Canon

SCOOPIC 16

16mm MOVIE CAMERA

CANON SERVICE MANUAL

CANON CAMERA COMPANY, INC.
TOKYO, JAPAN

INTRODUCTION

The Canon Service Manual is published by Canon Camera Co., Inc. for our main products to form a part of the quality assurance of our products.
When taking part in the service after sales for Canon products, this Service Manual, we hope, will be your consultant so that the product concerned always keeps its original precision.
The Canon Service Manual consists of six sections, the Repair Manual, Repair Guide, Service Tools List, Service Materials Manual, Price List of Spare Parts and Service Manual Report.

Should it happen that a Canon product of a customer becomes out of order and requires repair, repair it consulting these Repair Manual, Repair Guide, Service Tools List and Service Materials Manual. Referring to the prices of the spare parts see the Price List.
When ordering spare parts, please be sure to place an order filling in our printed form, the REQUISITION OF SPARE PARTS to, and also for any details and informations regarding tools and testing equipments, please ask to,

Canon Camera Co., Inc., SERVICE DEPARTMENT
312 Shimomarukocho, Ohtaku, Tokyo, Japan

When a product is improved greatly, the revised edition of the Service Manual will be published. Otherwise, the Service Manual Report is issued whenever a part of a product is changed, to supply you with the latest information from our factory.

We shall be very glad if you will let us know your opinion or request regarding this Canon Service Manual.

CONTENTS

HOW TO USE THIS SERVICE MANUAL

Canon Service Manual consists of the following six sections: Repair Manual, Repair Guide, Service Tools List,Service Materials Manual, Price List of Spare Parts and Service Manual Report, which is to be delivered if the outward appearance, function or design of the product is changed. These six sections are divided by index sheets so that you may easily identify.

REPAIR MANUAL

1. Repair Manual consists of the Exploded Views, Parts List of various portions of the product and Index of Parts Numbers.
2. Parts shown in an Exploded View are all listed on its right page being classified according to their mechanism.
3. An Exploded View and its corresponding Parts List are arranged under the same page number.
4. The Exploded Views are arranged according to the correct procedure of disassembling the Canon product but you may not always follow this order exactly when you remove a certain part. Sometimes you can carry out your purpose by removing only one part of this disassembling procedure.
5. The Table of Contents is arranged in the names of each mechanism. When you want to identify a part in exposure meter, see the item, EXPOSURE METER in the table and see the page indicated.
6. Such a part as 19-9775 that can be disassembled into still more several parts is shown in the Parts List with the explanatory indented column.

   e.g. 19-9775 Top Cover (B.P.)
   13-7095 Meter Window
   13-7160 Counter Window

7. When more than one piece of an identical part is used in a portion of the product, we indicate it by multiplying the part's name by its quantity.

   e.g. X24-170228 Screw ×4

8. When several part numbers are shown in square brackets, choose the suitable one of these parts according to the condition.

   e.g. [X32-505211 / X32-505212] Washer ×N

   For the most cases, the difference is in thickness of the washer.
9. When a part name is multiplied by N as in

   X32-504621 Washer ×N,

   use suitable numbers of the part accrding to the condition.
10. (B.P.) is the abbreviation of Bonding Part.
11. The part number of the part which can be supplied as a separate service part though it is one of the components of a bonding part, such as the Window or the Light Shield, is shown in the round brackets. The bonding part in this case includes those parts above said when ordered as the form of the bonding part.
12. When you want to identify a part from its part number, see the Index of Parts Numbers at the end of the repair manual.

REPAIR GUIDE

1. On the supposition of the most various troubles with the products that might happen, Repair Guide presents as many troubles, causes and remedies for them as possible. But we Canon Camera Co., Inc. firmly believe that none of these troubles can happen.
2. The troubles are classified according to their mechanism as they are shown in the Table of Contents. Several causes are shown to one trouble and the remedies are arranged according to the causes.

SERVICE TOOLS LIST

1. Service Tools List is the list in which the names and uses of the testing equipments required for the service after sales are given.
2. As for the specifications and uses about these testing equipments in details, refer to the Service Manual Report prepared for each testing equipment.
3. Special screwdrivers are listed in numerical order, e.g, in the sign of a special screwdriver T06A-13-8033-1, the number 13-8033 stands for the parts number of the parts which should be attached or removed by this special screwdriver.

SERVICE MATERIALS MANUAL

1. Service Materials Manual presents chemicals necessary for assembling and adjusting the products and lubricating oil necessary for keeping the precision, in combination with the names of materials and members to be used for.
2. Do not use other chemicals and lubricating oil than those shown here. Please place an order of them as well as spare parts to the Service Department, Canon Camera Co., Inc.
3. Service Materials Manual and Repair Manual have the same page number correspondingly so that you may easily identify.

PRICE LIST OF SPARE PARTS

1. Price List of Spare Parts presents the unit price of the service parts you received from us.
2. The unit price is F.O.B. Tokyo/Yokohama.
3. The page number on the Repair Manual in which each part is described is shown on the right side of each part so that you may easily identify.
4. All the prices of the Spare Parts on the Price List section are subjects to change without notice.

SERVICE MANUAL REPORT

Service Manual Report is for the purpose of giving a prompt and exact information when some revisions are made on the products, namely, when the products are partly changed by the rationalization of production, the development of function, change of outward appearance and so on. Therefore, Service Manual Report is to be published whenever any revision is made on the products.

CANON REPAIR MANUAL

CANON SCOOPIC 16

(REF. NO. 3-70201-2)

CANON CAMERA CO., INC.

TOKYO, JAPAN

First Printing, September 1966

Printed in Japan

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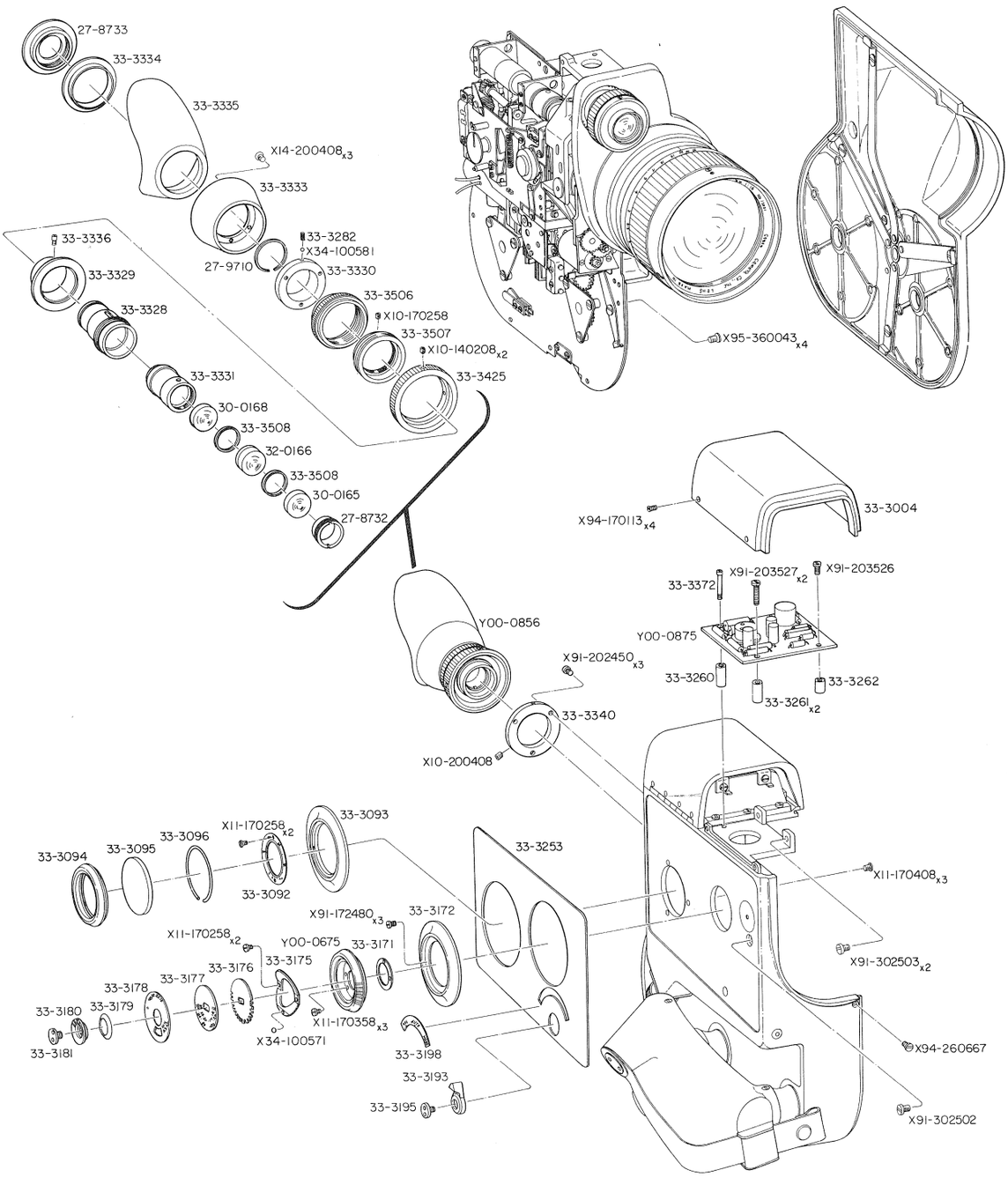
EXPLODED VIEW

of

CANON SCOOPIC 16



SCALE 1-3

PARTS LIST

EYEPIECE

Y00-0856	Eyepiece (Unit)
27-3710	Snap Washer
27-8732	Assemble Collar
27-8733	Assemble Collar
30-0165	Lens
30-0168	Lens
32-0166	Lens (B. P.)
33-3282	Coil Spring
33-3328	Eyepiece Sleeve
33-3329	Cam Ring
33-3330	Eyepiece Cover
33-3331	Eyepiece Tube
33-3333	Eyepiece Ring
33-3334	Spacer
33-3335	Eye Cap
33-3336	Screw
33-3425	Eyesight Adjusting
33-3506	Stopper Ring
33-3507	Stopper
33-3508	Spacer x 2
X10-140208	Screw x 2
X10-170258	Screw
X14-200408	Screw x 3
X34-100581	Steel Ball
33-3340	Eyepiece Holder
X10-200408	Screw
X91-202450	Screw x 3

FILM COUNTER

33-3092	Counter Dial
33-3093	Counter Window Frame
33-3094	Counter Window
33-3095	Counter Window Glass
33-3096	Retainer
X11-170258	Screw x 2
X11-170408	Screw x 3

SPEED DIAL

Y00-0675	Frame Dial Knob(B. P.)
33-3171	Washer
33-3172	Speed Dial Frame
33-3175	Click Spring
33-3176	Click Disk
33-3177	Film Speed Dial
33-3178	Frame Speed Dial
33-3179	Spring Washer
33-3180	Knurled Knob
33-3181	Pin Face Screw
X11-170258	Screw x 2
X11-170358	Screw x 3
X34-100571	Steel Ball
X91-172480	Screw

A-M SWITCH LEVER

33-3193	Switch Knob
33-3195	Pin Face Screw
33-3198	Switch Plate

PRINT CIRCUIT

Y00-0875	Print Circuit Plate (Unit)
33-3260	Spacer
33-3261	Spacer x 2
33-3262	Spacer
33-3372	Screw
X91-203526	Screw
X91-203527	Screw x 2

BODY CASE

33-3004	Top Cover
33-3253	Leather
X91-302502	Screw
X91-302503	Screw
X94-170113	Screw x 4
X94-260667	Screw

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EXPLODED VIEW
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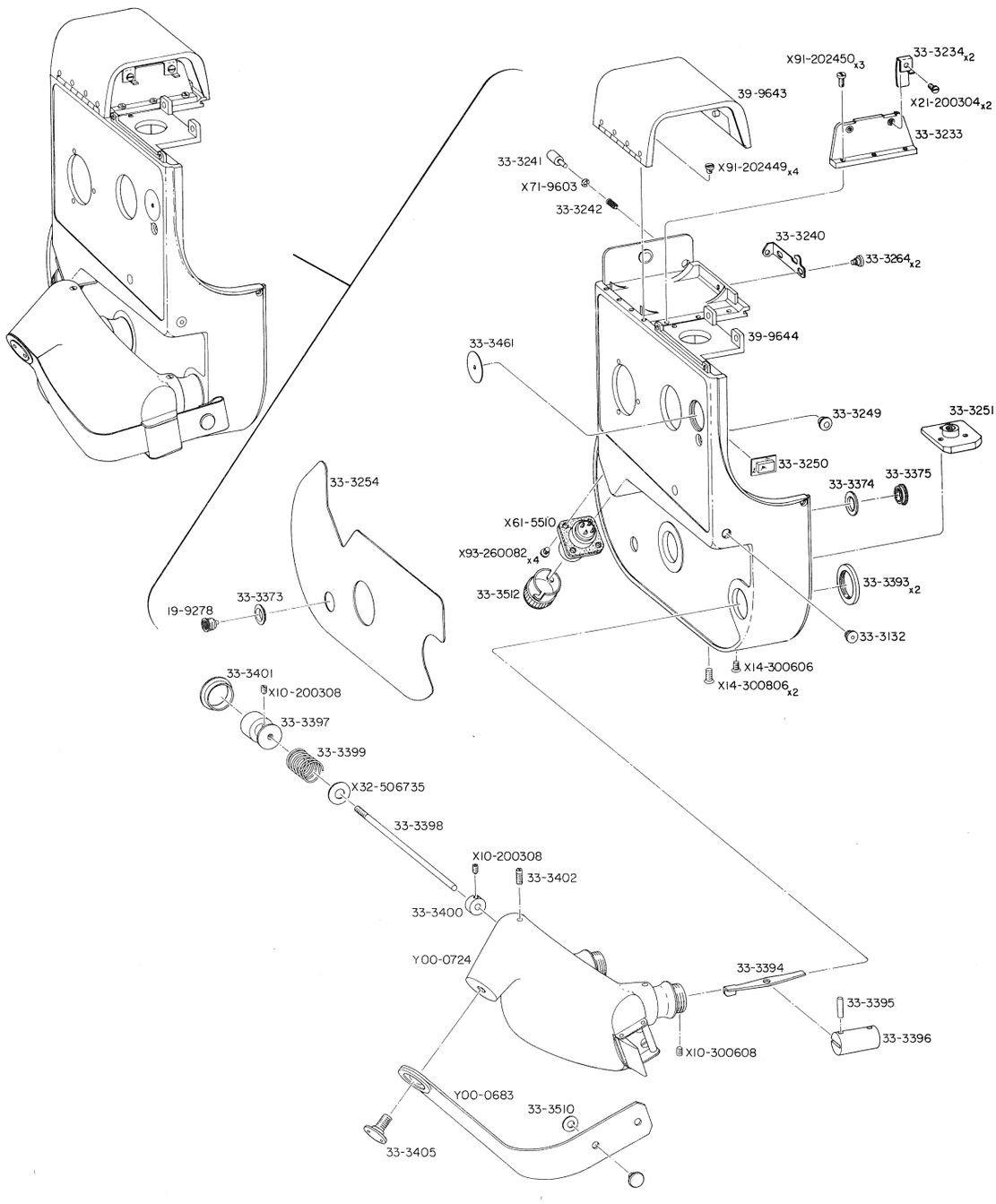

SCALE 1-3

PARTS LIST

BODY CASE

19-9278	Terminal (B. P.)
33-3132	Release Socket
33-3233	Battery Contact Base
33-3234	Battery Contact x 2
33-3240	Battery Cover Lock
33-3241	Lock Button
33-3242	Coil Spring
33-3249	Checker Button
33-3250	Checker Window
33-3251	Tripod Socket
33-3254	Leather
33-3264	Screw x 2
33-3373	Insulator
33-3374	Insulator
33-3375	Nut
33-3393	Nut x 2
33-3461	Cover
33-3512	Receptacle Cap
39-9643	Battery Cover (B. P.)
39-9644	Body Case (B. P.)
X14-300606	Screw
X14-300806	Screw x 2
X21-200304	Screw x 2
X61-5510	Receptacle
X71-9603	Retaining Washer
X91-202449	Screw x 4
X91-202450	Screw x 3
X93-260082	Screw x 4

HAND GRIP

Y00-0683	Grip Belt (B. P.)
Y00-0724	Hand Grip (B. P.)
33-3394	Release Lever
33-3395	Screw
33-3396	Collar
33-3397	Shutter Button
33-3398	Release Shaft
33-3399	Coil Spring
33-3400	Collar
33-3401	Button Frame
33-3402	Screw
33-3405	Pin Face Screw
33-3406	Rivet
33-3510	Washer
X10-200308	Screw x 2
X10-300608	Screw
X32-506735	Washer

