

CANON REPAIR MANUAL

CANON CAMERA MODEL FX (REFERENCE NO. 1-20301)

CANON CAMERA COMPANY, INC.

TOKYO, JAPAN

CANON SERVICE MANUAL

CANON INC. JAPAN

PREFACE

This manual is the guide for service after sales which we issue for the purpose of quality assurance of our products. This manual consists of six sections, i.e., General, Repair Manual, Repair Guide, Service Tools List, Price List of Spare Parts and Service Manual Report.

If any repairs are required, refer to Repair Manual, Repair Guide and Service Tools List.

A revised edition will be issued for any major alteration of the product, and minor changes will be issued under the Service Manual Report.

When parts are needed, it is important to order them by specifying the serial numbers and filling in the provided form, and also for any further details regarding tools, refer to the catalogue.

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

Canon Inc. SERVICE DEPARTMENT
30-2, Shimomaruko 3 Chome, Ohtaku,
Tokyo, Japan

CONTENTS

HOW TO USE THIS SERVICE MANUAL

Section 1 GENERAL

Section 2 REPAIR MANUAL

Table of Contents
Exploded View and Parts List
Index of Parts Numbers

Section 3 REPAIR GUIDE

Table of Contents
Disassembling Methods
Adjusting Methods
Trouble, Cause and Remedy
Inspection Standards

Section 4 SERVICE TOOLS LIST

Section 5 PRICE LIST OF CANON SPARE PARTS

Section 6 SERVICE MANUAL REPORT

HOW TO USE THIS SERVICE MANUAL

Canon Service Manual consists of the following six sections: General, Repair Manual, Repair Guide, Service Tools List, Price List of Spare Parts and Service Manual Reports, which will be issued if the outward appearance, function or design of the product is changed. These six sections are divided by index sheets for easy identification.

GENERAL

The General section consists of information useful to the repairman. It may consist of any or all of the following: technical specifications, design principals, circuit explanations, new or unusual repair technics, or any other information useful to the repairman.

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. $\left[\begin{array}{l} \text{X32-505211} \\ \text{X32-505212} \end{array} \right]$ 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 according 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 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 instruction 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.

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 subject 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 CAMERA MODEL FX (REFERENCE NO. 1-20301)

CANON CAMERA COMPANY, INC.

TOKYO, JAPAN

First Printing April, 1964

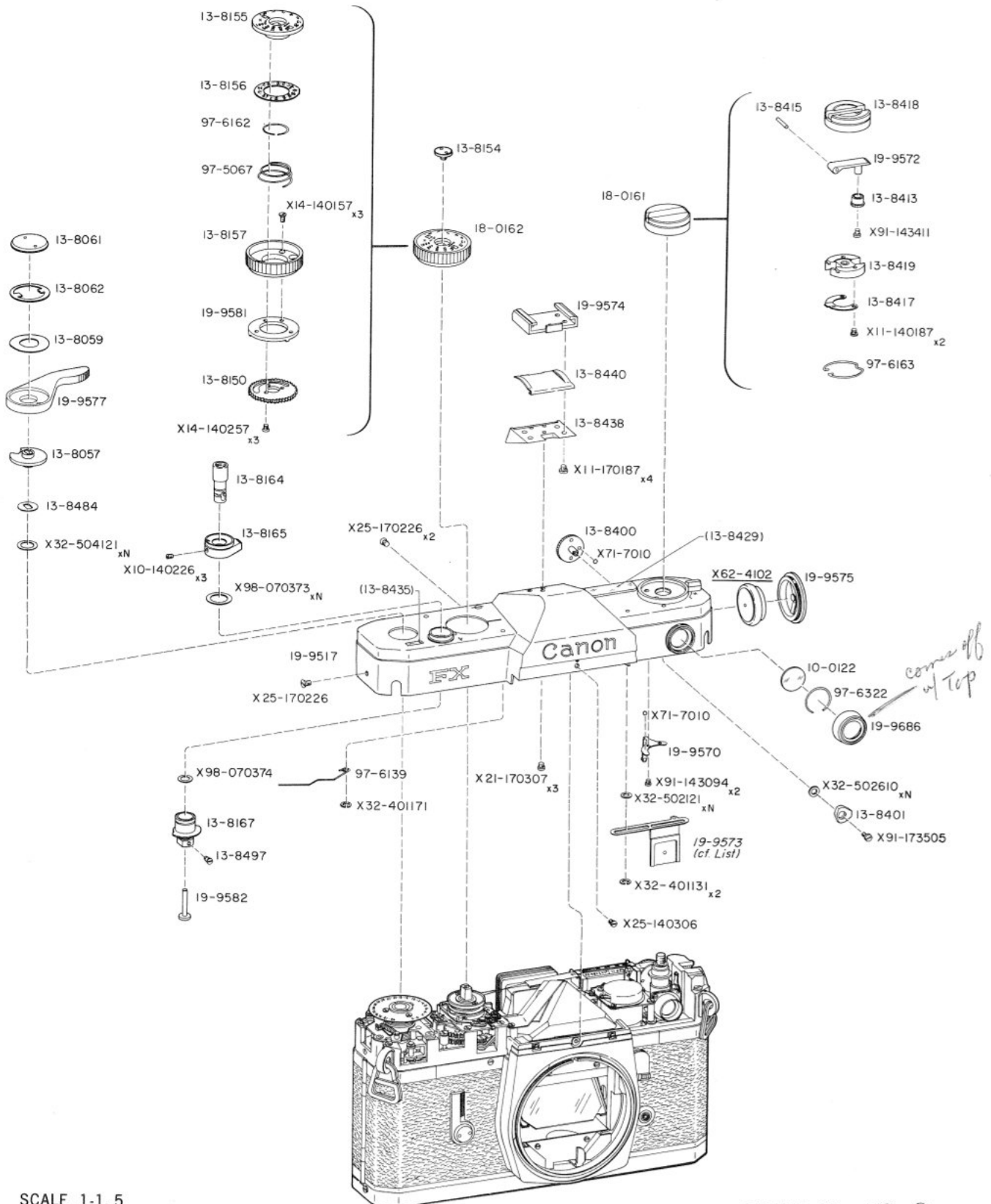
COPYRIGHT 1964
by
CANON CAMERA CO., INC.

Printed in Japan

TABLE OF CONTENTS

TOP COVER.....	1
REWIND CRANK.....	1
SHUTTER DIAL	1
SHUTTER BUTTON	1
ACCESSORY SHOE	1
WINDING LEVER.....	1
CdS METER.....	2
METER CONTACT	2
REWIND SHAFT	2
EYE-LEVEL FINDER	3
GROUND GLASS.....	3
EYEPIECE.....	3
BACK PLATE	3
FRONT COVER	3
BACK COVER	4
LOCK DEVICE	4
FRONT PANEL	4
FLASH TERMINAL	4
REFLECTOR CLAMP	4
REFLECTOR	4
SELF-TIMER.....	4,6
LENS MOUNTING FLANGE	4
REFLECTOR HOUSING	4,5
SHUTTER SPEED SELECTOR	6,7
FILM COUNTER	6,7,11
SLOW SHUTTER GOVERNOR.....	6
FLASH CIRCUIT	6,7
SHUTTER MECHANISM	6,10,11
WINDING MECHANISM.....	8
REWIND CLAMP LEVER	8
IDLE GEAR	8,9
REFLECTOR RELEASE LEVER	8
TRIPOD SOCKET	8
SHUTTER RELEASE SAFTY DEVICE.....	8
REFLECTOR CHARGE MECANISM	9
DIAPHRAGM OPERATION MECHANISM	9
NECK STRAP ADAPTER	10
TAKE-UP SPOOL	12
SPROCKET	12
BODY CASE	12

EXPLODED VIEW
of
CANON CAMERA MODEL FX



SCALE 1-1.5

CANON CAMERA CO., INC. ©

PARTS LIST

TOP COVER

10-0122	Frsnel Lens
13-8400	Meter Switch Knob
13-8401	Meter Switch Cam
19-9517	Top Cover (B.P.)
13-8429	Meter Window
13-8435	Counter Window
19-9573	Pin Hole Filter (B.P.)
n.b. This parts is included in the Meter Unit 18-0131 and not supplied as a single parts (cf.p.2).	
19-9570	Click Spring (B.P.)
19-9575	Battery Cap (B.P.)
19-9686	CdS Window (B.P.)
97-6322	Spring
X25-140306	Screw
X25-170226	Screw × 3
X32-401131	Retaining Washer × 2
X32-502121	Washer × N
X32-502122	
X32-502610	Washer × N
X32-502611	
X71-7001	Steel Ball × 2
X91-143094	Screw × 2
X91-173505	Screw
<u>X62-4102</u>	Mercury Battery

n.b. Mercury Battery has a parts number X62-4162, but
it is not dealt with one of the repair parts.

REWIND CRANK

18-0161	Rewind Crank (Unit)
13-8413	Rewind Crank Head
13-8415	Pivot
13-8417	Click Spring
13-8418	Rewind Knob
13-8419	Rewind Crank Holder
19-9572	Rewind Crank (B.P.)
97-6163	Spring
X11-140187	Screw × 2

SHUTTER DIAL

13-8154	Pin Face Screw
18-0162	Shutter Speed Dial (Unit)
13-8150	Film Speed Setting Disk
13-8155	Shutter Speed Dial
13-8156	Film Speed Dial
13-8157	Knurled Knob
19-9581	Film Speed Setting Claw (B.P.)
97-5067	Coil Spring
97-6162	Spring
X14-140157	Screw × 3
X14-140257	Screw × 3

SHUTTER BUTTON (cf. p. 9)

13-8164	Shutter Button
13-8165	Shutter Button Ring
13-8167	Shutter Button Sleeve
13-8497	Guide Screw
19-9582	Shutter Button Shaft (B.P.)
97-6139	Spring
X10-140226	Screw × 3
X32-401171	Retaining Washer
X98-070372	Washer × N
X98-070373	
X98-070374	

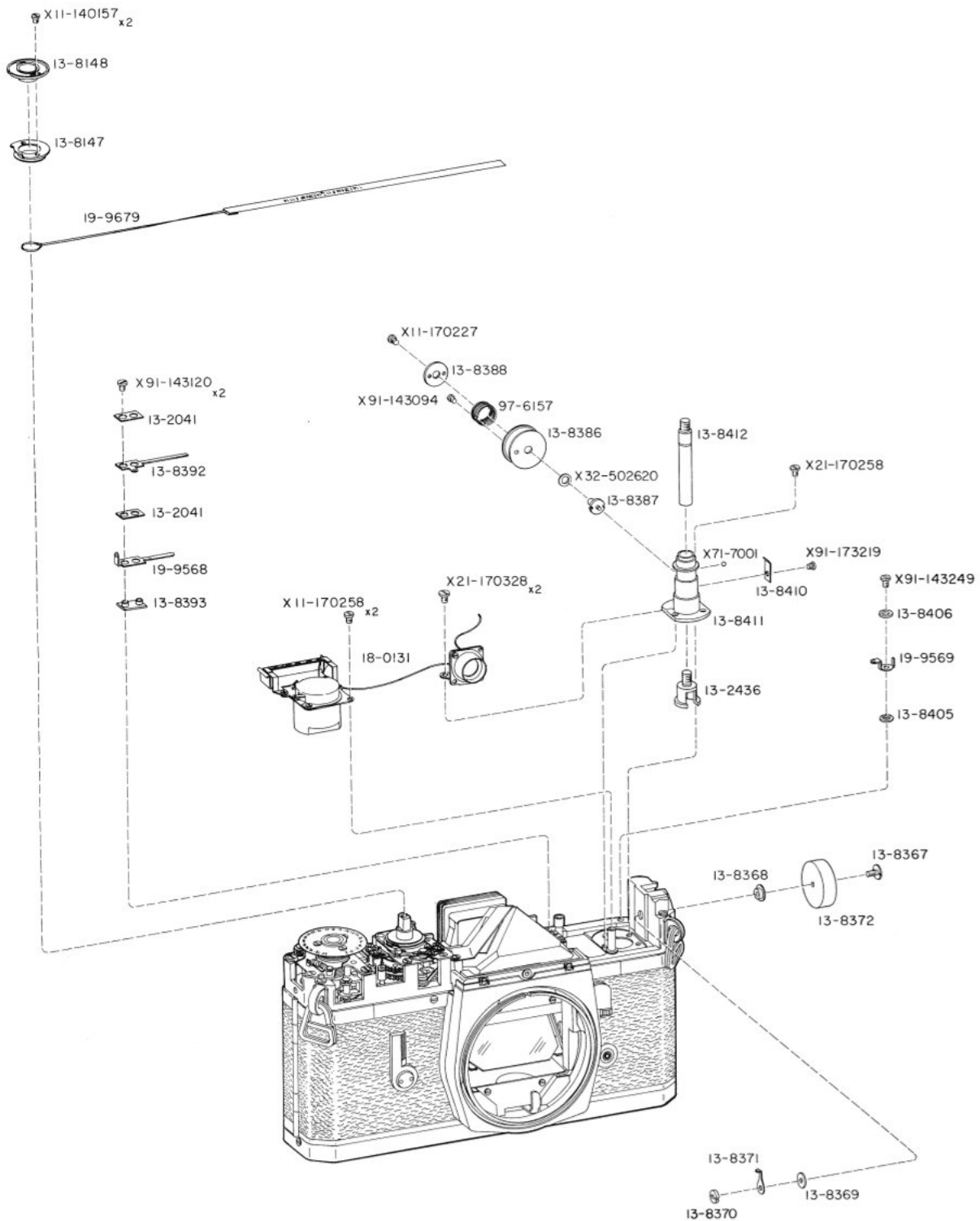
ACCESSORY SHOE

13-8438	Accessory Shoe Holder
13-8440	Plate Spring
19-9574	Accessory Shoe (B.P.)
X11-170187	Screw × 4
X21-170307	Screw × 3

WINDING LEVER (cf. p. 8)

13-8057	Winding Lever Seat
13-8059	Spring Washer
13-8061	Pin Face Screw
13-8062	Washer
13-8484	Washer
19-9577	Winding Lever (B.P.)
X32-504121	Washer × N
X32-504122	

EXPLODED VIEW
of
CANON CAMERA MODEL FX



SCALE 1-1.5

CANON CAMERA CO., INC. ©

PARTS LIST

CdS METER (cf. pp. 1 & 12)

13-8147	Pulley
13-8148	Pulley Cap
13-8386	Pulley
13-8387	Pulley Shaft
13-8388	Spring Hanger
18-0131	CdS Meter (Unit)
(It contains 19-9573, Pin Hole Filter)(B.P.)(cf.P.1).	
19-9679	Meter Scale (B.P.)
97-6157	Spring
X11-140157	Screw $\times 2$
X11-170227	Screw
X11-170258	Screw $\times 2$
X21-170328	Screw $\times 2$
X32-502620	Washer $\times N$
X32-502621	
X91-143094	Screw

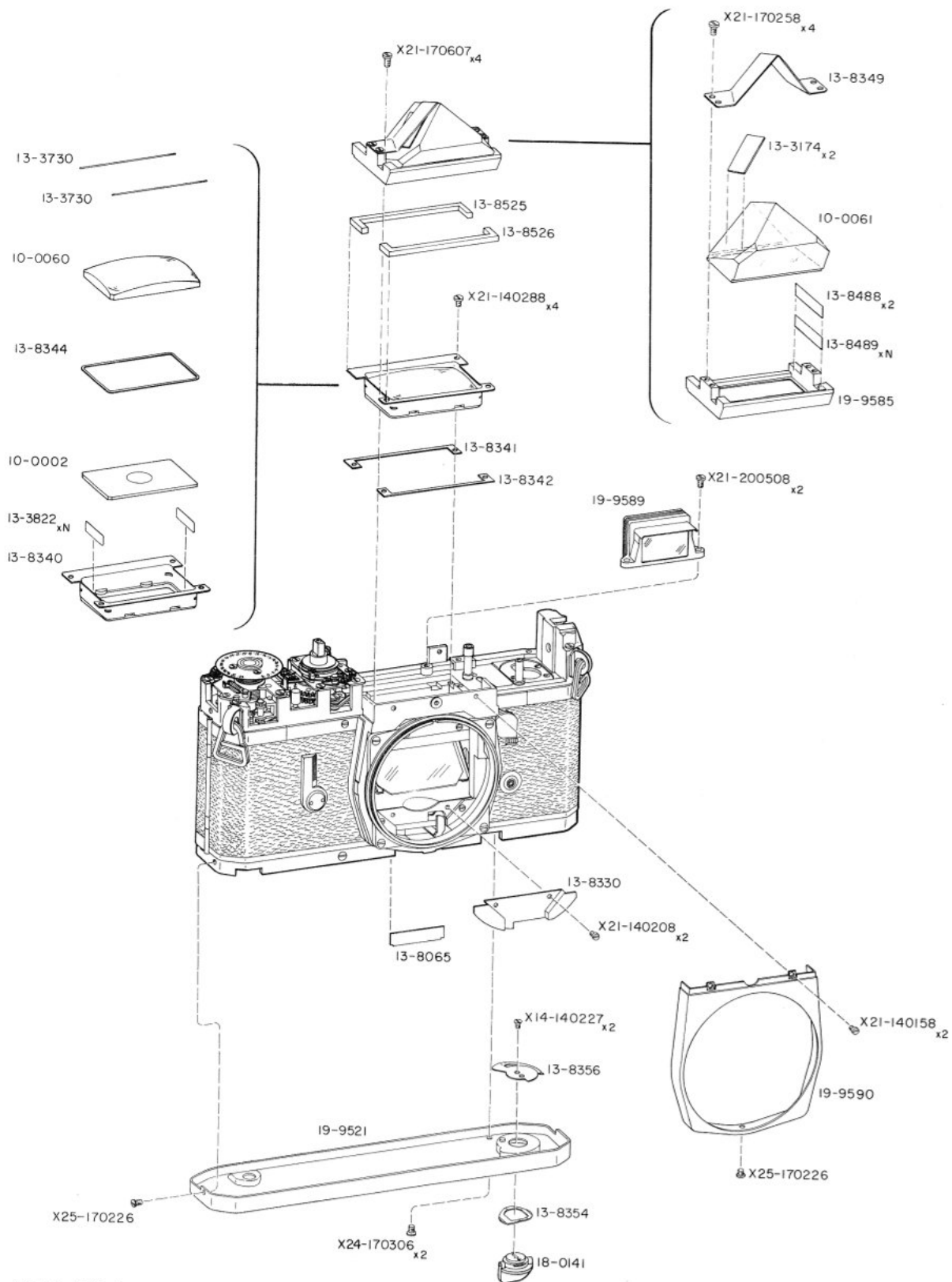
METER CONTACT

13-2041	Insulator $\times 2$
13-8367	Pin Face Screw
13-8368	Insulator
13-8369	Insulator
13-8370	Nut
13-8371	Lug
13-8372	Battery Cover
13-8392	Contact
13-8393	Insulator
13-8405	Insulator
13-8406	Insulator
19-9568	Checker Contact (B.P.)
19-9569	Meter Contact (B.P.)
X91-143120	Screw $\times 2$
X91-143249	Screw

REWIND SHAFT (cf. p1)

13-2436	Rewind Fork
13-8410	Click Spring
13-8411	Bearing
13-8412	Rewind Shaft
X21-170258	Screw
X71-7001	Steel Ball
X91-173219	Screw

EXPLODED VIEW
of
CANON CAMERA MODEL FX



SCALE 1-1.5

CANON CAMERA CO., INC. ©

PARTS LIST

EYE-LEVEL FINDER

10-0061	Pentaprism
13-3174(0.7)	Cork
13-3174(1)	Such numbers(0.7), (1) and(1.4) indi-
13-3174(1.4)	cate thickness of Corks.
	(unit:mm)
13-8349	Pentaprism Supporter
13-8488	Shim×2
13-8489	Shim×N
13-8525	Light Shield
13-8526	Light Shield
19-9585	Pentaprism Box (B.P.)
X21-170258	Screw×4
X21-170607	Screw×4

GROUND GLASS

10-0002	Ground Glass
10-0024	
10-0060	Condencer Lens
13-3730	Retainer×2
13-3822(0.2)	Adjusting Washer×N
13-3822(0.3)	Such numbers(0.2), (0.3) and(0.4) indi-
13-3822(0.4)	cate thickness of Adjusting Washers.
13-3822(0.5)	(unit: mm)
13-8340	Ground Glass Holder
13-8341(0.03)	Adjusting Washer×N
13-8341(0.05)	Such numbers(0.03), (0.05) and(0.07)
13-8341(0.07)	indicate thickness of Adjusting
13-8341(0.1)	Washers.
13-8341(0.2)	(unit: mm)
13-8342(0.03)	Adjusting Washer×N
13-8342(0.05)	Such numbers(0.03), (0.05) and(0.07)
13-8342(0.07)	indicate thickness of Adjusting
13-8342(0.1)	Washers.
13-8342(0.2)	(unit:mm)
13-8344	Mask
X21-140288	Screw×4

