsequently auto shutter speed adjustment. ∘ See Section of "Adjustment of CE0914 OFF Set". ∘ See Section of "Adjustment of Manual Shutter Speed".	

14. Diagnostic chart for defective shutter (electronic parts)

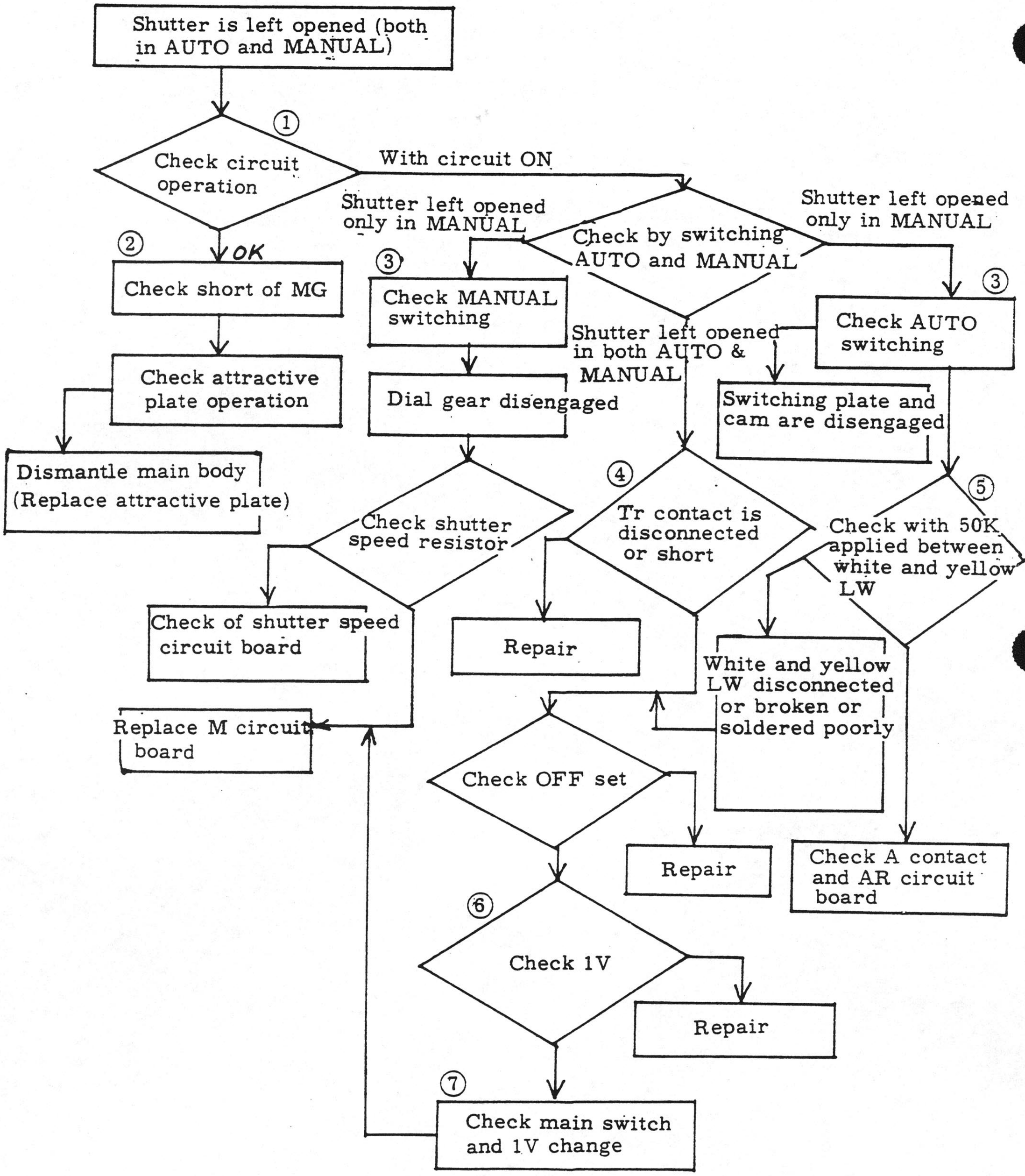
Main possible causes and diagnostic procedures to locate defective parts are given in the following charts.

Interpretation of Chart and Cautions

(1) When each diagnosis (check point) is normal, go downward: go to the lateral step (to right or to left) following the arrow mark if abnormal.

(2) The number in ◯ above the check point describes caution, method, adjustment, etc. below the chart.

(3) For other procedures, see "OUTLINE OF REPAIRS".


Shutter is left opened (both in AUTO and MANUAL)
①
Check circuit operation
With circuit ON
Shutter left opened only in MANUAL
Shutter left opened only in MANUAL
②
OK
Check short of MG
③
Check MANUAL switching
Check by switching AUTO and MANUAL
③
Check AUTO switching
Check attractive plate operation
Shutter left opened in both AUTO & MANUAL
Dial gear disengaged
Switching plate and cam are disengaged
Dismantle main body (Replace attractive plate)
④
Tr contact is disconnected or short
⑤
Check with 50K applied between white and yellow LW
Check shutter speed resistor
Check of shutter speed circuit board
Repair
White and yellow LW disconnected or broken or soldered poorly
Replace M circuit board
Check OFF set
Repair
Check A contact and AR circuit board
⑥
Check 1V
Repair
⑦
Check main switch and 1V change

① Checking of circuit operation

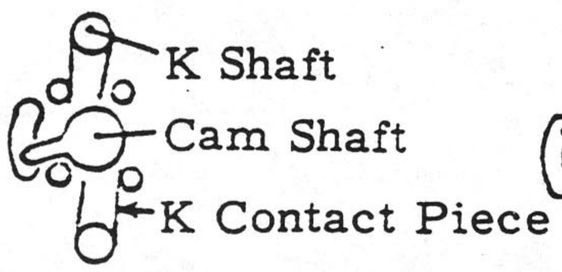
Checking by current comsumption.
MG ON ..... 8 - 9mA OFF ..... 11 - 13mA

② Shorting part of MG

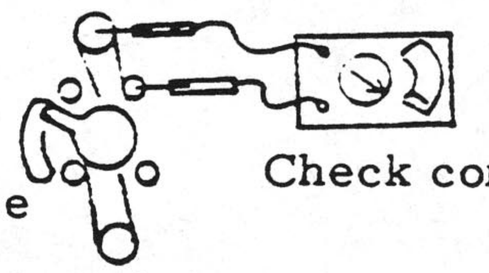
- o 10KΩ sensor and S base
- o MG coil end and body
- o Purple LW and body
- o Others

③ Check of accurate Auto/Manual switching

Check contact of K contact piece at S lever switching.



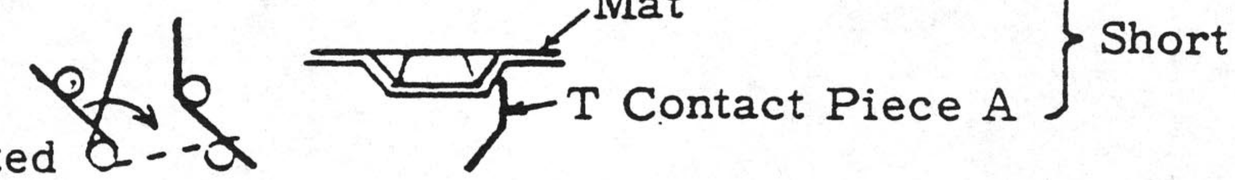
At AUTO



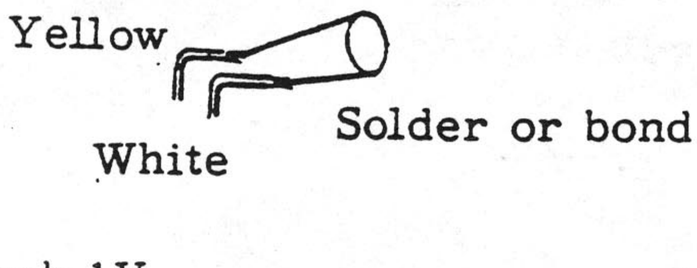
Check continuity by tester 10x or 1x.

At MANUAL

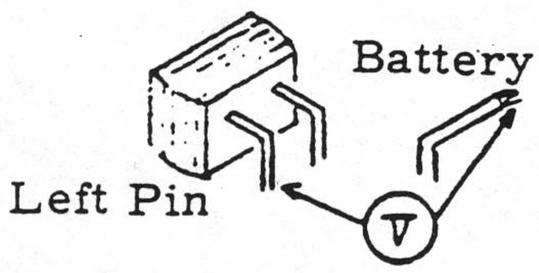
④ Tr. contact disconnected or short



⑤ Disconnect white and yellow LW from circuit board A. and connect 50K resistor in-between.

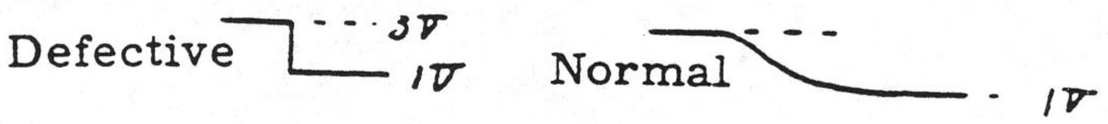


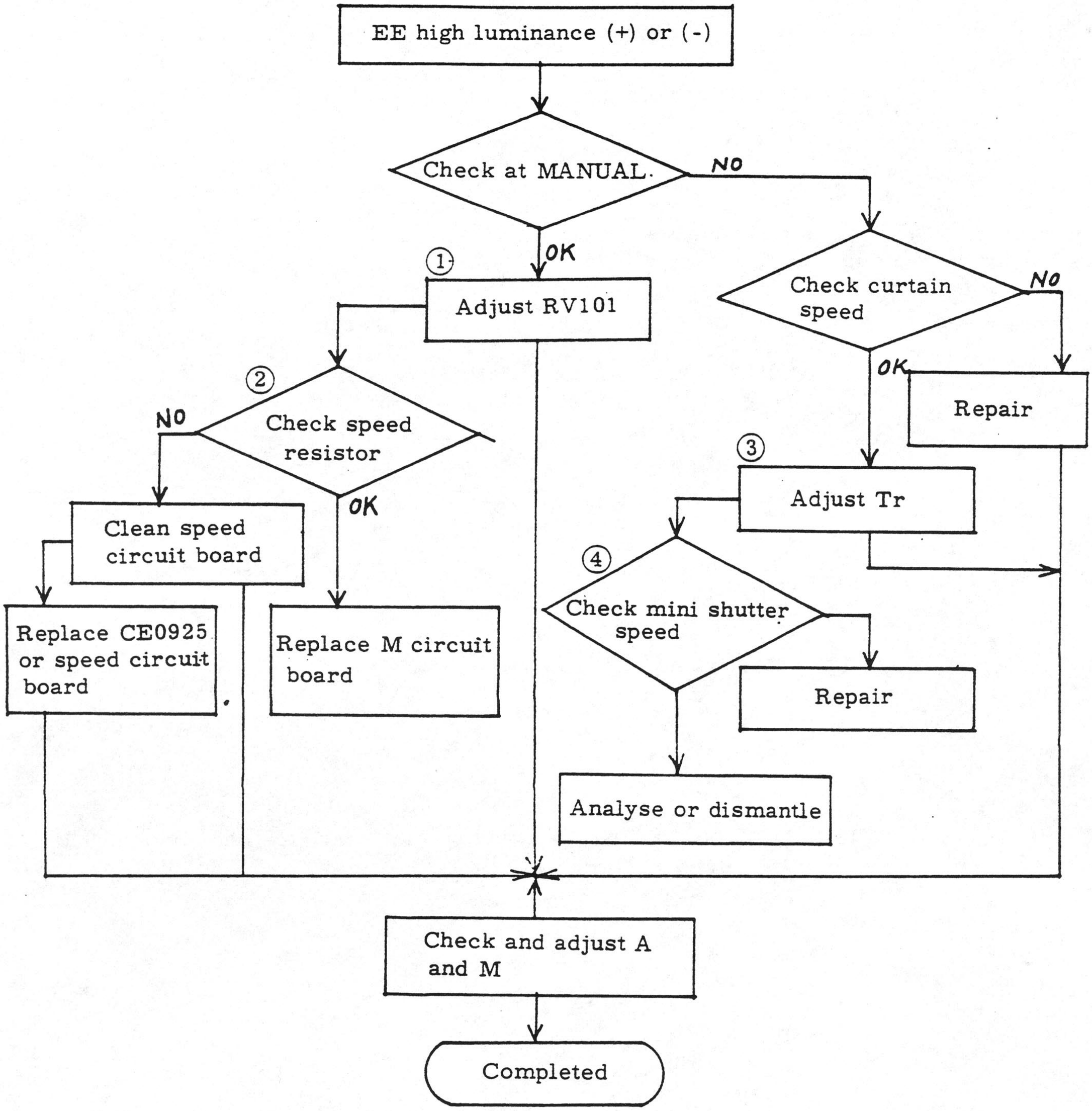
⑥ Check 1V



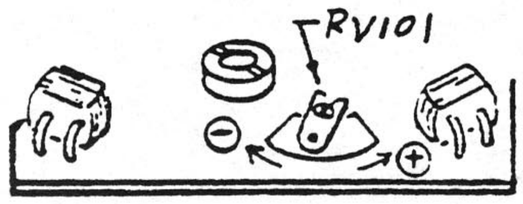
0.99 ± 0.01V
Set SW circuit board to AUTO

⑦ Connect a synchroscope instead of V in 6 and operate main switch to see 1V switching.



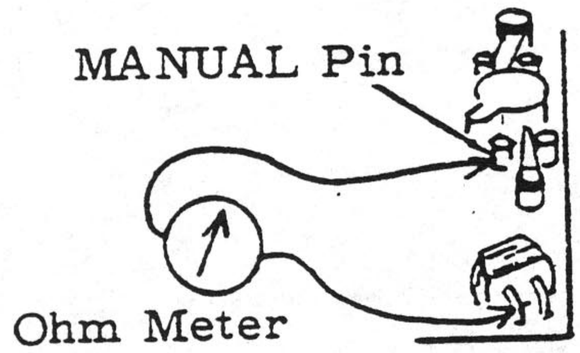

EE high luminance (+) or (-)
Check at MANUAL.
NO
OK
①
Adjust RV101
②
Check speed resistor
NO
OK
Clean speed circuit board
Replace CE0925 or speed circuit board
Replace M circuit board
Check curtain speed
NO
OK
Repair
③
Adjust Tr
④
Check mini shutter speed
Repair
Analyse or dismantle
Check and adjust A and M
Completed

① Adjustment of RV101 (AUTO)



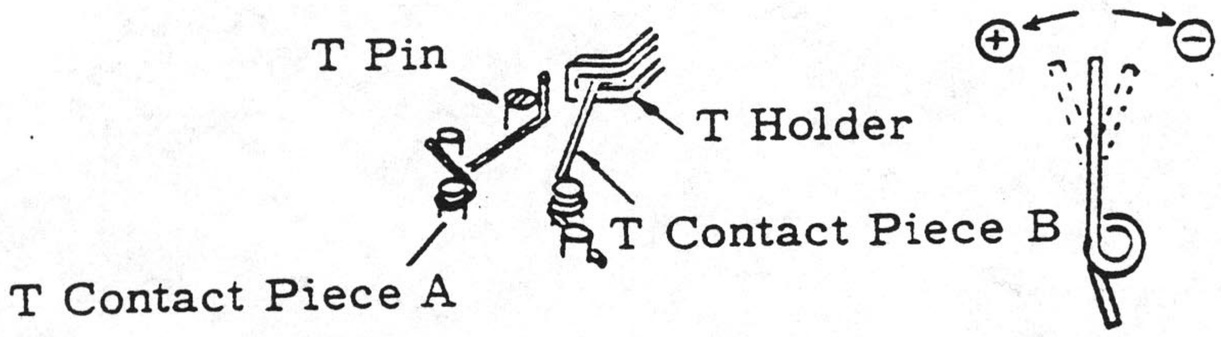
② Check of speed resistor

Set selector switch to AUTO. and measure between left pin (1V) of SBC and MANUAL pin.



1/1000	.....	12 (KΩ)
1/500	.....	24
1/250	.....	48
1/125	.....	96
1/60	.....	192
1/30	.....	384
1/15	.....	768
1/8	.....	1.5 (MΩ)
1/4	.....	3
1/2	.....	6
1/1	.....	12

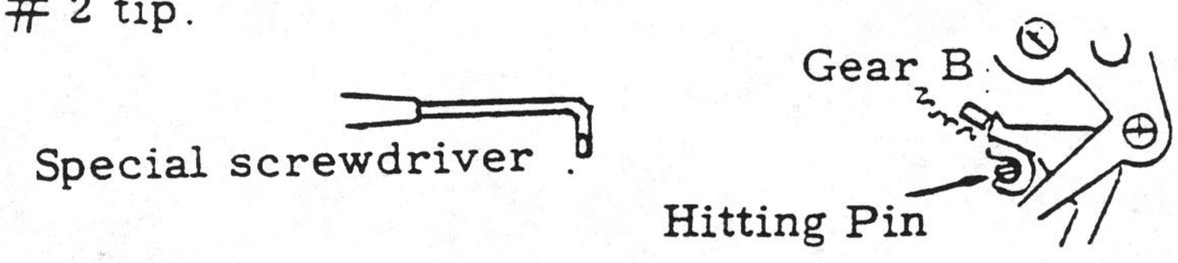
③ Tr adjustment

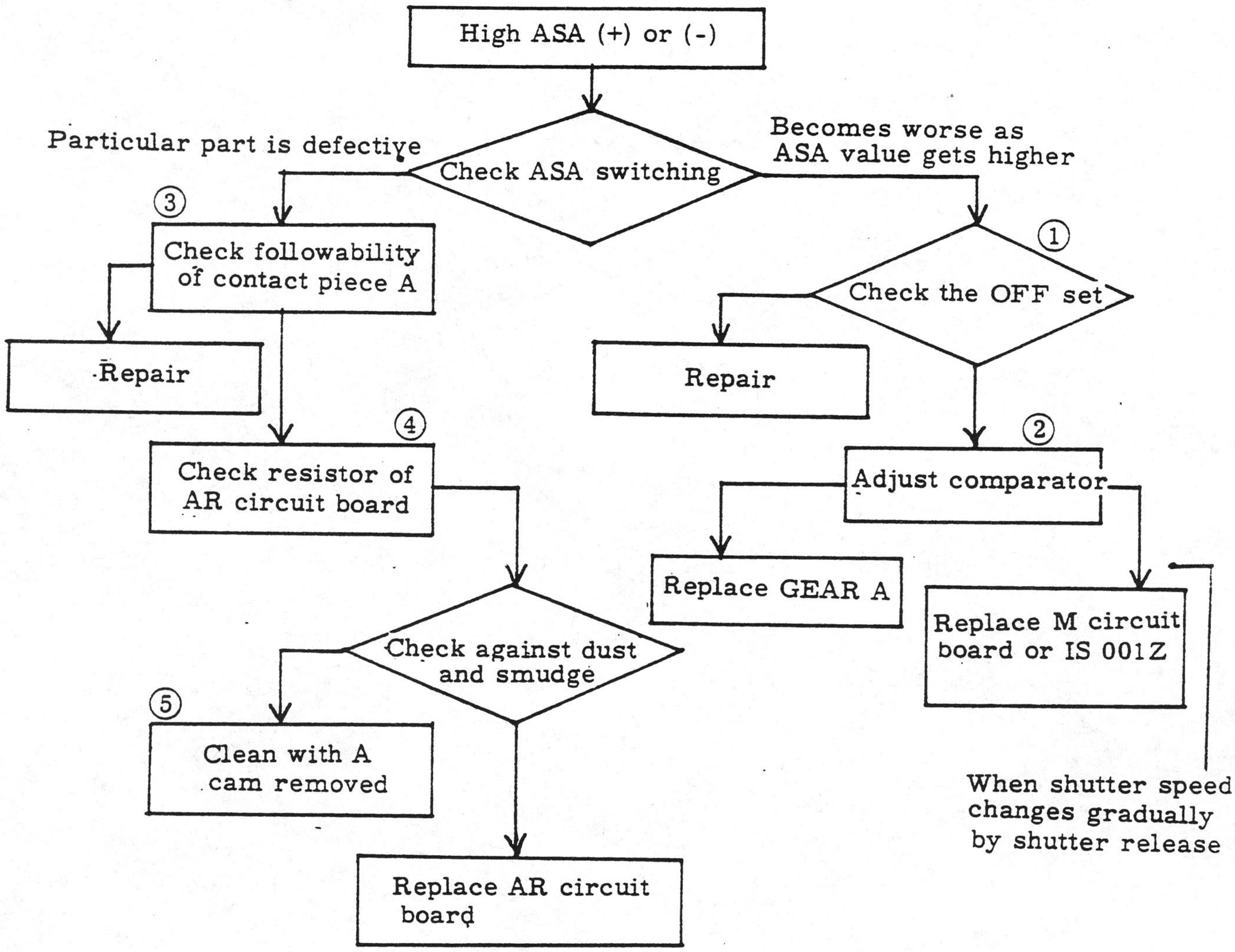


- When fluctuation becomes excessive due to tampering with contact piece. replace and adjust it.
- After adjustment by bending. there should be a clearance (at second step of opening claw) between T holder and T contact piece B.
- When wound. T contact piece B should not hit T pin.

④ Adjustment of mini shutter speed

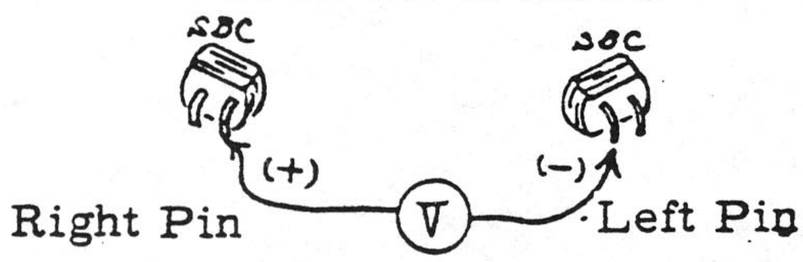
Adjust hitting pin with a special screwdriver.
Bend # 2 tip.




High ASA (+) or (-)
Check ASA switching
Particular part is defectiye
Becomes worse as ASA value gets higher
③
Check followability of contact piece A
Repair
④
Check resistor of AR circuit board
Check against dust and smudge
⑤
Clean with A cam removed
Replace AR circuit board
①
Check the OFF set
Repair
②
Adjust comparator
Replace GEAR A
Replace M circuit board or IS 001Z
When shutter speed changes gradually by shutter release

① Check of OFF set of preamplifier

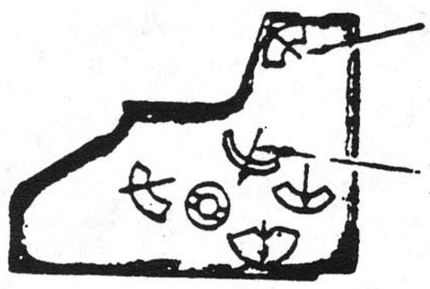
Tr is ON at AUTO



- Should be ±1.5mV or less.
- Adjustment should be made to ±0.5mV or less.
- The power supply (-) should be connected with black LW. (Otherwise, load batteries after locking the shutter.)

Caution: For checking, matching board may not be used. But it should be used for adjustment.

② Adjustment of comparator

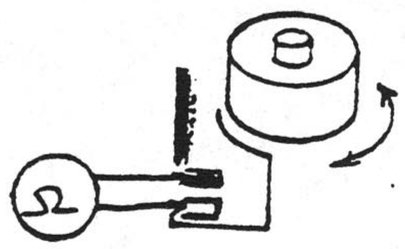


③ Check of contact piece A follow-ability

Contact piece A should be in contact with AR circuit board (by spring pressure) even when the contact piece A is moved slightly up and down.

④ Check of resistor of AR circuit board

Disconnect white and yellow LW, apply ohm meter and check while turning A cam.



Resistance Value (KΩ)

ASA 1600	800	400	200	100	50	25	12
0.64	1.02	1.79	3.58	7.16	14.3	28.6	57.2

⑤ Removal of A cam

a. Remove C ring. (Turn it clockwise about 30°.)

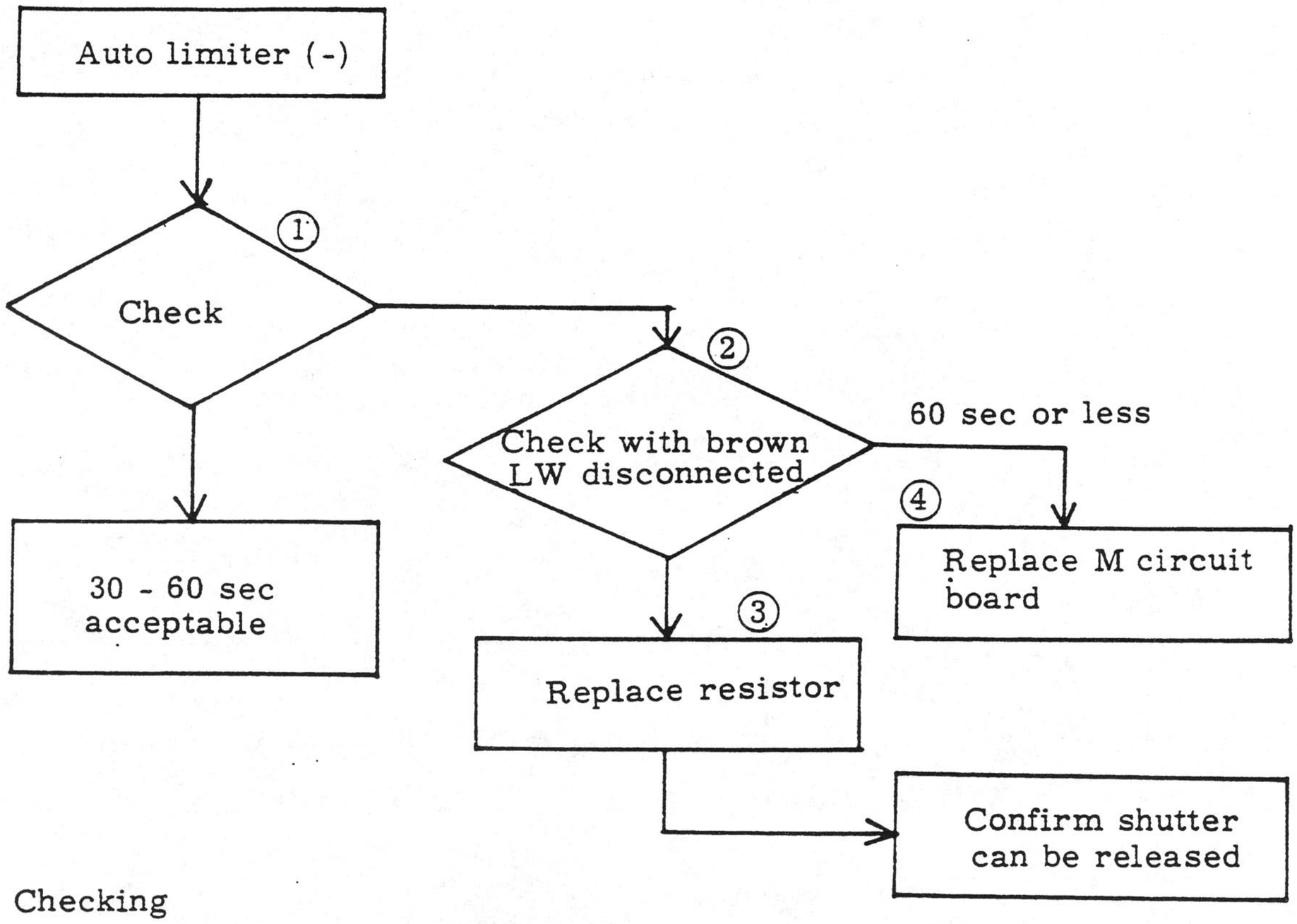
b. Loosen A contact piece fastening screw (left-hand screw), and remove the contact piece from AR circuit board.

c. Remove A cam.

Precautions for assembling

a. A lever should be brought to bear on the side surface of the A cam. (Displace A lever outwardly, and mount A cam in position.)

b. Tighten the screw taking care to the contacting state of A contact piece.



① Checking

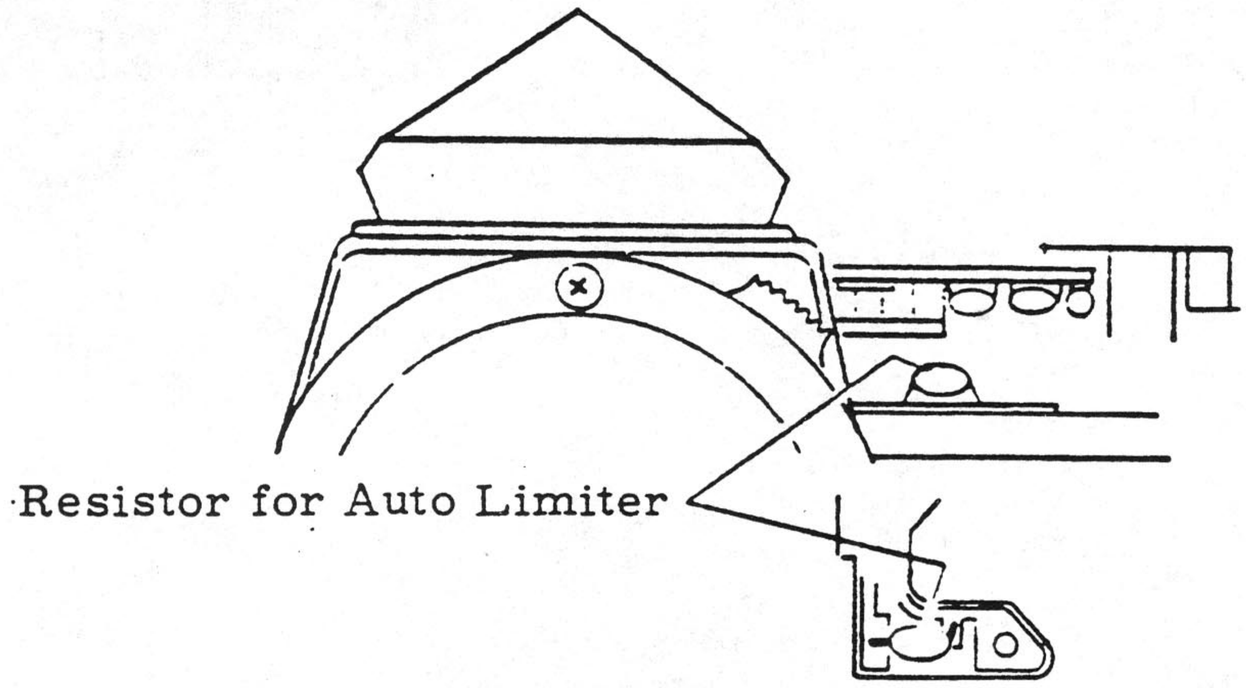
Mirror should flip down after 60 seconds or longer when shutter is released after dark condition of 3 minutes.