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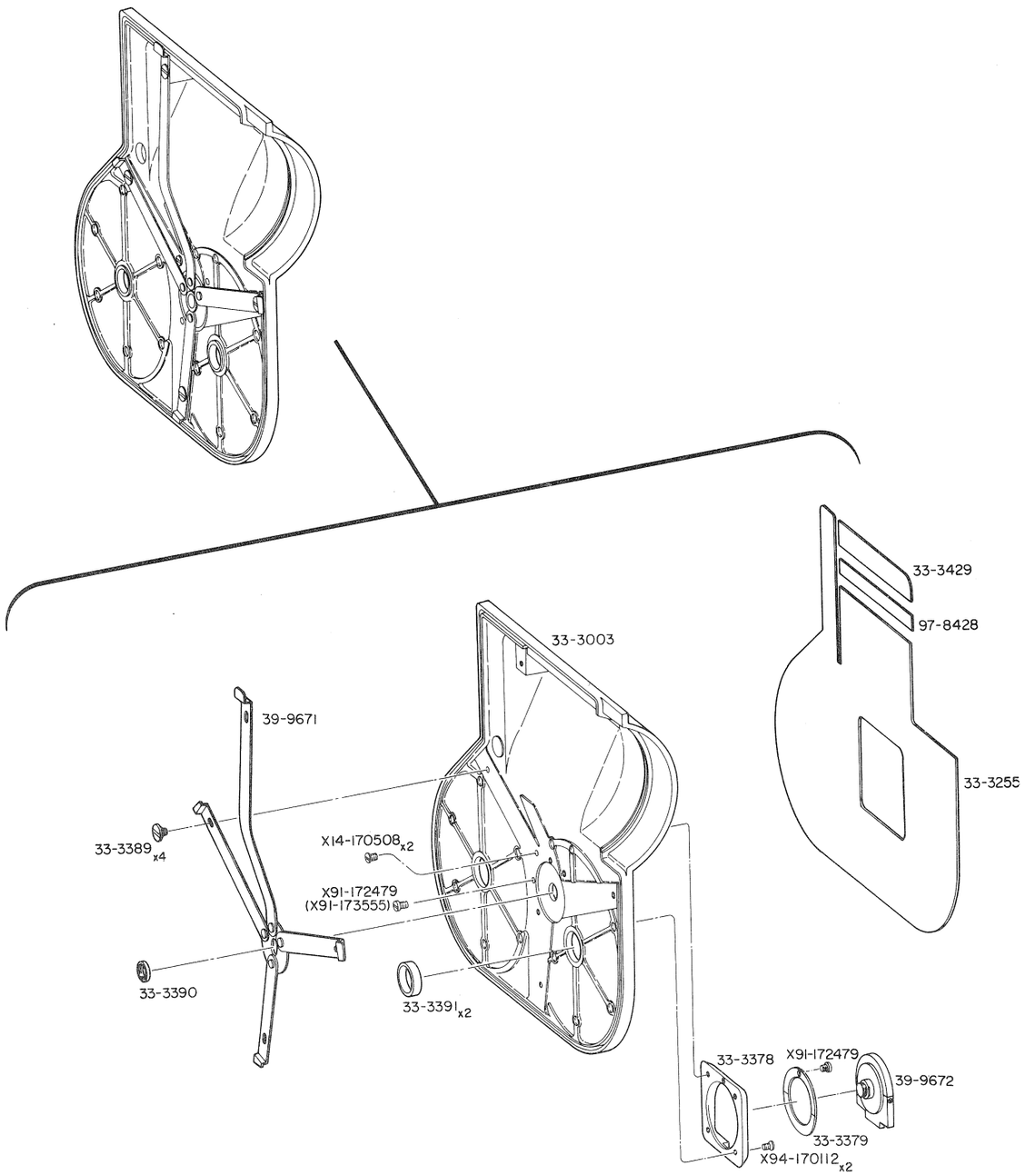

SCALE 1-3

PARTS LIST

SIDE COVER

33-3003	Side Cover
33-3255	Leather
33-3378	Side Cover Lock Frame
33-3379	Spring Washer
33-3389	Screw x 4
33-3390	Nut
33-3391	Cover x 2
33-3429	Leather
39-9671	Side Cover Lock Lever (B. P.)
39-9672	Side Cover Lock Key (B. P.)
97-8428	Name Plate
X14-170508	Screw x 2
X91-172479	Screw
[X91-172479 X91-173555]	Adjusting Screw
X94-170112	Screw x 2

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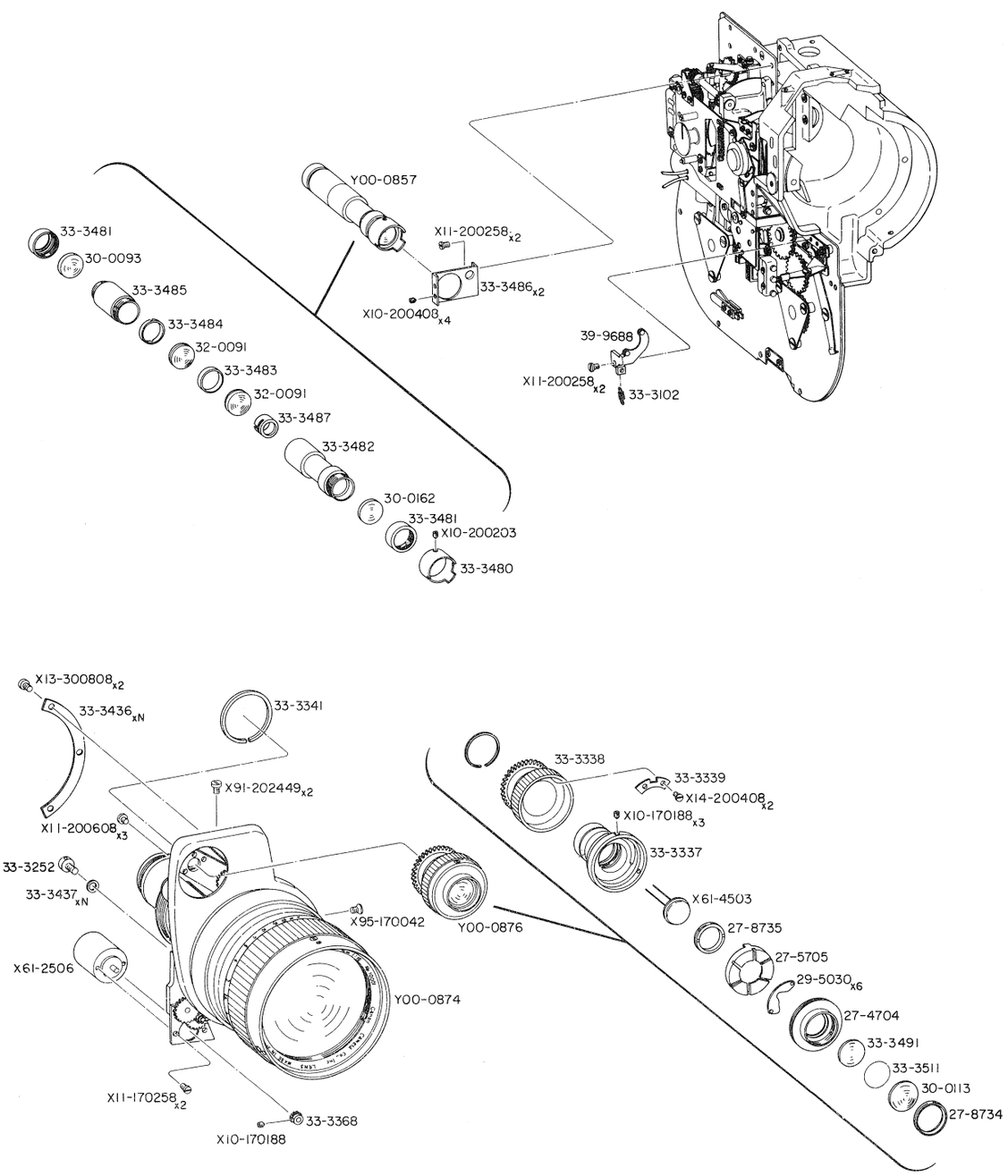

SCALE 1-3

PARTS LIST

ZOOM LENS (cf. pp. 5 & 6)

Y00-0874	Zoom Lens (Unit)
33-3252	Screw
33-3341	Snap Washer
33-3368	Motor Gear
33-3436 (0.02) 33-3436 (0.03) 33-3436 (0.05) 33-3436 (0.1) 33-3436 (0.2) 33-3436 (0.3) 33-3436 (0.5)	Adjusting Washer x N Parenthesized numbers indicate thickness. (Unit : mm)
33-3437 (0.02) 33-3437 (0.03) 33-3437 (0.05)	Adjusting Washer x N Parenthesized numbers indicate thickness. (Unit : mm)
X10-170188	Screw
X11-170258	Screw
X11-200608	Screw x 3
X13-300808	Screw x 2
X61-2506	EE Motor
X91-202449	Screw
X95-170042	Screw

CdS HOUSING

Y00-0876	CdS Housing Unit (Unit)
27-4704	Aperture Housing
27-5705	Aperture Leaf Guide
27-8734	Assemble Collar
27-8735	Assemble Collar
27-9710	Snap Washer
29-5030	Aperture Leaf x 6
30-0113	Lens
33-3337	CdS Housing
33-3338	CdS Gear
33-3339	Key
33-3491	Filter Holder
33-3511 (50) 33-3511 (70) 33-3511 (80) 33-3511 (85) 33-3511 (90) 33-3511 (95)	ND Filter x N Parenthesized numbers indicate transparency. (Unit : %)
X10-170188	Screw x 3
X14-200408	Screw x 2
X61-4503	CdS Photo Cell

VIEW FINDER

Y00-0857	View Finder (Unit)
30-0093	Lens
30-0162	Lens
32-0091	Lens (B. P.) x 2
33-3480	Tube
33-3481	Assemble Collar x 2
33-3482	Finder Tube
33-3483	Spacer
33-3484	Spacer
33-3485	Finder Tube
33-3487	Spacer
X10-200203	Screw
33-3486	Finder Holder x 2
X10-200408	Screw x 4
X11-200258	Screw x 4

GEAR SWITCH LEVER

33-3102	Coil Spring
39-9688	Gear Switch Lever (B. P.)
X11-200258	Screw x 2

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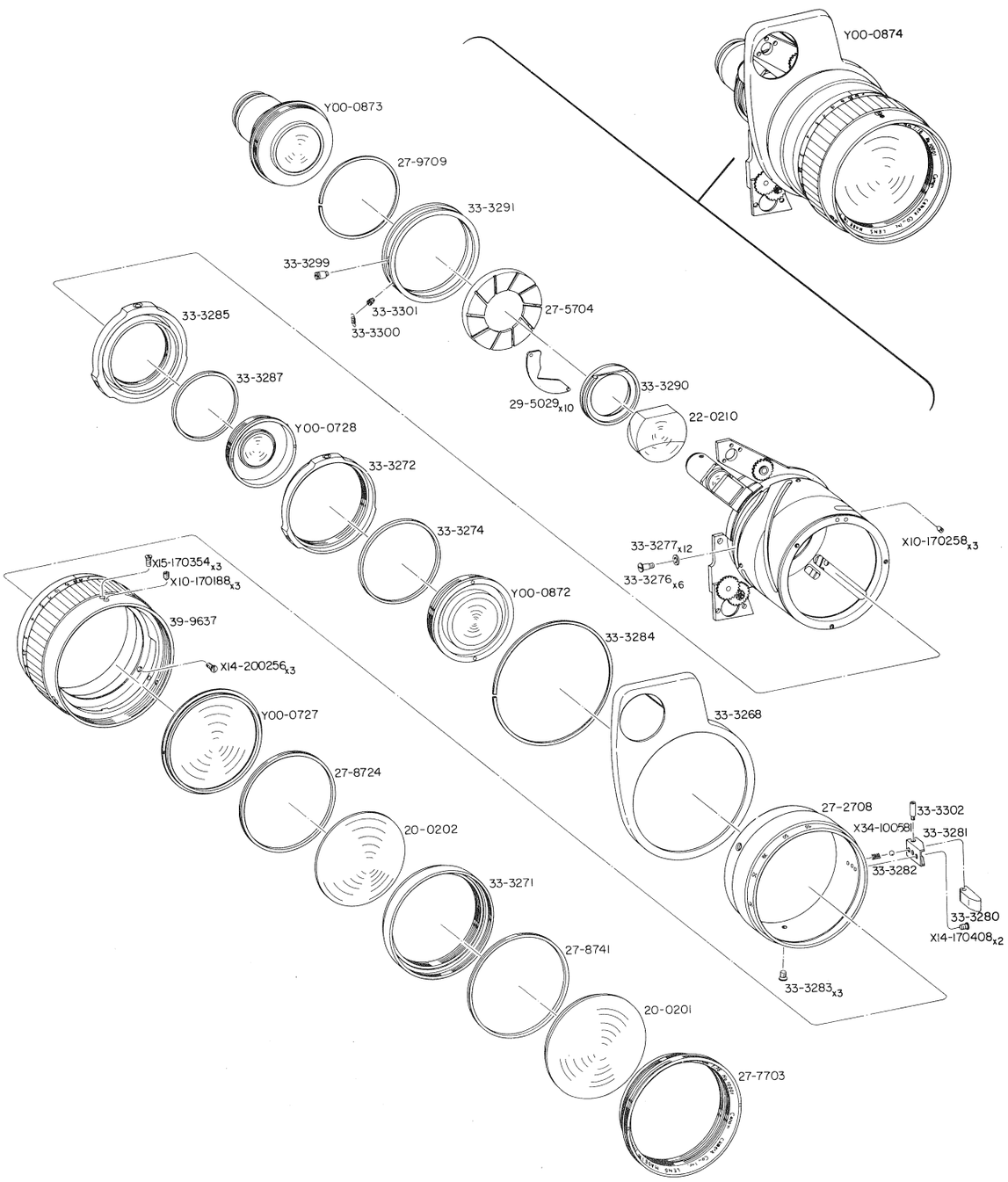

SCALE 1-3

PARTS LIST

ZOOM LENS

Y00-0874	Zoom Lens (Unit)
Y00-0727	Lens (B. P.)
Y00-0728	Lens (B. P.)
Y00-0872	Lens (B. P.)
Y00-0873	Relay Lens (B. P.)
20-0201	Lens
20-0202	Lens
22-0210	Half Mirror (B. P.)
27-2708	Zooming Ring
27-5704	Aperture Leaf Guide
27-7703	Name Ring
27-8724	Assemble Collar
27-8741	Assemble Collar
27-9709	Snap Washer
29-5029	Aperture Leaf (B. P.) x 10
33-3268	Front Cover
33-3271	Lens Barrel
33-3272	Shifting Ring
33-3274 (2.2) 33-3274 (2.4) 33-3274 (2.6) 33-3274 (2.8)	Adjusting Washer x N Parenthesized numbers indicate thickness. (Unit : mm)
33-3276	Screw x 6
33-3277	Zooming Rollar x 12
33-3280	Zooming Lever
33-3281	Zooming Lever Holder
33-3282	Coil Spring
33-3283	Screw x 3
33-3284	Light Shield
33-3285	Shifting Ring
33-3287 (2.0) 33-3287 (2.1) 33-3287 (2.2) 33-3287 (2.3) 33-3287 (2.4)	Adjusting Washer x N Parenthesized numbers indicate thickness. (Unit : mm)
33-3290	Retaining Ring
33-3291	Diaphragm Gear
33-3299	Screw
33-3300	Coil Spring
33-3301	Screw
33-3302	Screw
39-9637	Helicoid (B. P.)
X10-170188	Screw x 3
X10-170258	Screw x 3
X14-170408	Screw x 2
X14-200256	Screw x 3
X15-170354	Screw x 3
X34-100581	Steel Ball

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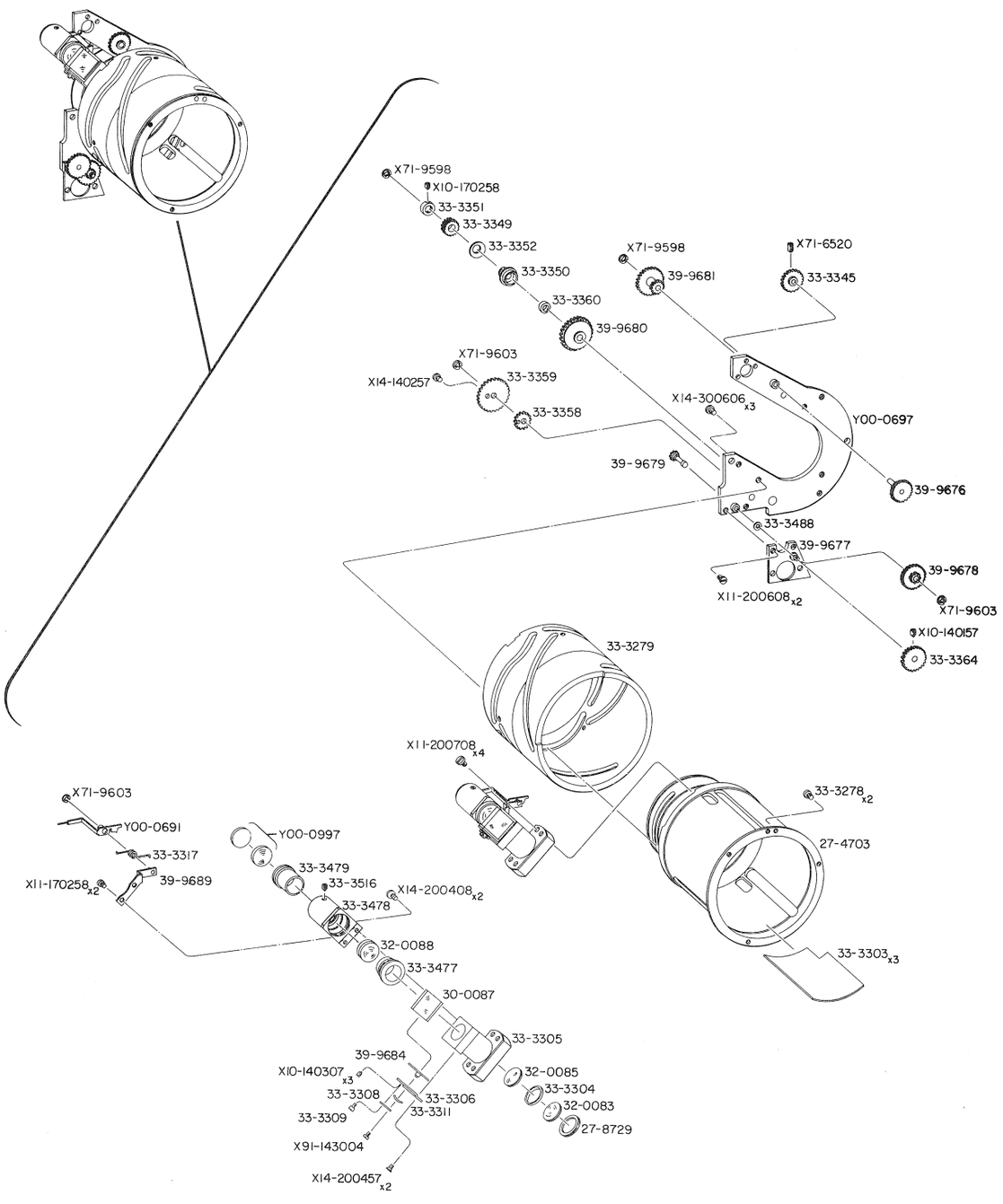