EYEPiece

19-9589	Eyepiece (B.P.)
X21-200508	Screw×2

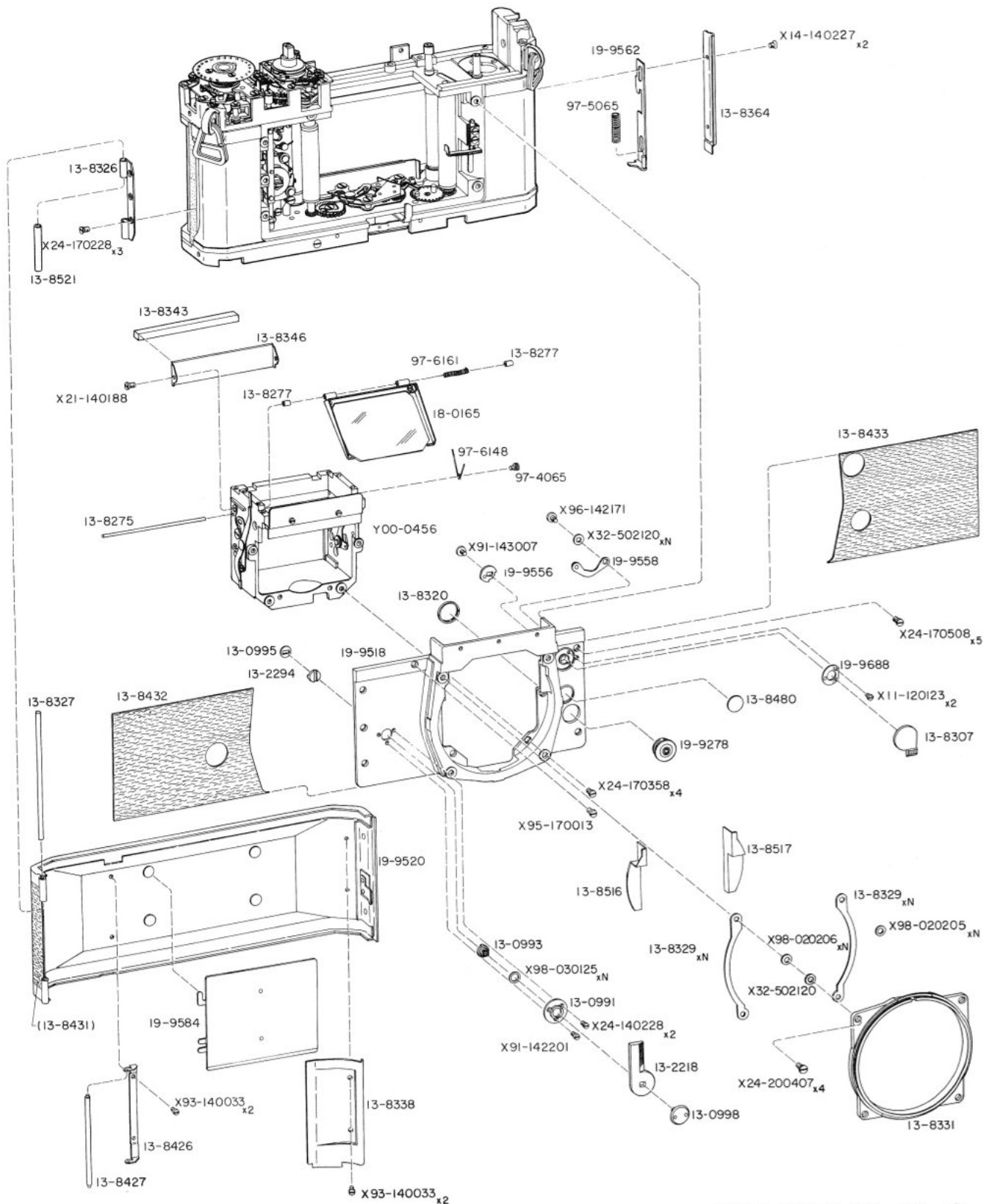
BASE PLATE

13-8065(0.9)	Light Shield
13-8065(1.2)	
13-8354	Spring Washer
13-8356	Back Cover Lock Lever
18-0141	Back Cover Lock Key (Unit)
19-9521	Base Plate (B.P.)
X14-140227	Screw×2
X24-170306	Screw×2
X25-170226	Screw

FRONT COVER

13-8330	Light Shield
19-9590	Front Cover (B.P.)
X21-140158	Screw×2
X21-140208	Screw×2
X25-170226	Screw

EXPLODED VIEW
of
CANON CAMERA MODEL FX



SCALE 1-1.5

CANON CAMERA CO., INC. ©

PARTS LIST

BACK COVER

13-8326	Hinge
13-8327	Shaft of Hinge
13-8338	Cassette Holder
13-8426	Roller Holder
13-8427	Anti-curl Roller
13-8521	Collar
19-9520	Back Cover (B.P.)
13-8431	Leather
19-9584	Pressure Plate (B.P.)
X24-170228	Screw × 3
X93-140033	Screw × 4

LOCK DEVICE

13-8364	Cover Plate
19-9562	Hook (B.P.)
97-5065	Coil Spring
X14-140227	Screw × 2

FRONT PANEL

13-8432	Leather
13-8433	Leather
13-8480	Cover
13-8516	Light Shield
13-8517	Light Shield
19-9518	Front Panel (B.P.)
X24-170358	Screw × 4
X24-170508	Screw × 5
X95-170013	Screw

FLASH TERMINAL

13-8320	Nut
19-9278	Flash Terminal (B.P.)

REFLECTOR CLAMP (cf. p. 5)

13-8307	Reflector Clamp Knob
19-9556	Cam (B.P.)
19-9558	Reflector Clamp Lever (B.P.)
19-9688	Click Spring (B.P.)
X11-120123	Screw × 2
X32-502120	Washer × N
X32-502121	
X91-143007	Screw
X96-142171	Screw

REFLECTOR

13-8275	Reflector Shaft
13-8277	Collar × 2
13-8343	Light Shield
13-8346	Light Shield
18-0165	Reflector (Unit)
97-4065	Screw
97-6148	Spring
97-6161	Spring
X21-140188	Screw

SELF - TIMER (cf. p. 6)

13-0991	Self-timer Bearing
13-0993	Coupling Joint
13-0995	Spring Washer
13-0998	Pin Face Screw
13-2218	Self-timer Lever
13-2294	Coupling Joint
X24-140228	Screw × 2
X91-142201	Screw
X98-030125	Washer × N

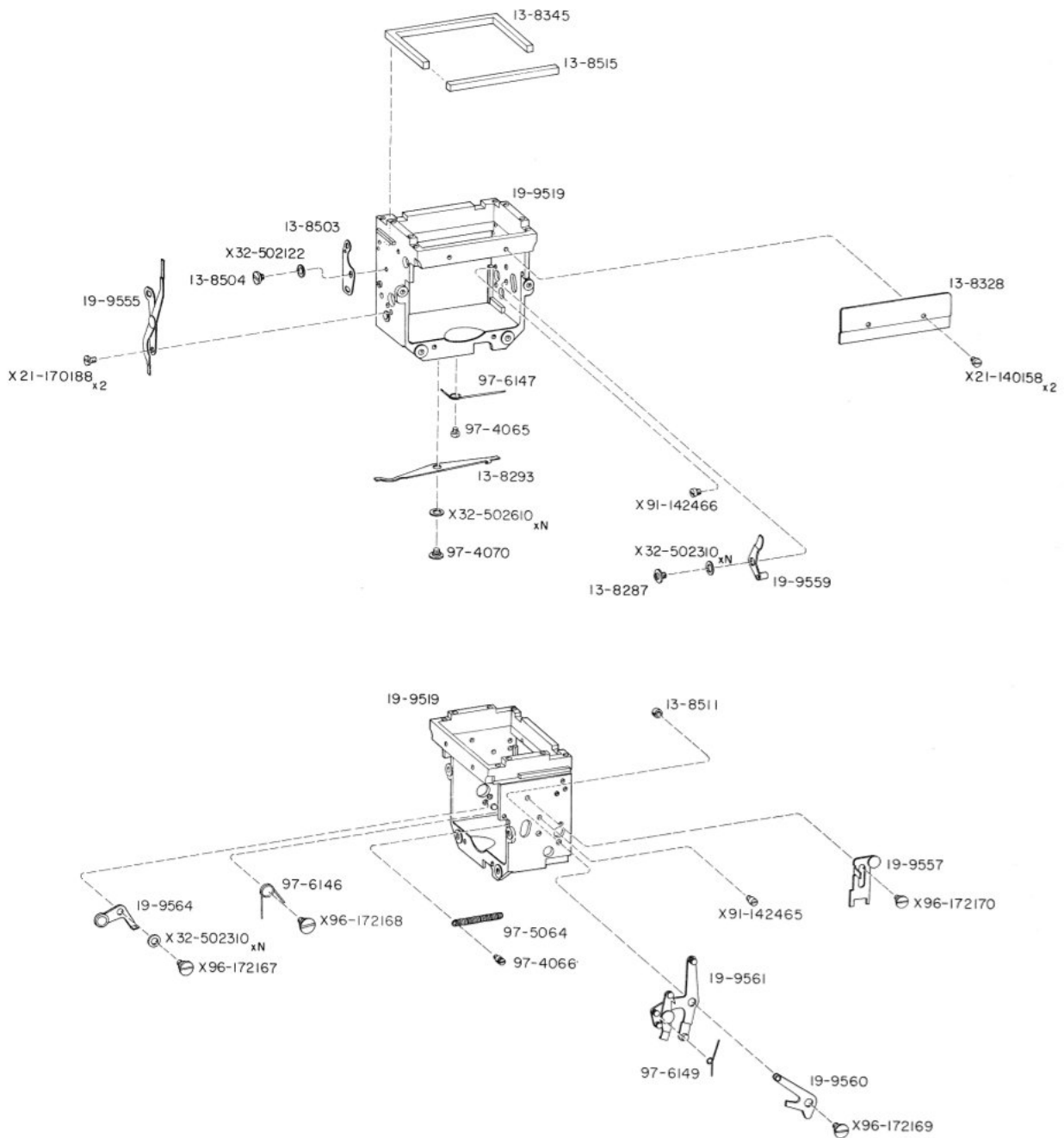
LENS MOUNTING FLANGE

X32-502120	Adjusting Washer × N
X32-502121	Such numbers(0.05), (0.1) and(0.2) indicate thickness of Adjusting Washers.
X32-502122	(unit: mm)
13-8331	Lens Mounting Flange
X24-200407	Screw × 4
X32-502120	Washer × N
X32-502121	
X32-502122	
X98-020205	Washer × N
X98-020206	

REFLECTOR HOUSING (cf. p. 5)

Y00-0456	Reflector Housing (Unit)
----------	--------------------------

EXPLODED VIEW
of
CANON CAMERA MODEL FX



SCALE 1-1.5

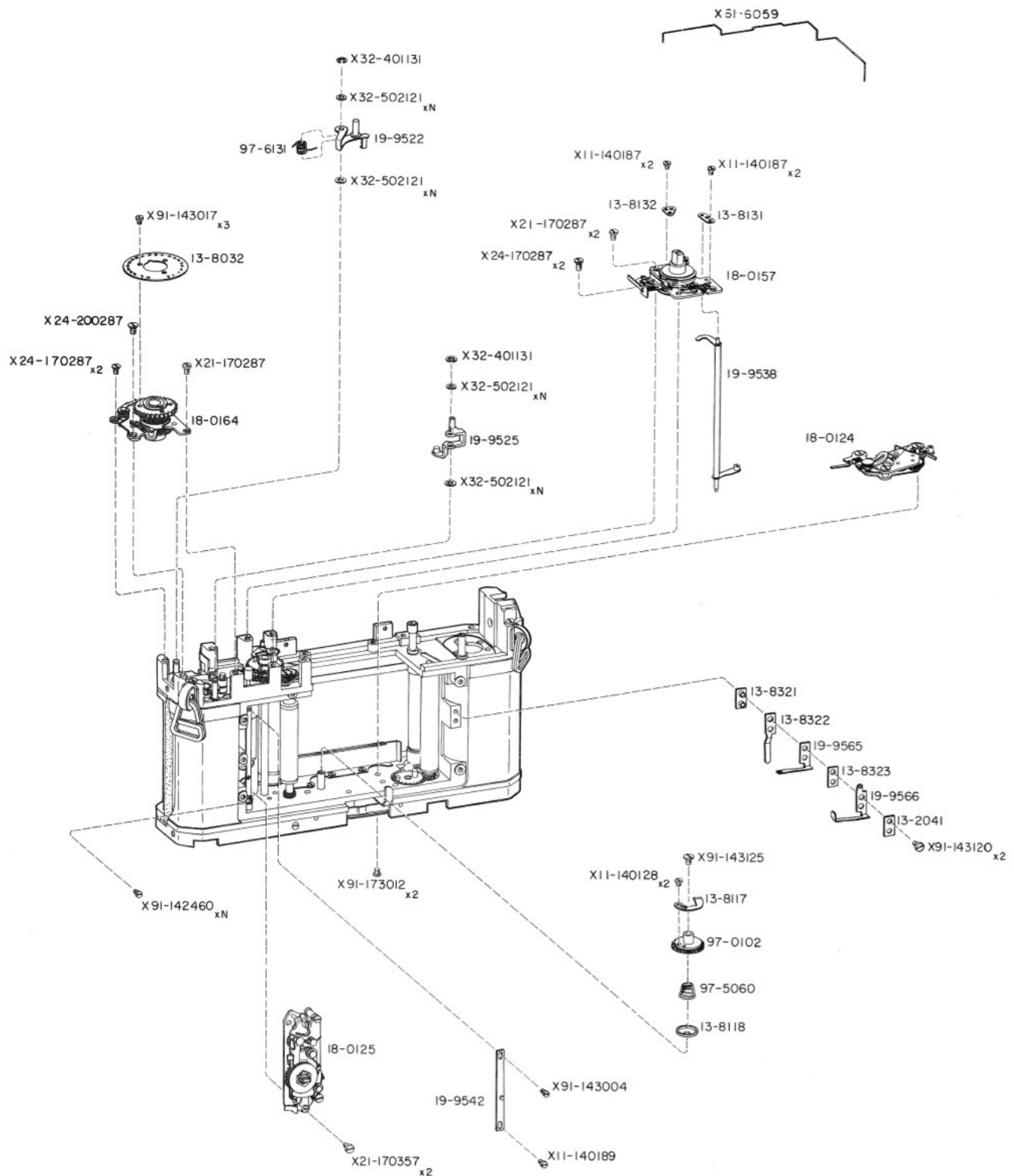
CANON CAMERA CO., INC. ©

PARTS LIST

REFLECTOR HOUSING (cf. p. 4)

13-8287	Screw
13-8293	Connecting Lever
13-8328	Light Shield
13-8345	Light Shield
13-8503	Reflector Adjusting Lever
13-8504	Screw
13-8511	Nut
13-8515	Light Shield
19-9519	Reflector Housing (B.P.)
19-9557	Slide Plate
19-9559	Swing-up Lever (B.P.)
19-9560	Swing-down Lever (B.P.)
19-9561	Inter Locking Lever (B.P.)
19-9564	Reflector Stopper (B.P.)
97-4065	Screw
97-4066	Screw
97-4070	Screw
97-5064	Coil Spring
97-6146	Spring
97-6147	Spring
97-6149	Spring
X21-140158	Screw × 2
X21-170188	Screw × 2
X32-502122	Washer
X32-502310	Washer × N
X32-502311	
X32-502312	
X91-142465	Screw
X91-142466	Screw
X96-172167	Screw
X96-172168	Screw
X96-172169	Screw
X96-172170	Screw

EXPLODED VIEW
of
CANON CAMERA MODEL FX



SCALE 1-1.5

CANON CAMERA CO., INC. ©

PARTS LIST

SHUTTER SPEED SELECTOR (cf. p. 7)

13-8131	Slow Shutter Link Holder
13-8132	Anchor Release Link Holder
18-0157	Shutter Speed Selector (Unit)
19-9538	Slow Shutter Link (B.P.)
X11-140187	Screw × 4
X21-170287	Screw × 2
X24-170287	Screw × 2

FILM COUNTER (cf. p. 7)

13-8032	Film Counter Dial
18-0164	Film Counter (Unit)
19-9522	Counter Reset Lever (B.P.)
19-9525	Counter Connect Lever (B.P.)
97-6131	Spring
X21-170287	Screw
X24-170287	Screw
X24-200287	Screw × 2
X32-401131	Retaining Washer × 2
X32-502121	Washer × N
X32-502122	

SLOW SHUTTER GOVERNOR

18-0124	Slow Shutter Governor (Unit)
X91-173012	Screw × 2

SELF-TIMER (cf. p. 4)

18-0125	Self-timer (Unit)
19-9542	Self-timer Starter (B.P.)
X11-140189	Screw
X21-170357	Screw
X91-142460	Adjusting Screw × N
X91-143461	
X91-143462	
X91-143004	Screw

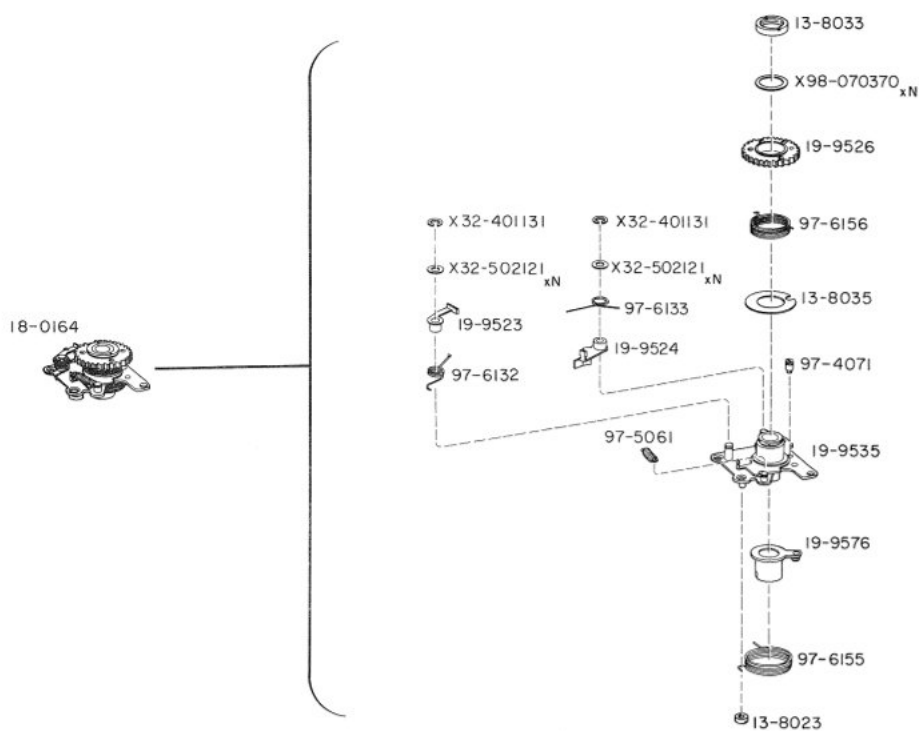
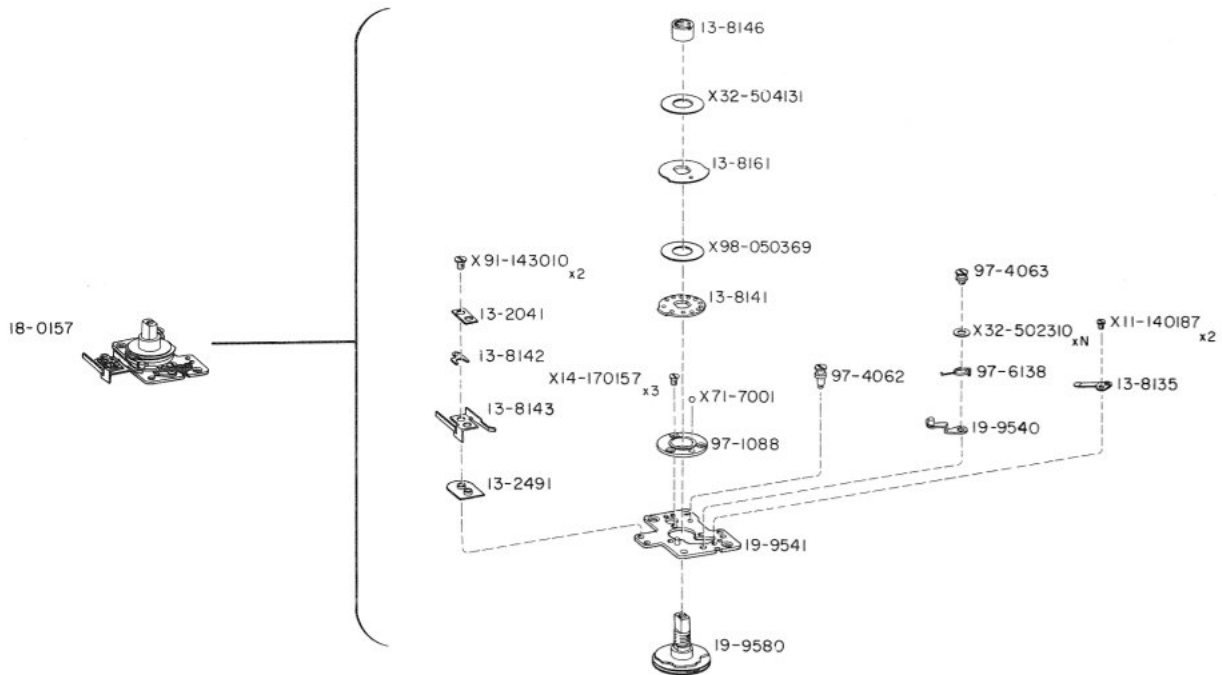
FLASH CIRCUIT (cf. p. 7)

13-2041	Insulator
13-8321	Insulator
13-8322	Contact
13-8323	Insulator
19-9565	FP Contact (B.P.)
19-9566	FP Contact (B.P.)
X61-6059	Lead Wire
X91-143120	Screw × 2

SHUTTER MECHANISM (cf. p. 11)

13-8117	Slow Shutter Pawl
13-8118	Spring Cover
97-0102	Slow Shutter Gear
97-5060	Screw × 2
X11-140128	Screw × 2
X91-143125	Screw

EXPLODED VIEW
of
CANON CAMERA MODEL FX



SCALE 1-1.5

CANON CAMERA CO., INC. ©

PARTS LIST

SHUTTER SPEED SELECTOR (cf. p. 6)

18-0157	Shutter Speed Selector (Unit)
13-8135	Click Spring
13-8141	Click Desk
13-8146	Nut
13-8161	Flash Cam
19-9540	Flash Switch Lever (B.P.)
19-9541	Shutter Speed Selector Base(B.P.)
19-9580	Shutter Speed Cam
97-1088	Bearing
97-4062	Screw
97-4063	Screw
97-6138	Spring
X11-140187	Screw×2
X14-170157	Screw×3
X32-502310	Washer×N
X32-502311	
X32-502312	
X32-504131	Washer
X71-7001	Steel Ball
X98-050369	Washer