Acceptable if the mirror lowers after longer than 30 seconds and less than 60 seconds.

- "Dark condition" means the state that the body cap is applied and the eyepiece frame is faced downward.

② Remove bottom plate, desolder brown LW and check ① .

③ Remove the resistor for auto limiter, and replace it by a 1MΩ resistor. (Use the soldering iron with a pointed tip.)



④ Protection against leakage current from M circuit board.

III. CE0914 (M circuit board)

1. Precautions for repairing CE0914

1) As the ICs blow out by static electricity, be sure to ground the work desk, soldering iron, pincette, nipper, operator's body, etc. when the IC and FET are handled as a single body.

(The pins ③ and ⑤ of MOS FET are particularly weak and may be destroyed by static electricity of 100V. Generally, the human body is supposed to have static electricity of 1500 - 10000V.)

2) Use rubber fingerstalls.

(Use fingerstalls on the thumb, forefinger and middle finger of both hands.)

3) Be sure to use silver containing, sparkle solder (Senju Kinzoku Kogyo Co., S 256. 0.8ϕ) for soldering.

(Since the pattern of CE0914 contains silver, if an ordinary solder is used. the silver component may be absorbed into the solder in a long period and the solder may become unstuck.)

4) Use non-acid paste and clean it with DAIFLON S-3E.

(It is sold under the name of Du Pont "FREON-TE" in the overseas market. Chemical Formula $C_2CL_3F_3 + C_2H_2OH$. $C_2CL_3F_3$ 96%. C_2H_5OH 4%)

5) As electrical elements are weak against heat. avoid to heat them for long in soldering.

The standard time for soldering is 3 sec. for one spot.

6) Dust and smudges (particularly. on flux and paste) should be absent because it lowers insulation resistance. (Particularly. insulation resistance of $10^{12}\Omega$ or greater is necessary for lower luminance levels. When smudged, brush and clean with DAIFLON S3-E, and then check with the SZ (binocular stereo microscope). Check particularly the pins of SBC. trigger switch and auto-side contact piece of cam shaft. etc.)

7) When the constant voltage power supply is connected. never turn on and off the power switch. Turn the power switch after disconnecting the wire of CE0914 (M circuit board).

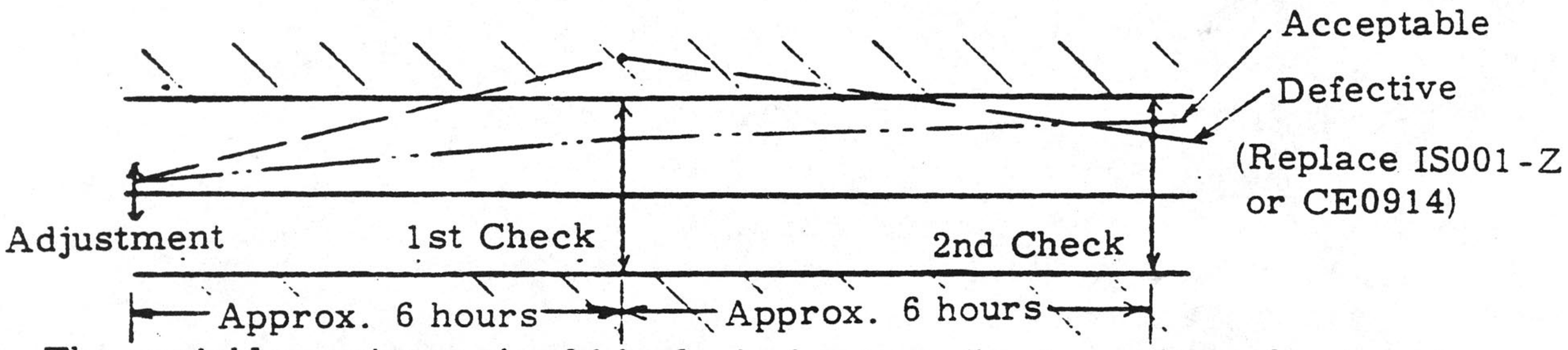
(Turning on and off of the power switch momentarily generates 60 - 70V.)

8) Confirm grounding of each component once a day or at the start of working hours by means of a tester.

(Acceptable if the tester needle deflects by the extent equivalent to the voltage of wall outlet AC between the grounding wire and the AC wall outlet.)

9) Take special care not to heat teflon over 450°C to prevent generation of toxic gas.

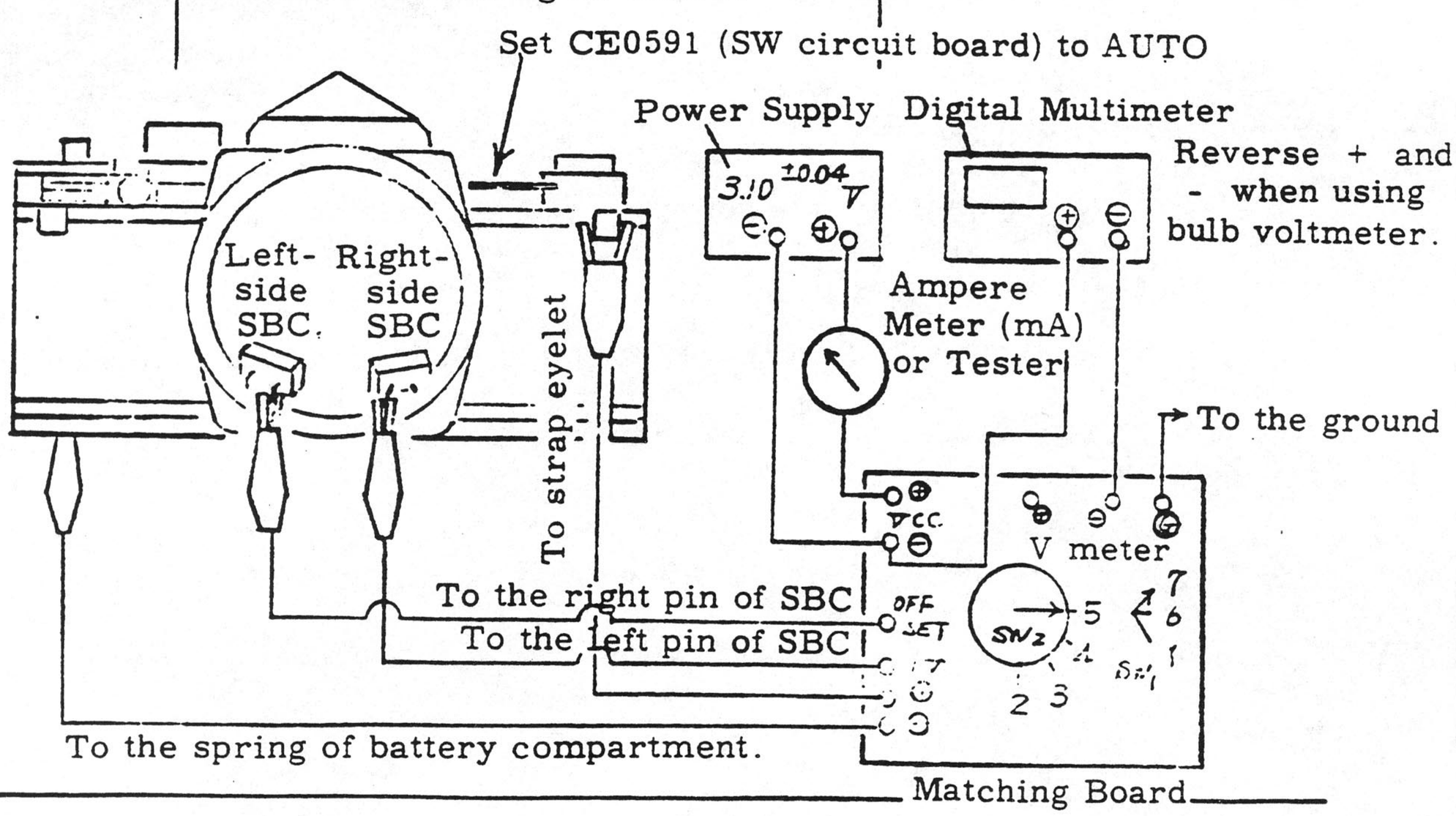
10) When the OFF set of the preamplifier is changed beyond 1.5mV. adjust it to ±0.5mV or lower; thereafter repeat the OFF set checking two times at a 6-hour interval. The measured value at each checking should be within ±1.5mV. If adjustment is impossible, replace the IC of IS001-Z or CE0914.



11) The variable resistor should be locked using adhesive, after adjustment.
12) Never fail to ground the pincette (tweezers) and the repairman's body when touching the trigger switch contact piece and SBC.

2. Adjustment of CE0914 (M circuit board)

Items	Method	Remarks
1) Preparation	a. Remove CE0951 (bottom cover). CE0955 (mat) and CE0503 (top plate). b. Release the shutter and lock it with the battery unloaded. (Main switch and trigger switch → ON) c. Set CE0591 (SW circuit board) to AUTO. d. Set the power voltage to 3.10±0.04V. e. Make the wiring as follow.	The powder switch should have been turned on before wiring and must not be turned off and on after the power supply is wired to camera. (If the switch is operated. high voltage is generated.)



<table>
<tr><th>Items</th><th>Method</th><th>Remarks</th></tr>
<tr><td></td><td>* When CE0502 (front plate) is removed.

1. Connect the clip wired to the battery compartment to the black LW on the bottom.

2. Advance the wind lever and turn on the trigger switch.

** When CE0914 is to be adjusted as a single body.

1. Connect the clip wired to the strap eyelet to CE0920 (sylinder) of CE0914.

2. Connect the clip wired to the battery compartment to the black LW.

3. Turn on the trigger switch.

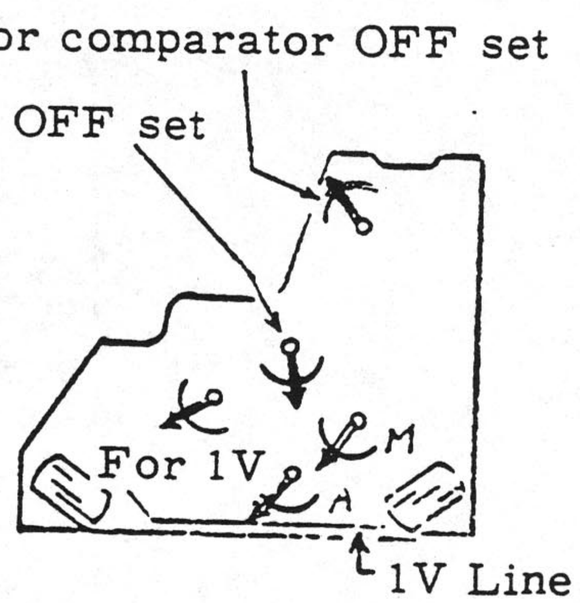
4. Turn the cam shaft to AUTO side. See Section III-3-2).</td><td>Note:

a. The wiring of SBCs should be as above.

b. Ampere meter of 1 - 15mA is most recommendable, but a tester of DC50mA range is acceptable.</td></tr>
<tr><td>2) 1V adjustment</td><td>a. Set switches of the matching board to 5 and 7. respectively.

b. ASA = 12

c. Adjust to 0.99±0.01V with the VR for 1V (1.2KΩ).
(-0.99±0.01V at above wiring of the digital multimeter.)

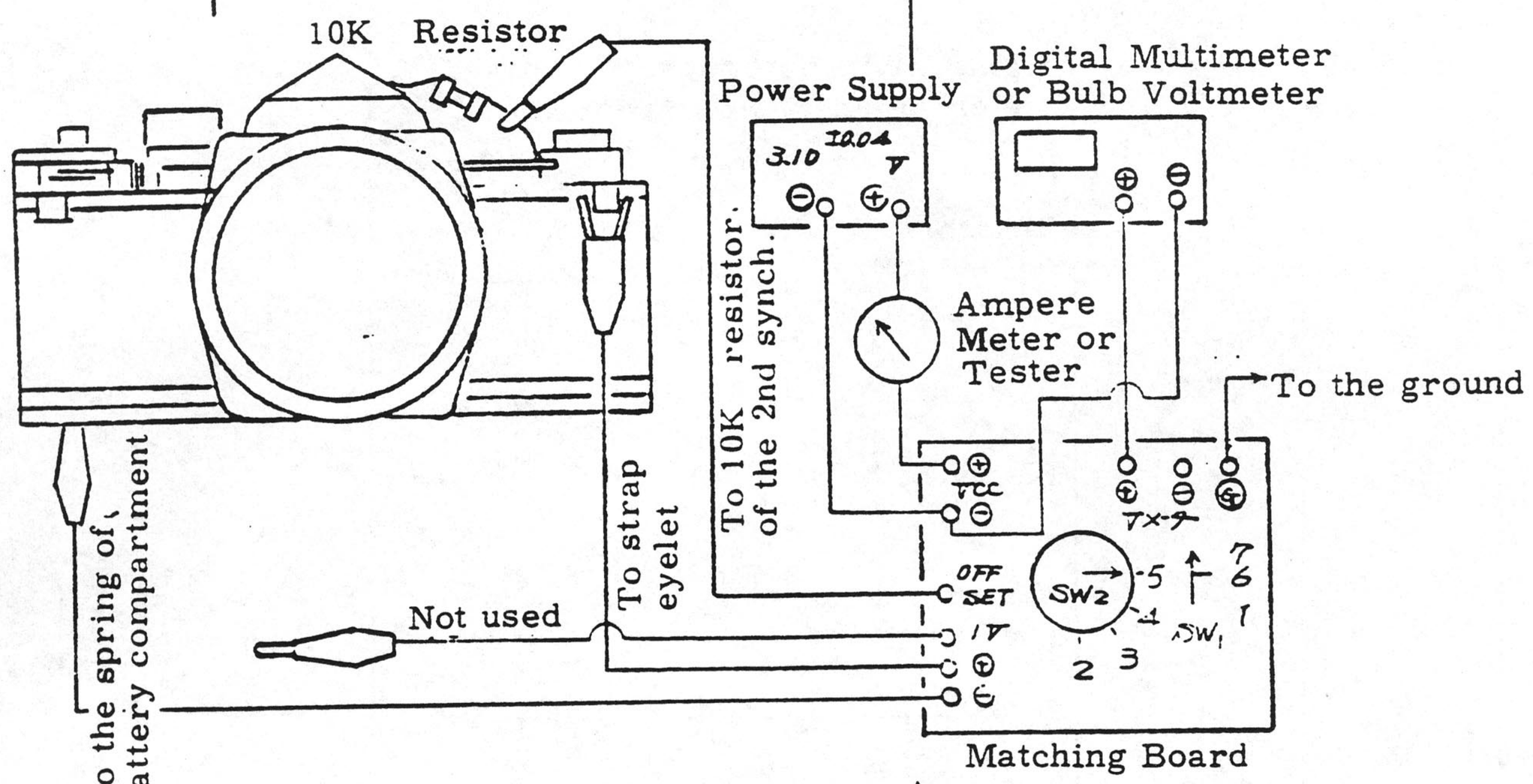
*** The ASA rating is irrelevant when CE0502 (front plate) is removed and CE0914 is to be checked as a single body.</td><td> 

Each VR is as above.</td></tr>
<tr><td>3) Elimination of static electricity from each part</td><td>(1) Connect (+) of the digital multimeter to (+) of the voltmeter. (When bulb voltmeter is in use, (+) of the bulb voltmeter to (+) of the voltmeter and (-) to (-). respectively.)</td><td></td></tr>
</table>

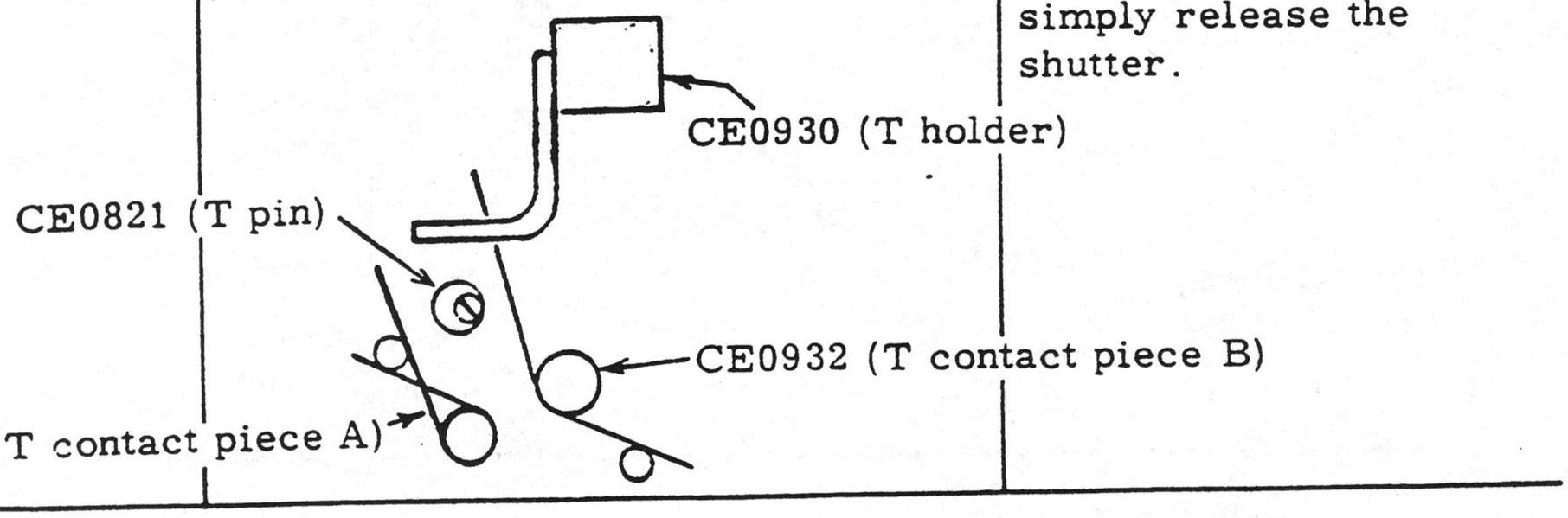
Items	Method	Remarks
	(2) Turn the Switch 1 in the sequence 7 → 6 → 1. Turn the Switch 2 in the sequence 5 → 4 → 3 → 2. (3) Turn the Switch 2 in the sequence 2 → 3 → 4 → 5. Turn the Switch 1 in the sequence 1 → 6 → 7.	Note: The SW circuit board should be surely set to AUTO upon the OFF set adjustment of preamplifier.
4) Off set adjustment of preamplifier	(1) The switches on the matching board are set to 5 and 7. (2) Adjust to 0 ± 0.5mV or less with the OFF set VR (2KΩ) for the preamplifier.	When the OFF set value is out of ±1.5mV, measure two times at every 6 hours: should be within ±1.5mV. See Section III-1-10).
5) Off set adjustment of comparator	(1) Disconnect the clip from the left pin of the right-side SBC. (2) Connect the left pin of the above SBC with the white LW of CE0640 (circuit board A) underneath the exposure meter by means of an LW with a clip at each end. (Take care not to shortcircuit the white LW.) (3) The switches on the matching board are set to 5 and 7. (4) Adjust to the current changing point using the OFF set VR for comparator (10KΩ). Approx. 8mV → 12mV	** When the CE0914 is checked as a single body. 4.5mA → 12mA Adjustment is completed.

3. Operation check of CE0914 (M circuit board)

Checking Items	Checking Procedure	Remarks
1) Preparation	(1) Before starting the operation check, confirm that CE0914 is properly adjusted. (See Section III-2 "Adjustment of CE0914".) (2) Release the shutter and lock it with the battery unloaded. (Main switch turns on.) (3) Set the power voltage to 3.10 ± 0.04V. (4) Make the wiring as illustrated below.	Note 1: The power switch should be previously turned on before wiring and must not be turned off and on once wired. Note 2: CE0951 (bottom cover), CE0950 (mat) and CE0503 (top plate) should be removed.

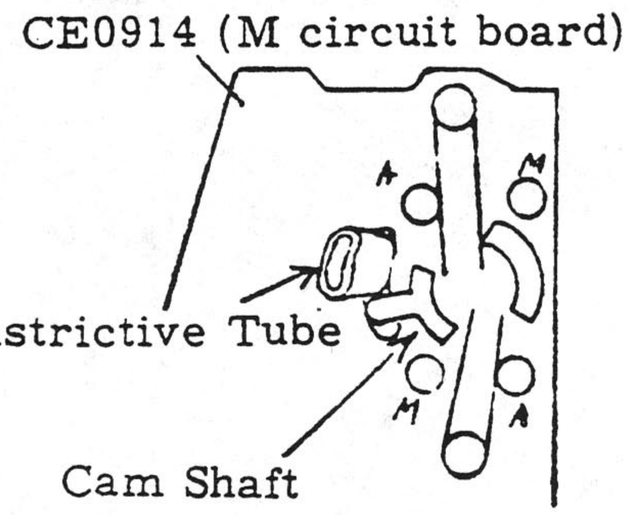


(5) Disengage CE0931 (T contact piece A) as shown below



* When CE0502 (front plate) is removed. simply release the shutter.

Checking Items	Checking Procedure	Remarks
	* When CE0502 (front plate) is removed: ① Connect the clip wired to the battery compartment shown in the preceding page to the black LW on the body bottom. ② Shortcircuit the white LW and yellow LW of CE0914 (M circuit board) by means of a resistor of about 50KΩ . ** When CE0914 is to be checked as a single body: ① Shortcircuit (+) and (-) of the digital multimeter (or bulb voltmeter) by means of a resistor of about 500 - 1KΩ . ② Shortcircuit the white LW and yellow LW of CE0914 by means of a resistor of about 50KΩ . ③ Connect the clip wired to the 2nd synch shown in the preceding page to the purple LW of CE0914. ④ Connect the clip wired to the battery compartment to the black LW of CE0914. ⑤ Connect the clip wired to the strap eyelet to CE0920 (sylinder) of CE0914.	
2) Check of automatic operation	(1) The switches on the matching board are set to 5 and 7. (2) Set the SW circuit board to AUTO. (3) The following conditions should be obtained when trigger switch is turned on and off.	** When CE0914 is a single body. Insert a thermo-constrictive tube or similar material between CE0914 and cam shaft as shown below to set to AUTO.

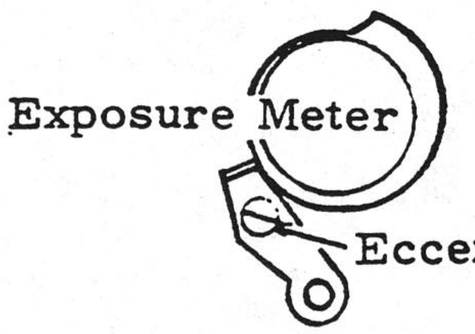
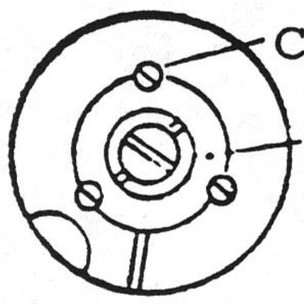
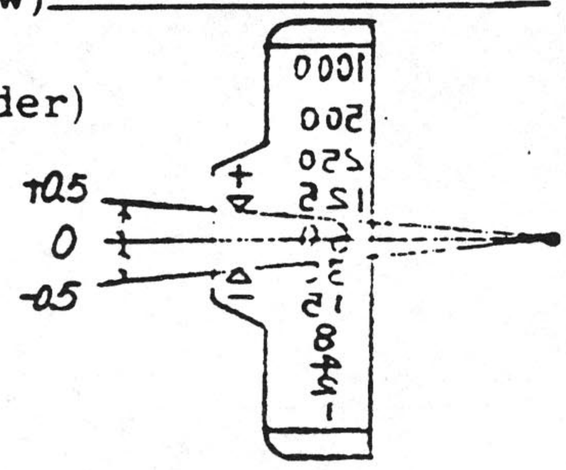
Checking Items	Checking Procedure	Remarks
	Tr SW ON: Digital multimeter (or bulb voltmeter) 2.8 - 2.9V Ampere Meter Approx. 8mA Tr SW OFF: Digital multimeter (or bulb voltmeter) 0V Ampere Meter Approx. 12mA	
3) Check of manual operation	(1) The switches on the matching board are set to 5 and 7. (2) Set the SW circuit board to MANUAL. (3) Make the same operation as (3) above. When same values as in AUTO are obtained, normal.	

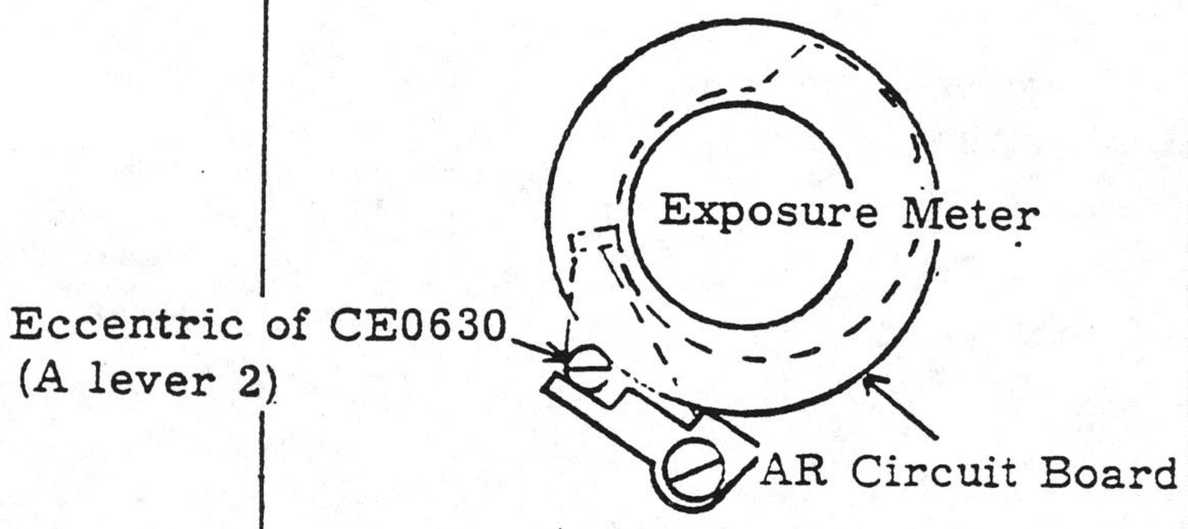
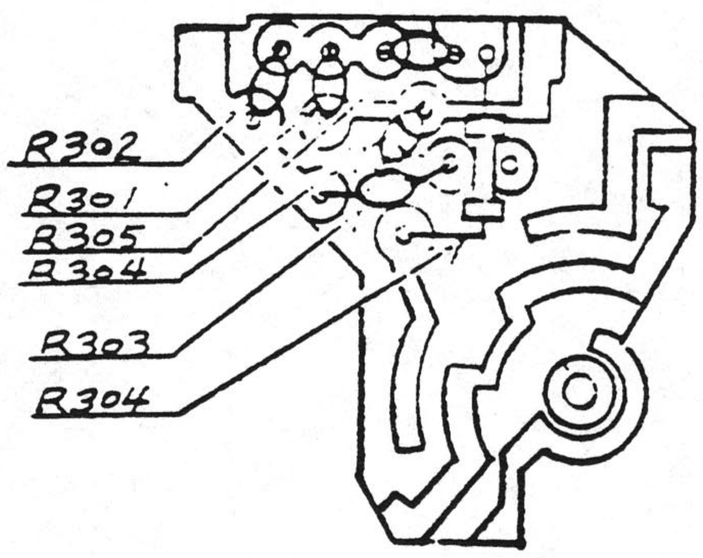
IV. EXPOSURE METER

1. Meter needle stuck

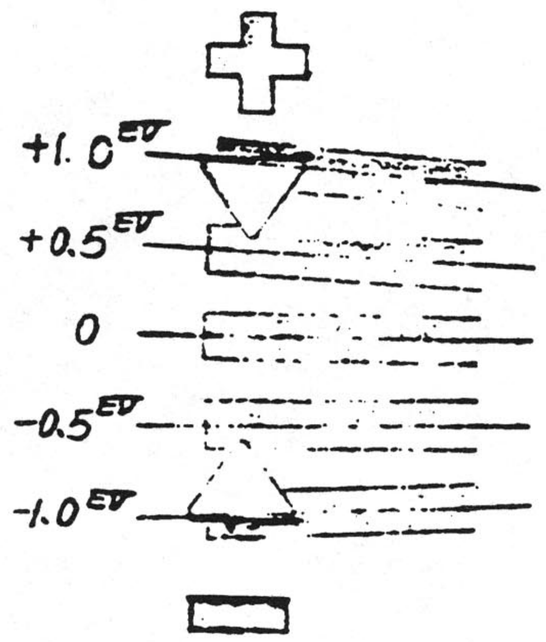
Cause	Remedy	Checkup
1) Disconnected CE0622 (teflon tube)	Teflon tube (CE0622) inserted into the needle holder may become detached. After taking out the fallen tube from inside the camera, insert a new tube into the needle holder without applying adhesive. Cautions: o Take care not to deform needle holder. o Do not use adhesive, because it is ineffective with teflon.	1. One CE0622 should be provided on the lower luminance side. 2. The mter needle should not get stuck with the shutter dial set to 1/2 at AUTO. EV 8 (ASA100). Check by shifting the switch lever from OFF to AUTO and vice versa.

