REPAIR MANUAL
&
PARTS LIST

FOR

FUJICA HD-S

FUJI PHOTO FILM CO., LTD.
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I SPECIFICATIONS AND PERFORMANCE

1. **Picture size :** 24 X 36 mm

2. **Lens :** F2.8 38 mm, 3 components, 4 elements, Tessar type,
Minimum focusing distance : 1.0 meter

3. **Shutter :** Programmed electronic shutter, Seiko Model ESF-G

Exposure time : Continuous, fully automatic from 1/8 to 1/450 sec.

Minimum aperture: F : 17.15

Source voltage : Two AM-4 batteries
Shutter release is locked when source voltage drops below 2.1V.

X-contact : Synchronized at all shutter speeds, shutter speed slower than 1/30 sec. is cut off.

4. **Exposure control :** CdS photocells, Programmed AE

Interlock range : Guaranteed function: EV6 to EV17 (ASA100)

Guaranteed performance: EV8 to EV15 (ASA100)

Film speed : ASA50, 100, 200 and 400
(No intermediate film speed)

Film speed indications : ASA64, 100, 200, 400 and Auto (■)

Film speed setting : Setting by film speed selector.

With the film speed selector set to AUTO, when Fuji ASA400 F-II film is loaded, film speed auto set pin actuates.

Underexposure warning lamp : Red LED lights in the viewfinder when liminosity of the object is EV8±1.2EV.

5. Flashmatic (FM)

By electrically detecting resistance
When the strobo main switch is turned on, the strobo switch turns on and at the same time, shutter is switched over to flashmatic (FM) mode.

FM interlocked range :	1.0 to 4.0 meters (ASA100)
Interlocking range with film speed :	ASA50, 100, 200 and 400
Strobo :	Built-in G^{NO} 12 (ASA400-m)
Power source :	Two AM-4 batteries (Used commonly with AE circuit.)
Number of flashings :	120 times (with two AM-4 batteries)
Strobo switch :	Knock type push-up/push-down switch with turn-off failure preventing indicator
Charge completion display :	Neon lamp on camera back

6. Viewfinder :

Kepler type, 6 components, 8 elements (4 lenses, 3 prisms and 1 acrylic resin block)

Displays in the viewfinder : Red underexposure warning lamp (LED) and Zone focus marks (four marks) interlocked with focusing ring.

7. Focusing system :

Helicoid type

Distance scale : m (meter) and ft (feet) (By eye estimation).

8. Film advancing system :

Taken-up on the spool by winding up film advance lever. Inching can be made.

9. Exposure counter :

Numerical sequence, S .... 1—4.6.8—.36
Automatically resets as the film chamber door is opened.

10. Film rewinding system :

With film rewind button on the camera bottom and rewind crank/knob on the camera top.
The film rewind button is automatically reset as the film advance lever is wound up.

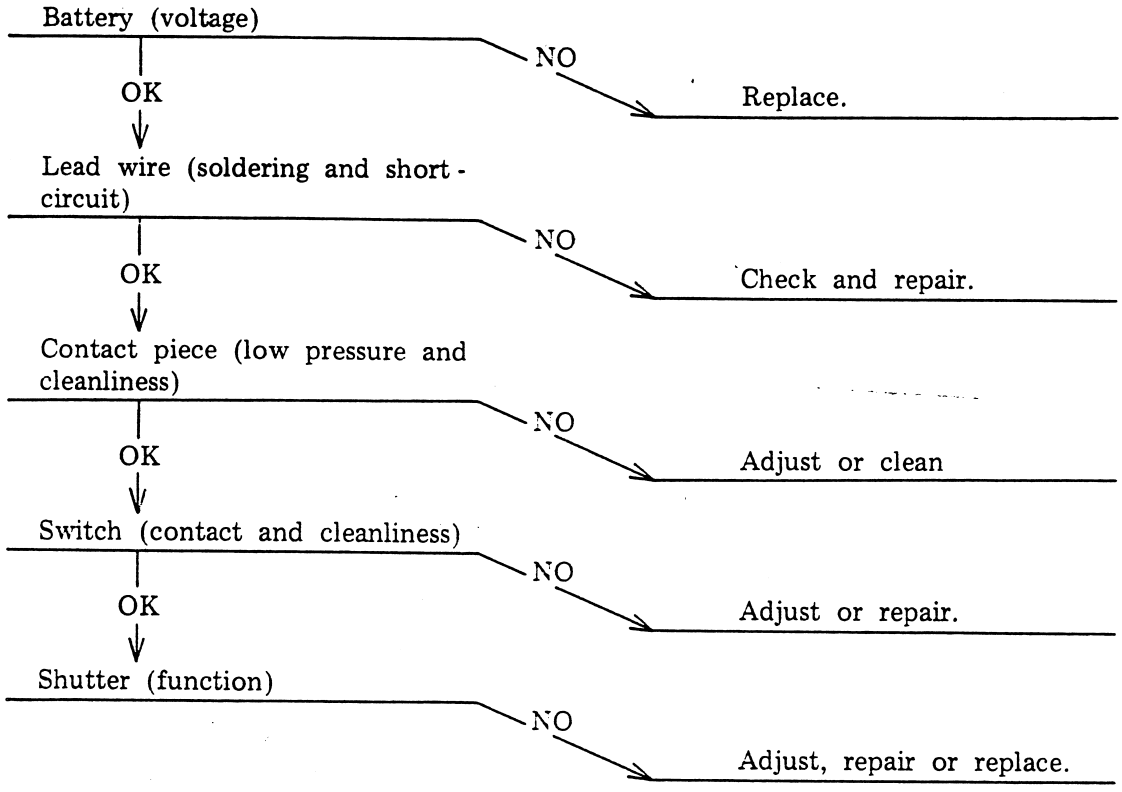
11. Self-timer : Set by the self-timer lever
Starts as the self-timer lever pushed toward the arrow mark after winding up film advance lever completely.
Self-timer operating time : 7 to 13 seconds.

12. Dimensions and weight :

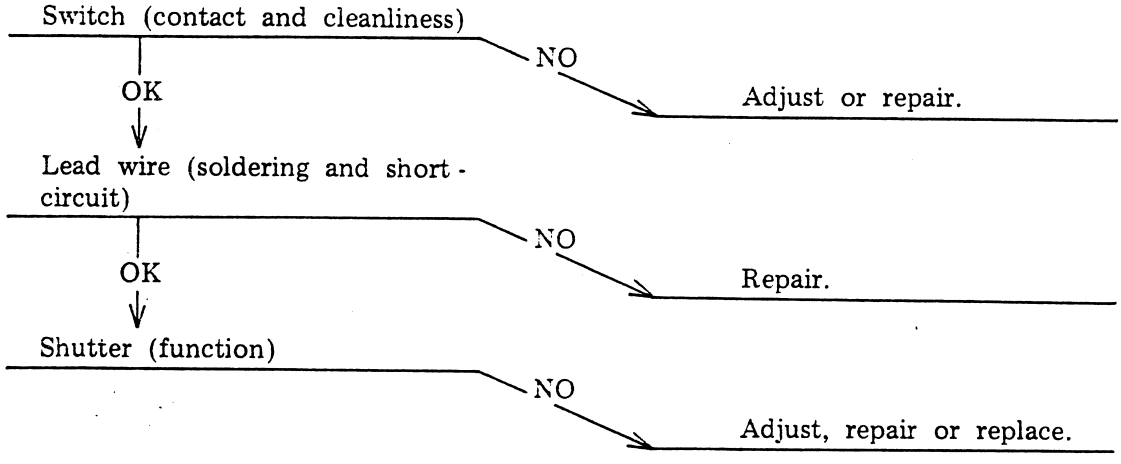
Ⅱ TROUBLESHOOTING

1. Shutter

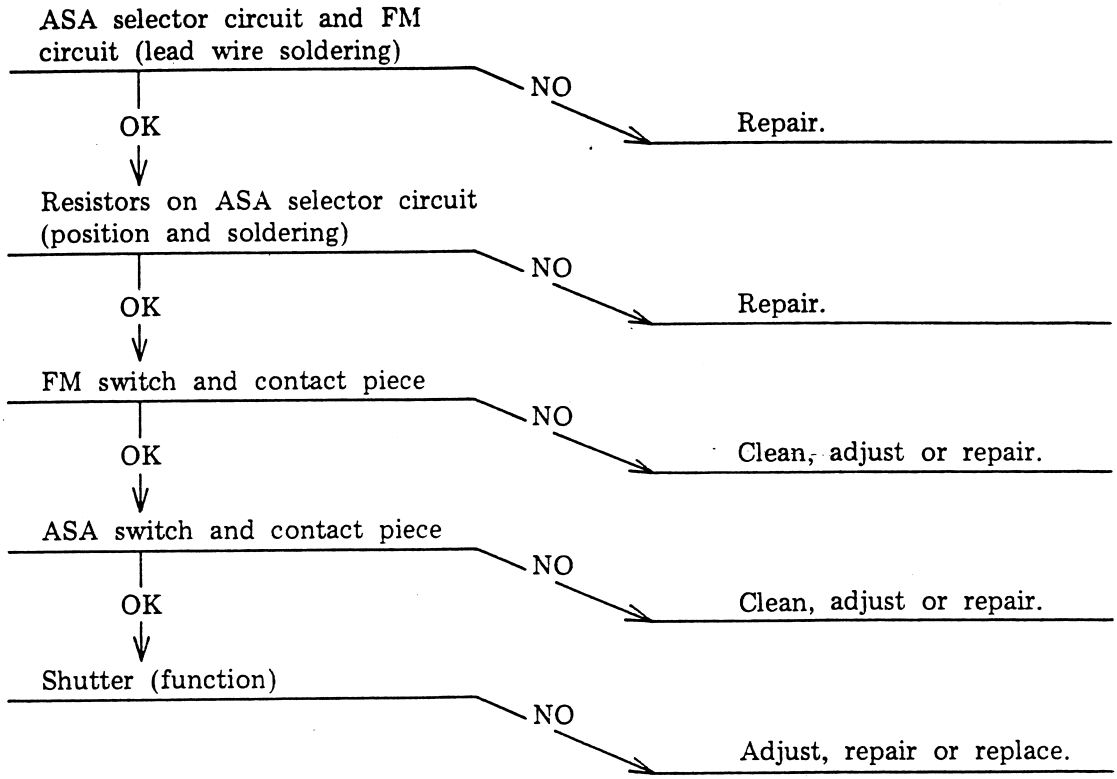
1-1 Shutter does not open. (Nothing is photographed.)



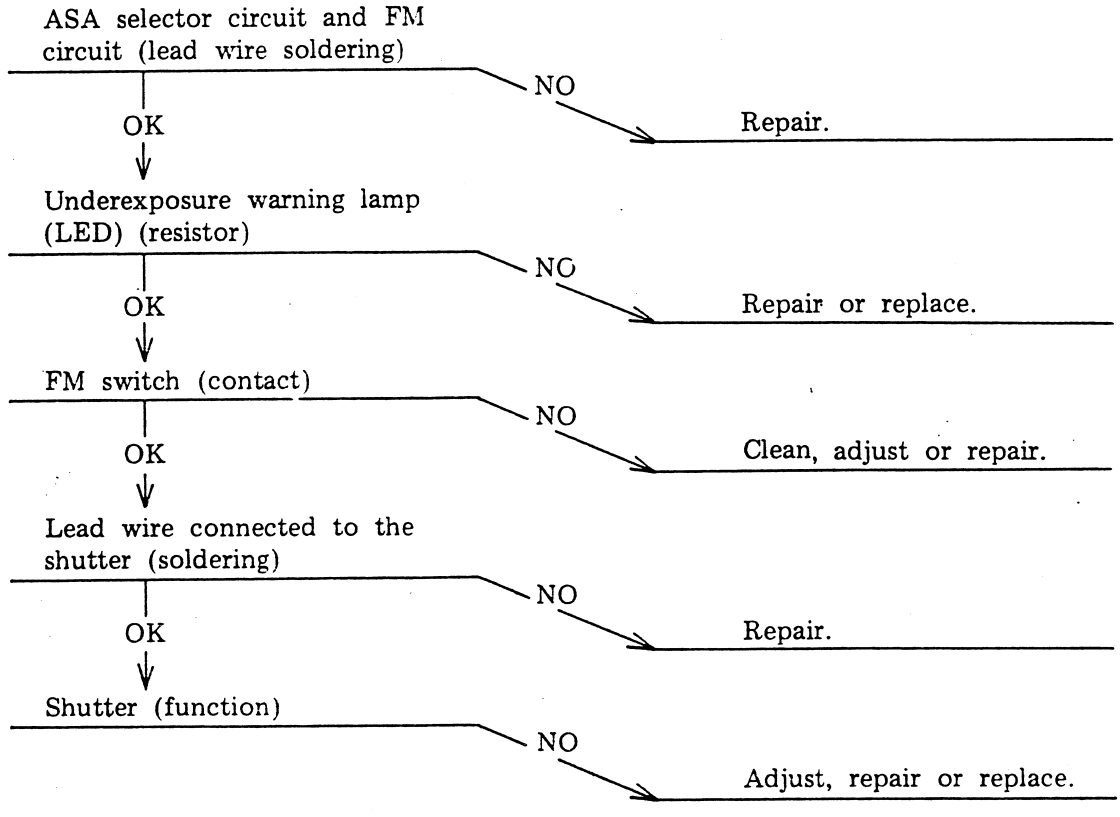
1-2 Shutter does not close.



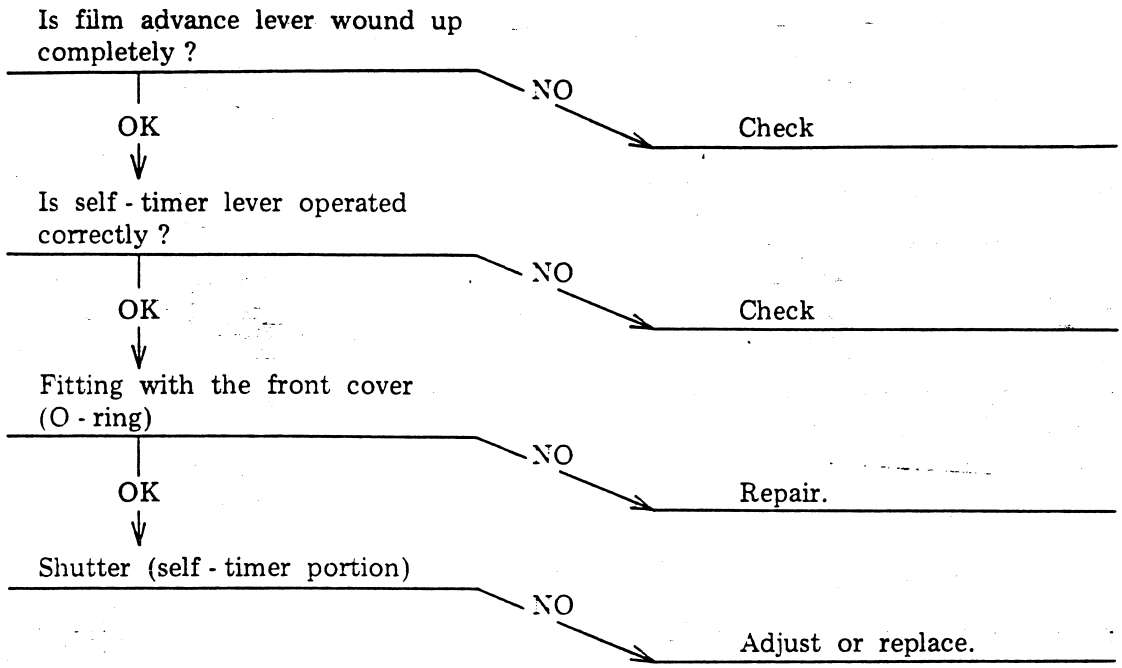
1-3 Shutter does not operate automatically



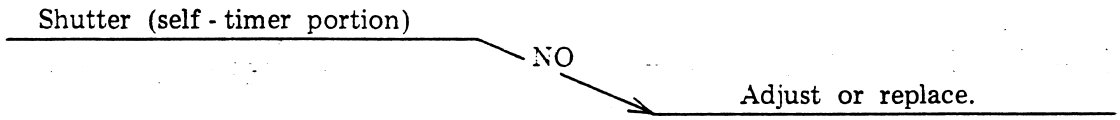
1-4 Underexposure warning lamp (LED) does not light. (In the viewfinder)



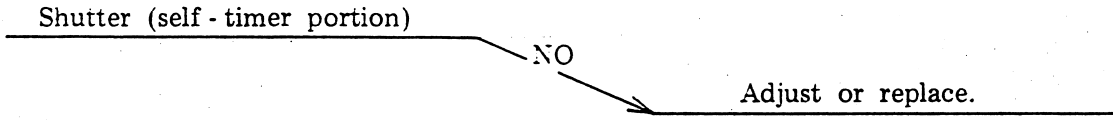
1 - 5 Self - timer stops in a half way.



1 - 6 Shutter is not released by self - timer.

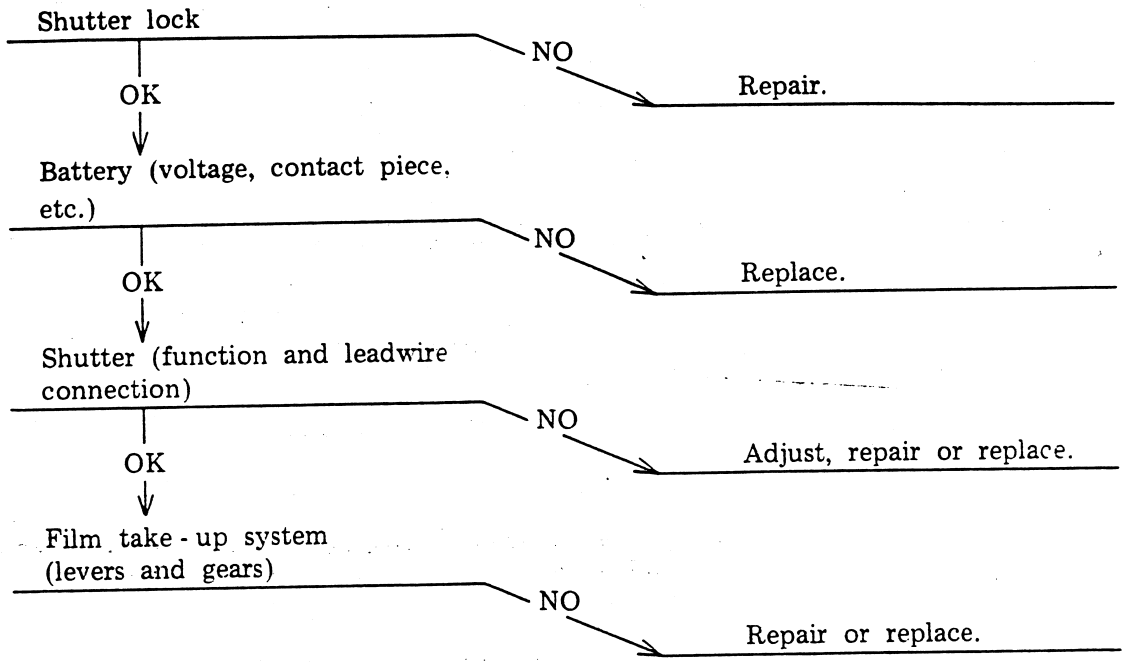


1 - 7 Self - timer cannot be set.

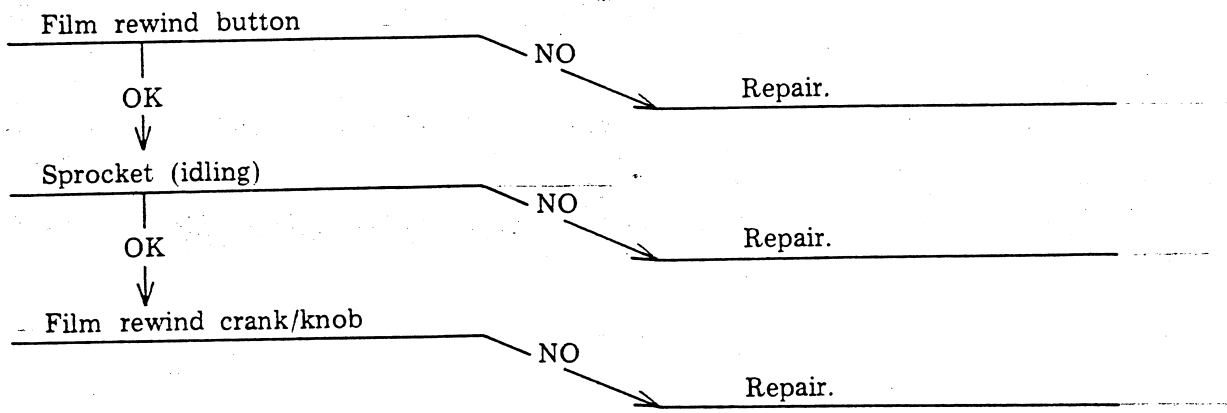


2. Film advancing/rewinding system

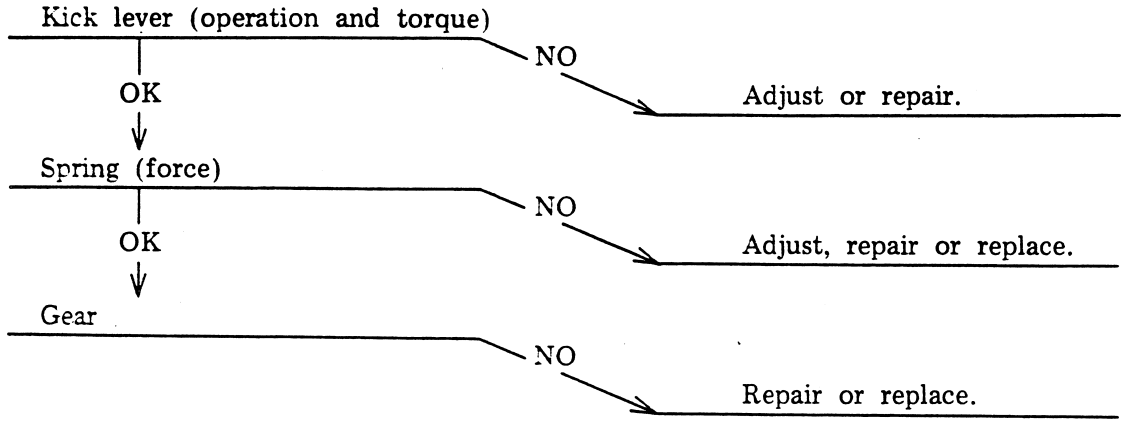
2-1 Film advance lever cannot be wound up.



2-2 Film cannot be rewound.

