



OLYMPUS OM-1 REPAIR MANUAL



OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN

<http://olympus.dementia.org/Hardware>



I N D E X

- A. DRAWING AND PARTS LIST
- B. GENERAL OUTLINE AND MECHANICAL FEATURES
- C. CHECK POINTS (INSPECTION STANDARD)
- D. ORDER OF DISASSEMBLY
- E. OUTLINE OF REPAIRS
- F. PARTS WHERE OIL, GREASE, ETC., SHALL BE USED
- G. SPECIAL TOOLS
- H. OTHERS



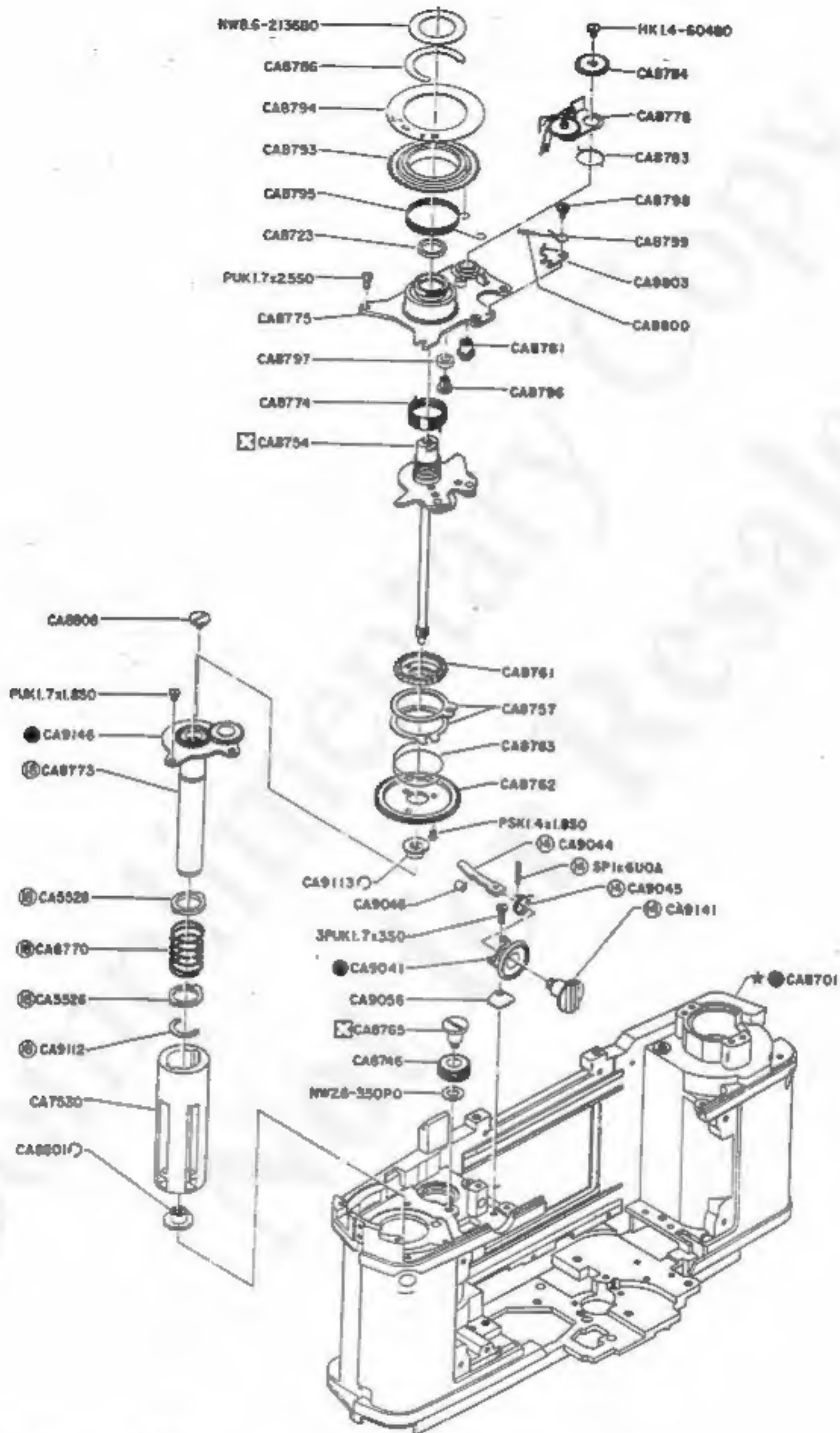


DRAWING AND PARTS LIST

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

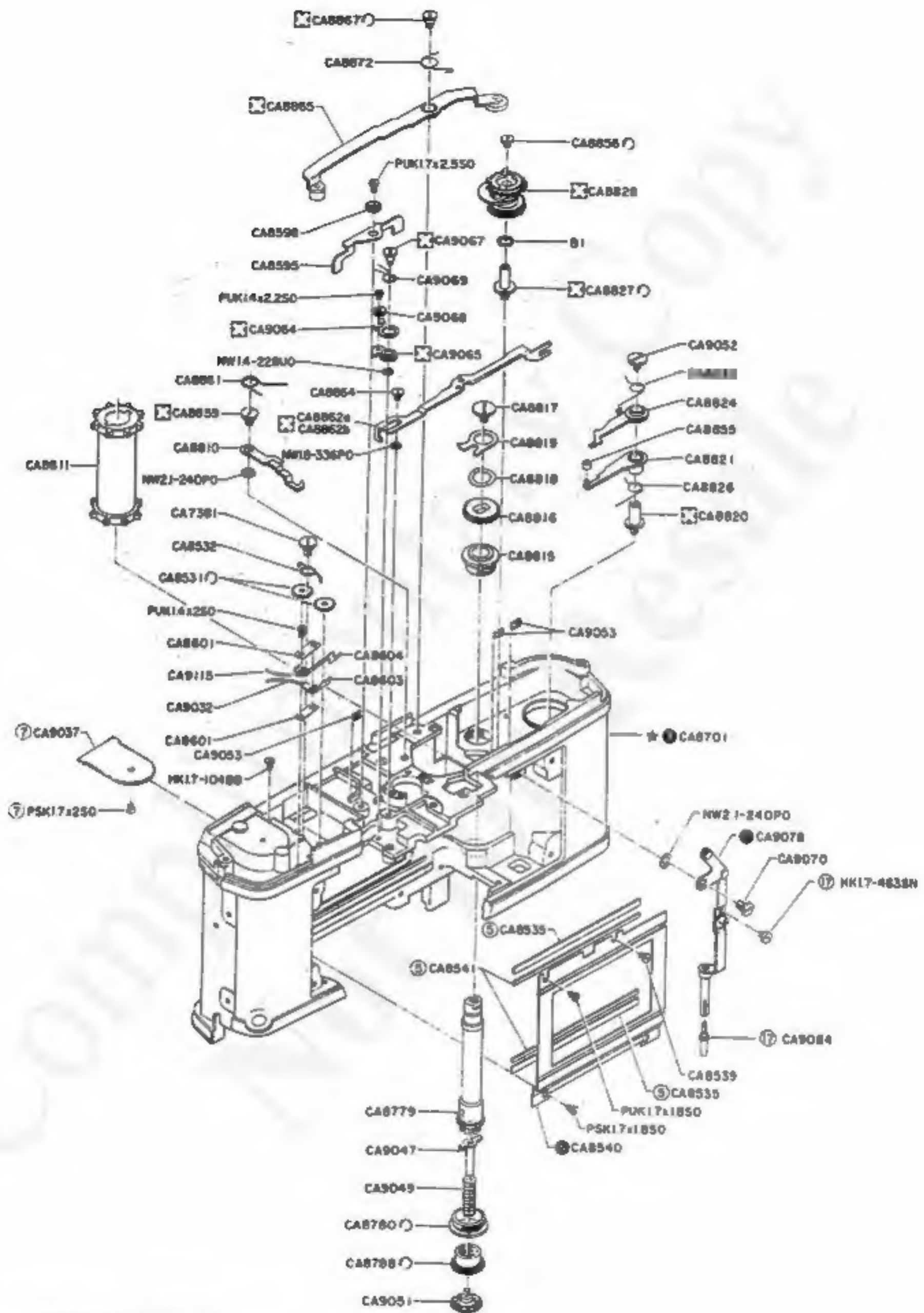
★	Only Body Die-Cast is not available in case of overseas.
①	An assembled parts is supplied including parts marked with
①	Single parts is supplied.
()	Not to be supplied in single parts, but as an assembled parts.
↺	Left-handed screw. (the mate screw hole is not marked particularly). All right-handed 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.
✖	The part which should not be touched directly by fingers. Be sure to cover fingers with rubber sacks.

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



REPAIR MANUAL

MODEL	HOUSE CODE	
OLYMPUS M-1	MDS	FIG 2/6
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		



REPAIR MANUAL

MODEL	HOUSE CODE	
OLYMPUS M-1	MDS	FIG. 4/6
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

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PARTS LIST

OM-1

PARTS NO.	NAME OF PARTS	NOTE
CA 5526	SPOOL HOLDER	●
6345	BATTERY COMPARTMENT LID	
7381	STOPPER SCREW	
7530	SPOOL "B"	
7732	GUIDE	
7963	RING "E"	
8076	TUBE	
8401	"M" FRAME	① 11 parts 8 kinds
8404	"M" LEVER SCREW	
8409a	ADJUSTING WASHER a	
8409b	ADJUSTING WASHER b	
8409c	ADJUSTING WASHER c	
8410	LEFT SIDE PLATE	
8411	RIGHT SIDE PLATE	
8412	M CHARGING LEVER	
8418	STOPPER SPRING	
8419	M HOOKING LEVER	
8421	HOOKING LEVER SPRING	
8422	TUBE #2	
8423	RETURNING SPRING	
8425	CONNECTING LEVER	
8427	M WASHER (RUBBER)	
8434	HOOK SPRING	
8435	M BASE PLATE	
8437	MS SPRING	
8441	M LEVER	
8444	TUBE #3	② 5 parts 5 kinds
8446	M RING	
8447	M SPRING	③ 6 parts 6 kinds
8448	CONNECTING LEVER SPRING	
8450	MU RING #0	2.5mm diam. 2.8mm diam. 3.1mm diam. 3.4mm diam. 2 parts 2 kinds
8451	MU RING #1	
8452	MU RING #2	
8453	MU RING #3	
8454	M PIVOT	
8457	LEVER SHAFT	3.7mm diam. ③ 8 parts 7 kinds ③ 8 parts 7 kinds ③ 8 parts 7 kinds
8459	MU RING #4	
8460a	LINK a	
8460b	LINK b	
8460c	LINK c	④ 0.40mm diam ④ 0.45mm diam. ④ 0.55mm diam. ④
8463	E RING 08	
8464	SPRING #1	
8466	SPRING #2	
8467	SPRING #3	⑤ 6 parts 5 kinds
8468	SPRING COVER	
8469	PIPE CONNECTOR	
8471	A PIPE	
8473	PIPE HOLDER (UPPER)	
8474	PIPE HOLDER (LOWER)	
8476	M POSITIONING SPRING	

PARTS LIST

OM-1

PARTS NO.	NAME OF PARTS	NOTE	
CA 8477	M POSITIONING SCREW	● ①	5 parts 5 kinds
8478	M POSITIONING PLATE		
8479	M POSITIONING SHAFT		
8481	S WASHER (RUBBER)		
8483	LIGHT PROOF PLATE		
8484	MU SHAFT	● ①	5 parts 5 kinds
8486	MU LEVER		
8489	MU SPRING		
8490	RIGHT COVERING PLATE		
8499	B MASK		
8501	S BASE PLATE	● ①	6 parts 6 kinds
8508	CURTAIN BASE R		
8510	ROLLER A		
8513	ROLLER HOLDER		
8517	TUBE STOPPER SCREW		
8519	TUBE SHAFT A	● ①	2 parts 2 kinds
8520	TUBE SHAFT B		
8521	2nd. CURTAIN STOPPER		
8522	1st. CURTAIN STOPPER		
8523	TUBE SHAFT HOLDER		
8529	ROLLER B	● ①	2 parts 2 kinds
8531	TENSION NUT		
8532	TENSION NUT STOPPER		
8535	FELT B		
8538	1st. CURTAIN		
8539	STOPPER FOR CA8540	● ①	9 parts 9 kinds
8540	FRAME		
8541	FELT A		
8543	GEAR SHAFT A		
8545	GEAR SCREW		
8556	CONNECTING PLATE	● ① ② ③ ④	53 parts 10 kinds
8567S	LEVER S		
8567M	LEVER M		
8567L	LEVER L		
8570	SPRING FOR CA8567		
8571	G CAM SHAFT	● ①	11 parts 11 kinds
8575	LOW CAM		
8576	HIGH CAM		
8577	SPEED GEAR		
8578	A LEVER 1		
8580	B LEVER 1	● ①	4 parts 4 kinds
8585	A LEVER SCREW		
8586	A LEVER SPRING		
8588	B LEVER SCREW		
8589	SHAFT FOR CA8592		
8590	B LEVER SPRING	● ①	4 parts 4 kinds
8592	RELEASING CLAW		
8594	SPRING FOR CA8592		
8595	S LEVER		
8598	S LEVER WASHER		
8600	2nd. CURTAIN	● ①	3 parts 3 kinds
		● ①	3 parts 3 kinds
		● ①	3 parts 3 kinds
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PARTS LIST