SCALE 1-3

PARTS LIST

ZOOM LENS BASE

Y00-0697	Zoom Lens Base (B. P.)
33-3345	Spur Gear
33-3349	Spur Gear
33-3350	Clutch
33-3351	Collar
33-3352	Spring Washer
33-3358	Spur Gear
33-3359	Spur Gear
33-3360	Collar
33-3364	Spur Gear
33-3488	Spacer x 2
39-9676	Idle Gear (B. P.)
39-9677	Shift Gear Base (B. P.)
39-9678	Step Gear (B. P.)
39-9679	Idle Gear (B. P.)
39-9680	Friction Gear (B. P.)
39-9681	Step Gear (B. P.)
X10-140158	Screw
X10-170258	Screw
X11-200608	Screw x 2
X14-140257	Screw
X14-300606	Screw x 3
X71-6520	Pin
X71-9598	Retaining Washer x 2
X71-9603	Retaining Washer x 2

ZOOMING CAM

27-4703	Inner Barrel
33-3278	Screw x 2
33-3279	Zooming Cam
33-3303	Light Shield x 3

HALF MIRROR

Y00-0691	Aperture Index (B.P.)
Y00-0997	Micro Prism
27-8729	Assemble Collar
30-0087	Lens
32-0083	Lens (B.P.)
32-0085	Lens (B.P.)
32-0088	Lens (B.P.)
33-3304	Spacer
33-3305	Finder Tube
33-3306	Prism Holder
33-3308	Adjusting Lever
33-3309	Eccentric Screw
33-3311	Spring Washer
33-3317	Spring
33-3477	Assemble Collar
33-3478	Rangefinder Tube
33-3479	Micro Prism Tube
33-3516	Screw
39-9684	Prism Holder (B. P.)
39-9689	Aperture Index Holder (B. P.)
X10-140307	Screw x 3
X11-170258	Screw x 2
X11-200708	Screw x 4
X14-200408	Screw x 4
X71-9603	Retaining Washer
X91-143004	Screw

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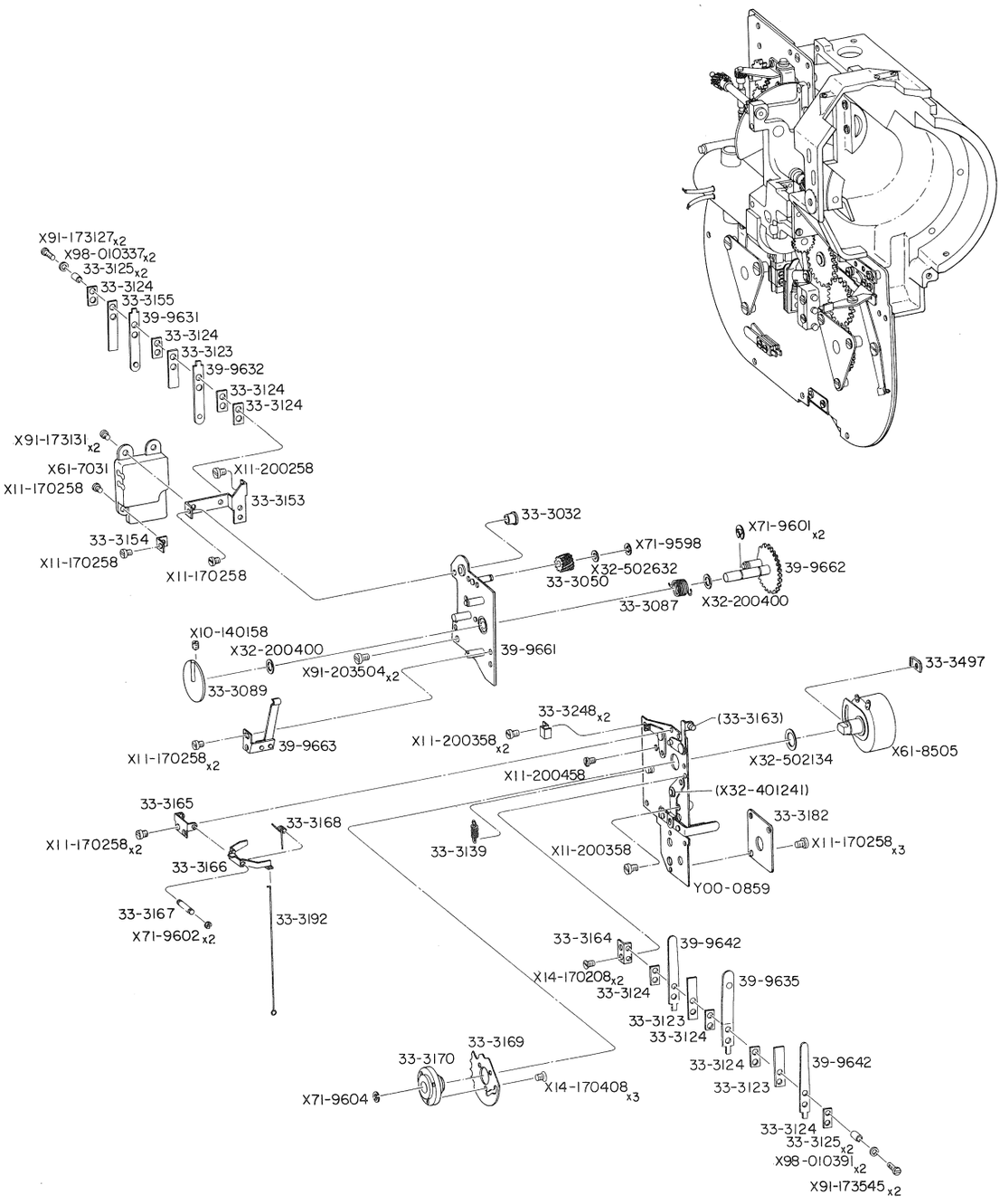

SCALE 1-3

PARTS LIST

MECHANISM PLATE (LEFT)

33-3032	Bearing
33-3050	Helical Gear
33-3087	Spring
33-3089	Counter Index
33-3123	Plate Spring
33-3124	Insulator x 4
33-3125	Collar x 2
33-3153	Checker
33-3154	Checker Holder
33-3155	Plate Spring
39-9631	Contact (B. P.)
39-9632	Contact (B. P.)
39-9661	Mechanism Plate Left (B. P.)
39-9662	Counter Gear (B. P.)
39-9663	Clow Spring (B. P.)
X10-140158	Screw
X11-170258	Screw x 5
X11-200258	Screw
X32-200400	Washer x 2
X61-7031	Battery Checker
X71-9598	Retaining Washer
X71-9601	Retaining Washer x 2
X91-173127	Screw x 2
X91-173131	Screw x 2
X91-203504	Screw x 2
X98-010391	Washer x 2

MECHANISM PLATE (RIGHT)

Y00-0859	Mechanism Plate Right (B. P.)
33-3163	Pin
33-3123	Plate Spring x 2
33-3124	Insulator x 4
33-3125	Collar x 2
33-3139	Spring
33-3164	Contact Base
33-3165	Lever Holder
33-3166	A-M Switch Lever
33-3167	Pin
33-3168	Spring
33-3169	Speed Change Cam
33-3170	Shutter Dial Shaft
33-3182	Switch Base
33-3192	Connecting Rod
33-3248	Wire Holder x 2
33-3497	Nut
39-9635	Contact (B. P.)
39-9642	Contact (B. P.) x 2
X11-170258	Screw x 5
X11-200358	Screw x 3
X11-200458	Screw
X14-170208	Screw x 2
X14-170408	Screw x 3
X32-502134	Washer
X61-8505	Variable Resistor
X71-9599	Retaining Washer
X71-9602	Retaining Washer
X71-9604	Retaining Washer
X91-173545	Screw x 2

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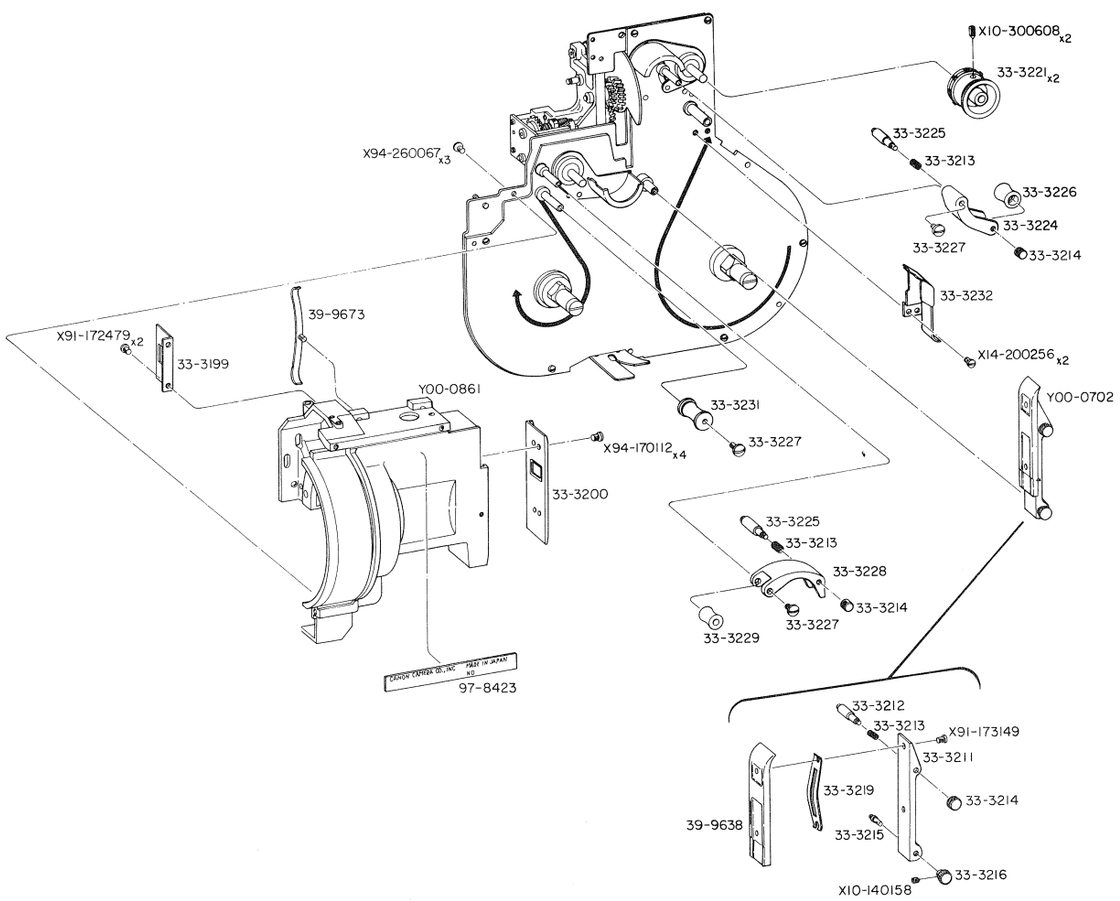

SCALE 1-3

PARTS LIST

PRESSURE PLATE

Y00-0702	Pressure Plate (Unit)
33-3211	Pressure Plate Holder
33-3212	Guide Pin
33-3213	Coil Spring
33-3214	Knob
33-3215	Screw
33-3216	Knob
33-3219	Plate Spring
39-9638	Pressure Plate (B. P.)
X10-140158	Screw
X91-173149	Screw

FILM GUIDE

33-3213	Coil Spring x 2
33-3214	Knob x 3
33-3221	Sprocket x 2
33-3224	Sprocket Guide
33-3225	Guide Pin x 2
33-3226	Guide Roller
33-3227	Screw x 3
33-3228	Sprocket Guide
33-3229	Guide Roller
33-3231	Guide Roller
33-3232	Film Guide
X10-300608	Screw x 2
X14-200256	Screw x 2

LENS HOLDER

Y00-0861	Lens Holder (B. P.)
33-3199	Light Shield
33-3200	Film Gate
39-9673	Side load Spring (B. P.)
97-8423	No. Plate
X91-172479	Screw x 2
X94-170112	Screw x 4

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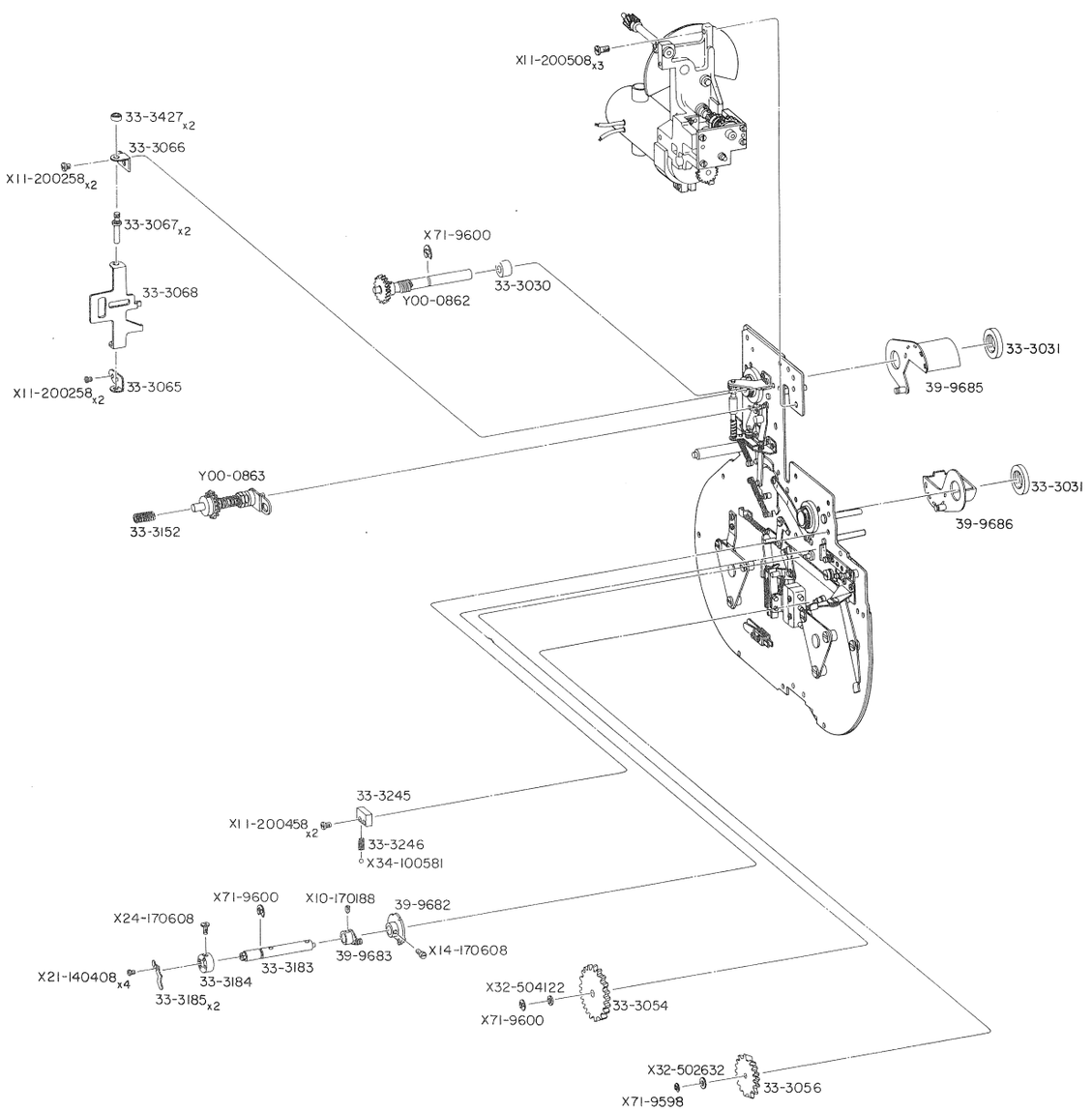

SCALE 1-3

PARTS LIST

PARTITION

Y00-0862	Sprocket Shaft (B. P.)
Y00-0863	Reseting Lever (B. P.)
33-3030	Collar
33-3031	Nut x 2
33-3054	Helical Gear
33-3056	Helical Gear
33-3065	Claw Holder
33-3066	Claw Holder
33-3067	Guide Pin x 2
33-3068	Feeding Claw
33-3152	Coil Spring
33-3183	Switch Shaft
33-3184	Switch Contact Base
33-3185	Switch Contact x 2
33-3245	Click Base
33-3246	Coil Spring
33-3427	Nut x 2
39-9682	A-M Switch Plate (B. P.)
39-9683	A-M Switch Lever (B. P.)
39-9685	Film Guide (B. P.)
39-9686	Film Guide (B. P.)
X10-170188	Screw
X11-200258	Screw x 4
X11-200458	Screw
X14-170608	Screw
X21-140488	Screw x 4
X24-170608	Screw
X32-502632	Washer
X32-504122	Washer
X34-100581	Steel Ball
X71-9598	Retaining Washer
X71-9600	Retaining Washer x 3

DRIVING PART (cf. p. 10)