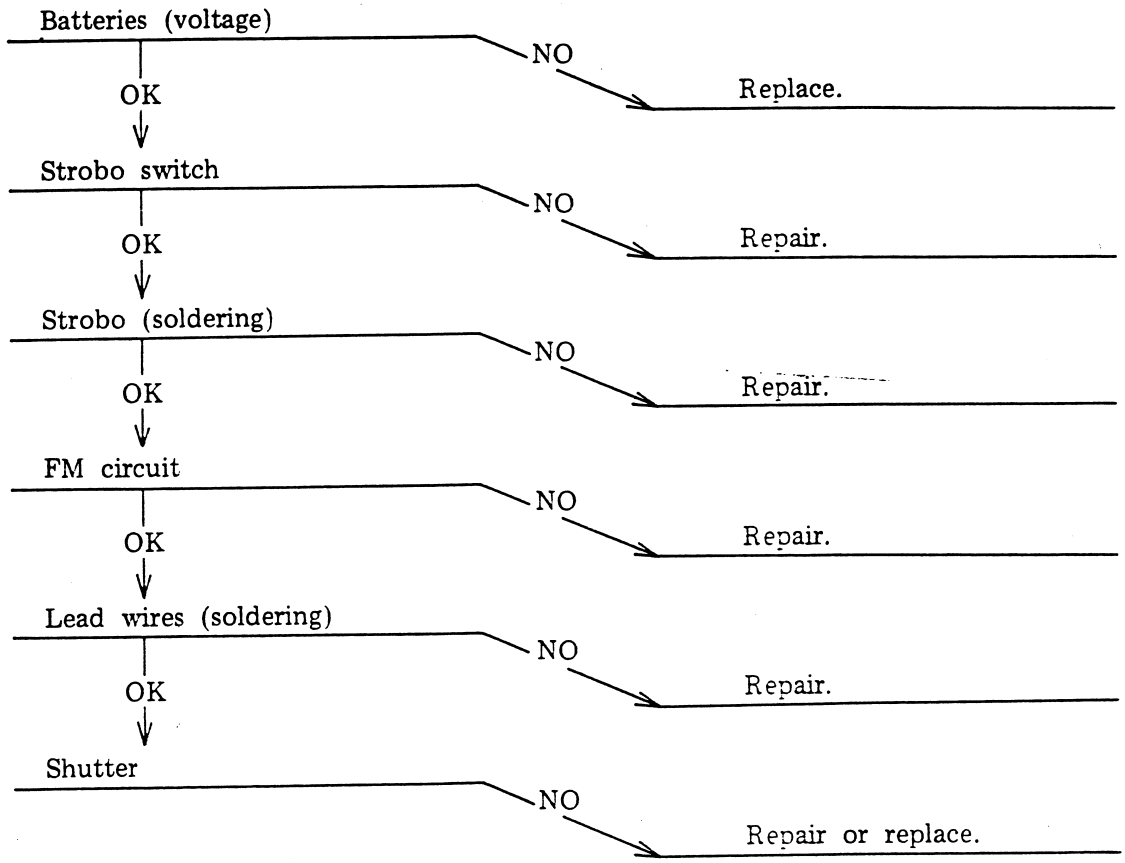


2-3 Exposure counter is not advanced or reset.

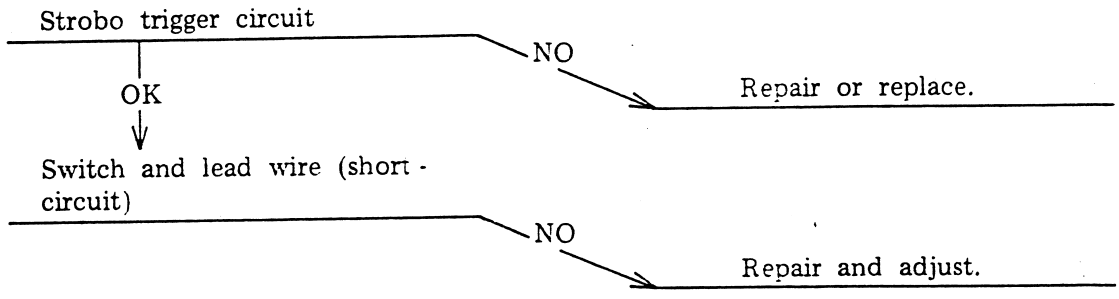


3. Strobo system

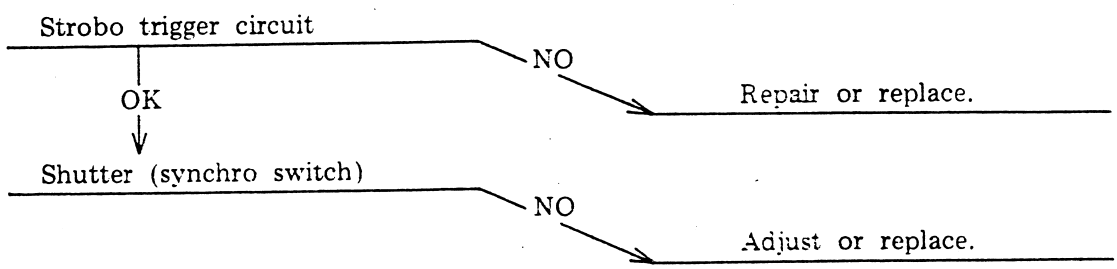
3-1 Strobo does not flash.



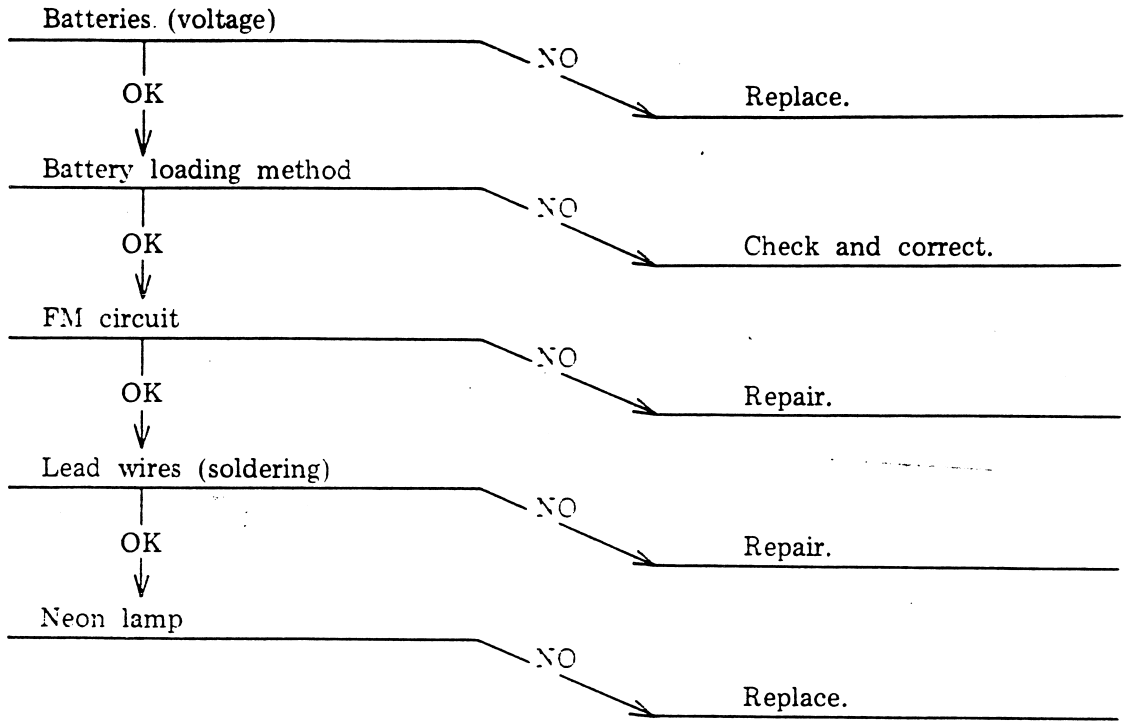
3-2 Accidentally flashes



3-3 Not synchronized correctly

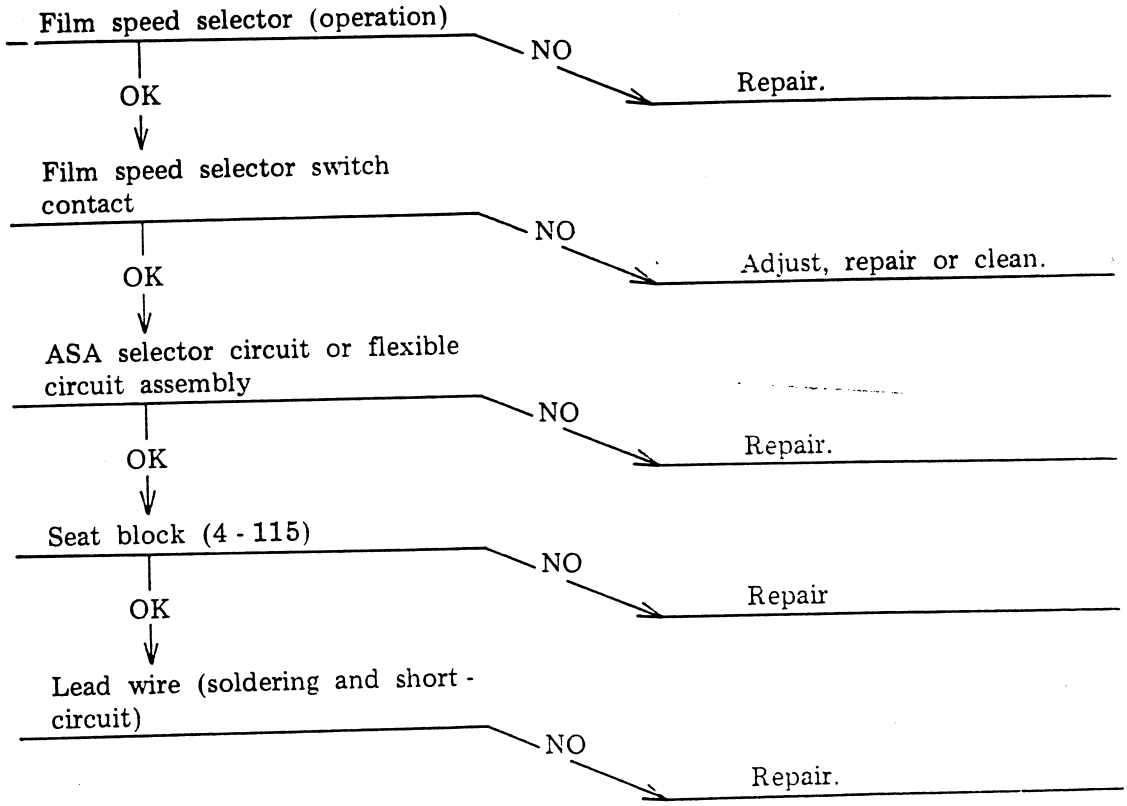


3-4 Neon lamp (flash ready) does not light.

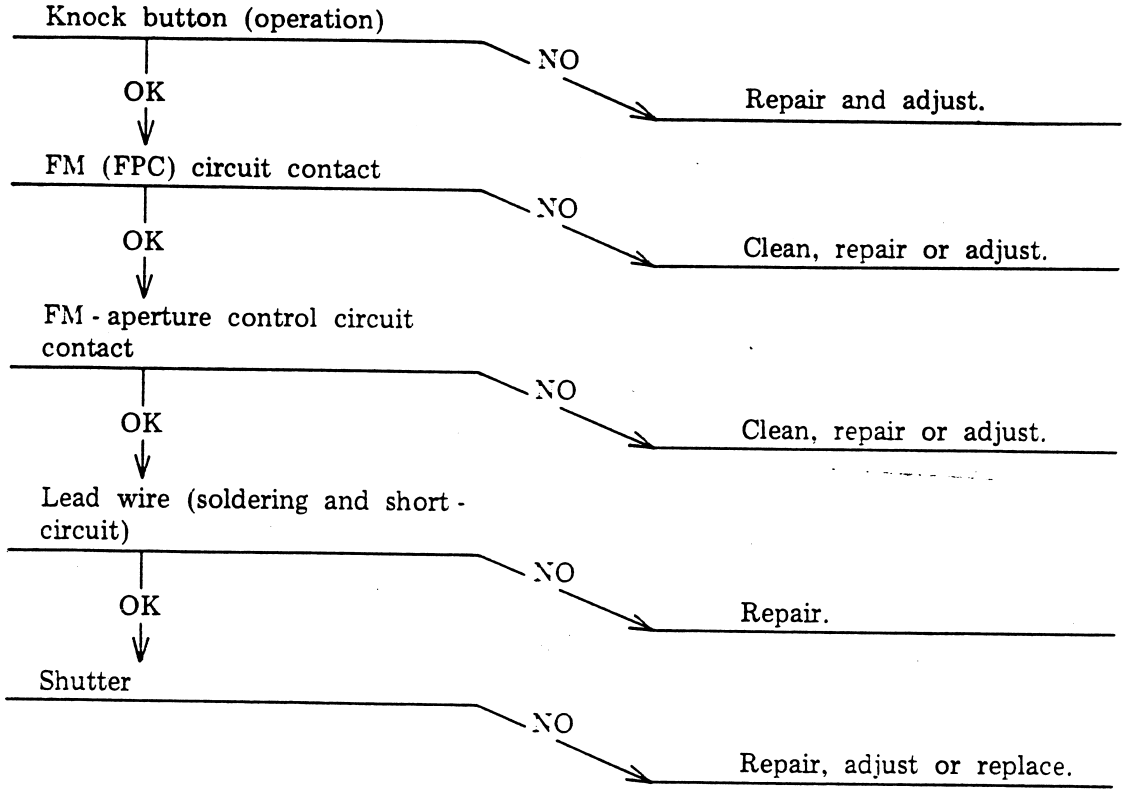


4. Film speed selecting system

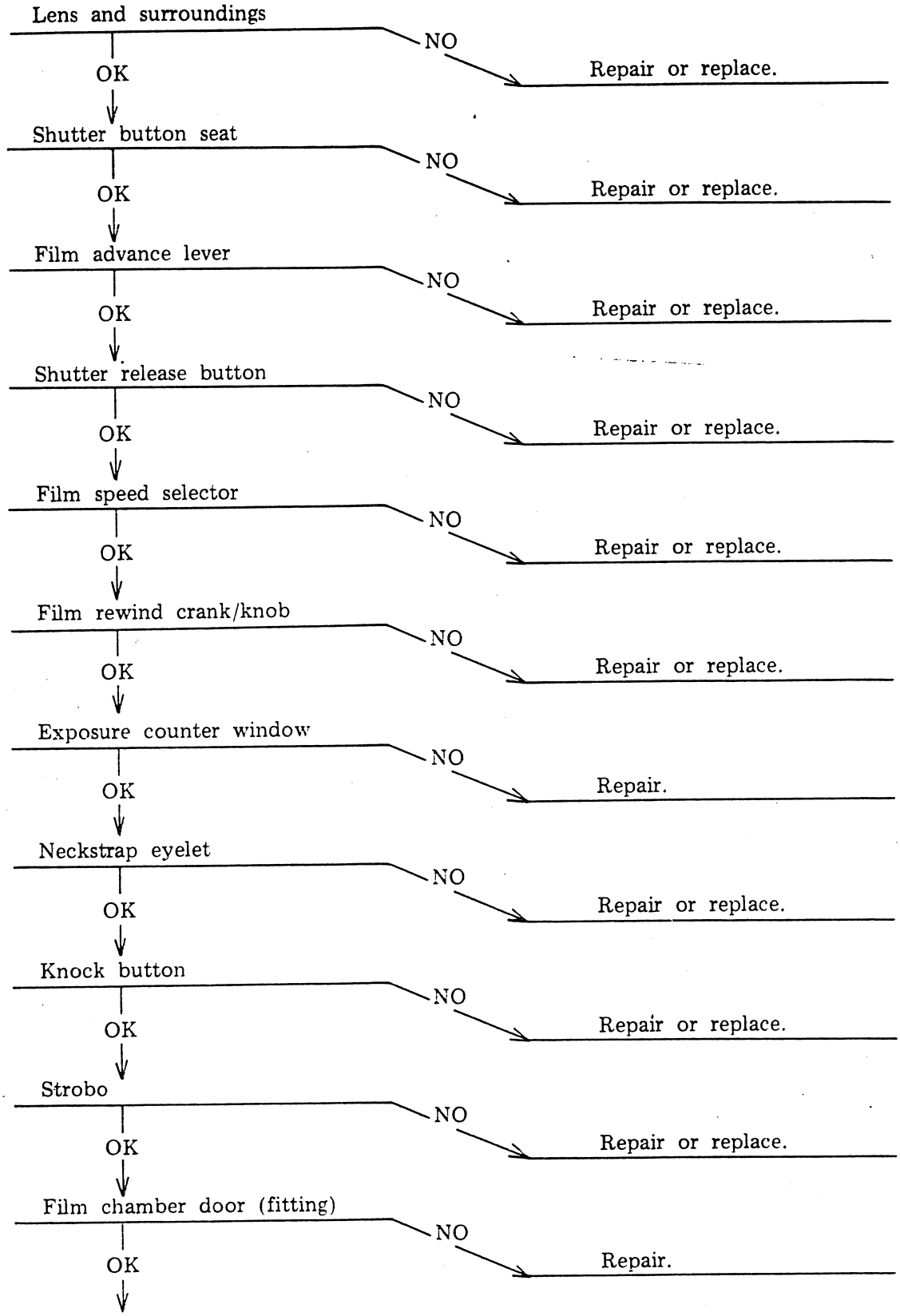
Film speed is not switched over.

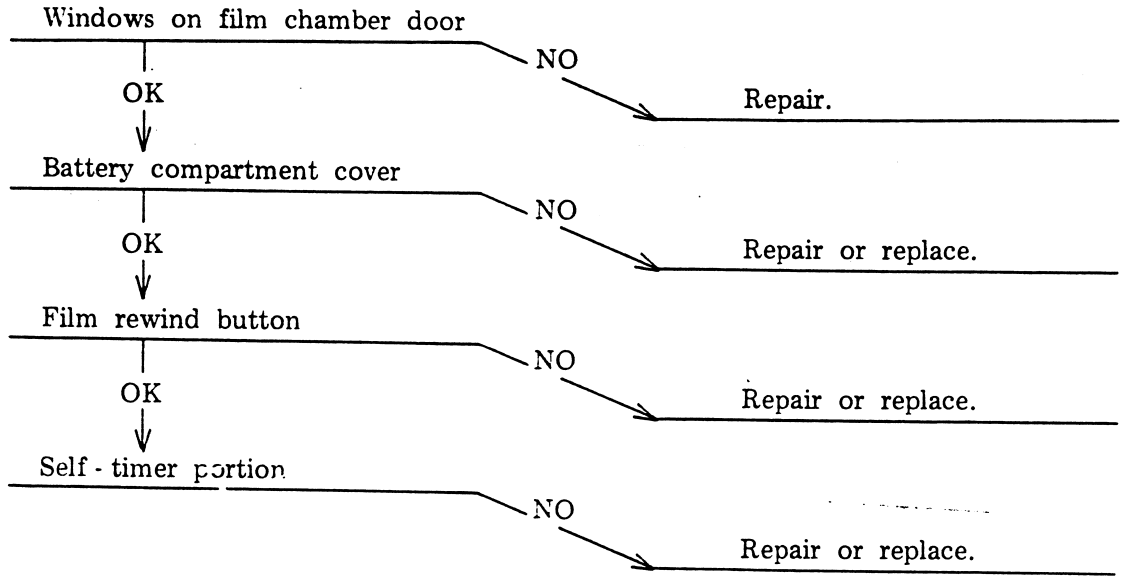


5. Flashmatic system



6. Water leaking




Windows on film chamber door
NO
Repair.
OK
Battery compartment cover
NO
Repair or replace.
OK
Film rewind button
NO
Repair or replace.
OK
Self - timer portion
NO
Repair or replace.

Ⅲ DISASSEMBLY

1. Disassembly

1-1 Inside assemblies and component parts

(1) Removing parts from the top of the front cover

(a) Remove the cover plate (1-1), screw (1-2) and film advance lever assembly (1-4) in that order.

The O-ring (1-3) is removed together with the screw (1-2) and the O-ring (1-7) is removed together with the film advance lever assembly (1-4).

(b) Open the film chamber door, apply a pincette to the fork portion of the rewind spindle (3-38) to hold it, and remove the film rewind crank assembly (1-11).

(c) Apply a pincette to the fork portion of the rewind spindle (3-38) and separate the rewind spindle (2-55) from the rewind spindle (3-38) with a No.5 or 6 flat head screw driver.

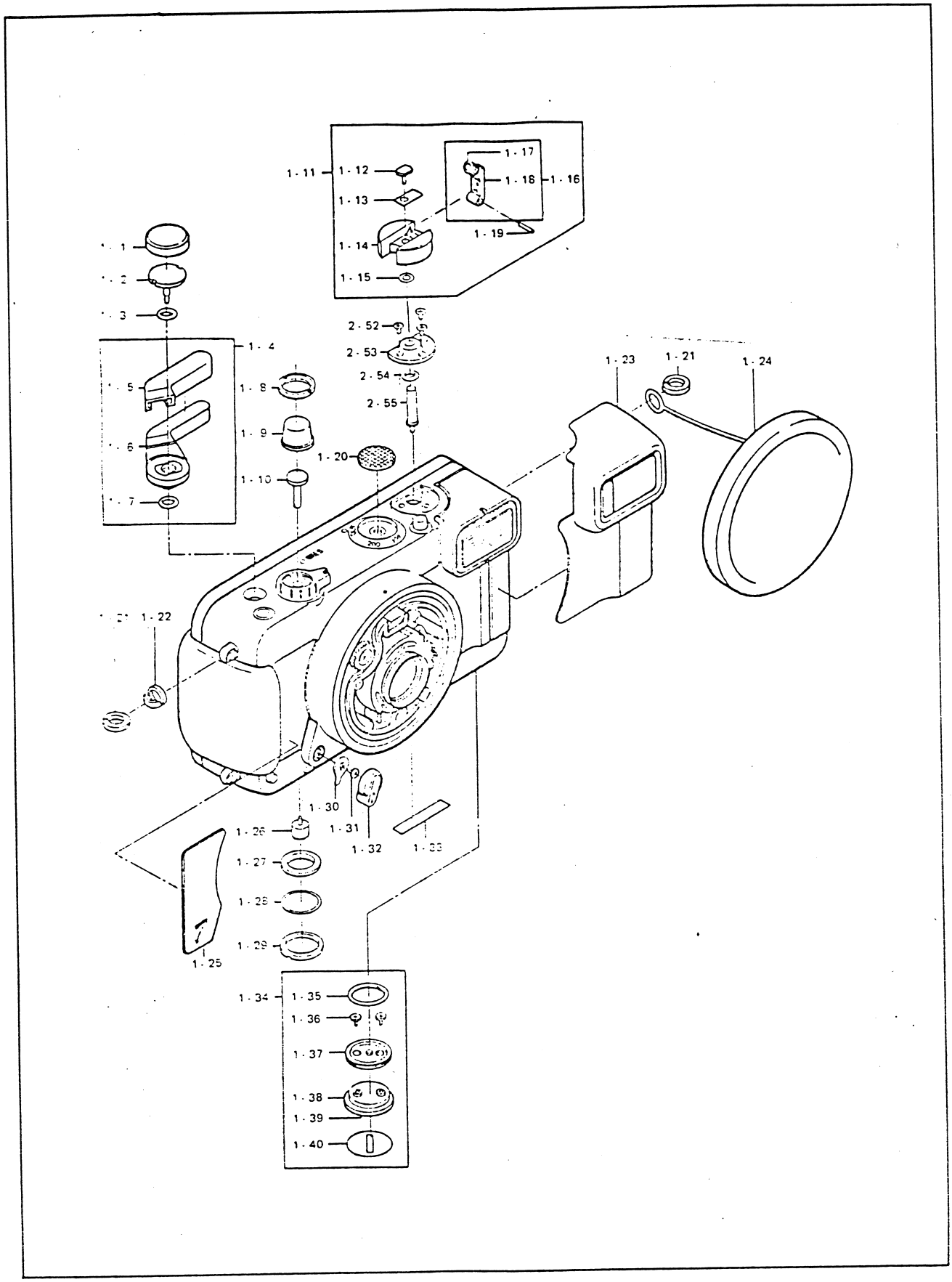
(d) Remove three screws (2-52), and pull the rewind spindle (2-55) upward. The shaft holder (2-53), rewind spindle (2-55) and O-ring (2-54) can be removed all together.

(2) Removing parts from the bottom of the front cover

(a) Remove the battery compartment cover assembly (1-34) by unscrewing it.

(b) Remove the ring (1-29) with a spanner, and remove the cover seat (1-28), cover ring (1-27) and film rewind button (1-26).