2. Indication accuracy improper

Cause	Remedy	Checkup
1) Zero point of meter off-positioned (Power voltage is 3.15±0.005V)	If off-positioned when confirming in the manner described at right, adjust as follow. (1) Coarse adjustment a. Preparation for adjustment 1 ASA = 100 2 f/stop = 2.8 3 Current = 121μA 4 Set the eccentric position of A lever to the center, and do not use it in the coarse adjustment.  Slitting faces slightly upward 5 There should be about 1mm clearance between CA8997 (spring gear) and CA8978 (lower boss). b. Adjustment Loosen three pulley screws fixing CA8981 (pulley holder) to adjust by slightly moving CA8981. o When zero point is to (+) side: Turn the pulley clockwise. o When zero point is off to (-) side: Turn the pulley counterclockwise.  	(1) Disconnect the black lead wire of the meter movable section from CE0591 (SW circuit board). (2) Set the camera as follow. 1 ASA = 100 (2 wires of CE0645 AR circuit board) 2 f/stop = 2.8 (3) Connect the blue lead wire of the resistor box to the black lead wire of the meter movable section. Connect the white lead wire of the resistor box to (-) of the ammeter and (+) of the ammeter to the camera body to take the earth. (4) Adjust the resistor box to 121μA. The meter needle should then be within the following range (power voltage is 3.15±0.005V). Reference: 0 $^{+0.3EV}_{-0EV}$ 

Cause	Remedy	Checkup
	(2) Fine adjustment Set the camera as described at right, and adjust by moving the eccentric of CE0630 (A lever 2).  	① ASA = 100 ② Shutter speed = 1/2 sec. ③ f/stop = F2.8 jig lens ④ Set to MANUAL. o At BV 4: When CE0503 (top plate) removed: -0.1 ± 0.1EV When CE0503 not removed: 0 ± 0.1EV Cautions: a. The lens should be closely in contact with diffusion plate. b. Extraneous light should not enter.
2) Defective at low luminance (BV 8)	Adjust by changing resistor R301 of CE0591 (SW circuit board).  After the adjustment. confirm BV 4 and adjust BV 11 and 16.	o Set the camera as follow. ① ASA = 100 ② Shutter speed = 1/30 sec. ③ f/stop = F2.8 jig lens ④ Set to MANUAL. o At BV 8: CE0503 removed: -0.1 ± 0.1EV CE0533 not removed: 0 ± 0.1EV Cautions: a. The lens should be closely in contact with diffusion plate. b. Extraneous light should not enter.

Cause	Remedy	Checkup
3) Defective at high luminance (BV 11)	Adjust by changing resistor R303 of CE0591. If the adjustment is impossible with R303 (at minus side), adjust to -0.1 - 0.2 with R301. Thereafter, check BV 8 and adjust to -0.1 ± 0.1EV with R304 to compensate for the above. After the adjustment, reconfirm BV 4 and make the adjustment at BV 16. See the above illustration for the position of each resistor.	o Set the camera as follow. ① ASA = 100 ② Shutter speed = 1/60 sec. ③ f/stop = F5.6 (jig lens) ④ Set to MANUAL. o At BV 11: CE0503 removed: -0.1 ± 0.1EV CE0503 not removed: 0 ± 0.1EV Cautions: 1. The lens should be closely in contact with diffusion plate. 2. Extraneous light should not enter.
4) Defective at high luminance (BV 16)	Adjust by changing resistor R304 of CE0591 (SW circuit board). See 2) of preceding page for the position of resistors.	o Set the camera as follow. ① ASA = 100 ② Shutter speed = 1/500 sec. ③ f/stop = F 11 (jig lens) ④ Set to MANUAL. o At BV 16: CE0503 removed: -0.1 ± 0.1EV CE0503 not removed: 0 ± 0.1EV

Cause	Remedy	Checkup
5) Meter matching	(1) Preparation for matching (Constant voltage should be 3.15V ± 0.005.) ① Jig lens, pentaprism and focusing screen should be attached. ② Set the Manual. ③ Take care not let light other than that from the luminance box into the CdS. ④ Turn the shutter dial from 1/1000 side. ⑤ Turn the f/stop of the jig lens from F16 side.	

Combination and Reference Value

BV	ASA	S.S.	FNO	Matching Resistance		Reference (EV)
4	100	1/2	2.8	(Eccentric of A Lever)		-0.1
8	"	1/30	2.8	301	30KΩ	-0.1 ± 0.1
11	"	1/60	5.6	303. 302	12KΩ	"
16	"	1/500	11	304	27KΩ	"

Reference Resistance

Note: The reference is -0.1EV with CE0503 removed. and is zero with CE0503 unremoved.

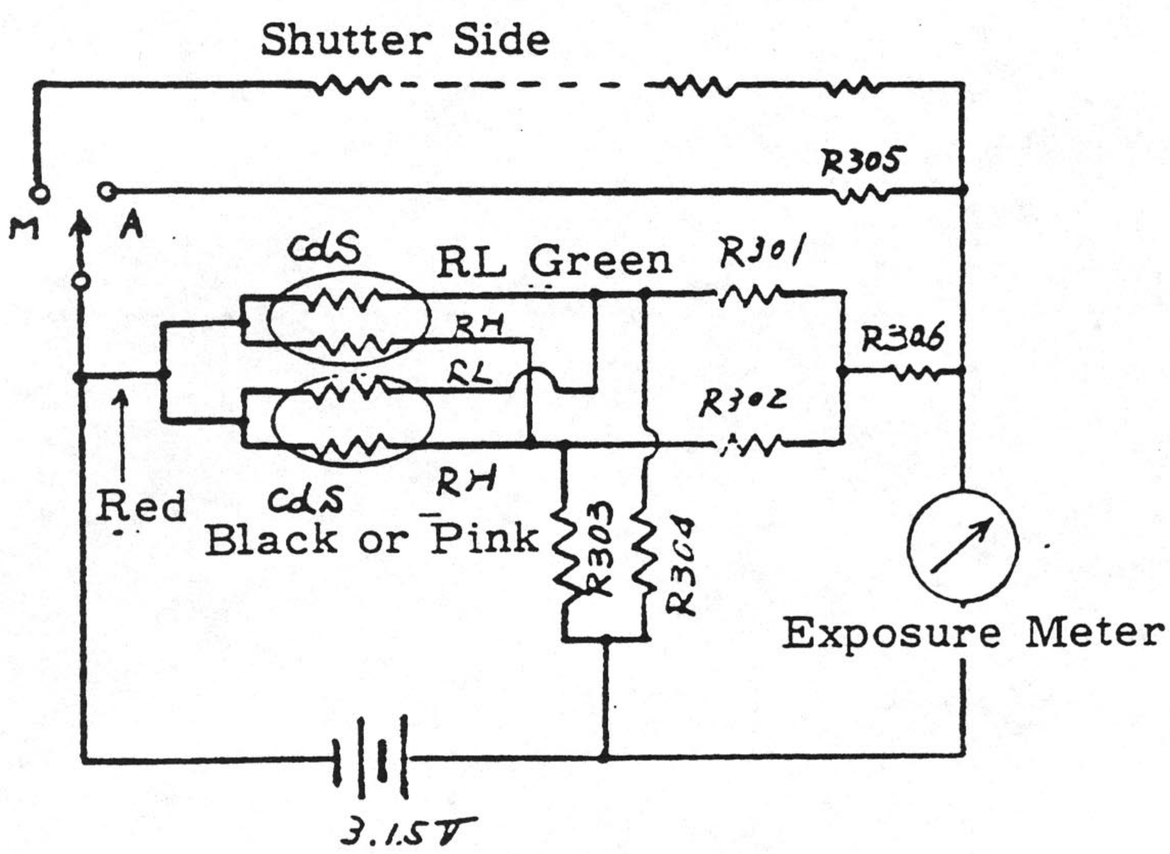
(2) Matching procedure	
① Adjust the meter needle zero position. Set to BV 4 and adjust with the eccentric of A lever.	See above table for combination of camera settings.
If adjustment by A lever 2 is ineffective. slightly move the position of CA8981 (pulley holder). See	-0.1EV when CE0503 is removed.

Cause	Remedy	Checkup
(See Section IV-2-2))	② Adjustment at BV 8 Set the luminance to BV 8 and adjust by changing resistor R301 of CE0591 (SW circuit board).	See the table in the previous page for combination of camera settings. -0.1±0.1EV with CE0503 removed.
	③ Re-confirm BV 4.	-0.1±0.1EV with CE0503 removed.
	④ Adjustment at BV 11: Set the luminance to BV 11, and adjust by changing resistor R303 of CE0591. When R303 adjustment is ineffective (at minus side), adjust to -0.1 - -0.2 with R301.	-0.1±0.1EV with CE0503 removed.
	⑤ Check at BV 8 Compensate the value added by the above adjustment with R304.	
	⑥ Check at BV 4.	-0.1±0.1EV with CE0503 removed.
	⑦ Adjustment at BV 16: Set the luminance to BV 16, and adjust by changing resistor R302 of CE0591.	-0.1±0.1EV with CE0503 removed.
	⑧ Confirm at BV 16 - BV 4.	
6) Defective resistance of CE0555 (circuit board B)	Each resistance value should be within the range shown below. If the resistance value becomes out of the range. replace the whole set of CE0555.  	The resistance values should be as indicated in the table next page when confirmed with a tester (digital) after CE0546 (SL contact piece) is mounted. (Wire the yellow and blue LWs to the digital multimeter.)

Cause	Remedy			Checkup
	S.S.	Resist-ance value	Tolerance Range	Insulation check: a. Between yellow LW and die-casting of CE0502 (front plate). b. Between blue LW and die-casting of CE0502 (other than at B) c. Eyelet hole of CE0555 (circuit board B) and die-casting of CE0502 (other than at B). d. Solder of CE0555 and the die-casting of CE0502 (other than at B). Continuity check: When the shutter dial is set to "B". blue LW and die-casting of CE0502 should be conductive. Caution: Make the test with CE0546 (SL contact piece) installed.
	1 1/1000	∞		
	2 1/500	298 KΩ	283 - 312.9 KΩ	
	3 1/250	143 "	138.8 - 150.1 "	
	4 1/125	94.4 "	78.9 - 99.1 "	
	5 1/60	71.7 "	68.1 - 75.3 "	
	6 1/30	57.3 "	54.4 - 60.17 "	
	7 1/15	47.7 "	45.3 - 50.0 "	
	8 1/8	41.3 "	39.2 - 43.4 "	
	9 1/4	36.2 "	34.4 - 38.0 "	
	10 1/2	32.1 "	30.5 - 33.7 "	
	11 1/1	28.7 "	27.26 - 30.14 "	
	12 B	∞		

Exposure Meter Circuit Diagram and Role of Each Resistor

1. Circuit Diagram



MDS Revised	MDS
R301	R1
R302	R2
R303	R3
R304	R4

2. Role of Each Resistor

R301: For correction of low luminance side (EV 8) ≒ 30KΩ

R302: For correction of low luminance side (EV 4 - 8) ≒ 27KΩ

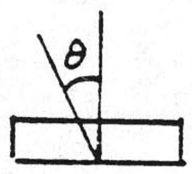
R303: For correction of high luminance side (EV 11) ≒ 12KΩ

R304: For correction of high luminance side (EV 14 - 16) ≒ 12KΩ

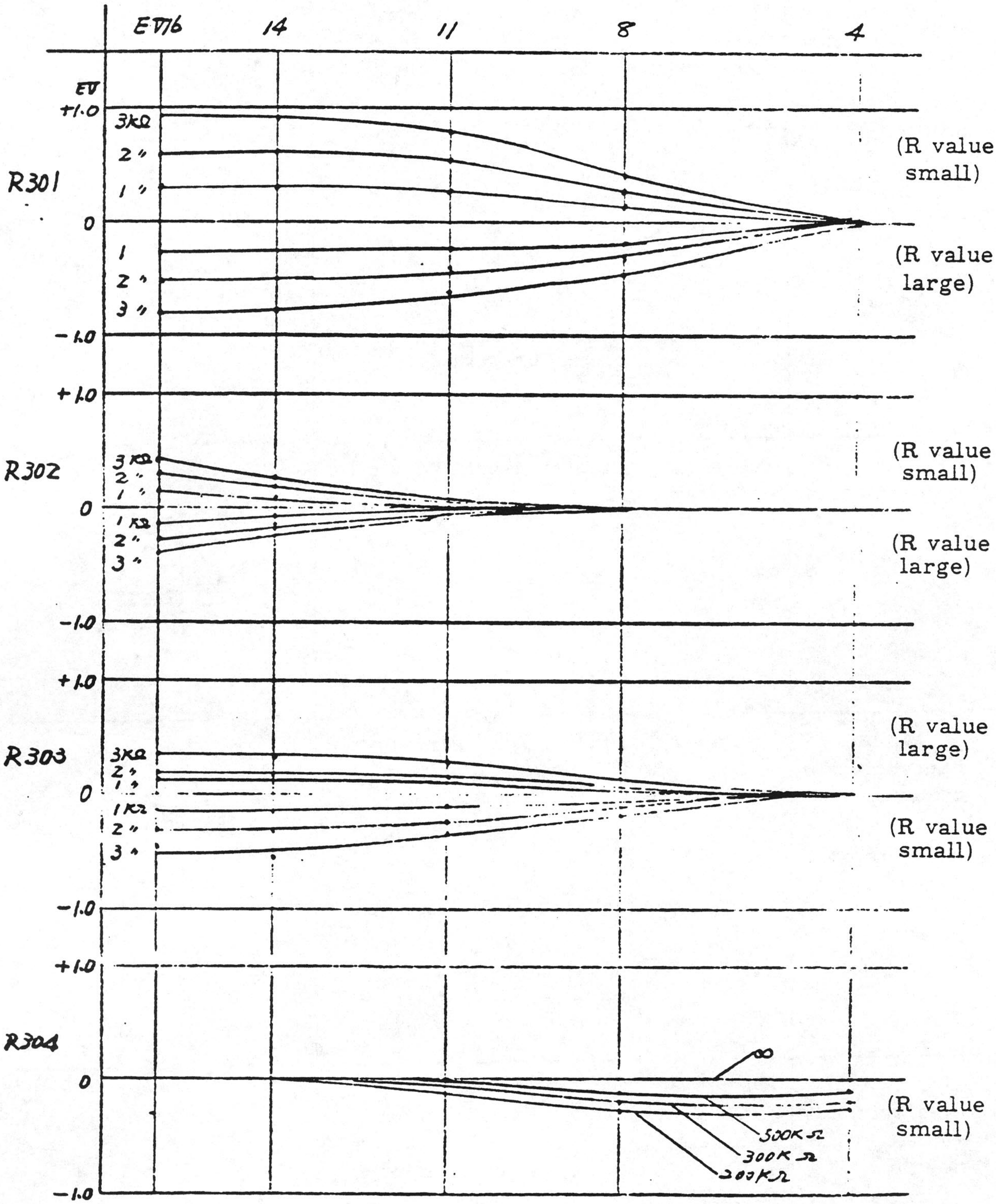
R305: Resistance value is same as at shutter speed of 1/60 sec (68.3KΩ)

R306: For correction of internal resistance of the meter movable section (2.4KΩ)

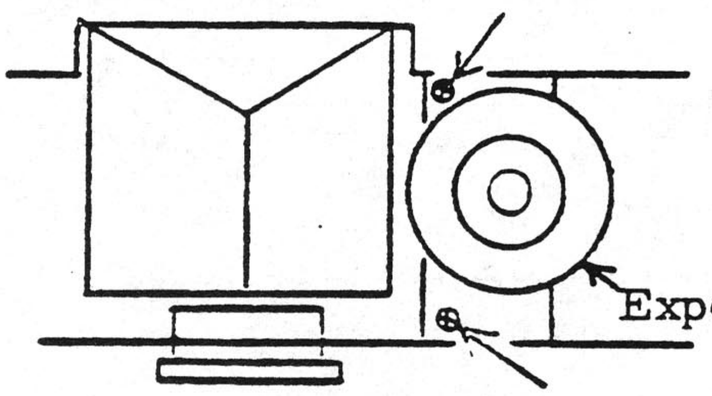
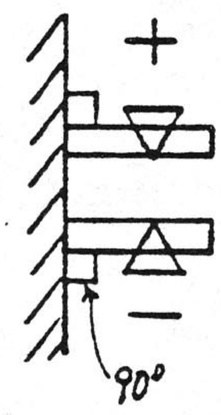
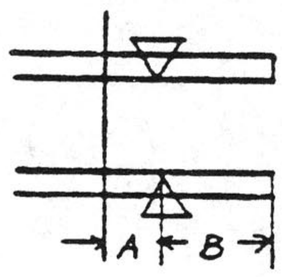
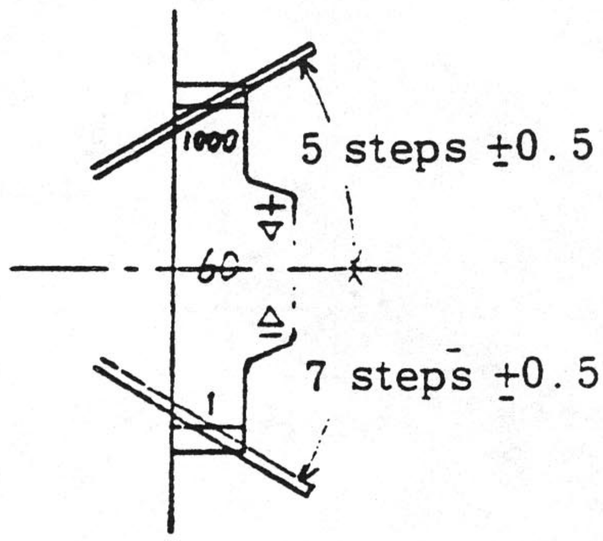
Comparison with MDS

<table>
<tr><th></th><th></th><th>MDS Revised</th><th>MDS</th></tr>
<tr><td>Coupling</td><td>Aperture Ring</td><td>Cord</td><td>Cord</td></tr>
<tr><td></td><td>Shutter Dial</td><td>Current (CE0555 circuit board B)</td><td>Cord</td></tr>
<tr><td>Movable Section</td><td>Deflection Angle of BV 2
  </td><td>θ = 55μA</td><td>θ = 15μA</td></tr>
<tr><td>Check Point</td><td>ASA = 100</td><td>BV SD FNO
16 1/500 11
14 1/125 11
11 1/60 5.6
8 1/30 2.8
4 1/2 2.8</td><td></td></tr>
</table>

Matching Resistance and Change in Meter Deflection

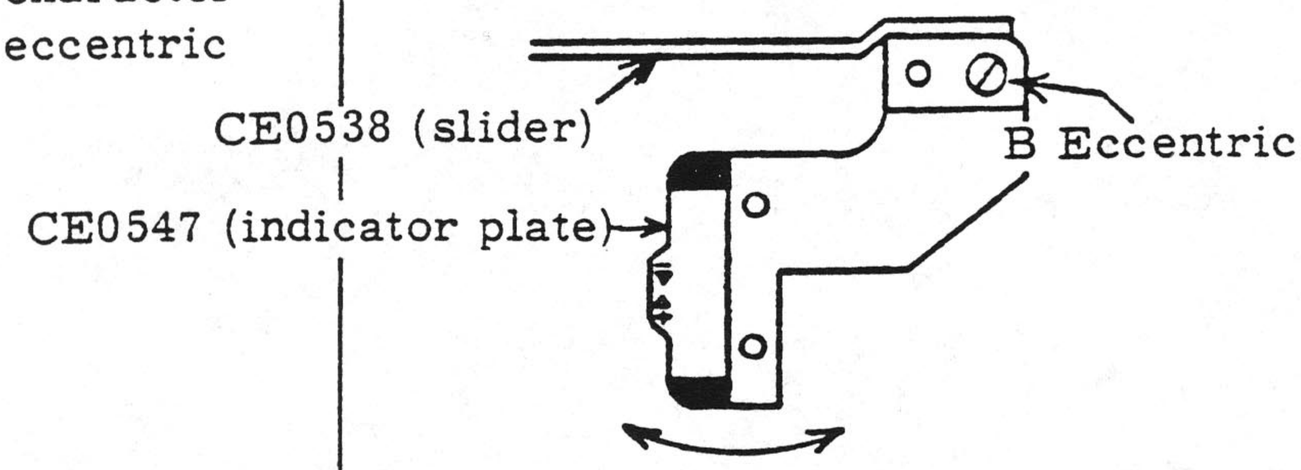


3. Improper position of meter needle

Cause	Remedy	Checkup
1) Tilted meter needle	Re-tighten two PUK1.7 x 2SO screws of the meter so that, at either one of the (+) or (-) side, the meter needle is rectangular to the side of the mask when an edge of the needle is aligned to the center of the triangle mark.  	 The angle should be 90° either on the (+) or (-) triangle center.
2) Length of meter needle	The length of meter needle should be as shown at right. B ≒ 2A Re-tighten PUK1.7 x 2SO of the meter.	
3) Working range of meter needle	The meter needle stop positions at AUTO should be within the range shown at right. Adjust by bending CE0641 (needle holder). Take care not to lose CE0622 (teflon tube)	
4) Vertical displacement of meter needle	The meter needle must not contact CE0547 (viewfinder indication plate). prism. etc. Adjust by bending the meter needle or CE0547.	

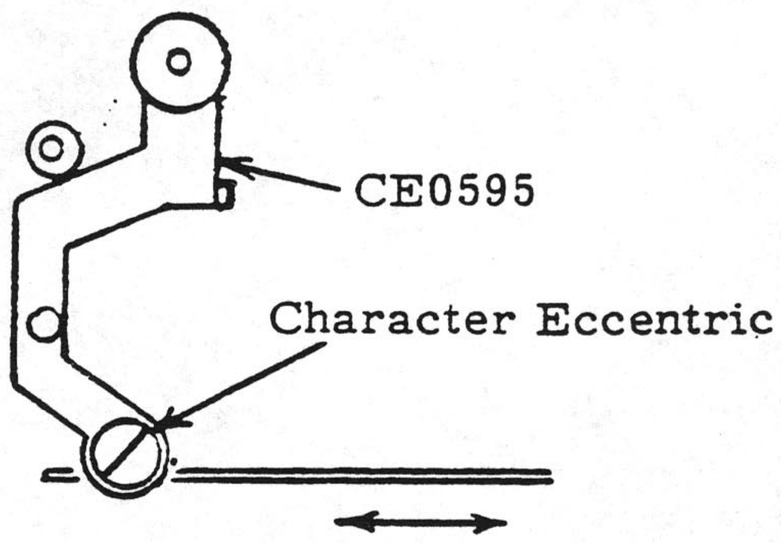
4. Improper position of CE0547 (viewfinder indication plate)

Cause	Remedy	Checkup
1) Improper adjustment of B eccentric and character eccentric	After correcting the tilting with B eccentric of CE0538 (slider), adjust the position with character eccentric of CE0595 (character lever).	a. Tilting There should be no unsightly tilting. b. Position at AUTO



The B eccentric adjustment should be made with CE0502 (front plate) removed.

Adjustment of character eccentric of CE0595 (character lever)

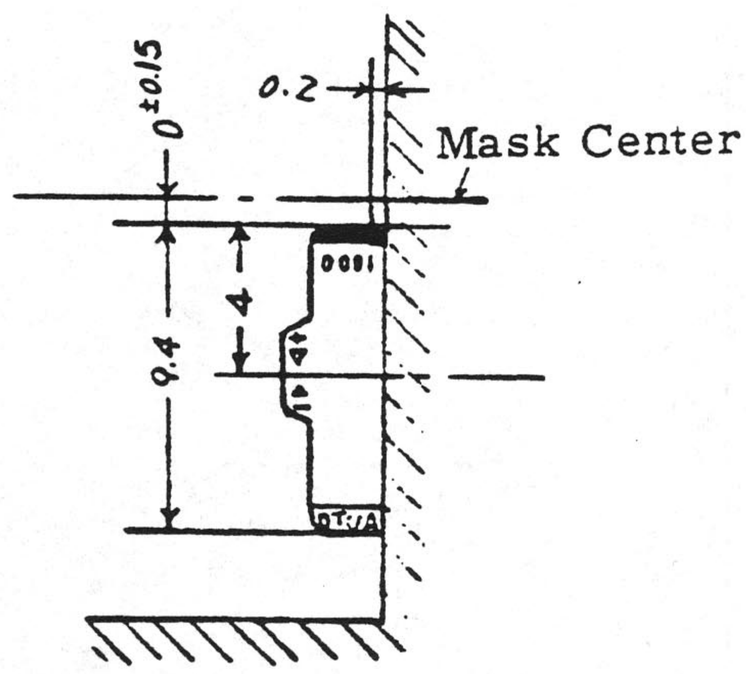


When adjustment only for character eccentric. is to be made. remove CE0503 (top plate); the eccentric will be seen underneath CE0591 (SW circuit board).

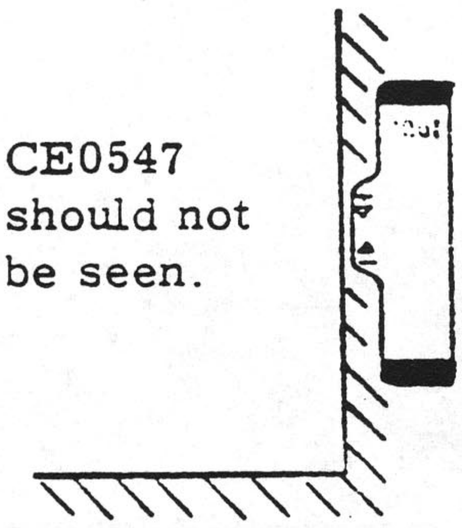
Caution:

Use RIGROIN or DAIFLON S3-E for the cleaning of CE0547. Never use mixed solution.

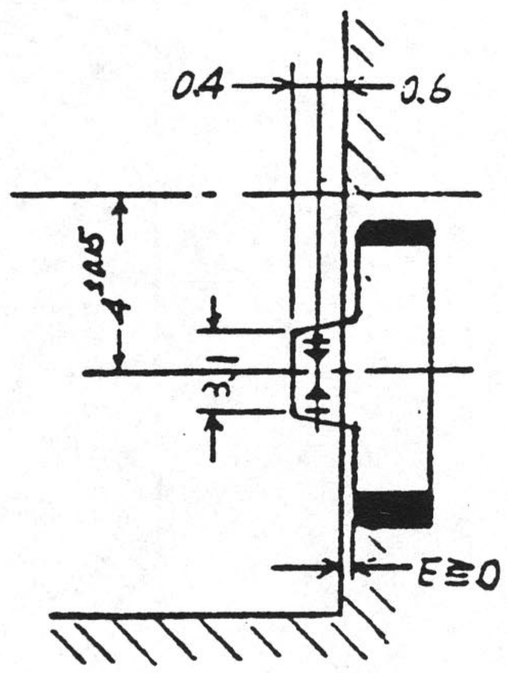
(It may be erase the characters.)