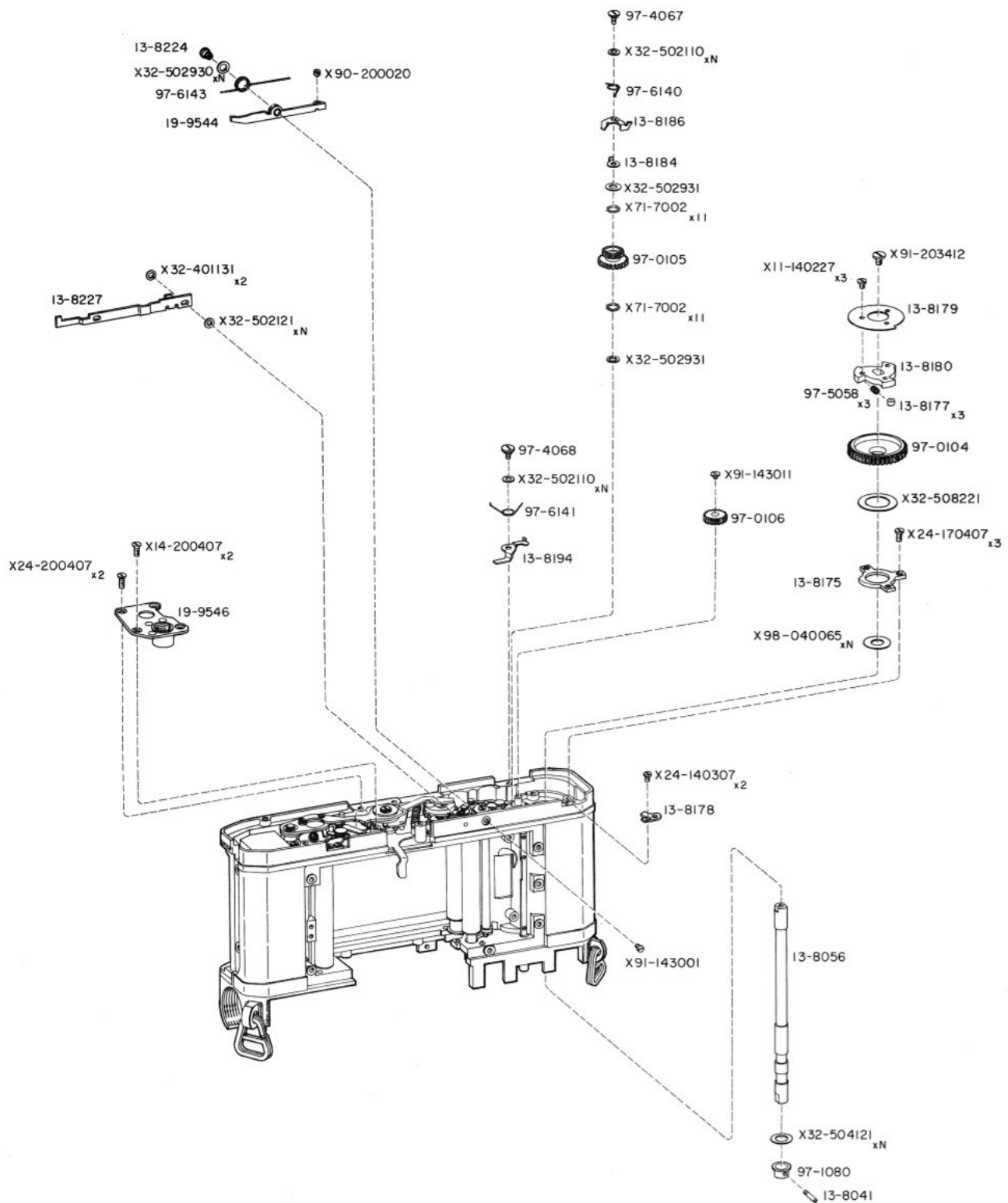
FLASH CIRCUIT (cf. p. 6)

13-2041	Insulator
13-2491	Insulator
13-8142	Lug
13-8143	X Contact
X91-143010	Screw×2

FILM COUNTER (cf. p. 6)

18-0164	Film Counter (Unit)
13-8023	Nut
13-8033	Nut
13-8035	Washer
19-9523	Stopper Claw (B.P.)
19-9524	Feeding Claw (B.P.)
19-9526	Counter Gear (B.P.)
19-9535	Film Counter Base (B.P.)
19-9576	Collar (B.P.)
97-4071	Screw
97-5061	Coil Spring
97-6132	Spring
97-6133	Spring
97-6155	Spring
97-6156	Spring
X32-401131	Retaining Washer
X32-502121	Washer×N
X32-502122	
X98-070370	Washer×N
X98-070371	
X98-070372	

EXPLODED VIEW
of
CANON CAMERA MODEL FX



SCALE 1-1.5

CANON CAMERA CO., INC. ©

PARTS LIST

WINDING MECHANISM (cf. p. 1)

13-8041	Screw
13-8056	Winding Shaft
13-8175	Winding Gear Bearing
13-8177	Roller×3
13-8178	Stopper
13-8179	Cover Plate
13-8180	Free Wheel Cam
97-0104	Winding Gear
97-1080	Winding Collar
97-5058	Coil Spring×3
X11-140227	Screw×3
X24-140307	Screw×2
X24-170407	Screw×3
X32-504121	Washer×N
X32-504122	
X32-508221	Washer
X91-203412	Screw
X98-040065	Washer×N
X98-040066	

REWIND CLAMP LEVER

13-8194	Rewind Clamp Lever
97-4068	Screw
97-6141	Spring
X32-502110	Washer×N

IDLE GEAR (cf. p. 12)

13-8184	Spring Hanger
13-8186	Clutch Release Lever
97-0105	Step Gear
97-0106	Idle Gear
97-4067	Screw
97-6140	Spring
X32-502110	Washer×N
X32-502111	
X32-502931	Washer
X71-7002	Steel Ball×22
X91-143011	Screw

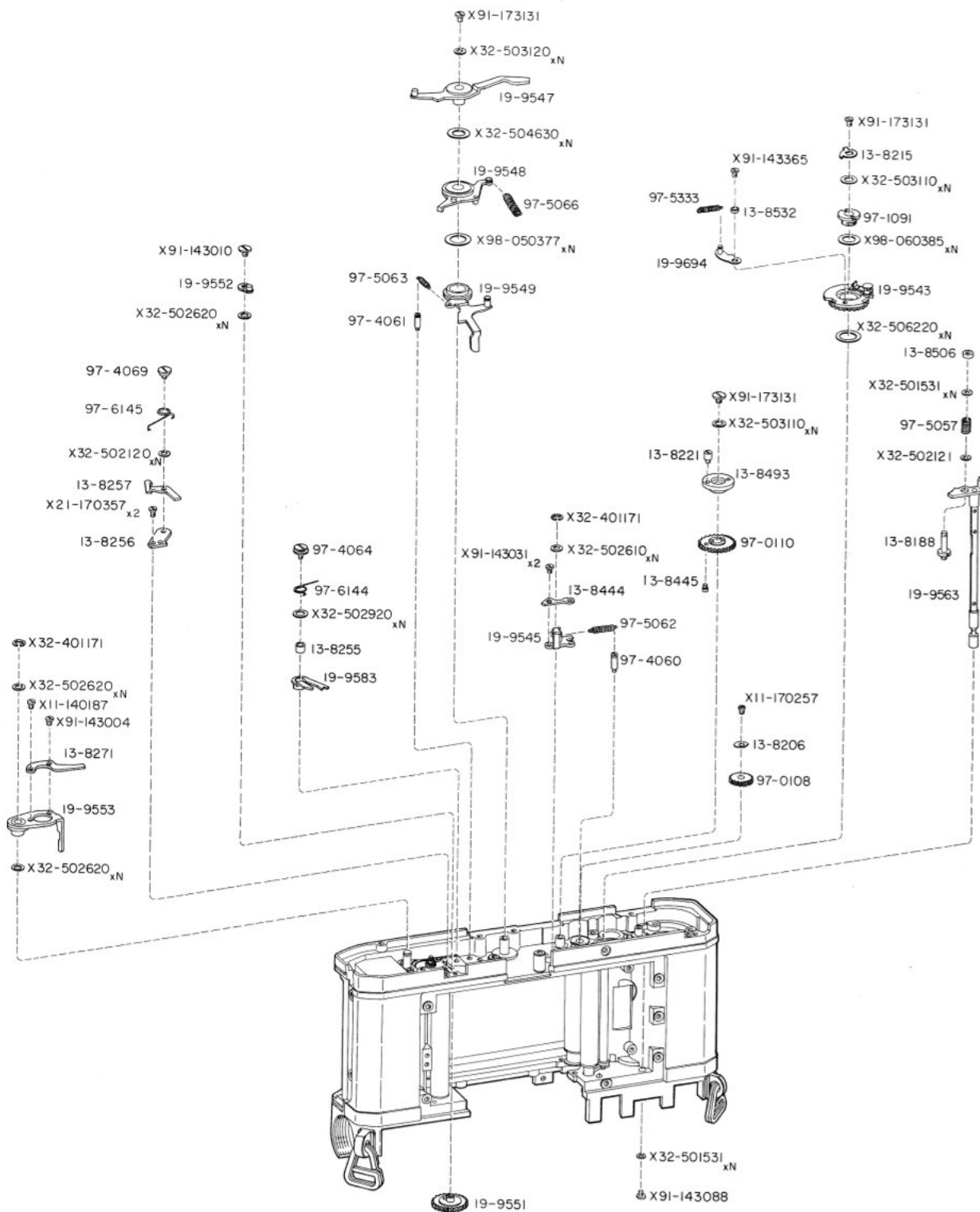
REFLECTOR RELEASE LEVER (cf. p. 9)

13-8224	Release Lever Shaft
13-8227	Release Rod
19-9544	Release Lever (B.P.)
97-6143	Spring
X32-401131	Retaining Washer×2
X32-502121	Washer×N
X32-502122	
X32-502930	Washer×N
X32-502931	
X32-502932	
X90-200020	Screw
X91-143001	Screw

TRIPOD SOCKET

19-9546	Tripod Socket (B.P.)
X14-200407	Screw×2
X24-200407	Screw×2

EXPLODED VIEW of CANON CAMERA MODEL FX



SCALE 1-1.5

CANON CAMERA CO., INC. ©

PARTS LIST

SHUTTER RELEASE SAFETY DEVICE

13-8215	Shutter Charge Pawl
13-8532	Collar
19-9543	Shutter Charge Gear (B.P.)
19-9694	Brake Lever (B.P.)
97-1091	Assemble Collar
97-5333	Coil Spring
X32-503110	Washer × N
X32-503111	
X32-503112	
X32-503113	
X32-506220	Washer × N
X32-506221	
X91-143365	Screw
X91-173131	Screw
X98-060385	Washer × N
X98-060386	

REFLECTOR CHARGE MECHANISM (cf. p. 5)

13-8221	Screw
13-8255	Collar
13-8256	Reflector Clamp Lever Base
13-8257	Reflector Clamp Lever
13-8271	Reflector Charge Lever
13-8445	Screw
13-8493	Reflector Charge Disk
19-9547	Reflector Charge Lever (B.P.)
19-9551	Reflector Reset Gear (B.P.)
19-9553	Reflector Charge Lever (B.P.)
19-9583	Hook Lever (B.P.)
97-0110	Reflector Charge Gear
97-4064	Screw
97-4069	Screw
97-6144	Spring
97-6145	Spring
X11-140187	Screw
X21-170357	Screw × 2
X32-401171	Retaining Washer
X32-502120	Washer × N
X32-502121	
X32-502620	Washer × N
X32-502621	
X32-503110	Washer × N
X32-503111	
X32-503112	

X32-503120	Washer × N
X32-503121	
X32-504630	Washer × N
X32-504631	
X91-173131	Screw × 2

SHUTTER BUTTON (cf. p. 1)

13-8188	Shutter Shaft Guide
13-8506	Nut
19-9563	Shutter Button Guide (B.P.)
97-5057	Coil Spring
X32-501531	Washer × N
X32-501532	
X32-502121	Washer
X91-143011	Screw

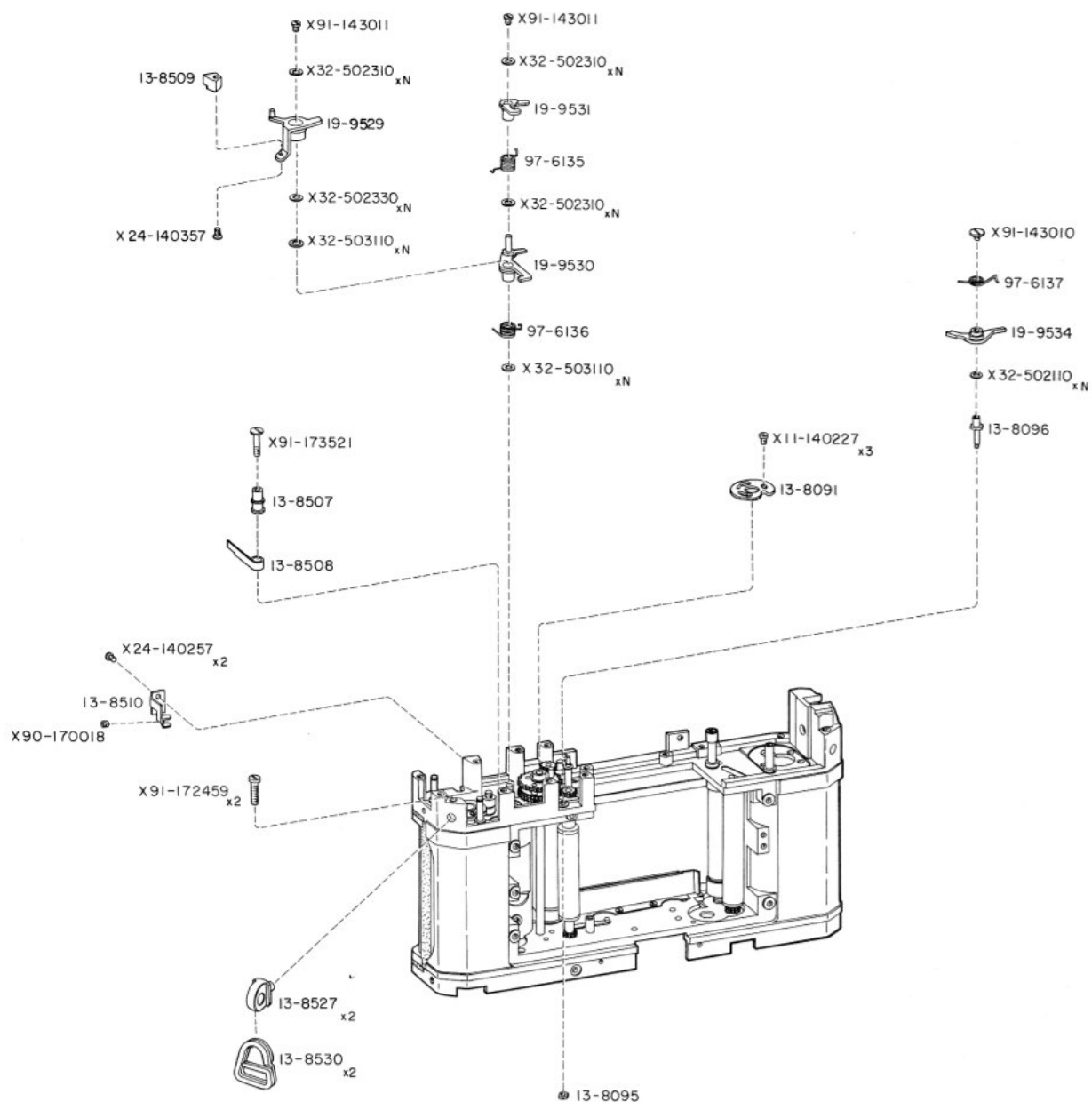
DIAPHRAGM OPERATION MECHANISM

13-8444	Diaphragm Clamp Lever
19-9545	Diaphragm Release Lever (B.P.)
19-9548	Diaphragm Reset Lever (B.P.)
19-9549	Diaphragm Release Lever (B.P.)
19-9552	Diaphragm Reset Lever (B.P.)
19-4060	Screw
97-4061	Screw
97-5062	Coil Spring
97-5063	Coil Spring
97-5066	Coil Spring
X32-401171	Retaining Washer
X32-502610	Washer × N
X32-502611	
X32-502612	
X32-502620	Washer × N
X32-502621	
X32-503120	Washer × N
X32-503121	
X32-504630	Washer × N
X32-504631	
X91-143010	Screw
X91-143031	Screw × 2
X91-173131	Screw
X98-050377	Washer × N
X98-050278	

IDLE GEAR (cf. p. 8)

13-8206	Idle Gear Holder
97-0108	Idle Gear
X11-170257	Screw

EXPLODED VIEW
of
CANON CAMERA MODEL FX



PARTS LIST

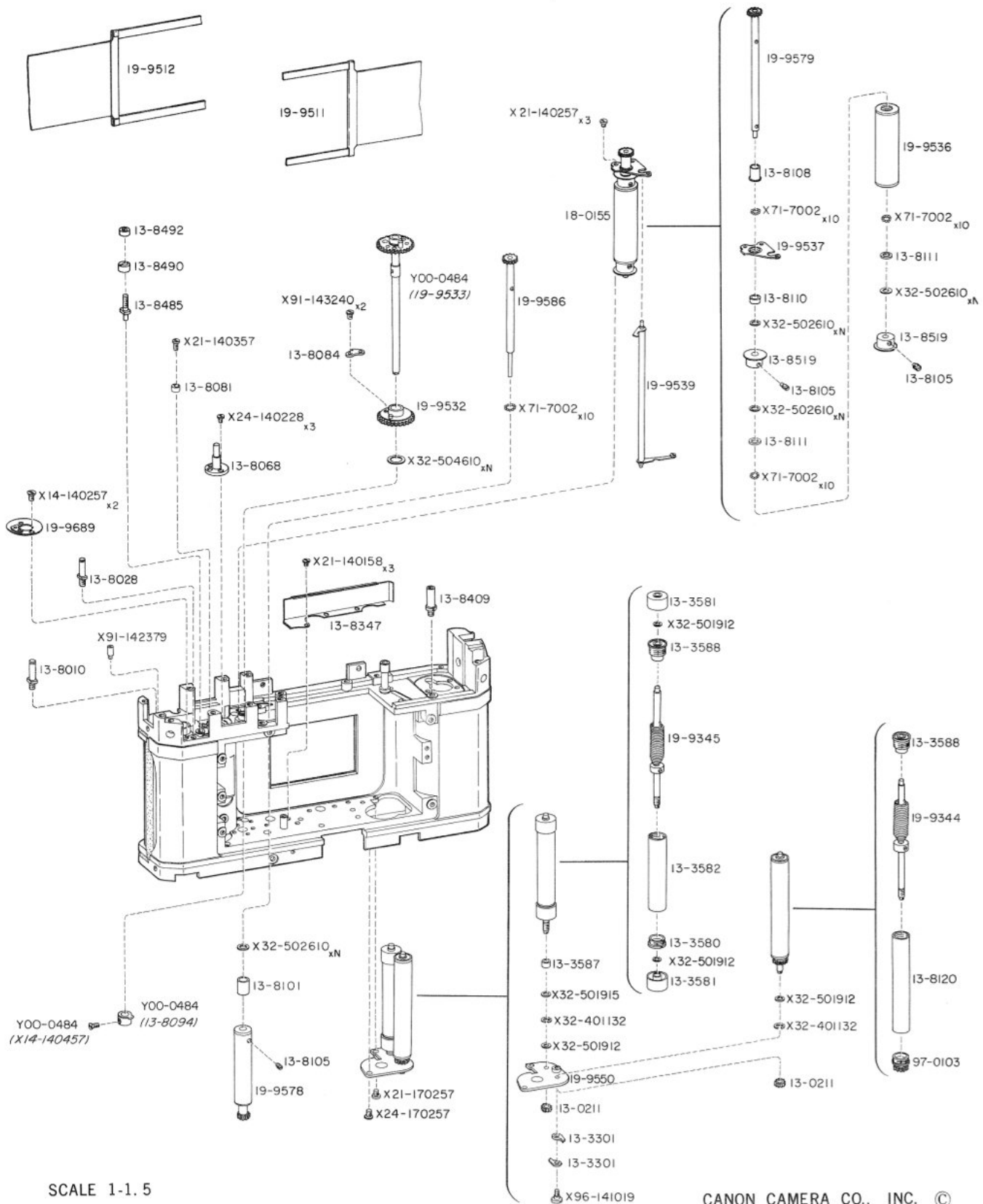
SHUTTER MECHANISM

13-8091	Release Cam
13-8095	Nut
13-8096	Release Lever Shaft
13-8507	1st Curtain Brake Shaft
13-8508	Brake Band
13-8509	1st Curtain Brake Head
13-8510	Brake Band Holder
19-9529	1st Curtain Brake (B.P.)
19-9530	2nd Curtain Release Lever (B.P.)
19-9531	2nd Curtain Release Lever (B.P.)
19-9534	Shutter Release Lever (B.P.)
97-6135	Spring
97-6136	Spring
97-6137	Spring
X11-140227	Screw×3
X24-140257	Screw×2
X24-140357	Screw
X32-502110	Washer×N
X32-502111	
X32-502310	Washer×N
X32-502311	
X32-502330	Washer×N
X32-502331	
X32-502332	
X32-503110	Washer×N
X32-503111	
X32-503112	
X90-170018	Screw
X91-143010	Screw
X91-143011	Screw
X91-173521	Screw

NECK STRAP ADAPTER

13-8527	Neck Strap Catch×2
13-8530	Neck Strap Adapter×2
X91-172459	Screw×2

EXPLODED VIEW
of
CANON CAMERA MODEL FX



SCALE 1-1.5

CANON CAMERA CO., INC. ©

PARTS LIST

SHUTTER MECHANISM (cf. p. 10)

Y00-0484 1st Curtain Gear (Unit)

n.b. Y00-0844 is consisted of three parts, i.e.,
13-8094, 19-9533, and X14-140457 as an unit,
and we don't supply them separately to you
from the point of its ability.