Fig. 1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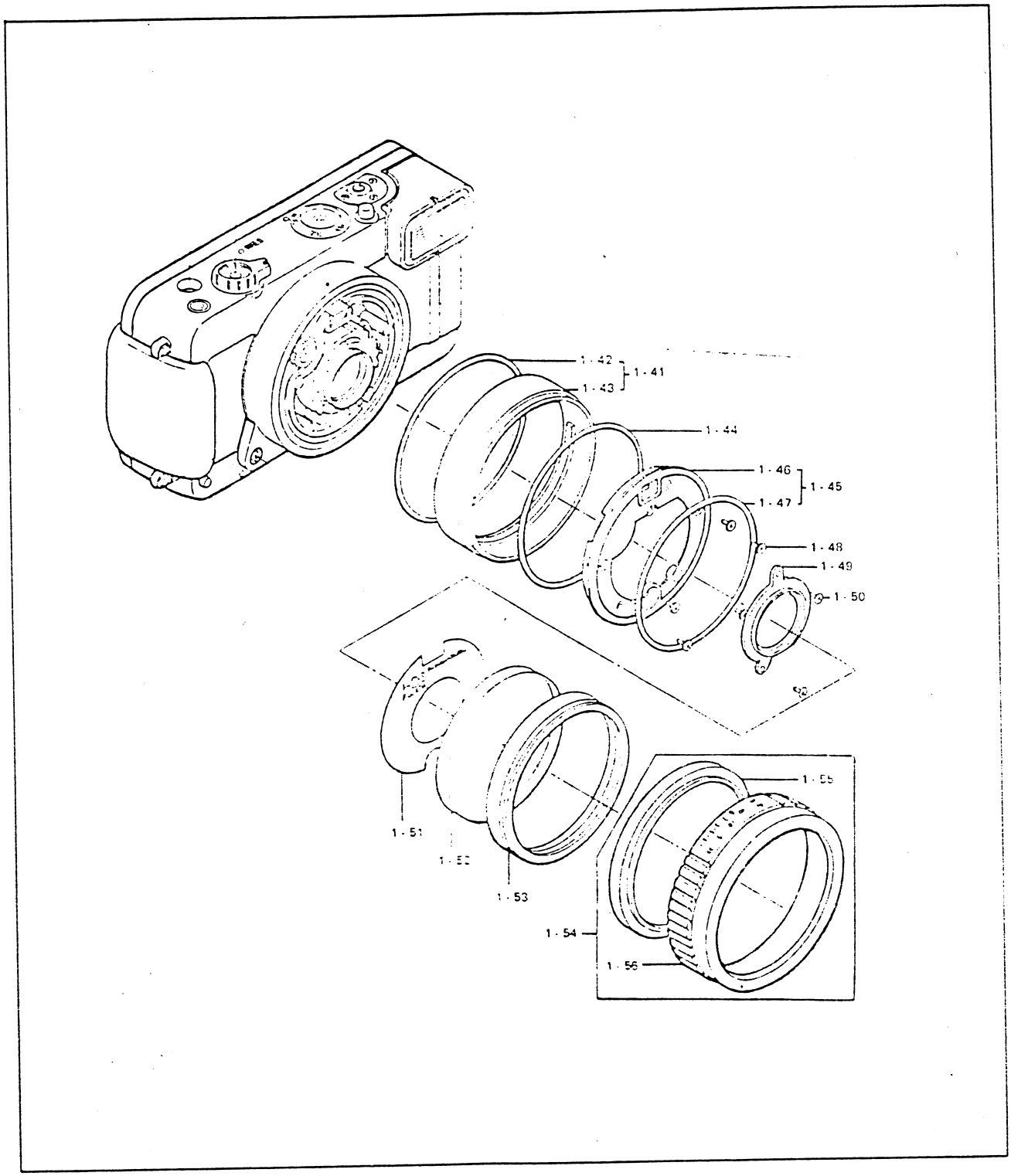
(3) Removing parts from the front face of the front cover

(a) Peel off the cover ring (1 - 56). The focusing ring II (1 - 55) will be removed together with the cover ring (1 - 56).

When the cover ring (1 - 56) has been peeled off alone, insert a No.6 flat head screw driver between the focusing ring II (1 - 55) and glass holder (1 - 53) and separate them.

(b) Loosen the glass holder (1 - 53) with a spanner, and remove the protection glass (1 - 52) and focusing ring assembly (1 - 41) together with the glass holder (1 - 53).

Fig. 2



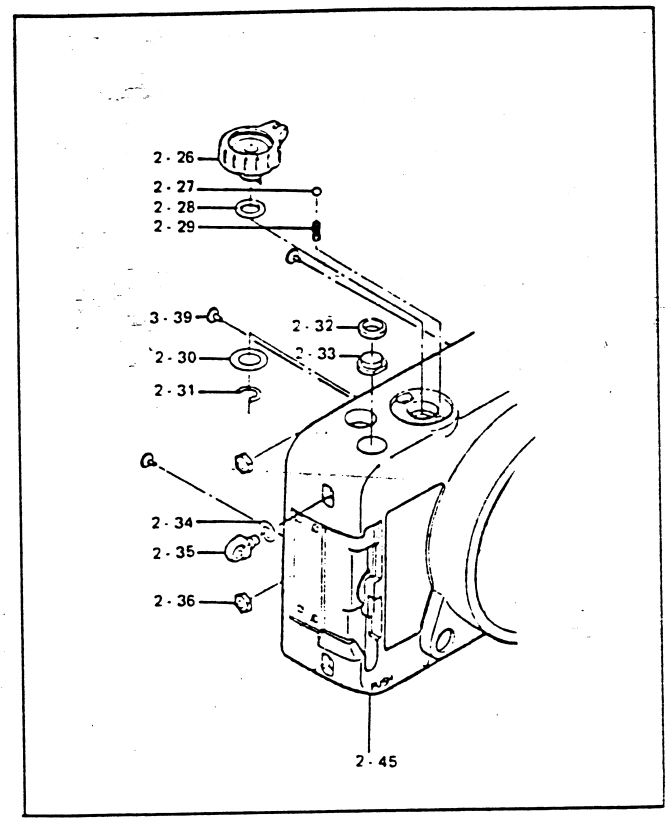
(4) Inside assemblies and component parts.

(a) Set the film speed selector "100", wind up the film advance lever completely, set the button seat (2-26) to "ON" (white circle), and release the shutter lock.

(b) Open the film chamber door, and remove three screws (3-39).

(c) Holding the front cover (2-45), push the lens assembly and take out the inside assemblies and component parts carefully to the back so as not to hook the release lever of the shutter on other parts.

Fig. 3

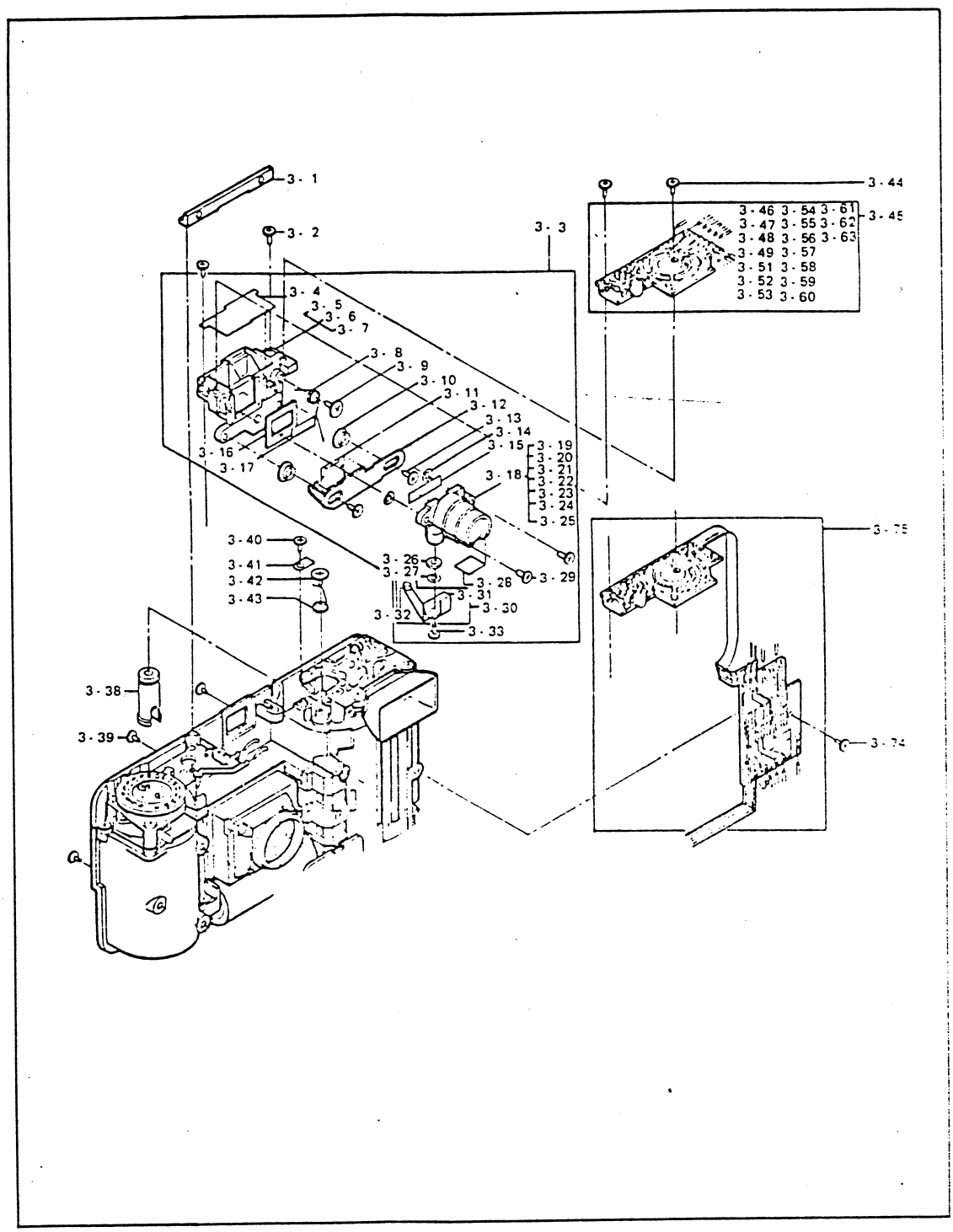


1 - 2 Removing viewfinder assembly (3 - 3)

(a) Remove two screws (3 - 39), and raise the ASA selector circuit assembly (3 - 45) or ASA selector circuit of the flexible printed circuit assembly (3 - 75) toward the rewind spindle side.

(b) Remove the rib (3 - 1), loosen two screws (3 - 2) and remove the viewfinder assembly (3 - 3) by pushing the interlock lever assembly (3 - 30) with a screw driver and by pulling the viewfinder assembly to the right. (Do not force to pull it.)

Fig. 4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1-3 Removing lens assembly and shutter assembly (3-94)

(a) Remove the name plate (1-51)

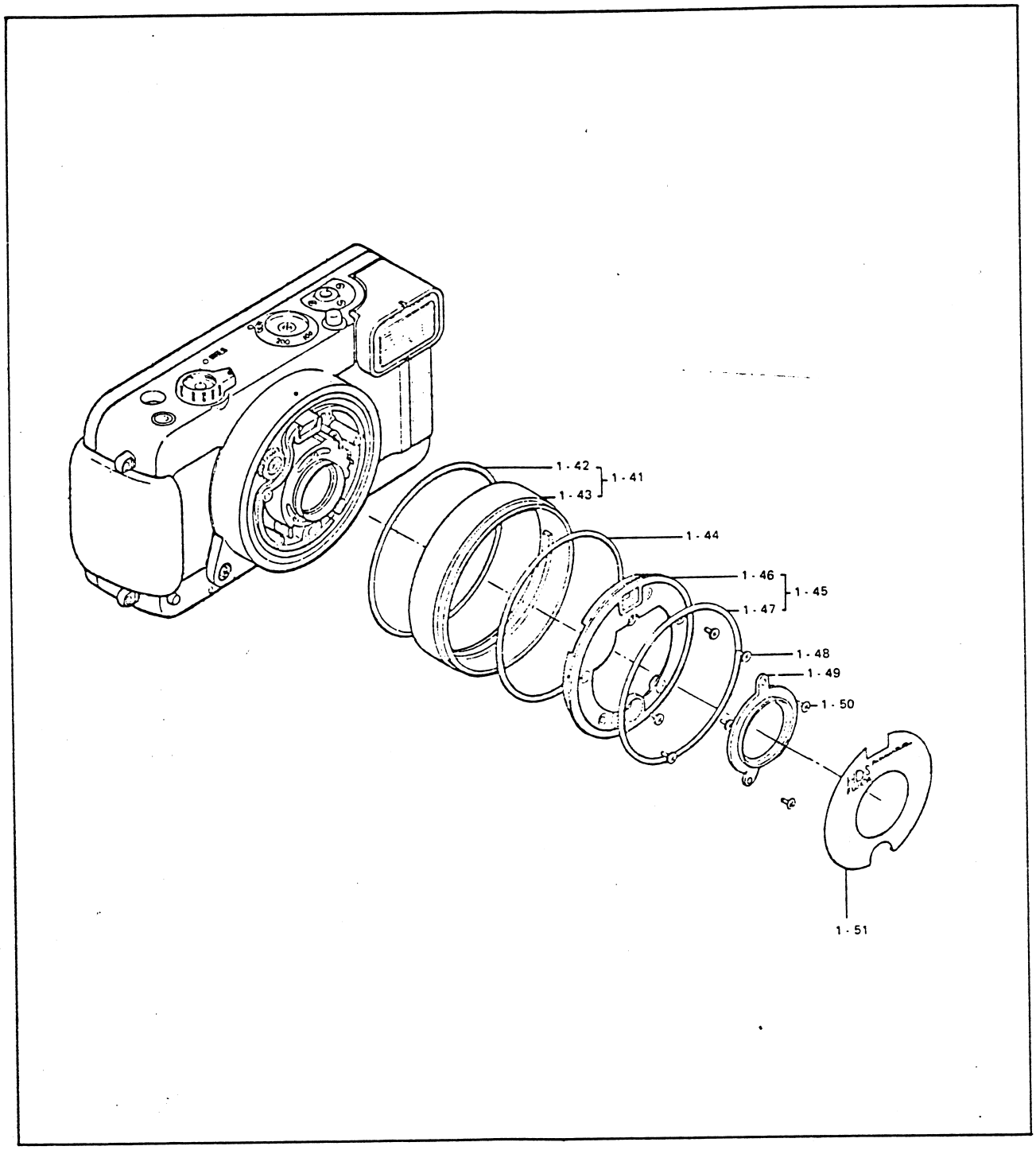
NOTE: There is a slight gap in the viewfinder assembly.
Use this gap and remove the name plate carefully so as not to scratch the name plate.

(b) Loosen two screws (1-50), and remove the lens cover (1-49).

NOTE: The lens cover (1-49) may have been installed with one screw (1-50) only. This is normal.
(This does not mean a lack of screw.)

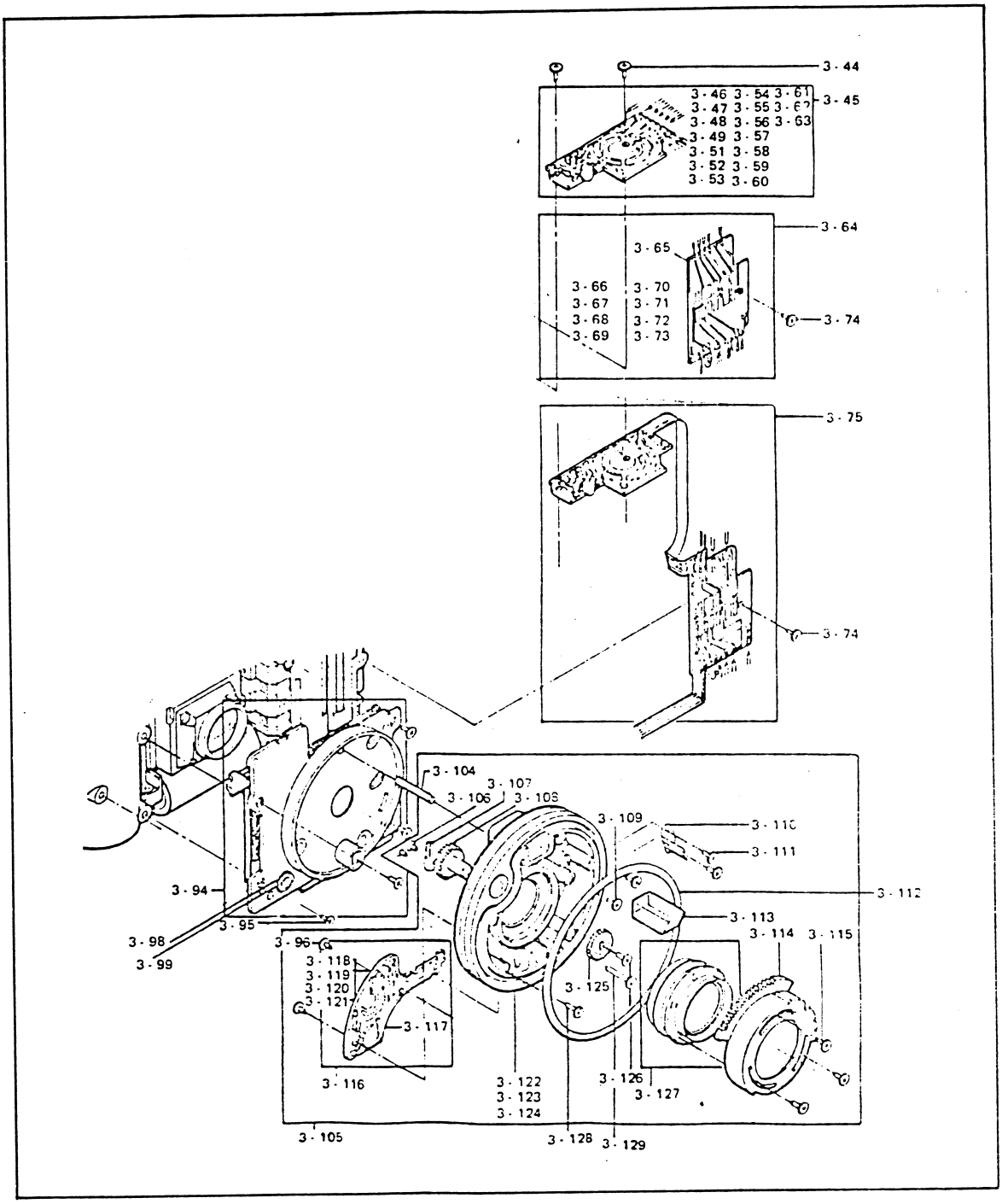
(c) Loosen five screws (1-48), and remove the front ring assembly (1-45).

Fig. 5



(d) Unsolder and disconnect the white lead wire (3-66) and blue lead wire (3-69) (extended from the FM or FPC circuit) at the FM-aperture control circuit assembly (3-116).

Fig. 6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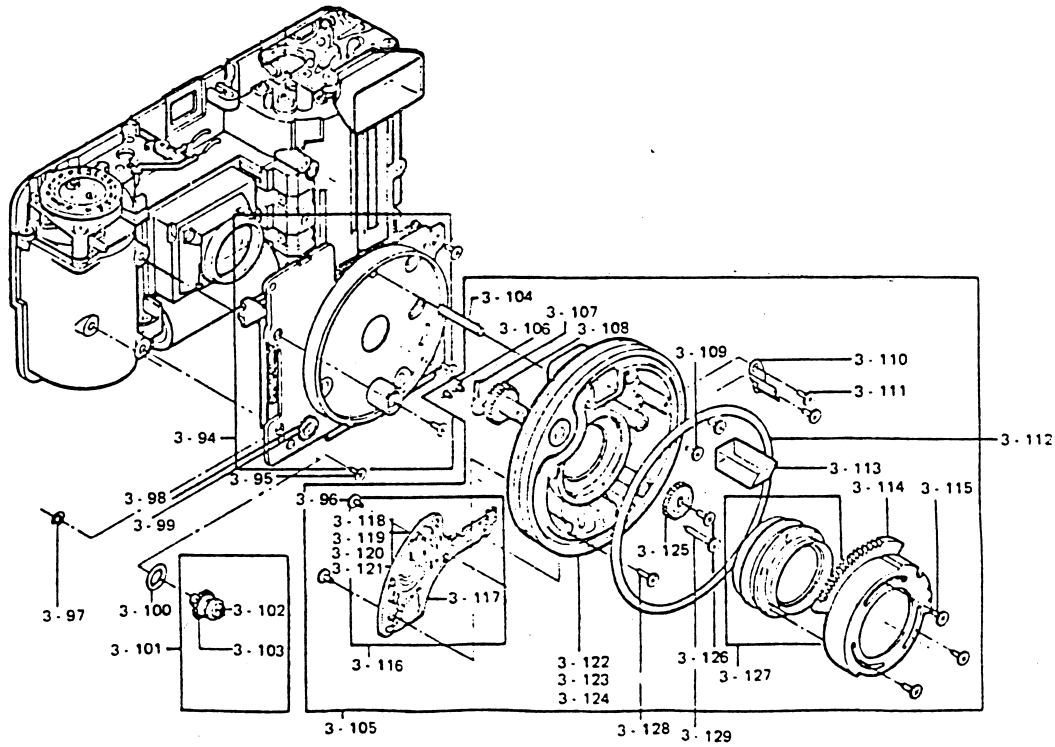
(e) Loosen two screws (3 - 128) and screw (3 -129), and remove the Helicoid assembly (3 - 105).

(f) Loosen four screws (3 - 95), and remove the shutter assembly (3 - 94).

Fig. 7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(g) Unsolder and disconnect the following lead wires from the shutter assembly (3 - 94).

a. Red lead wire (3 - 67), pink lead wire (3 - 71), yellow lead wire (3 - 72) and blue lead wire (3 - 68) extended from the FM circuit assembly.

b. Brown lead wire (3 - 59) extended from the ASA selector circuit assembly.

c. Green lead wire extended from the amplifier assembly (4 - 63).

d. Black lead wire (4 - 74) extended from the contact piece (4 - 70).

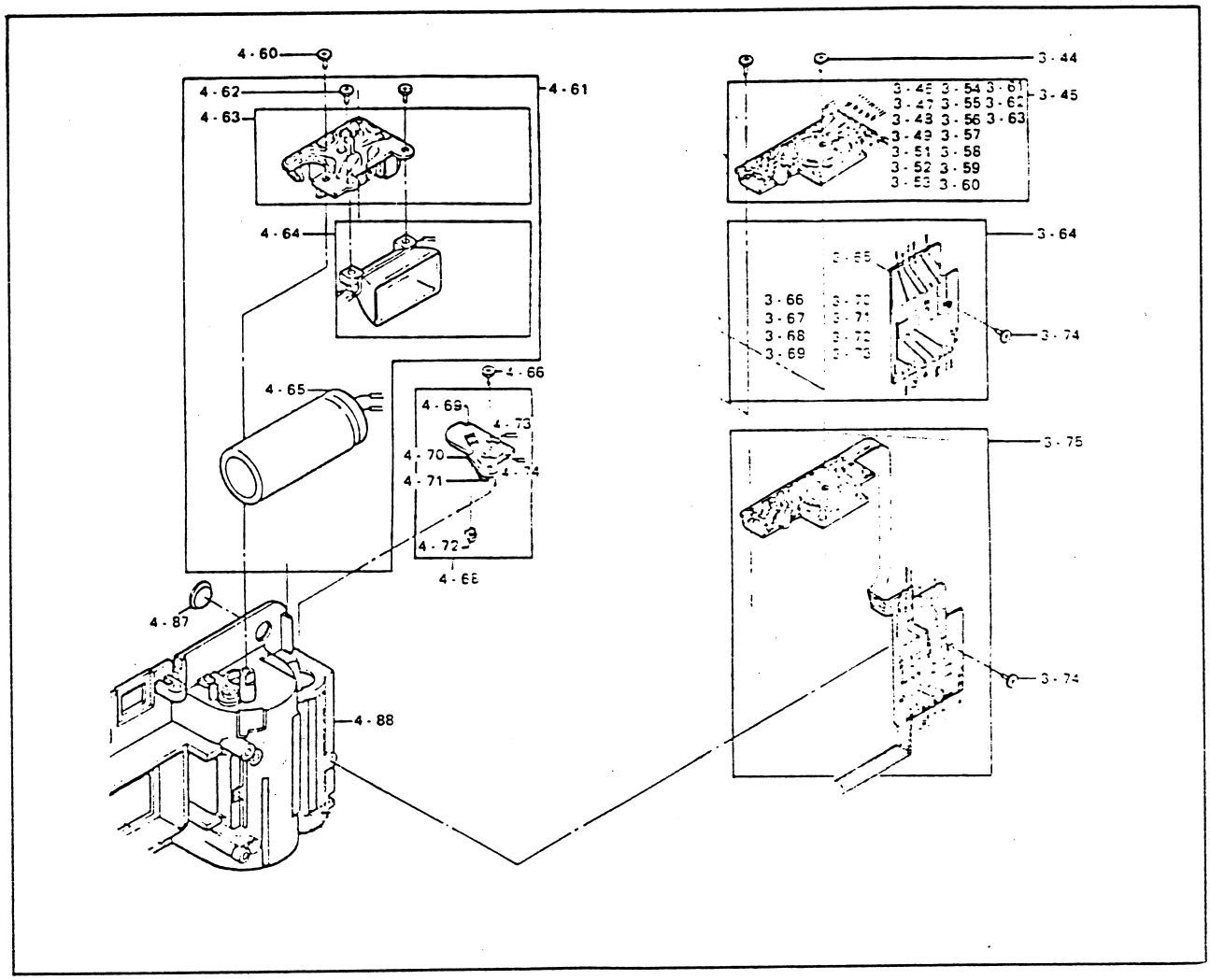
NOTE: When the ASA selector circuit and FM circuit are built in the flexible printed circuit board assembly (3 - 74), unsolder and disconnect the following terminals and lead wires.

a. Five lead wires on the flexible printed circuit board (3 - 74).

b. Green lead wire extended from the amplifier assembly (4 - 63).

c. Black lead wire (4 - 74) extended from the contact piece (4 - 70).