OM-1

PARTS NO.	NAME OF PARTS	NOTE
CA 8601	STOPPER PLATE	
8602	X SYNCHRO CONTACT POINT	
8603	FX SYNCHRO CONTACT POINT	
8604	F SYNCHRO CONTACT POINT	
8605	L CAM	
8606	S CAM	
8609	M LEVER	2 parts 2 kinds
8610	M LEVER SHAFT	
8611	M LEVER SPRING	
8612	A LEVER 2	
8614	A LEVER 2 SCREW	
8615	A LEVER 2 SPRING	
8617	GOVERNOR BASE	
8618	LIGHT PROOF PAPER	
8701	DIE-CAST BODY	② 3 parts 3 kinds (Not available)
8702	FRONT CASTING PART	4 parts 4 kinds
8703	TOP-COVER	4 parts 4 kinds
8704	BOTTOM-PLATE	
8705	REAR-COVER	20 parts 12 kinds
8710	PRESSURE PLATE	4 parts 3 kinds
8717	KEY A	2 parts 2 kinds
8719	KEY COLLAR	
8720	KEY COVER	
8722	KEY SPRING	
8723	BUSH	
8724	KEY POSITIONING SCREW	
8725	R. KNOB	
8726	R. LEVER	③ 4 parts 4 kinds
8727	R. PINCH	④
8729	PINCH SET SCREW	⑤
8730	R. LEVER PIN	
8731	R. LEVER SPRING	
8732	R. LEVER WASHER	
8733	R. SHAFT	
8734	R. SHAFT HOLDER	
8735	R. SPRING	
8738	COVERING PLATE	
8739	R. LEVER STOPPER 2	b: 0.8
8740	R. LEVER STOPPER 3	b: 1.1
8741	FILM COUNTER COVER	
8742	BATTERY CASE	
8743	BATTERY CONTACT POINT	
8744	STRAP EYELET	
8745	LIGHT PROOF L	
8746	LIGHT PROOF R	
8747	LIGHT PROOF (LOWER)	
8748	LIGHT PROOF (SIDE)	
8749	F.W LEVER	
8750	F.W LEVER WASHER	
8751	F.W LEVER COVER	
8752	F.W LEVER HOLDER	

PARTS LIST

OM-1

PARTS NO.	NAME OF PARTS	NOTE
CA 8753	F.W LEVER DECORATION	
8754	F.W SHAFT	
8757	F PLATE	10 parts 7 kinds
8761	F.W LC	
8762	F.W GEAR	
8763	F. SPRING	
8764	S.T IDLE	
8765	IDLE SHAFT	
8770	SPOOL SPRING	
8773	SPOOL SHAFT	
8774	F.W SPRING	
8775	F.W BASE PLATE	
8777	FASTENING RING	5 parts 5 kinds
8778	F.C RETURNING LEVER	
8779	S.T SHAFT	8 parts 7 kinds
8780	SPROCKET HOLDER (UPPER)	
8781	F.C GEAR SHAFT	
8783	F.C RETURNING SPRING	
8784	F.C GEAR	
8786	C RING	
8788	S.T GEAR	
8793	F.C LC	
8794	F.C PLATE	
8795	F.C SPRING	
8796	L STOPPER	
8797	WASHER (RUBBER)	
8798	K9 SHAFT	
8799	K STOPPER	
8800	K STOPPER COVER (RUBBER)	
8801	SPOOL HOLDER (LOWER)	
8803	F.C STOPPER	
8806	F.W LEVER COVER STOPPER	
8808	SPROCKET BASE SCREW	
8810	BULB SETTING PLATE	
8811	SPROCKET	
8813a	WASHER 1a	2 parts 2 kinds
8813b	WASHER 1b	t. 0.05
8815	SPROCKET HOLDER (LOWER)	t. 0.08
8816	GEAR #1	
8817	GEAR #1 SCREW	
8818	GEAR #1 SPRING	
8819	K CLAW	
8820	HOLDING SHAFT	
8821	CHECKING LEVER	
8824	LOCK LEVER	2 parts 2 kinds
8826	LOCK SPRING	2 parts 2 kinds
8827	SHAFT #2	
8828	GEAR #2 SHAFT	
8836	GEAR #3	8 parts 8 kinds
8839	GEAR #4	2 parts 2 kinds
8840	S WINDING PLATE	2 parts 2 kinds
		2 parts 2 kinds

PARTS LIST

OM-1

PARTS NO.	NAME OF PARTS	NOTE
CA 8841	GEAR #4 BASE	
8842	KS LEVER	2 parts 2 kinds
8843	SHAFT #4	
8844a	LEVER 1a	0
8844b	LEVER 1b	+0.1
8844c	LEVER 1c	-0.1
8845	LEVER #2	
8846	LEVER STOPPER	
8847	KS HOLDER	
8848	KS SHAFT	
8849	KS SPRING	
8851	GEAR #3 SPRING	
8852	SHAFT #4 SCREW	
8854	S RING	
8855	STOPPER RING	
8856	SHAFT #2 SCREW	
8857	BASE PLATE SHAFT	
8859	BULB PLATE SCREW	
8861	RETURNING SPRING	
8862a	KL PLATE a	1.4mm diam.
8862b	KL PLATE b	2 parts 2 kinds
8864	KL SHAFT	1.8mm diam.
8865	KM LEVER	2 parts 2 kinds
8867	M LEVER SHAFT	6 parts 6 kinds
8872	KM SPRING	
8875	TRIPOD SOCKET	
8876	FRONT COVERING PLATE	
8877	B MOUNT	
8878	S.S DIAL	
8879	CONNECTING RING	⑤ 2 parts 2 kinds
8880	DIAL GEAR	⑩ 2 parts 2 kinds
8881	B BASE PLATE	13 parts 11 kinds
8882	COVERING PLATE	
8888	B MOUNT SPRING	
8889	CONNECTING RING STOPPER	6 parts 6 kinds
8890	CLICK SPRING	
8893	COVERING PLATE	
8894	LOWER COVER	
8895	SYNCHRO SOCKET	4 parts 4 kinds
8896	FX SYNCHRO KNOB	
8897	FP SYNCHRO CONTACT POINT	
8898	FX SYNCHRO CONTACT PLATE	
8899	FX SYNCHRO CONTACT SPRING	
8900	INSULATING PLATE	
8901	INSULATING PLATE	
8902	FX RIVET	
8904	PENTAPRISM BASE	2 parts 2 kinds
8905	VIEW FIELD MASK #1	
8907	F FRAME	
8909	F SPRING	
8910	F SPRING SHAFT	

PARTS LIST

OM-1

PARTS NO.	NAME OF PARTS	NOTE
CA 8911	F SHAFT	
8912	F LOCK SCREW	
8914	DAMPER #1	
8915	DAMPER #2	
8916	DAMPER #3	
8917	MU KNOB	
8918	MU CAM	
8922	MU BASE	4 parts 4 kinds
8924	F PULLEY	6 parts 6 kinds
8925	CAM GEAR	5 parts 5 kinds
8931	PULLEY SHAFT	
8933a	RETURNING ROLLER a	3.3mm diam.
8933b	RETURNING ROLLER b	3.4mm diam.
8933c	RETURNING ROLLER c	3.5mm diam.
8933d	RETURNING ROLLER d	3.6mm diam.
8933e	RETURNING ROLLER e	3.7mm diam.
8933f	RETURNING ROLLER f	3.8mm diam.
8936	P COVER	
8938	B SPRING	4 parts 4 kinds
8939	B SPRING SHAFT	
8940	COVERING PLATE B	
8941	F HINGE	
8944	B STRING M	
8946	B STRING R	
8947	B MOUNT SCREW	
8949	B SPRING PLATE	
8950	COVERING PLATE	4 parts 4 kinds
8951	D FASTENING RING	
8953	F PULLEY SCREW	
8957a	R ROLLER a	3.6mm diam.
8957b	R ROLLER b	3.7mm diam.
8957c	R ROLLER c	3.8mm diam.
8959	DIAL STOPPER	
8960	COVERING PLATE WASHER	
8961	SM FRAME	
8962	S LEVER	
8963	S LEVER BASE	
8964	S LEVER BASE NUT	
8965	S LEVER CONNECTING PLATE	2 parts 2 kinds
8968	PIN FOR CA8970	
8970	CONTACT POINT #1	
8971	CONTACT POINT #2	
8972	PIN HOLDING PLATE	
8973	C LIGHT PROOF	
8974	S COVER	
8975	C COVER	
8976	M EARTH	
8977	M LOWER PLATE	10 parts 10 kinds
8980	M PULLEY	2 parts 2 kinds
8981	PULLEY HOLDER	2 parts 2 kinds
8982	M GEAR	

PARTS LIST

OM-1

PARTS NO.	NAME OF PARTS	NOTE
CA 8988	VIEW FIELD MASK #2	
8995	M BASE	● ● ● ● ● 11 parts 11 kinds
8996	GEAR FOR CA8977	
8998	SCREW FOR CA8996	
8999	SPRING FOR CA8977	
9001	LOCKING SPRING	
9003	LOCK BUTTON	
9004	LOCK BUTTON SPRING	
9005	LOCKING RING	
9007	A DIAL	
9008	PULLEY SCREW	
9010	A CAM	2 parts 2 kinds
9011	CAM HOLDER	
9016	A LEVER SCREW	●
9020	ASA PLATE	
9021	ST SPRING	
9024	INSULATION SHAFT	
9025	S BASE	● 5 parts 5 kinds t: 0.1 t: 0.2 t: 0.4
9026a	T WASHER a	
9026b	T WASHER b	
9026c	T WASHER c	
9030	T NUT	
9031	LEAD WIRE (105mm LONG BLACK)	
9032	LEAD WIRE (45mm LONG BLACK)	
9033	LEAD WIRE (90mm LONG BLACK)	
9034	LEAD WIRE (70mm LONG RED)	
9036	LEAD WIRE (100mm LONG BLACK)	
9037	P PLATE	①
9041	K BASE	② ③ ④ 6 parts 6 kinds
9044	K INNER PLATE	
9045	K LEVER SPRING	
9046	K PLATE HOLDER	
9047	ST CLAW	2 parts 2 kinds
9049	ST SPRING	
9051	ST SCREW	2 parts 2 kinds
9052	STOPPER SCREW	
9053	LEVER CUSHION	
9056	SPACING PLATE	
9057	CIUCUIT PLATE	
9060	CONTACT POINT COLLAR	
9064	M RELEASE #1	
9065	M RELEASE #2	2 parts 2 kinds
9067	MR SHAFT	
9068	M ECCENTRIC COLLER	
9069	MR SPRING	
9070	C SCREW	
9071	S LEVER STOPPER	
9072	ST LEVER	⑤ 2 parts 2 kinds
9073	S COVERING PLATE	
9074	ST START LEVER	⑥ 2 parts 2 kinds 2 parts 2 kinds
9075	F SPRING	

PARTS LIST

OM-1

PARTS NO.	NAME OF PARTS	NOTE
CA 9076	RELEASE BASE NUT	
9077	START LEVER CAP	
9078	S RELEASE PLATE	● 9 parts 9 kinds
9082	S RELEASE BUTTON	
9083	SR BUTTON WASHER	
9084	SR BUTTON SHAFT	●
9086	S LEVER PLATE	●
9087	D SCREW	
9088	W SPRING	
9091	COVER (RUBBER)	
9092	SM COVER	
9093	SPRING FOR CA9099	
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	
9104	REAR COVER LEATHER	
9105	HOLDER WASHER	
9106	ADJUSTING WASHER #1	
9107	ADJUSTING WASHER #2	
9108	T COLLAR	
9111	ST WASHER	
9112	C WASHER	●
9113	FW GEAR HOLDER	
9114	M SPRING SCREW	
9115	LEAD WIRE (30mm LONG BLACK)	
9117	LEAD WIRE (110mm LONG RED)	
9119	CdS CELL	
9124	L CONTACT POINT	
9125	M CONTACT POINT	4 parts 3 kinds
9128	LS GUIDE	
9129	P TAPE	
9130	P COVER HOLDER	
9131	PRISM HOLDER (RIGHT)	
9132	PRISM HOLDER (LEFT)	
9133	PRISM HOLDING SPRING	
9134	COVERING PLATE #1	
9135	COVERING PLATE #2	
9139	R COLLAR	
9141	K PINCH	●
9142	M STOPPER SCREW	
9143	LEAD WIRE (100mm LONG YELLOW)	
9144a	FRONT ADJUSTING PLATE a	t: 0.04
9144b	FRONT ADJUSTING PLATE b	t: 0.06
9144c	FRONT ADJUSTING PLATE c	t: 0.10
9144d	FRONT ADJUSTING PLATE d	t: 0.15
9144e	FRONT ADJUSTING PLATE e	t: 0.20

PARTS LIST

OM-1

PARTS NO.	NAME OF PARTS	NOTE
CA 9144f	FRONT ADJUSTING PLATE f	t: 0.25
9144g	FRONT ADJUSTING PLATE g	t: 0.30
9144h	FRONT ADJUSTING PLATE h	t: 0.35
9145a	REAR ADJUSTING PLATE a	t: 0.04
9145b	REAR ADJUSTING PLATE b	t: 0.06
9145c	REAR ADJUSTING PLATE c	t: 0.10
9145d	REAR ADJUSTING PLATE d	t: 0.15
9145e	REAR ADJUSTING PLATE e	t: 0.20
9145f	REAR ADJUSTING PLATE f	t: 0.25
9145g	REAR ADJUSTING PLATE g	t: 0.30
9145h	REAR ADJUSTING PLATE h	t: 0.35
9146	SPOOL SHAFT	● 11 parts 10 kinds ●
9148	LEAD WIRE (45mm LONG BLACK)	
9501	FLESNEL LENS	
LC 4070	EYE PIECE LENS	
4073	PENTAPRISM	
G 30	GOVERNOR	
V 40	SELF TIMER	
# 951	EXPOSURE METER	
SET SCREW	<u>PUK</u>	
	1.4 x 1.8 SO	1.4 x 1.8 SN
	1.4 x 2 SO	1.4 x 2.2 SO
	1.4 x 3 SO	
	1.7 x 1.8 SO	1.7 x 2 SO
	1.7 x 2.2 SO	1.7 x 2.5 SO
	1.7 x 4 SO	1.7 x 8 SO
	2 x 1.8 SO	2 x 2 SO
	2 x 2.2 SO	2 x 3 SO
	2 x 3 SB	2 x 3.5 SO
	2 x 4.5 SO	2 x 6 SO
	<u>3PUK</u>	
	1.4 x 1.8 SO	1.4 x 3 SO
	1.4 x 5.5 SO	
	1.7 x 3 SO ④	1.7 x 4 SO
	<u>PSK</u>	
	1.4 x 1.8 SO	1.4 x 2 SO
	1.4 x 2.5 SO	
	1.7 x 1.8 SO	1.7 x 2 SO
	1.7 x 2.2 SO	1.7 x 2.5 SO
	1.7 x 3 SO	1.7 x 3.5 SO
	1.7 x 4 SH	
	2 x 2 SO	2 x 2.2 SO
	2 x 2.5 SO	2 x 3 SO
	2 x 3 SE	2 x 4 SE

PARTS LIST

OM-1

PARTS NO.	NAME OF PARTS	NOTE
	<u>HK</u>	
	1.4 - 101 BO	1.4 - 101 SN
	1.4 - 102 BO	1.4 - 602 SN
	1.4 - 604 BO	1.4 - 636 SN
	1.7 - 104 BB	1.7 - 405 SN
	1.7 - 463 SN	
	2 - 310 BO	
	<u>SK</u>	
	1.4 - 103 BO	
	1.7 - 203 SN	1.7 - 204 SN
	<u>HU</u>	
	2 x 2.5 BO	
	<u>NU</u>	
	1.4 x 1.5 SA	
	<u>SP</u>	
	1 x 6 UOA	
	<u>B 1</u>	
	1/16	
	<u>NW</u>	
	1.4 - 228 UO	1.4 - 334 UO
	1.4 - 430 UO	1.5 - 425 UO
	1.8 - 230 UO	1.8 - 240 PO
	1.8 - 336 PO	2.1 - 240 PO
	2.6 - 350 PO	8.6 - 2136 BO



GENERAL OUTLINE
AND
MECHANICAL FEATURES

GENERAL OUTLINE AND MECHANICAL FEATURES

1. General Outline:

OLYMPUS Code Name: MDS

Model Name: Olympus OM-1

Main Features:

Format: 24 x 36mm

Lens Mount: Olympus OM-Mount, bayonet type.
 Flange back = 46.0mm
 Bayonet rotation = 70° (clockwise to mount).
 Lens release button on the side of the lens.