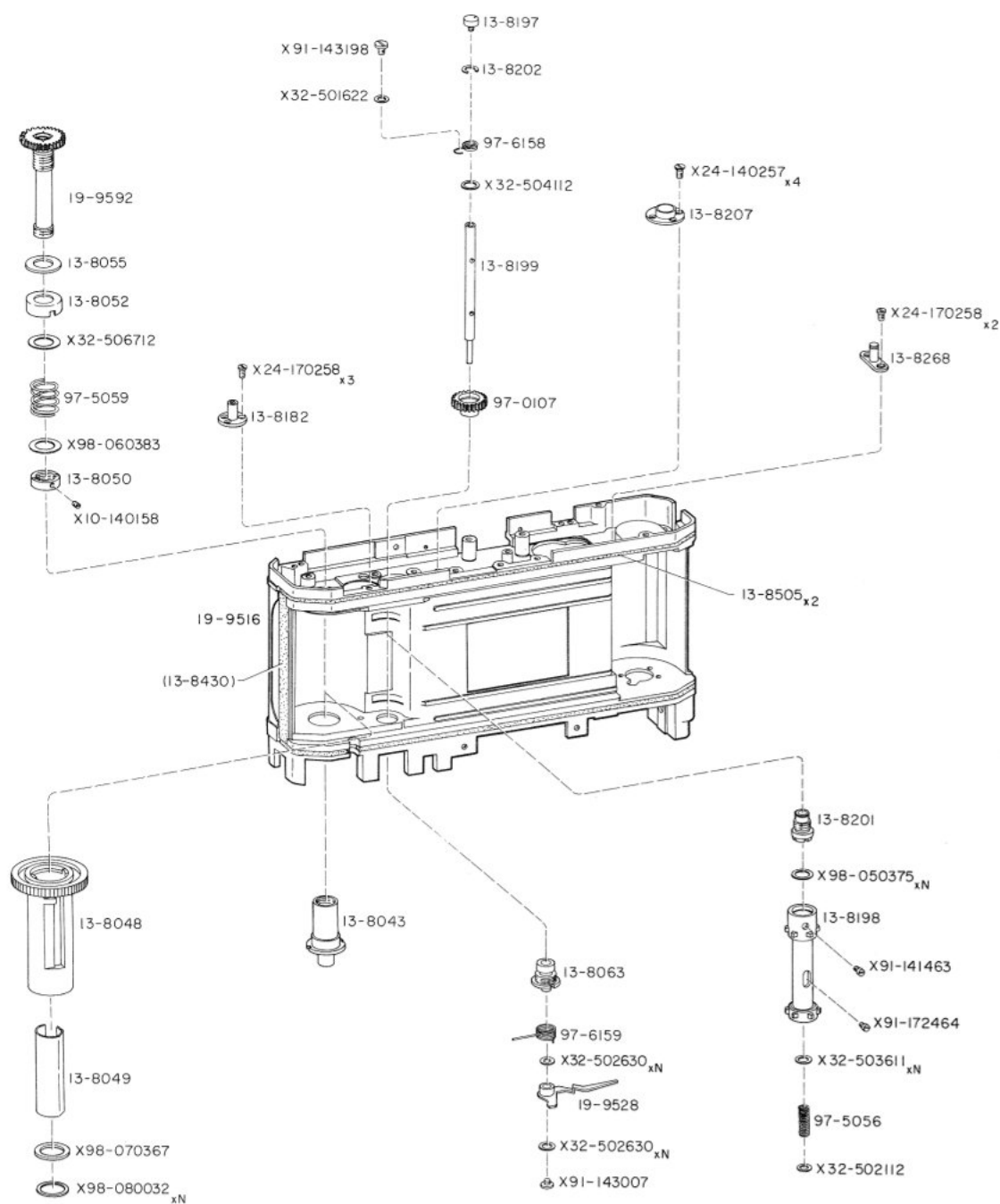
13-0211 Ratchet Nut×2
13-3301 Claw×2
13-3580 Flange
13-3581 Roller
13-3582 1st Curtain Drum
13-3587 Collar
13-3588 Nut
13-8068 Brake Shaft
13-8081 Eccentric Ring
13-8084 Hook
13-8101 Collar
13-8105 Screw×3
13-8108 Collar
13-8110 Collar
13-8111 Washer×2
13-8120 2nd Curtain Spring Drum
13-8347 Light Shield
13-8409 Meter Supporter
13-8485 Stopper
13-8490 Eccentric Ring
13-8492 Nut
13-8519 Flange×2
18-0155 1st Curtain Drum (Unit)
19-9344 2nd Curtain Spring (B.P.)
19-9345 1st Curtain Spring (B.P.)
19-9511 1st Curtain (B.P.)
19-9512 2nd Curtain (B.P.)
19-9532 2nd Curtain Gear (B.P.)
19-9536 1st Curtain Drum (B.P.)
19-9537 1st Curtain Drum Base (B.P.)
19-9539 Anchor Release Link (B.P.)
19-9550 Shutter Spring Base (B.P.)
19-9778 2nd Curtain Drum (B.P.)
19-9579 1st Curtain Drum Shaft (B.P.)
19-9586 2nd Curtain Drum Shaft (B.P.)
97-0103 2nd Curtain Spring Gear
X21-140158 Screw×3
X21-140257 Screw×3

X21-140357 Screw
X21-170257 Screw
X24-140228 Screw×3
X24-170257 Screw
X32-401132 Retaining Washer×2
X32-501912 Washer
X32-501915 Washer
X32-502610 Washer×N
X32-502611
X32-504610 Washer×N
X32-504611
X32-504612
X71-7001 Steel Ball×40
X91-143240 Screw×2
X96-141019 Screw

FILM COUNTER (cf. pp. 6 & 7)

13-8010 Reset Lever Shaft
13-8028 Connect Lever Shaft
19-9689 Counter Cam (B.P.)
X14-140257 Screw×2
X91-142379 Screw

EXPLODED VIEW
of
CANON CAMERA MODEL FX



SCALE 1-1.5

CANON CAMERA CO., INC. ©

PARTS LIST

TAKE-UP SPOOL (cf. p. 8)

13-8043	Spool Shaft
13-8048	Take-up Spool
13-8049	Spool Spring
13-8050	Nut
13-8052	Spring Cover
13-8055(0.6)	Fiber Washer
13-8055(0.8)	Such numbers(0.6), (0.8) and(1) indi-
13-8055(1)	cate thickness of Fiber Washers.
	(unit:mm)
19-9592	Take-up Spool Gear (B.P.)
97-5059	Spring
X10-140158	Screw
X32-506712	Washer
X98-060383	Washer
X98-070367	Washer
X98-080032	Washer×N
X98-080033	

SPROCKET

13-8063	Sprocket Bearing
13-8197	Rewind Button
13-8198	Sprocket
13-8199	Sprocket Shaft
13-8201	Sprocket Clutch
13-8202	Retainer
19-9528	2nd Curtain Brake (B.P.)
97-0107	Sprocket Gear
97-5056	Coil Spring
97-6158	Spring
97-6159	Spring
X32-501622	Washer
X32-502112	Washer
X32-502630	Washer×N
X32-502631	
X32-503611	Washer×N
X32-503612	
X32-504112	Washer
X91-141463	Screw
X91-143007	Screw
X91-143198	Screw
X91-172464	Screw
X98-050375	Washer×N
X98-050376	

BODY CASE (cf. pp. 8 & 9)

13-8505	Light Shield×2
13-8182	Idle Gear Shaft
13-8207	Winding Gear Bearing
13-8268	Reflector Charge Lever Shaft
19-9516	Body Case
13-8430	Light Shield
X24-170257	Screw×4
X24-170258	Screw×5

PARTS NO.	PAGE	PARTS NO.	PAGE	PARTS NO.	PAGE	PARTS NO.	PAGE
13-8526	3	19-9545	9	97-0102	6	97-6146	5
13-8527	10	19-9546	8	97-0103	11	97-6147	5
13-8530	10	19-9547	9	97-0104	8	97-6148	4
13-8532	9	19-9548	9	97-0105	8	97-6149	5
		19-9549	9	97-0106	8	97-6155	7
		19-9550	11	97-0107	12	97-6156	7
18-0124	6	19-9551	9	97-0108	9	97-6157	2
18-0125	6	19-9552	9	97-0110	9	97-6158	12
18-0131	2	19-9553	9	97-1080	8	97-6159	12
18-0141	3	19-9555	5	97-1088	7	97-6161	4
18-0155	11	19-9556	4	97-1091	9	97-6162	1
18-0157	6	19-9557	5	97-4060	9	97-6163	1
18-0161	1	19-9558	4	97-4061	9		
18-0162	1	19-9559	5	97-4062	7	97-6322	1
18-0164	6	19-9560	5	97-4063	7		
18-0165	4	19-9561	5	97-4064	9		
		19-9562	4	97-4065	4,5		
19-9278	4	19-9563	9	97-4066	5	X10-140157	2
19-9344	11	19-9564	5	97-4067	8	X10-140158	12
19-9345	11	19-9565	6	97-4068	8		
19-9511	11	19-9566	6	97-4069	9		
19-9512	11	19-9568	2	97-4070	5	X11-120123	4
19-9516	12	19-9569	2	97-4071	7	X11-140128	6
19-9517	1	19-9570	1	97-5056	12	X11-140187	1,7,9
19-9518	4	19-9572	1	97-5057	9	X11-140189	6
19-9519	5	19-9574	1	97-5058	8	X11-140227	8,10
19-9520	4	19-9575	1	97-5059	12	X11-170187	1
19-9521	3	19-9576	7	97-5060	6	X11-170227	2
19-9522	6	19-9577	1	97-5061	7	X11-170257	9
19-9523	7	19-9578	11	97-5062	9	X11-170258	2
19-9524	7	19-9579	11	97-5063	9		
19-9525	6	19-9580	7	97-5064	5		
19-9526	7	19-9581	1	97-5065	4	X14-140157	1, 7
19-9528	12	19-9582	1	97-5066	9	X14-140227	3,4
19-9529	10	19-9583	9	97-5067	1	X14-140257	11
19-9530	10	19-9584	4	97-5333	9	X14-200407	8
19-9531	10	19-9585	3	97-6131	6		
19-9532	11	19-9586	11	97-6132	7		
19-9534	10	19-9589	2	97-6133	7	X21-140158	3,5,11
19-9535	7	19-9590	3	97-6135	10	X21-140188	4
19-9536	11	19-9592	12	97-6136	10	X21-140208	3
19-9537	11	19-9679	2	97-6137	10	X21-140257	11
19-9538	6	19-9686	1	97-6138	7	X21-140288	3
19-9539	11	19-9688	4	97-6139	1	X21-140357	11
19-9540	7	19-9689	11	97-6140	8	X21-170188	5
19-9541	7	19-9694	9	97-6141	8	X21-170257	11
19-9542	6			97-6143	8	X21-170258	2,3
19-9543	9			97-6144	9	X21-170287	6
19-9544	8			97-6145	9	X21-170307	1

INDEX OF PARTS NUMBERS

PARTS NO.	PAGE	PARTS NO.	PAGE	PARTS NO.	PAGE	PARTS NO.	PAGE
Y00-0456	4	13-8065	3	13-8207	12	13-8400	1
Y00-0484	11	13-8068	11	13-8215	9	13-8401	1
		13-8081	11	13-8221	9	13-8405	2
		13-8084	11	13-8224	8	13-8406	2
10-0002	3	13-8091	10	13-8227	8	13-8409	11
10-0004	3	13-8095	10	13-8255	9	13-8410	2
10-0060	3	13-8096	10	13-8256	9	13-8411	2
10-0061	3	13-8101	11	13-8257	9	13-8412	2
10-0122	1	13-8105	11	13-8268	12	13-8413	1
		13-8108	11	13-8271	9	13-8415	1
		13-8110	11	13-8275	4	13-8417	1
13-0211	11	13-8111	11	13-8277	4	13-8418	1
13-0991	4	13-8117	6	13-8287	5	13-8419	1
13-0993	4	13-8118	6	13-8293	5	13-8426	4
13-0995	4	13-8120	11	13-8307	4	13-8427	4
13-0998	4	13-8131	6	13-8320	4	13-8429	1
13-2041	2,6,7	13-8132	6	13-8321	6	13-8430	12
13-2218	4	13-8035	7	13-8322	6	13-8431	4
13-2294	4	13-8141	7	13-8323	6	13-8432	4
13-2436	2	13-8142	7	13-8326	4	13-8533	4
13-2491	7	13-8143	7	13-8327	4	13-8435	1
13-3174	3	13-8146	7	13-8328	5	13-8438	1
13-3301	11	13-8147	2	13-8329	4	13-8440	1
13-3580	11	13-8148	2	13-8330	3	13-8444	9
13-3581	11	13-8150	1	13-8331	4	13-8445	9
13-3582	11	13-8154	1	13-8338	4	13-8480	4
13-3587	11	13-8155	1	13-8340	3	13-8484	1
13-3588	11	13-8156	1	13-8341	3	13-8485	11
13-3730	3	13-8157	1	13-8342	3	13-8488	3
13-3822	3	13-8161	7	13-8343	4	13-8489	3
13-8010	11	13-8164	1	13-8344	3	13-8490	11
13-8023	7	13-8165	1	13-8345	5	13-8492	11
13-8028	11	13-8167	1	13-8346	4	13-8493	9
13-8032	6	13-8175	8	13-8347	11	13-8497	1
13-8033	7	13-8177	8	13-8349	3	13-8503	5
13-8035	7	13-8178	8	13-8354	3	13-8504	5
13-8041	8	13-8179	8	13-8356	3	13-8505	12
13-8043	12	13-8180	8	13-8364	4	13-8506	9
13-8048	12	13-8182	12	13-8367	2	13-8507	10
13-8049	12	13-8184	8	13-8368	2	13-8508	10
13-8050	12	13-8186	8	13-8369	2	13-8509	10
13-8052	12	13-8188	9	13-8370	2	13-8510	10
13-8055	12	13-8194	8	13-8371	2	13-8511	5
13-8056	8	13-8197	12	13-8372	2	13-8515	5
13-8057	1	13-8198	12	13-8386	2	13-8516	4
13-8059	1	13-8199	12	13-8387	2	13-8517	4
13-8061	1	13-8201	12	13-8388	2	13-8519	11
13-8062	1	13-8202	12	13-8392	2	13-8521	4
13-8063	12	13-8206	9	18-8393	2	13-8525	3

PARTS NO.	PAGE	PARTS NO.	PAGE	PARTS NO.	PAGE	PARTS NO.	PAGE
X21-170328	2	X32-502611	1,9,11	X91-143004	6,9	X98-070370	7
X21-170357	6,9	X32-502612	9	X91-143007	4,12	X98-070371	7
X21-170607	3	X32-502620	2,9	X91-143010	7,9,10	X98-070372	1,7
		X32-502621	2,9	X91-143011	8,9,10	X98-070373	1
		X32-502630	12	X91-143031	9	X98-070374	1
		X32-502631	12	X91-143094	1,2	X98-080032	12
X24-140228	4	X32-502930	8	X91-143120	2,6	X98-080033	12
X24-140257	10	X32-502931	8	X91-143125	6		
X24-140307	8	X32-502932	8	X91-143198	12		
X24-140357	10	X32-503110	9	X91-143240	11		
X24-170228	4,11	X32-503111	9	X91-143249	2		
X24-170257	11,12	X32-503112	9	X91-143365	9		
X24-170258	12	X32-503113	9	X91-143461	6		
X24-170287	6	X32-503120	9	X91-143462	6		
X24170306	3	X32-503121	9	X91-172459	10		
X24-170358	4	X32-503611	12	X91-172464	12		
X24-170407	8	X32-503612	12	X91-173012	6		
X24-170508	4	X32-504112	12	X91-173131	9		
X24-200287	6	X32-504121	1,8	X91-173219	2		
X24-200407	4,8	X32-504122	1,8	X91-173521	10		
		X32-504131	7	X91-173505	1		
		X32-504610	11	X91-203412	8		
X25-170226	1,3	X32-504611	11				
X25-140306	1	X32-504612	11	X93-140033	4		
		X32-504630	9				
		X32-504631	9	X95-170013	4		
X32-401131	1,6,7,8	X32-506220	9				
X32-401132	11	X32-506221	9	X96-141019	11		
X32-401171	1,9	X32-506712	12	X96-142171	4		
				X96-172167	5		
				X96-172168	5		
X32-501531	9	X62-6105	6	X96-172169	5		
X32-501532	9			X96-172170	5		
X32-501622	12	X71-7001	1,2,7				
X32-501912	11	X71-7002	8				
X32-501915	11			X98-020205	4		
X32-502110	8,10			X98-020206	4		
X32-502111	8,10	X90-170018	10	X98-030125	4		
X32-502112	12	X90-200020	8	X98-040065	8		
X32-502120	4,9			X98-040066	8		
X32-502121	1,4,6,7,8,9			X98-050369	7		
X32-502122	1,5,6,7,8			X98-050375	12		
X32-502310	5,10	X91-141463	12	X98-050376	12		
X32-502311	5,10	X91-142201	4	X98-050377	9		
X32-502312	5	X91-142379	11	X98-050378	9		
X32-502330	10	X91-142460	6	X98-060383	12		
X32-502331	10	X91-142465	5	X98-060385	9		
X32-502332	10	X91-142466	5	X98-060386	9		
X32-502610	1,9,11	X91-143001	8	X98-070367	12		

CANON REPAIR GUIDE

CANON CAMERA MODEL FX

(REFERENCE NO. 1-20301)

CANON CAMERA COMPANY, INC.

TOKYO, JAPAN

PREFACE

Canon FX 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 FX is enjoying full confidence of its buyers as a high quality easy to handle single lens reflex camera.

Because of the above-mentioned manufacturing system, FX 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., Inc. is prepared to supply sufficient parts and tools for performing these repairs.

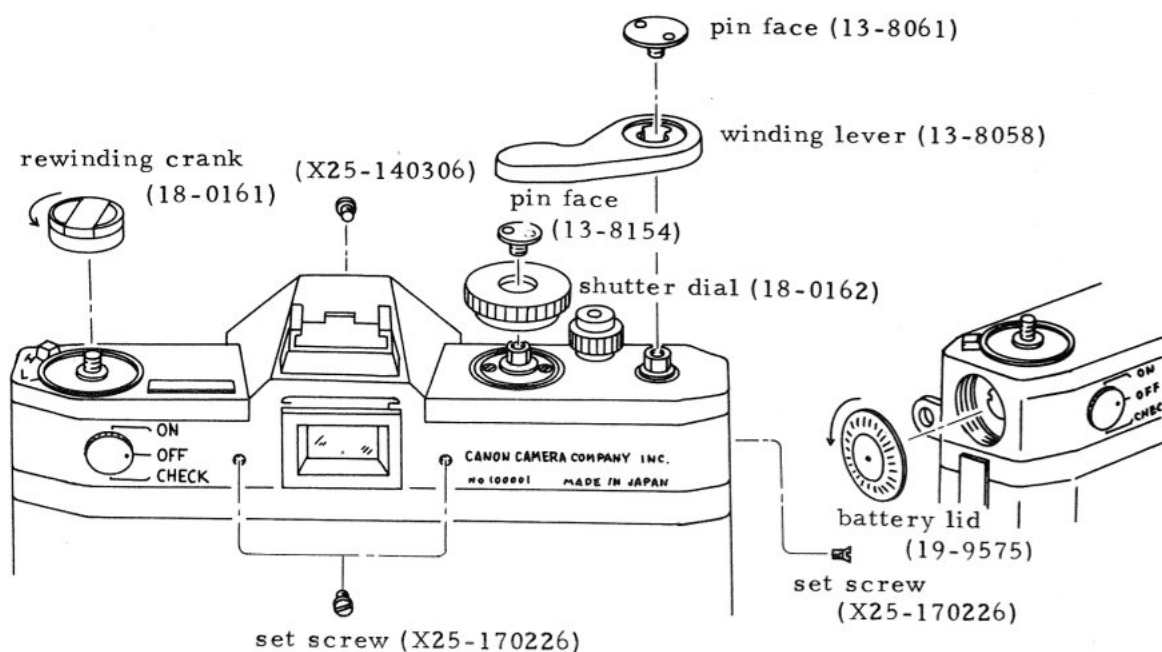
For details as to ordering of parts and tools, please send your inquiries to,

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

TABLE OF CONTENTS

Disassembling Method	Page
Top Cover	4
Base Plate	5
Front Panel	6
Penta Prism Box	7
CdS Meter	8
Meter Contact	9
Governor	10
Winding Shaft	11
Take Up Spool	12
Film Counter & Shutter Speed Selector	13
Adjusting Method	
1st Curtain Drum	14
2nd Curtain Drum	15
Master Gear	16
1st Curtain Brake	18
Shutter Stroke	19
Shutter Release	21
High Speed Shutter	22
Slow Shutter	23
Take Up Spool	25
Sprocket	27
Shutter Charge Gear	29
Position of Perforation	30
Meter Scale	31
CdS Meter	33
Meter Contact	34
Time Lag	35
Film Counter	36
Every Levers	37
Reflector	39
Trouble, Cause & Remedy	
Winding	41
Rewinding	45
Shutter	45
Self Timer	49
Reflector	49
Film Counter	50
CdS Meter	51
Synchronization	53
Diaphragm Lever	53
Focus	54
Back Cover	54

TOP COVER DISASSEMBLING



operations

process & n.b.

1. Take out winding lever.

Take out pin face.
(13-8061)

Take out winding lever.
(13-8058)

- n.b. 1. Take out ironware (13-8062, 13-8059, 13-8057) together with the lever, which is attached to the winding lever.
2. Don't lose washers for adjustment of height.

2. Take out shutter dial.

Take out pin face.
(13-8154)

Take out shutter dial.
(18-0162)

- n.b. At the time taking out shutter dial, set ASA 800, shutter speed B.