Fig. 8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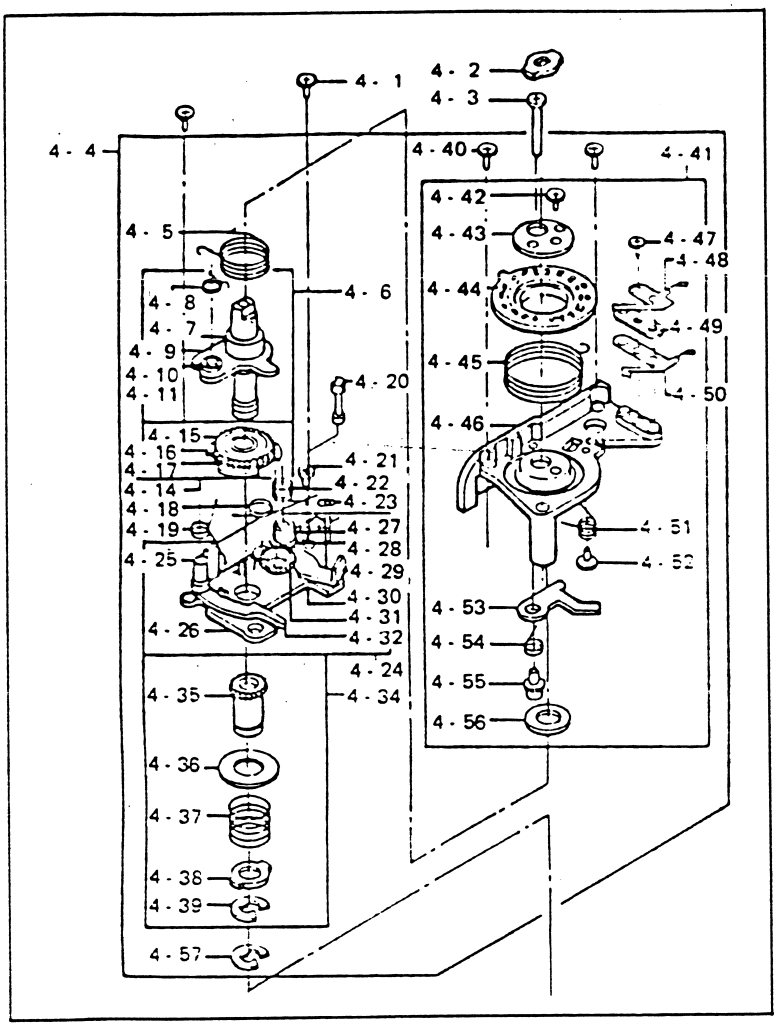
3-75
3-74

1-4 Removing film advance mechanism assembly (4-4) and exposure counter assembly (4-41)

(a) Loosen two screws (4-1) and screw (4-3), and remove the film advance mechanism assembly (4-4) and exposure counter assembly (4-41) as a set.

(b) The exposure counter assembly (4-41) can be separated by removing two screws (4-40).
Note that the spring (4-51) is hooked on the gear (4-20).

Fig. 9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4-38
4-39
4-57

1-5 Disassembling front cover assembly (2-25)

(a) Pull out two shafts (2-1), and remove the film chamber door assembly (2-7).

(b) Loosen the screw (2-49) after peeling off the cover plate (1-20), and remove the ASA selector dial I (2-50) and ASA selector dial assembly II (2-46).
Note that the spring (2-57) and steel ball (2-56) are attached to the front cover.

(c) Remove the clip (2-31) from inside of the front cover.
The washer (2-30), button seat (2-26) and O-ring (2-28) can be removed together.
Spring (2-27) and steel ball (2-27) are attached to the front cover.

(d) Loosen four screws (2-37) and remove the leaf spring assembly I (2-38).

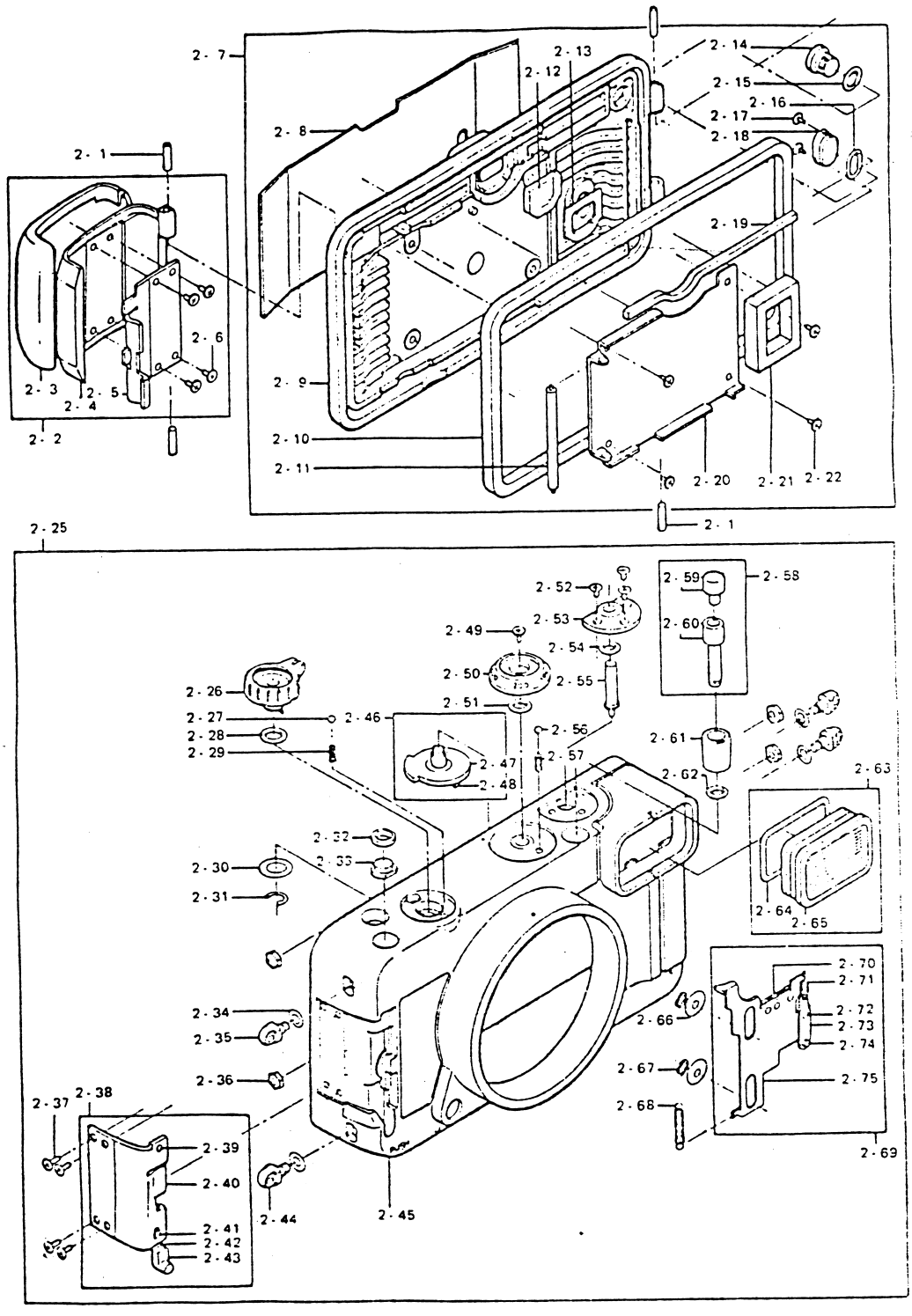
(e) Remove the spring (2-68) from inside of the front cover.
Disengage the knock plate I (2-75) with the button I (2-60).
Remove two clips (2-67). The two washers (2-66) and base plate assembly (2-69) can then be removed.

(f) Push out the protector (2-65) of the strobo from inside of the front cover.
The O-ring (2-64) will come out together with the protector (2-65).

(g) The button seat (2-61) is fitted together with the O-ring (2-62).

Fig. 10

Exploded view of front cover and film chamber door assembly



1-6 Disassembling film chamber door assembly (2-7)

(a) Remove two shafts (2-1) and remove the right grip assembly (2-2). Loosen four screws (2-6) and remove the leaf spring II (2-5). The right grip rubber (2-3) is adhered on the right grip (2-4).

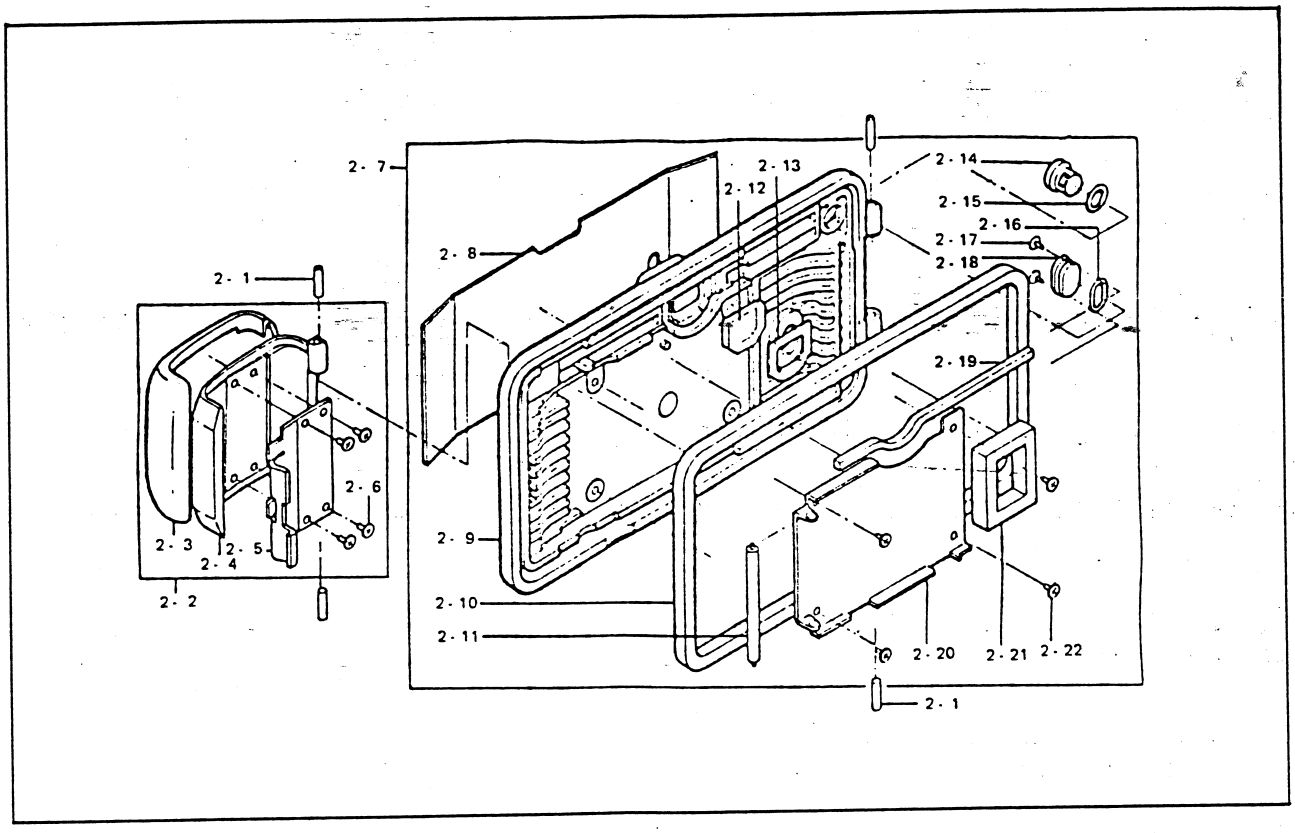
(b) Loosen four screws (2-22). The roller support (2-20) can be removed with the roller (2-11) attached to the roller support (2-20).

(c) Remove two screws (2-17), the window (2-18) can then be removed together with the O-ring (2-16).

(d) Swing the hook portion of the window plug (2-14) toward inside of the film chamber door and push out the window plug. The window plug (2-14) can then be removed together with the O-ring (2-15).

(e) The moquette (2-19), moquette (2-21), window glass (2-12), holder (2-13), film chamber door cover (2-8) and gasket (2-10) are installed with adhesive.

Fig. 11


2-7
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2-3
2-5
2-4
2-9
2-10
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2-20
2-21
2-22
2-2
2-1

1-7 Disassembling helicoid assembly (3-105)

(a) Loosen the screw (3-109) in the front side and two screws (3-96) in the back side of the helicoid assembly (3-105) and remove the FM-aperture control circuit assembly (3-116).

(b) Loosen the screw (3-126), and remove the gear II (3-125) and gear I (3-108).
Note that the contact piece (3-107) is installed on the gear I (3-108) with two screws (3-106).

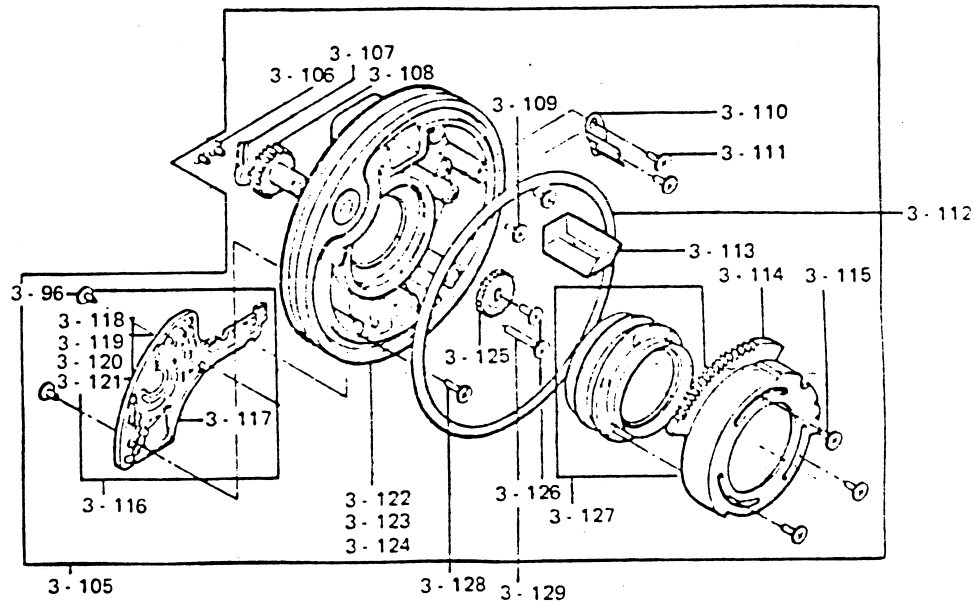
(c) Loosen two screws (3-111) and remove the leaf spring (3-110).

(d) Loosen three screws (3-115), and remove the interlock ring (3-114).

(e) Now, remove the lens assembly (3-127) with a spanner.

Fig. 12

Exploded view of helicoid assembly (3 - 105)



2. Reassembly

2 - 1 Inside assemblies and component parts (sprocket, spool, etc.)

(a) Install the hood assembly (4 - 122) in the mask of the camera body with adhesive carefully so that no adhesive comes out from the hood assembly. (Refer to Fig.

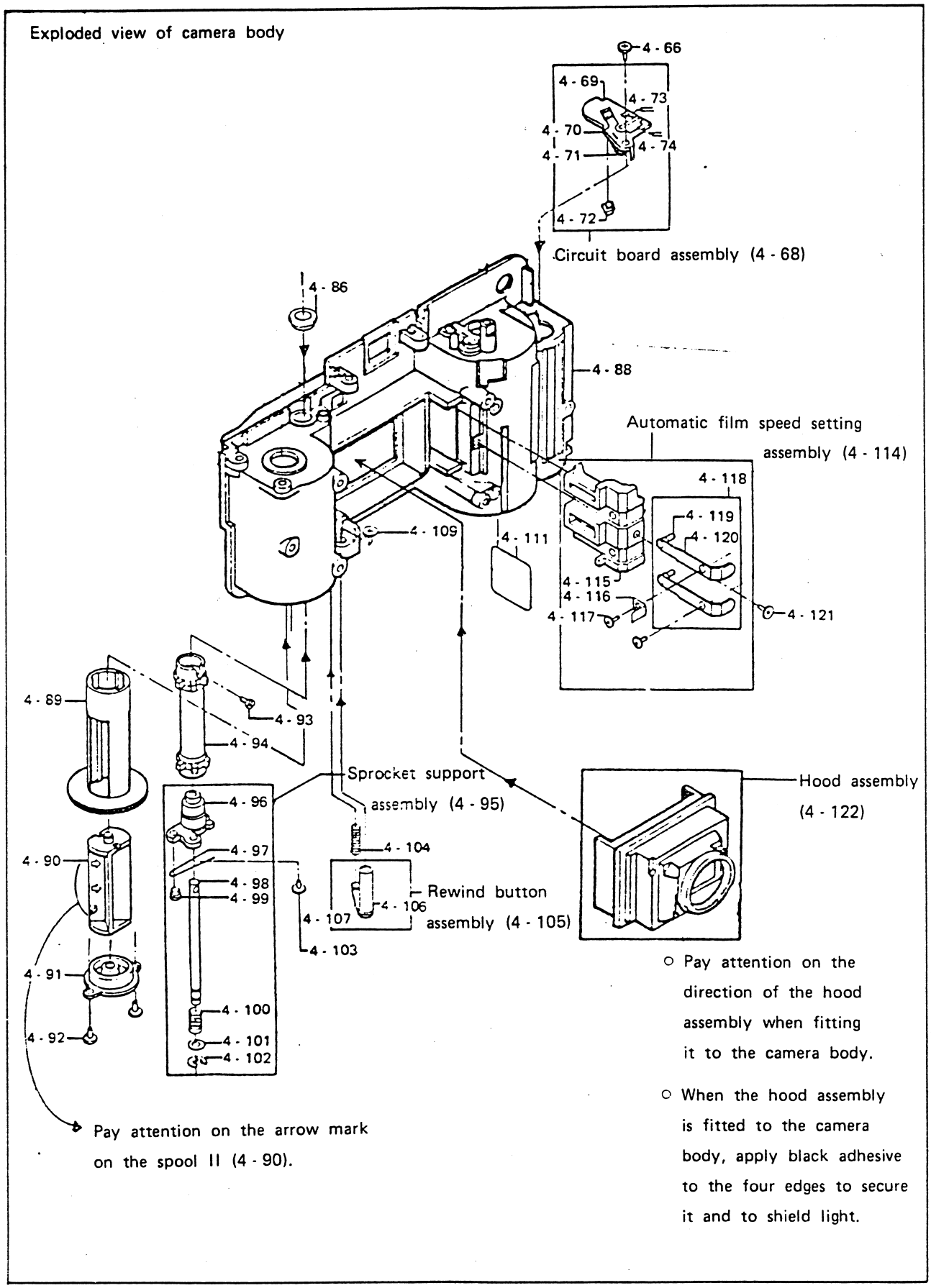
(b) Installing spool and sprocket

- ○ Place the sprocket (4 - 94) in the camera body, fit the sprocket support assembly (4 - 95) to the sprocket (4 - 94) from the bottom of the camera body, and tighten the screw (4 - 103).
- ○ Now, match the groove on the sprocket (4 - 94) with the screw hole on the release spindle (4 - 98), and tighten the screw (4 - 93). The holder (4 - 86) is fitted into the main body.
- ○ Apply the spring (4 - 104) to the column on the bottom of the camera body, cover up the spring (4 - 104) with the rewind bottom assembly (4 - 105), and by pushing the rewind bottom (4 - 105), tighten the screw (4 - 109).
- ○ Fit the spool I (4 - 89) to the camera body, insert the spool II (4 - 90) into the camera body from the bottom of the camera body fit the support (4 - 91) from the bottom of the camera body, and tighten two screws (4 - 92). (Pay attention on the arrow mark of the spool II (4 - 90). The spool II (4 - 90) cannot be inserted reversely.)

(c) Fit the automatic film speed setting assembly (4 - 114) to the camera body, and tighten the screw (4 - 121).

(d) Place the circuit board assembly (4 - 68) on the camera body and tighten the screw (4 - 66).

Fig. 13


Exploded view of camera body
4 - 66
4 - 69
4 - 73
4 - 70
4 - 74
4 - 71
4 - 72
Circuit board assembly (4 - 68)
4 - 86
4 - 88
Automatic film speed setting
assembly (4 - 114)
4 - 118
4 - 119
4 - 120
4 - 109
4 - 111
4 - 115
4 - 116
4 - 117
4 - 121
4 - 89
4 - 93
4 - 94
Sprocket support
assembly (4 - 95)
Hood assembly
(4 - 122)
4 - 96
4 - 97
4 - 104
4 - 90
4 - 98
4 - 99
Rewind button
assembly (4 - 105)
4 - 106
4 - 107
4 - 103
4 - 91
4 - 92
4 - 100
4 - 101
4 - 102
Pay attention on the arrow mark
on the spool II (4 - 90).
○ Pay attention on the direction of the hood assembly when fitting it to the camera body.
○ When the hood assembly is fitted to the camera body, apply black adhesive to the four edges to secure it and to shield light.

2-2 Film advance mechanism assembly (4-4) and exposure counter assembly (4-41)
Check the film advance mechanism assembly (4-4) first.

Next, joining the film advance mechanism assembly with the spool and sprocket in the camera body, place the film advance mechanism assembly on the camera body, and tighten two screws (4-1) and screw (4-3).
When the film advance mechanism assembly (4-4) is installed completely, be sure to check the film advance mechanism assembly for performance and functions (film advancing, exposure counter advancing, and exposure counter resetting)

(a) Place the gear assembly (4-14) on the base plate assembly (4-24), fit the film take-up spindle assembly I (4-6), fit the gear assembly (4-34) from the bottom (back), and secure them with the E-clip (4-57).

NOTE: Apply grease to the hole into which the film take-up spindle assembly I (4-6) is fitted and sliding portions of the gears (4-15) and (4-35) slightly.

(b) Apply the spring (4-19) to the shaft (4-25).
Now, apply one end of the spring to the base plate (4-26) and the other end to the stopper (4-32).

(c) Apply the spring (4-18) to the shaft (4-28).
Now, apply one end of the spring (4-18) to the base plate (4-26) and the other end to the stopper (4-29).

(d) Apply the spring (4-22) to the shaft (4-27), place the washer (4-23) beneath the hook portion, and tighten the screw (4-21).

NOTE: Before applying the spring (4-22), put grease on the shaft (4-27).

(e) Fit the gear (4-20) to the gear (4-31) and secure it with Alonalpha (adhesive) at the back side.

(f) Apply the spring (4-5) to the film take-up spindle (4-6).
Now, apply one end of the spring (4-5) to the base plate (4-26) and the other end to the film take-up spindle (4-6).

NOTE: Be careful not to hold the spring (4-8) with the spring (4-5). When the spring (4-8) is held with the spring (4-5), the film advance mechanism will not operate correctly.
Apply grease to the coil portion of the spring (4-5).