Shutter:

Type: Focal plane type

Shutter Speed: B, 1 to 1/1000 of a second.

Dial: On the lens mount.

Charging: Self-cocking.

Flash Synchronization:

X and FP with switch

With electronic flash (X) 1 to 1/60 sec.

With Class "M" bulbs (X) 1 to 1/15 sec.

With Class "F" bulbs (X) 1 to 1/15 sec.

With focal plane bulbs (FP) 1/60 to 1/1000 sec.

Viewfinder:

Type: Single reflex type, eye-level viewfinder.

Prism: Pentagonal roof prism, fixed, silver-coated.

Focusing Screen: 1-1 Microprism-Matte Type provided.
 Interchangeable with any of 11 additional
 screens available.

Viewfield:	97% both vertically and horizontally.
Exposure Indicator:	Visible in the viewfield is the exposure measurement indication.
Magnification:	0.92X at infinity with standard 50mm lens.
Reflex Mirror:	
Type:	Quick return type.
Mirror-up:	The mirror can be looked up by 90° rotation of the mirrorlock-up lever.
Mirror Cut-Out:	No mirror Cut-Out in the viewfinder regardless of the lens used, from 8mm fisheye through 800mm ultra-long telephoto (in case of full open aperture).
Reflection:	Highly reflective special coating is applied on the reflecting surface.
Exposure Meter:	
Type:	Through-the-lens light measuring meter.
Method of Measurement:	Open-aperture light measuring method, for average light measurement.
	Zero-method system
Sensing Cell:	Two CdS (cadmium sulphide) type cells.
Measuring Range:	EV1.2 - EV16.9 with MS5512 at ASA100 EV2 - EV1.7 with MS5014 at ASA100 EV2.35 - EV17.35 with MS5018 at ASA100
Film Type Indication:	Film sensitivity indicator dial with ASA ratings with the locking device.
Insufficient Light Warning:	When switched in, the needle jumps down extremely beyond the lower limit of the range indicator, if light is insufficient.
ASA Ratings:	ASA 25 - 1600
Power Source:	Mercury battery, 1.3V, JIS H-D type. (e.g. National H-D, Toshiba H-D, Mallory RM-625R, GE No. 625, Eveready E625N, etc.)

On/Off Switch:	Lever type
Calibration:	K=1.3
Film Loading:	
Loading Method:	Easy-loading system (EL system) by opening up the rear cover, which is hinged and provided with the magic-lock (opened when the film-rewinding knob is pulled out.)
Film Advance:	The take-up spool rotates in the direction contrary to the lever movement. Single-stroke rapid winding lever. (Also capable of film-advancement by several short strokes.) Winding angle = 150° Pre-winding angle = 30° Prevention against double-exposure and double-film-advance.
Exposure Counter:	Progressive and automatic-return type.
Exposure Counter Index:	S . . 1 2 . 4 . 6 34 . 36 . E
Film Rewinding:	Rewind crank. Film release knob (to be turned 90° toward the "R" mark with a red dot). Automatically reset when film is to be advanced.
Interchangeable Rear Cover:	By the mounting pin.
Shutter Release:	Shutter release button on the body. Also with a cable release, JIS approved screw-in type.
Self-Timer:	Lever system (Rotation angle 180°) with approx. 4 - 12 sec. delay. Action is started by the start-lever. In the middle of the timer action, the start-lever may be shifted back to stop it. The timer may be reset then.
Accessory Shoe:	Direct contact shoe to be screwed on.
Synchro-socket:	As per JIS standards.

Tripod Screw: As per JIS standards.

Size & Weight: Body only = 136w x 83h x 50d 490gr. (17.3 oz)
 with MS5512 = 136w x 83h x 97d 810gr. (28.2 oz)
 with MS5014 = 136w x 83h x 86.5d 720gr. (25.4 oz)
 with MS5018 = 136w x 83h x 81d 660gr. (23.3 oz)

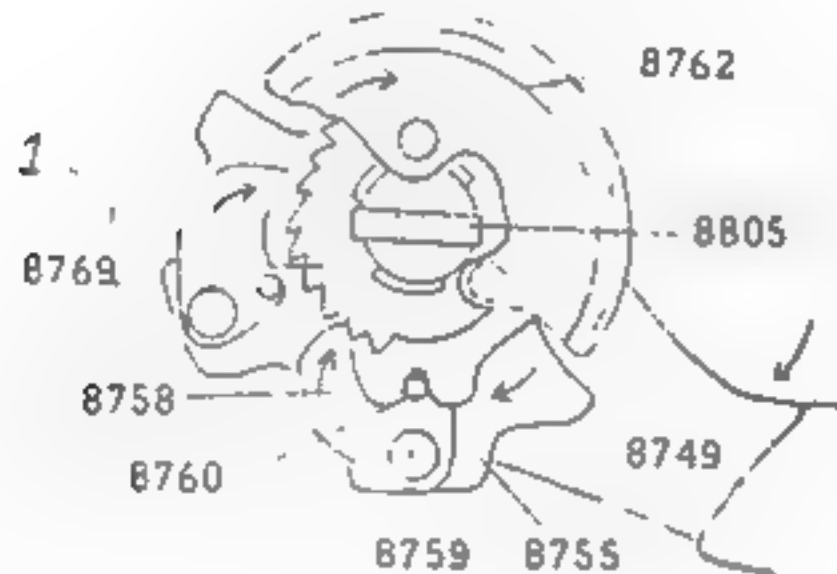
2. Mechanical Features:

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(1) Film Advance

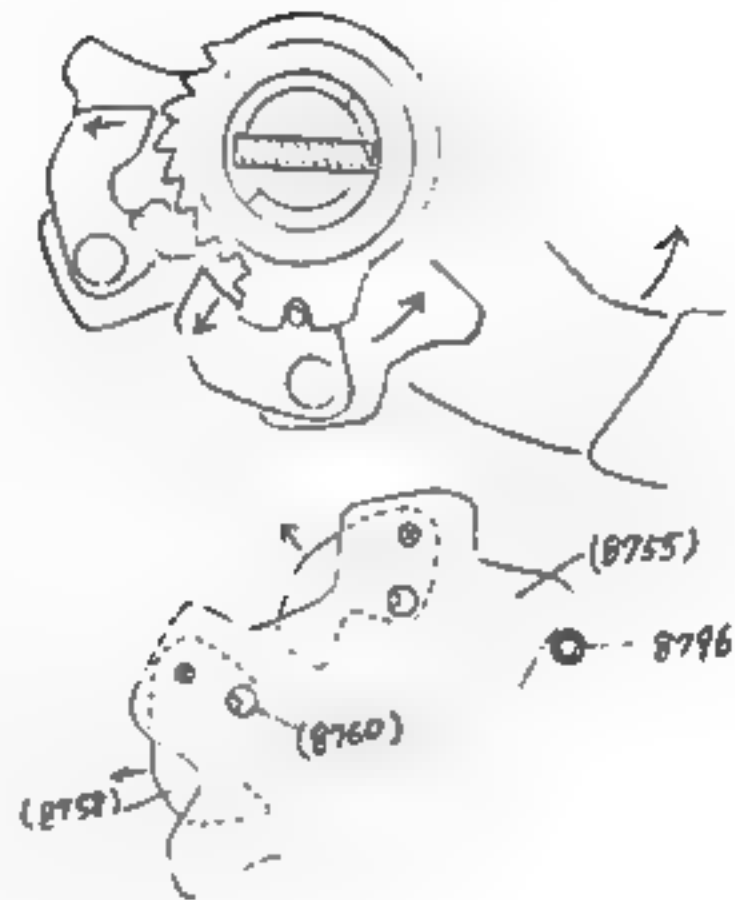
When 8749 is turned, (8755) is driven in the arrowed direction by means of (8805). When (8755) moves, two (8758) pivoted at (8760) is moved in the arrowed direction to engage on (8761) and to turn it.

(8762) is screwed on (8761) which rotates simultaneously to drive gears engaged on it. This starts the film advancing motion. One of the two (8758) will rotate (8761).



Upon turning (8749) to the fullest extent, and releasing it, (8755) returns to the original position moving in the arrowed direction by means of 8774 hooked on 8755. At this time, since (8758) escapes in the arrowed direction, pivoted at 8760, there is no clicking sound for (8758) going beyond the latchet. Amount of (8758)'s escape is determined by the guiding hole for (8760) on (8755).

(8755) stops when it hits 8796. 8796 is covered with rubber to absorb noise. Film advancing motion by engagement and disengagement of (8758), as described at right may be carried out by one single stroke or by several short strokes.



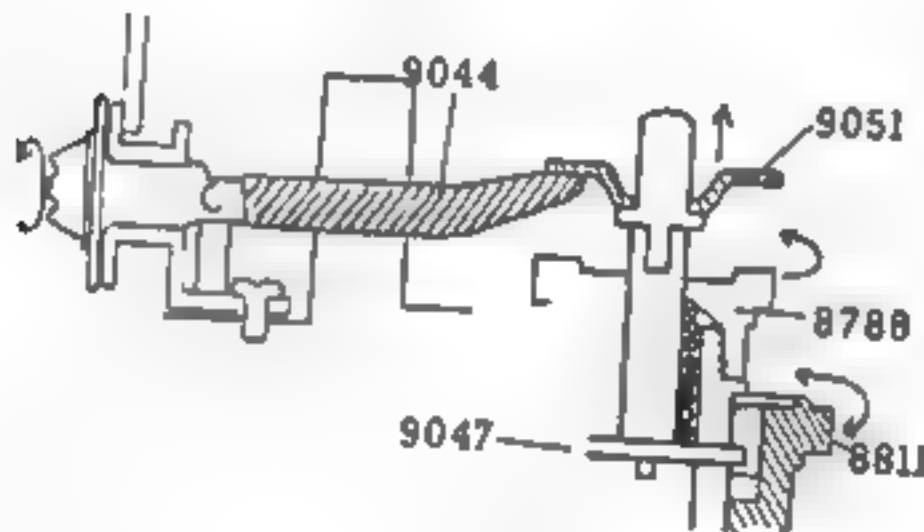
(2) Sprocket Release (Rewinding Mechanism):

Unlike the former push-button system, it adopts such a mechanism where in 9141 located at the joint of CA8703 (Top-cover) on the left front of the camera and the main body, is turned to release the sprocket. 9047 engaged into the groove of the sprocket moves jointly with 8788. It means that, to release the sprocket, this 9047 should be removed from the groove of the sprocket.



Order of Operation:

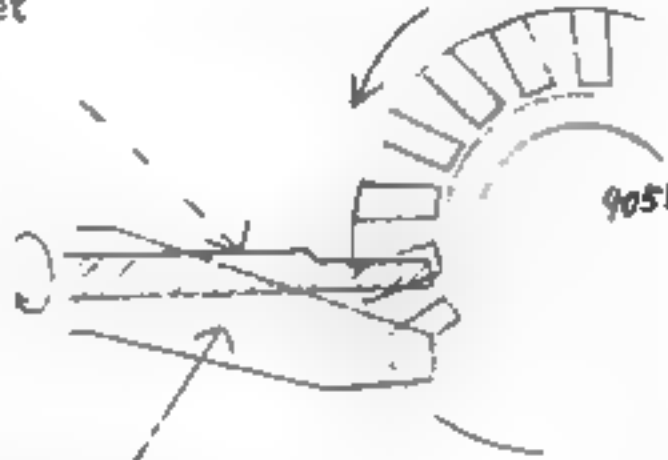
1. When 9141 is turned counterclockwise, 9141 adjoining 9044 pushes up 9051 at its tip.
2. Then 9047 connected to 9051 is pulled up simultaneously and comes off from the sprocket groove making the sprocket freely rotatable.



3. At the stage 2 above, if CA8749 (Lever) is turned up, 8788 rotates in the arrowed direction simultaneously rotating 9051 connected with 8788.
4. On 9051 are 18 grooves which catches 9044 to rotate it, as 9051 rotated.
5. When 9044 is turned until it is released from the groove of 9051, by 9045, 9141 backs to the original position.
6. At the same time, 9047 is pressed down by 9049. If the sprocket groove is in the position corresponding with 9047, the sprocket movement will also be synchronized.