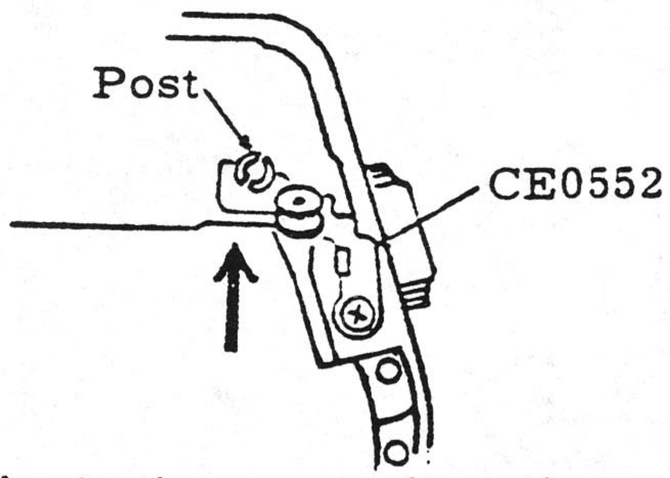
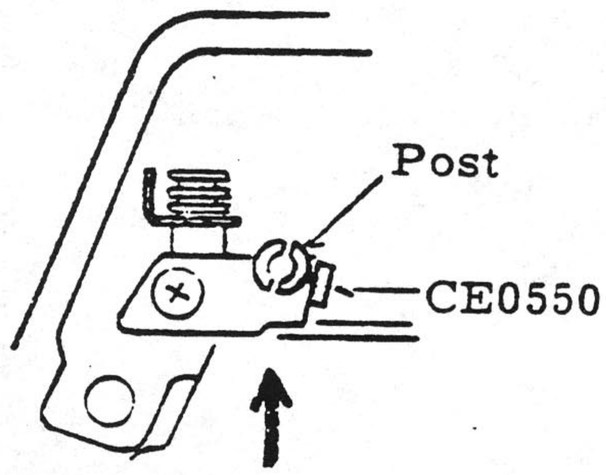
c. At OFF

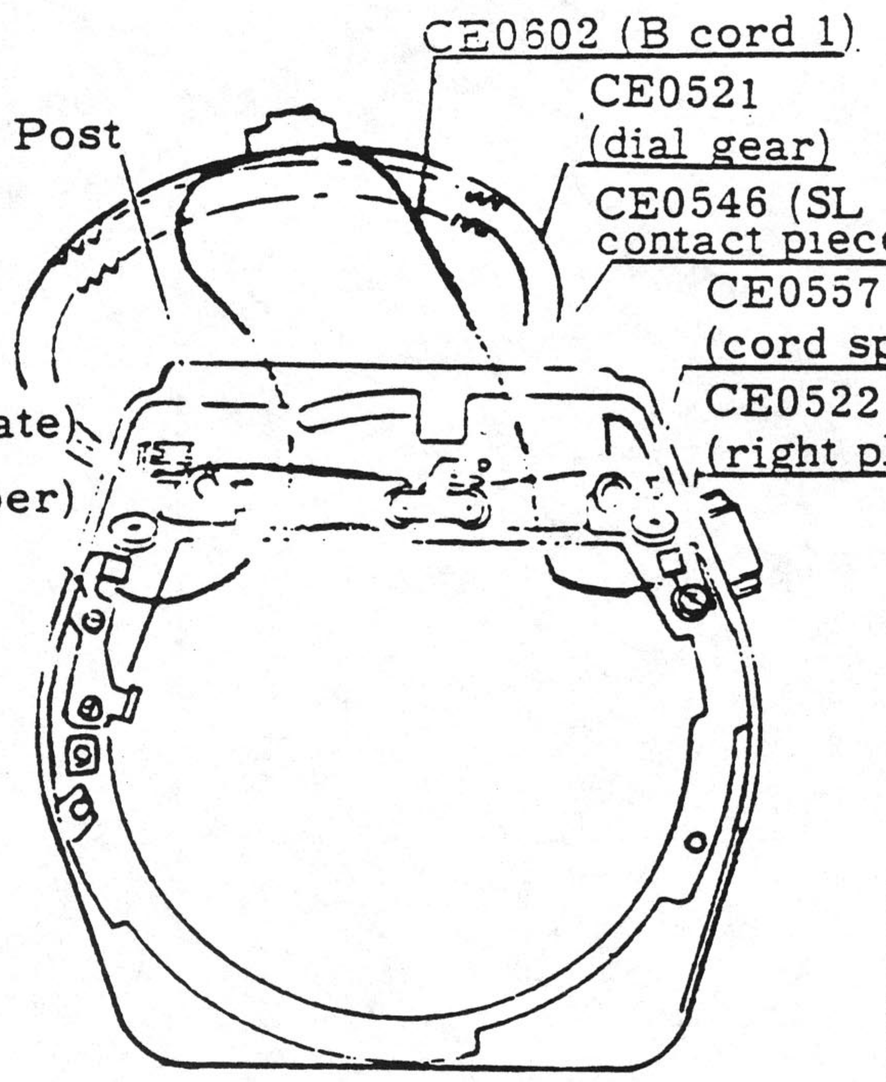
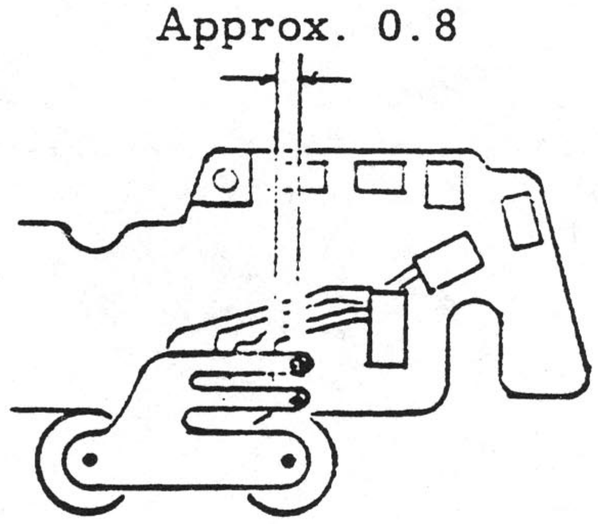
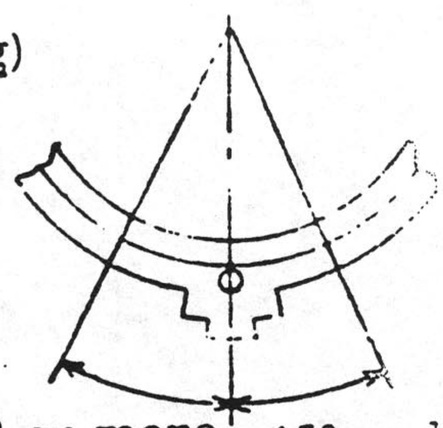


d. At MANUAL

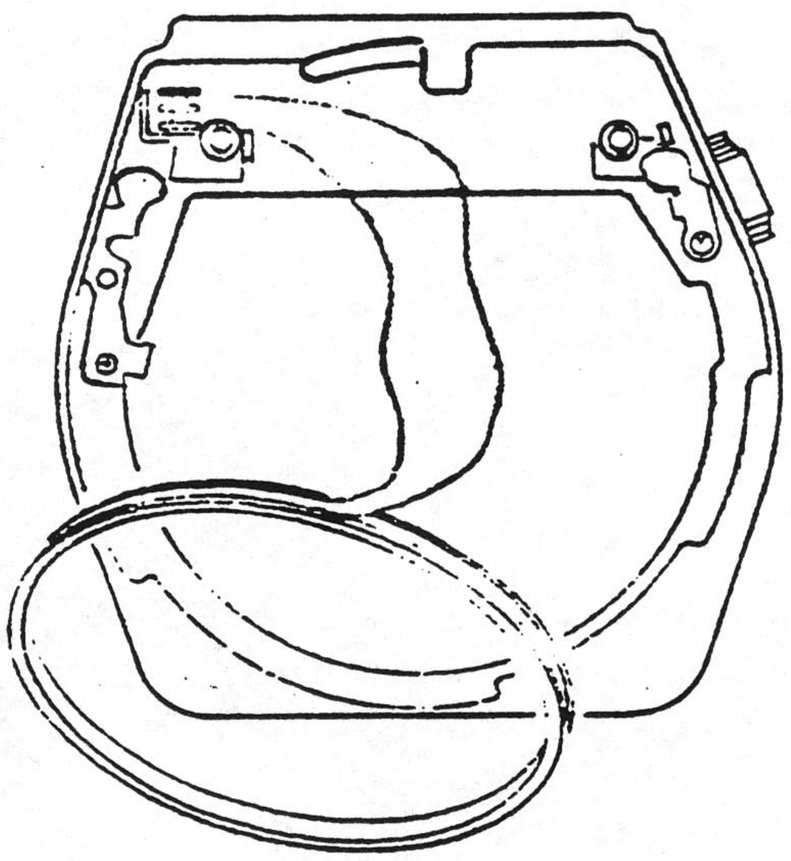
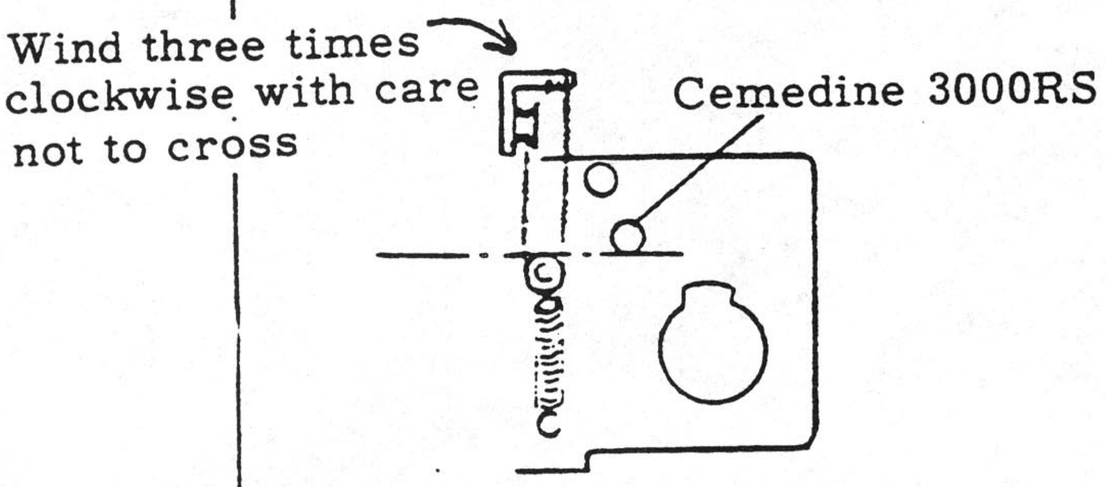
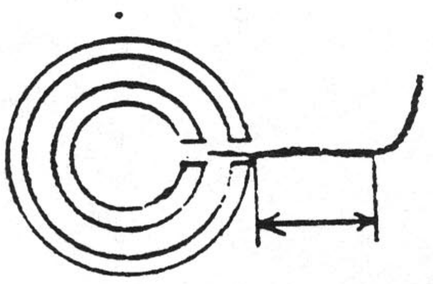


5. Improper changing of shutter speed

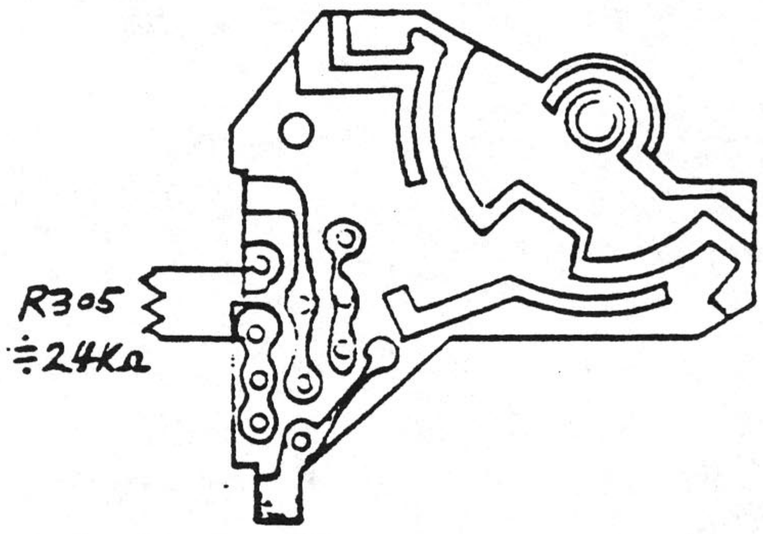
Cause	Remedy	Checkup
1) Improper position of CE0552 (right side plate)	After confirming that the roller operates normally. strike CE0552 against the post illustrated below and tighten it.  Strike in the arrow direction	
2) Improper position of CE0550 (roller plate)	After confirming that the roller operates normally. strike CE0550 against the post illustrated below and tighten it.  Strike in the arrow direction	
3) Poor insulation of CE0555 (circuit board B)	When CE0546 (SL contact piece) is attached. the insulation should be as follow. Between yellow LW and Main Body ... ∞ Ω Between blue LW and Main Body ... Conductive at "B" and ∞ at other shutter speeds. Between yellow LW and Blue LW ... Resistance value of each shutter speed is obtained. (This test should be done with the yellow and blue LWs disconnected from CE0591 SW circuit board).	When CE0546 (SL contact piece) is not attached. the insulation should be as follow. Between yellow LW and Main Body ... ∞ Ω Between blue LW and Main Body ... ∞ Ω Between blue LW and Yellow LW ... ∞ Ω

Cause	Remedy	Checkup
4) Defective CE0602 (B cord 1)	Replace on re-attach CE0602 in the following manner. (1) Wind CE0602 (cord) around the edge of CE0550 (roller plate). turn the post and pass the cord through CE0546 (SL contact piece). (2) Thread CE0602 (cord) through the roller (two positions) of CE0561 (stopper) and then through the roller (two positions) of CE0522. (3) Thread through CE0546 and then through CE0557 (cord spring) and wind two times. (4) Engage the cord in CE0521 (dial gear) and place it on CE0502 (front plate) to decide the cord length. and then glue to the cord winding portion of CE0557 (cord spring). Then cut off surplus length. (5) Referring to the checkup method at above right. decide the position of CE0546 and glue the cord to CE0521 (dial gear).  Gluing: Cemedine 3000RS	CE0546 (SL contact piece) should be in the position shown below when the shutter dial is set to 1/1000.  Gluing of the cord to CE0521 (dial gear): Drip 2 - 3 drops of Cemedine 3000RS into the gluing hole of CE0521. The gluing area should be more than 45° and less than 90° (20 - 30mm) as illustrated below. 

6. Improper coupling of CE0522 (coupling ring)

Cause	Remedy	Checkup
1) Defective CE0603 (B cord 2)	If CE0522 (coupling ring) operates normally, check CE0603. When it is found defective, replace or adjust it in the following manner. (1) Thread the upper part of cord through the lower roller, and the lower part of cord through the upper roller. respectively. in the condition with CE0522 (coupling ring) placed on CE0502 (front plate). (2) Thread the upper length through the B spring unit and wind it round B spring plate (three winds clockwise with care not to cross) and glue there. (3) Glue the lower length to CE0635 (pulley M).  	 Do not apply Cemedine here. When CE0522 (coupling ring) is struck against the stopper. the condition should be as shown at left.

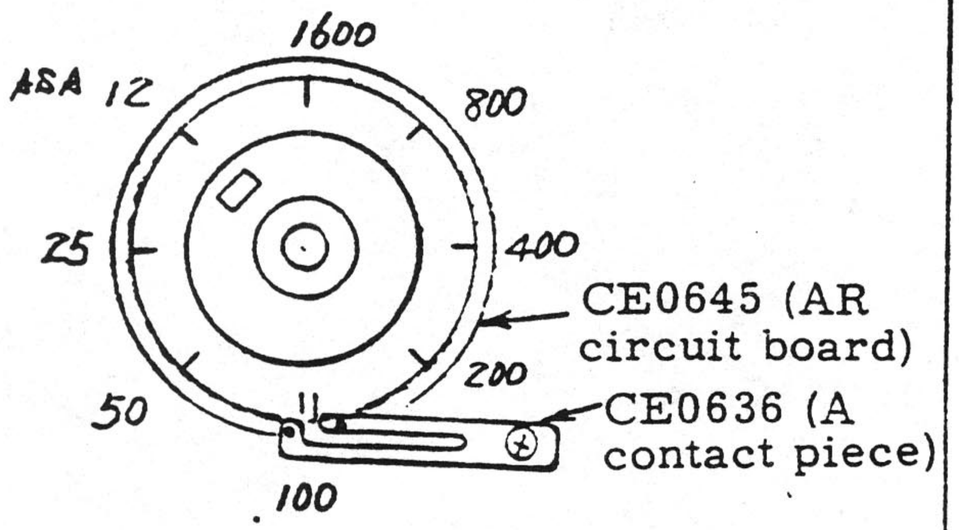
7. Excessive indication difference between AUTO and MANUAL

Cause	Remedy	Checkup
1) Improper adjustment of R306	Replace R306 to have the condition at right.  	Check Points at AUTO/ MANUAL. EV / (ASA) / Shutter Speed / FNO 8 / 100 / 1/30 / 2.8 11 / " / 1/60 / 5.6 14 / " / 1/125 / 11 16 / " / 1/500 / 11 o Standard ... ±0.3EV for each check point. o Set to zero at MANUAL and switch to AUTO and see deviation from the center of each shutter speed value.

8. Excessive difference in going and returning meter needle deflection owing to aperture ring.

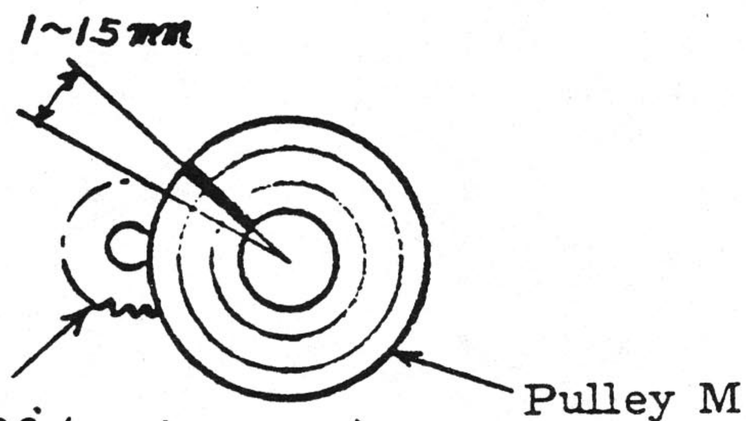
Cause	Remedy	Checkup
1) Insufficient tension of CA8999 (gear spring)	When the tension of CA8999 is insufficient. it may cause excessive unbalance in the meter needle reciprocating movement and improper returning of cord. CA8999 should be tensioned by two winds. and replaced if tension is too weak. It is recommended to tension after tentatively tightening the gear shaft. Remove CE0502 (front plate). whole set of meter unit. and then whole set of CE0626 (bottom plate M unit), and thereafter make the repair.	CA8999 should operate effectively and surely.

1) Each ASA position of CE0645 (AR circuit board)



Each ASA setting is matched to CE0636 (A contact piece). The above illustration shows that CE0636 is matched to ASA 100.

2) Mounting of CE0635 (pulley M)



CE0635 (pulley M) should be set to 1 - 1.5mm with CA8996 (spring gear) as a reference.

3) Mounting of exposure meter

a. ASA = 12

b. Eccentric of CE0630 (A lever 2) = Center

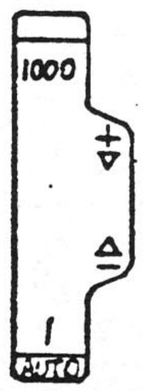
c. Engagement of M gear and CA8983 (P gear) = 2.5 teeth

d. Engagement of CE0633 (Q gear) and CA9000 (pulley gear) = 3.0 teeth

Set CA8981 (pulley holder) as above. and tighten PUK1.7-406SO. (See "ORDER OF DISASSEMBLY".)

4) Cleaning of CE0547 (viewfinder indication plate)

Use RIGROINE for cleaning. Never use mixed solution. (It can erase the characters.)



Viewfinder Indication Plate

5) Constant-voltage power supply:

The reference voltage of the exposure meter differs from that of the shutter because of the following reasons.

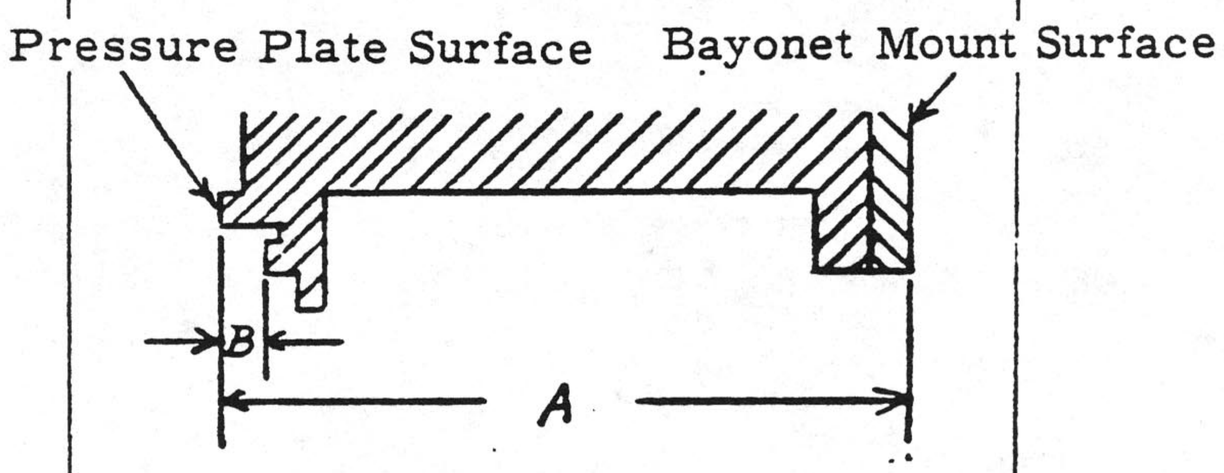
a. As the current consumption of the exposure meter is several 100μA. the battery can supply 3.15V without voltage drop.

b. As the current of about 10mA is consumed when the shutter operates. the battery suffers the voltage drop and supplies 3.10V instead of 3.15V.

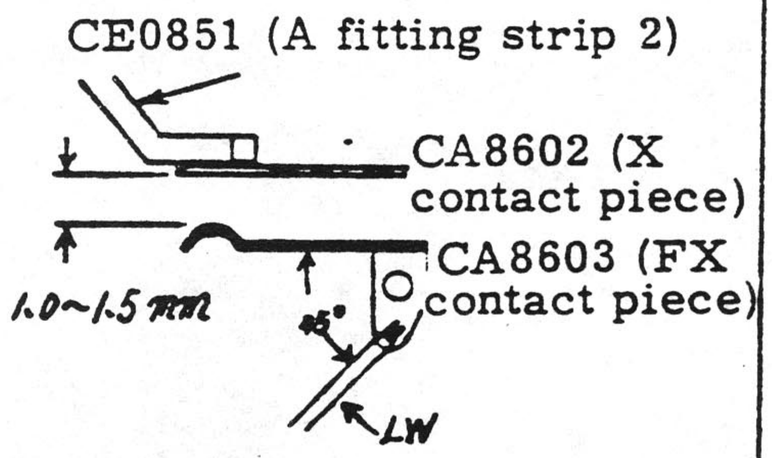
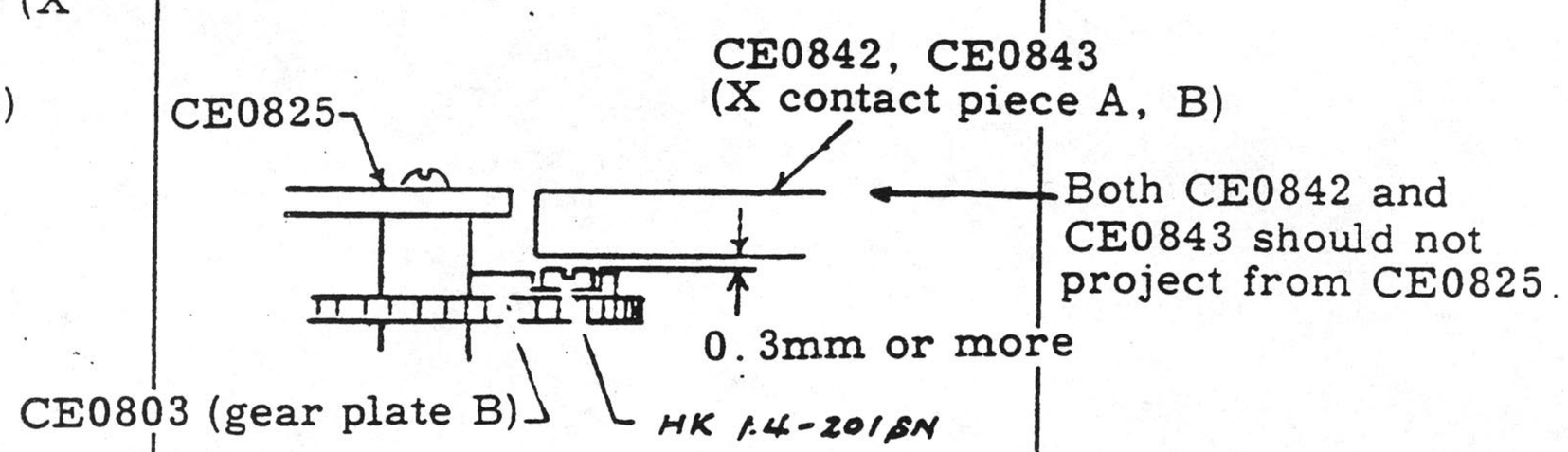
Owing to the above reasons. the power supply voltage should be set to 3.15V for the exposure meter and 3.10V for the shutter when the constant-voltage power supply is used.

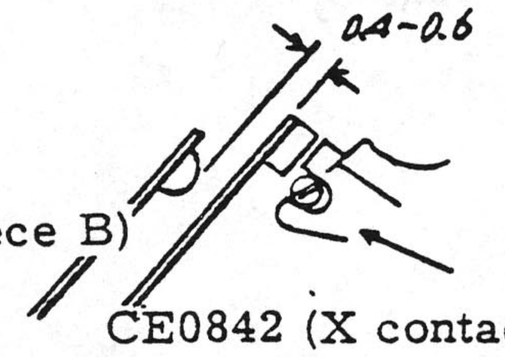
V. PERFORMANCES

1. Poor focusing

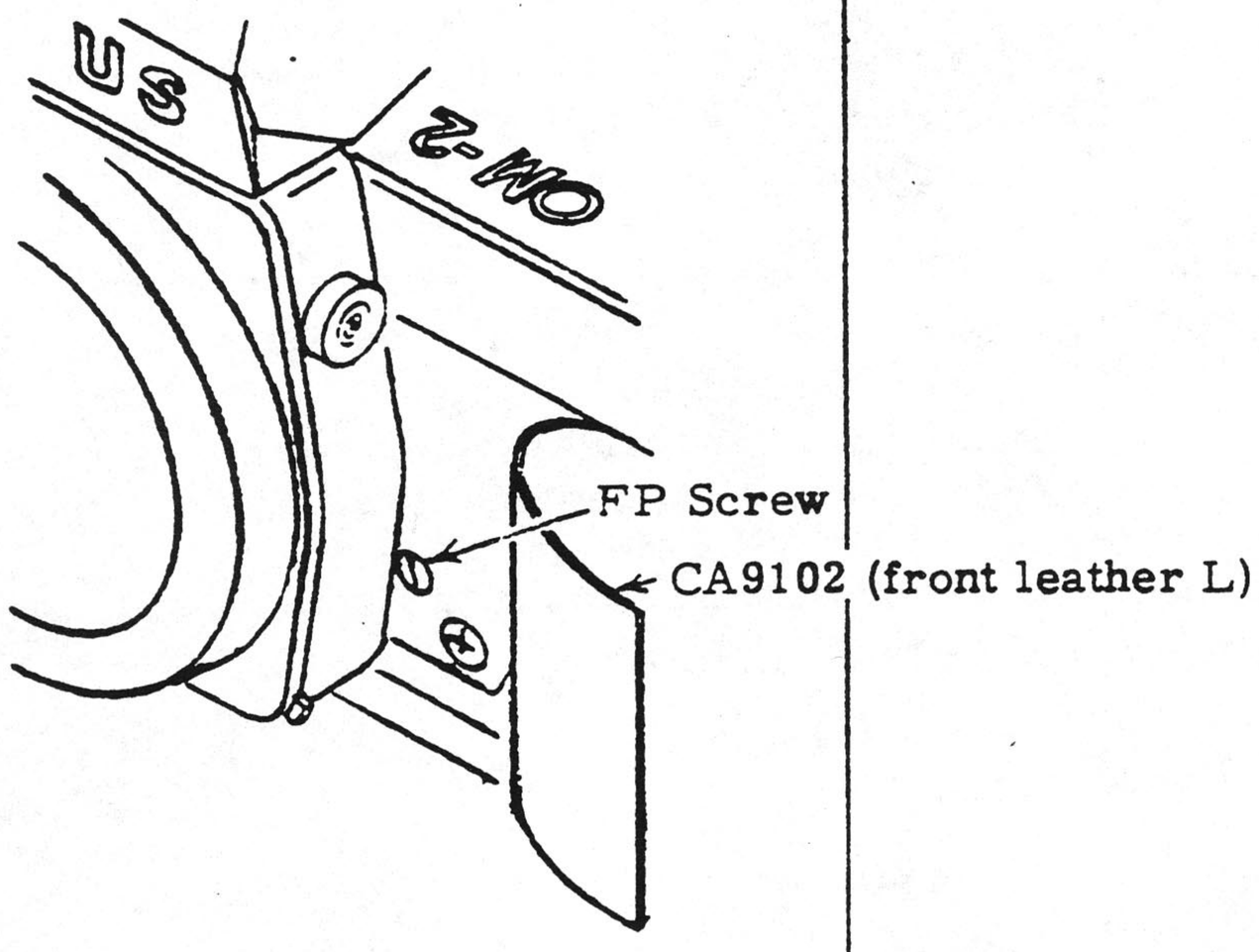
Cause	Remedy	Checkup
1) Adjustment of flange back	The distance from CA8877 (bayonet mount) to film pressure plate surface should be: $A = 46.2^{+0}_{-0.02}$ The distance from pressure plate surface to film rail surface should be: $B = 0.2^{+0.02}_{-0.01}$  Adjustment should be made with CA9106. CA9107 and CA9170 (spacer). (See the OM-1 Repair Manual.)	
2) Poor focusing in viewfinder	Select proper piece out of a - h series of CA9144 (front ring seat) and CE0535 (back ring seat). and adjust focusing. Apply pliobond on the side of the ring seat. (See the OM-1 Repair Manual 20-I-D43.)	

2. WX contacts not conductive

Cause	Remedy	Checkup
1) Conduction failure between CA8602 (X contact piece) and CA8603 (FX contact piece)	CA8602 and CA8603 should be as follow. a. CA8602 should be pushing CE0851 after winding. (If not. bend CA8602.) b. CA8602 should not project from the edge of A Lever 1 (CE0851 ASS'Y) c. The clearance between CA8602 and CA8603 should be within 1.0 - 1.5mm.  Lead wire should be soldered at an angle of 45°	When tested with WX tester. CA8602 and CA8603 should be conductive at shutter speed 1/60 sec. or slower, and not conductive at 1/125 sec. or faster. CA8602 and CA8603 should become conductive after the opening curtain finished running. X contact piece A and B should be conductive before the closing curtain runs. and become non-conductive as soon as the closing curtain starts to run.
2) Conduction failure between CE0842 (X contact piece A) and CE0843 (X contact piece B)	CE0842 and CE0843 should be as follow. (1) CE0842 and CE0843 should have a clearance of 0.3mm between HK screw of CE0803 (gear plate B) before winding.  (2) CE0842 and CE0843 should not project from CE0825 when winding is done.	