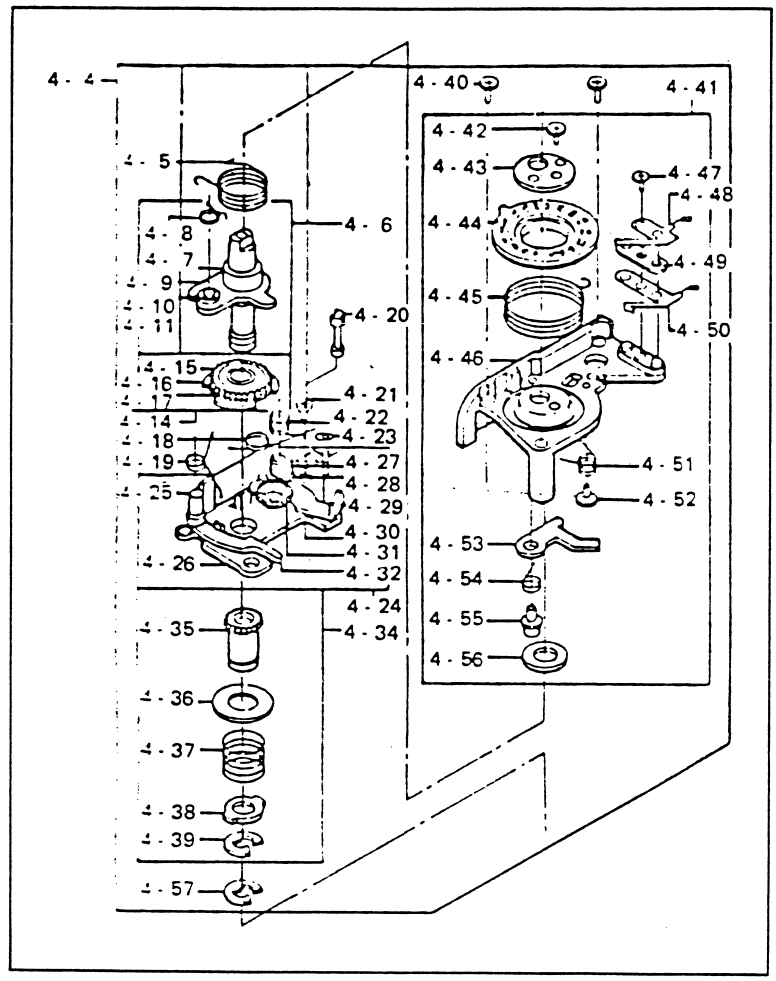
(g) Move the spring (4-51) of the exposure counter assembly (4-41) away, and inserting the gear (4-20) of the base plate (4-26) into the hole on the base plate (4-46), combine the exposure counter assembly (4-41) with the film advance mechanism assembly (4-4).

(h) Tighten two screws (4-40).

(i) Place contact piece I (4-50), contact base (4-49) and contact piece II

(4-48) on the base plate (4-46) in that order after cleaning the contact pieces and fighten the screw (4-47).

Fig. 14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2-3 Flash assembly (4-61) and FM circuit assembly (3-64)

(1) Flash assembly (4-61)

(a) Check the flash assembly (4-61) to insure that all lead wires are connected correctly and that the flash bulb is installed on the amplifier circuit correctly.

(b) Place the amplifier assembly (4-63) and flash bulb assembly (4-64) on the camera body, and tighten the screw (4-60).
Extend the red lead wire (4-73) of the circuit board assembly (4-69) to the center of the camera body along the front of the amplifier installing column, and extend the black lead wire (4-74) to the bottom of the camera body along the groove on the camera body.

(c) Wiring

- Combine the red and black lead wires extended from the amplifier (to the capacitor) and green lead wire extended from the amplifier with the black lead wire (4-74) extended from the circuit board (4-69), and extend them toward the bottom of the camera body.
- Extend the black and brown lead wires extended from the amplifier toward the flash bulb assembly (4-64).
- Extend the red lead wire extended from the apmlifier to the right.

(d) Install the capacitor (4-65) on the bottom of the camera body with a piece of double-sided adhesive tape.

(2) FM circuit assembly (3-64)

(a) Check the FM circuit assembly (3-64) to insure that all the lead wires and electronic components such as diode are connected and soldered correctly and that the printed circuit is normal.

(b) Place the FM circuit assembly (3-64) on the camera body, and tighten the screw (3-74).

- Extend the yellow lead wire (3-70) of the FM circuit assembly toward the camera top through the back of the FM circuit assembly.
- Be careful not to hold tge black and red lead wires extended to the capacitor, green lead wire extended to the shutter and black lead wire extended from the circuit board (4-69) between the FM circuit assembly and camera body.
- When placing the FM circuit assembly on the camera body, insert the FM circuit assembly beneath the contact pieces of the circuit board (4-69).

(3) Soldering and connecting lead wires and contact piece

Connect lead wires and contact piece by means of a soldering as indicated below.

(a) Red lead wire extended from the amplifier:
To circuit board (4-69)

(b) Brown lead wire extended from the amplifier:
To FM circuit (3-64)

(c) Black lead wire extended from the amplifier:
To FM circuit (3-64)

(d) The contact piece (4-70) of the circuit board (4-69):
To FM circuit (3-64)

(e) Yellow lead wire (3-70) of FM circuit:
To strobo amplifier

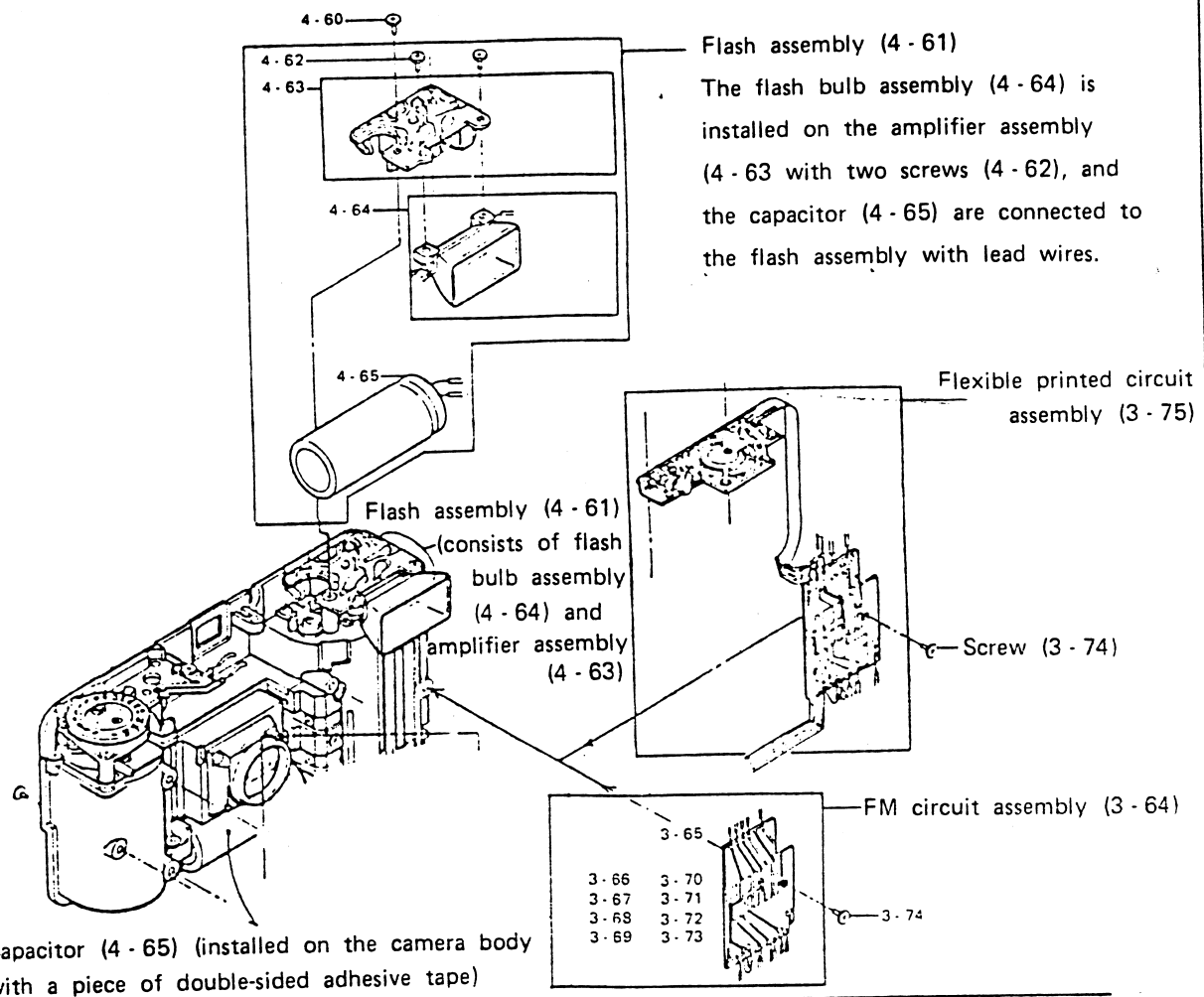
NOTE: The contact piece (4-70) should not be floated against the FM circuit. If floated, push it down on the FM circuit before soldering.

(4) Arranging lead wires

Combine and arrange the ten lead wires indicated below:

- Pink lead wire (3-71), wihye lead wire (3-66), yellow lead wire (3-72), blue lead wire (3-68), blue lead wire (3-69) and red lead wire (3-67) beneath the FM circuit.
- Black lead wire (4-74) extended from the circuit board (4-69)
- Green lead wire extended from the amplifier.
- Red and black lead wires extended from the capacitor
  Now, place the bracket (4-112) and tighten the screw (4-113).
  Be careful not to hold each lead wire between other parts.

Fig. 15



EXPLODED VIEW OF FLASH ASSEMBLY AND FM CIRCUIT ASSEMBLY

2-4 Joining flash assembly with flexible printed circuit board assembly or FM circuit assembly

(a) Flash assembly

Fefer to III-2.3-(a) above.

(b) FM circuit assembly

(1) Check the FM circuit assembly to insure that each lead wire, diode, LED and resistor are soldered correctly and the printed circuit patter is normal.

(2) Place the FM circuit portion of the flexible printed circuit assembly (3-75) or FM circuit assembly (3-64) on the camera body, and tighten the screw (3-74).

- Be careful not to hold the red and black lead wires between the strobo amplifier and capacitor, green lead wire from the strobo amplifier to the shutter and black lead wire extended from the circuit board (4-69) between the FM circuit board and camera body. Exercise care on the white lead wire in the back of the FM circuit also.
- Be sure to insert the FM circuit beneath the contact piece B of the circuit board (4-69).

(c) Solder and connect the lead wires as indicated below

a. Red lead wire from the strobo amplifier to the circuit board (4-69).

b. Brown lead wire from the strobo amplifier to the FM circuit.

c. Black lead wrie from the strobo amplifier to the FM circuit.

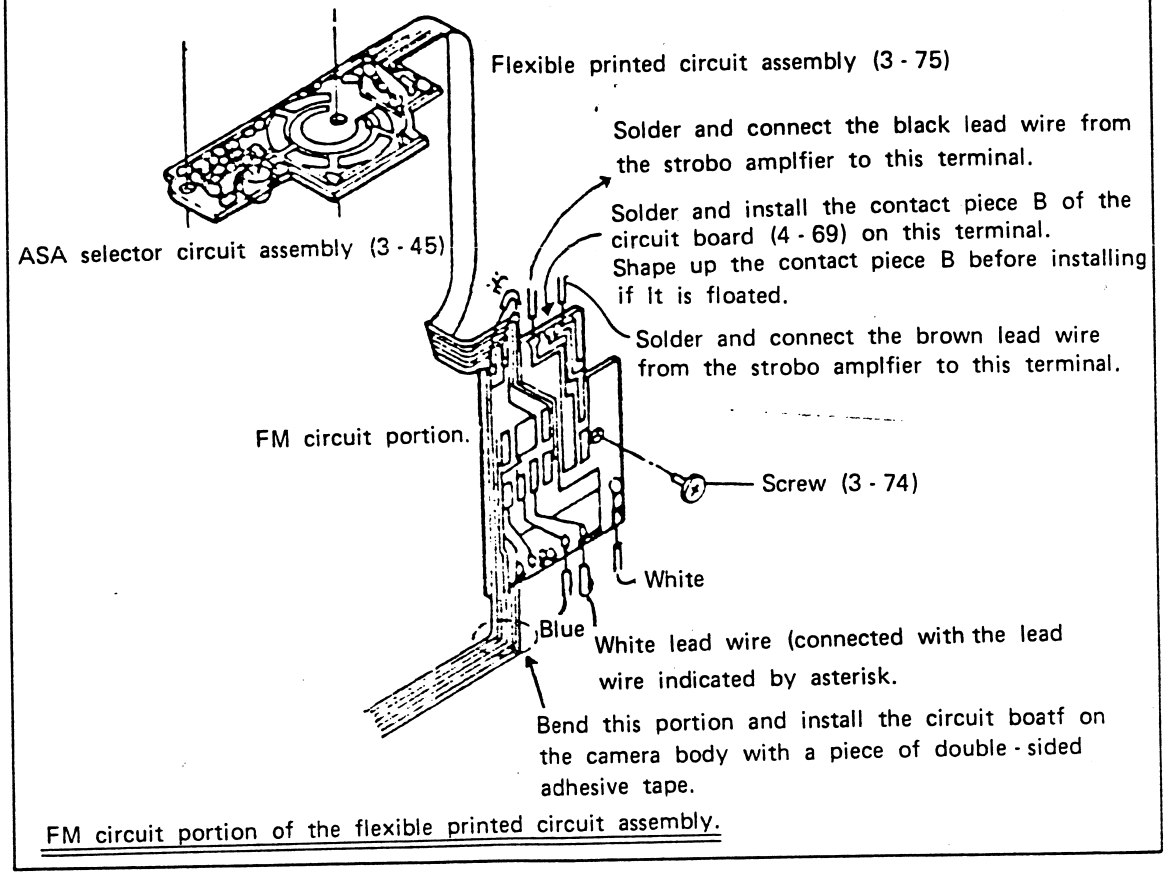
d. Contact piece B of the circuit board (4-69) to the FM circuit board.

NOTE: The contact piece B will not be soldered securely when the contact piece B is floated. Be sure to shape up the contact piece B before soldering.

(d) Arrange the lead wires as indicated below.

Secure the flexible printed circuit board with a piece of double-sided adhesive tape, combine the six lead wires (blue and white lead wires of the FM circuit, three lead wires from the strobo amplifier and black lead wire from the circuit board (4-69), place the bracket (4-112), and tighten the screw (4-113).

Fig. 16



FM circuit portion of the flexible printed circuit assembly.

Fig. 17

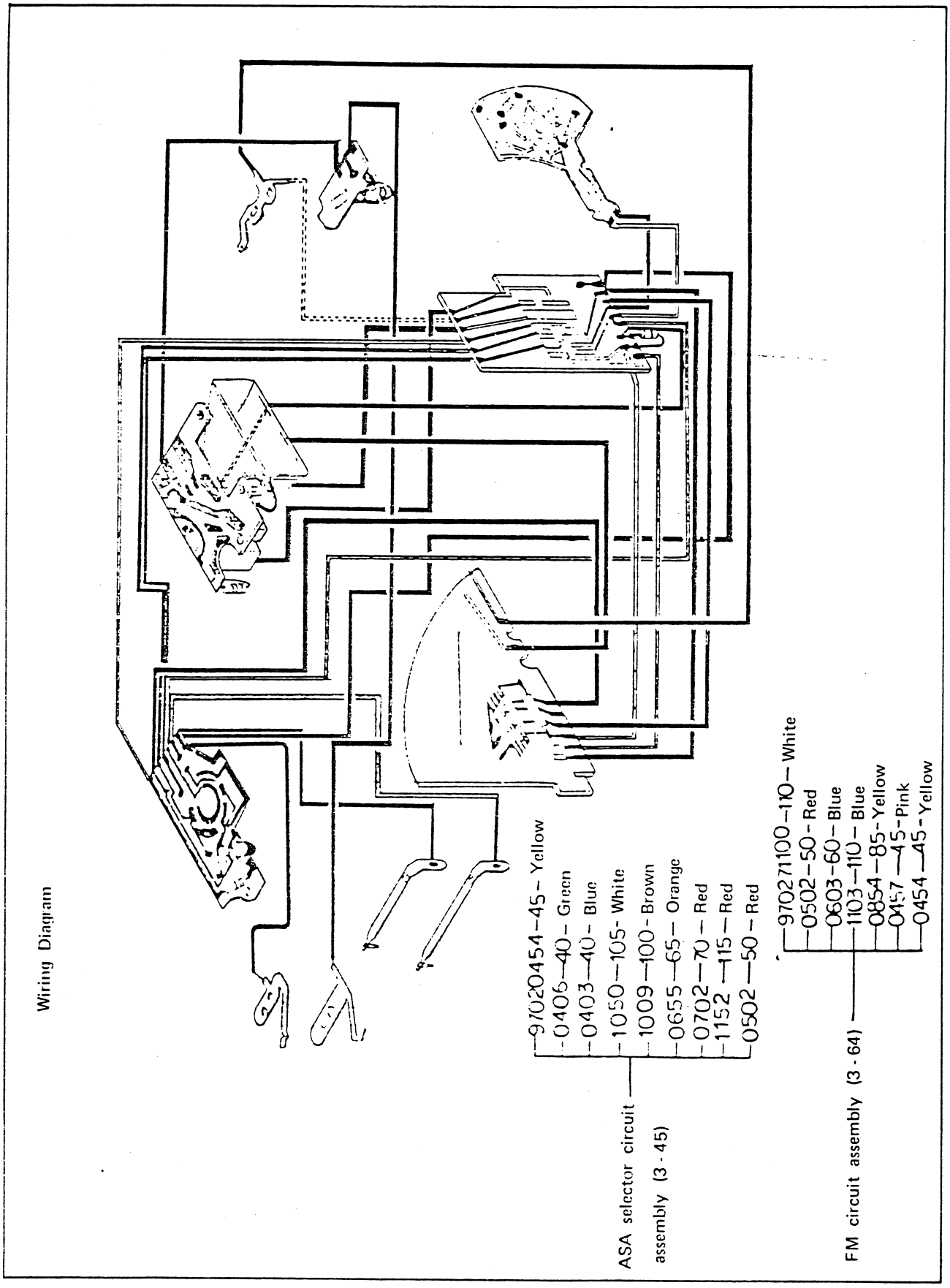
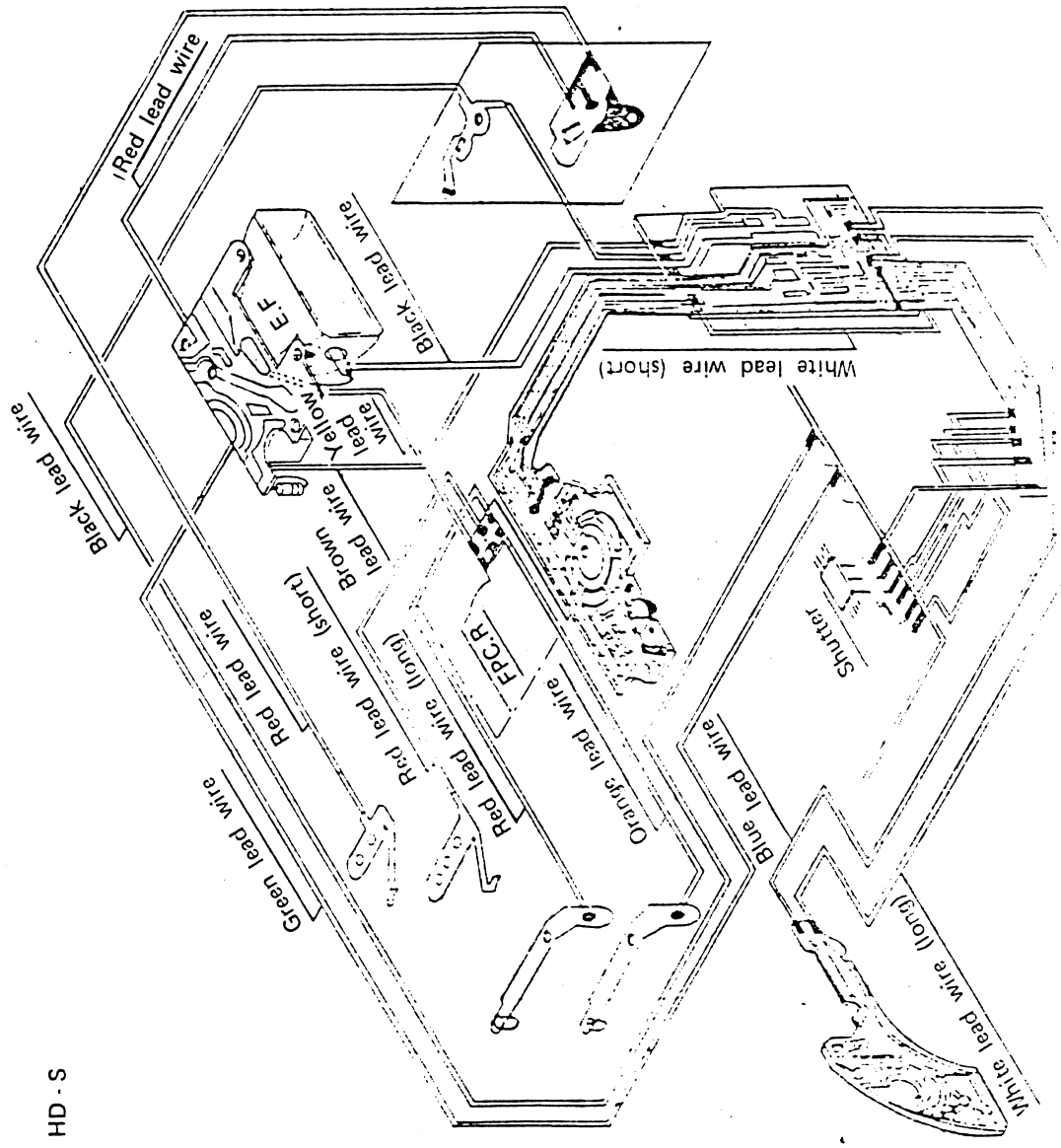

Wiring Diagram
ASA selector circuit assembly (3-45)
9702 0454—45—Yellow
0406—40—Green
0403—40—Blue
1050—105—White
1009—100—Brown
0655—65—Orange
0702—70—Red
1152—115—Red
0502—50—Red
FM circuit assembly (3-64)
9702 7110 0—110—White
0502—50—Red
0603—60—Blue
1103—110—Blue
0854—85—Yellow
0457—45—Pink
0454—45—Yellow

Fig. 18

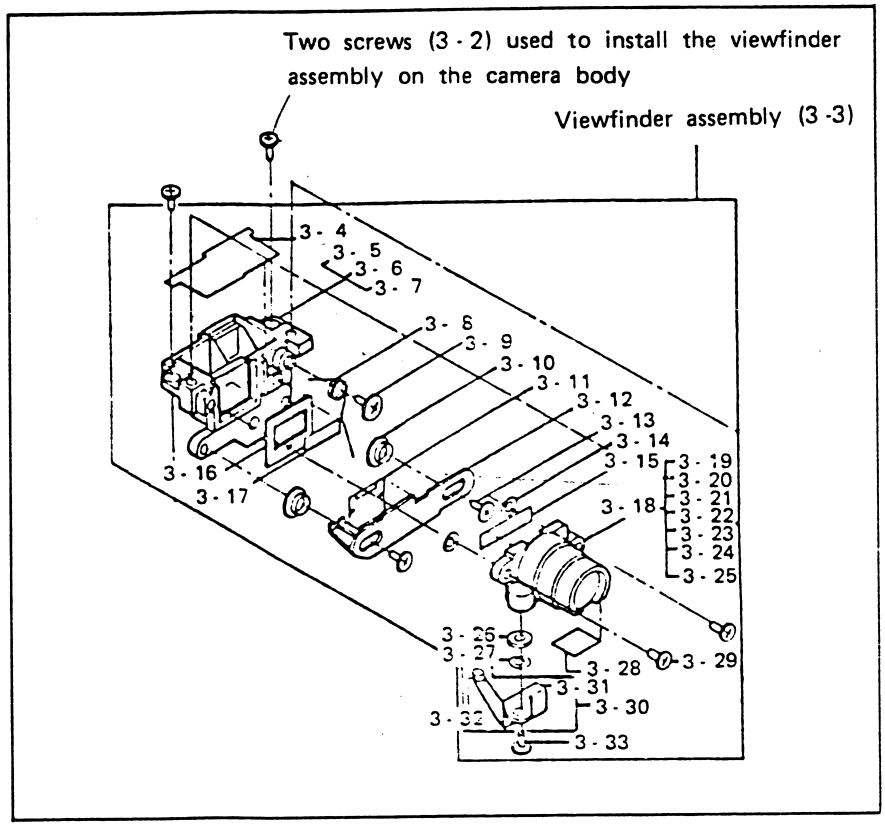


Wiring diagram FUJICA HD-S

2 - 5 Viewfinder assembly

Check the viewfinder assembly first. Now, place the viewfinder assembly on the camera body, and tighten two screws (3 - 2).