If the groove position does not correspond with 9047, the sprocket will not be synchronized at the moment 9141 is returned to its original position but left released. In this case, winding operation needs to be repeated until 9047 fits into the sprocket groove.

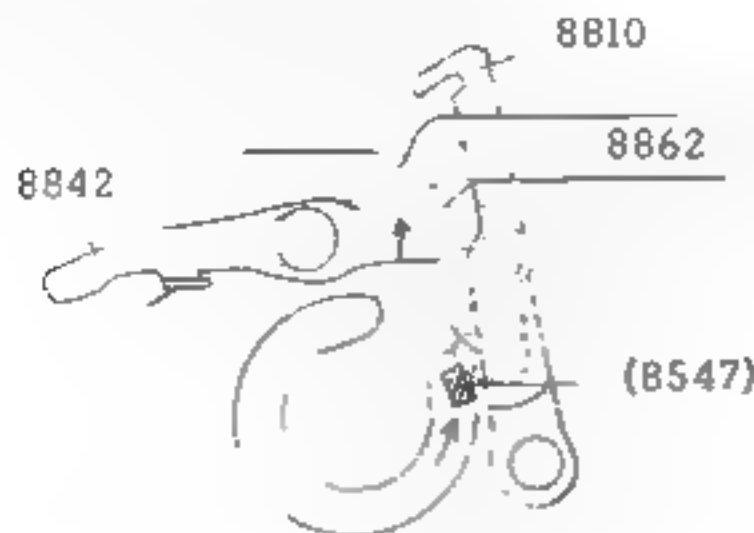
Position of 9044 at
the time the sprocket
is released.



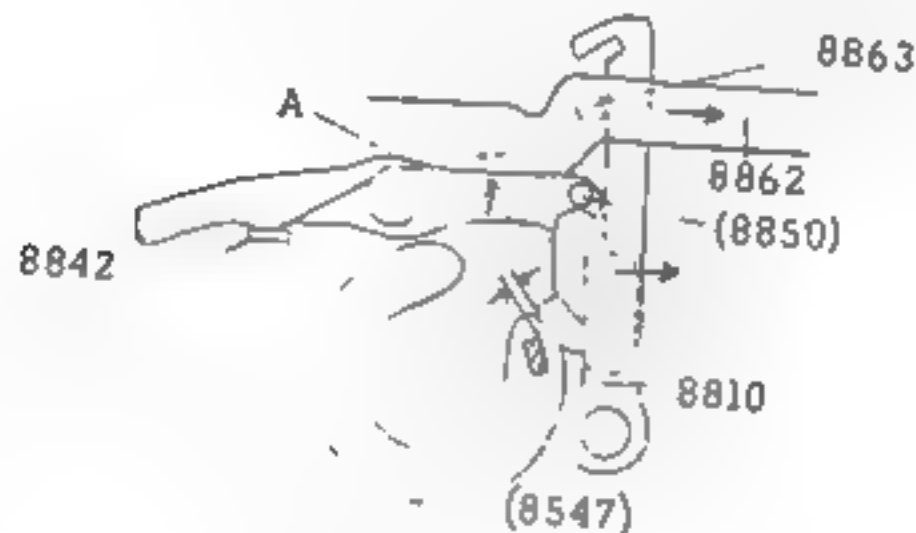
Position of 9044 at
the time the sprocket
is synchronized.

(3) Release for CA8849 (KS spring) Action:

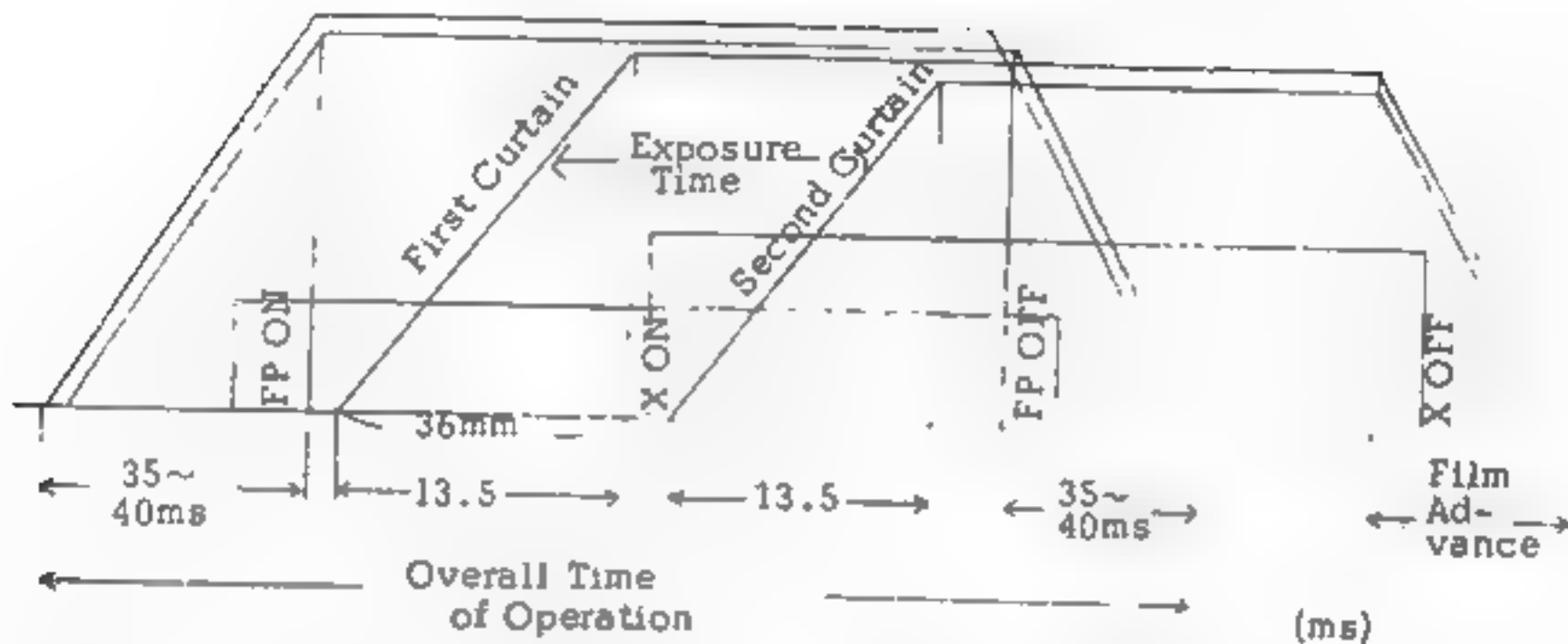
At the time of film advancing motion, the embossed portion of (8847) is rotated in the arrowed direction and hits 8842 immediately prior to completion of shutter charging action. (8847) turns 8842 in the arrowed direction to release the lock. If the shutter is operated while 8842 is in contact with the embossed portion of (8547), the 8849 engaged on 8842 works to push (8847) and the curtain speed is influenced. Therefore, such should be avoided.



1. When 9082 (button) is pressed, 8862 moves in the arrowed direction and turns, by means of (8863), 8810 in the arrowed direction.
2. When 8810 is moved, it hits (8850) clinched on the KS lever. When it is further moved, it turns the KS lever by (8850) action in the arrowed direction and releases 8842 from the boss on (8547).
3. When the 8862 is moved still further, the mirror commences its operation and the shutter also works.



(4) Shutter Timing:

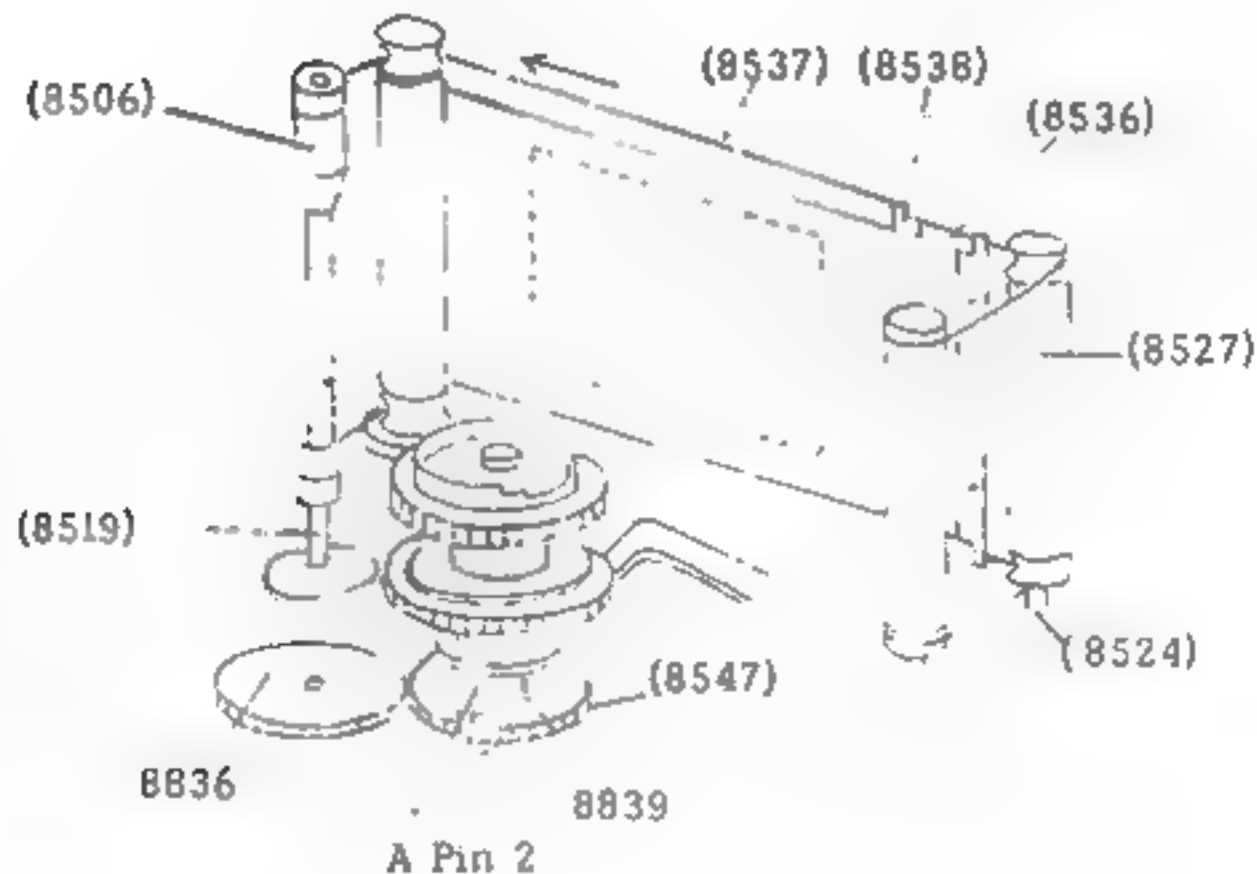


Shutter Release	Mirror elected. First Curtain starts.	First Curtain finishes its run. Second Curtain Starts.	Second Curtain finishes its run. Mirror lowered.	Overall operation completed.
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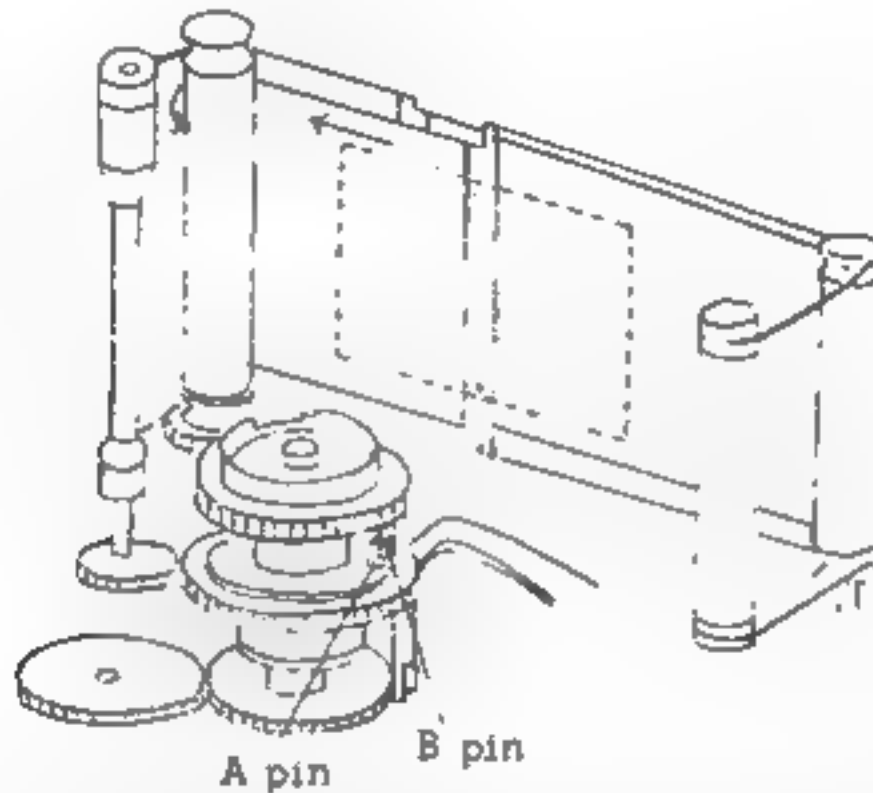
The above timing is based on the curtain movement from one edge to another edge of the mask. Therefore, it does not include the movement of the first and the second curtains before they appear one end of the mask and after they will have reached the other end of the mask.

(5) Shutter Charging:

1. When film is advanced, 8836 and 8839 are rotated, which in turn makes the embossed portion of 8840 of 8839 push A pin 2 connected to (8547). Thus (8547) is rotated.
2. When (8547) is rotated, it turns 8506 by means of 8519 connected thereto.
3. At each end of (8506) is glued a string, to which is attached (8538) of the first curtain. When (8506) is rotated, the strings are wound up towards (8506) against the spring force effected on (8524) and (8527), and thus the first curtain moves in the arrowed direction.