X11-200508	Screw x 3

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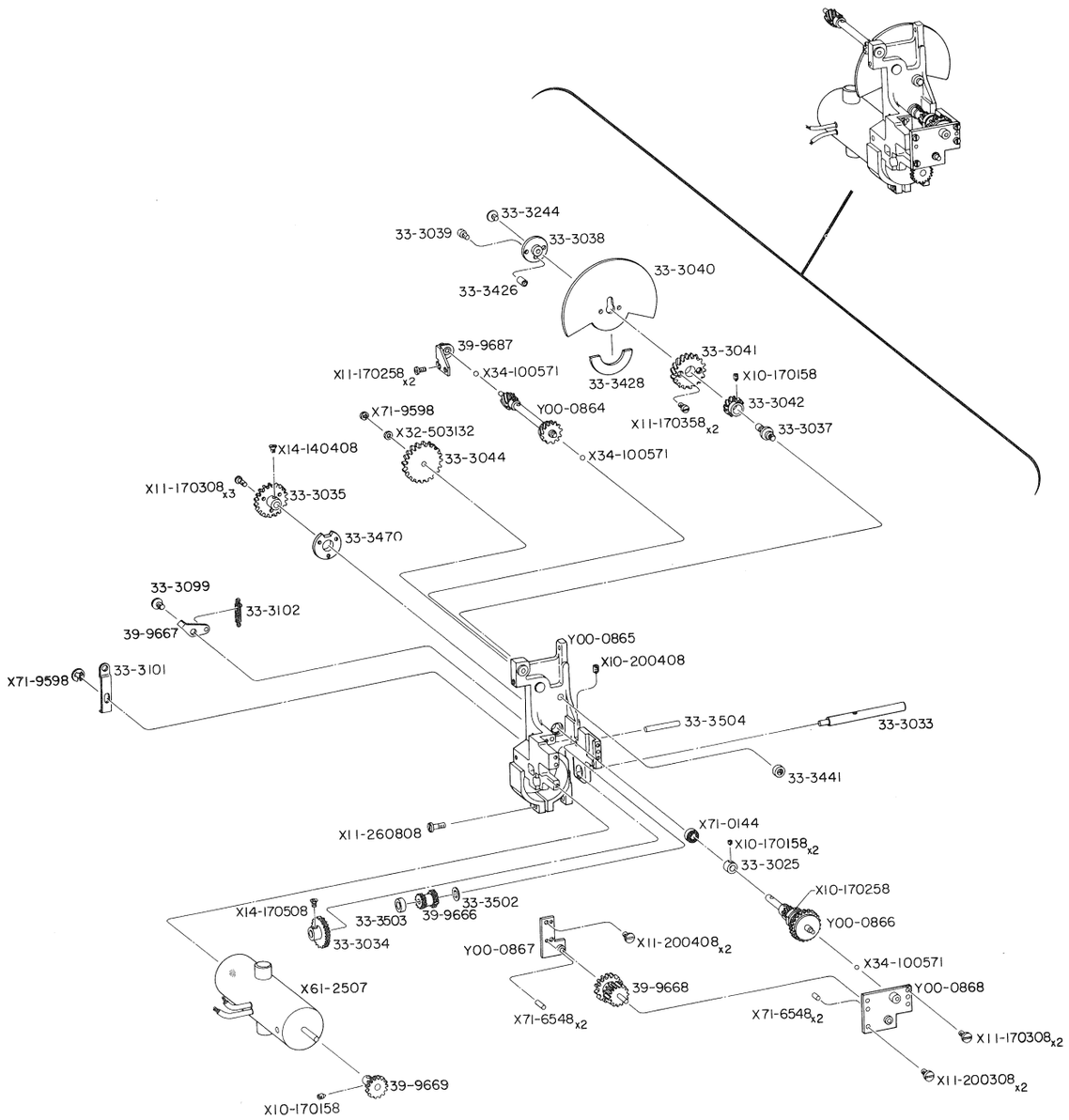


SCALE 1-3

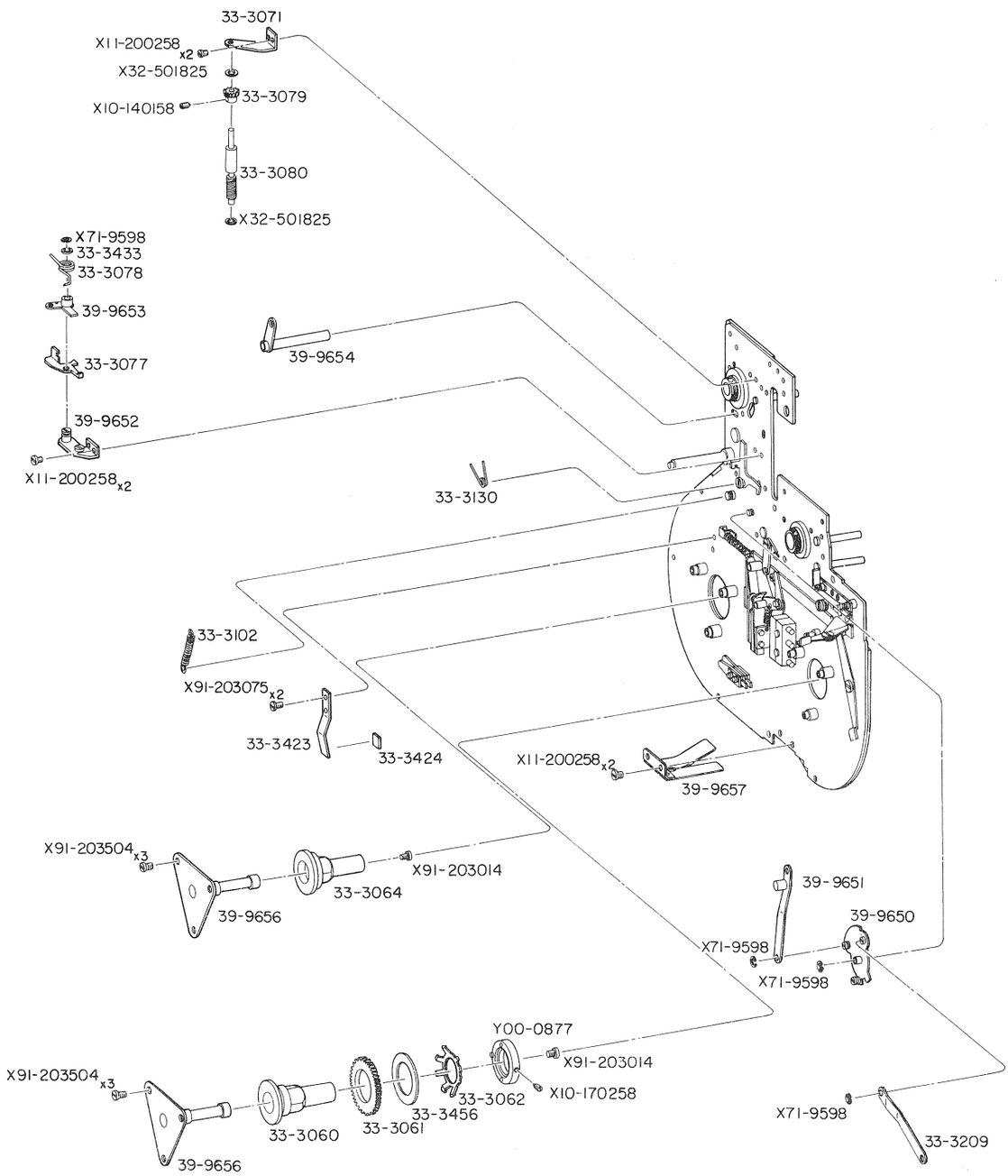
PARTS LIST

DRIVING PART

Y00-0864	Worm Gear Shaft (B. P.)
Y00-0865	Shift Gear Base (B P.)
Y00-0866	Driving Shaft (B. P.)
Y00-0867	Bearing (B. P.)
Y00-0868	Bearing (B. P.)
33-3025	Stopper
33-3033	2nd Sprocket Shaft
33-3034	2nd Sprocket Gear
33-3035	Stopper Gear
33-3037	Shutter Shaft
33-3038	Shutter Blade Holder
33-3039	Screw
33-3040	Shutter Blade
33-3041	Shutter Gear
33-3042	Helical Gear
33-3044	Helical Gear
33-3099	Screw
33-3101	Release Rod
33-3102	Coil Spring
33-3244	Screw
33-3426	Nut
33-3428	Balancer
33-3441	Nut
33-3470	Shutter Stopper
33-3502	Washer
33-3503	Collar
33-3504	Shaft
39-9666	Step Gear (B. P.)
39-9667	Shutter Stopper (B. P.)
39-9668	Shift Gear (B. P.)
39-9669	Motor Gear (B. P.)
39-9687	Bearing (B. P.)
X10-170158	Screw x 3
X10-170258	Screw
X10-200408	Screw
X11-170308	Screw x 3
X11-170358	Screw x 2
X11-200308	Screw x 2
X11-260808	Screw
X14-140408	Screw
X14-170508	Screw
X32-503132	Washer
X34-100571	Steel Ball x 3
X71-0144	Ball Bearing
X71-6548	Pin x 4
X71-9598	Retaining Washer x 2

REF. NO. 3-70201-2

EXPLODED VIEW
of
CANON SCOOPIC 16



SCALE 1-3

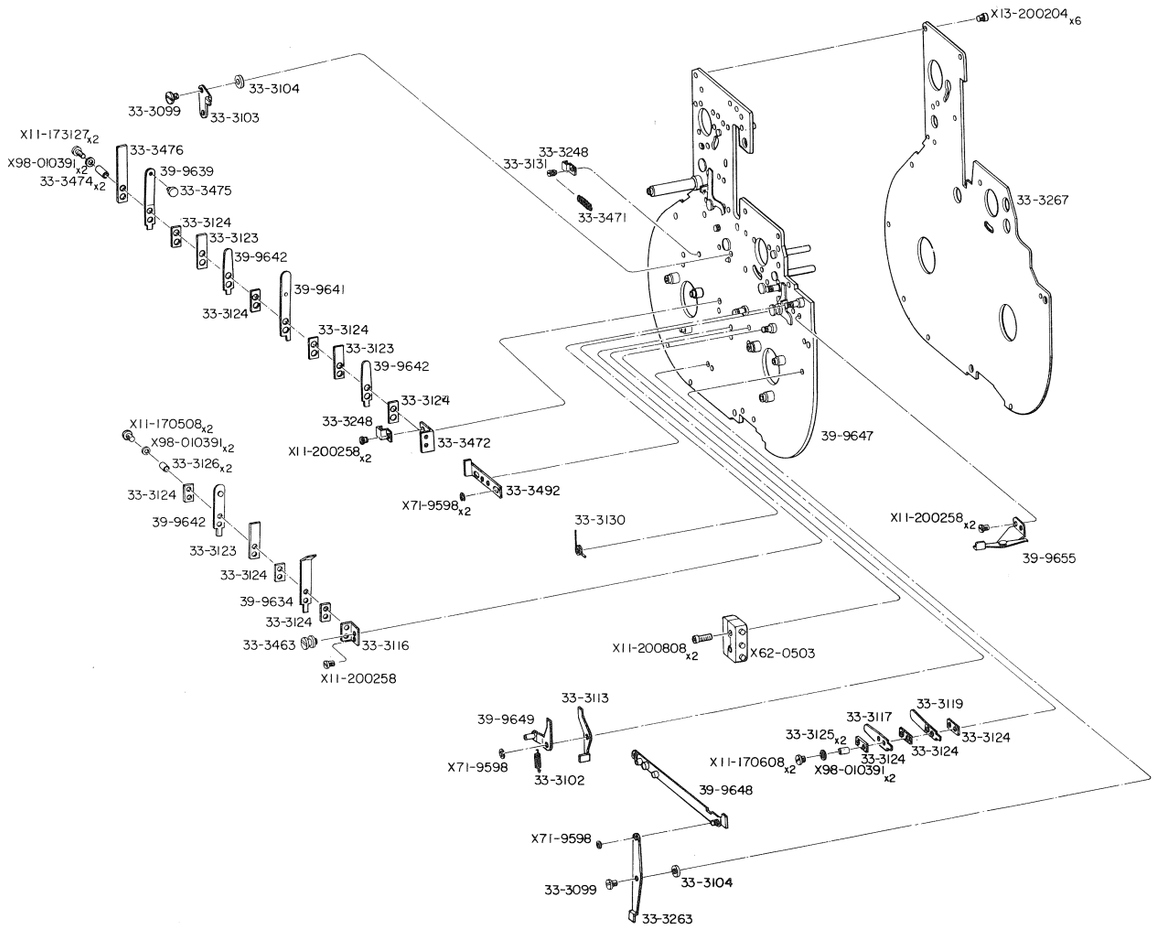
PARTS LIST

PARTITION

Y00-0877	Nut (B. P.)
33-3060	Take-Up Reel Spindle
33-3061	Reel Gear
33-3062	Toothed Spring
33-3064	Supply Reel Spindle
33-3071	Counter Worm Holder
33-3077	Resetting Lever
33-3078	Spring
33-3079	Gear
33-3080	Counter Worm
33-3102	Coil Spring
33-3130	Spring
33-3209	Connecting Plate
33-3423	Friction Plate
33-3424	Felt
33-3433	Washer
33-3456	Washer
39-9650	Film Guide Lock Disk (B. P.)
39-9651	Connecting Rod (B. P.)
39-9652	Bearing (B. P.)
39-9653	Bearing (B. P.)
39-9654	Resetting Pin (B. P.)
39-9656	Spindle Holder (B. P.) x 2
39-9657	Film Cutter (B. P.)
X10-140158	Screw
X10-170258	Screw
X11-200258	Screw x 6
X32-501825	Washer x 2
X71-9598	Retaining Washer x 3
X91-203014	Screw x 2
X91-203075	Screw x 2
X91-203504	Screw x 6

REF. NO. 3-70201-2

EXPLODED VIEW
of
CANON SCOOPIC 16



SCALE 1-3

PARTS LIST

PARTITION

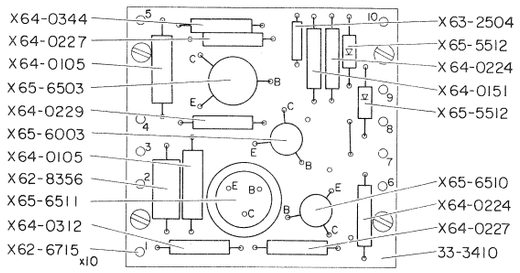
33-3099	Screw x 2
33-3102	Coil Spring
33-3103	Release Lever
33-3104	Washer x 2
33-3113	Micro Switch Lever
33-3116	Contact Base
33-3123	Plate Spring x 3
33-3124	Insulator x 10
33-3125	Collar
33-3126	Collar
33-3130	Spring
33-3248	Wire Holder x 2
33-3263	Release Lever
33-3267	Threading Plate
33-3463	Screw
33-3471	Spring
33-3472	Contact Base
33-3474	Collar x 2
33-3475	Insulator
33-3476	Plate Spring
33-3492	Clach Lever Holder
39-9631	Contact (B. P.)
39-9634	Contact (B. P.)
39-9635	Contact (B. P.)
39-9639	Contact (B. P.)
39-9641	Contact (B. P.)
39-9642	Contact (B. P.) x 3
39-9647	Contact (B. P.)
39-9648	Shutter Release Rod (B. P.)
39-9649	Switch Lever (B. P.)
39-9655	Shutter Release Lever (B. P.)
X11-170508	Screw x 2
X11-170608	Screw x 2
X11-173127	Screw x 2
X11-200258	Screw x 5
X11-200808	Screw x 2
X13-200204	Screw x 6
X62-0503	Micro Switch
X71-9598	Retaining Washer x 4
X98-010391	Washer x 6

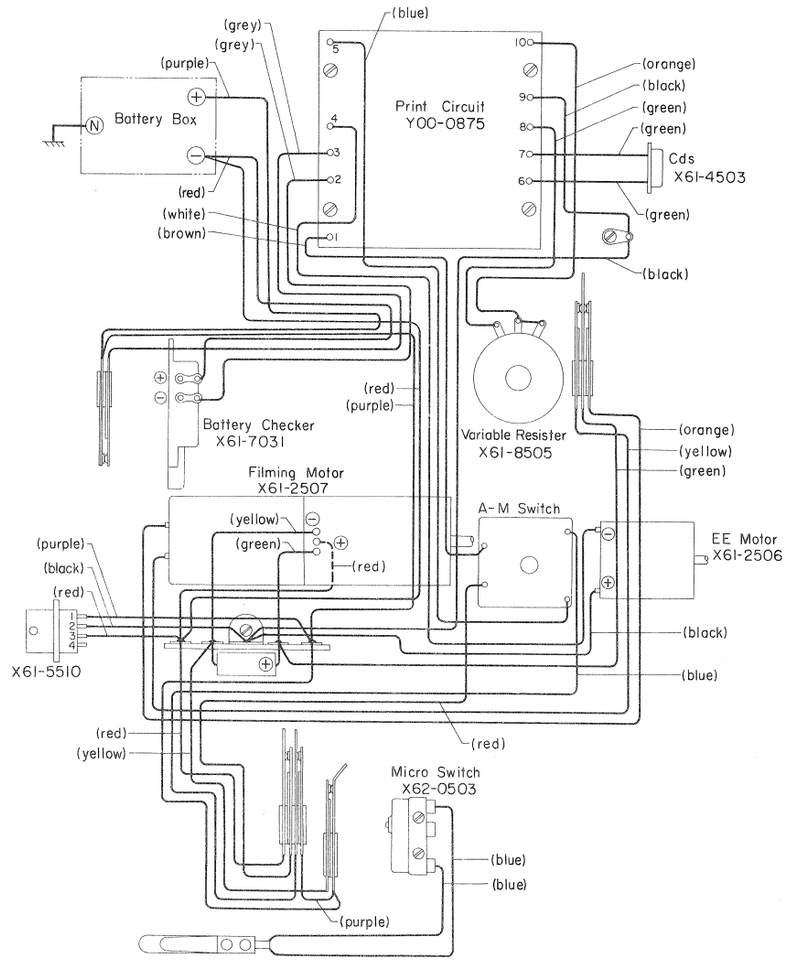
REF. NO. 3-70201-2

CIRCUIT DIAGRAM

of

CANON SCOOPIC 16





NO SCALE

PARTS LIST

Y00-0875	Print Circuit Plate(Unit)
33-3410	Print Circuit Plate
X61-2506	EE Motor
X61-2507	Filming Motor
X61-4503	CdS
X61-5510	Receptacle
X61-7031	Battery Checker
X61-8505	Variable Resistor
X62-0503	Micro Switch
X62-6715	Lug x 10
X62-8356	Resistor
X63-2504	Condencer
X64-0105	Resistor x 2
X64-0151	Resistor
X64-0224	Resistor x 2
X64-0227	Resistor x 2
X64-0229	Resistor
X64-0312	Resistor
X64-0344	Resistor
X65-5512	Diode x 2
X65-6003	Diode
X65-6503	Diode
X65-6510	Diode
X65-6511	Diode

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INDEX OF PARTS NUMBER

CANON REPAIR GUIDE

CANON SCOOPIC 16
(REFERENCE NO. 3-70201)

CANON CAMERA COMPANY, INC.

TOKYO, JAPAN

PREFACE

Canon Scoopic 16 is a product of Canon's proud quality control system. As a result of wide market research, traditionally high technical skills and rigid inspection before delivery, Canon's Scoopic 16 is enjoying full confidence of its buyers as a high quality the most advanced cine camera for professional use.

Because of the above-mentioned manufacturing system, Scoopic 16 is almost breakdown-proof. As long as the instructions given in the instruction booklet are carefully followed, this camera can be maintained in top functioning condition.

If by chance, however, something should go wrong, repair the trouble completely according to the technical instructions given in the following pages. Canon Camera Co. is prepared to supply sufficient parts and tools for performing these repairs.

For any details as to the ordering of parts and tools, please send your inquiries to,

Canon Camera Co., Inc., SERVICE DEPARTMENT
312 Shimomarukocho, Ohtaku, Tokyo, Japan.