Cause	Remedy	Checkup
	(3) CE0842 should be contacted to CE0817 (closing claw B) and have a clearance of 0.4 ~ 0.6 between the metallic dowel of CE0843 before winding.  CE0843 (X contact piece B) CE0842 (X contact piece A) Adjustment is to be made by retightening PUK1.4 x 1.6SO of CE0842 and CE0843 or by bending CE0842 and CE0843.	
3) Insufficient contact efficiency	If the contact efficiency is less than the value described at right when measured by an insulation efficiency gauge. clean each contact piece or replace it.	1/60 sec. at an interval of 1ms: 60% or higher 1/30 sec. at an interval of 2.5ms: 70% or higher
4) Check for insulation and continuity	Check in the following procedures. (1) Check for insulation of FP contact Check with the shutter speed set to 1/1. (2) Check for continuity of X contact It should be conductive with 3V when the shutter is released at 1/60 or slower. (3) Check for insulation of X contact Set the shutter speed to 1/1. wind the closing curtain midway after the opening curtain run. and check insulation. (4) Check for switching of X/FP contacts Keeping condition (3). set the supply voltage to 3V and switch from X to FP. and check continuity of FP contact.	(1) Should be 30MΩ or more at 500V when measured by insulation efficiency gauge. (2) X contact should be conductive at 3V. (3) Should be 30MΩ or more when measured by insulation efficiency gauge. (4) X contact should not be conductive and FP contact conductive at 3V.

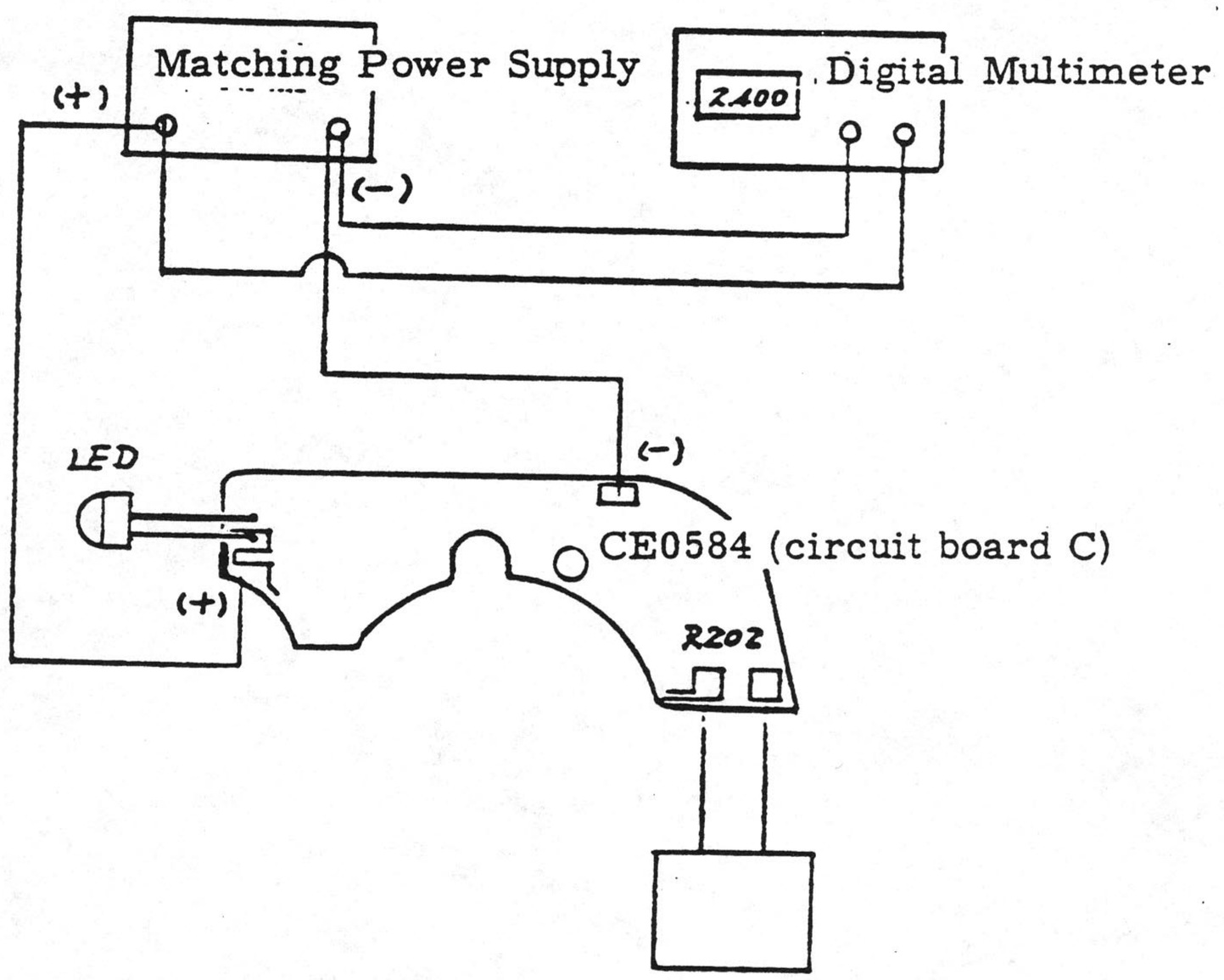
3. Improper time lag of FP contact

Cause	Remedy	Checkup
1) Improper adjustment of CE0532 (FP screw)	Peel off CA9102 (front leather L) around the reset button, and adjust by turning the FP screw with screw-driver No. 2. Clockwise turning: Becomes faster Counter-clockwise turning: Becomes slower  Caution: Take care not to tighten FP screw too deep. because it will be fallen into the inside of the camera body.	

VI. OTHERS

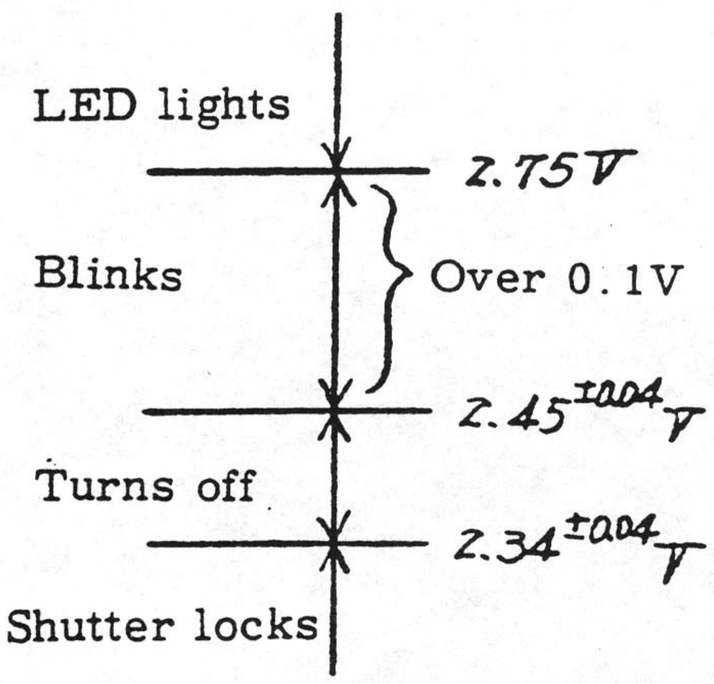
1. Improper battery checker indication

Cause	Remedy	Checkup
1) Improper matching of R202 (matching resistor)	After removing the whole set of CE0584 (circuit board C) from the body, remove R202 attached to CE0584 and wire it as illustrated below, and select a resistor with which the LED turns off at an voltage less than 2.4V.	Turn-off voltage: 2.45±0.04V Blinking voltage: Difference with the turn-off voltage is 0.1V or more and 2.75V or less.



The part wired to the resistor box in the above drawing is R202, which is available in the following 11 types.

470Ω	±10%	1/16W
1.5KΩ	"	"
2.2 "	"	"
2.7 "	"	"
3.3 "	"	"
3.9 "	"	"
4.3 "	"	"
4.7 "	"	"
5.1 "	"	"
5.6 "	"	"
6.2 "	"	"



PARTS WHERE OIL, GREASE ETC. SHALL BE USED

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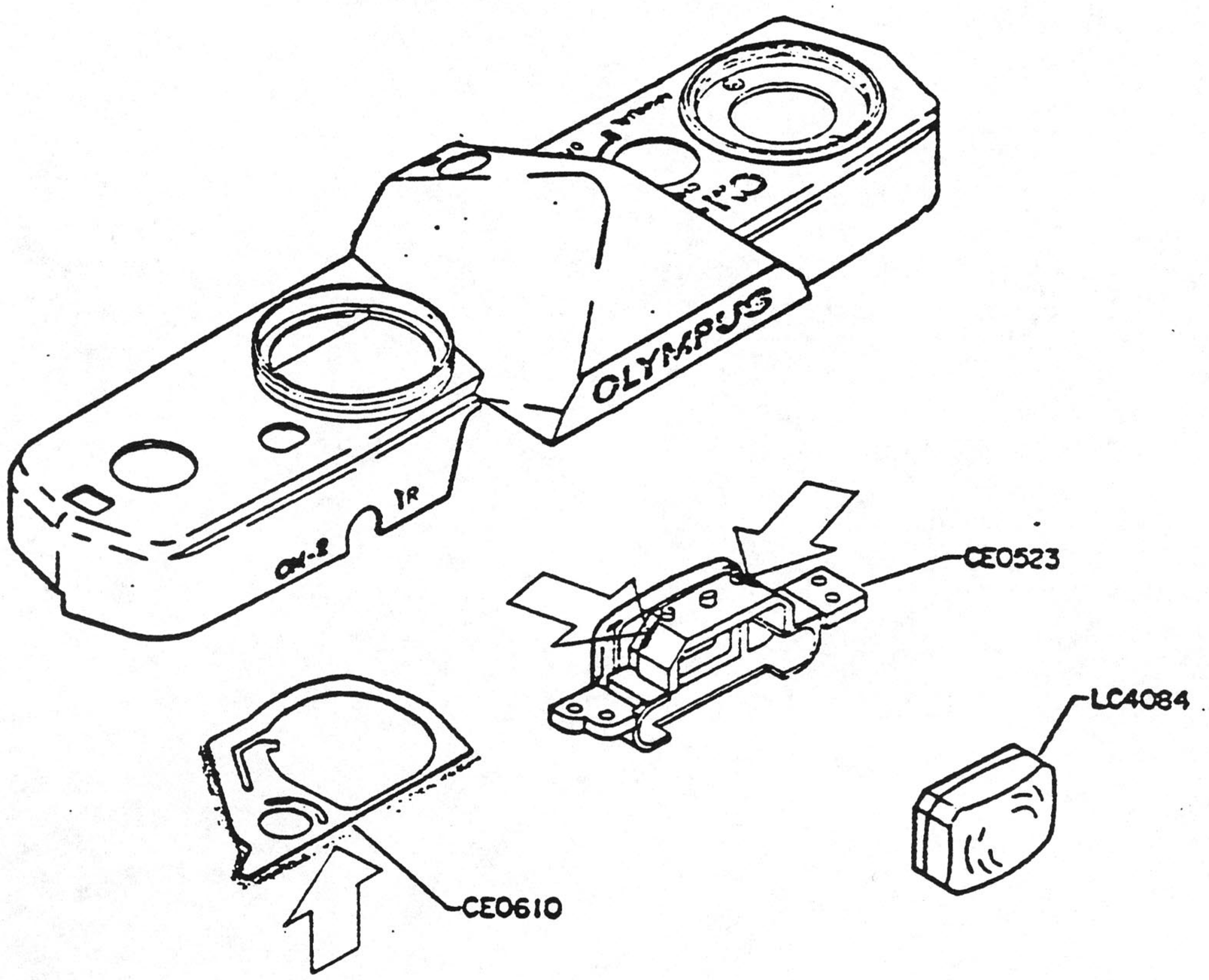
023P GREASE 143