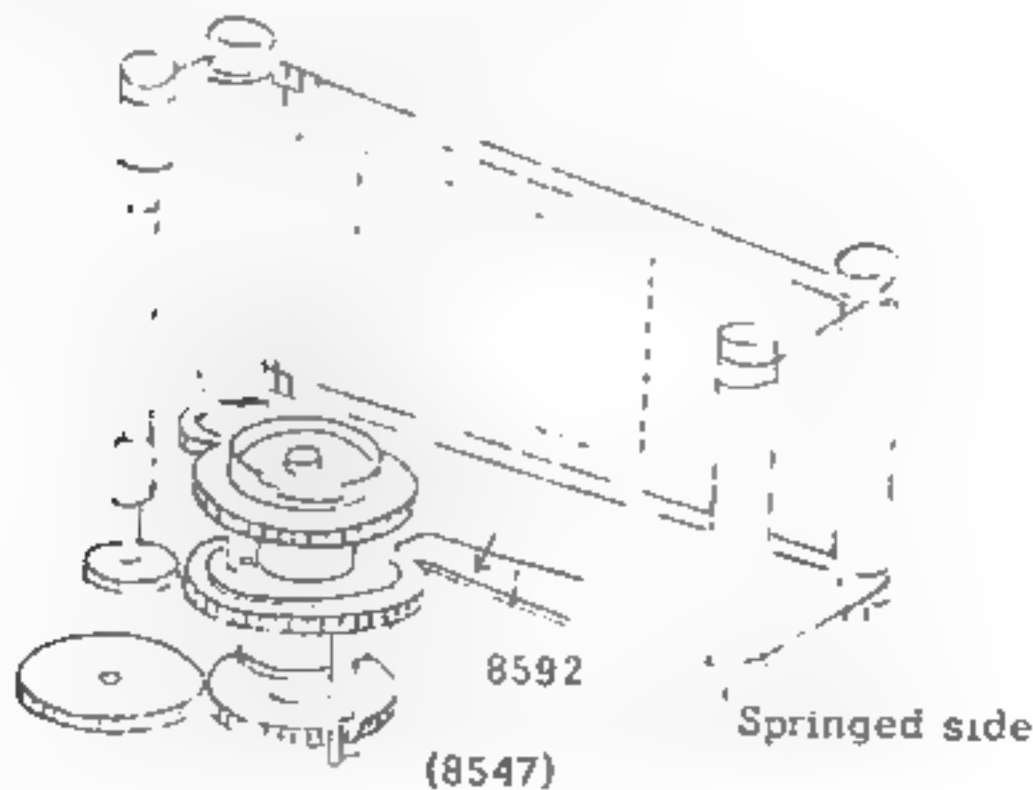


4. When (8547) is rotated, A pin of the (8547) pushes B pin of the (8548), thus moving the second curtain in the arrowed direction. ((8447) and (8548) will move simultaneously.)



5. Upon completion of winding as shown below, CA8592 is engaged onto the tooth of (8547) and locks (8547) and (8548). The first and second curtains will remain wound up while pooling the returning force towards the spring. This will complete the charging action of the shutter.

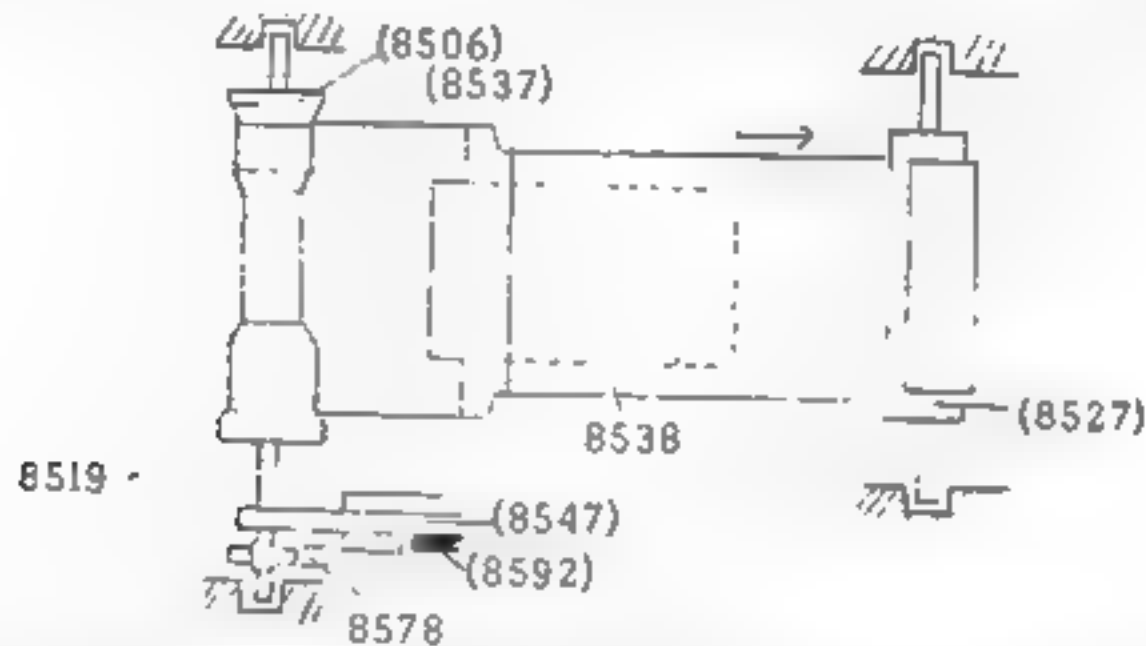
Curtains are wound up
towards this side.



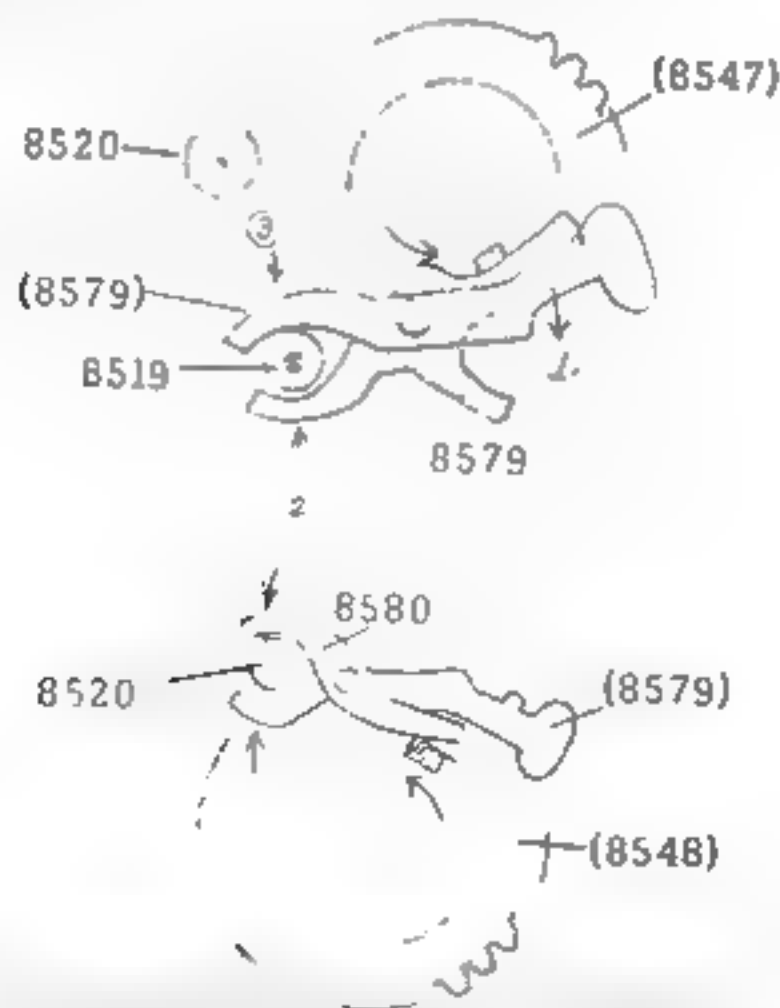
(6) First Curtain Operation:

While the shutter is charged, the curtain remains pulled by the Tension Spring equipped within (8527) in the arrowed direction.

When the shutter is released and the mirror is flipped up, 8592 is released from the gear. The first curtain runs as Main Spring in (8527) rolls it up. The rotation speed of (8527) at this time is an important factor determining the exposure time, since it relates to the speed of the first curtain.



For shock and noise absorption, the brake mechanism is provided. At the end of the curtain movement, the boss on (8547) or (8548) presses the tweezer squeezing up 8519 and 8520 to effect brake on shaft rotation.

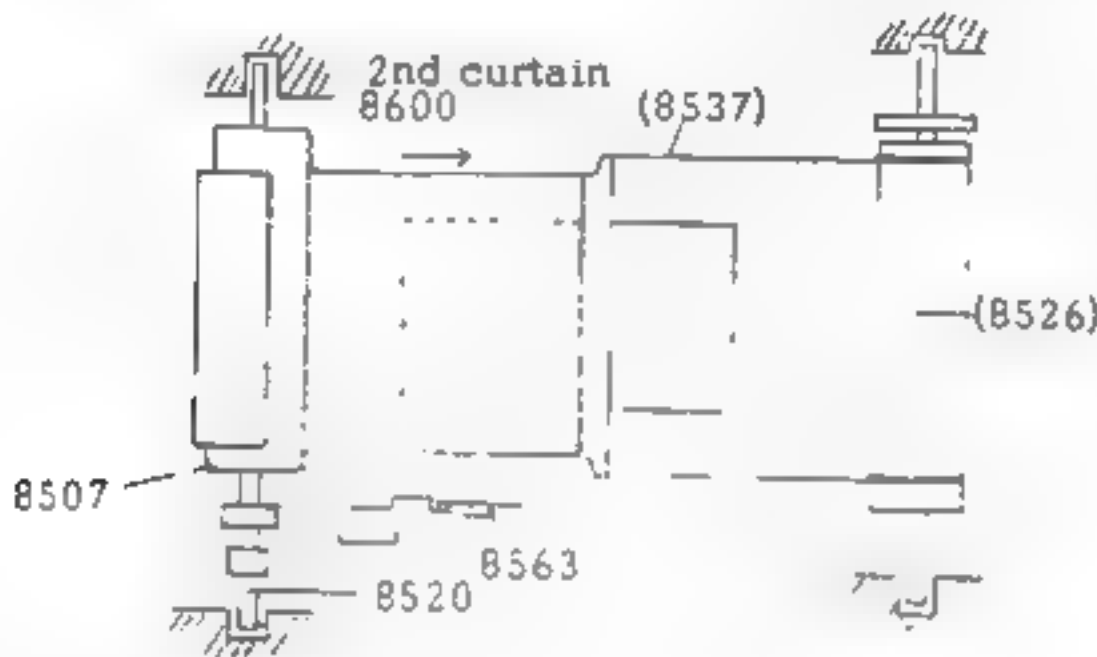


(7) Second Curtain Operation:

While the shutter is charged, the curtain remains pulled by the Tension Spring (8599) provided in (8526) in the arrowed direction.

Upon receipt of the signal from the first curtain, (8563) is released and the second curtain string is wound up onto (8526) by means of the Tension Spring (8599) and the curtain runs.

At this time, the rotation speed of (8526) is an important factor determining the exposure time since it relates to the speed of the second curtain.



(8) Shutter Speed Adjustment:

The exposure time is determined by the curtain speed and the slit width (interval between the first and the second curtain). When the curtain speed is fixed, the exposure depends on the slit width. In case of MDS, the curtain speed is set at 11.7 - 12.1 ms. (for both the first and the second curtains), and the exposure time is adjusted by various slit width.

The major part of the mechanism used for this purpose is:

Low Speed	1/1	1/2	Large ankle on the governor.
	1/4	1/8	Small ankle on the governor.
	1/15	1/30	Gear only of the governor.
High Speed	1/60	1/1000	By the shape of (CA8549, Cam) not using the governor.

High Speed (1/60 ~ 1/1000)

There is constantly a force by Tension Spring (8599) trying to make various parts work in such an order as (8527)-(8538)-(8537)-(8506)-8519-(8547). When 8592 is released as a result of mirror lifting, it releases 8547. Then the first curtain starts moving and (8506) rotating as (8527) is rotated by the force from (8530).

The interval between curtains, i.e. how soon the second curtain should start after the first curtain, is controlled as follows. 8547 clinched on the Gear A rotates in unit with the Gear A, and pushes out 8551 to let the back of 8551 release 8563. It will rotate (8548) and start the second curtain.

The shutter speed adjustment for 1/60 - 1/1000 is made by 8577 engaged on the shutter dial. When it is set at the desired speed between 1/60 - 1/1000, it will determine the position of 8576. Through 8559 connected to 8576 it will further determine the position of 8551. (When released, 8551 returns to its original position.)

Low Speed (1/1 - 1/30)

Since the mechanism of the first curtain operates in a same manner as in case of a high shutter speed, the exposure time is adjusted by controlling the timing after the start of the second curtain until the moment the Patch of the second curtain appears in the wash. The control is performed by the governor.

1/1 1/2

When the shutter dial is set at 1/1 or 1/2, it will determine the position of 8577 engaged onto the shutter dial. It will further set the position of 8605 screwed with 8577. The A lever is dropped into the concave of 8605 and the Large Ankle is engaged. The speed adjustment of 1/1 and 1/2 is made by the Cam lever connected to 8575. The Cam lever will determine the position of the G lever and thus change the angle of operation of the Governor to adjust the speed. (Ref. E - 29)

Now the preparation of speed adjustment for 1/1 or 1/2 is completed. After the first curtain run, 8563 is released. When the Gear B (second curtain) starts moving, the boss on the Gear G hits the G lever on the governor. After its operation for appropriate time on the governor, the boss on the Gear B is released from the G lever. This removes the Gear B load and the second curtain runs in a high speed. (The position of 8551 will be the same as in the case of 1/60.)