Fig. 19


Two screws (3 - 2) used to install the viewfinder assembly on the camera body
Viewfinder assembly (3 -3)
3 - 4
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3 - 33

2-6 Printed circuit assembly (3-45)

(a) Check the printed circuit assembly (3-45) to insure that each lead wire, resistor and LED are soldered correctly and that the printed circuit pattern is normal.

(b) Install the printed circuit assembly (3-45) on the viewfinder assembly with two screws (3-44).

(c) Perform wiring as indicated below.

a. Combine five lead wires (red lead wire (3-63), red lead wire (3-62), brown lead wire (3-59), white lead wore (3-58) and orange lead wire (3-60) of the printed circuit assembly (3-45)), and apply them to the wire holder (4-116) of the automatic film speed setting assembly (4-114).

b. Solder and connect the red lead wire (3-63) and orange lead wire (3-60) respectively to the upper and lower leaf springs (4-120).

c. Solder and connect the red lead wire (3-62) and white lead wire (3-58) to the FM circuit assembly (3-64).

d. Solder and connect the yellow lead wire (3-55), green lead wire (3-56) and blue lead wire (3-57) to the FM circuit assembly (3-64).

e. Solder and connect the red lead wire (3-61) to the contact piece I (4-50).

f. Solder and connect the red lead wire (4-73) of the circuit board assembly (4-68) to the contact piece II (4-48).

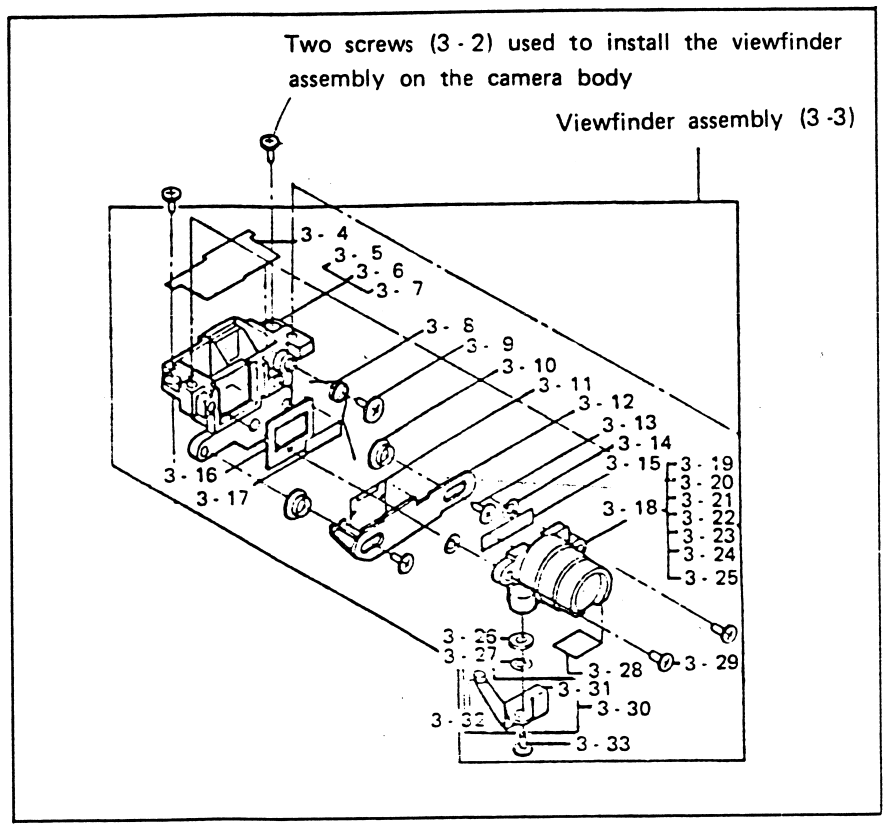
(d) Arrange the lead wires as indicated below.

a. Apply the red lead wire (3-62) and white lead wire (3-58) to the bracket (4-112).

b. Arrange the green lead wire (3-56), blue lead wire (3-57) and yellow lead wire (3-55) connected to the FM circuit assembly (3-64) along the bottom of the flash assembly together with the red lead wire (4-73) extended from the circuit board (4-69).

c. Extend the red lead wire (3-61) and red lead wire (4-73) extended from the circuit board (4-69) up to the top of the viewfinder assembly through the back of the ASA selector circuit board (3-46).

Fig. 19


Two screws (3-2) used to install the viewfinder assembly on the camera body
Viewfinder assembly (3-3)
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2-6 Printed circuit assembly (3-45)

(a) Check the printed circuit assembly (3-45) to insure that each lead wire, resistor and LED are soldered correctly and that the printed circuit pattern is normal.

(b) Install the printed circuit assembly (3-45) on the viewfinder assembly with two screws (3-44).

(c) Perform wiring as indicated below.

a. Combine five lead wires (red lead wire (3-63), red lead wire (3-62), brown lead wire (3-59), white lead wore (3-58) and orange lead wire (3-60) of the printed circuit assembly (3-45)), and apply them to the wire holder (4-116) of the automatic film speed setting assembly (4-114).

b. Solder and connect the red lead wire (3-63) and orange lead wire (3-60) respectively to the upper and lower leaf springs (4-120).

c. Solder and connect the red lead wire (3-62) and white lead wire (3-58) to the FM circuit assembly (3-64).

d. Solder and connect the yellow lead wire (3-55), green lead wire (3-56) and blue lead wire (3-57) to the FM circuit assembly (3-64).

e. Solder and connect the red lead wire (3-61) to the contact piece I (4-50).

f. Solder and connect the red lead wire (4-73) of the circuit board assembly (4-68) to the contact piece II (4-48).

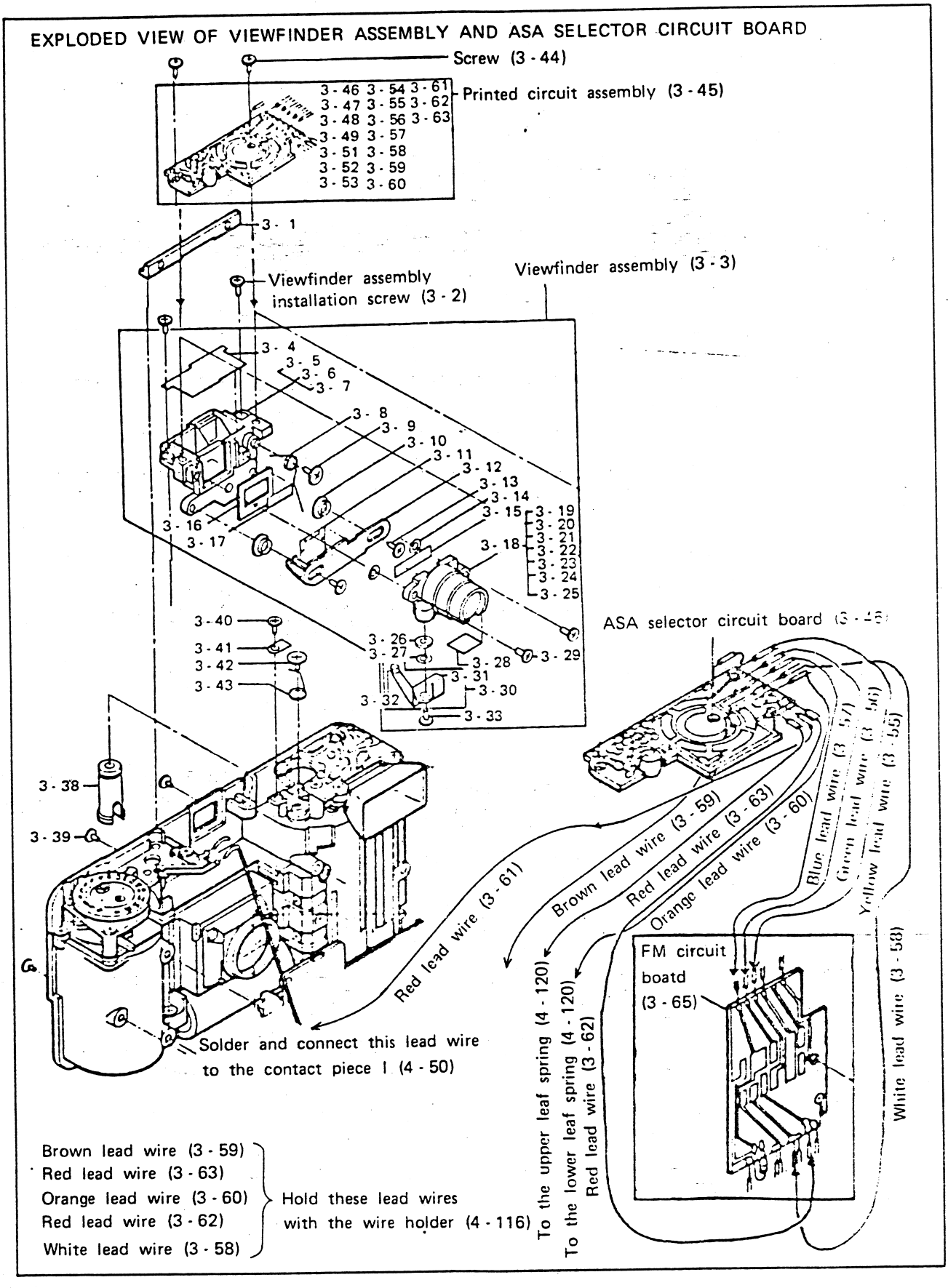
(d) Arrange the lead wires as indicated below.

a. Apply the red lead wire (3-62) and white lead wire (3-58) to the bracket (4-112).

b. Arrange the green lead wire (3-56), blue lead wire (3-57) and yellow lead wire (3-55) connected to the FM circuit assembly (3-64) along the bottom of the flash assembly together with the red lead wire (4-73) extended from the circuit board (4-69).

c. Extend the red lead wire (3-61) and red lead wire (4-73) extended from the circuit board (4-69) up to the top of the viewfinder assembly through the back of the ASA selector circuit board (3-46).

Fig. 20


EXPLODED VIEW OF VIEWFINDER ASSEMBLY AND ASA SELECTOR CIRCUIT BOARD
Screw (3 - 44)
3 - 46 3 - 54 3 - 61
3 - 47 3 - 55 3 - 62
3 - 48 3 - 56 3 - 63
3 - 49 3 - 57
3 - 51 3 - 58
3 - 52 3 - 59
3 - 53 3 - 60
Printed circuit assembly (3 - 45)
3 - 1
Viewfinder assembly installation screw (3 - 2)
Viewfinder assembly (3 - 3)
3 - 4
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3 - 33
3 - 40
3 - 41
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3 - 43
ASA selector circuit board (3 - 46)
3 - 38
3 - 39
Red lead wire (3 - 61)
Brown lead wire (3 - 59)
Red lead wire (3 - 63)
Orange lead wire (3 - 60)
Blue lead wire (3 - 57)
Green lead wire (3 - 56)
Yellow lead wire (3 - 55)
White lead wire (3 - 58)
FM circuit boatd (3 - 65)
Solder and connect this lead wire to the contact piece I (4 - 50)
To the upper leaf spring (4 - 120)
To the lower leaf spring (4 - 120)
Red lead wire (3 - 62)
Brown lead wire (3 - 59)
Red lead wire (3 - 63)
Orange lead wire (3 - 60)
Red lead wire (3 - 62)
White lead wire (3 - 58)
Hold these lead wires with the wire holder (4 - 116)

2-7 ASA selector cirucit board (3-46)

(a) Place the ASA selector circuit board (3-46) or the ASA selector circuit portion of flexible printed circuit board assembly (3-75) on the viewfinder assembly after bending the strobo side of the ASA selector circuit, and tighten the two screws (3-44).

(b) Perform wiring as indicated below.

a. Apply the red lead wire (long) and orange lead wire of the ASA selector circuit board to the wire holder (4-116).

b. Solder and connect the red lead wire (long) and orange lead wire respectively to the upper and lower leaf springs (4-120).

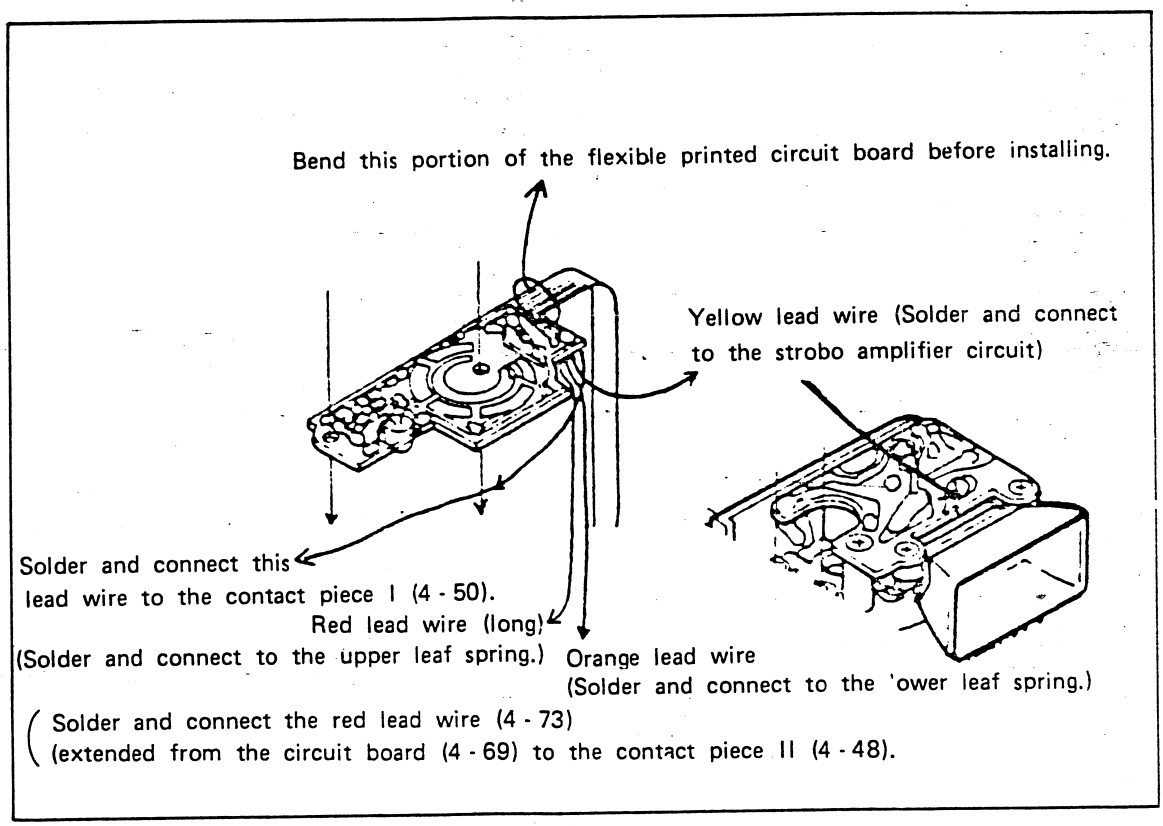
c. Solder and connect the red lead wire (short) to the contact piece I (4-50).

d. Solder and connect the red lead wire (4-73) extended from the circuit board (4-69) to the contact piece II (4-48).

(c) Arranging lead wires

Arrange and extend the red lead wire (short) and red lead wire (4-73) extended from the circuit board (4-69) to the top of the viewfinder assembly through the back of the ASA selector circuit board.

Fig. 21


Bend this portion of the flexible printed circuit board before installing.
Yellow lead wire (Solder and connect to the strobo amplifier circuit)
Solder and connect this lead wire to the contact piece I (4 - 50).
Red lead wire (long)
(Solder and connect to the upper leaf spring.)
Orange lead wire
(Solder and connect to the 'ower leaf spring.)
Solder and connect the red lead wire (4 - 73)
(extended from the circuit board (4 - 69) to the contact piece II (4 - 48).

2-8 Shutter, parts surrounding the shutter and lens assembly

(a) Installing self-timer gear on the shutter

a. Check the shutter assembly (3-94) to insure that it is normal. Now, fit the gear 1 (3-98) to the self-timer shaft of the shutter assembly (3-94), and tighten the screw (3-99).

b. Apply grease to the portion of the shutter base plate where the gear assembly (3-101) slides slightly, fit the gear assembly (3-101), and apply the E-clip (3-97) from the back of the shutter assembly to secure the gear assembly.
Be sure to install the gear assembly after applying the O-ring (3-100) to the gear assembly, and before applying the O-ring (3-100), apply silicon grease to the self-timer shaft (3-102).

NOTE: Align the flat faces of the self-timer shaft in the shutter side in parallel to those of the self-timer shaft (3-102) of the gear assembly (3-101).
Further, before installing the gear assembly, make sure that the self-timer shaft of the shutter has been completely released.

(b) Installing shutter assembly on camera body

Extend the blue lead wire (3-69) and white lead wire (3-66) extended from the FM circuit (3-64) to the front side of the camera through the back of the shutter assembly, place the shutter assembly on the camera body, and tighten four screws (3-95).

NOTE: When checking the shutter, apply 3V.
Be careful not to hold the lead wires between the shutter assembly and camera body.

(c) Solder and connect the sevel lead wires indicated below to the printed circuit board of the shutter assembly.

a. Red lead wire (3-67), blue lead wire (3-68), yellow lead wire (3-72) and pink lead wire (3-71) extended from the FM circuit board.

b. Green lead wire extended from the strobo amplifier.

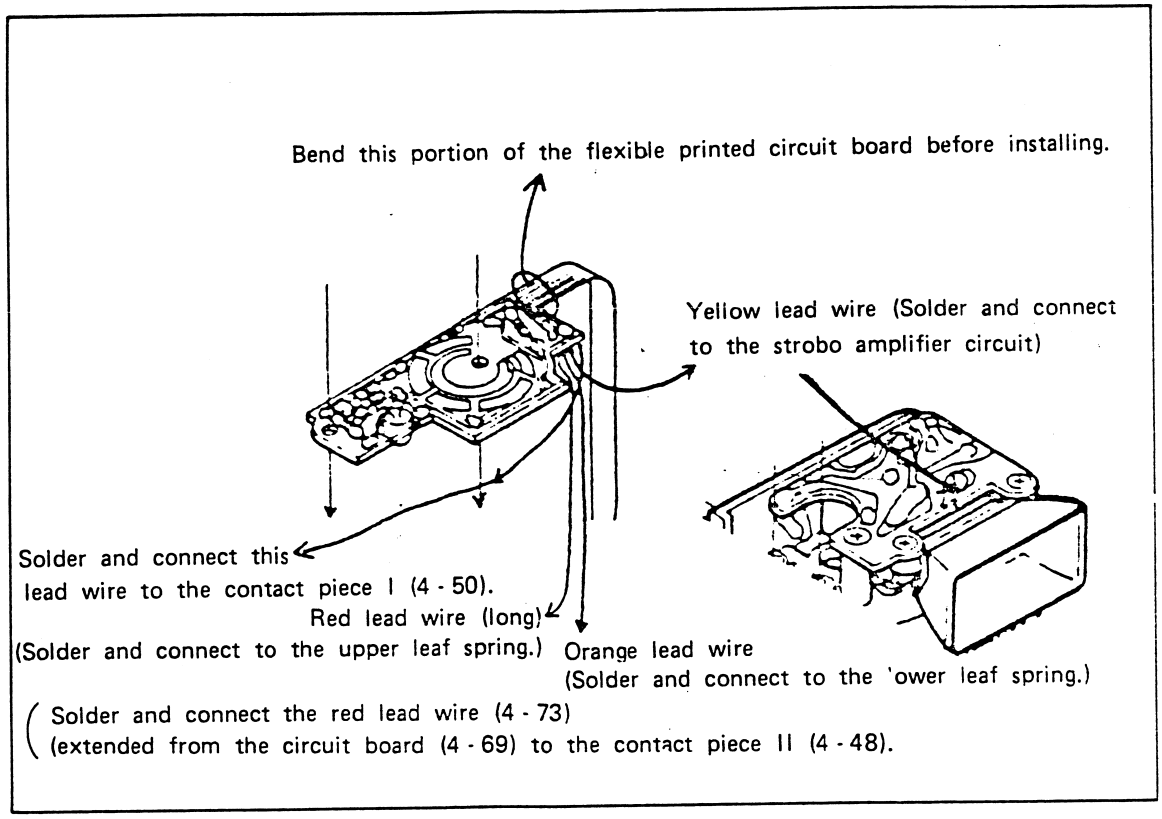
c. Black lead wire (4-74) extended from the circuit board (4-69).

d. Brown lead wire (3-59) extended from the ASA selector circuit.

(d) Connecting shutter assembly to flexible printed circuit

When the camera uses a flexible printed circuit assembly (3-75), solder and connect the flexible printed circuit assembly to the shutter assembly as indicated below.

Fig. 21


Bend this portion of the flexible printed circuit board before installing.
Yellow lead wire (Solder and connect to the strobo amplifier circuit)
Solder and connect this lead wire to the contact piece I (4 - 50).
(Solder and connect to the upper leaf spring.)
Red lead wire (long)
Orange lead wire
(Solder and connect to the 'ower leaf spring.)
Solder and connect the red lead wire (4 - 73)
(extended from the circuit board (4 - 69) to the contact piece II (4 - 48).

2-8 Shutter, parts surrounding the shutter and lens assembly

(a) Installing self-timer gear on the shutter

a. Check the shutter assembly (3-94) to insure that it is normal. Now, fit the gear 1 (3-98) to the self-timer shaft of the shutter assembly (3-94), and tighten the screw (3-99).

b. Apply grease to the portion of the shutter base plate where the gear assembly (3-101) slides slightly, fit the gear assembly (3-101), and apply the E-clip (3-97) from the back of the shutter assembly to secure the gear assembly.
Be sure to install the gear assembly after applying the O-ring (3-100) to the gear assembly, and before applying the O-ring (3-100), apply silicon grease to the self-timer shaft (3-102).

NOTE: Align the flat faces of the self-timer shaft in the shutter side in parallel to those of the self-timer shaft (3-102) of the gear assembly (3-101).
Further, before installing the gear assembly, make sure that the self-timer shaft of the shutter has been completely released.

(b) Installing shutter assembly on camera body

Extend the blue lead wire (3-69) and white lead wire (3-66) extended from the FM circuit (3-64) to the front side of the camera through the back of the shutter assembly, place the shutter assembly on the camera body, and tighten four screws (3-95).

NOTE: When checking the shutter, apply 3V.
Be careful not to hold the lead wires between the shutter assembly and camera body.

(c) Solder and connect the sevel lead wires indicated below to the printed circuit board of the shutter assembly.

a. Red lead wire (3-67), blue lead wire (3-68), yellow lead wire (3-72) and pink lead wire (3-71) extended from the FM circuit board.

b. Green lead wire extended from the strobo amplifier.