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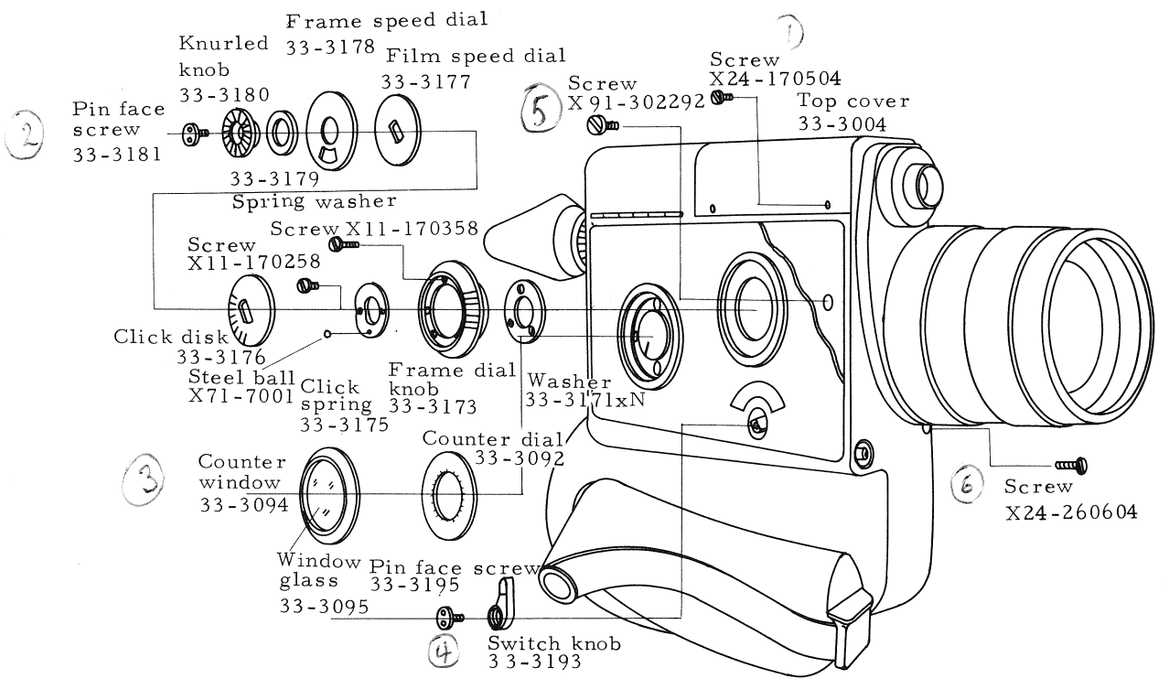
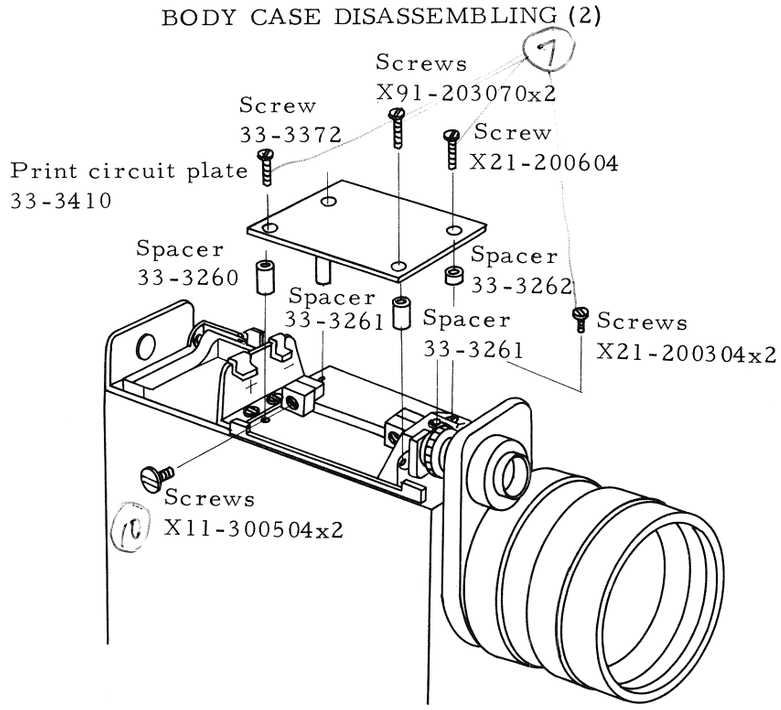
BODY CASE DISASSEMBLING (1)



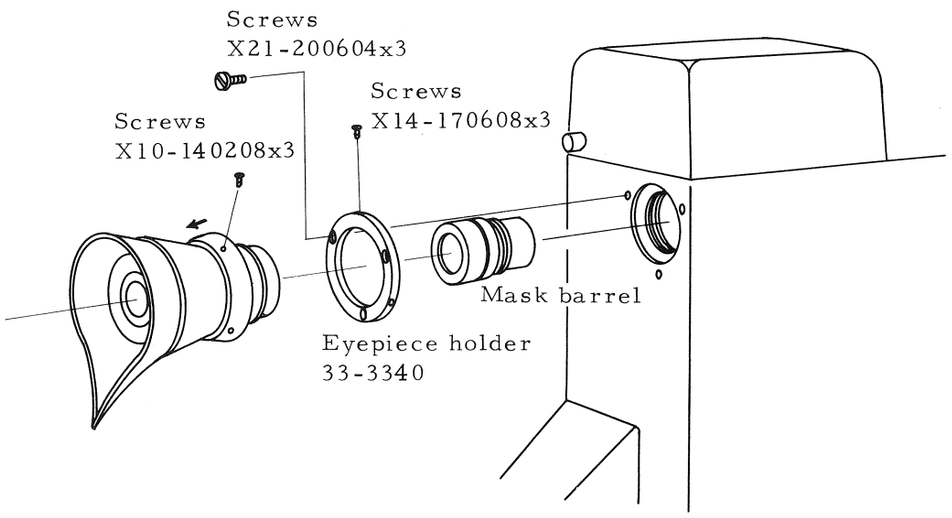
	Work	Order and Note
1.	Removal of top cover	X24-170504x4 screws — 33-3004 top cover
2.	Removal of speed dial section	33-3181 Pin face screw — 33-3180 knurled knob — 33-3179 spring washer 33-3178 frame speed dial — 33-3177 film speed dial — 33-3176 click disk X11-170258x2 screws — 33-3175 click spring — X71-7001 steel ball X11-170358x3 screws — 33-3173 frame dial knob — 33-3171 washer
3.	Removal of counter window	33-3094 Counter window — Remove after dissolving with ketone. Not necessary to remove 33-3095.
4.	Removal of switch knob	33-3195 Pin face screw — 33-3193 switch knob
5.	Removal of screws under leather	Peel off the leather section shown in the above diagram and remove screw X91-302292.
6.	Removal of front screw	Remove screw X24-260604 under the lens.

BODY CASE DISASSEMBLING (2)



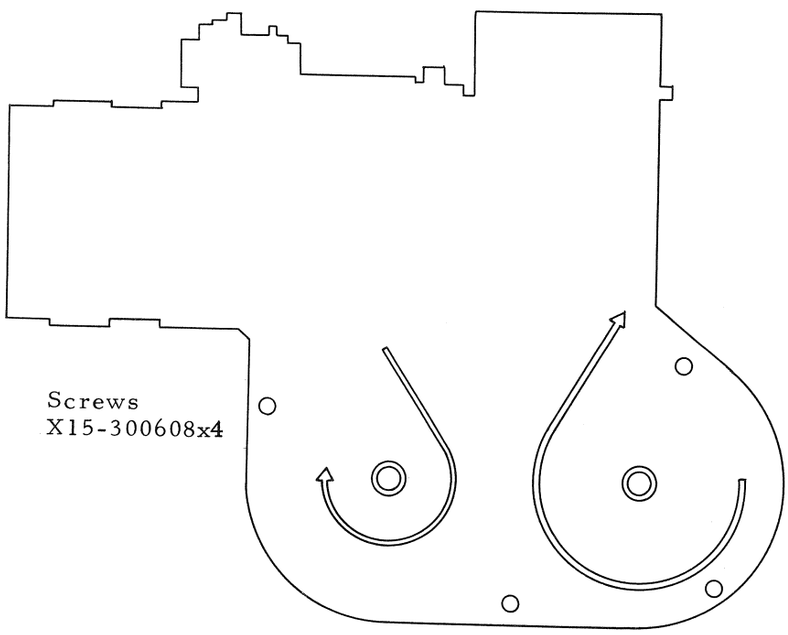
	Work	Order and Note
7.	Removal of print circuit plate	X21-200604 screw — X91-203070x2 screw — 33-3372 screw — 33-3410 print circuit plate 33-3260 spacer — 33-3261x2 spacers — 33-3262 spacer It is not necessary to remove the electrical parts on the print circuit plate and the cords.
8.	Unsoldering of electrode cords	Remove the (+) red cord and the (-) purple cord from the electrode.
9.	Removal of front cover screws	Remove screws X21-200304x2.
10.	Removal of case, body screws	Remove X11-300504x2 screws

BODY CASE DISASSEMBLING (3)



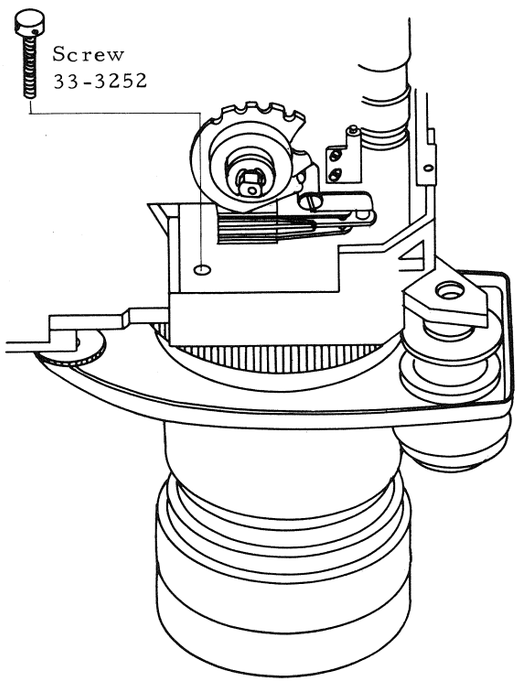
Work	Order and Note
11. Removal of eyepiece	Loosen $\frac{\text{X10-140208x3}}{\text{screws}}$ and slide in the direction shown in the above diagram. $\frac{\text{X14-170608x3}}{\text{screws}}$ — $\frac{\text{X21-200604x3}}{\text{screws}}$ — $\frac{\text{33-3340}}{\text{eyepiece holder}}$ After removing the above, also remove the mask barrel.

BODY CASE DISASSEMBLING (4)



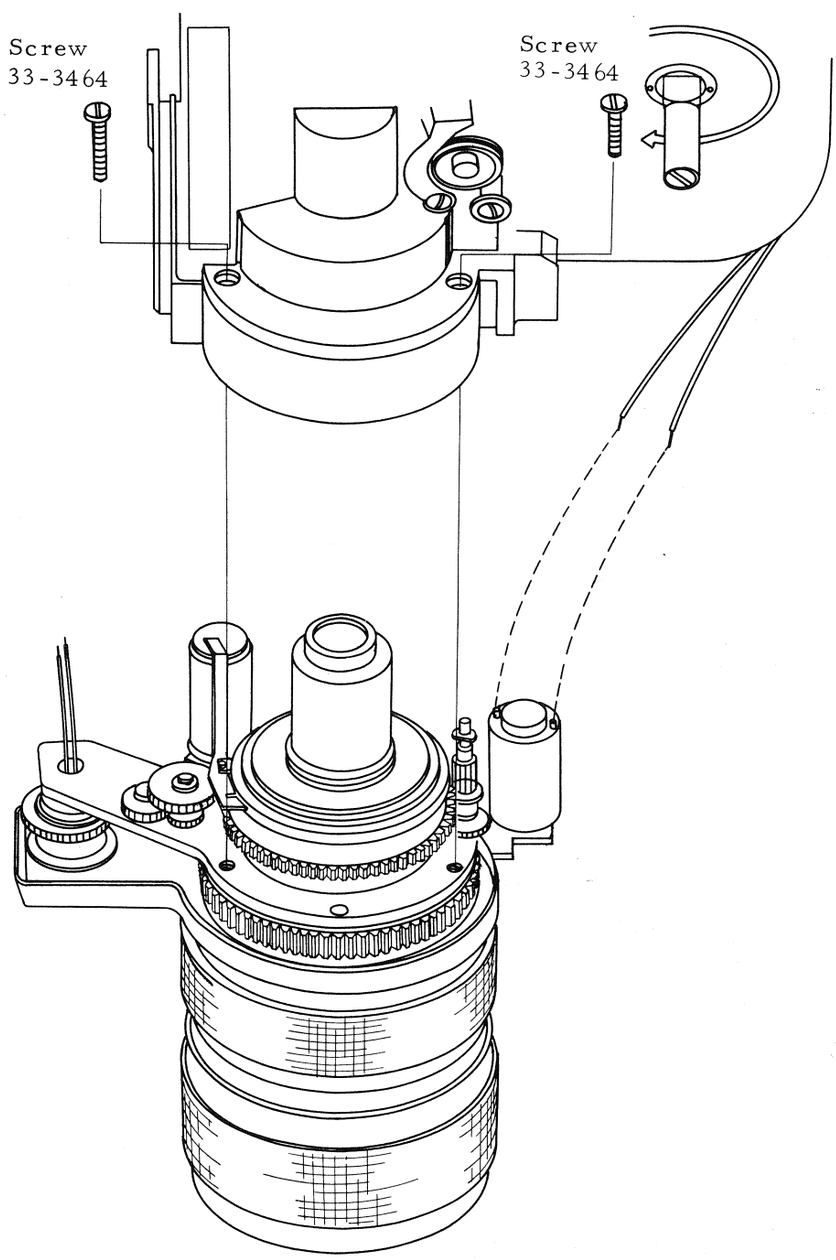
	Work	Order and Note
12.	Removal of base plate screws	Remove X15-300608x4 screws
13.	Removal of case	Omitted

ZOOM LENS DISASSEMBLING (1)

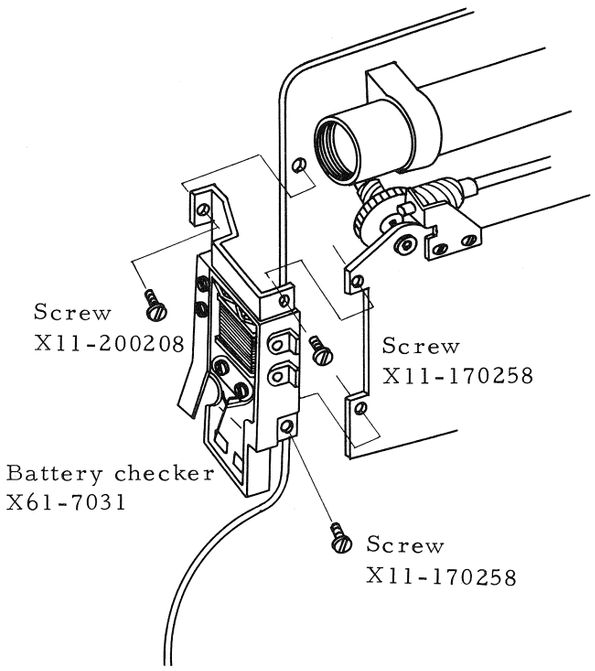


Work	Order and Note
1. Removal of special screw	In unscrewing $\frac{33\text{-}3252}{\text{screw}}$ use screw driver No. 2 or similar tool. Insert it into the small hole in the screw and turn to the left.
2. Removal of long screws	Remove $\frac{33\text{-}3464\text{x}2}{\text{screws}}$
3. Removal of cords	3.1 Unsolder the two green cords coming from the CdS at 6 and 7 sections of the print circuit plate. 3.2 Unsolder the black and white cords coming from the EE motor at the pole section of the motor. (Note) There should be a red mark on the connecting pole of the black cord. If not, put on a red mark.

ZOOM LENS DISASSEMBLING (2)

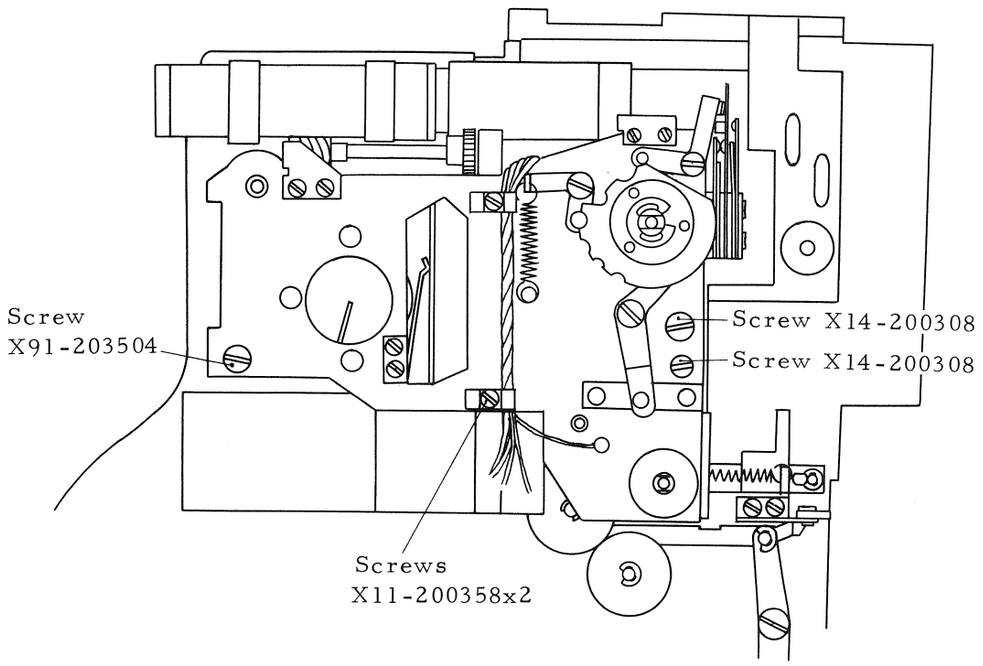


BATTERY CHECKER DISASSEMBLING



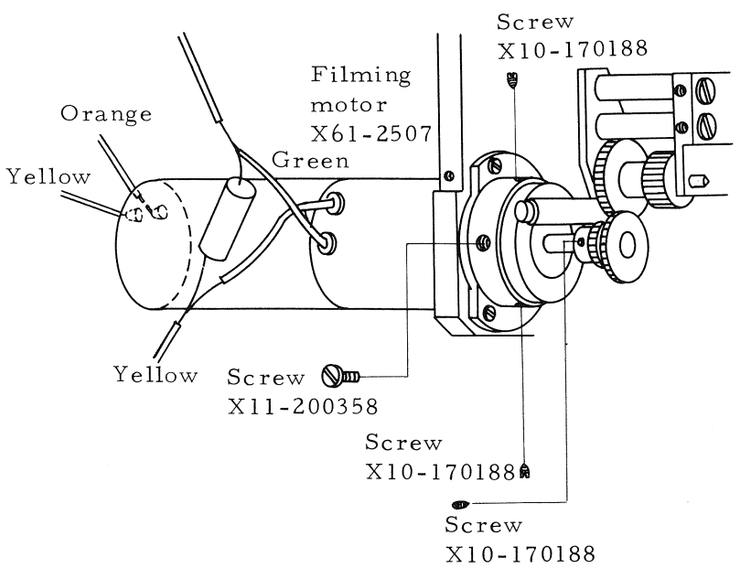
Work	Order and Note
1. Removal of screws	Remove X11-170258x2 mechanism plate screws — X11-200208 contact side screw

MECHANISM PLATE DISASSEMBLING



Work	Order and Note
1. Removal of screws	Remove X91-203504 screw — X14-200308x2 screws — X11-200358x2 screws
	When removing the mechanism plate, check for unsoldered cords and loose parts.