3. Take out rewinding crank

Take out rewinding crank.
(18-0161)

4. Take out battery lid.

Take out battery lid.
(19-9575)

5. Take out every set screw of top cover.

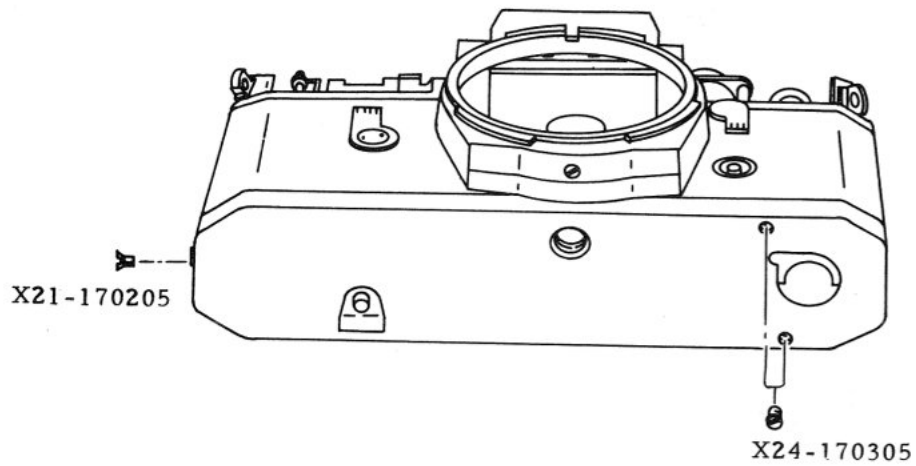
Take out side set screw.
(X25-170226)

Take out back set screw. x 2
(X25-170226)

Take out front set screw.
(X25-140306)

At the time taking out top cover, set shutter lock lever at A.

BASE PLATE DISASSEMBLING

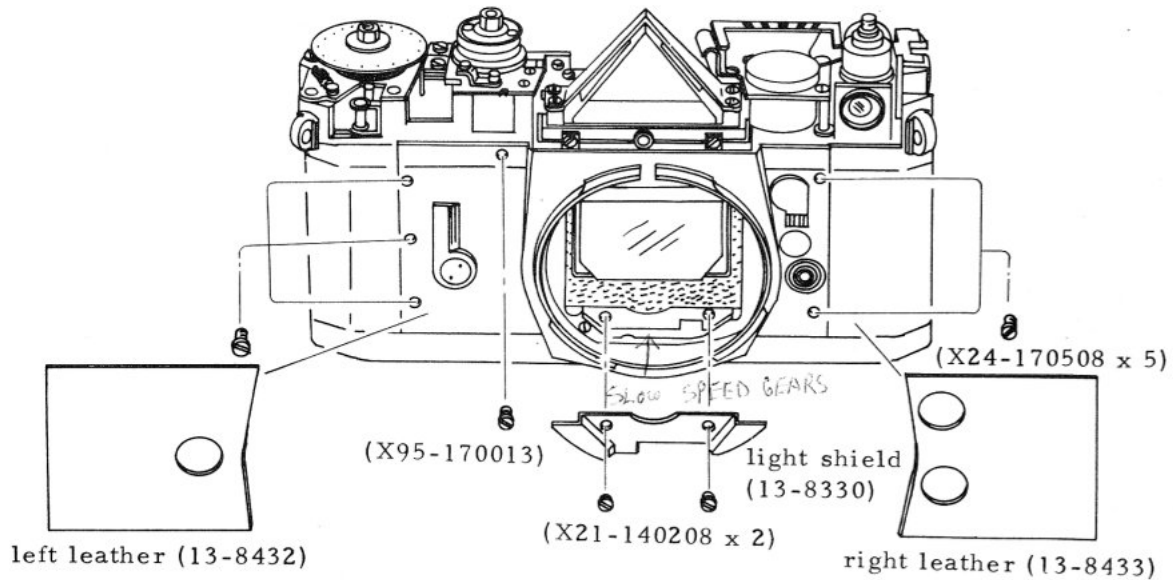


operations

process & n.b.

- | | | |
|---|--------------------------------------|---------------------------------------|
| 1. Take out set screw for
base plate | <u>set screw x 2</u>
(X24-170305) | <u>side set screw</u>
(X21-170226) |
| 2. Take out base plate | | |

FRONT PANEL DISASSEMBLING



operations

process & n.b.

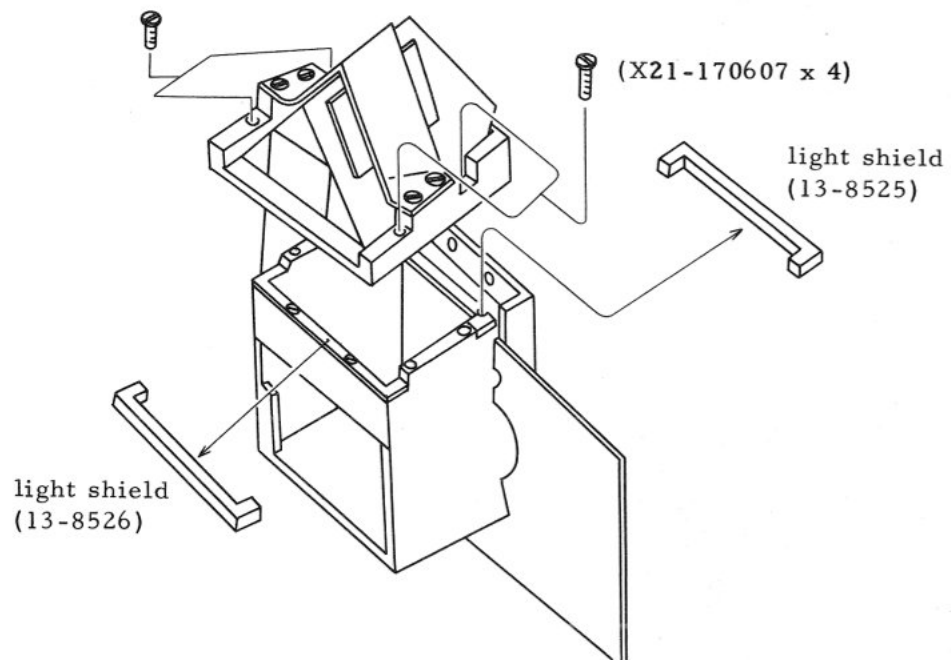
1. Take out leather.

<u>left leather</u>	<u>right leather</u>
(13-8432)	(13-8433)
2. Take out light shield

<u>set screw for light shield x 2</u>	<u>Take out light shield.</u>
(X21-140208)	(13-8330)
3. Take out every set screw for front panel.

<u>set screw x 5</u>	<u>set screw</u>
(X24-170508)	(X95-170013)

PENTAPRISM BOX DISASSEMBLING



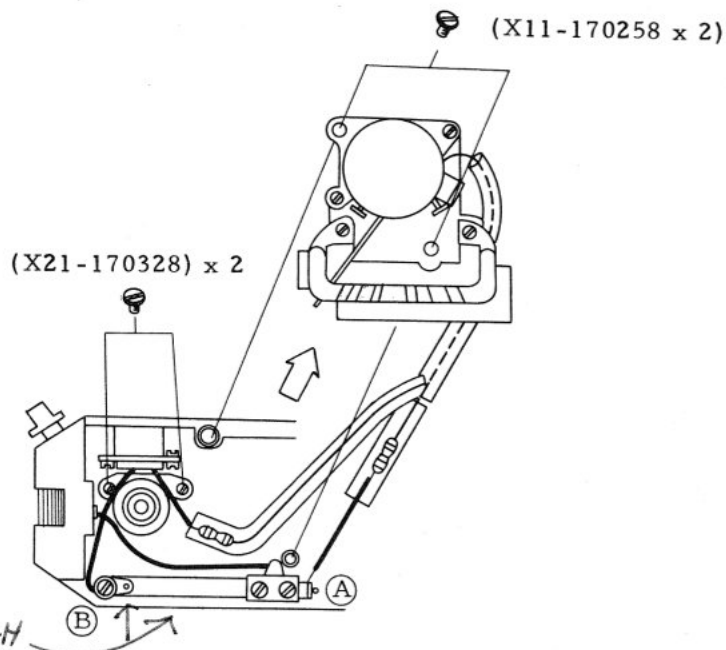
operations

1. Take out set screw for pentaprism box.
2. Take out pentaprism box.

process & n.b.

Take out set screw x 4
(X21-170607)

CdS METER DISASSEMBLING



IF METER CHECKER
WORKS BUT METER
DOESNIT CLEAN SWITCH
UNDER TOP - INREAR

operations

process & n.b.

1. Take out set screw for meter.

set screw for meter x 2
(X11-170258)

Take out meter.
(18-0131)

n.b. After taking out set screw for meter, pull the meter slowly to the direction of the arrow.

- 2 Take out solder.

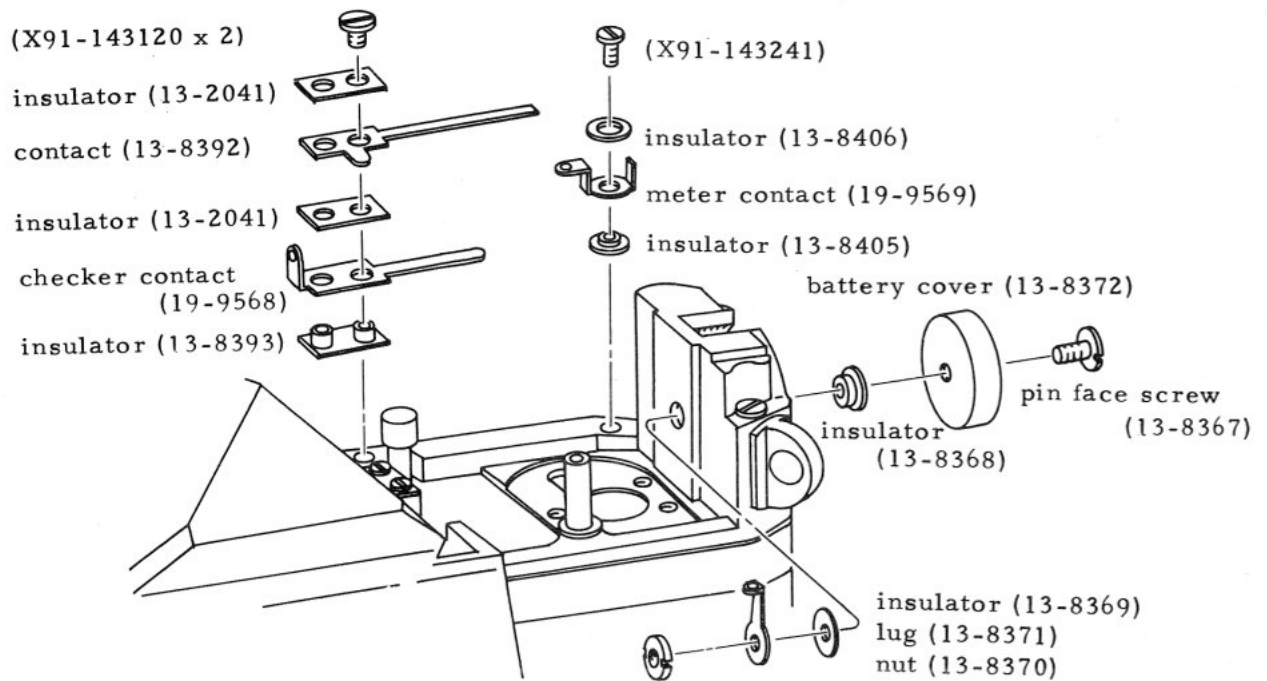
Take out solder A, B.

3. Take out set screw for CdS.

set screw for CdS x 2
(X21-170328)

Take out CdS.

METER CONTACT DISASSEMBLING



operations

process & n.b.

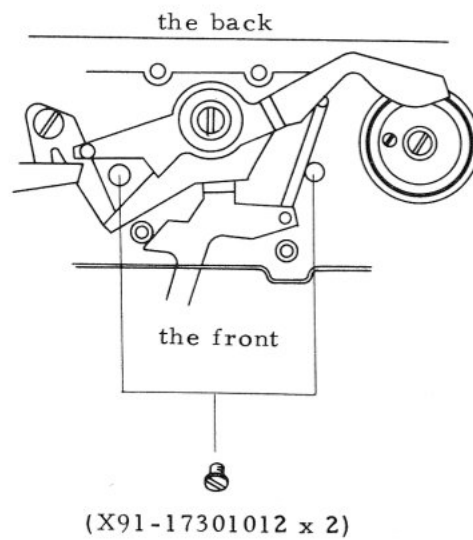
1. Take out meter contact.

<u>set screw</u> (X91-143241)	<u>insulator</u> (13-8406)	<u>meter contact</u> (19-9569)
<u>insulator</u> (13-8405)		
2. Take out battery cover.

<u>pin face screw</u> (13-8367)	<u>battery cover</u> (13-8372)	<u>insulator</u> (13-8368)
<u>nut</u> (13-8370)	<u>lug</u> (13-8371)	<u>insulator</u> (13-8369)
3. Take out contact and checker contact.

<u>Take out set screw x 2</u> (X91-143120)	<u>insulator</u> (13-2041)	<u>contact</u> (13-8392)
<u>insulator</u> (13-2041)	<u>checker contact</u> (19-9568)	<u>insulator</u> (13-8393)

GOVERNOR DISASSEMBLING



operations

1. Take out set screw for governor.

process & n.b.

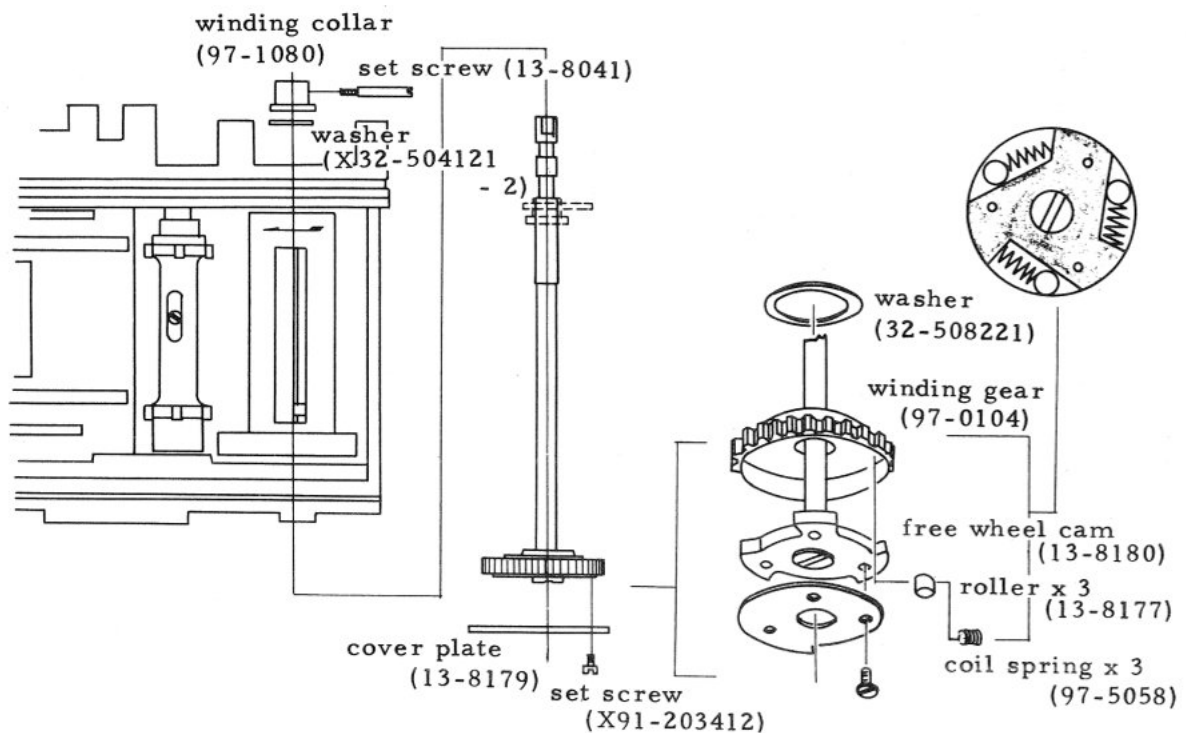
Take out set screw. x 2
(X91-173012)

n.b. The one of the set screws cannot be seen unless the winded condition is taken.

2. Take out governor.

Take out governor.
(18-0124)

WINDING SHAFT DISASSEMBLING



operations

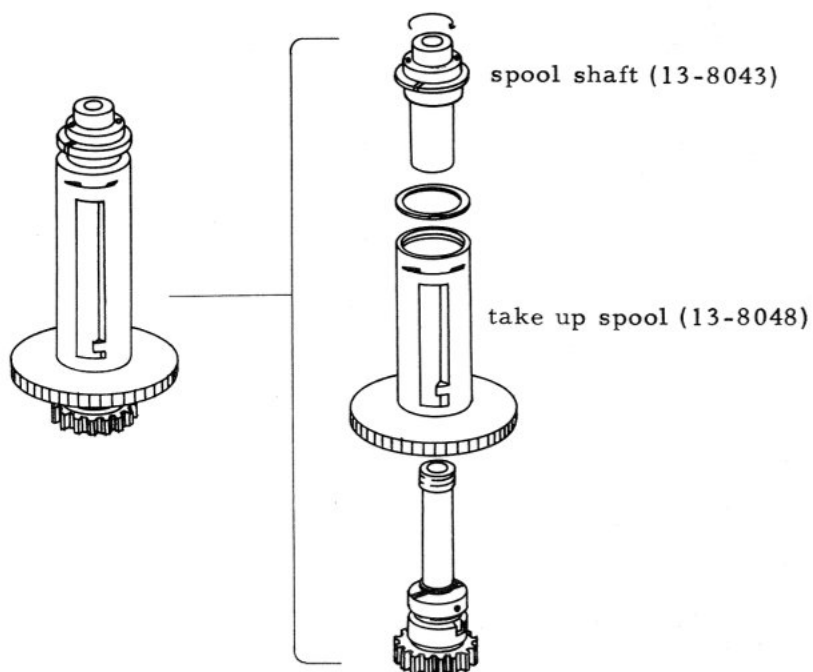
1. Take out winding shaft.

process & n.b.

<u>set screw</u> (13-8041)	<u>winding collar</u> (97-1080)	<u>washer</u> (X32-504121-2)
<u>set screw x 3</u> (X91-203412)	<u>cover plate</u> (13-8179)	Pull out winding shaft.

- n.b. It can be taken out free wheel cam, roller, coil spring, and winding gear altogether, however, the spring is easy to jump and lose, so that it had better take out roller and coil spring when the cover plate is taken out.

TAKE-UP SPOOL DISASSEMBLING



operations

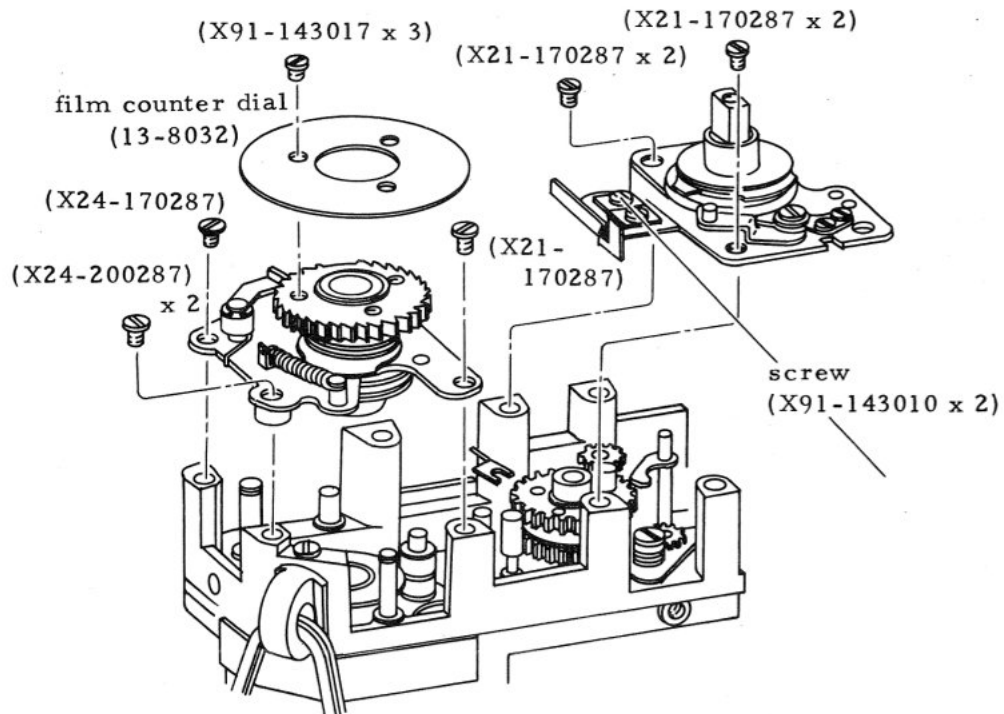
1. Take out take up spool.

process & n.b.

Fix our screw driver T06A-8043 into spool shaft (13-8043), turn to clockwise.

n.b. Pay attention to the spool shaft is screwed counter clock thread.

FILM COUNTER & SHUTTER SPEED SELECTOR DISASSEMBLING



operations

process & n.b.

1. Take out film counter.

Take out every set screw. set screw x 2 set screw x 2 set screw
(X24-200287) (X24-170287) (X21-170287)

Take out film counter.

2. Take out shutter speed selector.

Take out every set screw. set screw x 2 set screw x 2 screw
(X24-17287) (X21-170287) (X91-143010)

Loose one. Take out piece.

Take out shutter speed selector.
(18-0157)

n.b. Detach meter scale from pulley before taking out shutter speed selector.