MOLYCOAT + COSMOLUBRIC 144

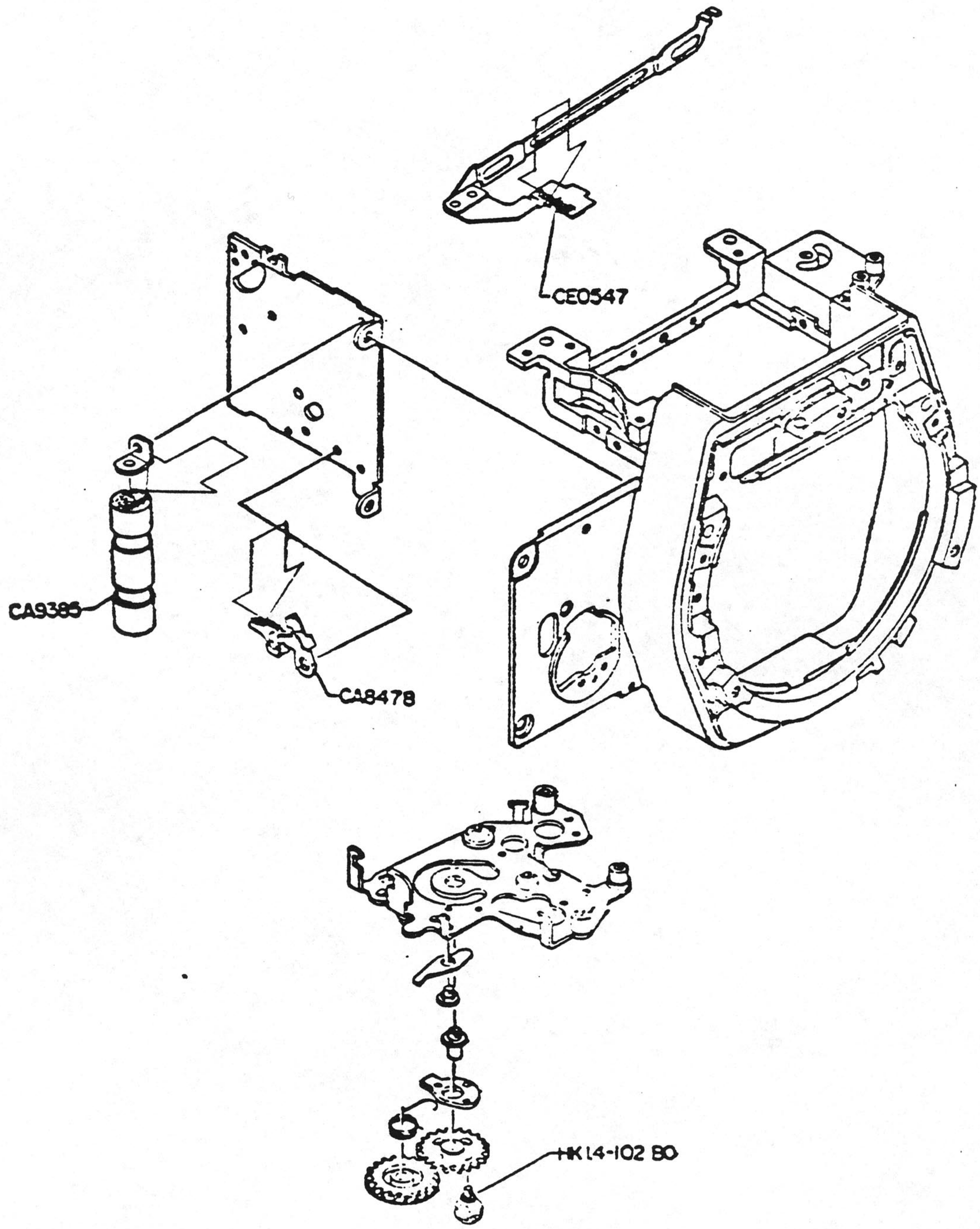
MOLYCOAT + 017P GREASE 145

ROCOL PASTE 146

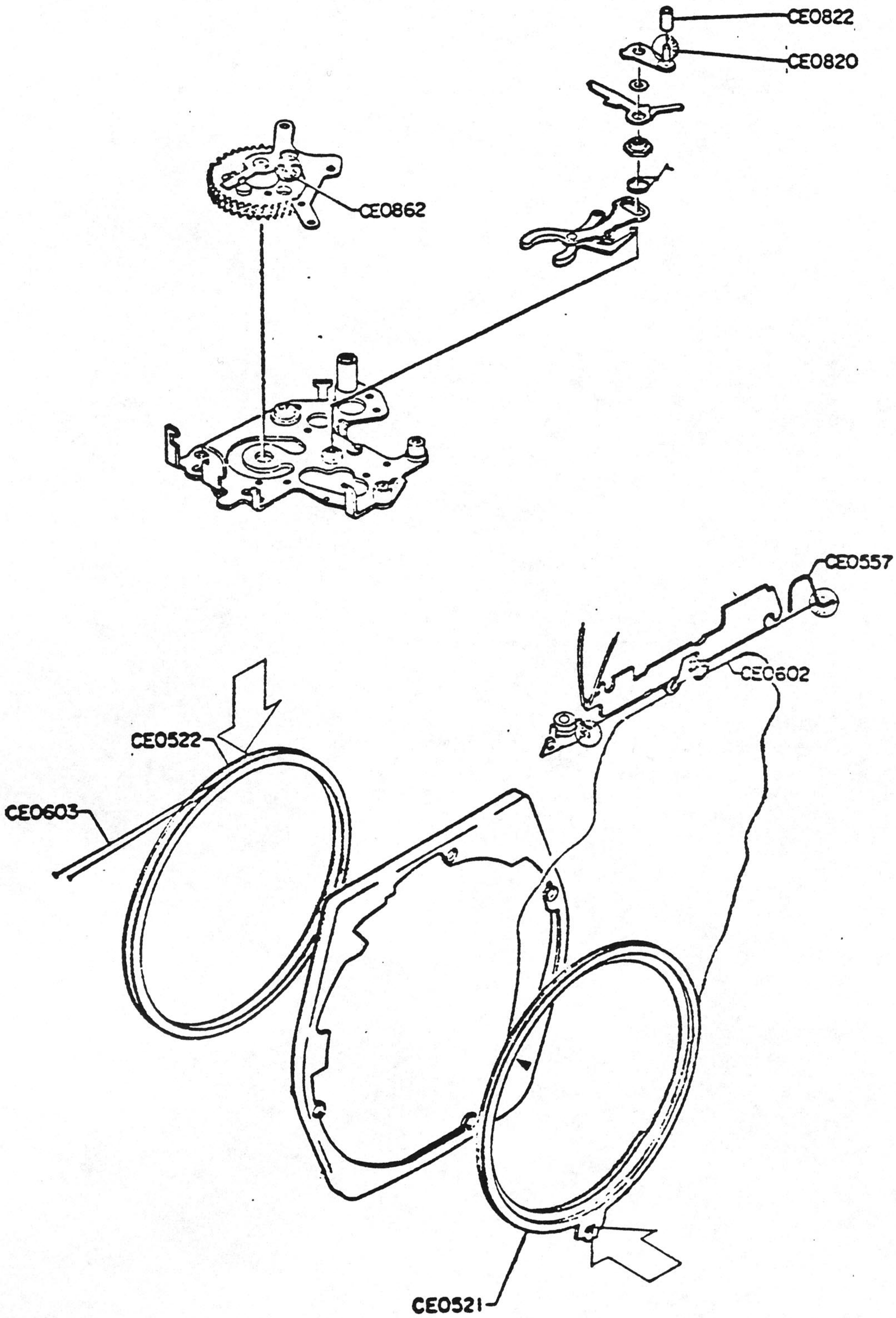
ARALDITE



ALON ALPHA



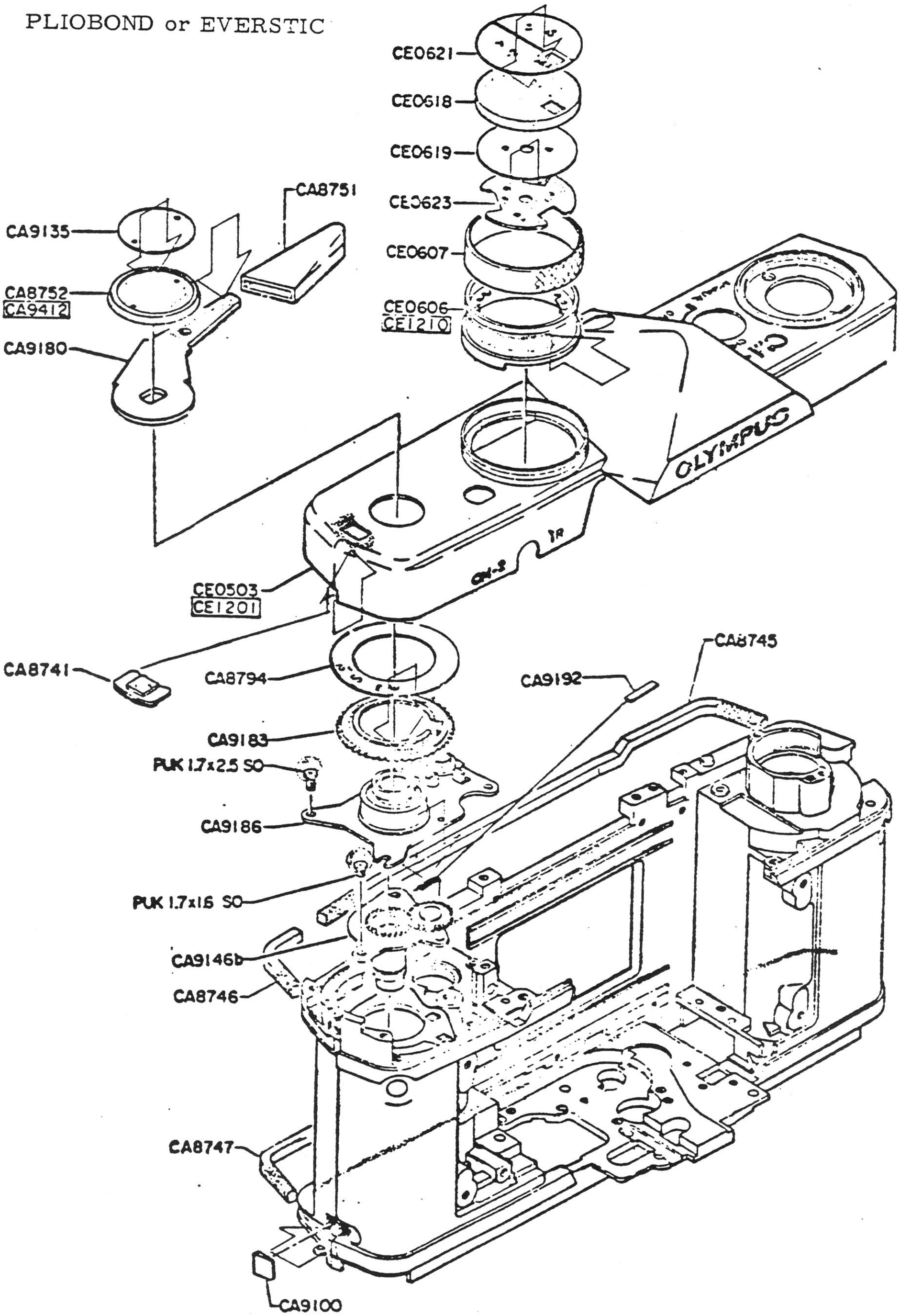
CEMEDINE 3000RS



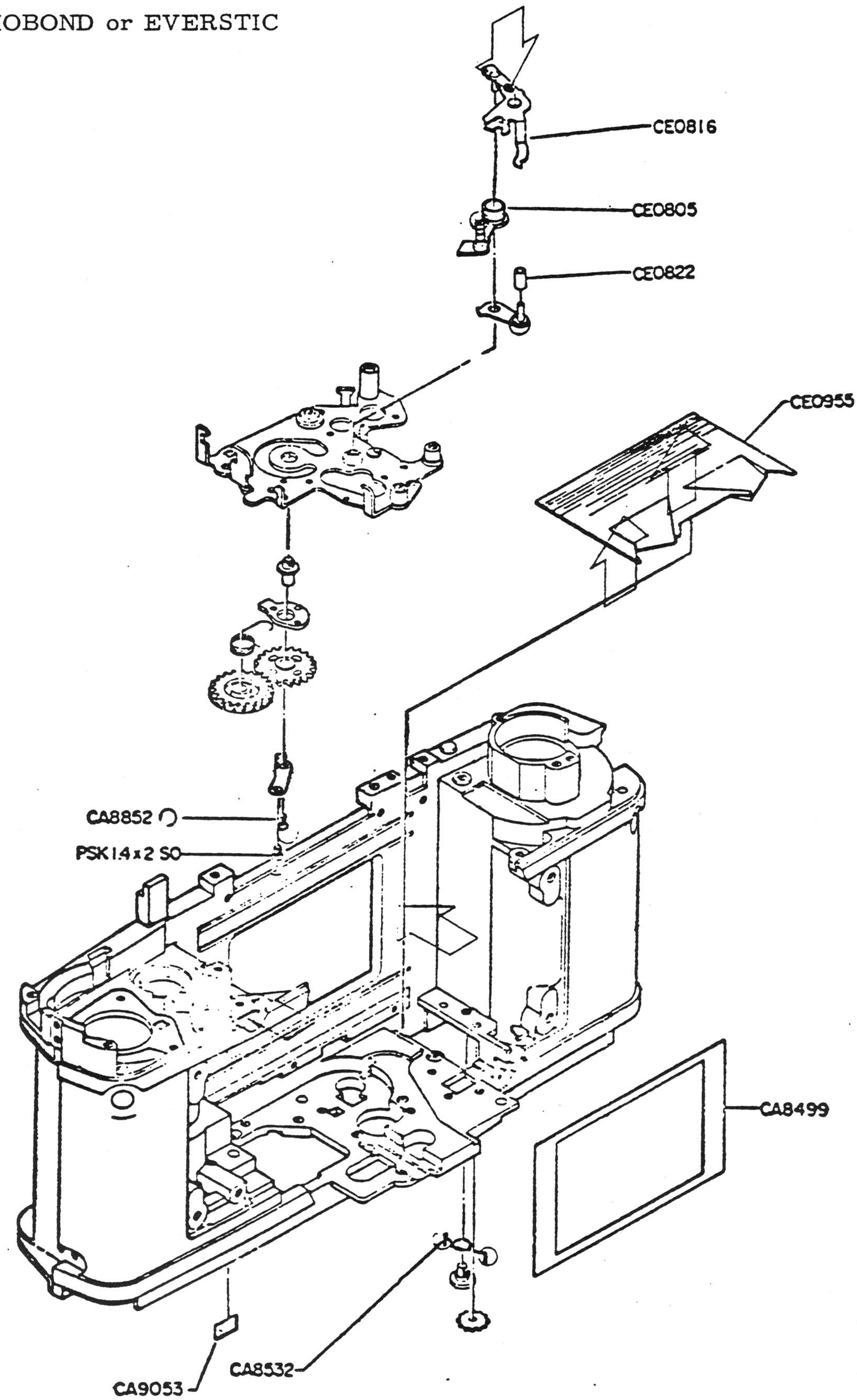
OLYMPUS
OM-2

PARTS WHERE OIL. GREASE. ETC. SHALL BE USED

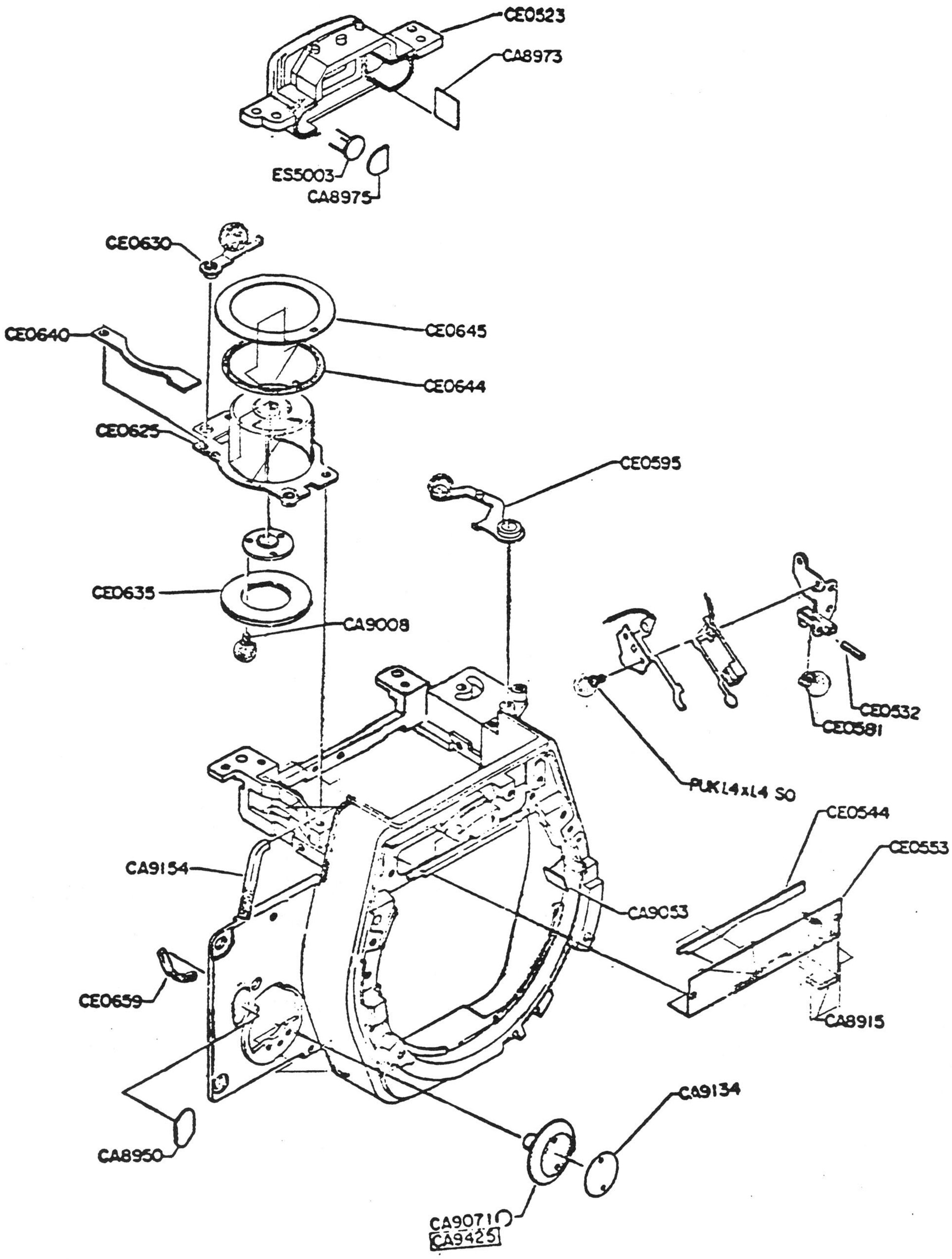
PLIOBOND or EVERSTIC



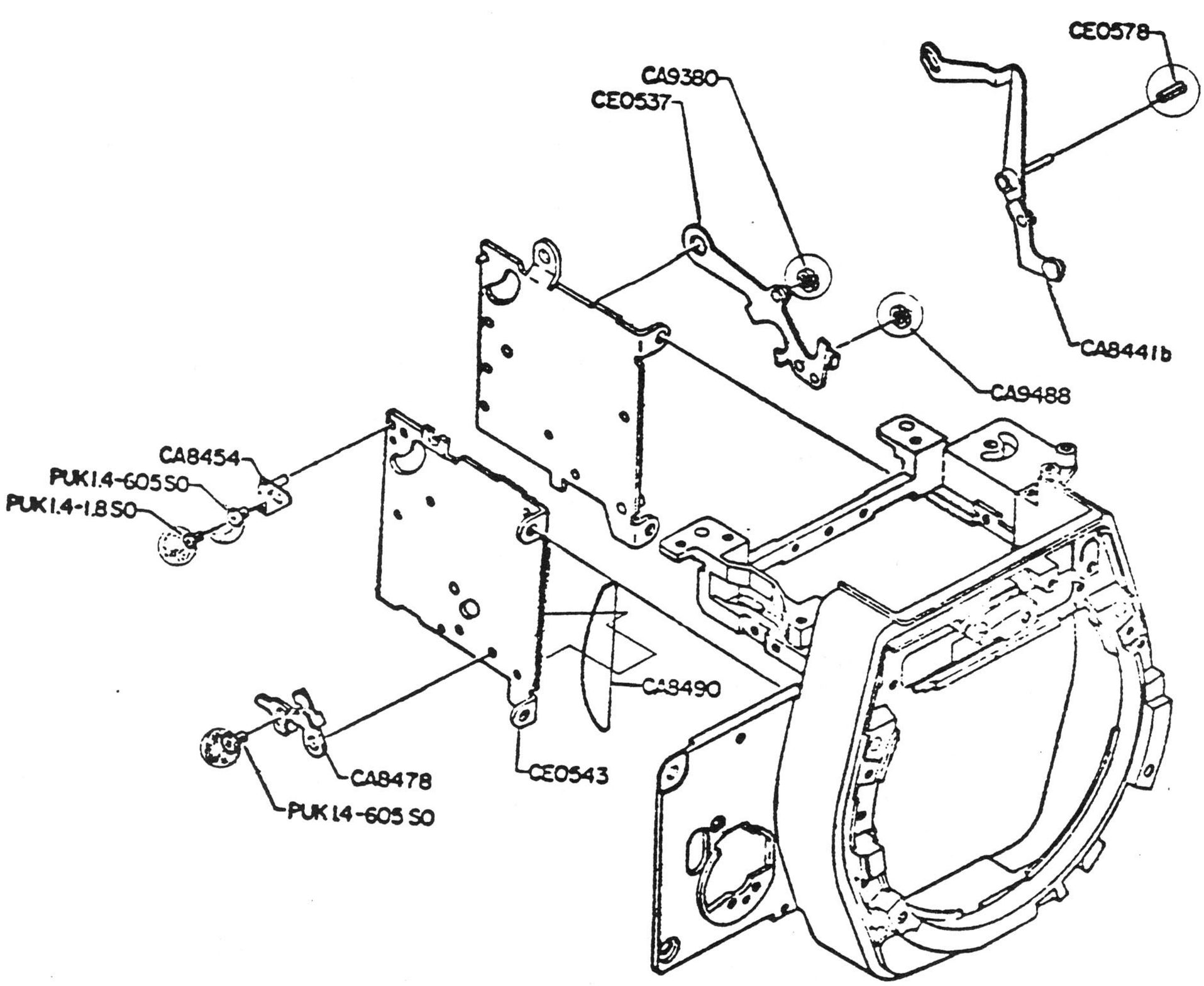
PLIOBOND or EVERSTIC



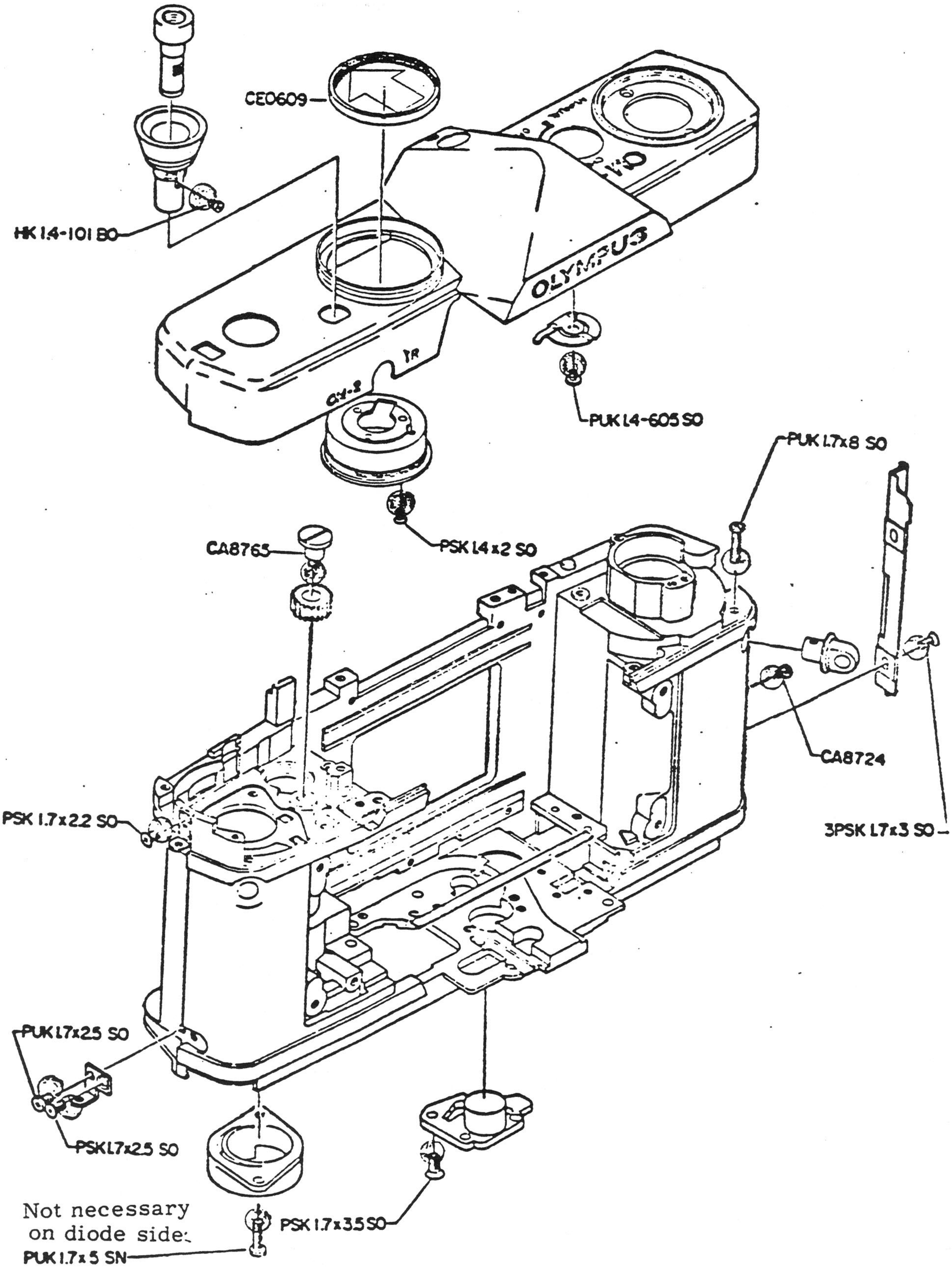
PLIOBOND or EVERSTIC



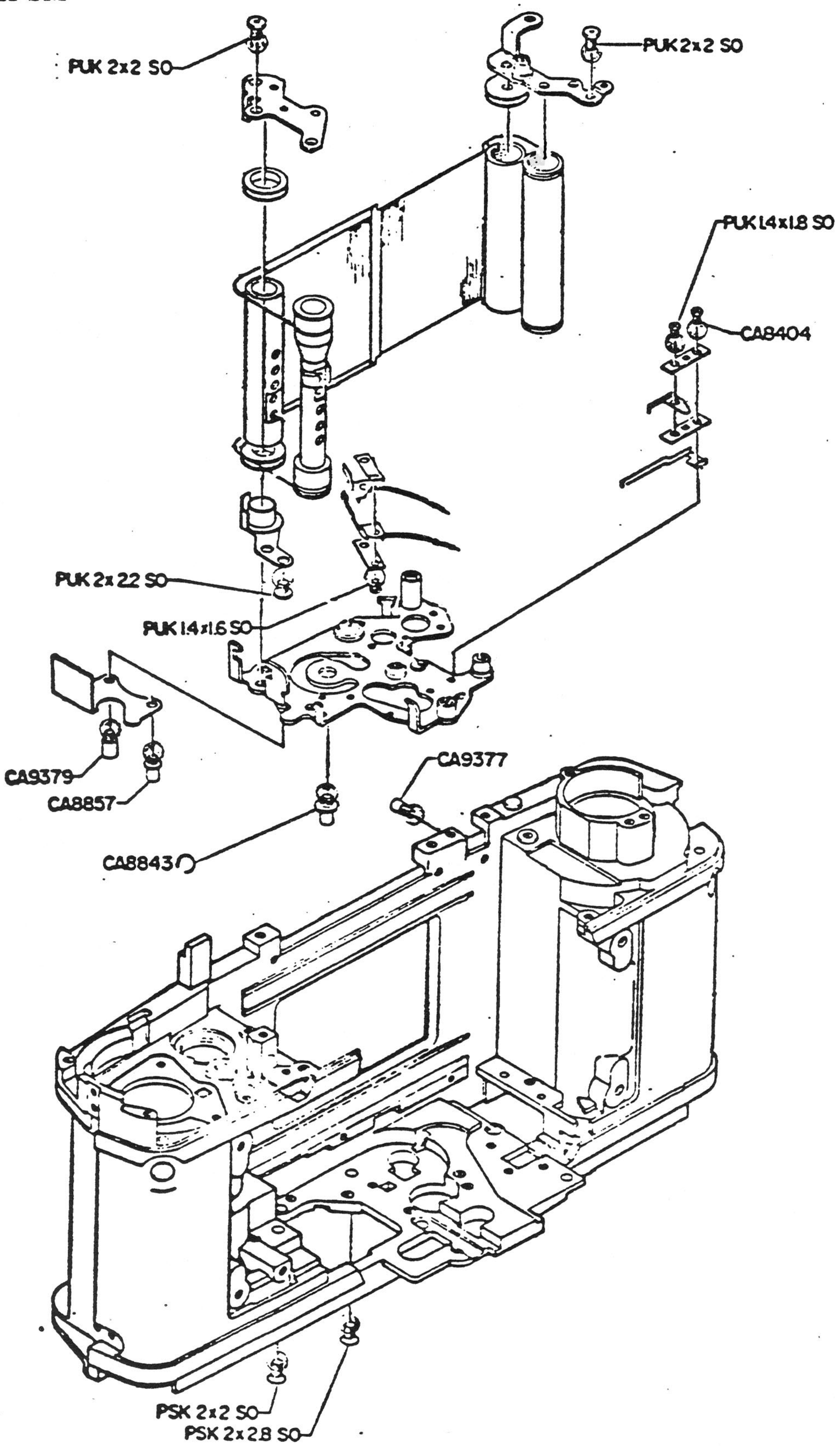
PLIOBOND or EVERSTIC



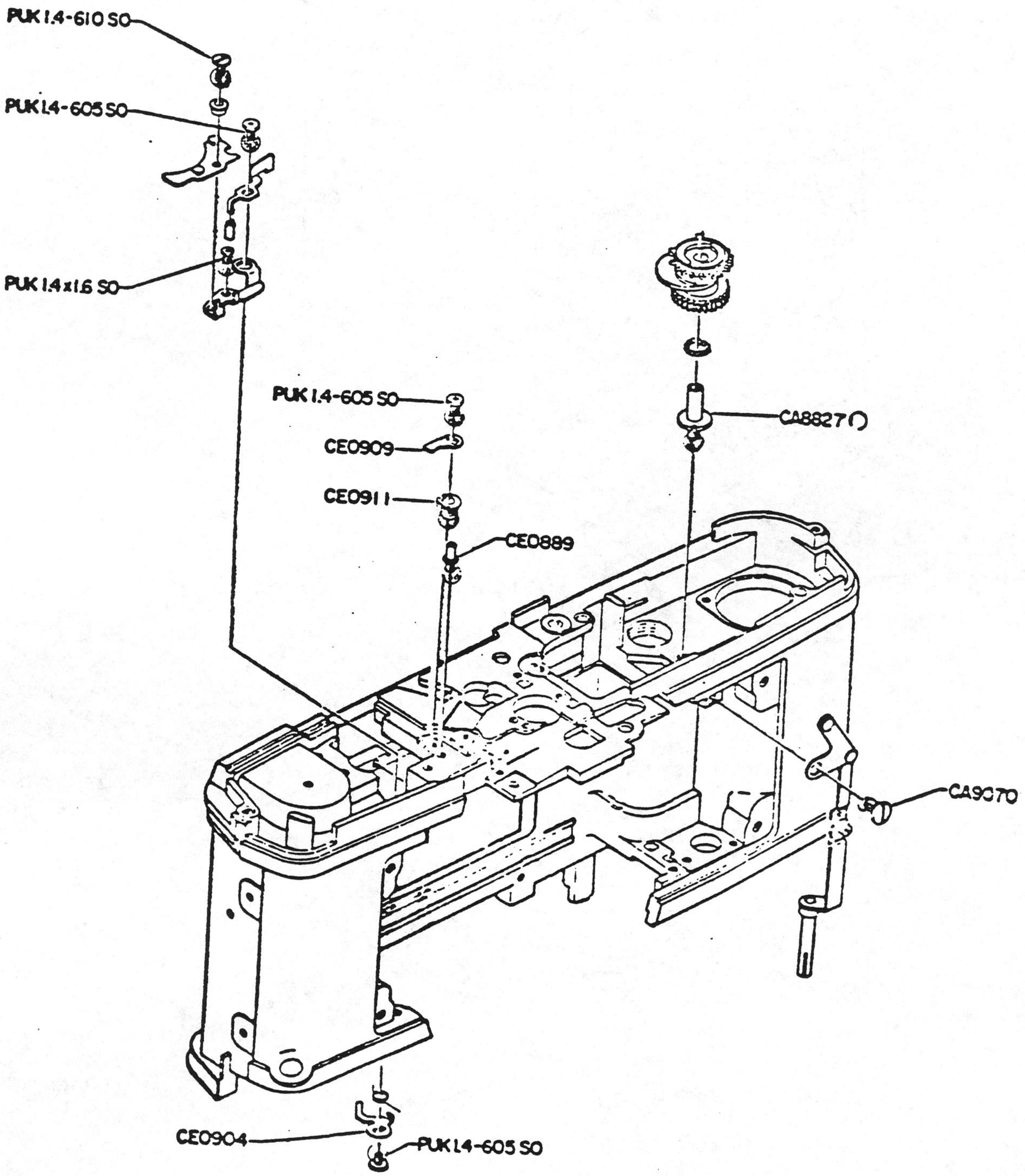
BELL LOCK SM


CE0609
HK 1.4-101 BO
OLYMPUS
PUK 1.4-605 SO
PUK 1.7x8 SO
PSK 1.4x2 SO
CA8765
CA8724
3PSK 1.7x3 SO
PSK 1.7x2.2 SO
PUK 1.7x2.5 SO
PSK 1.7x2.5 SO
Not necessary
on diode side:
PUK 1.7x5 SN
PSK 1.7x3.5 SO

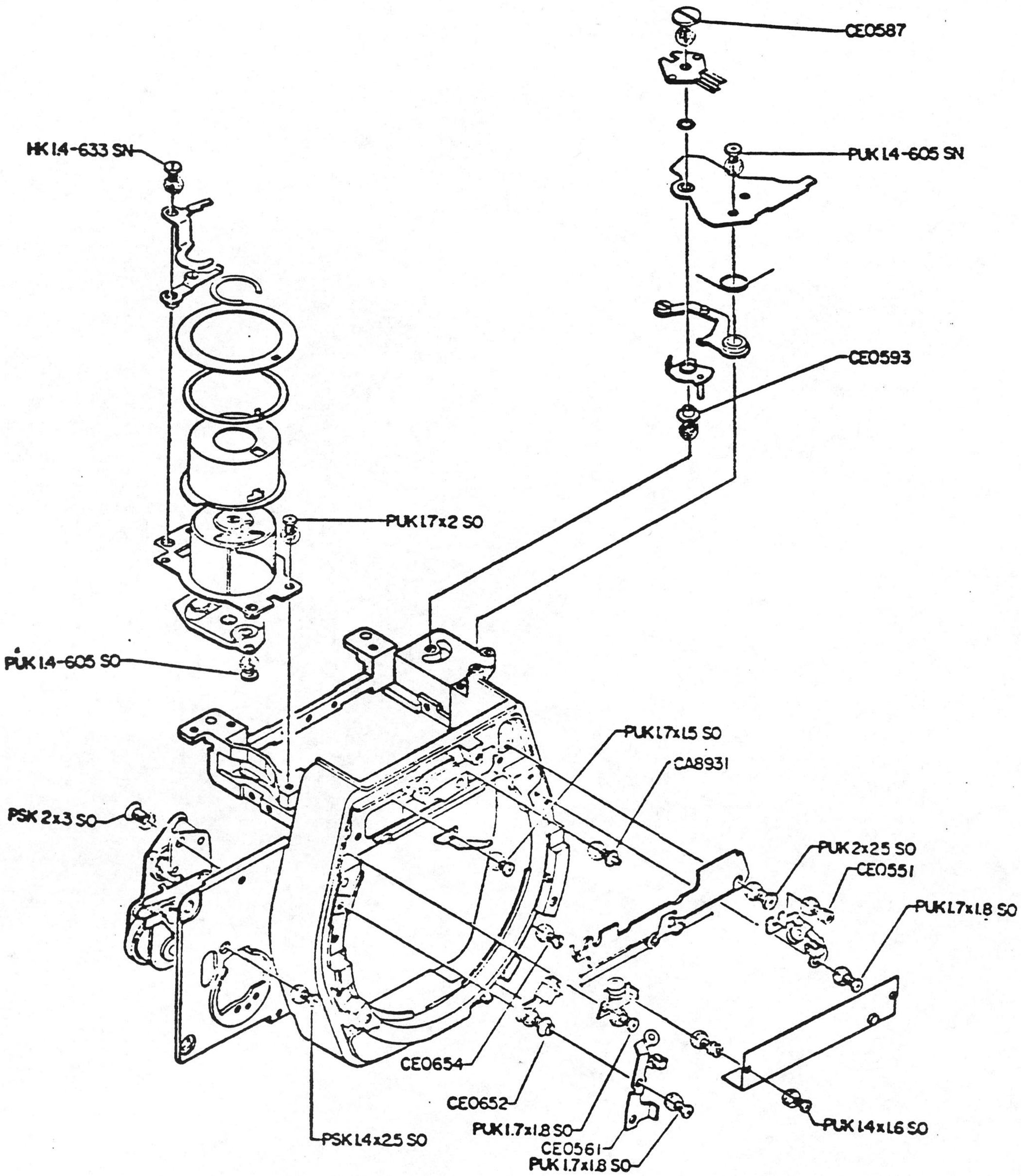
BELL LOCK SM


PUK 2x2 SO
PUK 2x2 SO
PUK 1.4x1.8 SO
CA8404
PUK 2x22 SO
PUK 1.4x1.6 SO
CA9379
CA8857
CA8843
CA9377
PSK 2x2 SO
PSK 2x28 SO

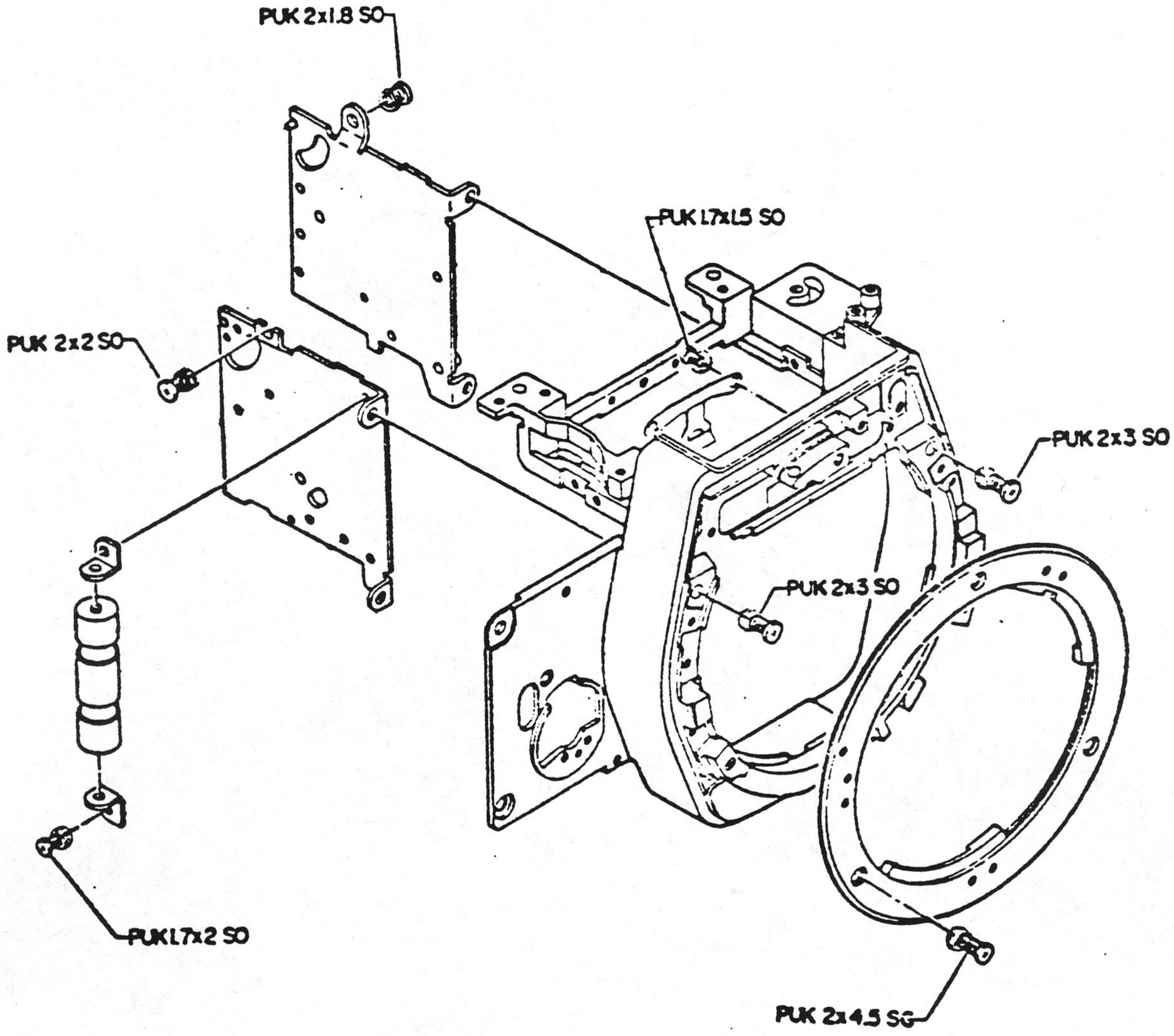
BELL LOCK SM


PUK 1.4-610 SO
PUK 1.4-605 SO
PUK 1.4x1.6 SO
PUK 1.4-605 SO
CE0909
CE0911
CE0889
CA8827
CA9070
CE0904
PUK 1.4-605 SO

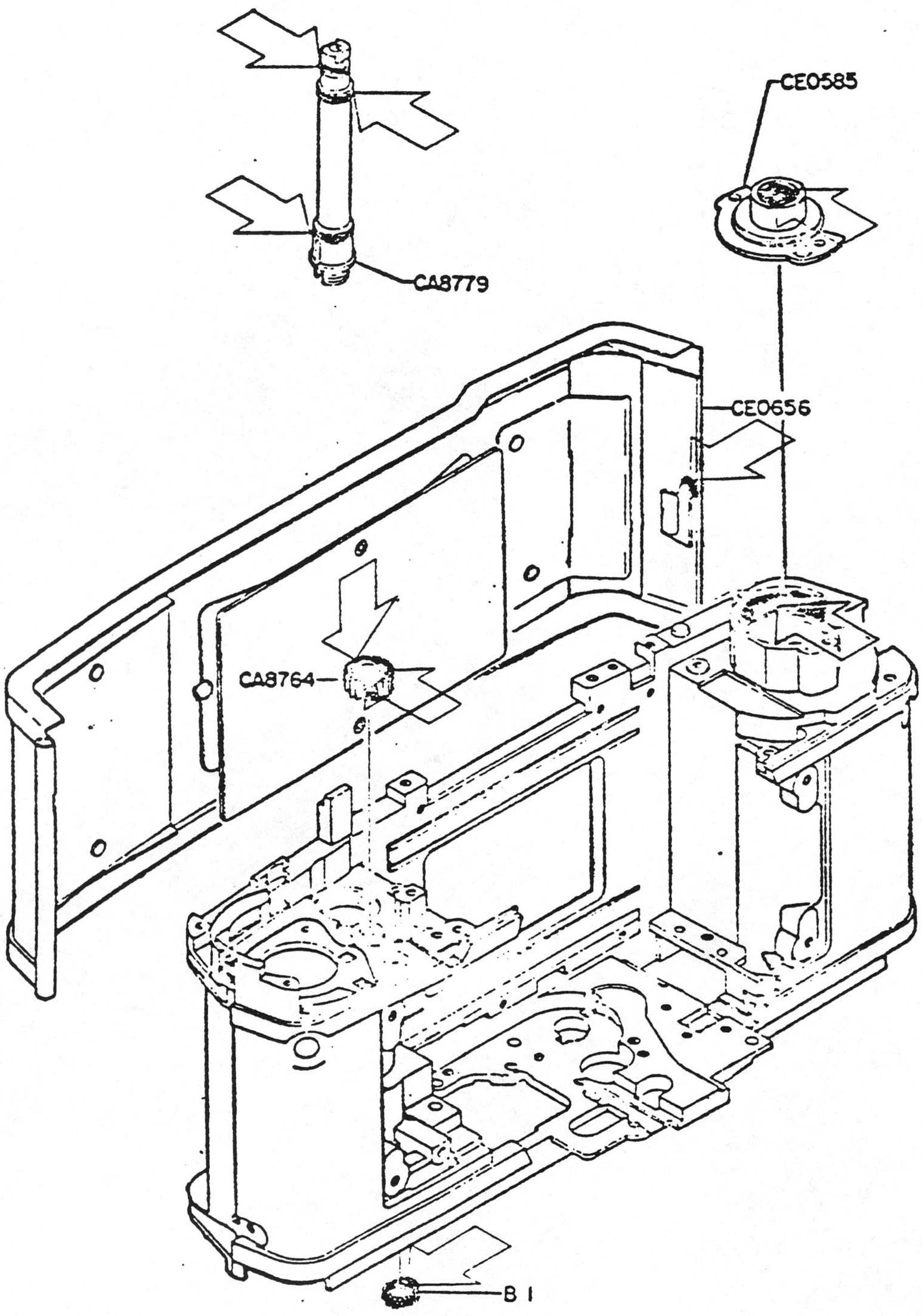
BELL LOCK SM

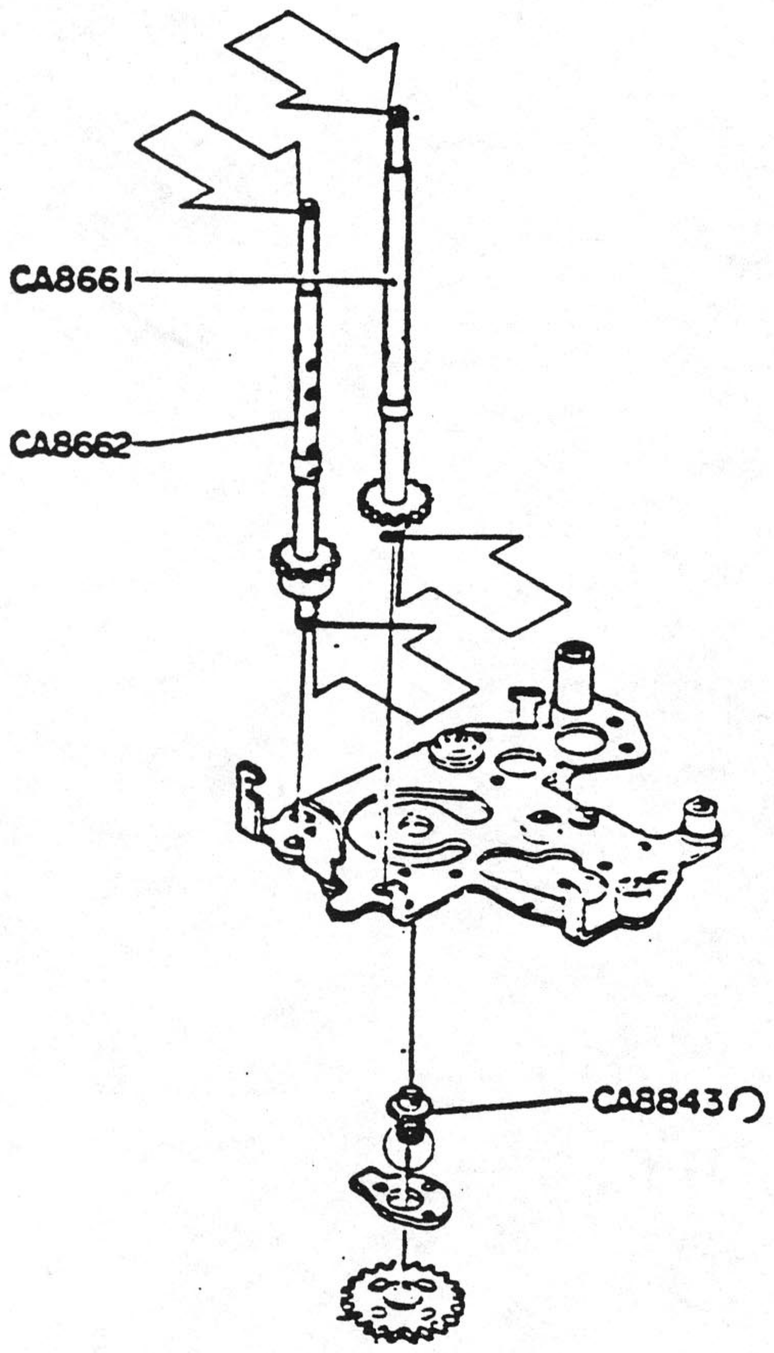

HK 1.4-633 SN
CE0587
PUK 1.4-605 SN
CE0593
PUK 1.7x2 SO
PUK 1.4-605 SO
PUK 1.7x1.5 SO
CA8931
PSK 2x3 SO
PUK 2x25 SO
CE0551
PUK 1.7x1.8 SO
CE0654
CE0652
PUK 1.7x1.8 SO
PUK 1.4x1.6 SO
PSK 1.4x2.5 SO
CE0561
PUK 1.7x1.8 SO