FILMING MOTOR DISASSEMBLING



	Work	Order and Note
1.	Removal of screws	Remove X10-170188 screw — X11-200358 screw — X10-170188x2 screws
2.	Removal of lead wire	Unsolder the green, yellow, orange and yellow lead wires coming out from the motor.

MOTOR ADJUSTMENT

1. Checking

Ordinarily, new parts are good parts and can be used without checking. However, in the case of this camera, adjustment of flame speed cannot be performed. Therefore, it is better to check the motor accurately.

1. Checking method.
There are two methods of checking. One is the method of checking the related revolutions. The other is checking the related electric current.
In either case, a certain amount of load is applied and the revolutions or the electric current are checked at that time. Either method will do.

1.1 Checking of related revolutions.
(Related revolutions)
1st stage 3000 rpm ± 100 rpm/45 g-cm
2nd stage 4500 rpm ± 100 rpm/55 g-cm
The following operations are performed to check whether related revolutions are within the above-mentioned standards.

(Procedure)
1. Apply torque to the motor

(Note)
1. Method of applying torque.
   1. Attach a pulley 1 cm in radius to the tip of the motor shaft.
   2. Attach a 45 g weight (when checking the 1st stage of 3000 rpm, a 55 g weight when checking the 2nd stage of 4500 rpm) to the end of a silk thread and wind it around the pulley once. Fix the other end of the thread. (Fig. 1)

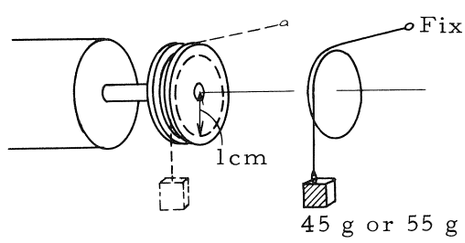


Fig. 1

2. Connect the power source to the lead wires coming out of the motor.
(Note)
Connections should be made as shown in the diagram below. (Fig. 2)

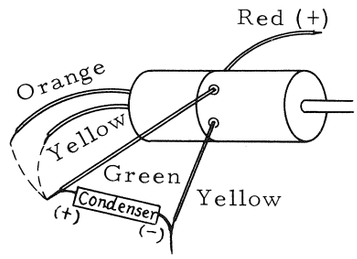


Fig. 2

* Red lead wire...(+)
* Yellow (side of motor)...(-)
* When green and yellow (back of motor) are connected...high speed (2nd stage, 4500 rpm)
* When green and orange are connected... low speed (1st stage 3000 rpm)

3. Check the revolutions. The motor is good if within the above-mentioned standards.

1.2 Checking of related electric current.
(Related electric current)
At 1st stage 420 mA or less
At 2nd stage 490 mA or less

Apply load, the same as in the case of checking related revolutions, and read the current at this time.
The ammeter can be connected in between the power source and the red lead wire or in between the yellow lead wire (on the side of the motor) and the (-) pole of the power source.

2. Other points to check.
2.1 There should be no abnormal sounds during revolution.
2.2 There should be no irregularity in voltage for 1 minute at AC 100 V.

2. Adjusting method

1. Adjusting of mesh between motor gear and clutch gear.
Adjust so that the mesh is approximately two-thirds.
° When the meshing is too deep...Loosen the lower screw and tighten the upper screw.
(Fig. 3)
(In direction of arrow B)

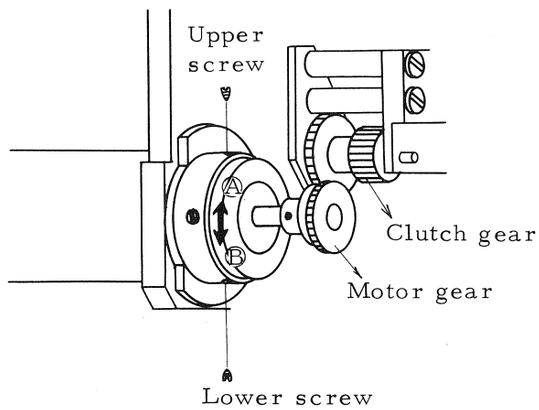


Fig. 3

° When the meshing is too shallow...Loosen the upper screw and tighten the lower screw.
(In direction of arrow A)
(Note) Be sure to check that the switching of the clutch gear is smooth.

SHUTTER BLADE ADJUSTMENT

1. Removal of shutter blade

When removing the shutter blade, the die casting, on which the shutter blade shaft is attached, must be removed from the body base plate. In order to do this, first remove the sprocket and the threading plate, separate the body base plate from the main die casting and then remove the die casting on which the blade shaft is attached. Repairs that need disassembling up to this point are rare with only the exception of cameras submerged in water. Therefore, here we shall start from the part under the condition up to the disassembling of the die casting with the blade shaft attached. (Fig. 4)

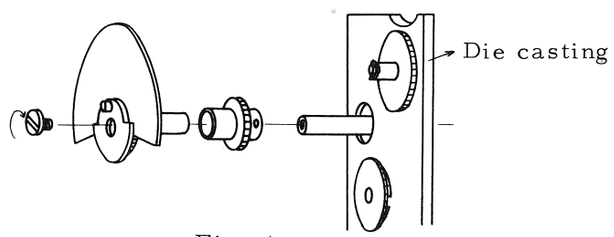


Fig. 4

(Note) The blade tightening screw is a reverse screw (loosens by turning in the direction of the arrow)

2. Attaching method

1. Attaching position and method.

(Procedure)

1. Turn the stopper gear in the direction of the arrow in the diagram below and press against the stopper (Fig. 5)
2. The position of the blade at this time should be as shown in the diagram below. (Fig. 5)

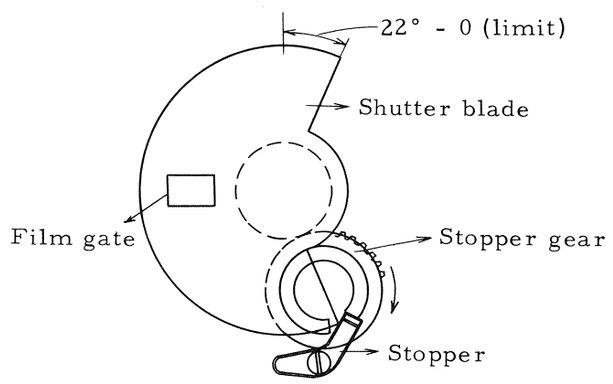


Fig. 5

(Note) When the position is out of limit, loosen the blade tightening screw and change the meshing of the gear.

FEEDING CLAW ADJUSTMENT

1. Removing method

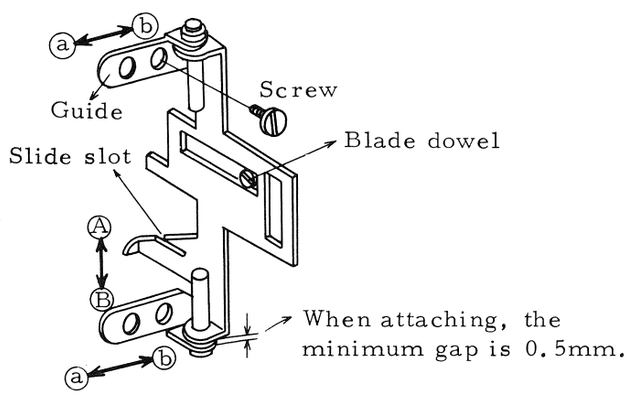


Fig. 6

The claw can be removed by removing the screw after removing the mechanism plate. (Fig. 6)
(Note) The claw can be easily removed if the blade dowel is set in the position shown in the above diagram. (Fig. 6)

2. Attaching and adjusting methods

The attachment and adjustment of the claw are performed simultaneously.

1. Positioning of the perforation.
   The position of the perforation is adjusted as shown in the following diagram. (Fig. 7)

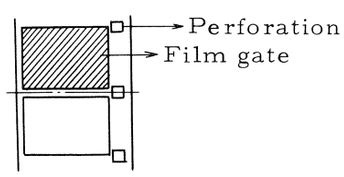


Fig. 7

(Procedure)
1. Set the feeding claw temporarily. (Refer to Fig. 6)
2. Obtain a transparent 16mm film.
3. Place the film on top of the film gate plate and engage it with the claw.
4. Turn the shutter blade in the revolving direction and stop when the feeding claw reached the lowest position.
5. At this time, check to see that the perforation is at the position indicated in the above diagram. (Fig. 7)

Adjustments are made by using the slide slot, shown in the diagram under "Removing Method", and bending the claw in the direction of arrow (A) or (B). (Fig. 6)

2. Adjusting protrusion length of claw (after attaching mechanism plate).
   Adjust so that the distance (protrusion length) from the film gate plate claw hole to the tip of the claw is 0.8 ± 0.1 mm. (Fig. 8)

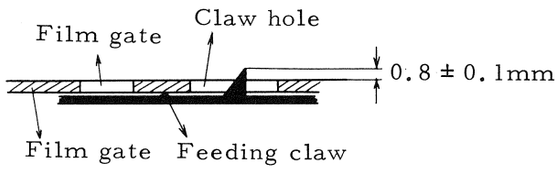


Fig. 8

Adjustment for the protrusion length is performed by changing the attachment position of the guide, shown in Fig. 6 under "Removing Method", in the direction of arrows (a) or (b).

(Note) When moving the vertical guides, do not move just one guide but both. Always check to see that the movement of the claw is light.

SHUTTER RELEASE LEVER ADJUSTMENT

1. Adjusting method

1. Adjusting release lever position.
When the switch lever of OFF-AUTO-MANU is set at OFF when the shutter button is not pressed (the condition where the lock lever is in the notch of the release lever), the relationship between the release lever and the lock lever should be as shown in the following diagram. (Fig. 9)

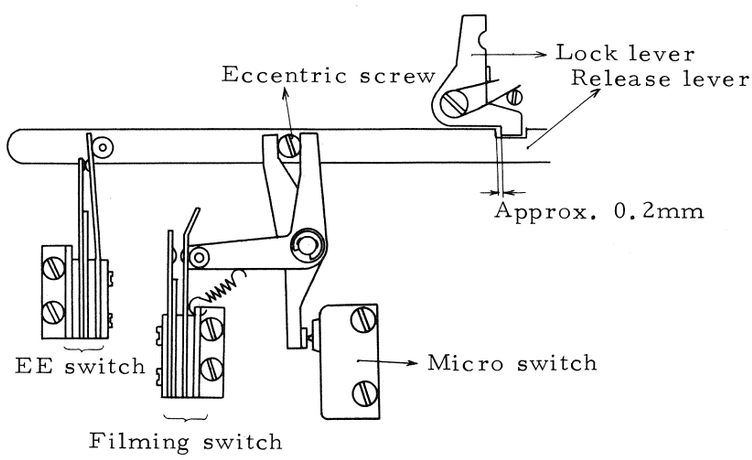


Fig. 9

Adjustment is made by turning the eccentric screw which moves the release lever to left or right. The gap is adjusted by this movement.

(Note) When the shutter button is pressed under OFF condition, the micro, EE and filming switches should not function.
When the shutter button is pressed the lock lever should not get dislodged from the notch of release lever.

2. Switching on of the various switches. The various switches are to be switched on according to the following order: (Fig. 9)

1. Micro switch
2. EE switch
3. Filming switch

} Adjustments are made by --changing the attachment positions of the switches.

(Note) 1. The micro switch is OFF when pressed and ON when protruding.
2. The EE switch is OFF when in contact and ON when separated.

SPROCKET ADJUSTMENT

1. Adjusting method

1. Adjusting position of No. 1 sprocket.

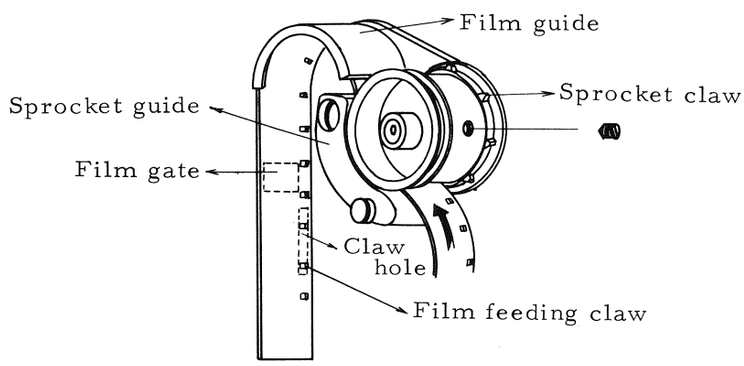
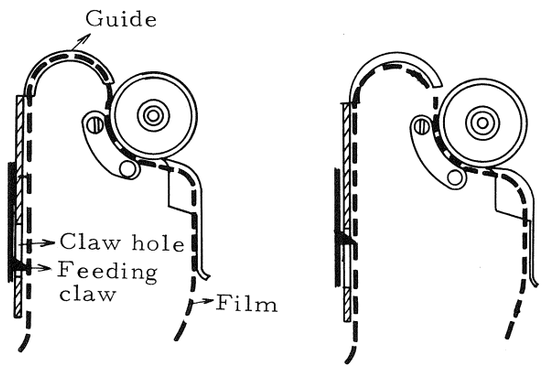


Fig. 10

(Procedure)

1. Close the film guide (condition of loading). (Fig. 10)
2. Insert the film into the sprocket (direction of the thick arrow) and load.
   (Note) 1. The film is fed by turning the filming gear (with the fingers).
   2. Be sure to close the sprocket guide.
3. Stop loading when the film has slightly passed the claw hole.
4. Move the film feeding claw until it reaches the lowest position.
   (Note) During loading check to see that the feeding claw is at the lowest position.
5. Loosen the two sprocket screws.
6. Completely engage the film perforation onto the feeding claw and hold with the fingers.
7. Press the looped section of the film with the fingers to the inner side of the guide.
   (Note) If the sprocket is out of position at this time, it can be adjusted because the sprocket screw is loose.
8. Tighten the sprocket screw in this position. (Fig. 11)



(Diagram A) (Diagram B)

Fig. 11

(Diagram A)... Film loop and feeding claw are both normal. Tighten the sprocket screw in this position.

(Diagram B)... Position of feeding claw is bad. Film loop is bad. Bring the feeding claw down and make the film contact the inner side of the guide before tightening the sprocket screw.

2. Adjusting position of No. 2 sprocket

It is performed in exactly the same manner as the No. 1 sprocket. Therefore, it shall be omitted here.

MECHANISM PLATE ADJUSTMENT

1. Attaching method

1. Parts to be careful of when attaching the mechanism plate.

1.1 Check to see that the "feeding claw spring" which can be seen from the center hole of the mechanism plate, is holding the feeding claw normally. (Fig. 12)

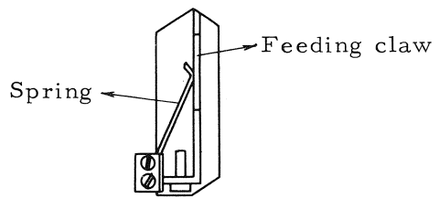


Fig. 12

1.2 Check to see that the spring has been inserted into the tip of the loading slip gear. (Fig. 13)

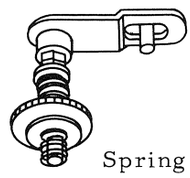


Fig. 13

1.3 Check to see that the ball of the OFF-AUTO-MANU switch click is in its normal position. (Fig. 14)

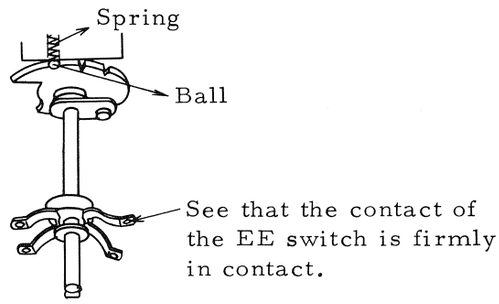


Fig. 14

1.4 Check to see that the clutch switch plate spring is holding both ends of the clutch gear shaft. (Fig. 15)

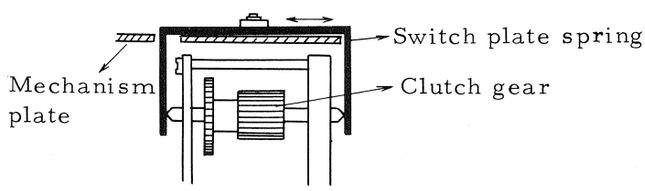


Fig. 15

2. Parts to check after attaching the mechanism plate.

2.1 The left and right movements of the clutch gear and the switching condition.
Check to see that the switching of the gear is smooth when the frame speed is switched.

2.2 Functioning of the film guide.
When the side cover is closed the film guide opens.
When the side cover is opened the film guide closes (loading condition) due to the functioning of the gear related to filming.
Check to see that this operation functions smoothly.