1ST CURTAIN DRUM ADJUSTMENT

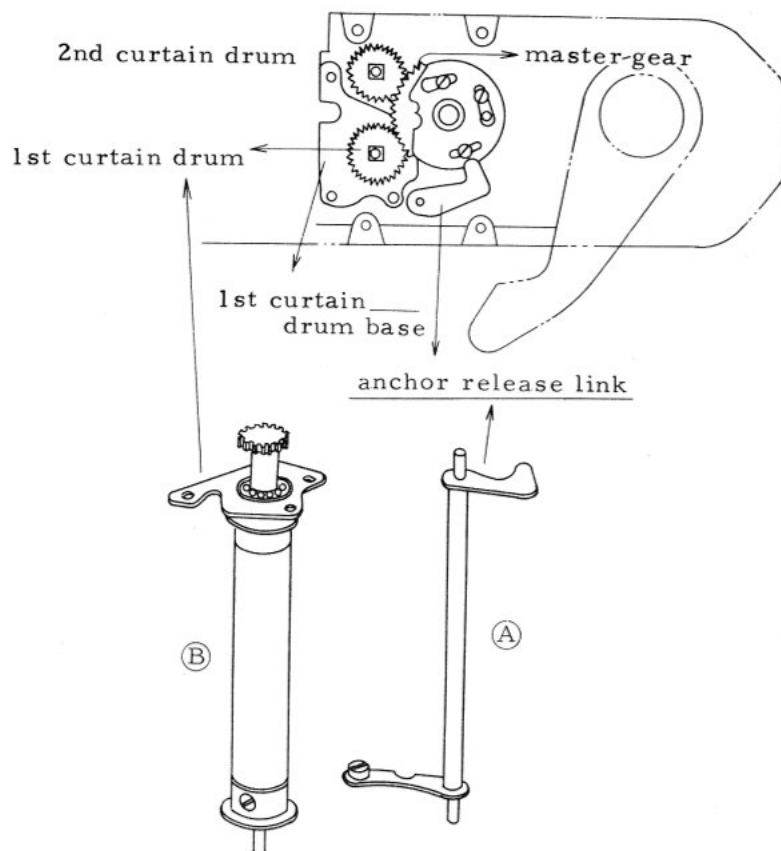
operations

process & n.b.

1. How to fix slow shutter link.

It is not possible to detach or fix anchor release link if 1st curtain drum is being fixed to the body, and moreover, at the time anchor release link will be fixed, 1st curtain drum must be in the detached condition. (Refer to the following diagram.)

- n.b. 1. At this time shutter speed selector is detached.
2. Place anchor release link in the body hole. (B part in the following diagram.)



2. How to fix 1st curtain drum.

Place the end B of the 1st curtain drum into the hole of the body and put the base plate and the body together temporary, and fasten the master gear and 1st curtain drum gear pushing a little bit to the direction that the space between the gears comes apart.

n.b. Put diabond to screws. At this moment don't put it to bearings.

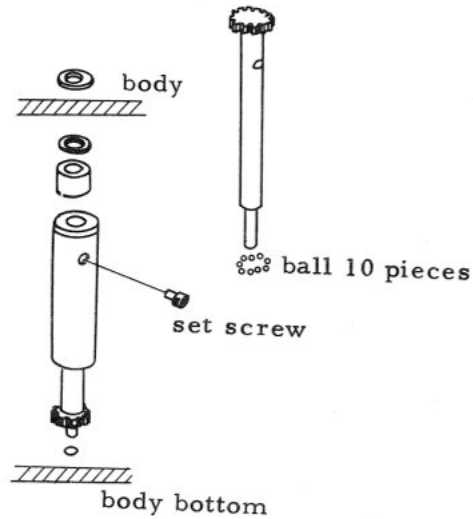
2ND CURTAIN DRUM ADJUSTMENT

operations

1. How to fix 2nd curtain drum.

process & n.b.

It is not possible to fix or to detach 2nd curtain drum if curtain is fixed on, and therefore, in the case of repair, only in the case of submergence, detach and fix the curtain. (Refer to the following diagram.)



- n.b.
1. Put in 10 balls. Lubricate GE-1.
 2. Fasten set screw of the drum tightly.
 3. Thrust loose must be approximately 0.1 - 0.2 mm.

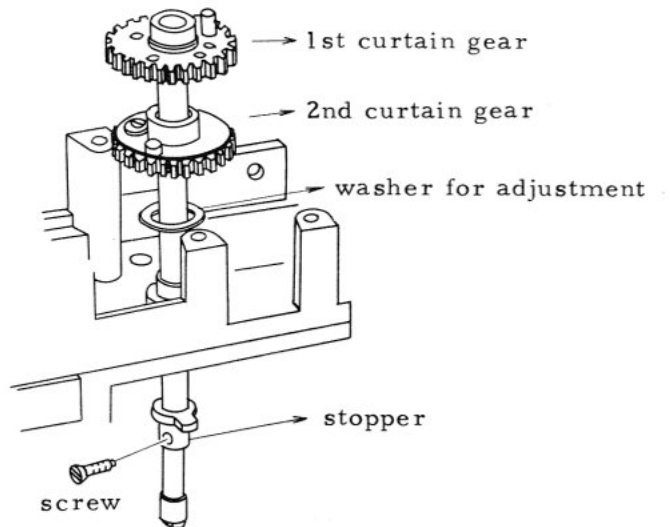
MASTER GEAR ADJUSTMENT

operations

process & n.b.

1. How to fix master gear

1-1 Process for assembly (Refer to the following diagram.)



1-1-1 Put 2nd curtain gear to 1st curtain gear, then put washer for adjustment.

1-1-2 Let it through the body.

1-1-3 Put stopper in.

n.b. At the time inserting stopper and fastening screw, loose up and down of 2nd curtain gear must be within 0.1 mm.

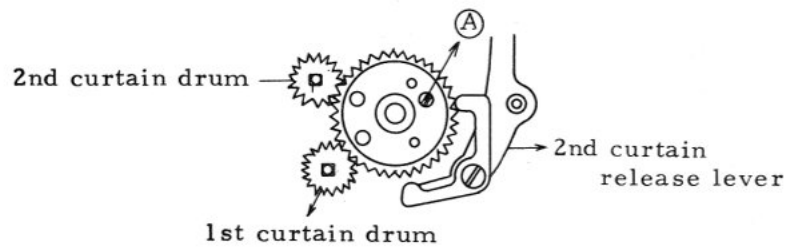
2. How to adjust.

2-1 How to adjust gearing.

2-1-1 Wind 2nd curtain drum up to 2nd curtain line of the body with finger, and gear it to 2nd curtain release lever and hook.

2-1-2 At this time let 1st curtain gear shaft through and insert stopper as the process mentioned at 1-1 item.

2-1-3 In the condition of which shutter is released, make the position A of 1st curtain gear as it must come as shown in the following diagram.



- 2-1-4 Wind up master gear with pincette or screw-driver, inspect gearing of curtain.
- 2-1-5 Concerning adjustment of curtain gearing, press 1st curtain drum and 2nd curtain drum with your fingers as they should not return to the starting on the way of winding, and adjust it turning 1st curtain gear.
- 2-1-6 After adjustment of curtain gearing, set the stopper with screw.
 - n.b. When the stopper is set to the master gear shaft, fasten tightly from the side of bigger hole.
- 2-1-7 In the condition of winded up, fix shutter charge pawl placing its end to the direction of back cover.

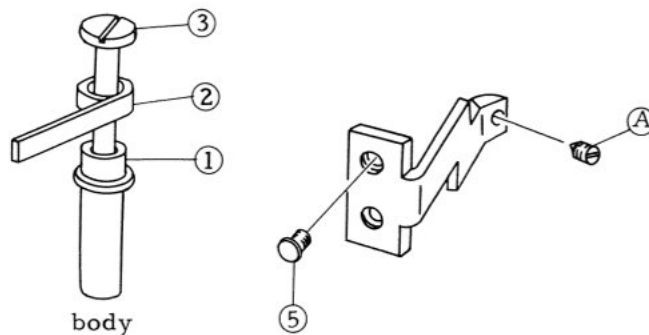
1ST CURTAIN BRAKE ADJUSTMENT

operations

process & n.b.

1. How to fix 1st curtain brake band

body 1 collar 2 band 3 screw



2. How to adjust

1. How to adjust 1st curtain jump

1-2 Control the strength of 1st curtain brake within the limit of 150 - 200g, adjust it with screw A.

1-3 Concerning the adjustment of jump, it will be strong if screw A is turned to clockwise and become weak if it is turned to counter clockwise.

1-4 After the adjustment, put diabond on screw A.

SHUTTER STROKE ADJUSTMENT

operations

process & n.b.

1. Adjustment of stroke

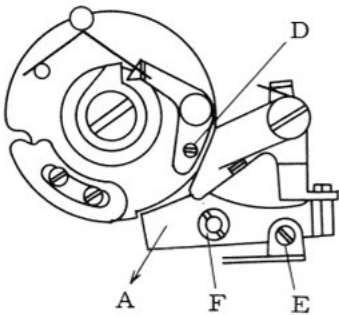
Operation of related mechanism stroking shutter button is as the following table.

	0.5	1.0	1.5	2.0
descending amount on the way of winding				
start moving of self timer				
shutter charge pawl				
release lever				
all length of stroke				

How to adjust

1-1 How to adjust descending amount on the way of winding

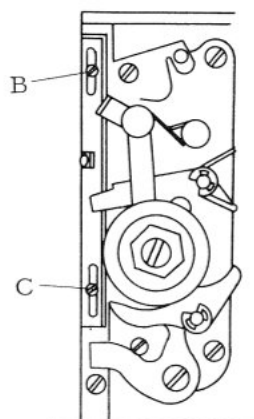
On the way of winding the loose amount of shutter button must be adjusted within 0.2 - 0.65 mm, bending the portion A of the following diagram up and down for the adjustment of loose amount, and adjust it within the limit.



1-2 How to adjust the stroke until start moving selftimer

Self timer must start moving within the limit of 0.75 - 0.85 mm.

As the adjustment, shift the position up and down loosening screws B, C in the following diagram.



- 1-3 How to adjust position of coming off for shutter charge pawl.

It is required that coming off for shutter charge pawl must come off within the limit in stroke 1.1 - 1.3 mm.

Refer to the diagram of item 1-1 for the adjustment, turn eccentric dowel of D and change the gearing amount of forwarding claw and shaft claw.

- 1-4 How to adjust position of coming off for release lever.

It is required that coming off for release lever must come off within the limit in stroke 1.5 - 1.7 mm.

Refer to the diagram of item 1-1 for the adjustment, inspect the condition of coming off with potato screw E.

- 1-5 How to adjust all stroke.

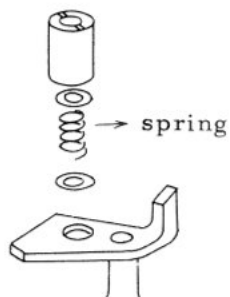
It is required that all stroke must fix within the limit of 2.0 - 2.20 mm.

Refer to the diagram item 1 for adjustment, adjust it using washer F.

2. Adjustment of pressure how to adjust.

- 2-1 Make the shutter pressure within 500g.

Change the spring of the following diagram for adjustment.



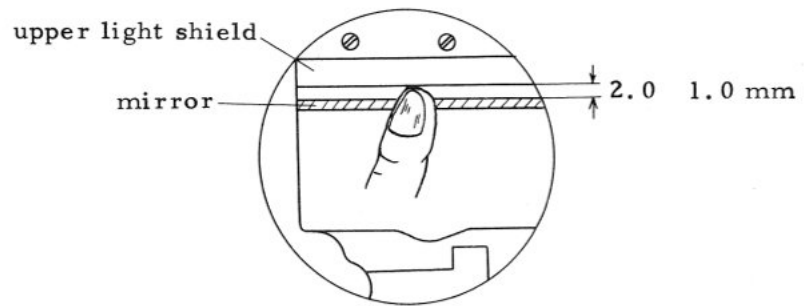
SHUTTER RELEASE ADJUSTMENT

operations

process & n.b.

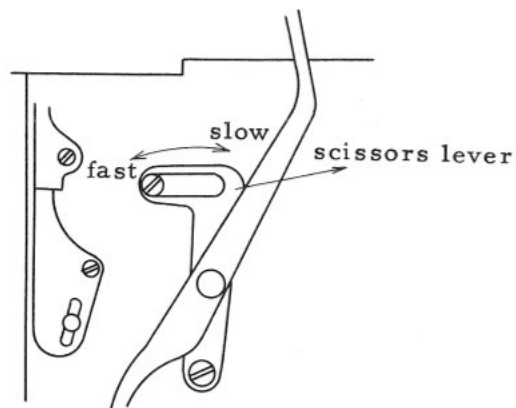
1. How to adjust shutter release

- 1-1 Set shutter at B, at the time click the shutter and raise the mirror slowly holding the mirror with your fingers, the shutter must release within the limit 2.0 ± 1.0 mm of space between upper light shield and the reflecting surface of mirror end.



- 1-2 In the long hole of scissors lever in mirror box for the adjustment, adjust release timing of shutter moving right or left.

After the adjustment, fix it with diabond to the long hole screw portion.



HIGH SPEED SHUTTER ADJUSTMENT

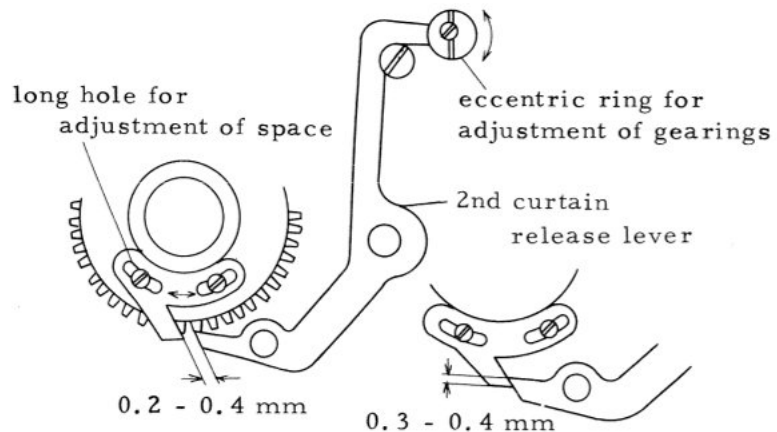
operations

process & n.b.

1. How to adjust the space between hook and 2nd curtain release lever and its gearings

- 1-1 How to adjust the space between hook and 2nd curtain release lever

It is required for the adjustment of space that the space between the hook and 2nd curtain release lever must be within the limit of 0.2 - 0.4 mm in the winded condition. Adjust it loosing two screws which fixes hook in the following diagram and shifting them to right or left in the long hole for adjustment of space.



- 1-2 How to adjust the gearings between the hook and 2nd curtain release lever

It is required that the gearings between the hook and 2nd curtain release lever must be within the limit 0.3 - 0.4 mm in the condition of setting shutter at B. Adjust it turning the eccentric ring for adjustment of gearings in the above diagram.

n.b. After the both adjustment, fix with diabond.

2. How to adjust higher speed shutter

- 2-1 How to adjust 1/500 sec.

Adjust it turning eccentric screw of 2nd curtain release lever (19-9531).

- 2-2 How to adjust 1/1000 sec.

Adjust it moving release cam (13-8091).

SLOW SHUTTER ADJUSTMENT

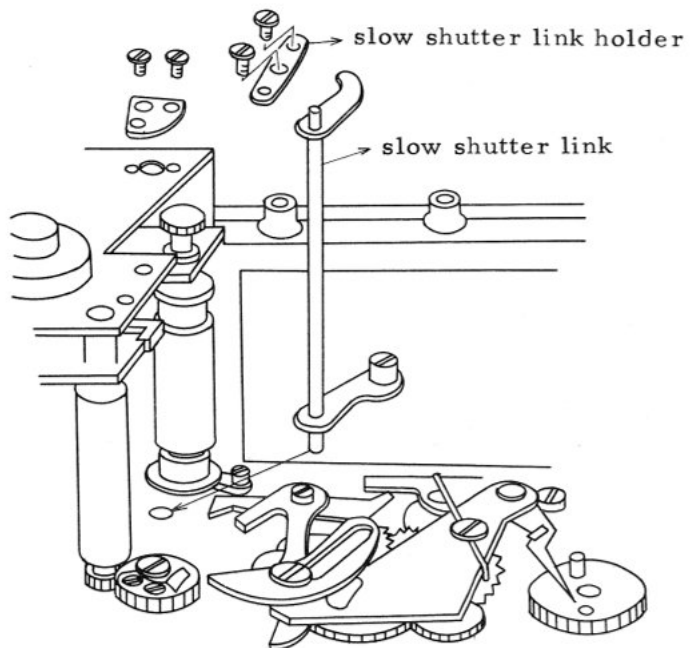
operations

1. How to fix the portion of slow shutter

process & n.b.

- 1-1 Fixing slow shutter link (Refer to the following diagram.)
- 1-2 Fixing slow shutter link holder (Refer to the following diagram.)
- 1-3 Fixing slow shutter governor (Refer to "Taking out Governor", in "Take to Pieces" item.)

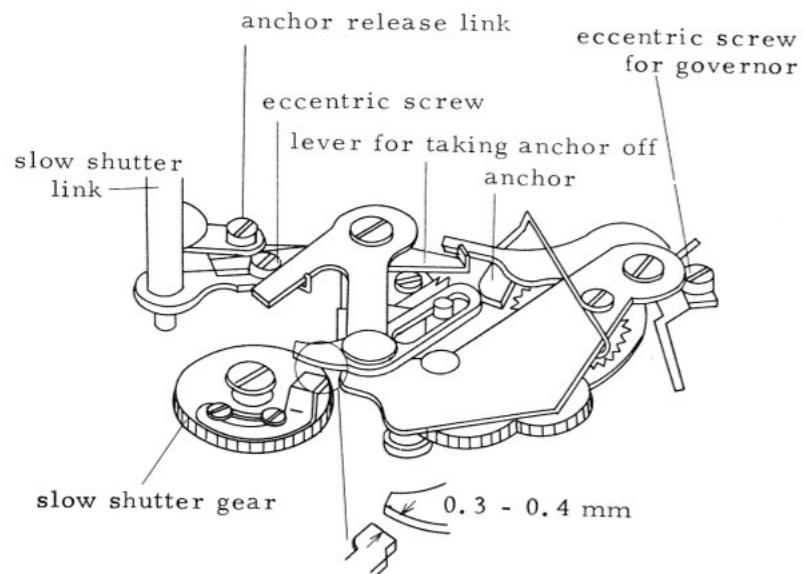
- n.b. 1. Set the shutter at 1/1 sec. in the winded condition.
2. Fix the governor bringing up near to the side of curtain.



operations

process & n.b.

2. How to adjust slow shutter



2-1 Adjustment of anchor gearing

In the position of $1/15$ sec. the anchor must come off, and of $1/8$ sec. it must charge, moreover, it is required that there must be a little space between the lever for taking anchor off and the anchor release link at $1/8$ sec.

2-2 Adjustment of space between slow shutter pawl and governor

Adjustment of space between slow shutter pawl and governor turning long hole of the pawl to right or left in shutter speed at $1/8$ sec. and in the winded condition.

adjusting scope 0.3 - 0.4 mm.

2-3 Adjusting method and limit

$1/8$ sec. 120 ms - 150 ms	Adjust it with eccentric screw.
$1/1$ sec. 850 ms - 1200 ms	Adjust it with eccentric screw of governor.

n.b. 1. After the above speeds are adjusted, check also the other speeds.

TAKE UP SPOOL ADJUSTMENT

operations

process & n.b.

1. How to fix spool

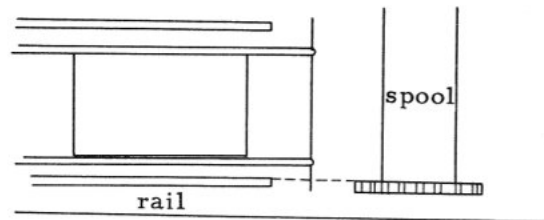
Refer to "Taking out Spool" item for the process how to fix spool.

- n.b. 1. It is required that the dowel in the another surface of the spool and the ditch of the spool gear must properly gear.

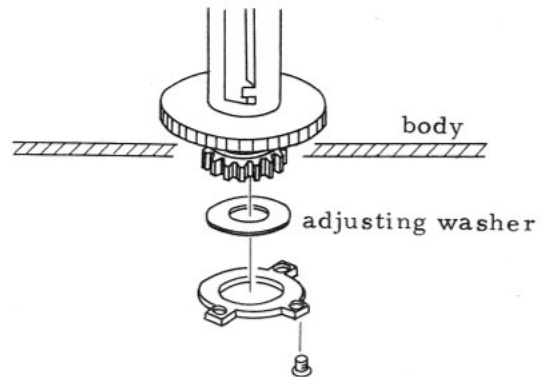
2. Upper spool shaft is counter clock thread.

2. How to adjust

2-1 Adjustment of spool high



It is required that step difference the hight of spool and the rail must not be more than ± 0.1 mm.

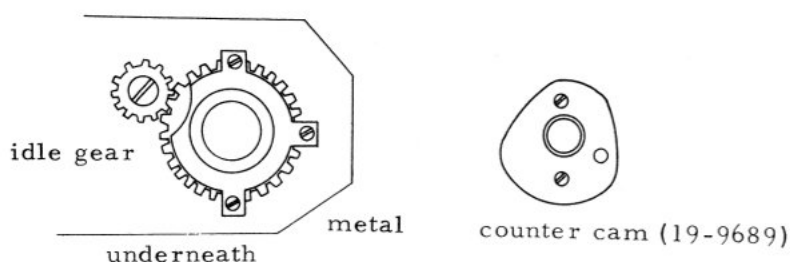


3. How to fix idle gear (97-0106)

After the spool is assembled to the body, once take out the idle gear and it needs to fix it again.

- 3-1 Make the all mechanism in the winded condition.

- 3-2 Make counter cam in the upper part of the spool to the condition of the following diagram.
(turning the spool)



3-3 At this time screw fixing the idle gear with proper gearing to the spool gear

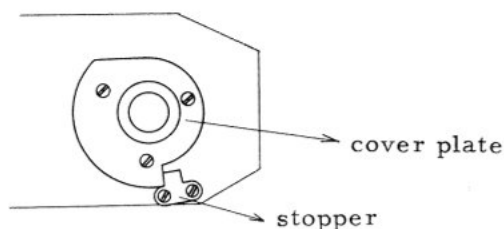
4. How to fix winding shaft and free wheel cam

Refer to the item "Taking out spool".

- n.b. 1. Put GE-7 between metal and winding up gear in the diagram of the former item.
2. Adjust thrust loose with washer of underneath of upper winding collar, the limit must be within 0.1 - 0.2 mm.

5. How to fix cover plate (13-8179)

After put in winding shaft, free wheel cam, roller, and spring, fix the cover plate combining the role of both stopper and pressure plate.



- n.b. 1. Place the cover plate to the stopper, and turn the winding shaft to the winding direction little by little and fasten it in the position of screw hole fits.
2. Make it complete winded up condition.