1/4 1/8

Among the series of the governors for 1/1 and 1/2, a Large Ankle is used in place of the Small Ankle to lessen the load. This controls the operating angle of the governor by 8575 so as to meet the requirement, i.e. 1/4 and 1/8. When the shutter dial is set at 1/4 or 1/8, the S lever of the governor escapes from 8606 and the Small Ankle will be engaged. Then 8605 presses the A lever to release the Large Ankle. The speed adjustment for 1/4 and 1/8 is directed from 8575 to the Cam lever and thus changes the operating angle of the G lever. (Ref. E -30)

1/15 1/30

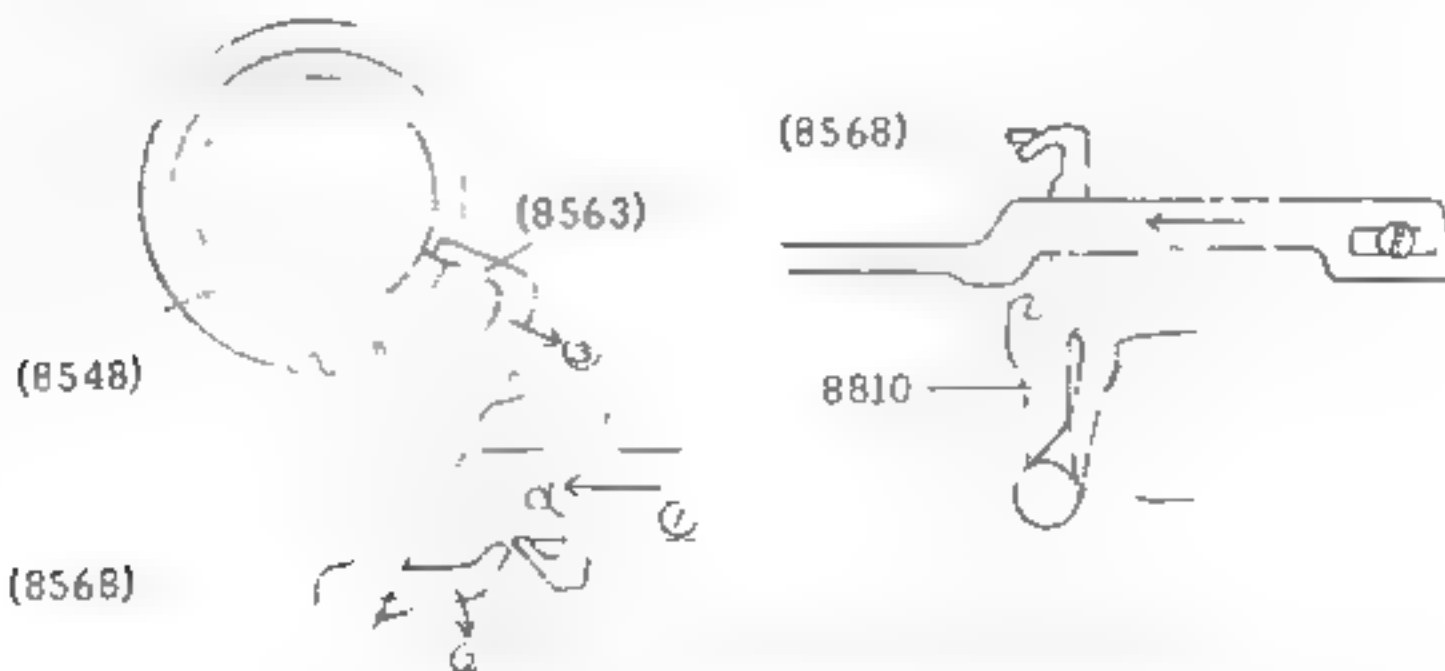
The only difference from the previous speeds, 1/1 - 1/8, is that it does not use the ankle of the governor but the gear of the governor alone to apply a load on 8548.

When the shutter dial is set at 1/15 or 1/30, the positions of 8575 and 8605 are determined by the gear. Both Large and Small Ankles are pressed toward outer perimeter of the Governor cam and released. According to the height of 8575, the movement of the Cam lever is governed and further the position of the G lever. Thus, the start of the second curtain's run will be delayed as appropriate. (Ref. E -30)

B (Bulb)

The movement of the first curtain is same as in other cases. By means of 8576, 8551 is placed in the position to escape the action of 8549. Therefore, the second curtain is not released by the operation of 8547.

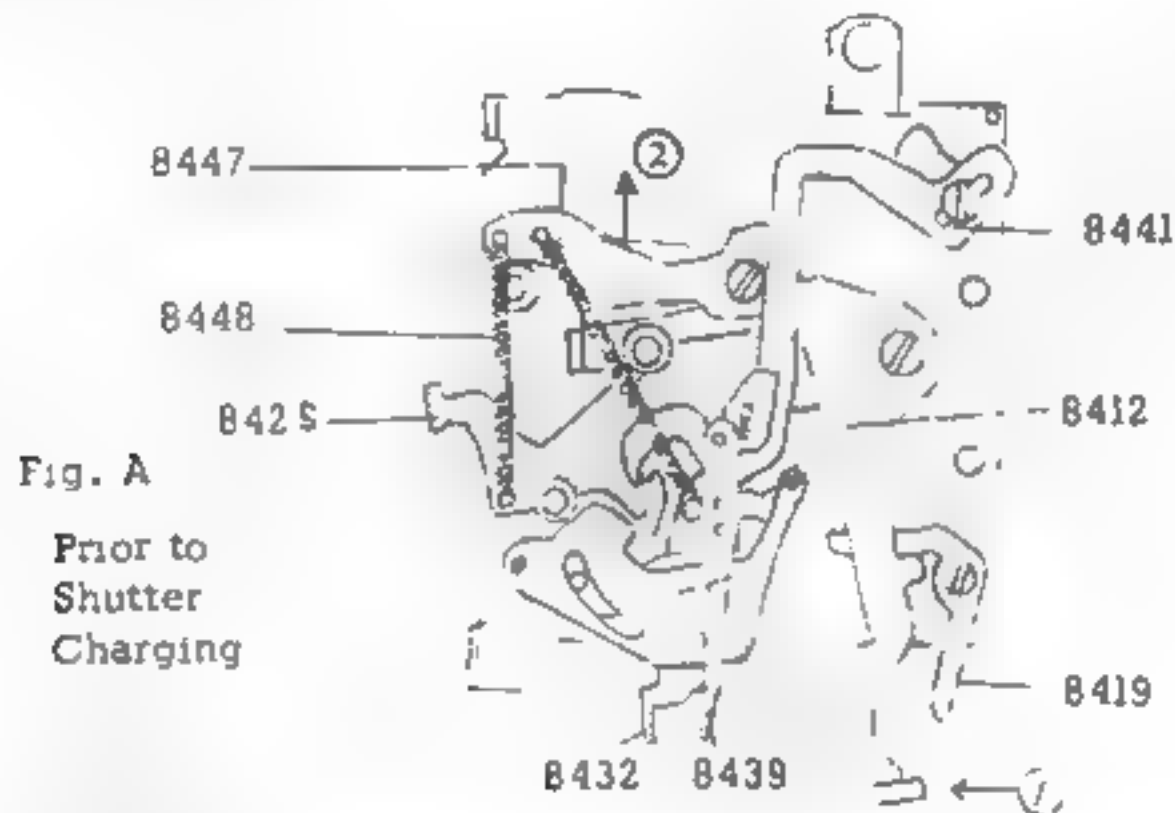
When the release button returns to the original position, 9079 moves in the arrowed direction and its boss hits 8568. When 9078 returns, 8568 rotates in the direction of (2) shown in the illustration below. 8563 in unit with 8568 is released from the embossed portion of the B Gear. It will rotate the Gear B and the second curtain starts running.



Function of CA8612 (Lever)

In case of snapshot at low shutter speeds ($1/1$ $1/4$), CA8612 removes ankle from Gear-governor and returns G lever immediately to the appropriate position. This prevents irregularity of low shutter speeds. (Ref: E - 27)

(9) Mirror Operation:



Mirror Charging:

1. When the film is advanced, 8412 is pressed in the direction of (1). (Fig. A)
2. Since 8448 is stopped by 8432 and 8441 by 8448, 8448 and 8412 are charged. (Fig. B)
3. 8412 is locked by 8419. (Fig. B)

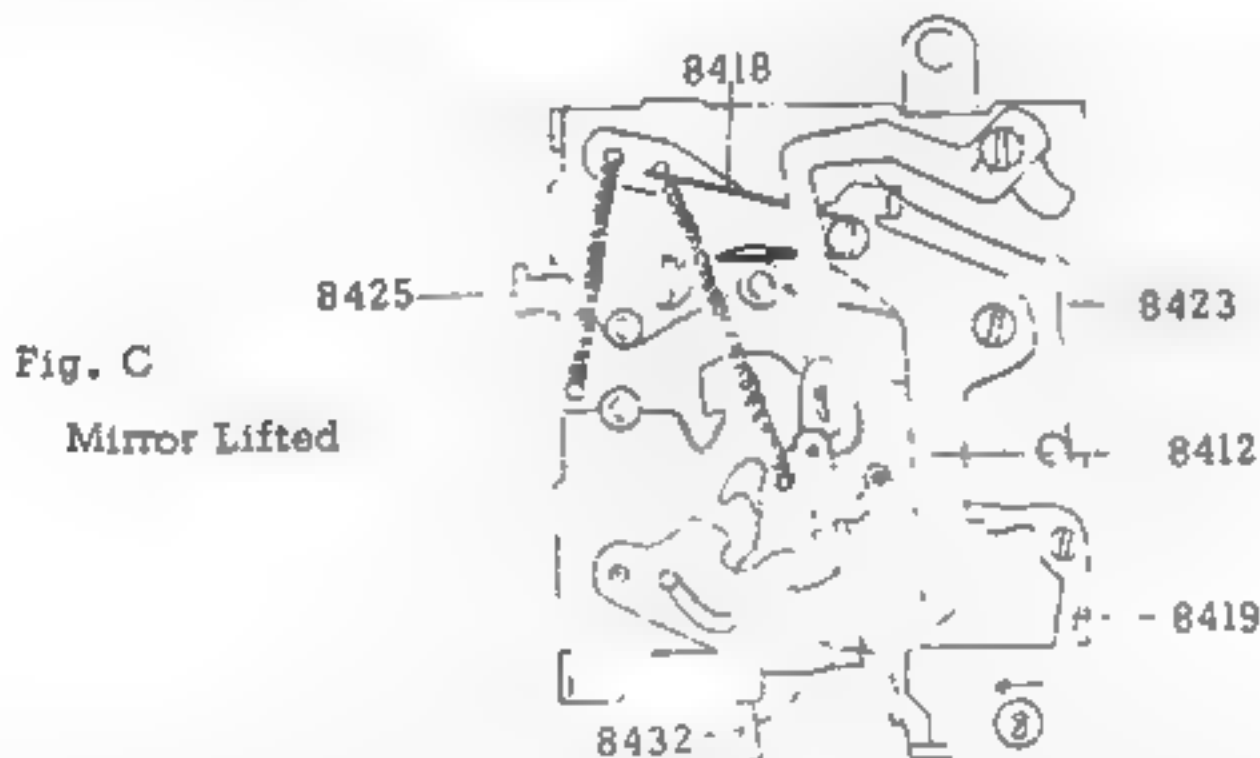
Fig. B

Subsequent to Mirror Charging



Mirror Operation:

1. When 9082 (Botton) is pressed, 8432 is pushed in the direction of (3) to be released from 8425.
2. 8425 is pushed by 8448 in the direction of (4). (Fig. B)
3. Along with the movement of 8425, 8441 moves in the direction of (6) to lift the mirror. (Fig. B)
4. When the 8441 moves in the direction of (6), 8439 is moved towards (7) to transmit the mirror-lift up to the shutter.



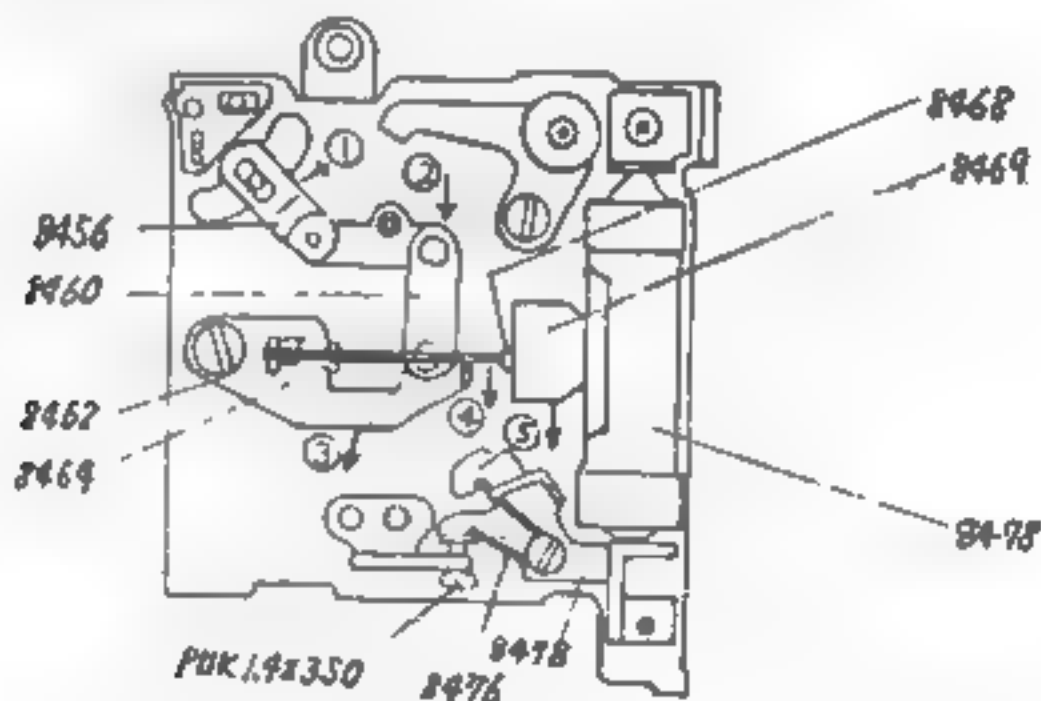
5. 8425 is fixed in position by 8418, which acts as the shock absorber.
6. Upon receipt of the message from the shutter that the second curtain has completed its run, 8419 is pressed in the direction of (8). (Fig. C)
7. When 8419 is released from 8412, 8412 is lowered by 8423.
8. 8425 is pressed down at the same time 8412 is lowered.
9. 8425 is locked by 8432. The mechanism returns to the original state shown in Fig. A.