2.3 The set position of the manual shield closing lever.
When the OFF-AUTO-MANU switch lever is manipulated, it should shield off the (M) mark when set at OFF and AUTO positions, and should always clearly indicate the (M) mark when set at MANU.
(Reference) The set position of the shield closing lever. (Fig. 16)

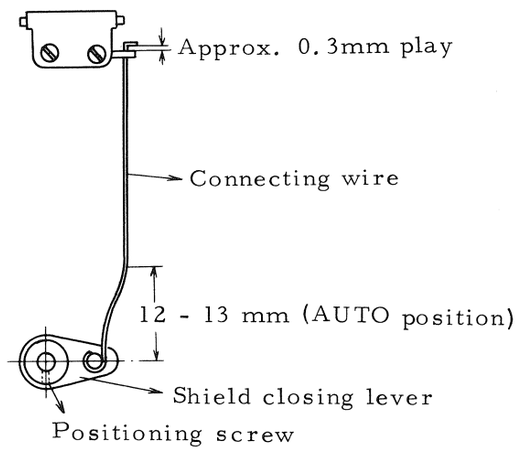


Fig. 16

(Note) When adjusting, the connecting wire sometimes touches the switch plate spring of the clutch gear. In such a case, bend the connecting wire at the position indicated in the diagram.

BATTERY CHECKER ADJUSTMENT

1. Checking

2.1 How to check the functioning.
Connect the wire, as shown in the diagram below, and then connect a power source of 9V - 12V to it.
The needle should be within the red or blue ranges at this time. (Figs. 17, 18)

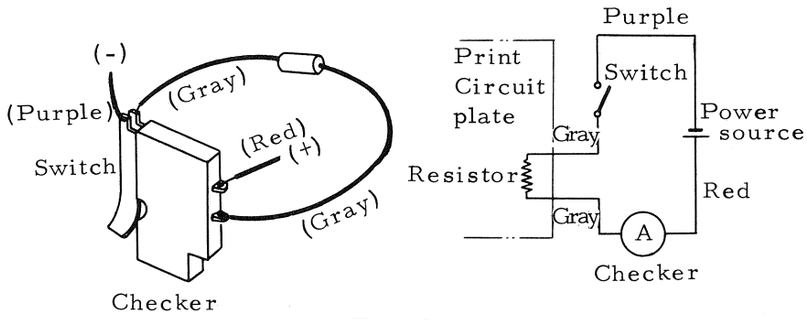


Fig. 17

2. Adjusting method

3.1 Measuring
The needle should point to the dividing line between red and white when the voltage is 9.5V, as shown in the diagram below. (Fig. 18)

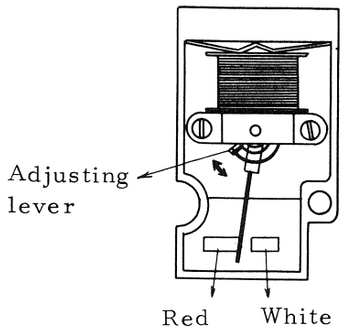


Fig. 18

(Note) The needle should not be bent.

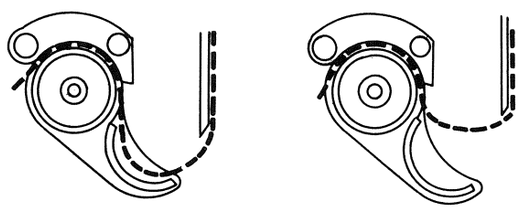
3.4 Adjusting.
Adjustment is made by turning the adjusting lever in the direction of the arrow. (Fig. 18)

CHECK POINT

Overall checking and points to be confirmed after attachment of mechanism plate.

1. Automatic loading.
   Loading is checked by the current during loading.
   When film is not loaded...300 - 350mA at 24 fps
   When film is loaded.....600mA or less at 24 fps

2. Checking skips in film feeding.
   Load film and set the filming speed at 48 fps.
   Repeat releasing the shutter instantaneously.
   At this time, check to see that the film loop at the bottom part of the guide does not disappear. (Fig. 19)
   If it does, it means that the film skips during feeding.



Normal Bad

Fig. 19

When film skipping occurs, it means the 2nd sprocket is revolving normally but that the feeding claw is not engaged normally with the film perforations. This is because the protrusion length of the feeding claw is insufficient, because the shape of the tip of the claw is bad, or because the pressure of the pressure plate is insufficient.

3. Current at time of film feeding.
   300mA or less at 24 fps and 12V.

4. Functioning of the battery checker.
   Press the battery checker button and confirm its functioning.
   Refer to "Battery Checker Adjustment".

5. Functioning of footage counter.
   Operate filming under the condition of a closed side cover (by pressing the guide opening pin) and confirm the functioning of the footage counter. See that the filming does not catch or stop.

6. Sprocket position.
   Check the position of the sprocket.
   Refer to "Positioning of Sprocket".

7. Check frame speed.
   Check the frame speed with a stroboscope.

FOCUS ADJUSTMENT

1. Adjusting method

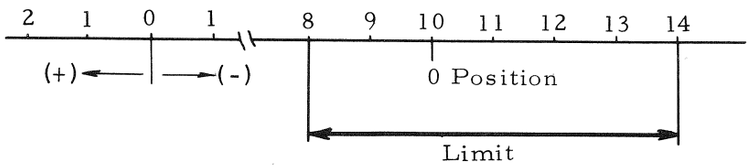
The checking and adjusting of focus for wide-angle and telephoto is performed under the same principles and methods as for 8mm cameras.
Adjustment methods shall be omitted here.

1. Focusing position and limit.

Focal distance of lens	Focal distance of collimator	O position on collimator scale	Collimator scale limit
13mm	130mm	-10	2 4
76mm	300mm	-1	1/3 2/3

When the above limits are indicated by a diagram, they are as follows:

(13mm)



(76mm)

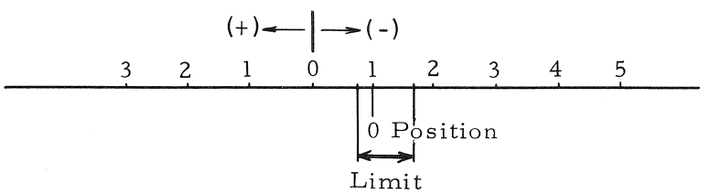


Fig. 20

VIEWFINDER ADJUSTMENT

1. Adjustment for the alignment of the rangefinder focal point surface.
   There are two focal point surfaces in the rangefinder tube. One is the mat surface and the other is the rangefinder mask surface. Aligning adjustment means making adjustments so that both of these focal point surfaces can be seen with the same visibility.

   (Procedure)
   1. Turn the eyesight adjusting ring of the eyepiece and focus on the mat surface. (Fig. 21)
      (Note) Use the eyepiece connecting ring (tool).

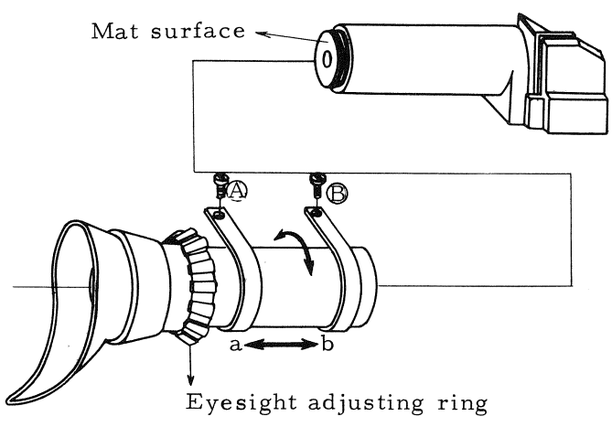


Fig. 21

   2. At this time, check to see that the mask can be seen clearly in the same manner as the mat surface.
   3. If the visibility is out of focus, loosen screws (A) and (B), move the tube in the direction of arrows a or b, and make adjustments so that the mask can be seen with the same visibility as the mat surface. (Fig. 21)

2. Repairing of fallen mask.
   There should be no fallen mask (especially in regards to the film gate). Make the following adjustments.

   (Procedure)
   1. Attach a field-of-view glass (tool) to the film gate surface and align it with the field-of-view of the chart.
      (Note) In this case it does not mean field-of-view adjustment. It is mainly to obtain accurately the horizontal and vertical lines.

2. Keep both eyes open and look into the rangefinder mask with one eye while looking at the chart with the other. (Fig. 22)

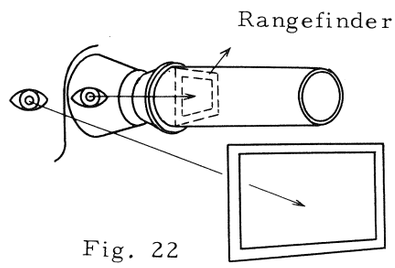
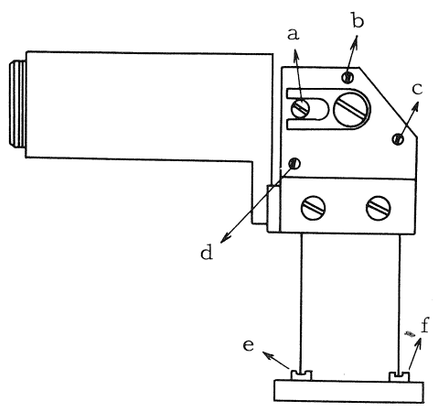


Fig. 22

3. In this case the mask and the chart should be on the same horizontal line.
4. If the mask should be slanted when compared with the chart, loosen screws (A) and (B) shown in Fig. 21 and adjust by turning in the direction of arrows c or d.

3. Eyesight adjusting.
(Procedure)
   1. Attach a field-of-view glass to the film gate surface and align it with the field-of-view of the chart.
   2. Look at the chart through the rangefinder.
   3. At this time the mechanical shaft of the film gate and the optical shaft of the rangefinder should be aligned.
   4. If they are not in alignment, make the following adjustments. (Fig. 23)



Eccentric screw a

Screws b, c, d

Fig. 23

Adjustments are made with screws a, b, c and d. When adjustments are impossible with these four screws, then loosen screws e and f and adjust by turning the entire prism unit in the direction of the lens circumference or by twisting it. (Fig. 23).

As a rule, there is a necessity of making adjustments with screws a to d.

(Note) Screws e and f cannot be loosened or tightened without first removing the lens unit. (Fig. 23) Therefore, remove the lens unit, loosen screws e and f, move the prism unit and then quickly retighten the screws. After that, attach the lens unit and readjust with screws a to d.

ELECTRIC EYE ADJUSTMENT

1. Adjusting method

1. Adjusting aperture of CdS housing.
Minimum aperture (22) and maximum aperture (1.6) are adjusted with the CdS housing.

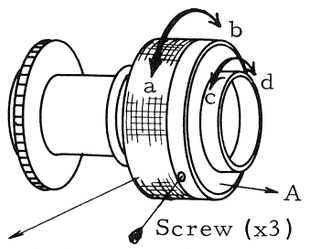


Fig. 24

(Procedure)

1. Check and see that the manual ring turns in both a and b directions without catching. (Fig. 24)

   (Note) If the ring does not turn smoothly and catches or is tight, apply liquid molybdenum to the (B) section indicated in the following diagram and then check the revolving condition again. If the rotation is still rough, move lever (C) and check the movement of the aperture leaf. If the cause is the aperture leaf, replace the aperture leaf or clean it. (Fig. 25)

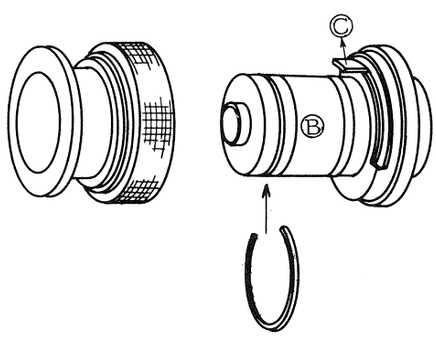


Fig. 25

2. Turn the manual ring in the direction of b, in Fig. 24, until it stops, and then loosen the three screws.
3. Adjust so that the aperture at this time is 0.6mm (high warning aperture).
   Adjustment is made by changing the aperture by turning (A) in the direction of arrows c or d.
   When 0.6mm is obtained, tighten the screws.
   (Note) When aperture 0.6mm is obtained, turn the manual ring. If the aperture leaf should bite it, it is alright to open the hole up to approximately 0.8mm.

2. Adjusting coupling between lens aperture and CdS housing aperture.

(Procedure)

1. Attach the CdS housing to the lens unit. (Fig. 26)

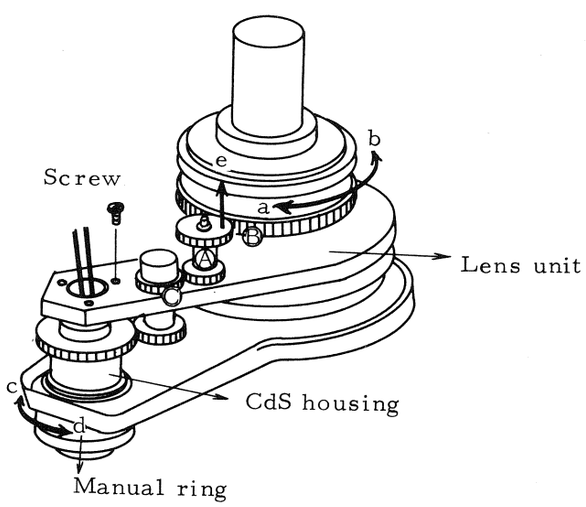


Fig. 26

2. Move gear (A), in the above diagram, in the direction of arrow e and remove the connection between gears (C) and (B). (Fig. 26)
3. Turn the manual ring in the direction of arrow c until it stops (the condition in which the CdS housing aperture is open at maximum).
4. Turn gear (B) in the direction of b until it stops. (Fig. 26) (Condition as shown in A Diagram of Fig. 28)
   (Note) Turn the clutch of the automatic manual switch gear while removing the clutch. (In the direction of arrow a in Fig. 27)

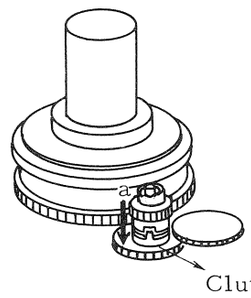


Fig. 27

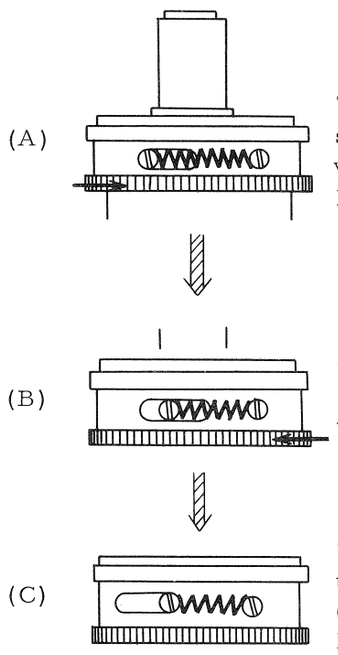


Fig. 28

5. The spring is stretched to maximum when gear (B) in Fig. 26 is turned until it stops. (Fig. 28, Diagram A)
   Next, return gear (B) one or two teeth. (Fig. 28, Diagram B)
6. In this returned condition (Fig. 28, Diagram B) mesh gears (A), (B) and (C) as shown in Fig. 26.
7. When the gears are let go of after meshing, the condition becomes like that shown in Diagram C of Fig. 28. At this time, the manual ring (Fig. 26) slightly returns and the lens aperture is in the condition of maximum opening.
8. In the condition shown in Diagram C of Fig. 28, attach the "aperture adjusting tool" to the tip of the CdS housing. (Fig. 29)

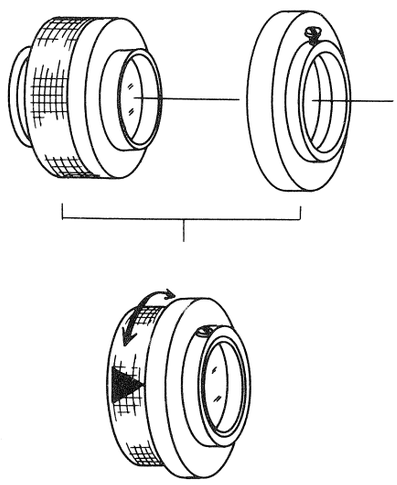


Fig. 29

9. Put an index mark opposite the 1.6 graduation (on the manual ring) of the adjusting tool.
(Note) It is a good idea to glue on a piece of vinyl tape cut in the shape of a triangle. (Fig. 29)

10. Turn the manual ring in the directions of arrows a and b until it stops. (When under the condition as shown in Fig. 27 it will turn lightly.)
The movement range at this time should be as shown in the following diagram. (Fig. 30)

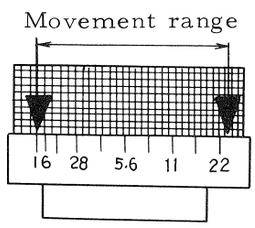


Fig. 30

When the movement range is narrow, make the CdS aperture small.
Be careful, however, that it is not less than 0.6mm because the blade will bite.
When the movement range is too wide, open the CdS aperture, but only up to the limit of 0.8mm.
(Note) Refer to "Adjusting Aperture of CdS Housing".
When the movement range is off to one side, this can be changed by changing the meshing of gears (A), (B) and (C) in Fig. 26.

3 Adjusting the viewfinder needle.
The adjusting of the needle inside the viewfinder is divided into three adjustments.

3.1 Needle stroke adjustment.
The movement of the needle is coupled to the rotation of the manual ring. The movement range of the needle should be as shown in the following diagram. (Fig. 31)

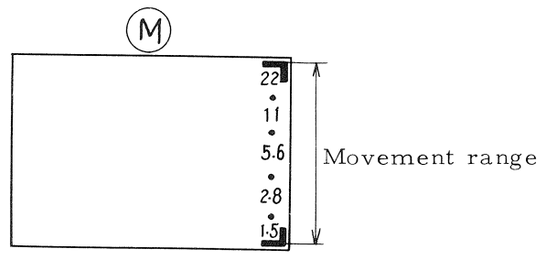


Fig. 31

When the stroke is small or too big, adjust according to the following diagram. (Fig. 32)

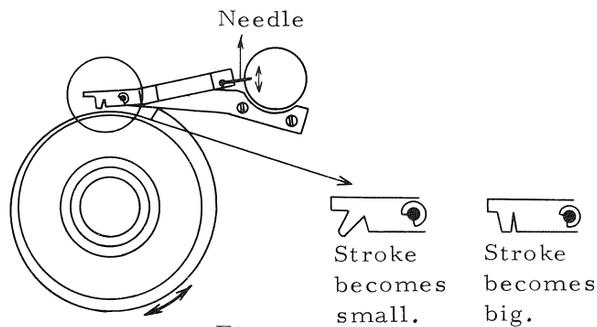


Fig. 32

3.2 Confirming needle accuracy.
After the stroke adjustment mentioned above has been completed, check to see that the graduations of the aperture adjusting tool (Figs. 29, 30) attached to the CdS housing and the figures inside the viewfinder are aligned. If F1.6 and F22 are aligned, the adjustment is alright.