SPROCKET ADJUSTMENT

operations

1. How to fix sprocket

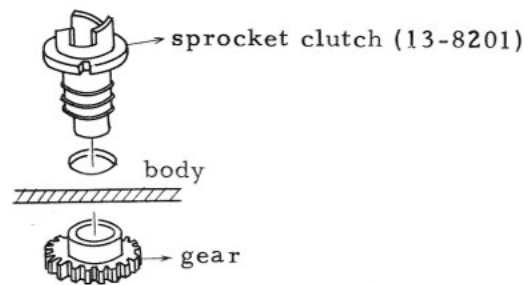
process & n.b.

In the case the sprocket is replaced, it is required that shutter speed selector, master gear, and 2nd curtain release lever must have been taken out, and in the case sprocket gear of base is replaced, it also required that shutter charge gear must have been taken out.

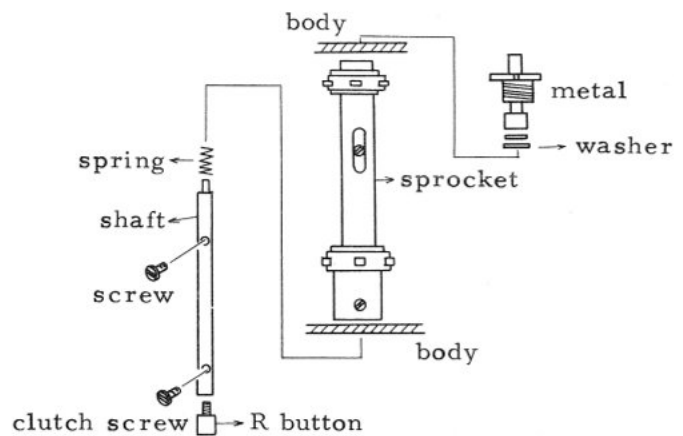
1-1 Fixing gear

Screw in the gear from the base to the body, and sprocket clutch from the insid.

n.b. Lubricate GE-7 to the revolving part, and put diabond to the screwing part.



1-2 Fixing sprocket



n.b. 1. Washer is for adjustment of sprocket height and put the small one inside of the metal and use the big one for adjustment, then the loose limit is 0.1 - 0.2 mm. After the adjustment, loose the metal and put diabond to screwing part of the metal.

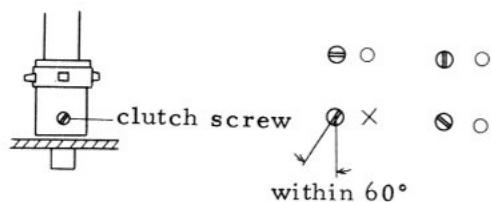
operations

process & n.b.

1-3 Fixing sprocket shaft

Refer to the above item.

- n.b. 1. Lubricate GE-7 to the fixing part of shaft.
2. Make the fixing position of the clutch screw as the following diagram.



The position of X this mark is not acceptable.

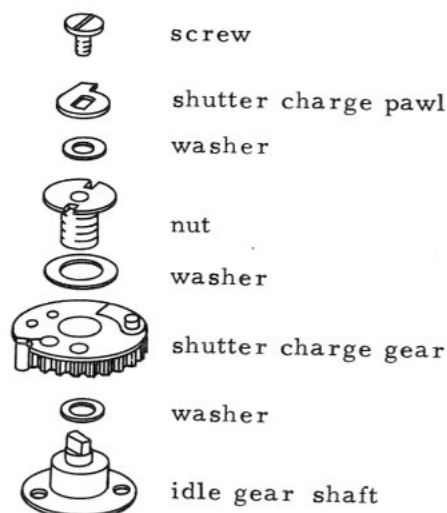
SHUTTER CHARGE GEAR ADJUSTMENT

operations

process & n.b.

1. How to fix shutter charge gear

- 1-1 Fixing process (Refer to the following diagram.)



- n.b. 1. As the fixing position of shutter charge pawl the point of the shutter charge pawl must come to the back side direction in the complete winded condition.
2. As coil spring 97-5333 of hook on shutter charge gear, put the spring through hole of the hook and put it into small ditch in brake lever 19-9694 completely, and it must move smoothly within movable scope.

2. How to adjust

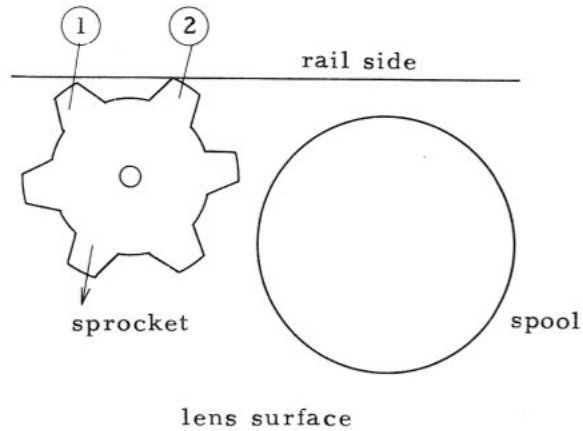
- 2-1 It is required that the loose up and down of the shutter charge gear must be within the limit 0.03 - 0.08 mm, and adjust the loose with adjusting washer underneath of the nut in the above diagram.
- 2-2 Make the up and down loose of the master shaft within the limit 0.03 - 0.08 mm, and adjust it with adjusting washer underneath of the shutter charge pawl in the above diagram.

POSITION OF PERFORATION ADJUSTMENT

operations

process & n.b.

1. How to adjust the position of perforation
- 1.1 Place it horizontally in the complete winded condition.



- 1.2 Make 1 and 2 horizontally or the left a little bit lower.
- 1.3 If it hasn't come to the position as shown in the above diagram in the winded condition, lift the shutter charge gear a little bit and turn the sprocket to the right, then fix the position of perforation.

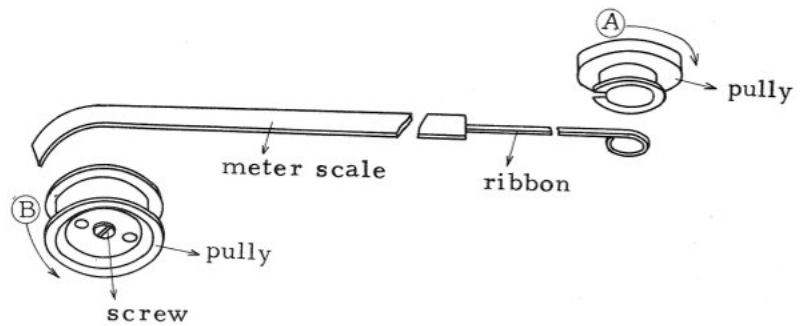
METER SCALE ADJUSTMENT

operations

1. How to fix and adjust meter scale and pully

process & n.b.

- 1-1 Bend the end of the meter scale round and put plio-bond about 10 mm to the reverse side of the end and paste it to the pully 13-8386.
- 1-2 Insert the loop of ribbon to the ditch of pully, and put it into the shutter dial shaft.

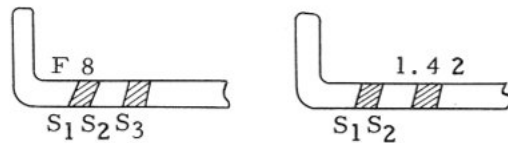


2. How to adjust

- 2-1 Turn the pully to the arrow direction A as the red F 8 of the meter scale should come to mid point between S_1 and S_2 of stripe and wind up the ribbon.
- 2-2 Fix it setting shutter dial at ASA 800, and shutter at B. Refer to diagram A.
- 2-3 Turn the spring hanger 13-8388 about one round to the arrow direction B getting rid of the slack of meter scale, and fix with screw.
- 2-4 After the adjustment, it is required that F 1 must come across to S_2 setting shutter dial at ASA 100, shutter at 1/1000 sec. Refer to diagram B.

dia. A

dia. B



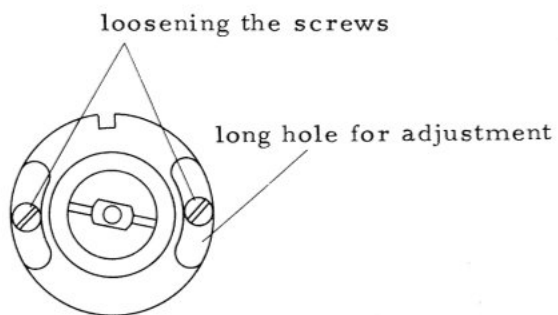
3. How to adjust meter scale

- 3-1 How to adjust position of diaphragm and S.

If F 8 doesn't come to S_1 setting shutter dial at ASA 800, and shutter at B, adjust it loosening two screws in the following diagram and moving the long hole.

operations

process & n.b.



- 3-2 If F 1 doesn't come to S_2 setting it at ASA 100, and shutter 1/1000 sec., adjust it in the same way as the item 1.

CdS METER ADJUSTMENT

operations

1. How to fix meter

2. How to adjust

process & n.b.

Refer to the item, "Taking out Meter".

This meter doesn't have zero 0 indication, therefore, it is acceptable that it indicates within the limit in the appointed point.

2-1 adjustment of meter sensitivity for high sensitivity (H).

checking point stripe	brightness cd/m^2	limit
S_7	16	0.5 F
S_9	64	

2-1-1 In the case the needle swings too much, put ND filter in the place of CdS.

2-1-2 In the case the needle swings too little, replace the meter.

2-2 adjustment of meter sensitivity for low sensitivity (L).

checking point stripe	brightness cd/m^2	limit
S_1	64	0.75 F
S_3	256	
S_5	1024	
S_7	4096	

2-2-1 In the case the needle swings too much, stick ND filter on the pin hole filter.

2-2-2 In the case the needle swings too little, delete and make the pin hole bigger.

n.b. The balance limit between high sensitivity S_9 and low sensitivity S_1 must be within 0.75 F.

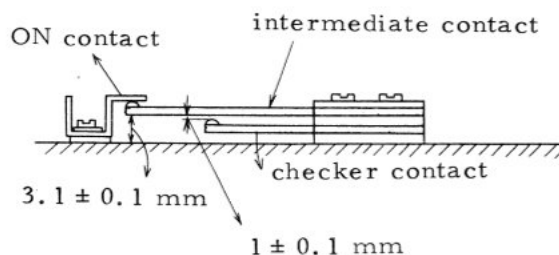
METER CONTACT ADJUSTMENT

operations

process & n.b.

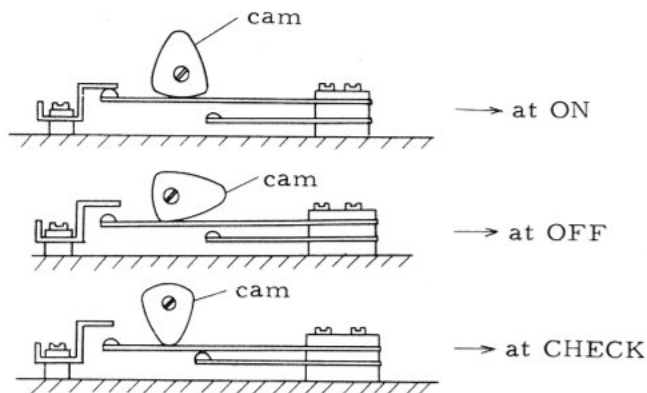
1. How to fix meter contact Refer to the item, "Taking out meter contact".
2. How to adjust
 - 2-1 Adjustment of ON contact, intermediate contact, and checker contact.

The spaces of each other are as the following diagram.



- n.b.
1. Fix that the intermediate contact should come to the center of the ON contact's width.
 2. The intermediate contact must always have a contact with the ON contact.
 3. Put the cover on and confirm the operation of meter.
- * The meter must completely operate at ON.
 - * The meter should not operate at OFF,
 - * The needle must come to the blue portion of stripes at CHECK, however, install a new battery.

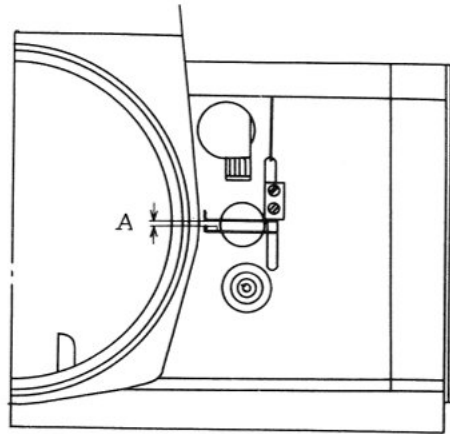
reference diagram



TIME LAG ADJUSTMENT

1. How to adjust time lag

1-1 How to adjust time lag for high speed contact



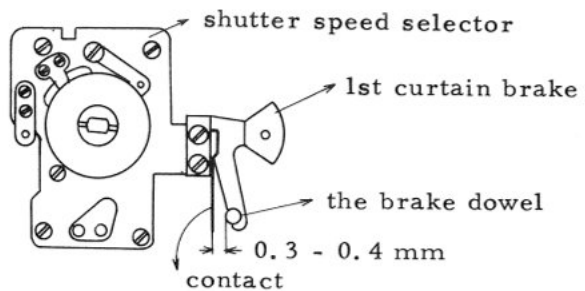
In the front view, peel the leather of the right hand side, take out cover 13-8480, and adjust the time lag changing the space of contact A.

The time lag must be within 10.5 - 13.5 m/s of PA16 transistor shutter tester, however, read the pulse at the starting point.

1-1-1 Make the space of contact A smaller if the time lag will be less than 10.5 m/s.

1-1-2 Make the space of contact A bigger if the time lag will be more than 13.5 m/s.

1-2 How to adjust time lag for X contact



Make the space between the brake dowel and the contact about 0.3 - 0.4 mm when it is wound up completely.

The time lag must be more than 1.5 m/s of PA16 transistor shutter tester, however, read the pulse at the ending point.

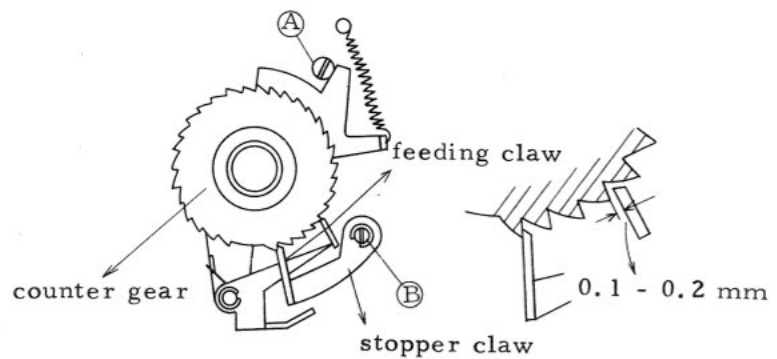
FILM COUNTER ADJUSTMENT

operations

process & n.b.

1. How to adjust film counter 1-1 How to adjust the position of claws

In the condition that shutter is completely winded up, that the counter gear is at start, adjust as the following diagram the relationship between stopper claw and feeding claw with the eccentric screws A and B.



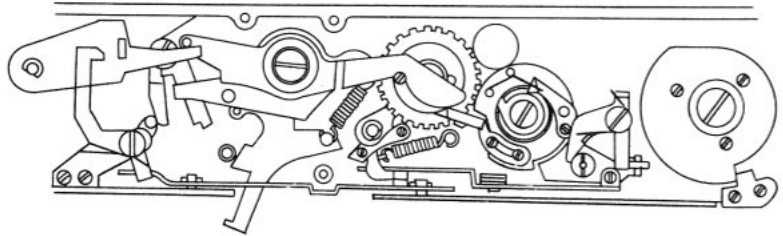
EVERY LEVERS ADJUSTMENT

operations

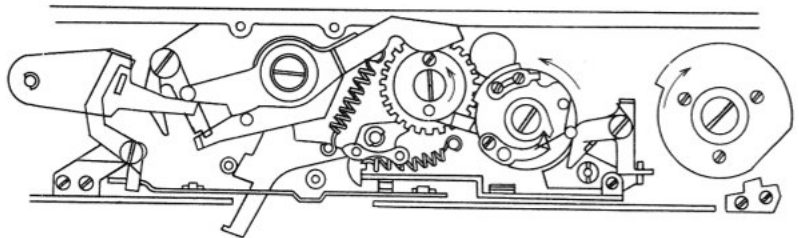
process & n.b.

1. The position of every lever

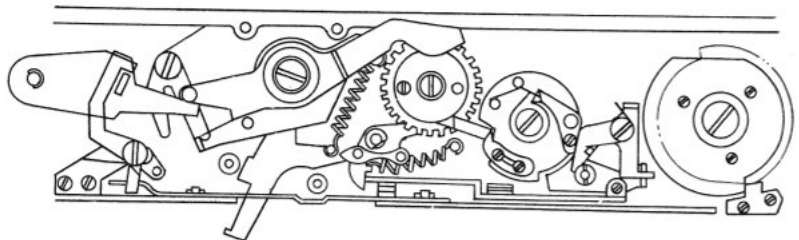
- 1-1 the position of every lever after release



- 1-2 the position of every lever on the way of winding up



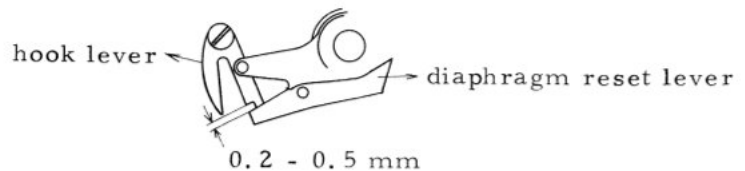
- 1-3 the position of every lever when the winding is completed



2. Adjustment of space between the levers

- 2-1 adjustment of space between the levers on the way of winding up Refer to the diagram 1 and 2.

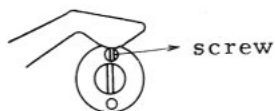
- 2-1-1 diaphragm reset lever 19-9548 and hook lever 19-9583



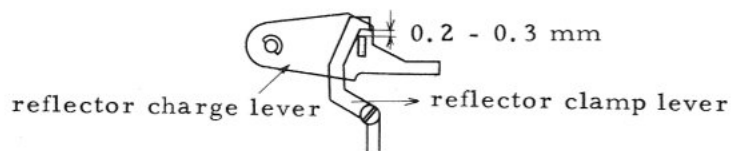
n.b. Adjust it with charge screw 13-8221 of three kind. (2.2φ, 2.5φ, 2.8φ)

operations

process & n.b.



2-1-1 reflector charge lever and reflector clamp lever

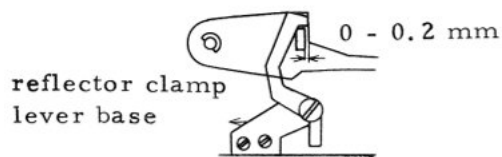


n.b. Adjust it with the long hole of reflector charge lever.



2-2 Adjustment of the space between the levers at the time of the winding is completed.

2-2-1 reflector charge lever and reflector clamp lever



n.b. Adjust it changing the position of reflector clamp lever base, however, put diabond to the screws after it is fastened up.

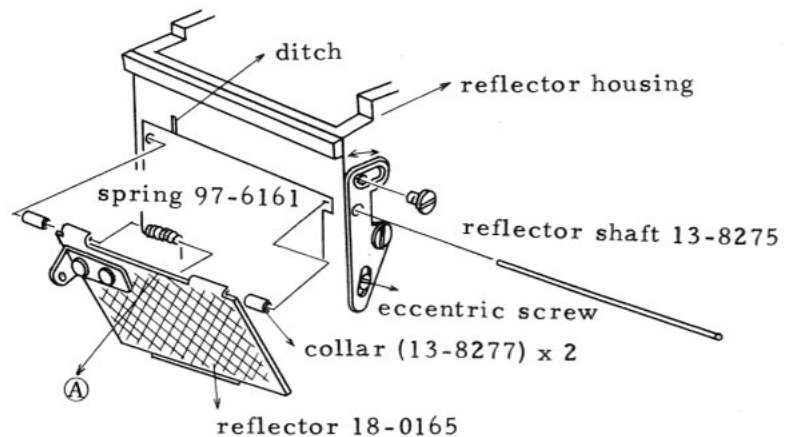
REFLECTOR ADJUSTMENT

operations

process & n.b.

1. How to fix mirror

1-1 process of fixing



- 1-1-1 Insert the spring end (shorter end) to A of the reflector before the fixing.
- 1-1-2 Insert the reflector shaft to the hole of reflector housing and insert one collar to the reflector shaft from the inside.
- 1-1-3 Pass the reflector shaft through the hole of the reflector, moreover, pass the spring through, and again to the hole of the reflector and pass the collar through.
- 1-1-4 Insert the end of reflector shaft to the reflector housing.
- 1-1-5 After assembled, pass the end of spring (longer end) through the ditch, then hang it to the inside of the reflector housing.
- 1-1-6 Fix the upper light shield.
The diagram is abridged.

2. How to adjust.

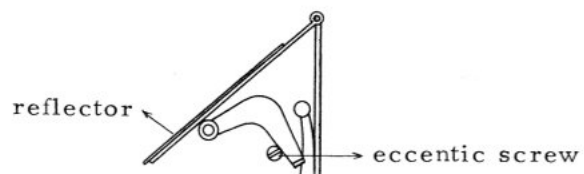
2-1 How to adjust right and left position of the reflector housing

- n.b. 1. Refer to the instruction of the service equipments, "Universal Type 90 Degrees Collimator".
2. Adjust it turning eccentric screw of the side of the reflector housing, refer to the diagram of item 1.

2-2 How to adjust up and down position

operations

process & n.b.



n. b. Fix it to the equipment, and set the reflector
45 degrees with eccentric screw.

TROUBLE, CAUSE & REMEDY

WINDING

At the time of winding,
it is caught.

- 1 If there is a big friction at the inserting part of body metal and gear.
 - 1-1 Replace the sprocket gear.
 - 1-2 Put liquid molybdenum grease to the inserting part.
- 2 If there is too much loose at the inserting part of step gear 97-0105.
 - 2-1 Adjust as there is no loose to the direction of thrusting putting eleven balls to the upper and bottom.
- 3 If the space between every gear which is connected to the winding is too narrow.
 - 3-1 Replace defective gear.