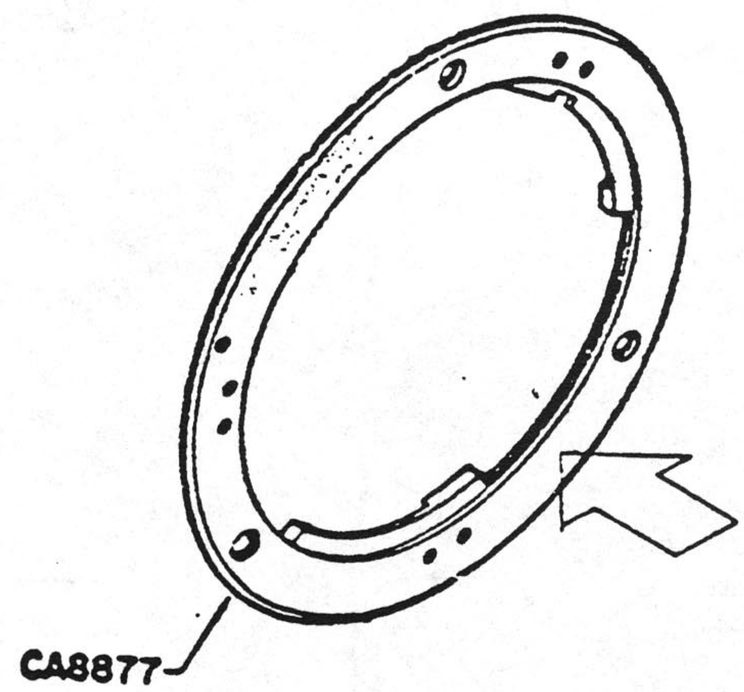
BELL LOCK SM


PUK 2x1.8 SO
PUK 1.7x1.5 SO
PUK 2x2 SO
PUK 2x3 SO
PUK 2x3 SO
PUK 1.7x2 SO
PUK 2x4.5 SG

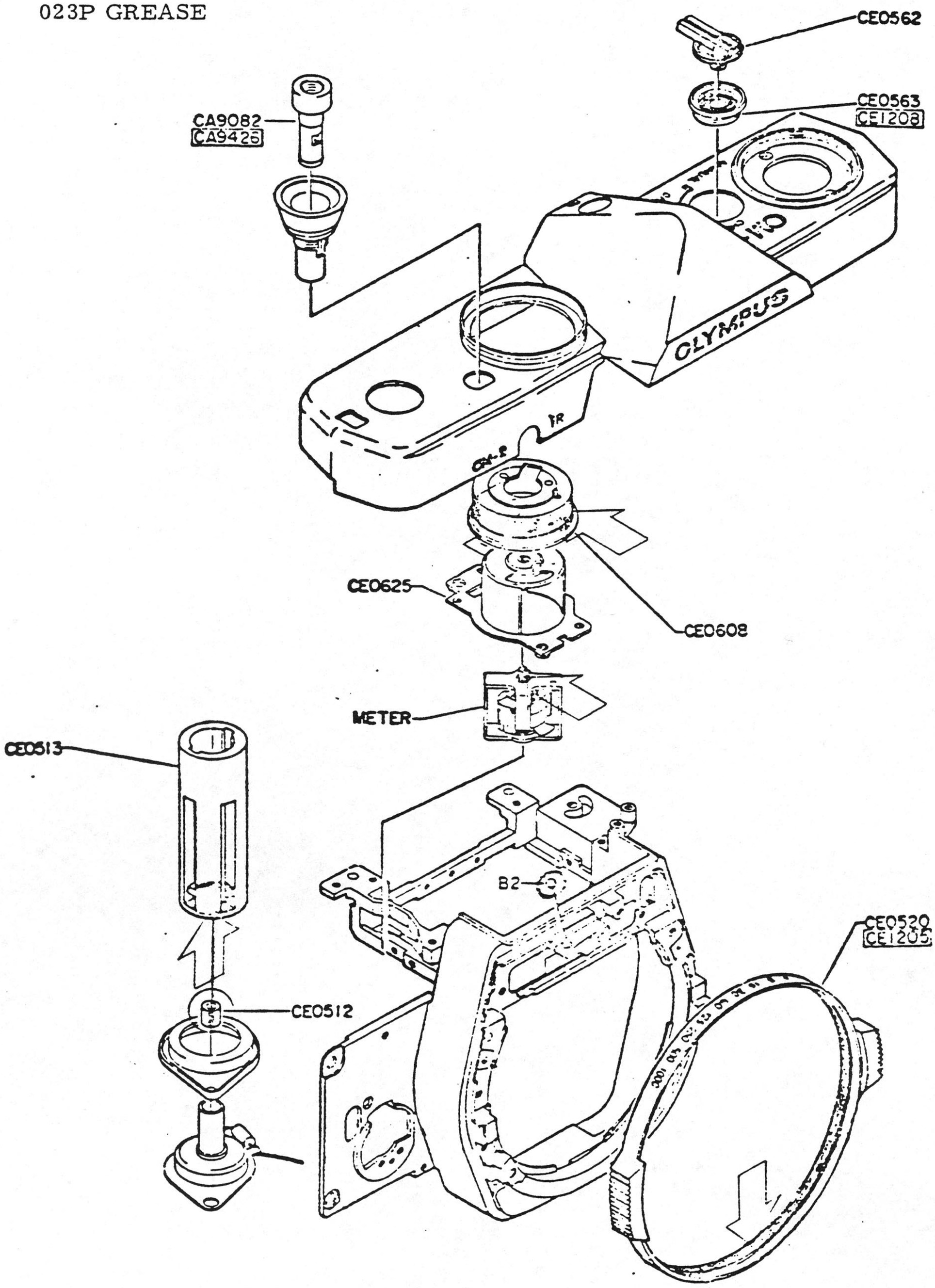
EP GREASE



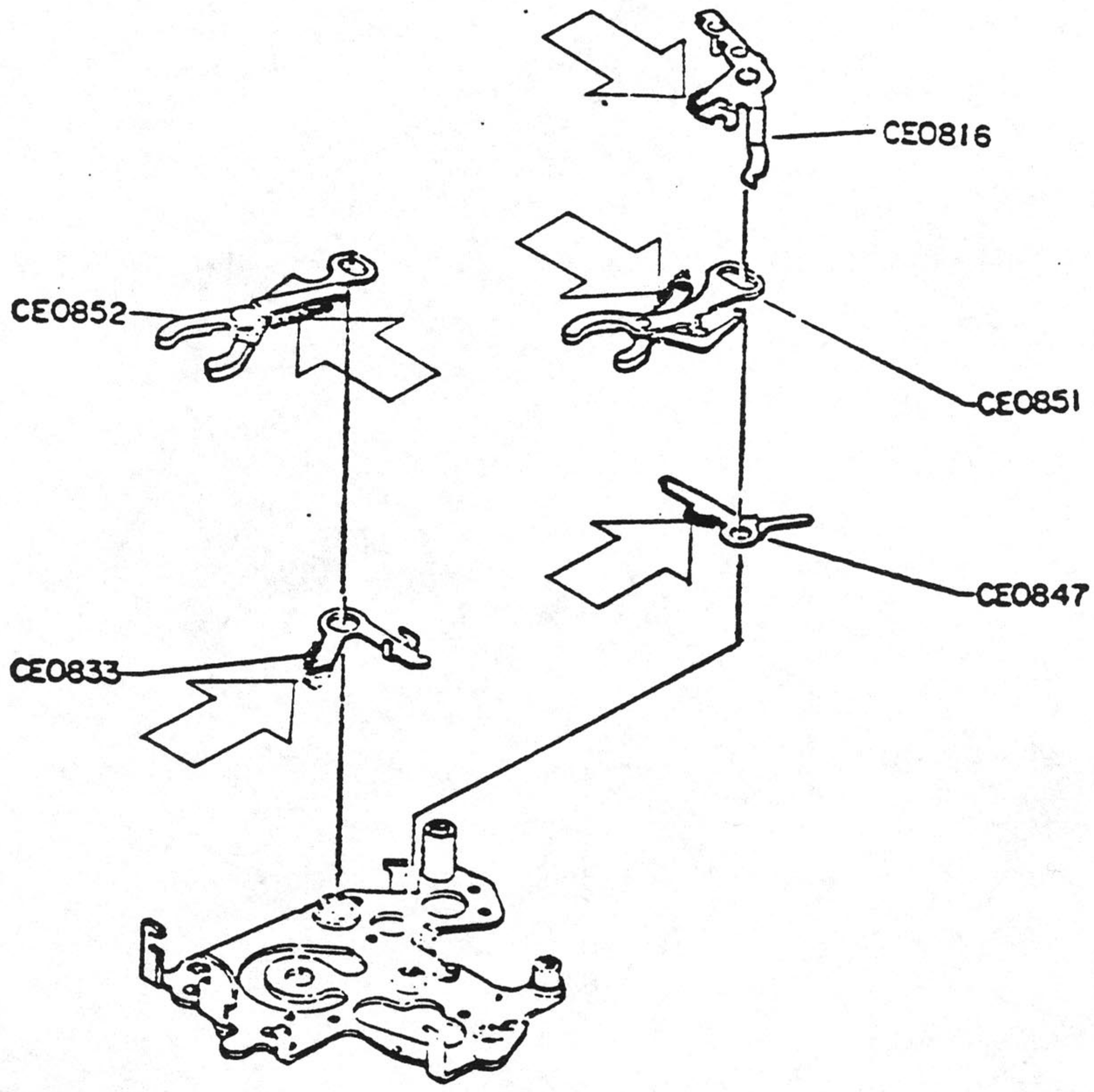

CA8661
CA8662
CA8843


CA8877

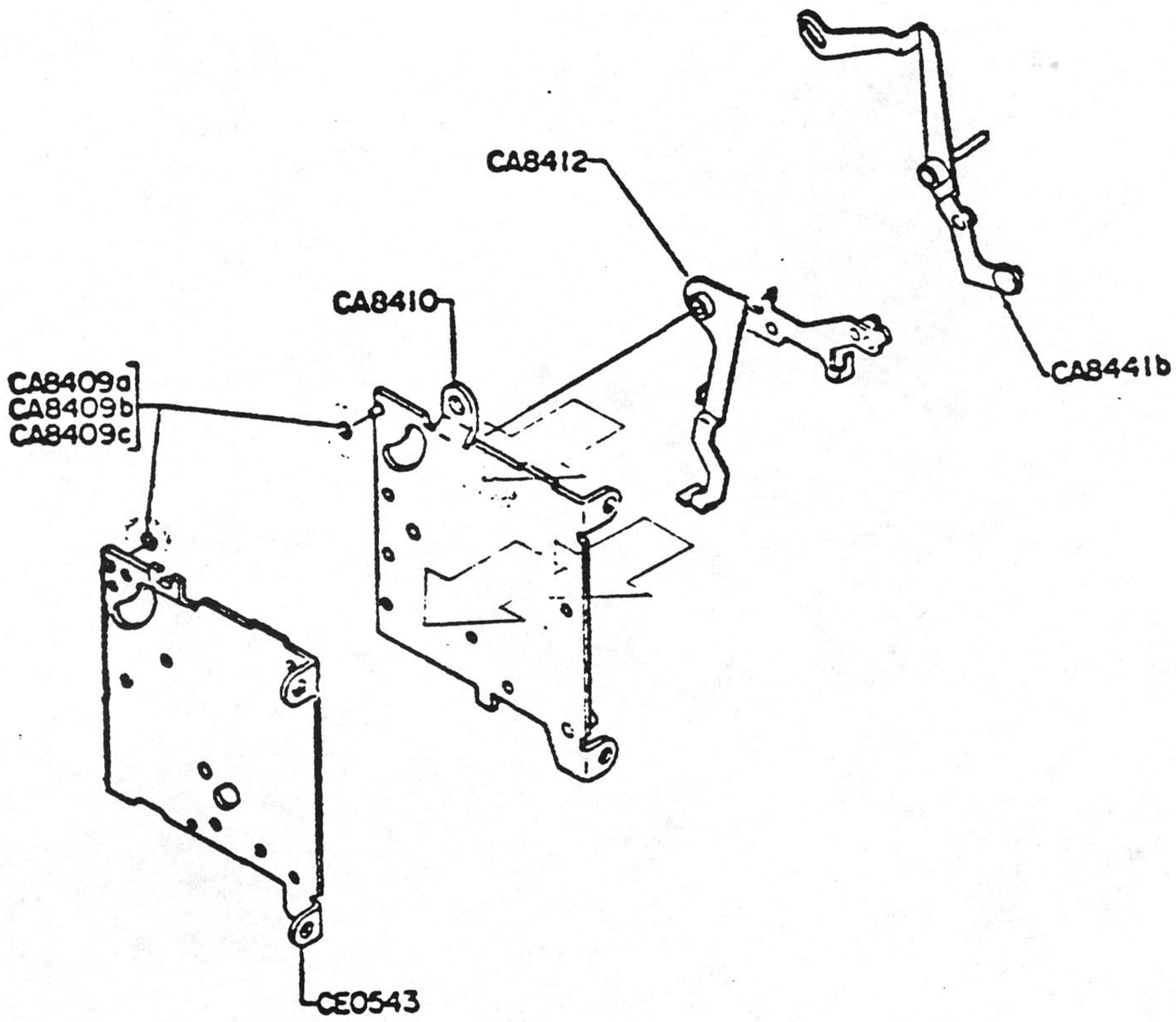
023P GREASE

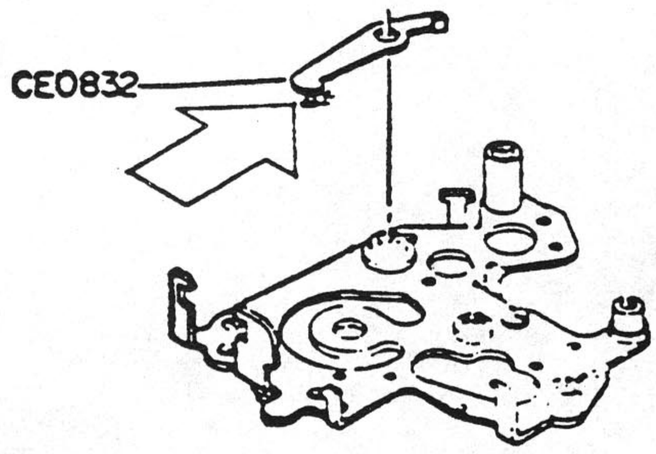

CE0562
CE0563
CE1208
CA9082
CA9428
OLYMPUS
CE0625
CE0608
METER
CE0513
B2
CE0520
CE1205
CE0512

MOLYCOAT + COSMOLUBRIC

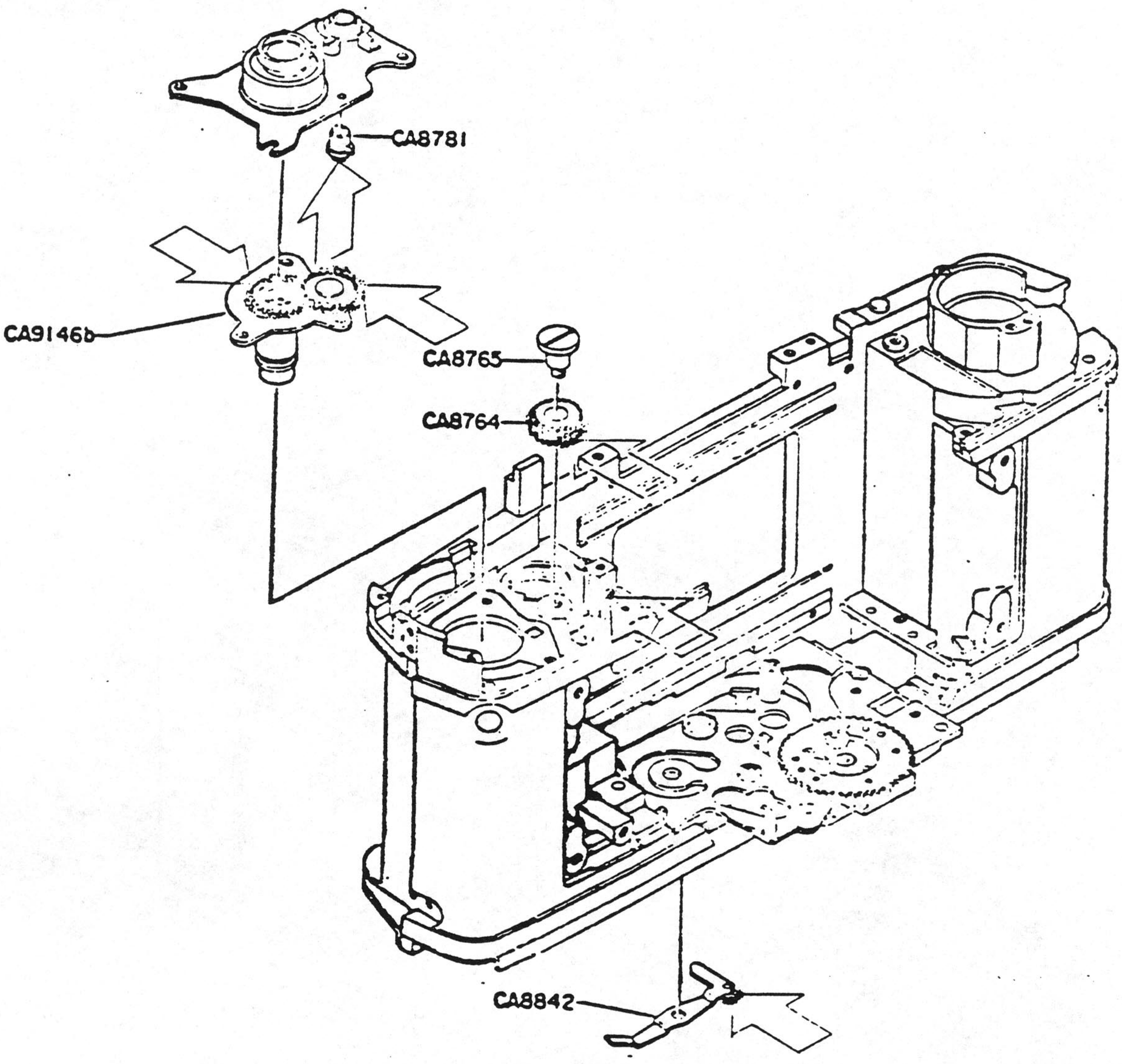


MOLYCOAT + 017P GREASE

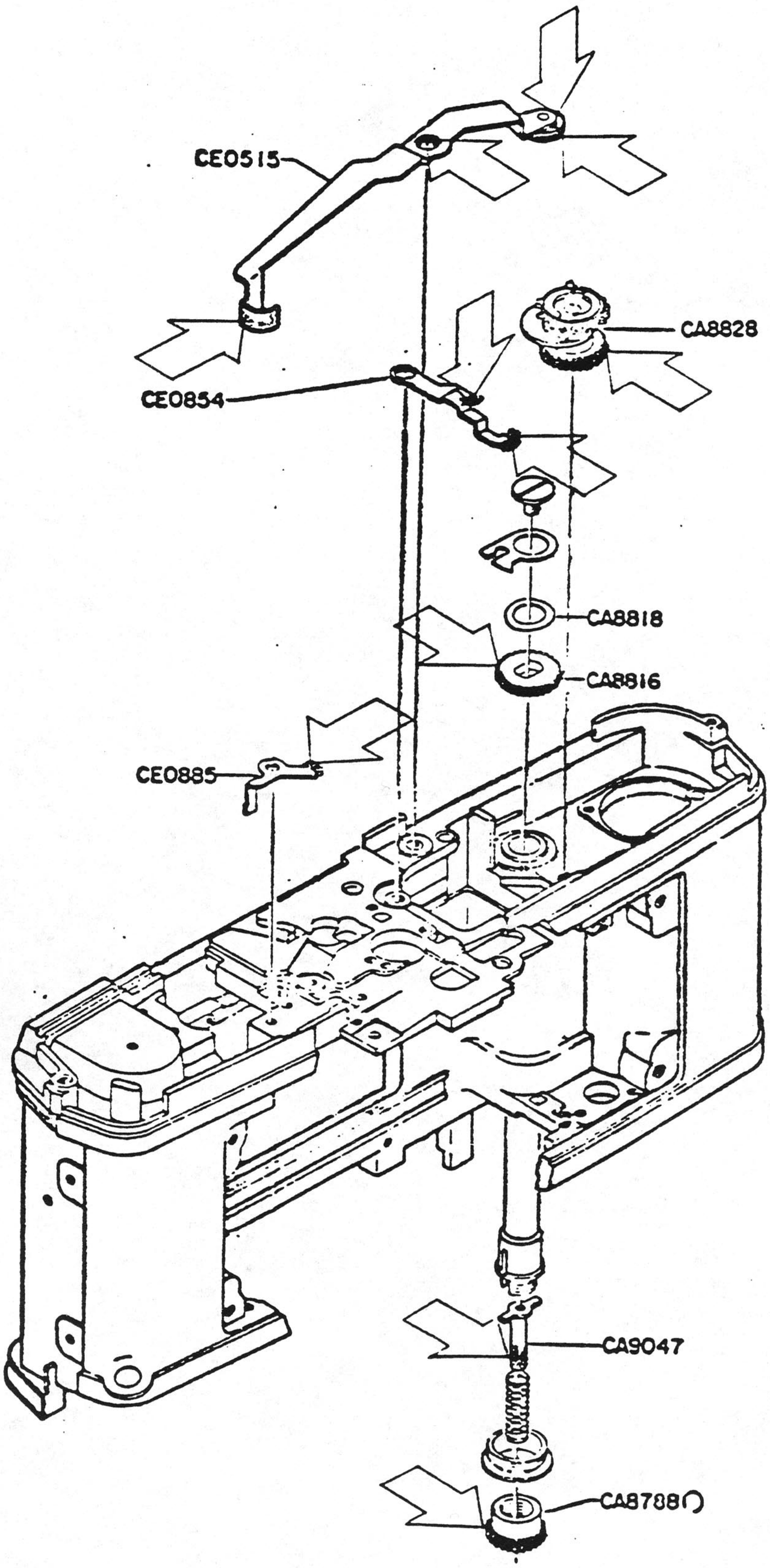




ROCOL PASTE



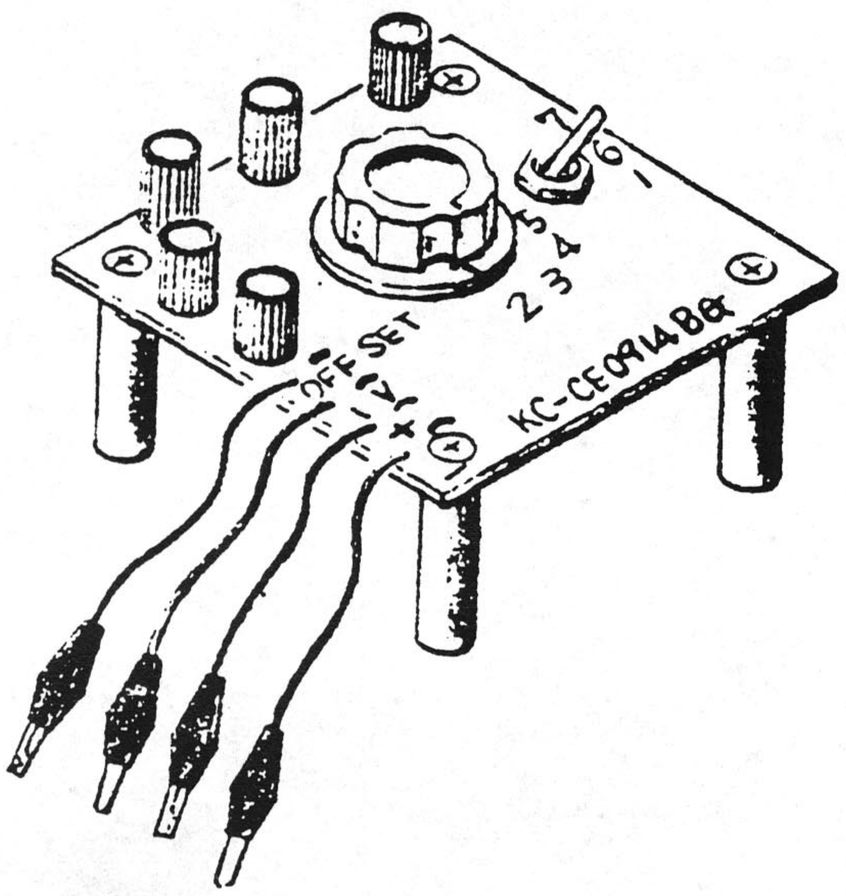
ROCOL PASTE

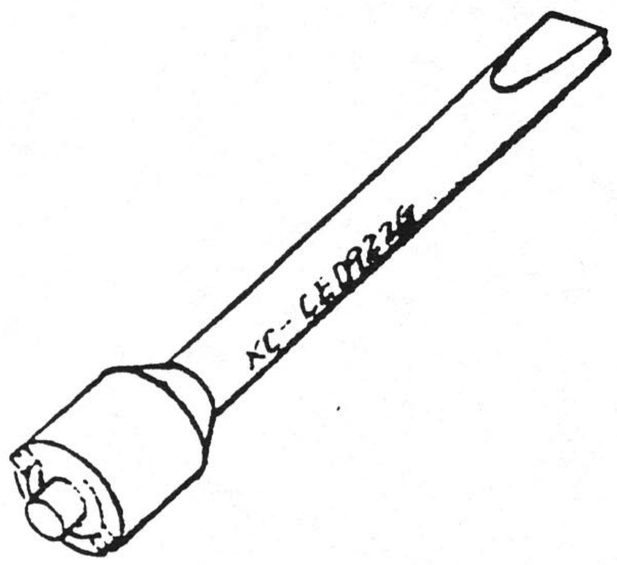
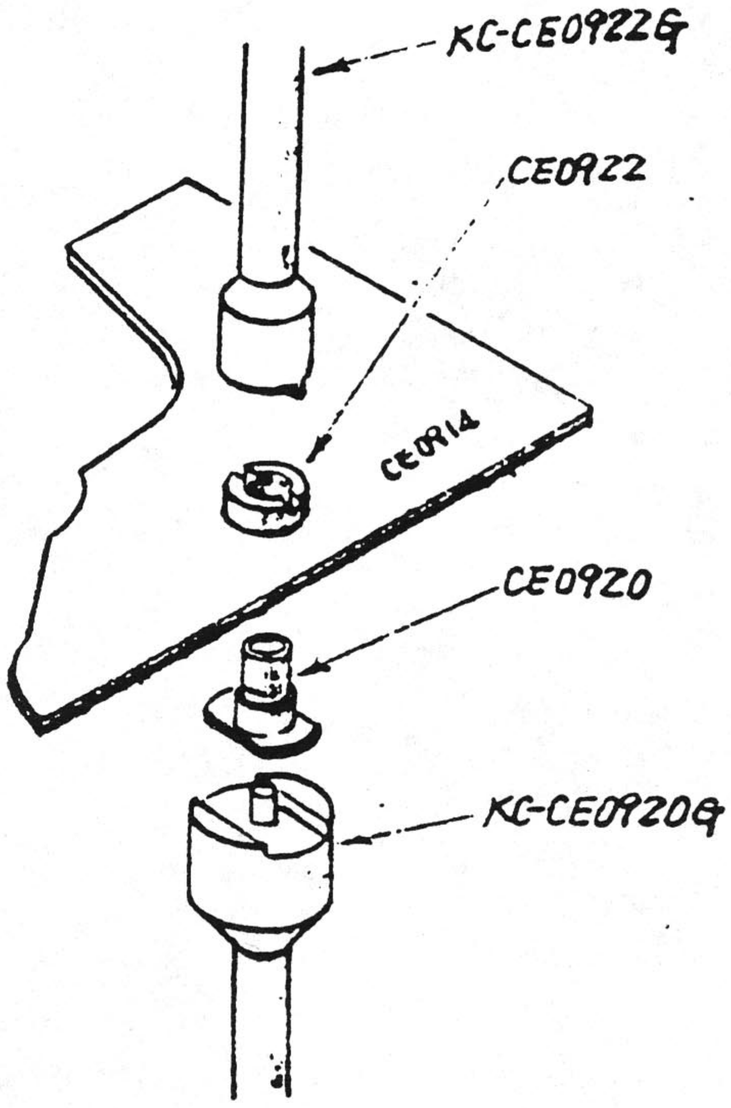
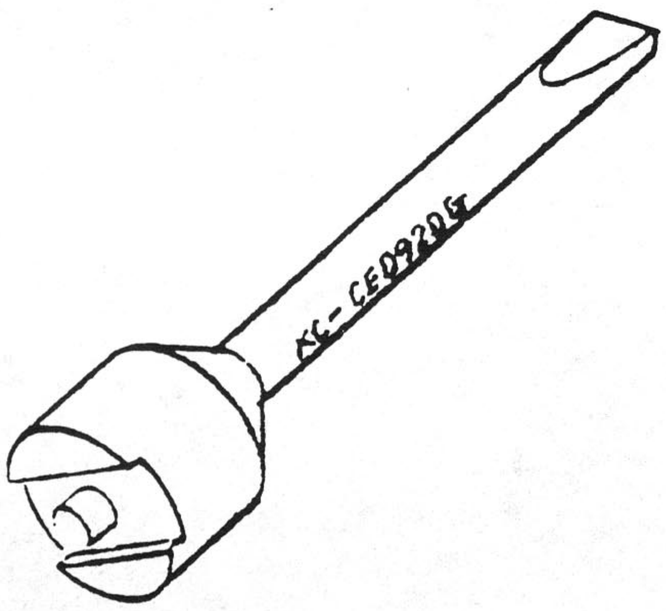
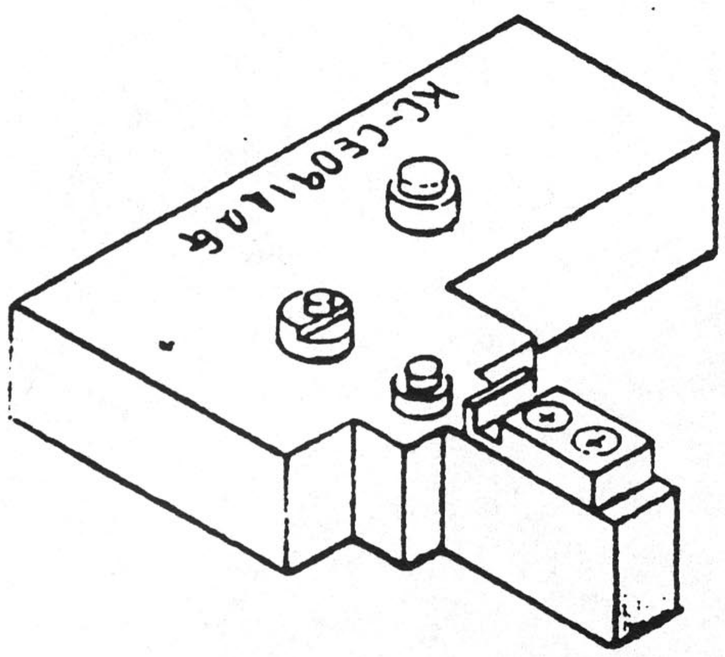


OLYMPUS
OM-2

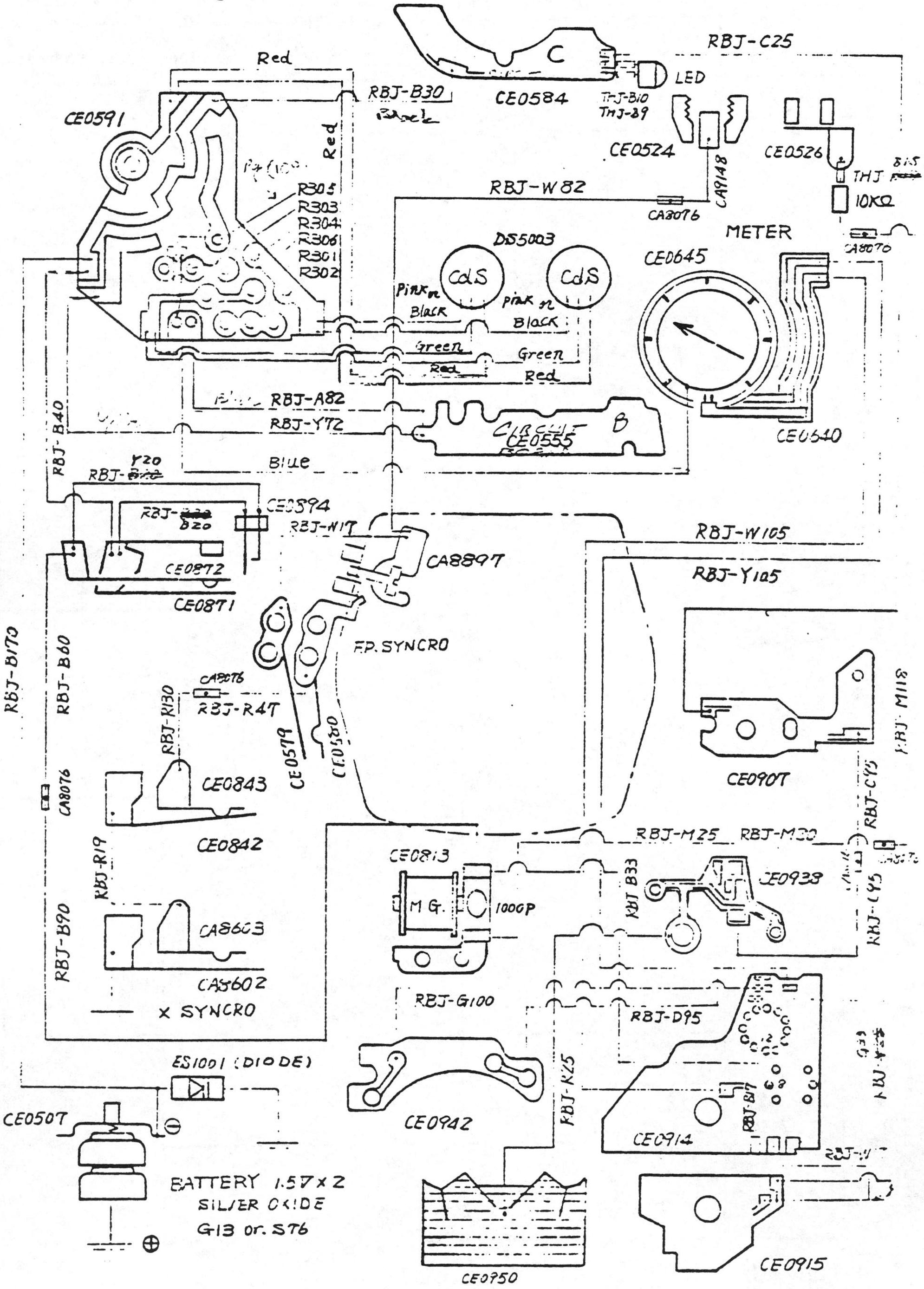
SPECIAL TOOLS

SPECIAL TOOLS

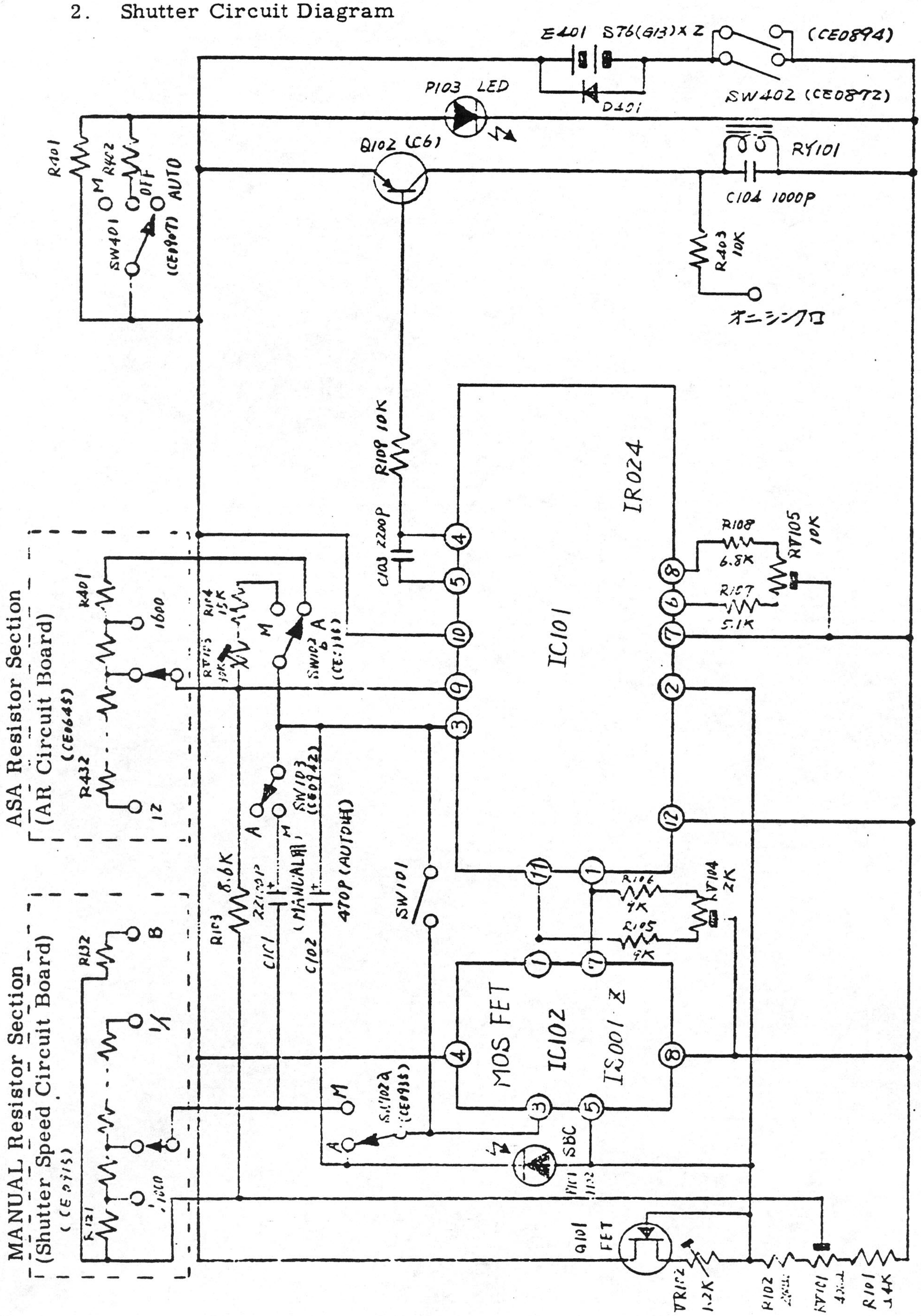
Name	Place Used & Usage	Remarks
KC-CE0914BG Matching Board 	Eliminates unnecessary electricity of IC upon matching and checking M circuit board. Usage See page 106.	
KC-CE0914CG Cord 	Used to connect the white LW (or circuit board A) to the left pin of SBC at the time of off set adjustment of the comparator of M circuit board. See page 104.	
KC-CE0914DG 51KΩ Cord 	Connects the yellow and white LWs when checking if the front casting (CE0502) is out of position or checking the operation of M circuit board by itself. See page 106.	This resistor is enough with 1 - 57KΩ because it is a substitution for AR circuit board (CE0645).