(10) Mirror Brake Mechanism:

To absorb or prevent shocks during the mirror travel, an air brake is provided consisting of a cylinder and a piston, which is effected towards the latter part of the mirror movement vertically.

Steps of Operation:

1. When the mirror begins its movement, 8456 moves in the direction of (1) and its other end in the direction of (2).
2. 8456 and 8462 being connected by 8460, 8462 moves in the direction of (3).
3. As 8464 is fixed onto 8462, 8464 moves in the direction (4).
4. When the mirror is raised $20^{\circ} - 22^{\circ}$, 8464 will hit 8469. To absorb the shock at this time, 8464 is used and further a piece of rubber sheet is glued at its tip.



5. 8464, while bending itself, will push down 8469 in the direction of (5).
6. The mirror is completely raised.

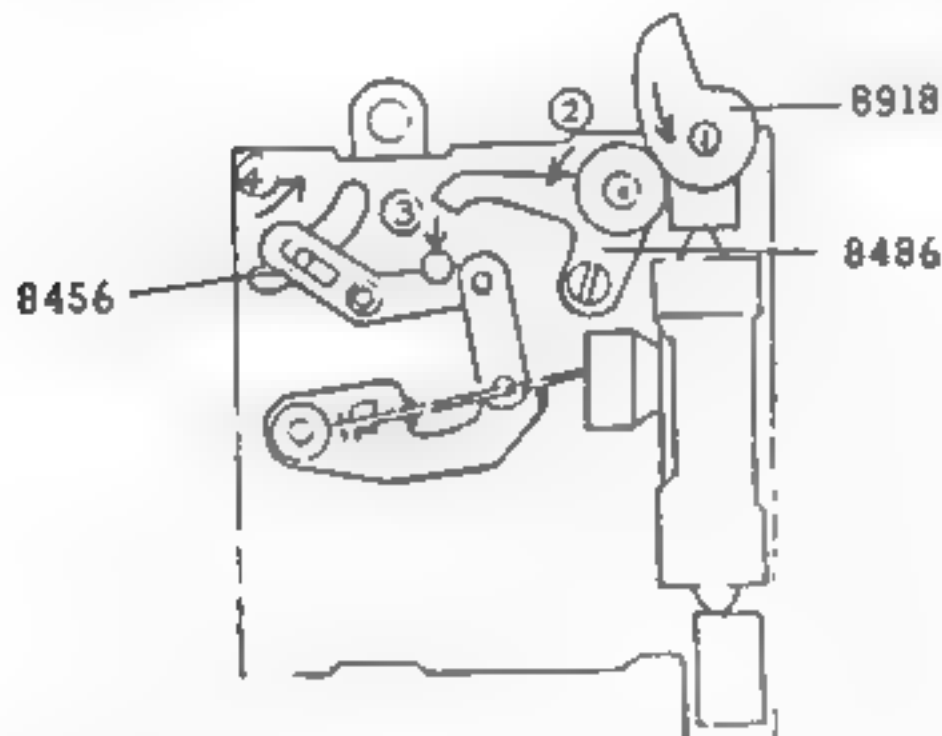
Positioning (45°) of the Mirror:

8401 hits 8476 and the mirror, thereby, is fixed in position of 45° . The necessary adjustment is made by rotating the PUK 1.4 x 350 and changing 8476 position.

(11) Mirror-Up Mechanism:

When a short focus lens is used, the lens will hit the mirror. Therefore, it is necessary to lift up the mirror and thus the mirror-up mechanism is provided to meet the requirement.

1. When 8719 is turned, 8918 moves in the arrowed direction.
2. 8486 presses 8456, thus lifting the mirror.
3. Simultaneously with 8456 movement, 8441 pivoted at 8442 rotates counter-clockwise. The mirror is up. (Status (6) of Fig. B in the Repair Data B-17)

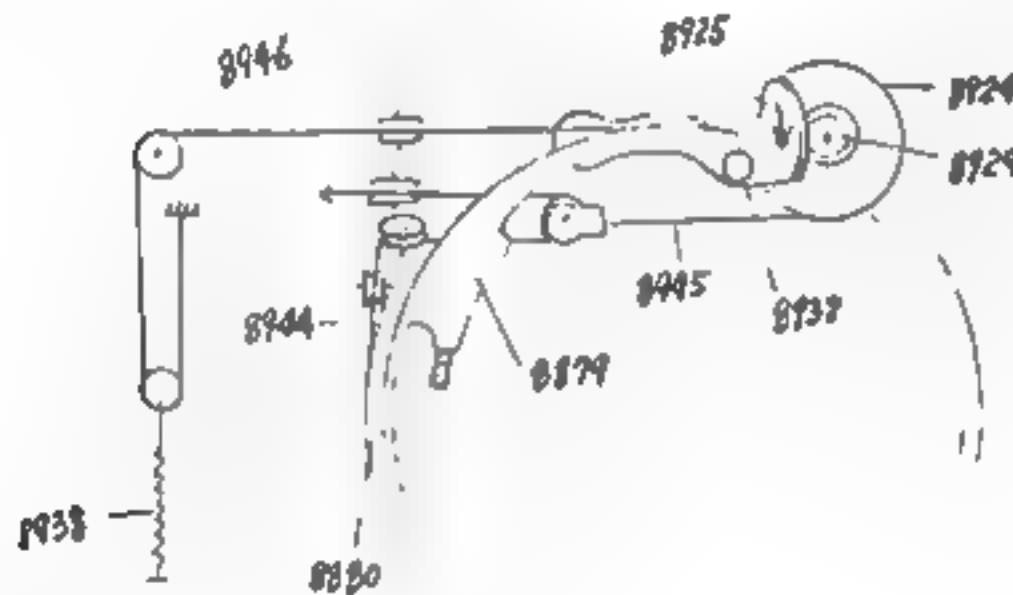


(12) Synchronizing Mechanism for the Exposure Meter:

When the shutter dial is turned, this rotates 8880 directly connected thereto. Then the string (8944) adhered to the outer perimeter of 8880 will move to rotate 8980 of the meter using the Moving pulley as a media. Three pulleys (8883) in the route are for converting the string (8944) angle. At this time, the string is given tension by the spring (8999) on the meter side.

When the aperture ring is turned, the Connecting lever on the lens turns 8879. 8932 which is clinched to the 8925 and is in contact with the Cam of 8879, will rotate itself. While doing so, it will turn 8925 in the arrowed direction and further 8929 which is engaged on 8925. Now, 8924 will turn since it is made in unit with (8929). It will roll up 8945 to pull the Moving pulley and 8944 and further to turn the pulley on the exposure meter.

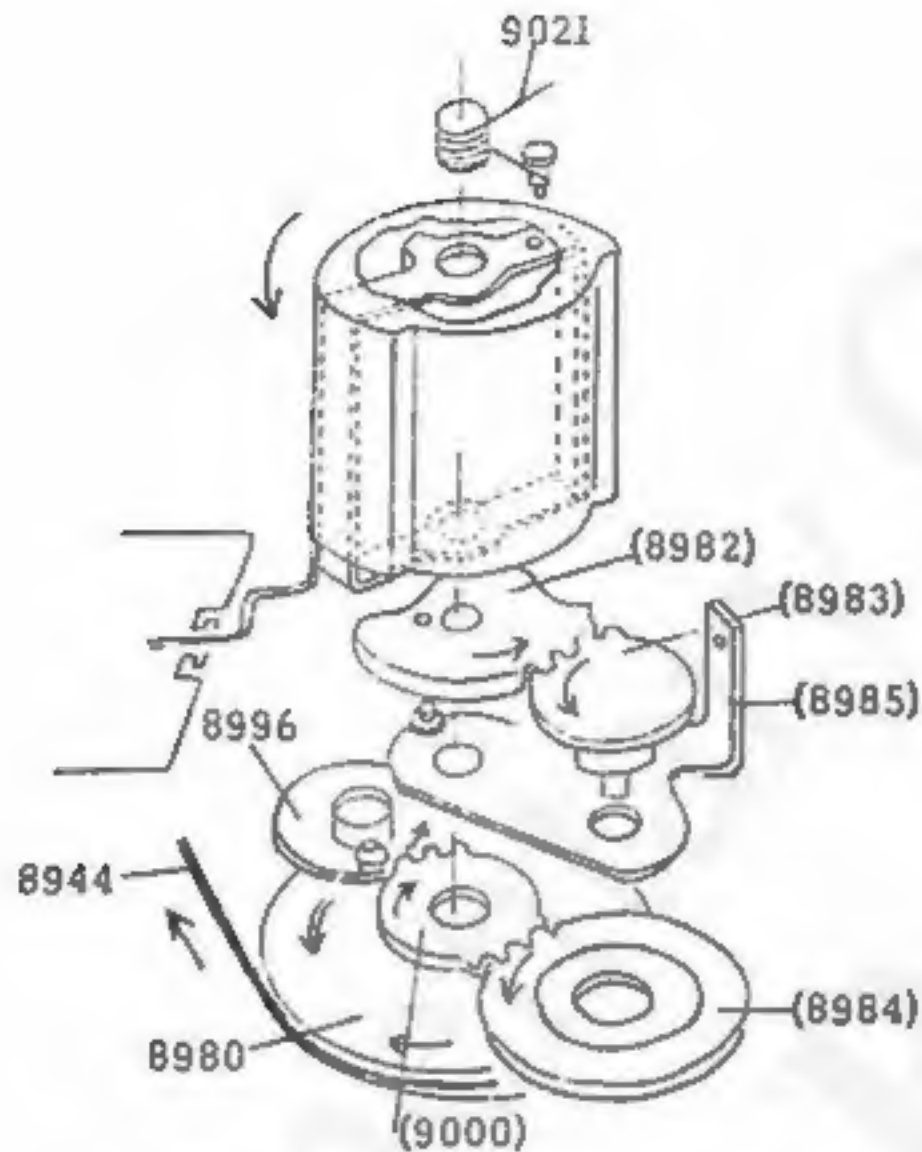
At this time, 8946 adhered to the outer perimeter of 8879 will also move to pull 8938. When the aperture ring is returned to the previous position, this will insure that the boss of 8879 will always hit the Connecting lever of the lens.



(13) Mechanical Section of Exposure Meter:

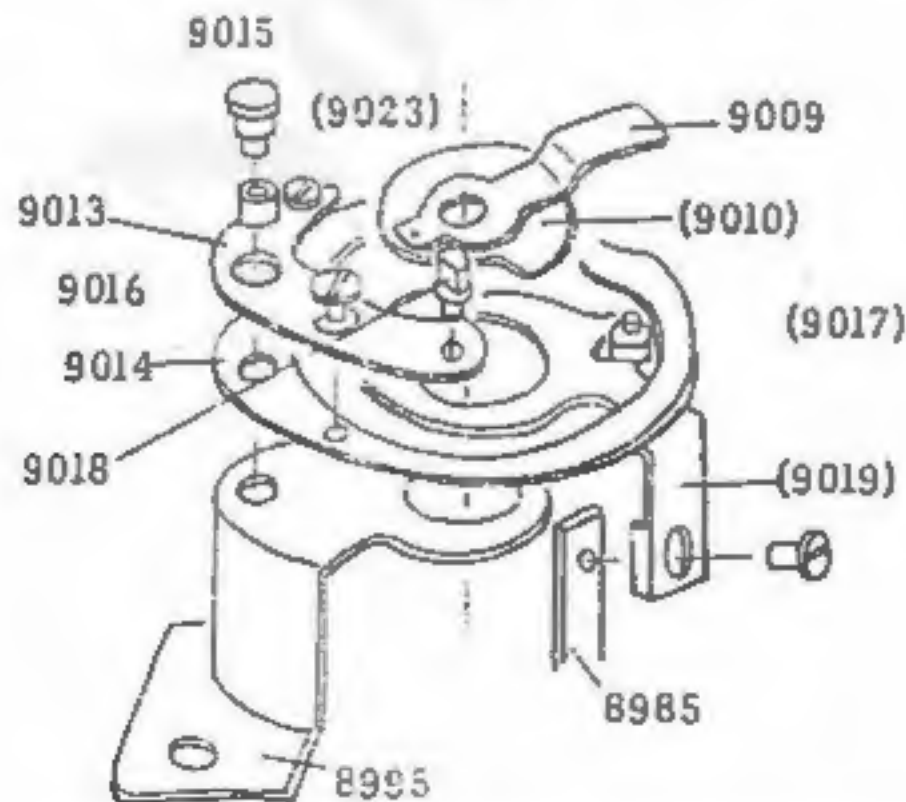
Changes in Shutter Speed and Lens Opening:

When the shutter dial is turned from 1/1000 toward B and the aperture ring from F 16 toward open, the string (8944) moves in the arrowed direction as shown in the illustration, next page, to turn 8980. (9000) in unit with 8980 turns 8984 and further 8982 through 8983 which is united with 8984. 8982 is fixed on the meter frame by screws. Thus, the meter is activated. On the pulley M is applied a force in the direction (→) by 8999 and 9021 engaged on 8996, and the string (8944) is given tension constantly.