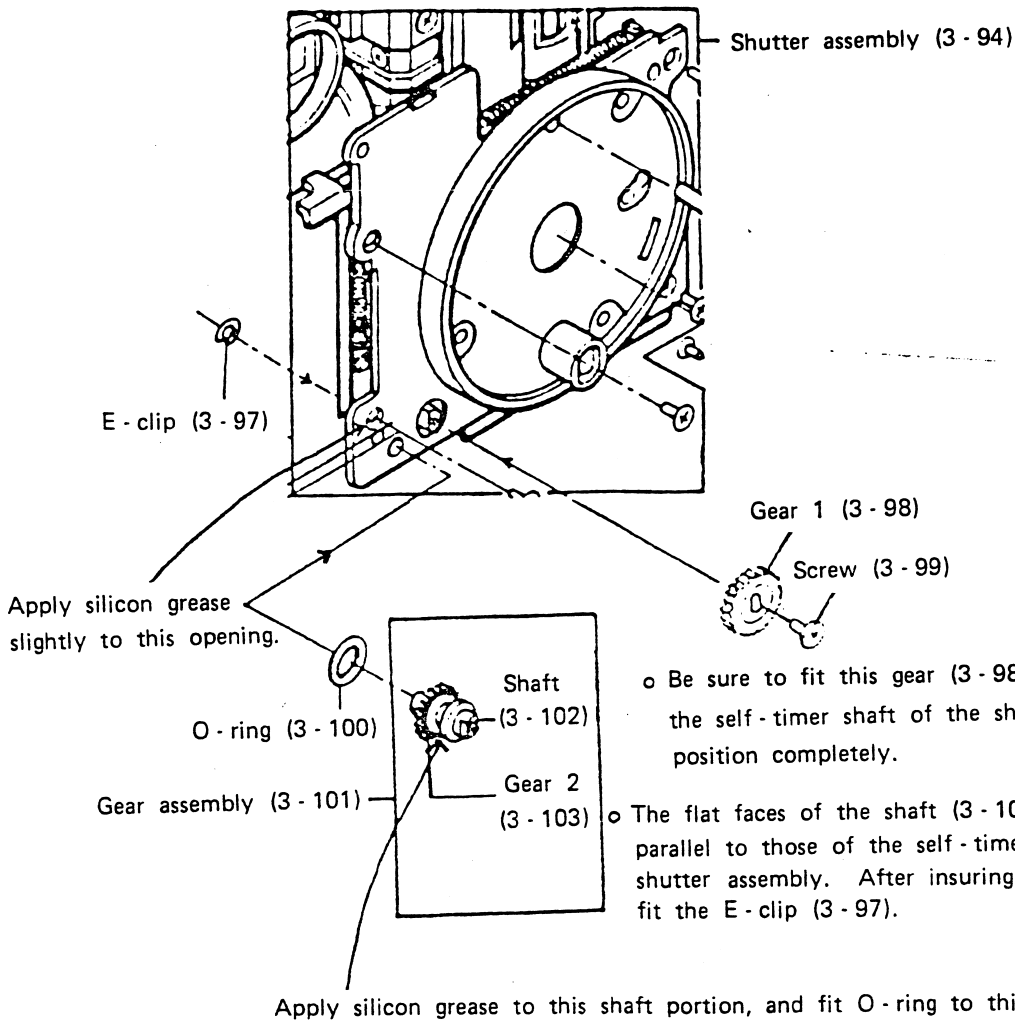
c. Black lead wire (4-74) extended from the circuit board (4-69).

d. Brown lead wire (3-59) extended from the ASA selector circuit.

(d) Connecting shutter assembly to flexible printed circuit

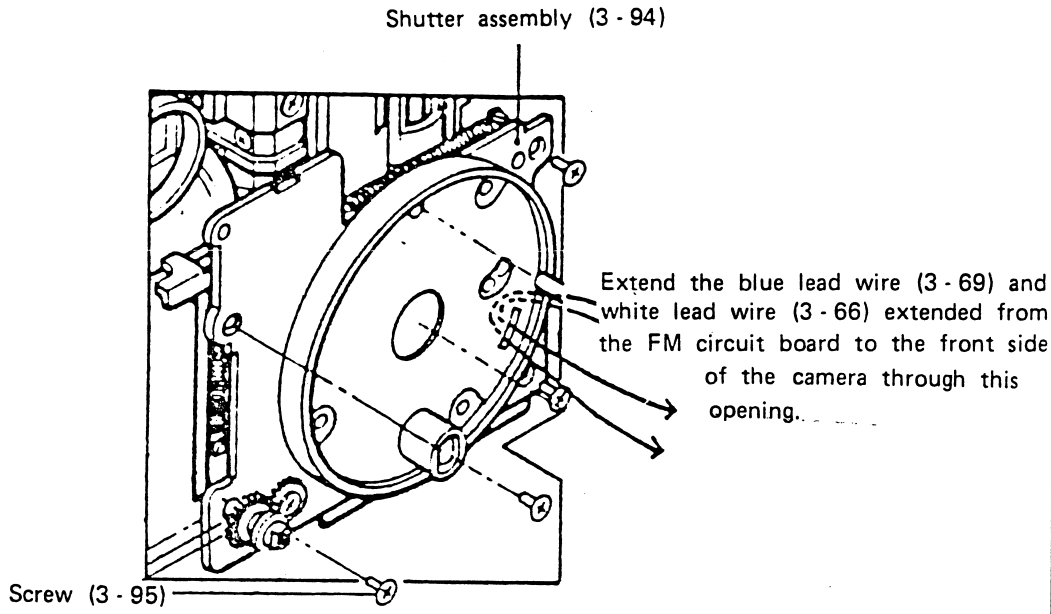
When the camera uses a flexible printed circuit assembly (3-75), solder and connect the flexible printed circuit assembly to the shutter assembly as indicated below.

Fig. 22



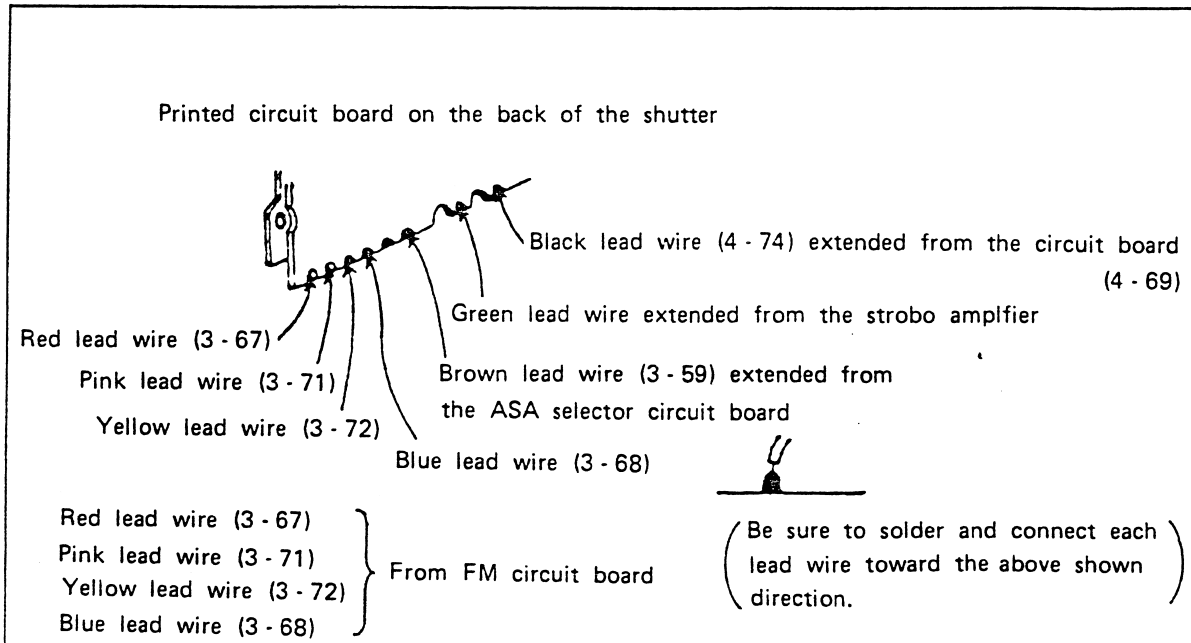
Installing selt - timer gears to the shutter assembly.

Fig. 23



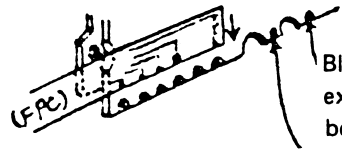
Installing the shutter assembly on the camera body

Fig. 24



Lead wire connections to the shutter assembly

Fig. 25



Soldering and connecting FPC to the shutter assembly

a. Five leads of the flexible printed circuit assembly
b. Green lead wire extended from the strobo amplifier.
c. Black lead wire (4 - 74) extended from the circuit board (4 - 69).

(e) Arranging lead wires

Neatly arrange the lead wires among the shutter, strobo and capacitor.

(f) Installing helicoid assembly

(1) Apply the pin (3 - 104) to the shutter assembly.
Check the helicoid assembly (3 - 105) to insure that the lens and prism are clean and free from scar and scratch.
Apply the blue lead wire (3 - 69) and white lead wire (3 - 66) extended to the front side of the shutter through the opening on the helicoid assembly.
Now, place the helicoid assembly on the shutter, and tighten two screws (3 - 128) and screw (3 - 129).

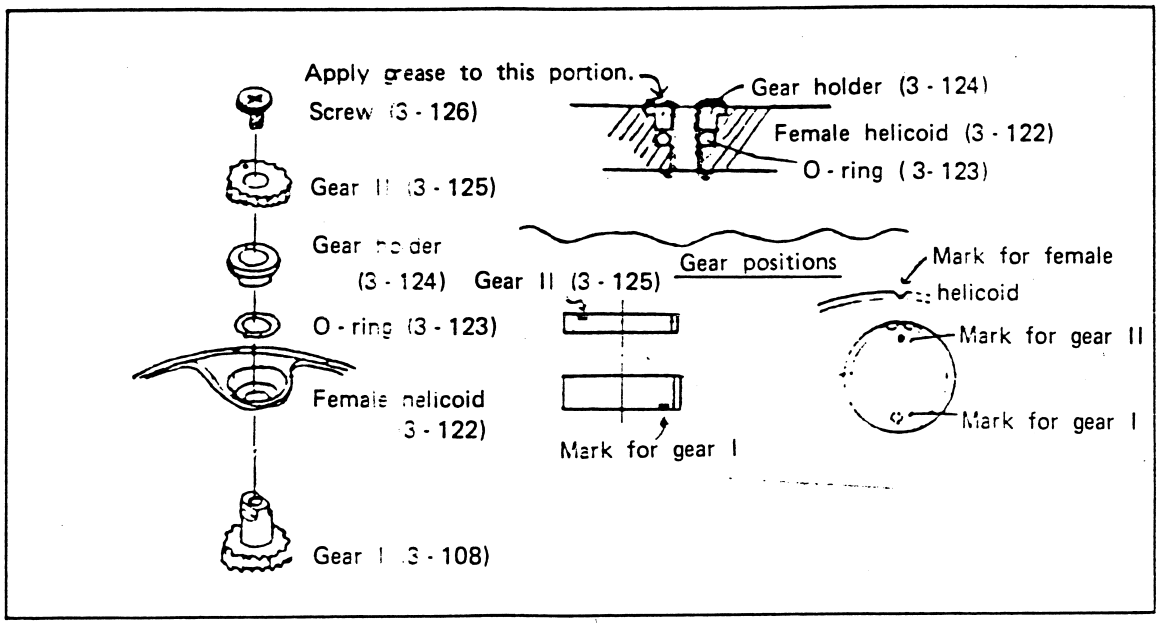
(2) Install the lens assembly (3 - 127) on the female helicoid (3 - 122) with a spanner.

(3) Apply grease to the shaft portion of the gear I (3 - 108), fit the gear (3 - 108) to the gear holder (3 - 124) from the back, fit the gear II (3 - 125) from the front side, and tighten the screw (3 - 126).

NOTE: When the gear I is fitted to the gear holder, align the gear I properly so that the mark on the gear I is in the center of the lens. For the gear II, aling it so that the circle mark on the back is in the outside (outer periphery side of the helicoid assembly). For these relative positions, see the figure below.

(4) Set the lens (master lens) to oo position (turn the lens fully into the camera body once, and slightly return it), fit the interlock ring (3 - 114) by matching the circle mark on the back of the interlock ring with the mark on the gear I, and tighten three screws (3 - 115) temporarily.

Fig. 26


Apply grease to this portion.
Screw (3 - 126)
Gear II (3 - 125)
Gear holder
(3 - 124)
O - ring (3 - 123)
Female helicoid
(3 - 122)
Gear I (3 - 108)
Gear holder (3 - 124)
Female helicoid (3 - 122)
O - ring (3- 123)
Gear positions
Gear II (3 - 125)
Mark for gear I
Mark for female helicoid
Mark for gear II
Mark for gear I

(5) Install the leaf spring (3 - 110) with two screws (3 - 111) temporarily.

(6) Apply the FM-aperture control circuit assembly (3 - 116) from the back of the helicoid assembly (3 - 105), tighten two screws (3 - 96), and tighten the screw (3 - 109) from the front side.

NOTE: Make sure that the contact piece (3 - 107) is clean and not deformed.

(g) Connecting lead wires

Solder and connect the blue lead wire (3 - 69) and white lead wire (3 - 66) extended from the FM circuit board to the FM-aperture control circuit (3 - 117).
Solder and connect the blue lead wire (3 - 69) and white lead wire (3 - 66) respectively to the upper and lower patterns of the FM-aperture control circuit (3 - 117).
When these lead wires are connected, arrange them so that the lens can be turned smoothly.

(h) Fit the O - ring (3 - 112) to the groove on the outer circumference of the female helicoid (3 - 122) and apply silicon grease to the O - ring.

Fig. 27

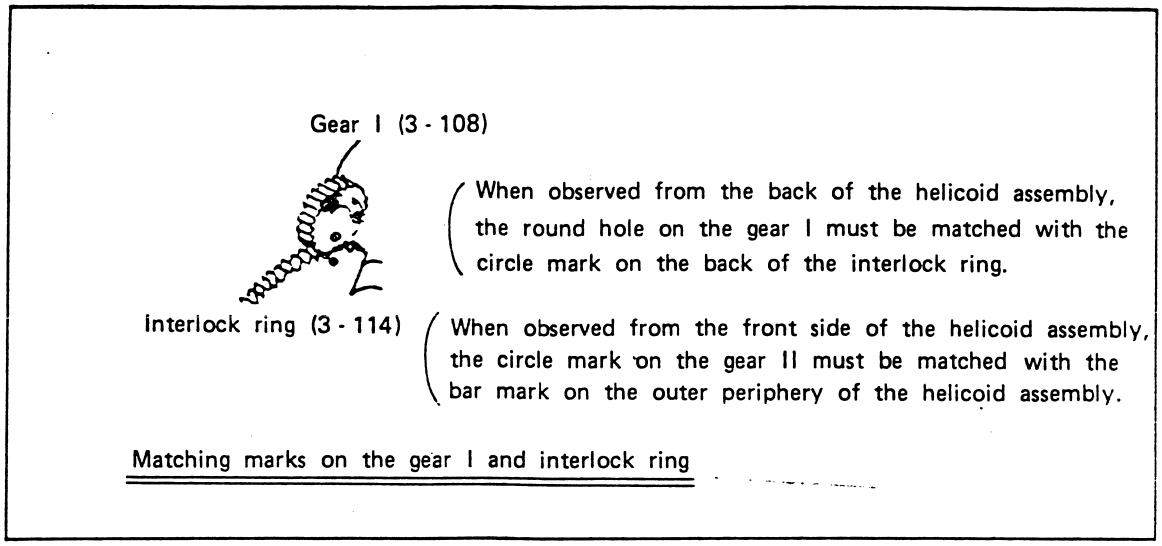

Gear I (3-108)
When observed from the back of the helicoid assembly, the round hole on the gear I must be matched with the circle mark on the back of the interlock ring.
Interlock ring (3-114)
When observed from the front side of the helicoid assembly, the circle mark on the gear II must be matched with the bar mark on the outer periphery of the helicoid assembly.
Matching marks on the gear I and interlock ring

Fig. 28

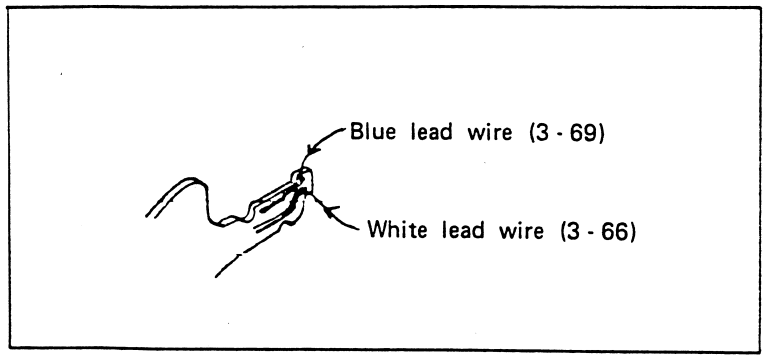
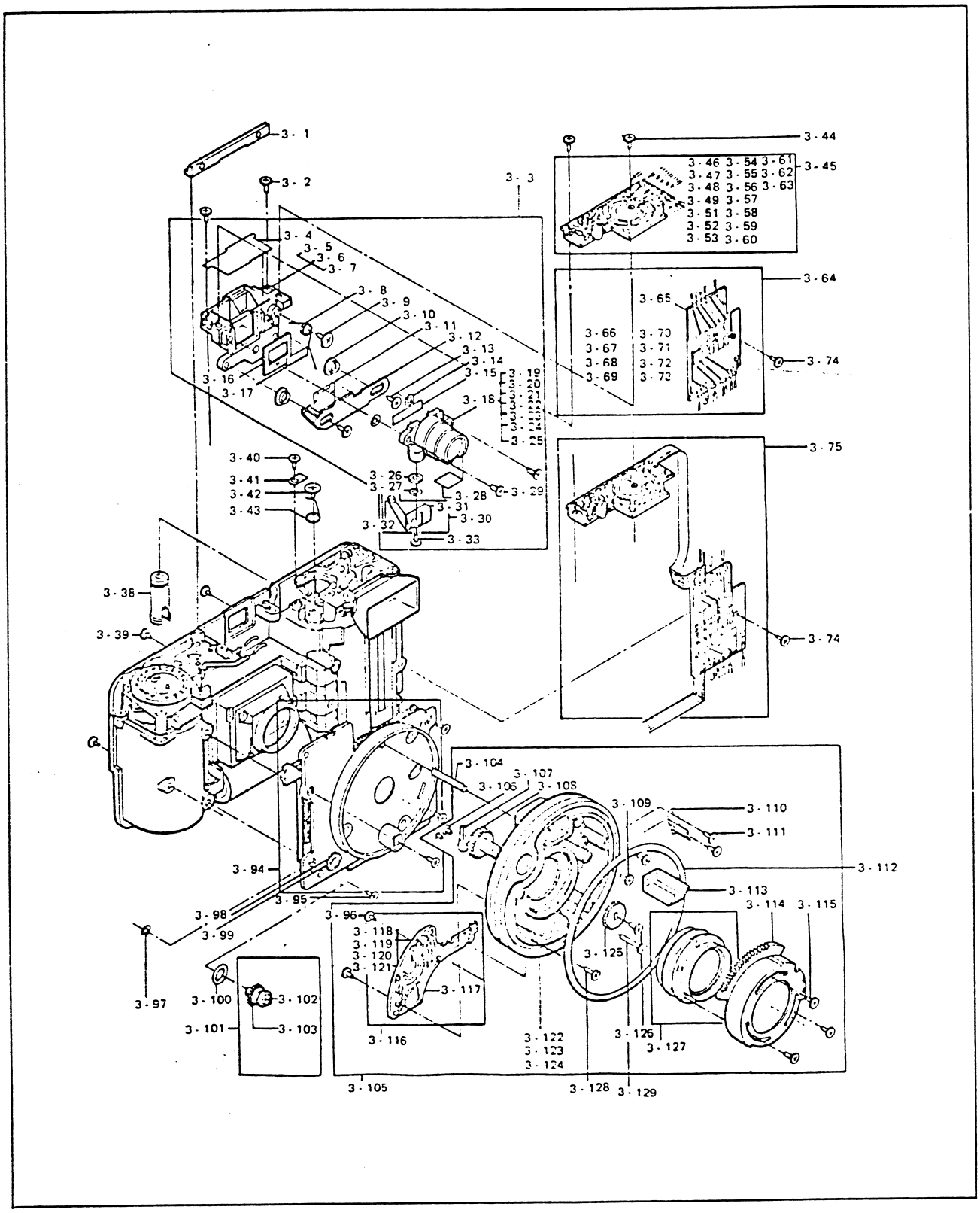

Blue lead wire (3-69)
White lead wire (3-66)

Fig. 29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3-129

2-9 Installing component parts on the front cover (2-45)

(a) Installing leaf spring assembly I (2-38)

a. Place the leaf spring assembly I (2-38) in the "PUSH" mark side of the front cover (2-45), and tighten four screws (2-37).

b. Check the lock release button (2-43) to insure that it operates correctly.

(b) Installing ASA selector dial I (2-50) and ASA selector dial assembly II (2-46)

a. Apply the spring (2-57) and steel ball (2-56) to the front cover (2-45).

b. Apply grease to the shaft portion of the ASA selector dial assembly II (2-46), apply the ASA selector dial assembly II (2-46) to the front cover from the inside, fit the O-ring (2-51) to the ASA selector dial assembly II from the outside of the front cover, place the ASA selector dial I (2-50) on the O-ring, and tighten the screw (2-49).

NOTE: Make sure that the contact piece (2-48) is clean and not deformed.
when installing the ASA selector dial assembly II, be sure to provide a gap between the front cover and the stopper portion of the ASA selector assembly II (2-46).
Apply grease to the spring (2-57) and steel ball (2-56) before installing them on the front cover.

c. Now, check the ASA selector dial to insure that it operates smoothly.

(c) Button seat (2-26), shutter release button (1-10) and rubber cap (1-9)

a. Apply silicon grease to the shaft portion of the button seat (2-26) and fit the O-ring (2-28) to the button seat.

b. Apply oil fense to the shaft head of the button seat.
This oil fense prevents grease applied to the O-ring (2-28) flowing out and sticking to the contact pieces (4-48 and 4-50).

c. Place the spring (2-29) and steel ball (2-27) in the position of the button seat on the front cover.

d. Fit the button seat (2-26) from the top of the front cover, and fit the washer (2-30) and clip (2-31) to the button seat from inside of the front cover.

e. Check the button seat to insure that it operates smoothly.

f. Fit the shutter release button (1-10) to the button seat, put the rubber cap (1-9) on the shutter release button, and after applying grease to the lock nut (1-8) slightly, tighten the lock nut (1-8) with a spanner.

NOTE: Be careful not to twist or break the rubber cap (1 - 9).