KC-CE0914EG 1KΩ Resistor 	To be connected to the (+) and (-) terminals of digital multimeter when making the operation check for M circuit board itself. See page 106.	This resistor is enough with 500 - 1KΩ because it is a subsitution for MG.

Name	Place Used & Usage	Remarks
KC-CE0922D Driver 	Used in being mounted to the driver chuck Q-0008 3.0φ. 	o To be newly manufactured. o Precautions on Usage Since the driver (CE0922) is soldered. turn KC-CE0920G to remove CE0920 upon disassembling or assembling.
KC-CE0920G Driver 		
KC-CE0914aG M Circuit Board Adjusting Tool 	Used upon soldering IC (IR-024 and IS-0001Z) to M circuit board. Usage When this tool is mounted on the M circuit board after inserting each pin of IC into the M circuit board. it is automatically set at the optimum height of IC. Then. it is to be soldered as it were.	o M circuit board and IC should be set with the space of about 0.3mm. o If the IC is mounted too high. it may cause short-circuit between the camera main body die-cast and IC. So. take sufficient care in mounting IC.

1. Circuit Diagram

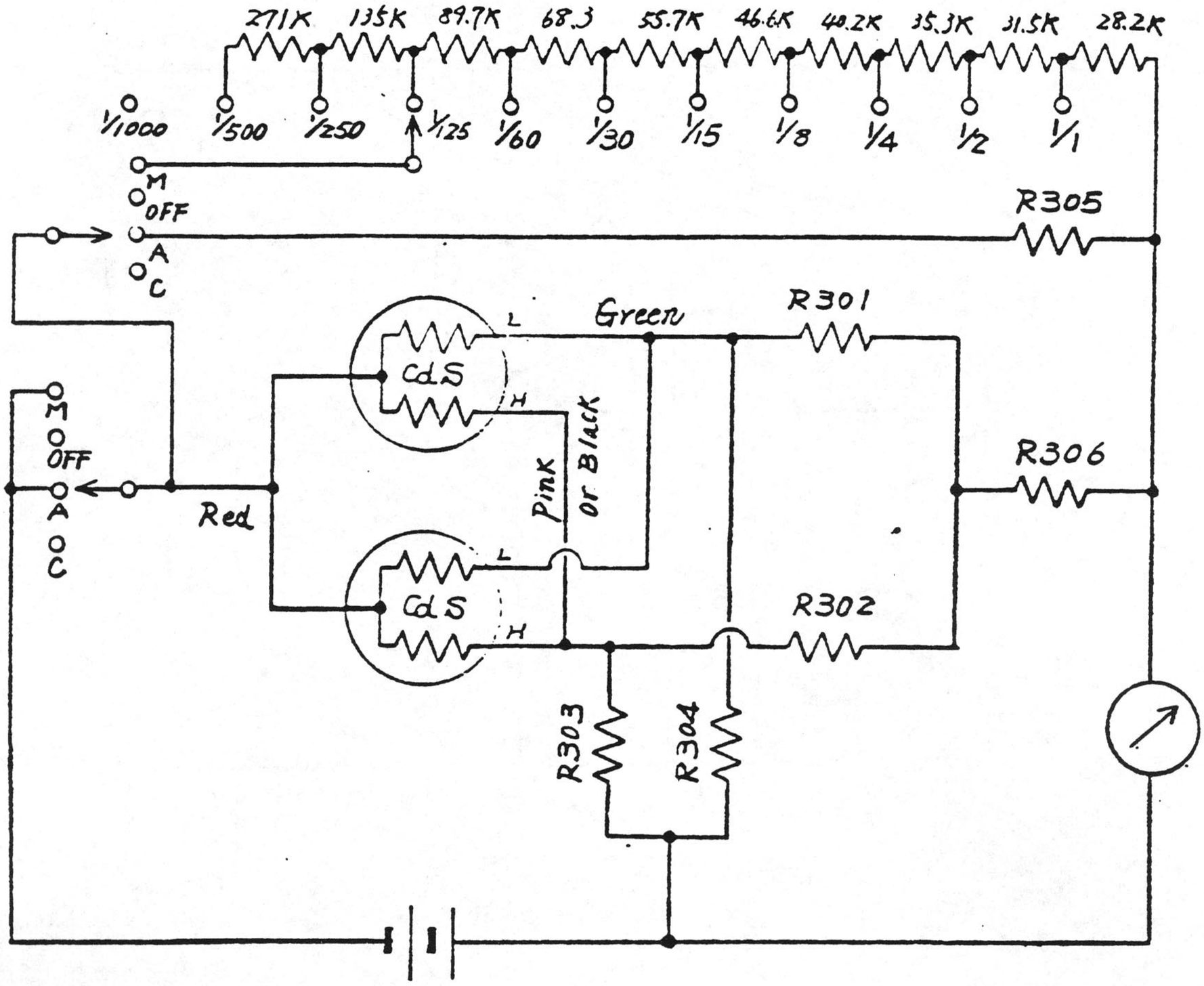


2. Shutter Circuit Diagram

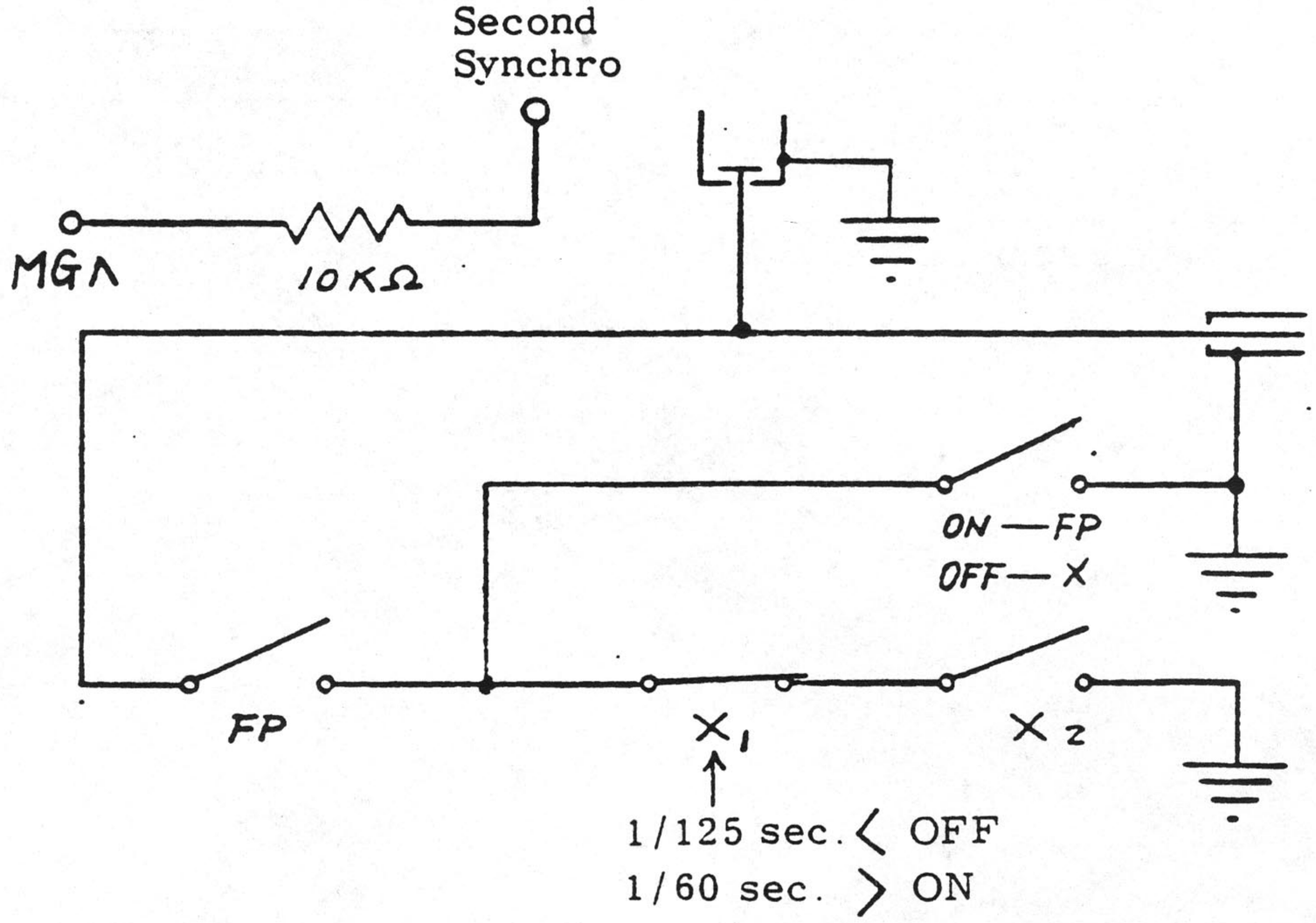


3. Meter Circuit Diagram

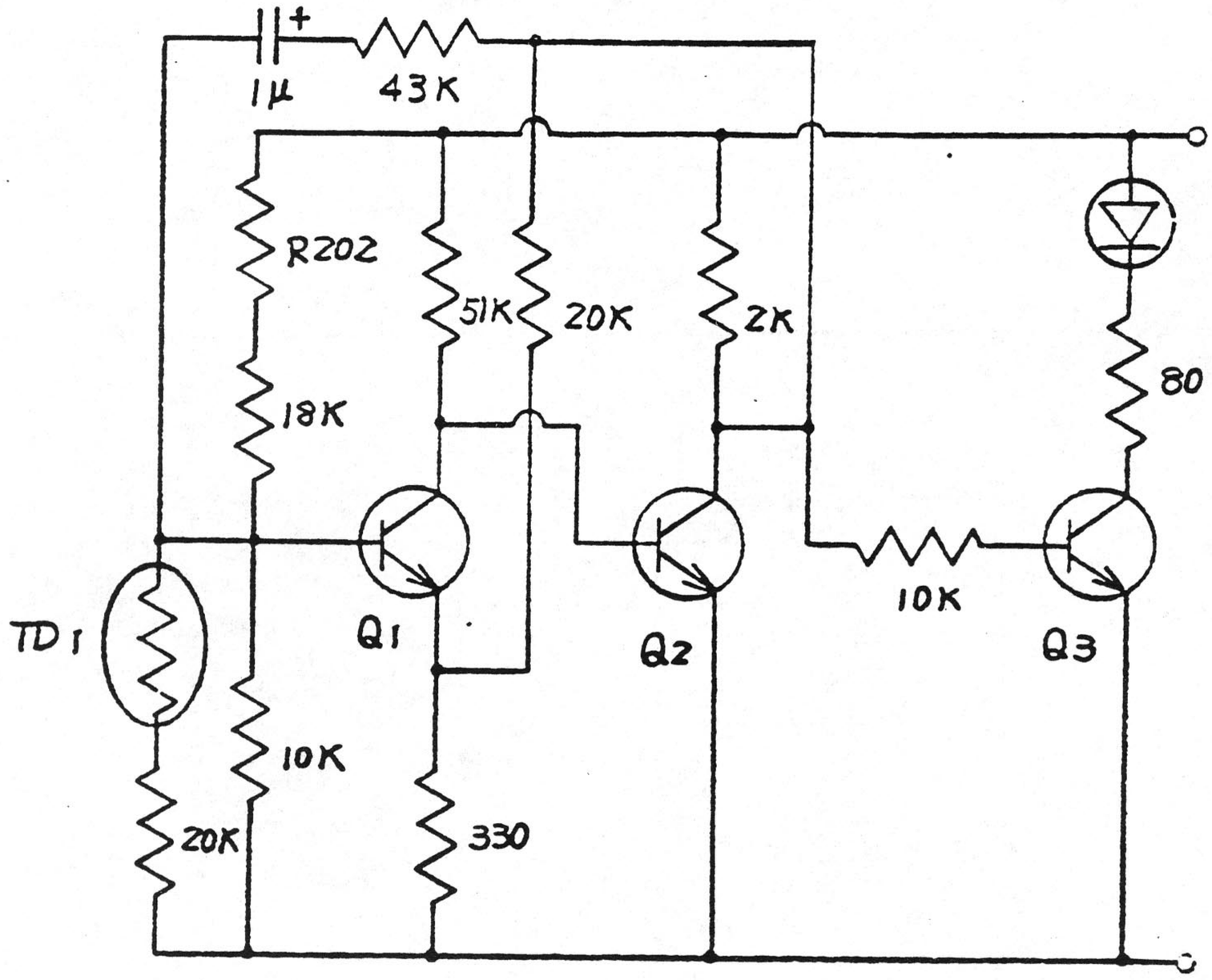
(CE0555 Base plate B)

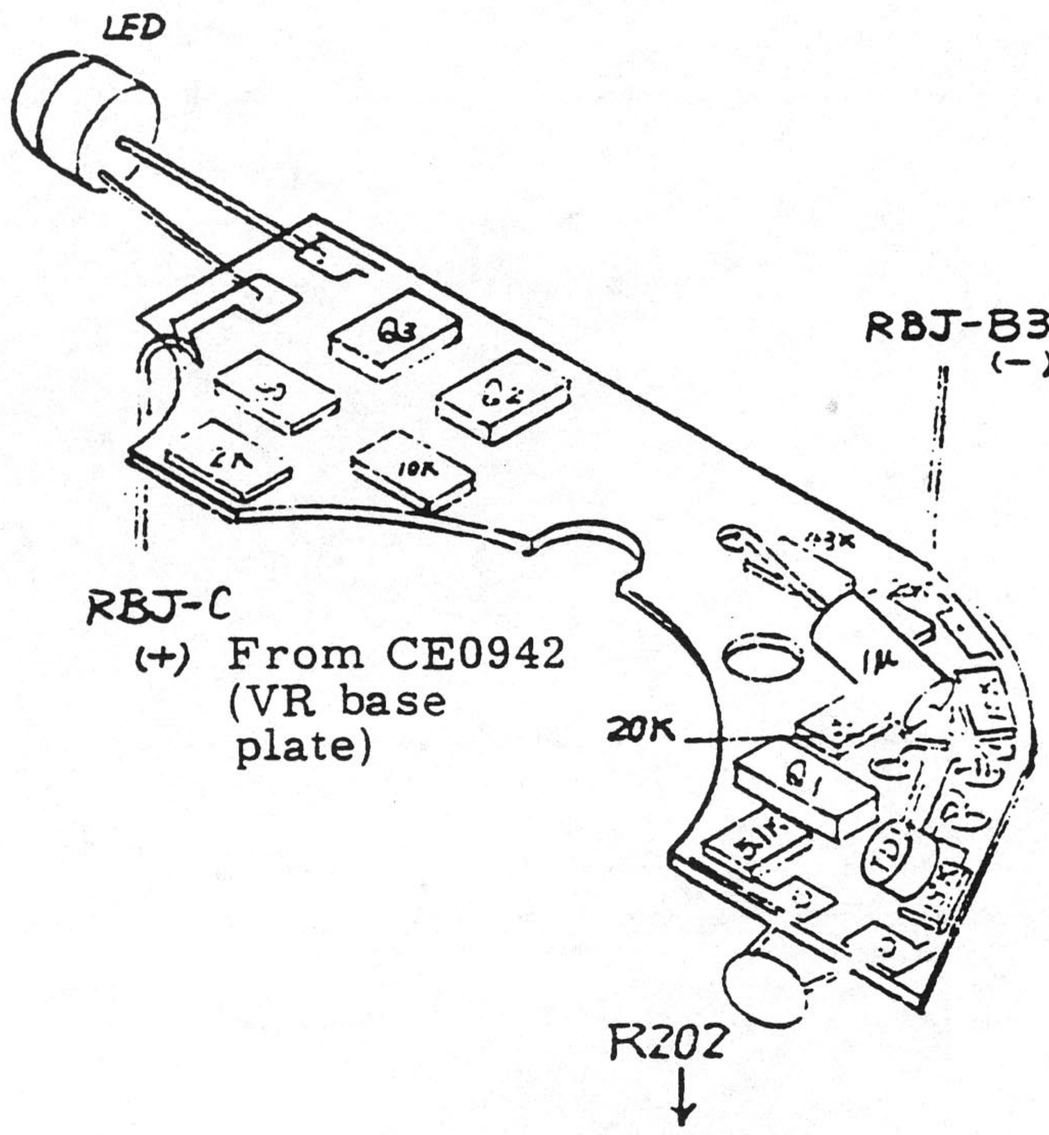


4. Synchro Circuit Diagram



5. Battery Checker Circuit Diagram





Q_1 Q_2	For oscillation
Q_3	For controlling LED
TD_1	Temperature compensation

	V_1		V_2
Q_1	OFF	Oscil-	ON
Q_2	ON	lation	OFF
Q_3	OFF	ON -OFF	ON
LED	OFF	ON -OFF	ON