3.3 Protruding length of needle and focus adjustment.
The protruding length of the needle should be within the range shown in the following diagram. (Fig. 33)
The focus is adjusted so that it can be seen with the same visibility as the figure 5.6 within the viewfinder.

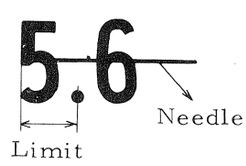


Fig. 33

4. Automatic adjustment.
Automatic adjustment is performed according to the following chart.

Aperture	ASA100/24 frame cd/m^2	ASA10/24 frame cd/m^2	ASA320/16 frame cd/m^2	Remarks
1.6	24.9	250		o mark, Standard check point
2	39.2	400		
2.8	*A$_{o}$ 78.4	800	17.0	* mark A Limit ± 1/3F
4	156.8	*A$_{o}$1600	*B$_{o}$ 34.4	
5.6	*A$_{o}$313.0	3200	68.8	* mark B Limit ±1/2F
8	627.2	6400	137.6	
11	1254.4		275.2	
16	*A$_{o}$2560.0		550.4	
22	5120.0		1100.8	

Low warning range: ASA 10/24 frame 256 - 199 cd/m^2
High warning range: ASA 320/24 frame 2140 - 1510 cd/m^2

Adjustments are made in the following manner (includes accuracy checking method).

(Procedure)

1. As shown in Fig. 29, attach the aperture adjusting tool to the tip of the CdS housing.
2. Apply the specified ASA, frame speed and light intensity.
3. Check and see to which F stop on the aperture adjusting tool the manual ring (revolving ring) of the CdS housing is pointing at this time. (Refer to the above chart). --Up to this point is the checking method--
4. When it is out of limit, remove the lens of the CdS housing and obtain the proper figure by inserting and removing an ND filter directly in front of the CdS.
   - o When under-exposed (large aperture stop or small aperture)--Insert an ND filter.
   - o When over-exposed (small aperture stop or large aperture)--Remove the filter or remove the black ink from the CdS.

CANON REPAIR GUIDE

CANON SCOOPIC 16

(REF. NO. 3-70201-2)

CANON CAMERA CO., INC.

TOKYO, JAPAN

PREFACE

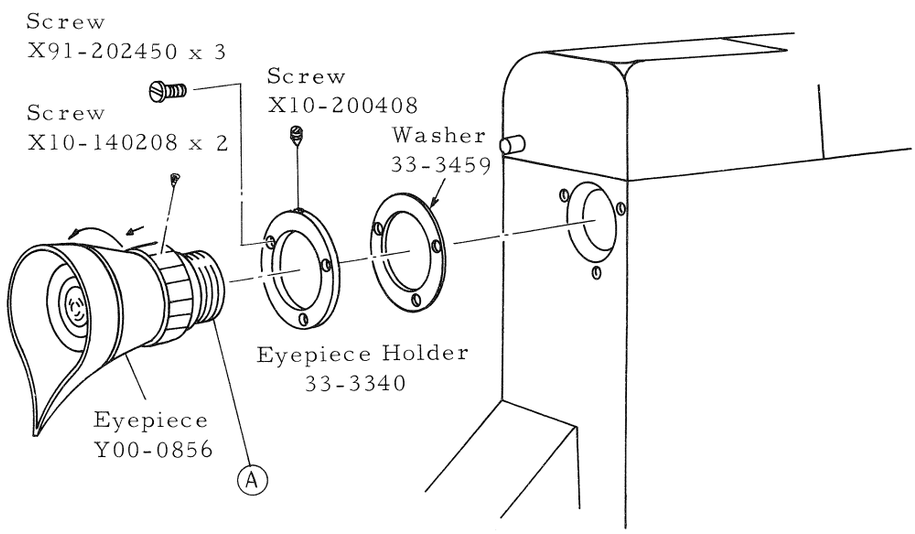
This Repair Guide is the instruction for the purpose of quality assurance and repairing service to the products. This Guide is consisted of three parts, i.e., Disassembling Method, Adjusting Method, and Trouble, Cause & Remedy. If any repairs are required, refer to this Guide.

Any comments or requests about this Guide or product will be highly appreciated.

Canon Camera Co., Inc.
Service Department
30-2 Shimomaruko 3 Chome
Ohtaku, Tokyo, Japan

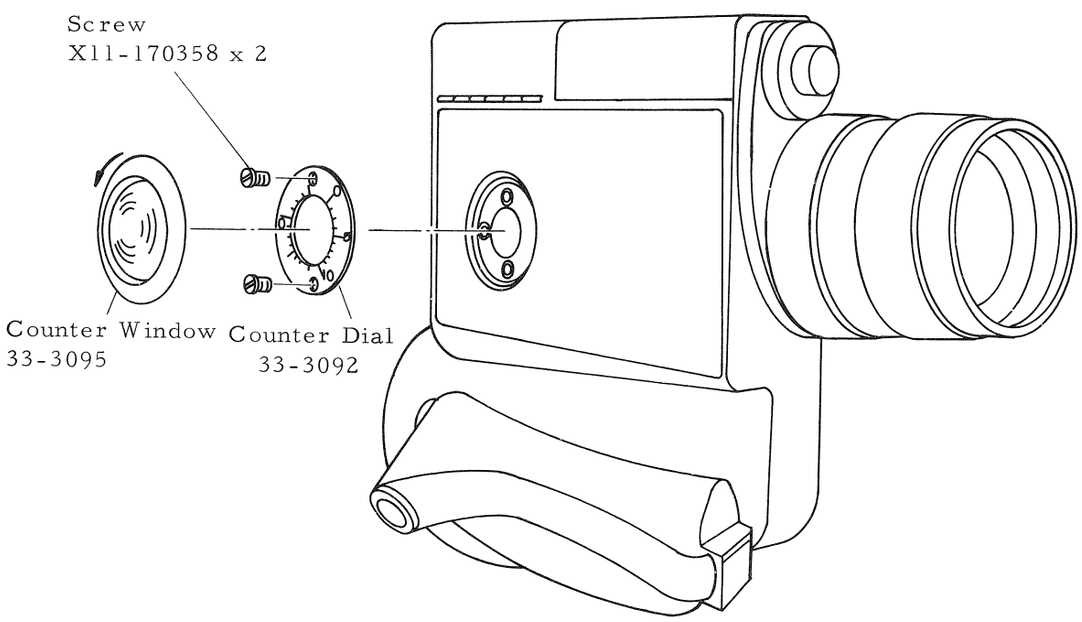
CONTENTS

EYEPIECE DESASSEMBLING



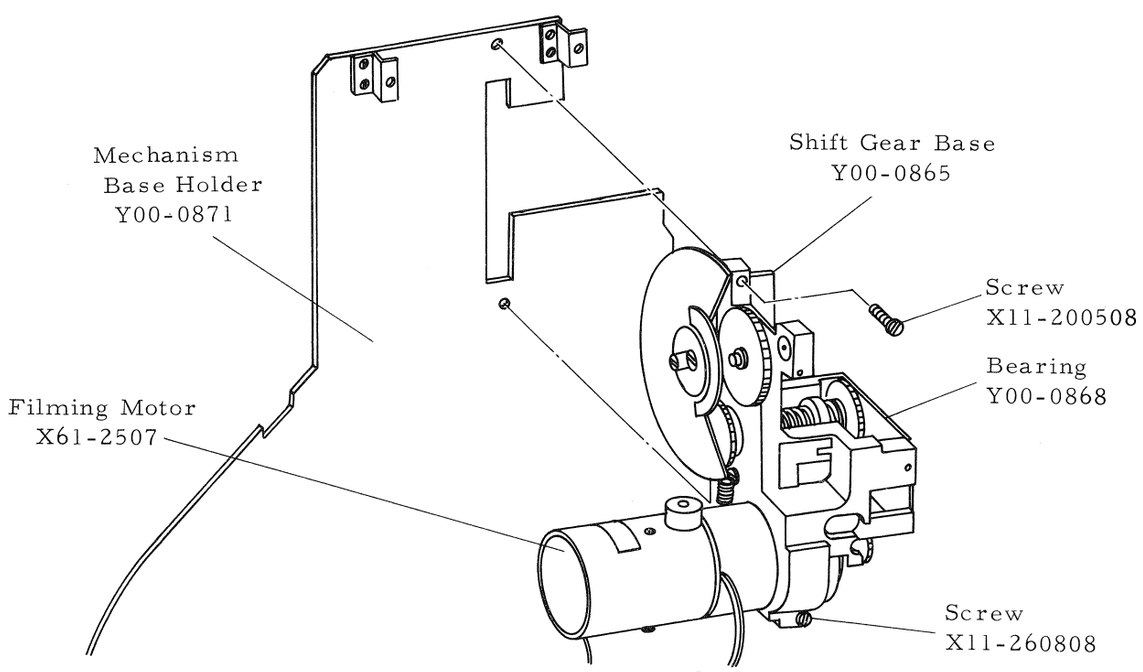
Work	Order and Note
Removal of eyepiece	Loosen X10-140208 x 2 (Screw) and slide in the direction shown in the above diagram.
	Remove X10-200408 (Screw) and turn Y00-0856 (Eyepiece) in the arrow direction
	The part (A) is designed to be thread cutting.

COUNTER WINDOW DISASSEMBLING



Work	Order and Note
Removal of counter window	33-3095 Counter Window Since the counter window has thread cutting, it can be removed by turning in the arrow direction. No binding agent is needed for it. X11-170358 x 2 Screw ——— 33-3092 Counter Dial

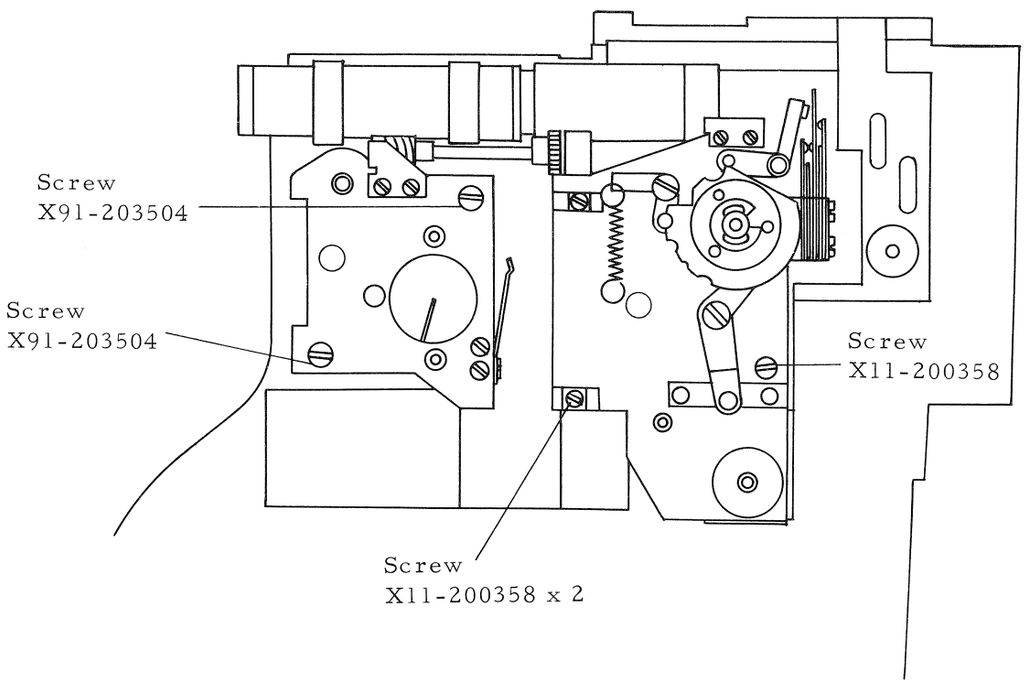
FILMING MOTOR ASSEMBLING



Work	Order and Note
Assembling of shift gear base	Y00-0871 (Mechanism Base Plate) ——— Y00-0865 (Shift Gear Base) ——— X11-200508 x 3 (Screw)
Assembling of filming motor	Y00-0865 (Shift Gear Base) ——— X61-2507 (Filming Motor) ——— X11-260808 (Screw)

Apply the bonding agent to screws X11-260808 after tightening them.

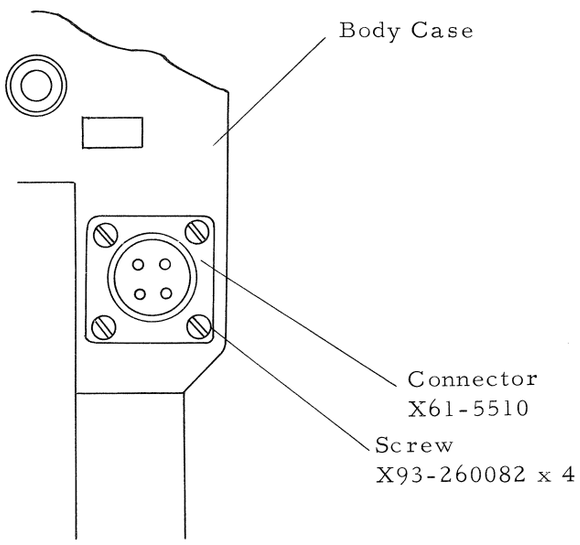
MECHANISM PLATE DISASSEMBLING



Works	Order and Note
Removal of screws	X91-203504 x 2 / Screw
	X11-200358 x 2 / Screw ——— X14-200308 / Screw

When removing the mechanism plate, watch the cords against unsoldering and also switch click balls or other parts against coming off.

CONNECTOR DISASSEMBLING

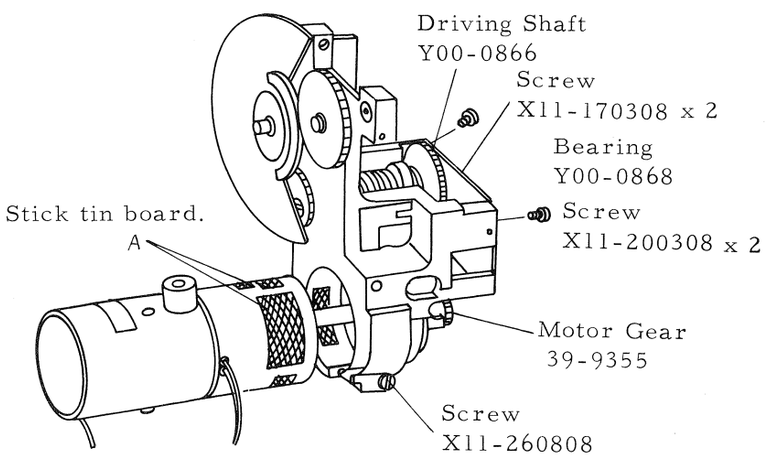


Work	Order and Note
Removal of connector	X61-5510 Connector ——— X93-260082 x 4 Screw

On removing, be careful of the inner lead wires.

MOTOR ADJUSTMENT

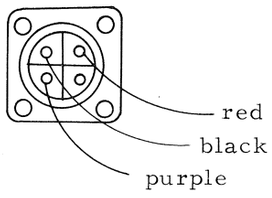
Work	Adjusting Method and Note
Attaching slip gear	Y00-0866 Driving Shaft ——— Y00-0868 Bearing then lightly fix X11-170308 x 2 Screw and X11-200308 x 2 Screw



Adjusting mesh of slip gear	Turn the driving shaft by the hand, stop it at the point where it turns most lightly, and fix X11-170308 x 2 and X11-200308 x 2 tightly. Note: When turning the gear, confirm it does not stick.
Measuring torque of driving shaft	Limit: 250gr - 300gr.
Adjusting mesh between motor and switch gears	Make adjustment by sticking the tin board to the part A in the above diagram.

CONNECTOR & MECHANISM PLATE RIGHT ADJUSTMENT

Work	Adjusting Method and Note
Circuit of connector	Use the external batteries.



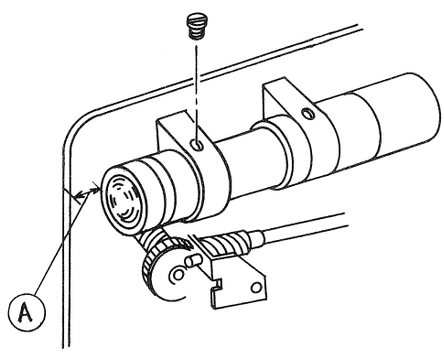
Connect the purple wire to the minus terminal of the battery. (1)

Solder the black one to the earth of the print circuit board (9). (2)

Connect the red one with the red of EESW. (3)

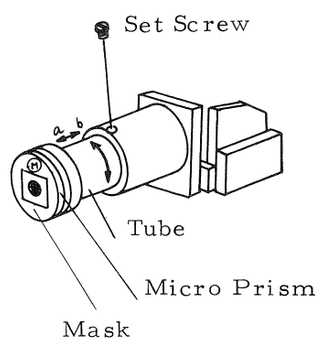
VIEWFINDER ADJUSTMENT

Work	Adjusting Method and Note
	1. Matching of focal point surfaces in rangefinder There are two focal point surfaces in the viewfinder tube. One is the mat surface and the other is the finder mask surface. These two surfaces should be matched at the same visibility.



Note: The former model has two surfaces separately, while present model has them in piles, so the adjustment can be made at one place.

Attaching viewfinder	1) Attach the finder tube to the mechanism base place so that the length (A) may be 2.52 cm from the tube head to the edge of the mechanism base plate as shown in the diagram. Then tighten two screws X10-200408.
Adjusting focus and fallen mask	2) Adjust the focus on the micro prism by turning the finder tube between a and b as shown in the diagram, by which the focus on the mask surface is adjusted together. And also make adjustments of fallen finder mask when turning the finder tube. Then tighten the screws.



CIRCUIT DIAGRAM