It sticks on the way of
winding up.

- 1 If the counter cam 19-9689 hits the bottom surface of 1st curtain brake head.
 - 1-1 Delete that portion of 1st curtain brake head.
- 2 If it is caught between dowel gear and 2nd curtain spring drum gear.
 - 2-1 Replace dowel gear.
- 3 Because of too big up and down loose of winding shaft, the cover plate 13-8179 rides on the stopper 13-8178.
 - 3-1 Adjust the loose of winding shaft.

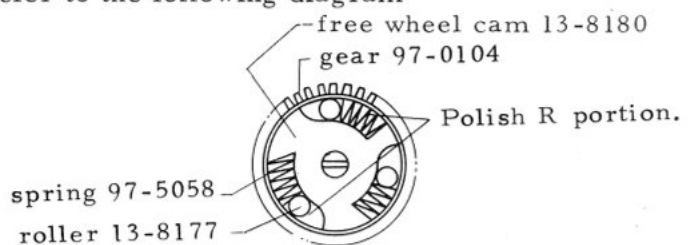
The return of winding lever
sticks on the way.

- 1 If the inserting of free wheel cam 13-8180 and roller of winding gear 97-0104 is too tight.
 - 1-1 Replace the free wheel cam or the gear

Stick at the time the winding
lever is completely winded
up.

- 1 Stick of free wheel cam 13-8180 and roller
 - 1-1 Replace the free wheel cam or polish R portion.

Refer to the following diagram

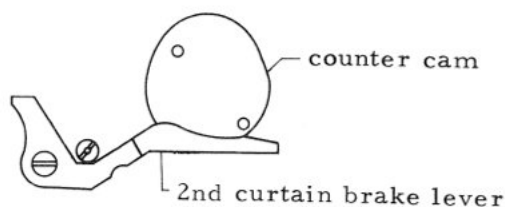


Too heavy winding up

- 1 The curtain is too tight.
 - 1-1 Adjust it withing the standard.
 $13.5 \text{ ms} \pm 0.5 \text{ ms}$ $15 \text{ ms} \pm 0.5 \text{ ms}$
- 2 If there is too small space of every lever for diaphragm, reflector charge lever 19-9547 and diaphragm reset lever 19-9548.
 - 2-1 Readjustment of every diaphragm lever.
Refer to "How to Adjust."
- 3 1st curtain brake is too strong.
 - 3-1 Make jump stop of 1st curtain weak.
- 4 Whether every gear is fastened too much to the direction of thrust.
 - 4-1 Rotation of every gear and adjustment
- 5 Too much deep gearing of spring 97-6158 and sprocket gear.
 - 5-1 Replace the spring.

Incompetence of winding

- 1 Counter cam 19-9689 gets in underneath of 2nd brake lever 19-9528.
 - 1-1 Readjustment of the counter cam's hight or replacement of 2nd curtain brake lever.

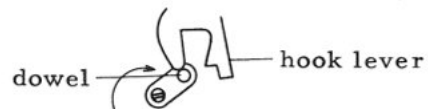


- 2 coming off of coil spring 97-5333

The movement of shutter charge hook which is included in shutter charge gear 19-9543 is not smooth, consequently the shutter charge pawl and the hook also doesn't gear smoothly and only the shutter charge gear turns and the dowel or the master gear doesn't rotate. Therefore, the end of the brake lever hits the dowel, then the counter cam becomes incompetence of rotation.

- 2-1 Wind the winding passing 2nd curtain brake lever away, and then make the gearing of shutter charge pawl and the hook, simultaneously adjust the spring move.

- 3 Because of heavy movement of every lever underneath and every diaphragm lever, the diaphragm lever doesn't completely return to the starting point, therefore, diaphragm release lever 19-9545 and 19-9549 cannot gear one another and the winding becomes incompetent.
 - 3-1 Readjust the movement of every lever.
Refer to "How to Adjust. "
- 4 Because 2nd curtain doesn't work correctly, the hook lever (19-9583) doesn't come off, therefore, the diaphragm reset lever isn't able to return, and simultaneously the diaphragm lever cannot also return, so that the diaphragm lever and the diaphragm release lever hit one another.
 - 4-1 Readjustment of 2nd curtain's operation
- 5 2nd curtain sticks because of the transformed bottom part of the body inside or light shield of mirror box side.
 - 5-1 Amend the transformation of light shield.
- 6 In the case something gets inside so that all the operative parts don't work properly.
 - 6-1 Observe the inside and get rid of it.
- 7 The diaphragm lever doesn't return properly because of the weakened coil spring 97-5063 and it hits to the diaphragm release lever.
 - 7-1 Replace the coil spring 97-5063.
- 8 Because of poor position of reflector reset gear, at the time 2nd curtain runs out, the dowel comes off from the hook lever, and the winding becomes incompetent.
 - 8-1 Readjustment of the reflector reset gear position.



When winding up,
lever slips.

- 1 In the relation of formation in the finished surface of free wheel cam 13-8180 and roller forwarding it slips.

1-1 Replace free wheel cam 13-8180.

1-2 Replace winding gear 97-0104.

When winding up rightly,
retainer doesn't easily
come in.

- 1 Space of master retainer is too narrow.

1-1 Make the space 0.1 - 0.15 m/m.

- 2 Poor function of shutter release lever 19-9534.

2-1 Readjust.

- 3 Because of loosened gear of 1st curtain master shaft Y00-0484 and retaining of the shaft (taper pin), the space of retainer becomes poor.

3-1 Replace the master shaft Y00-0484.

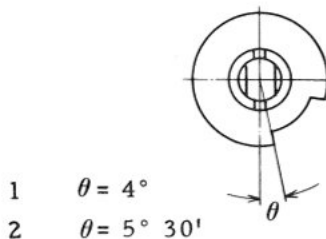
- 4 Poor function of scissors lever 19-9555.

4-1 Readjust or replace it.

The winding lever touches
to the shutter dial.

- 1 Misselection of winding lever seat 13-8057.

1-1 Refer to the following diagram, use either $\theta = 4^\circ$, $5^\circ 30'$, and readjustment.



REWINDING

Rewind button doesn't return 1
when winding has completed.

Poor finish of clutch 13-8201's surface so that the
clutch screw cannot pass through.

1-1 Replace the clutch.



There is a hollow.

clutch

2 Clutch screw ditch and clutch convexity feeds one
another.

2-1 Replace the clutch screw.

Sprocket doesn't rotate
counter.

1 The end of sprocket shaft 13-8199 is too round so
that if the sprocket is turned counter, the clutch
taking off lever slips.

1-1 Replace or amend the sprocket shaft.

2 Sticker or cemedine which is put on ring dowel
13-8197 at the time of tightening comes off so that
the clutch taking off lever slips.

2-1 Cleaning

3 The gearing of sprocket gear 97-0107 and the
retained metal of the body become extremely bad,
and the rotation of sprocket becomes too heavy.

3-1 Replace the sprocket gear or lubricate liquid
molybdenum to the gearing portion.

4 The screw of sprocket gear and sprocket clutch
13-8201 becomes loose so that up and down loose
of the sprocket is gone then the rotation of
sprocket becomes too heavy.

4-1 Readjustment

SHUTTER

Diaphragm, mirror and
shutter doesn't work.

1 Poor balance of strength of coil spring 97-5062
so that reflector clamp lever 13-8267 doesn't
come off from reflector charge lever 19-9553 and
shutter doesn't work.

1-1 It is required that it must be replaced as the strength of the reflector clamp lever must come off more than 40g stronger than the coil spring comes off, adjust, simultaneously, every operative part must work rightly.

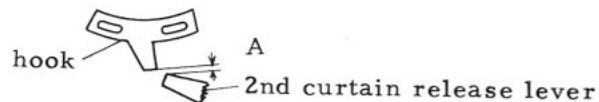
2 Caused by the poor operation of every lever in front cover.

2-1 Readjustment

The curtain doesn't operate at B.

1 The space of portion A in the following diagram is too narrow, or by the cause of poor formation of hook 13-8084.

1-1 Adjustment of eccentric ring or replacement of hook 13-8084.



Skipping at B

1 2nd curtain release lever 19-9530 doesn't work normally.

1-1 Readjustment especially up and down loose.

2 There is no space between hook 13-8084 and 2nd curtain release lever 19-9530.

2-1 Readjustment



Adjust the space with two screws.

3 The work of shutter release lever 19-9534 is too poor so that it doesn't set firmly.

3-1 Readjustment

4 At the time winding is not complete (before retaining set) if the shutter button is clicked.

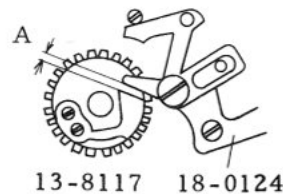
4-1 This phenomenon happens mechanically, therefore, it is not possibly adjusted. If those which are extremely too poor, adjust the space of retaining widening to 0.1-0.5 mm.

1st curtain jumps.

- 1 The brake is too weak.
 - 1-1 Readjust with the adjusting screw of brake band 13-8508.
- 2 The brake band 13-8508 is transformed, and in the case it is useless.
 - 2-1 Replace the brake band 13-8508.
- 3 If the shutter speed becomes extremely changed.
 - 3-1 Adjust the speed within $15 \text{ ms} \pm 0.5$.

1 second stop

- 1 The gearing of space A between slow shutter pawl and slow shutter governor 18-0124 is too deep.



- 1-1 Adjust the space A to $0.3 - 0.4 \text{ mm}$ at $1/8 \text{ sec.}$ time. Replace the slow shutter pawl 13-8117.
- 2 Too much gearing of anchor in the governor
 - 2-1 Readjustment of the gearing or replace the governor.

Skipping $1/8 \text{ sec.}$

- 1 Too much shallow gearing of anchor in the governor
 - 1-1 adjustment
- 2 Slow shutter fixing cam which is underneath of shutter speed selector and slow shutter link 19-9538 doesn't touch, therefore, washer on the cam and end of slow shutter link hit one another, so that the position of slow shutter link isn't settled and it skips.
 - 2-1 Amendment of washer transformation.

Abnormal sound at the time governor returns

- 1 After the governor operates the anchor doesn't completely come off.
 - 1-1 Bend anchor release link 19-9539 and adjust.
- 2 Reflector reset gear 19-9551 hasn't been fixed at the right position, therefore, it cannot take the anchor of the governor off.

2-1 Adjust the position of reflector reset gear 19-9551.

Every high speed of shutter are poor.

1 Varied time passes away.

1-1 Adjust it within the appointed standard.

Lack of lubrication

1 Lack of lubrication of inserting part of slow shutter gear 97-0102 and body stud.

1-1 Lubricate.

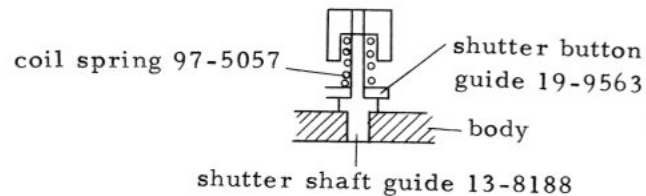
Shutter button is not smooth.

1 Operation of clutch release lever 13-8186 isn't smooth.

1-1 Amend the part or replace.

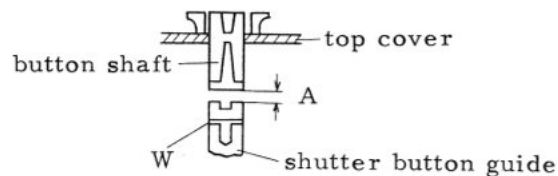
2 Roughness of coil spring 97-5057 and shutter shaft guide 13-8188.

2-1 Readjustment



Lack of stroke of the button

1 Those of which has no space A between the shutter button guide and the button shaft



1-1 Adjust the above space A to 0.1 - 0.2 mm with washer.

Release position of shutter is fast or slow.

1 Loosened end screw of release lever (19-9544).

1-1 Adjust the dropping amount of the button to 1.5 - 1.7 mm.

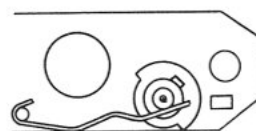
After the adjustment, put diabond to the screw.

Not be able to get time lock

1 Because of inferior transformation of T lock spring notching portion of button guide doesn't closely fit to it in parallel.

- 1-1 Amend the portion A of T lock spring.

inside of top cover



button guide



lock spring

SELF TIMER

Self timer has been started, however, the shutter doesn't release.

Lack of stroke of lever for shutter starting of self timer

- 1-1 Replace to the bigger screw which attaches to the shutter shaft.

(20φ, 25φ, 30φ)

Not be able to set the self timer

- 1 Defective self timer itself

- 1-1 Replace the self timer.

- 2 Coming off of starting release spring of the self timer

- 2-1 Adjustment

Poor timing of self timer starting

- 1 Poor positioning of start adjusting lever which is attached to shutter shaft

- 1-1 Adjust the dropping amount of the button to 0.75 - 0.85 mm.

Self timer is released simultaneously.

- 1 Poor positioning of start adjusting lever which is attached to shutter shaft

- 1-1 Adjust the dropping amount of the button to 0.75 - 0.85 mm.

REFLECTOR

Poor returning of mirror

- 1 Hitting of hinge 13-8272 and light shield 13-8346

- 1-1 Amendment

- 2 Spring 97-6161 is too weak.

- 2-1 Replace 97-6161.

- 3 In the case the spring comes off from ditch.

3-1 Readjustment.

4 The inserting of hinge and pin 13-8275 is too tight.

4-1 Put a reamer to the hinge or replace the hinge, and the pin.

5 Because of transformation of light shield 13-8328, it touches to the mirror end.

5-1 amendment of 13-8328 or the replacement.

6 Poor positioning of mirror sticking so that it touches to 13-8328.

6-1 replacement of mirror.

The mirror doesn't properly return at the time the mirror cramps.

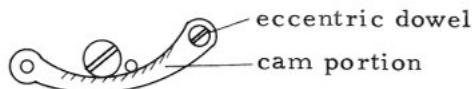
The operation of slide lever 19-9667 doesn't work properly.

1-1 adjustment of thrust loose of 19-9557.

Lack of turning up of the mirror at the time the mirror cramps.

1 Cam portion of cramp lever is (-).

1-1 replacement of part



2 Poor adjustment of eccentric dowel

2-1 readjustment

Inferior mirror 45°

1 Refer to the item, "How to Adjust".

The mirror doesn't operate when the shutter is clicked.

1 Those which spring 97-6149 comes off

1-1 readjustment

2 Hook 13-8311 which is retained to inter locking lever 19-9561 doesn't work normally.

2-1 readjustment

FILM COUNTER

Film counter doesn't forward.

1 Stop claw hits to feeding claw spring 97-6123, then it doesn't make counter gear stop.

1-1 replacement of feeding claw spring or the amendment

- Film counter doesn't return.
- 2 In the cause of fixing time of counter reset lever 19-9522 or its transformation, the height of high and low is not proper so that the end of counter reset lever and back cover don't touch one another, it comes above or under the side of the back cover, therefore, forwarding claw which touches to 19-9522 runs away and it doesn't gear with counter gear and forwarding becomes defective.
 - 1 Eccentric adjusting position of stopper claw 19-9523 is to the back cover, in the case the stopper claw runs away, it touches to the inside of the top cover, and it doesn't return.

1-1 readjustment

- 2 Too much weak tension of spring 97-6155.

2-1 Replace the spring.

- 3 If the rotating angle of ratchet claw becomes larger, winding amount of the spring is increased, it has a friction in the direction of thrust and it cannot return.

3-1 Replace the spring.

Aberration of film counter indicator.

- 1 poor positioning of film counter dial 13-8032.

1-1 It is required that the numbers must be caught to the indicator.

CdS METER

The meter doesn't work.

- 1 Caused by poor wiring, short-circuit, poor contacting.

1-1 readjustment

- 2 Battery is gone out.

2-1 Replace the battery.

- 3 Defective meter it self.

3-1 Replace the meter.

The needle of meter is caught.

- 1 The needle is too long and touches to the top cover.

1-1 Replace the meter.

- 2 In the case the needle touches to the upper side of meter fixing screw.

- 2-1 readjustment of the needle hight
(Do not bend the needle to right or left.)
 - 3 The needle and the diaphragm belt touch one another.
 - 3-1 readjustment of the needle hight
(Do not bend the needle to right or left.)
 - 4 When the needle returns to the original point, the needle and light shield touch one another.
 - 4-1 amendment of light shield bending part
 - 5 Those which dust gets in the inside meter.
 - 5-1 cleaning of the inside or replacement of the meter
- Poor positioning of meter
- 1 Varied caused by loosened pulley fixing screw
 - 1-1 readjustment
 - 2 Those which diaphragm drum fixing screw is loosened
 - 2-1 readjustment
 - 3 At the time the shutter dial is fastened, the use direction of the loose of the shaft which is the loose of shutter selector shaft and shutter dial isn't good.
 - 3-1 readjustment
- Inferior precision of meter
- 1 Obviously the meter is inferior itself, however, check the following items before the replacement.
 - 1-1 adjustment of 0 zero.
 - 1-2 In the case the precision is (+) in the every case, use ND filter together.
 - 1-3 In the case it is (+) in using meter L, use ND filter in front of pin hole filter.
 - 1-4 In the case it is (-) in using meter L, make a hole of pin hole filter larger to (0.35 ϕ) and use it.
 - 1-5 In the case point which doesn't fall under to the above items, replace the meter.

SYNCHRONIZATION

Inferior continuity

- 1 Defective plug
 - 1-1 replacement of plug
- 2 Disconnection of wire and defective wiring
 - 2-1 readjustment.
- 3 Poor contacting and touching
 - 3-1 Readjustment.

Inferior FP time lag

- 1 Poor relationship between switch in timing of FP contact and shutter starting timing

Inspect it at the position of mirror goes up.

 - 1-1 shutter starting timing

$2 \text{ mm} \pm 1 \text{ mm}$
 - 1-2 FP switch in timing

$4 \text{ mm} \pm 0.5 \text{ mm}$

Inferior efficiency of FP contact

- 1 Switch contact is apart.
 - 1-1 readjustment
- 2 Those which has poor connection of FP contact.
 - 2-1 readjustment

Inferior time lag of X contact.

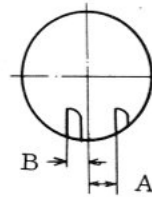
- 1 Because of too strong brake of 1st curtain, the shutter becomes double exposure, and the switch becomes irregular.
 - 1-1 adjustment of double exposure
- 2 The shutter doesn't fully open at X.

DIAPHRAGM LEVER

Inferior strength of diaphragm lever

- 1 Caused by the inferior diaphragm spring.
 - 1-1 replacement of diaphragm spring

Adjust it to $150 \pm 20 \text{ gr}$ at $B = 2.4 \text{ mm}$.



Inferior positioning of diaphragm lever

- 1 Adjusting screw of hook lever 19-9583, diaphragm release lever 19-9545 become loose and transform.
 - 1-1 Refer to the above diagram. Adjust more than $A = 5.8 \pm 0.3 \text{ mm}$, $B = 2.4 \text{ mm}$.

FOCUS

Inferior precision of infinity. 1

- The time passes by the length of mounting back has changed.
 - 1-1 Readjust to $42.1 \pm 0.02 \text{ mm}$. However, this measurement is not from the mounting to the pressure plate, but use a piece of glass.
- 2 Inferior positioning of high for flannel box.
 - 2-1 readjustment.
- 3 Those which are inferior lens focus
 - 3-1 readjustment

BACK COVER

Shock at the time the back cover is closed.

- 1 The claw of back cover and the claw of open and shut cannot engage one another properly.
 - 1-1 Adjust bending the claw of back cover.

Too weak opening of back cover

- 1 Those which the pressure plate is too weak.
 - 1-1 Adjust it making spring strong.
- 2 Those which the move of back cover 18-0158 is too heavy or it hits to the body.
 - 2-1 readjustment

Irregular back cover.

- 1 inferior part of open and shut claw 19-9562.
 - 1-1 replacement

CANON SERVICE TOOLS LIST

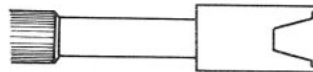
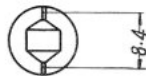
CANON CAMERA MODEL FX
(REFERENCE NO. 1-20301)

TESTING EQUIPMENTS

<u>Use</u>	<u>Name of Testing Equipment</u>
Exposure Meter	1. Inspection device for Canonet meter 2. Cover for Canon FX photocell meter 3. Resistance meter (0-1 mega ohm)
Shutter	1. PA-16 transistorized shutter tester or Simplified shutter test unit
Focal plane	1. 42.14 dial gauge
Release lever	1. 1-20301 inspection tool for position of release lever
Adjusting	1. 1-20301 substitutional cam - 1 2. 1-20301 substitutional winding lever - 1

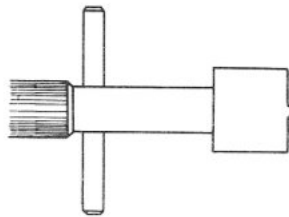
SPECIAL SCREWDRIVERS

T06A-13-8033-1



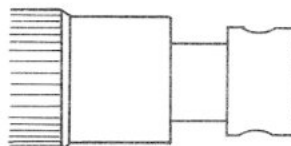
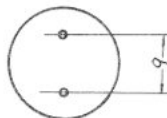
Tightening counter gear

T06A-13-8043-1



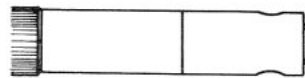
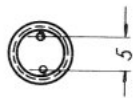
Tightening spool shaft

T06A-13-8061-2



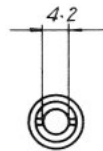
Tightening winding lever

T06A-13-8154-1



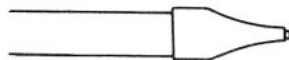
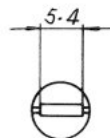
Tightening shutter dial

T06A-13-8367-1



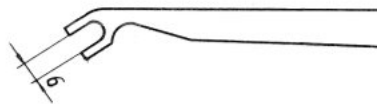
Tightening battery contact

T06A-97-1091-1



Tightening shutter charge gear

T01S-13-8075-2



Adjusting shutter speed
(higher speed)