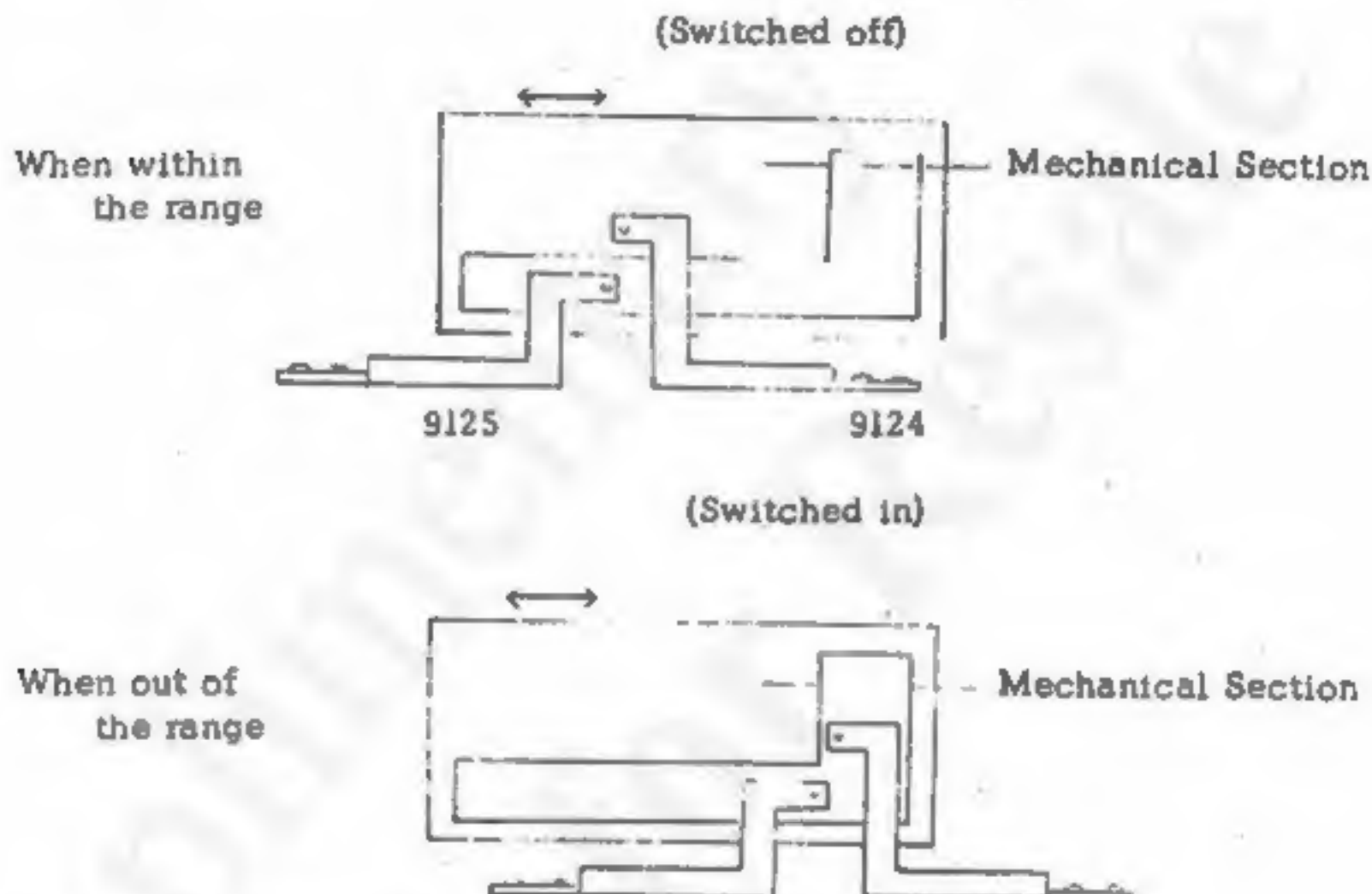
(14) ASA Setting Transmission:

When the ASA dial (9007) is turned, (9009) which is engaged onto the groove of the A dial turns 9010. 9010 is in contact with (9018). The lifting force of 9010 is transmitted to turn the (9013) pivoted at (9015). To (9013) is connected (9014) by 9016. On (9014) is clinched 9017 which is fitted into the groove of (9019). Thus (9019) is turned. (9019) is connected to 8985 by a screw. When 8985 is turned, the meter will be activated.



(15) Warning Switch:

When the light is insufficient and below the synchronous range of the exposure meter, a warning is given in the viewfinder. In case of various lenses used, if the light is below the lower limit of the measurable range, the needle is made to swing approximately 2EV toward the plus (+) side and not to meet the center of the index.

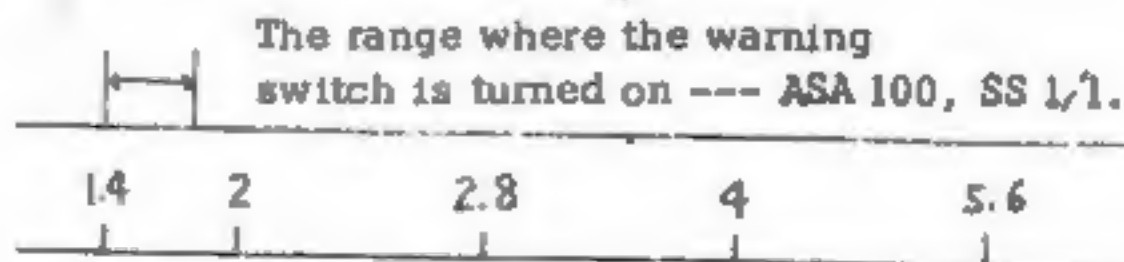


Range of Measurement of Each Lens:

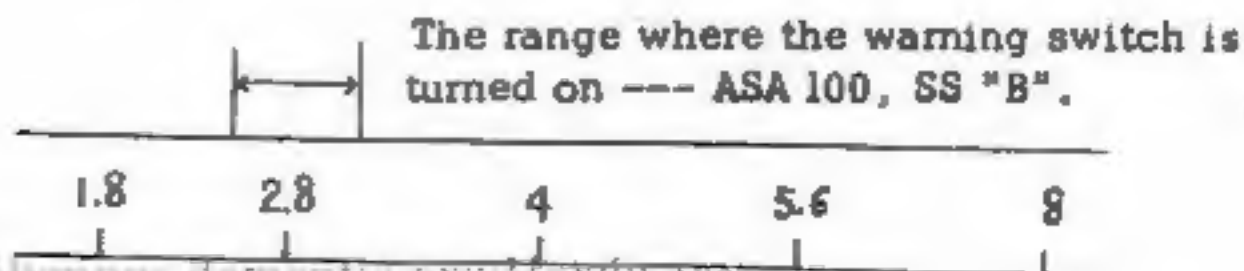
MS5014	BV2-17
MS5018	BV2.35-17.35
MS5512	BV1.9-16.9

ON-position of the Warning Switch:

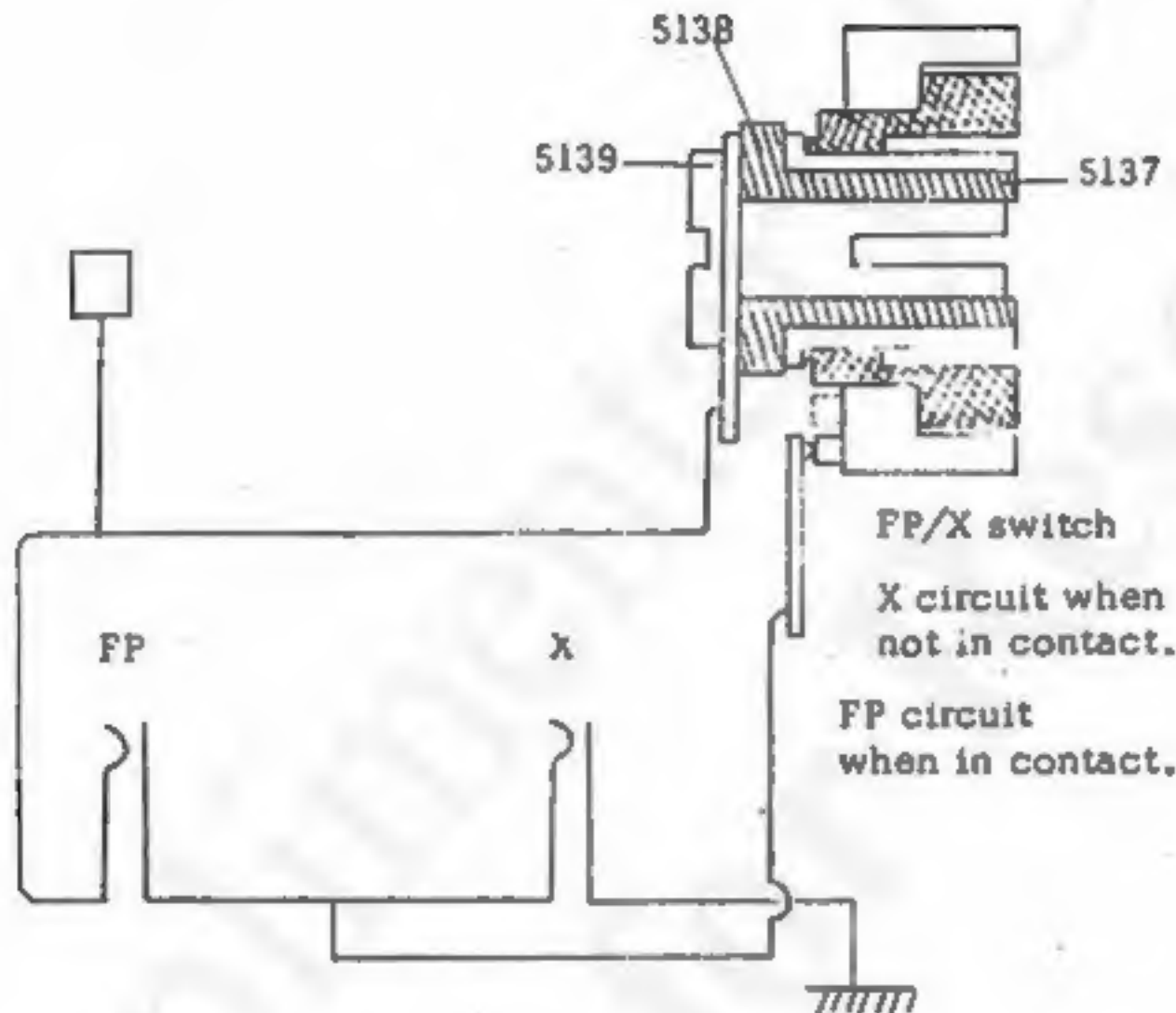
MS5014:



MS5018:



(16) Flash Synchronization Circuit:



In a single reflex, normally it takes the mechanism wherein the X contact is always kept ON and/or it is switched on again when the film is advanced. This causes an explosion at the time of the film advance. Therefore, normally the X contact piece is made movable to prevent it. However, because it means unstable positioning of the contact piece, FP and X are connected parallelly in case of MDS.

To check the insulation resistance of the contact piece, in case of X contact, set the shutter dial at 1/1 and release it. While the 1/1 governor is in operation, move the film advance lever for about half a stroke. See if the needle of the Insulation Resistance Meter) shows over 30MΩ. A check can then be carried out.

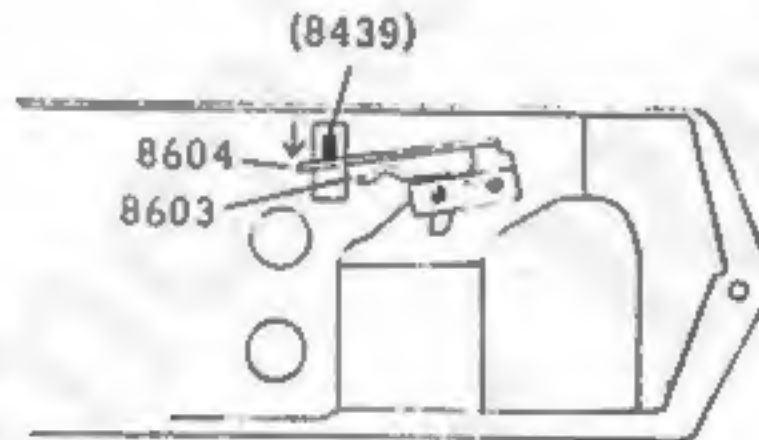
In case of FP turned ON and X being OFF, when the film advance lever is moved for a full stroke, curtains will make their runs and will return to the normal position. A check can then be carried out.

Do not attempt checking too frequently, since it may cause for strings for curtains to come off the pulley.

FP-Contact:

The FP contact has to be switched in within 10 ms. prior to complete opening of the first curtain. Thus, normally, the signal is received from the mirror driving mechanism. In case of MDS, the signal notifying the mirror rising is transmitted to the shutter which in turn makes the switch work by 8439.

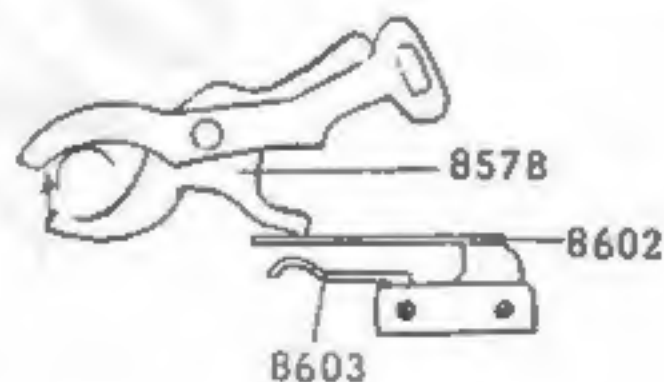
When the mirror rises, 8439 moves in the arrowed direction to switch the EP contact on.



X-Contact:

Since the X contact is to be switched IN immediately upon completion of the first curtain opening, the switching action is carried out by the first curtain cam and the first curtain brake.

In case of MDS, it is switched in by 8578 of the first curtain brake lever.



Immediately prior to completion of the first curtain opening, 8578 starts rotating in the arrowed direction, thus effecting the brake. The X contact is made effective immediately after completion of the first curtain opening.

The brake is kept effective until completion of the film advancement. In the meantime, the X contact is also kept effective.