(d) Button assembly (2 - 58) and base plate assembly (2 - 69)

a. Apply grease to the shaft portion of the button assembly (2 - 58), and fit the button assembly to the button seat (2 - 61).
The button seat (2 - 61) has been tightly fitted to the front cover together with the O - ring (2 - 62).

b. Fit the base plate assembly (2 - 69) to the inside of the front cover by inserting the knock plate into the groove on the button I (2 - 60).

c. Fit two washers shafts, and apply two clips (2 - 67).

d. Install the spring (2 - 68).

e. Apply grease to the portion of the knock plate where the washer slides and apply grease to the knock pin (2 - 74).
Now, check the button assembly and base plate assembly to insure that they operate smoothly

(e) Protector (2 - 65)

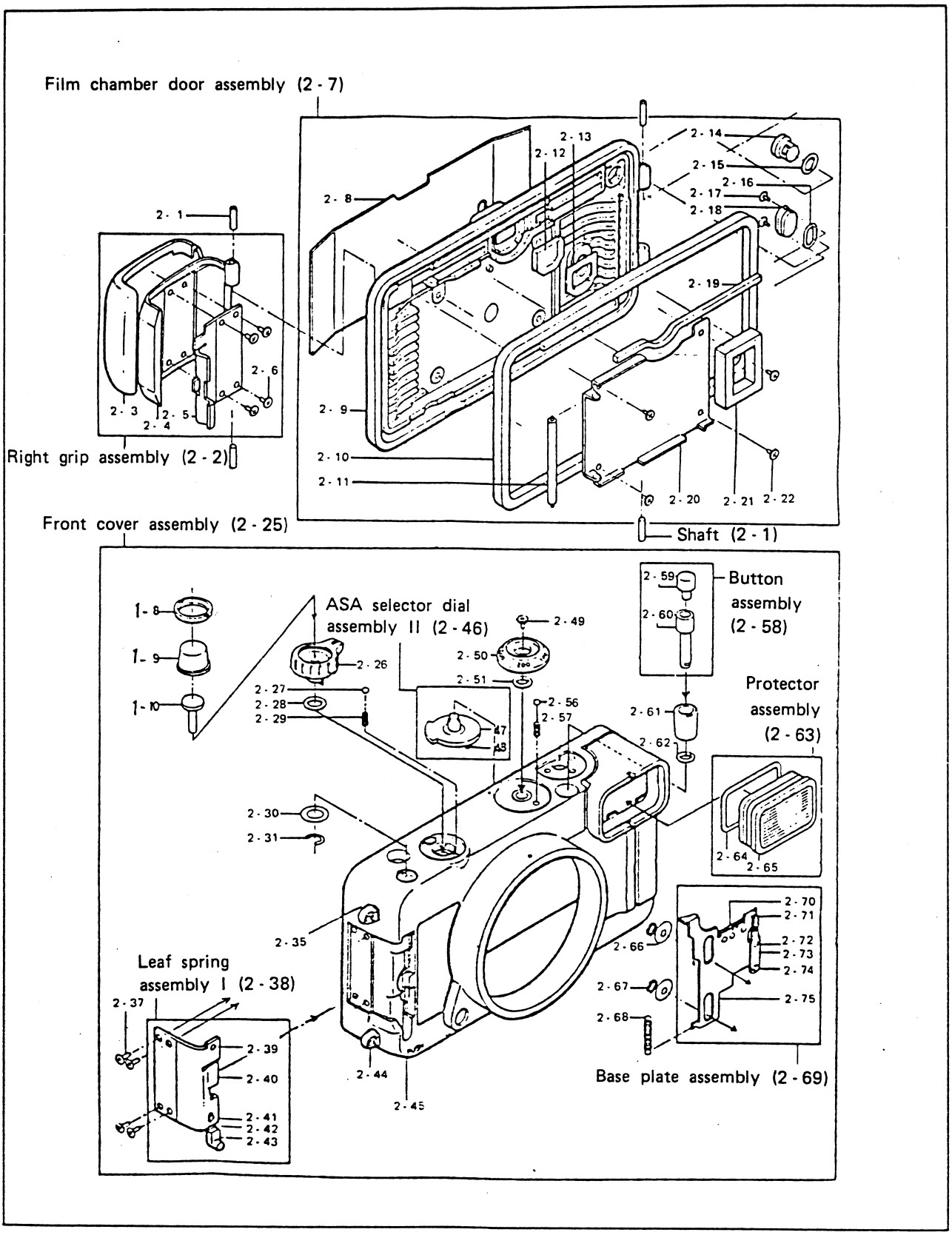
Fit the O - ring (2 - 64) to the protector (2 - 65), apply grease to the outer circumference of the protector, and fit the protector to the front cover.

(f) Film chamber door assembly (2 - 7)

a. Match the hinge portion of the film chamber door assembly (2 - 7) with the front cover, and securely install the shafts (2 - 1).

b. Check the film chamber door for fitting to the front cover and locking. Check the right grip assembly (2 - 2) and leaf spring assembly I (2 - 38) to insure that they operate smoothly.

Fig. 30


Film chamber door assembly (2-7)
2-1
2-3
2-4
2-5
2-6
Right grip assembly (2-2)
2-8
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2-22
Shaft (2-1)
Front cover assembly (2-25)
1-8
1-9
1-10
ASA selector dial assembly II (2-46)
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Button assembly (2-58)
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Protector assembly (2-63)
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2-74
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Base plate assembly (2-69)
Leaf spring assembly I (2-38)
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2-39
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2-43
2-44
2-45

2-10 Joining the front cover to the camera body

(a) Fit the rib (3-1) and bottom cover (4-108) to the main body (4-88). (Use adhesive if necessary)

(b) Place the internal mechanism under the charged condition, set the film speed selector to "AUTO", and set the button seat (2-26) to "ON" (white circle).

(c) Fit the main body to the front cover by filting the front cover in such an extent that the shutter release button (1-10) does not come out. Be sure that the front cover is not floated and be carefull not to deform the contact pieces or make the contact pieces dirty.

(d) After insuring that the main body and front cover are joined completely, tighten three screws (3-39).

Fig. 31

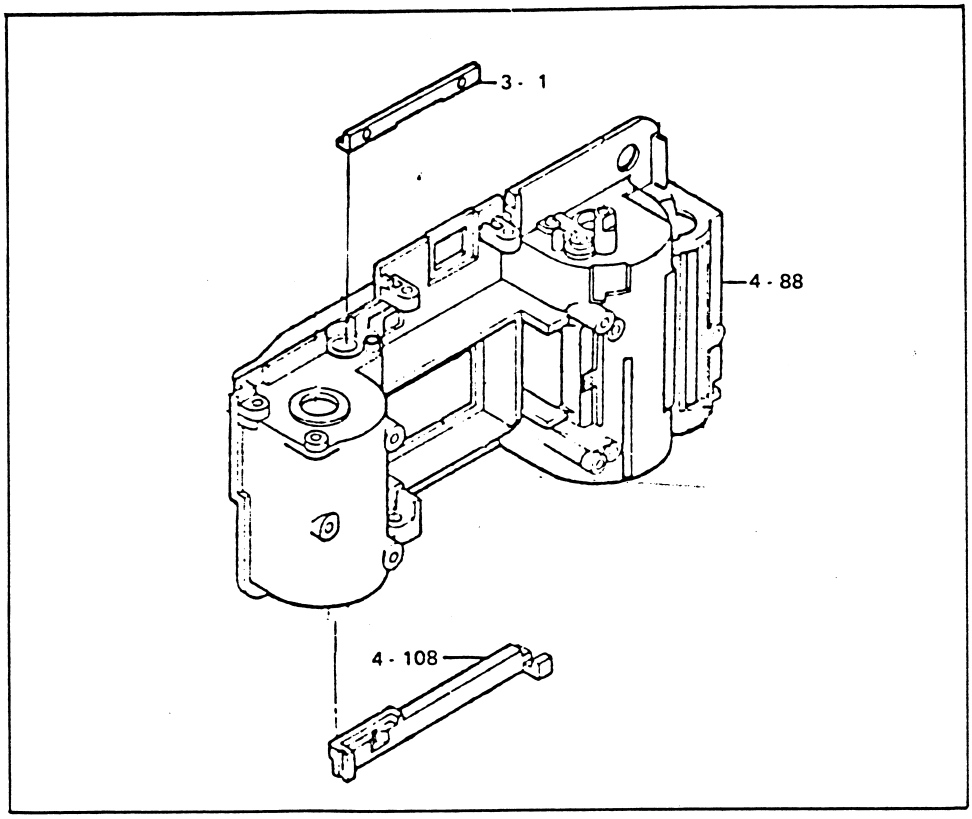
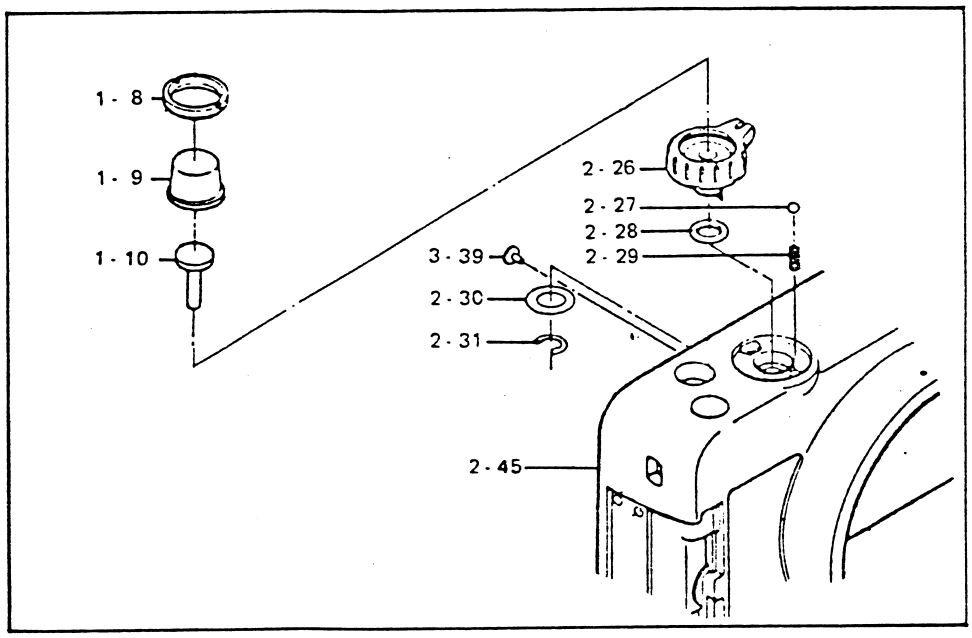


Fig. 32



2-11 Parts around the lens

For adjustment of focus, refer to Chapter IV Repair and Adjustment.
For the following instructions, the three screws (3-115), leaf spring (3-110) and two screws (3-111) are assumed to have been tighten finally.

(a) Apply the O-ring (1-44) to the female helicoid (3-122), place the front ring assembly (1-45) on the O-ring (1-44), and tighten five screws (1-48).

NOTE: Be sure to install the front ring (1-46) aftre insuring that the circle mark on the gear II (3-125) has met with the index on the female helicoid (3-122).
Be careful not to allow the O-ring (1-44) coming out of the groove on hte female helicoid (3-122).

(b) Place the lens cover (1-49) on the lens, and tighten two screws (1-50).

NOTE: Only one screw (1-50) may be used.

(c) Apply adhesive to the front ring (1-46) at the portion where the name plate (1-51) is to be installed, and install the name plate (1-51).

NOTE: Be careful not to damage the name plate and not to allow the adhesive coming out of the name plate.

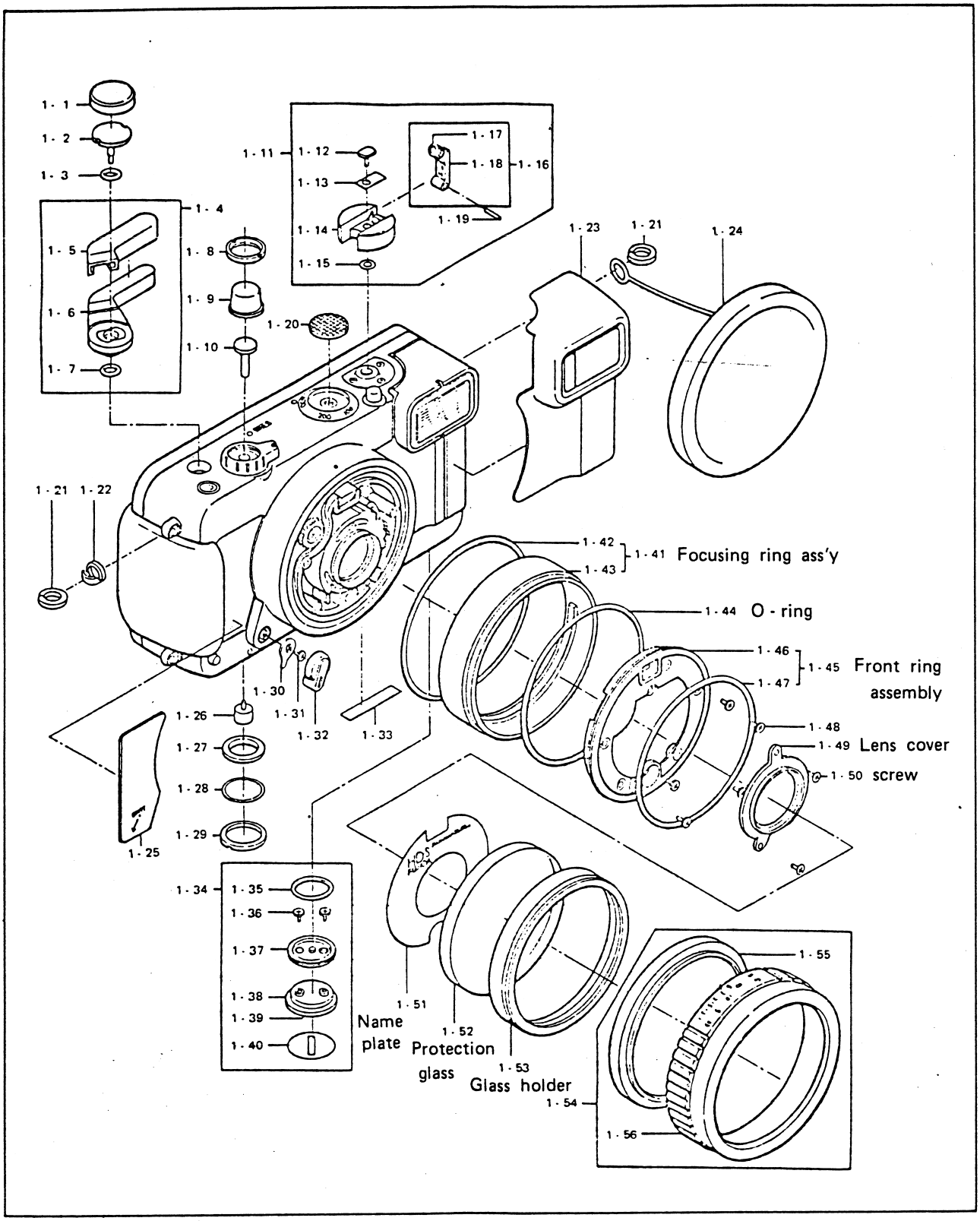
(d) Installing focusing ring assembly (1-41)

Intermesh the gear of the focusing ring I (1-43) with the gear II (3-125) fit the stopper with the female helicoid (3-122), and thus, install the focusing ring assembly (1-41).

(e) Check and clean the protection glass (1-52), place it and tighten the glass holder (1-53).

NOTE: Before installing the protection glass, recheck the name plate and protection glass to insure that they are clean and no adhesive has come out of the name plate.
Tighten the glass holder (1-53) securely so that it will not be loosened.

Fig. 33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1-41 Focusing ring ass'y
1-42
1-43
1-44 O-ring
1-45 Front ring assembly
1-46
1-47
1-48
1-49 Lens cover
1-50 screw
1-51 Name plate
1-52 Protection glass
1-53 Glass holder
1-54
1-55
1-56

2-12 Parts installed on the camera exterior

(1) Shaft holder (2-53)

Fit the O-ring (2-54) to the shaft holder (2-53), apply silicon grease to the rewind spindle II (2-55) and O-ring (2-54), fit them to the front cover (2-45) and tighten three screws (2-52).

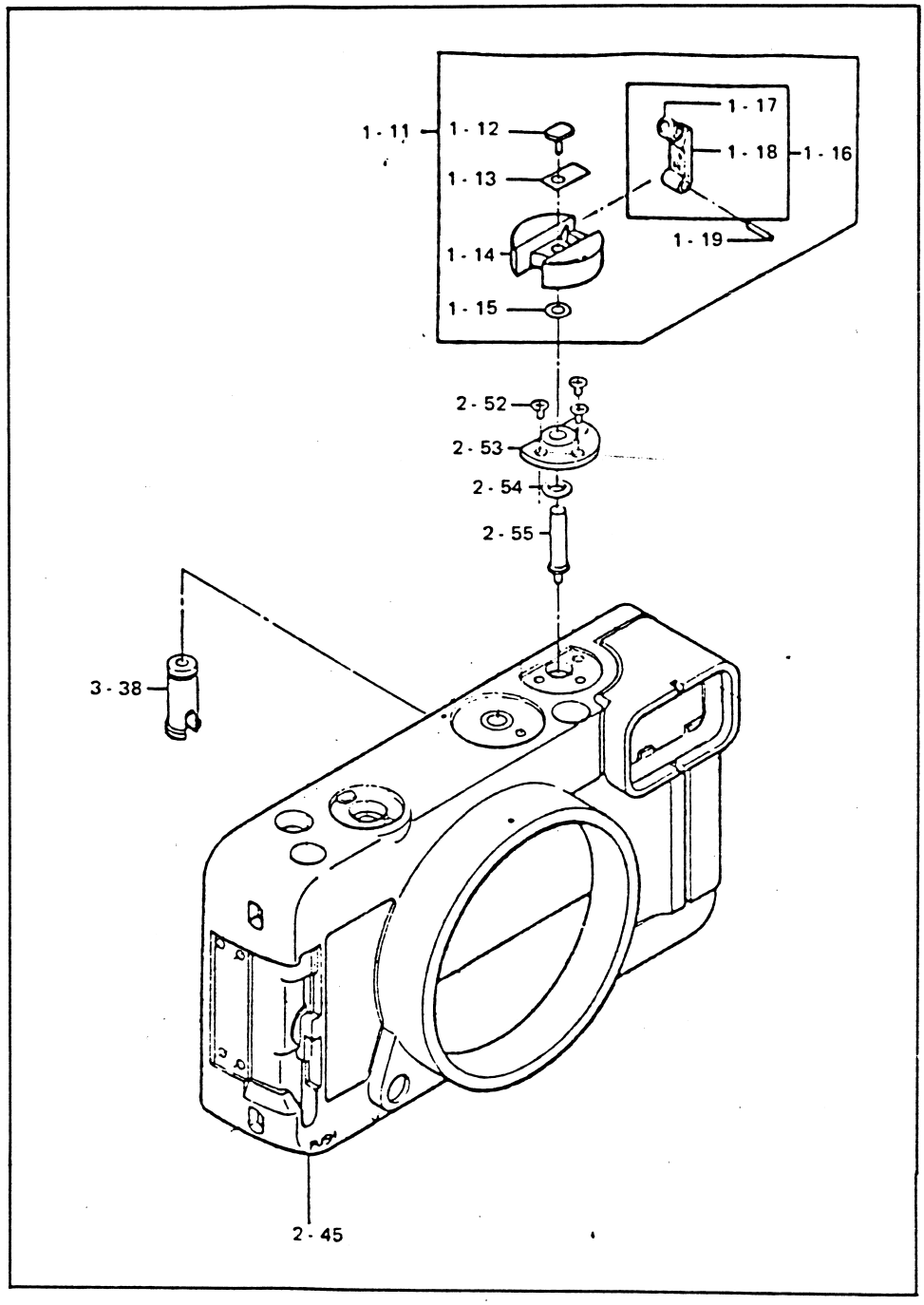
(2) Film rewind knob (1-14)

(a) Apply a pincette to the fork portion of the rewind spindle I (3-38) to hold the rewind spindle I and tighten the rewind spindle II (2-55) in the front cover side.

(b) Install the rewind crank assembly (1-11) on the rewind spindle II (2-55).

(c) Check the rewind knob (1-14) to insure that it operates correctly.

Fig. 34



(3) Film advance lever assembly (1 - 4)

(a) Apply the washer (4 - 2) to the film take - up spindle assembly (4 - 6).

(b) Fit the film advance lever assembly (1 - 4) to the film take - up spindle assembly (4 - 6). Apply solicon grease to the O - ring (1 - 7), if necessary.

(c) Apply silicon grease to the screw (1 - 2) , apply the O - ring (1 - 3) to the screw (1 - 2), and tighten the screw (1 - 2).

(d) Apply adhesive to the top of the screw (1 - 2), and install the cover plate (1 - 1) on the screw (1 - 2).

NOTE: Be careful not to allow the adhesive coming out of the cover plate.

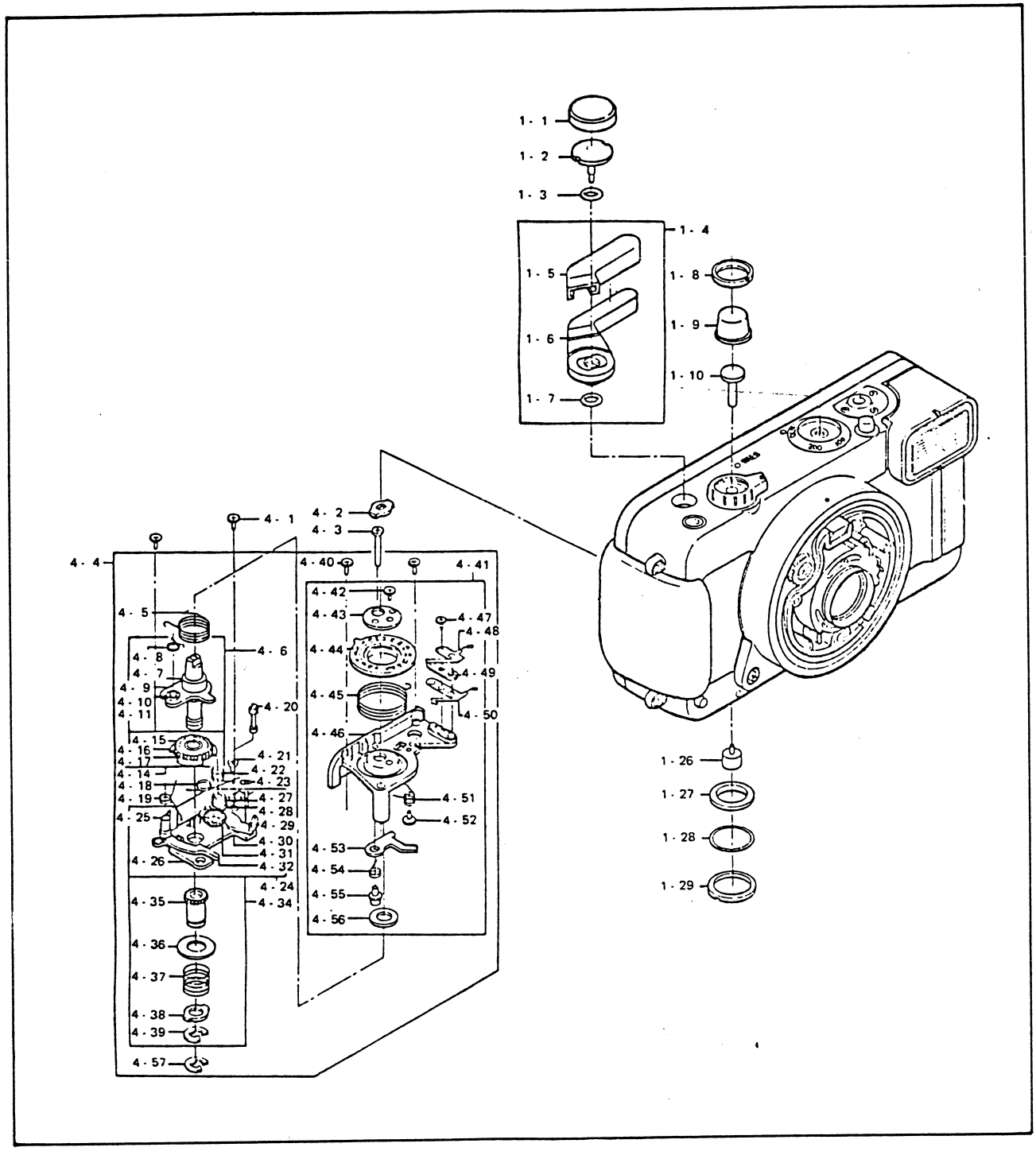
(e) Load batteries to the camera and check the film advance lever and shutter release button for their functions.

(4) Film rewind button (1 - 26)

Insert the film rewind button (1 - 26) into the hole on the camera bottom, apply the cover ring (1 - 27) and cover seat (1 - 28) to the film rewind button, and tighten the ring (1 - 29).

NOTE: Be careful to tighten the ring (1 - 29) sufficiently.
Check the film rewind button to insure that it works correctly.

Fig. 35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4-56
4-57

(5) Install the front rubber (1 - 23), rubber plate (1 - 25) and cover plate (1 - 20) in their positions with adhesive. The right grip rubber (2 - 3) cannot be installed with adhesive unless the leaf spring II (2 - 5) is removed.

NOTE: Be careful not to allow adhesive coming out of each parts.

(6) Open the film chamber door, and install the pressure plate assembly (1 - 76) and other parts as described below.

(a) Insert the shaft (4 - 82) into the pressure plate (4 - 76), place the pressure plate (4 - 76) on the main body, and tighten two screws (4 - 81).

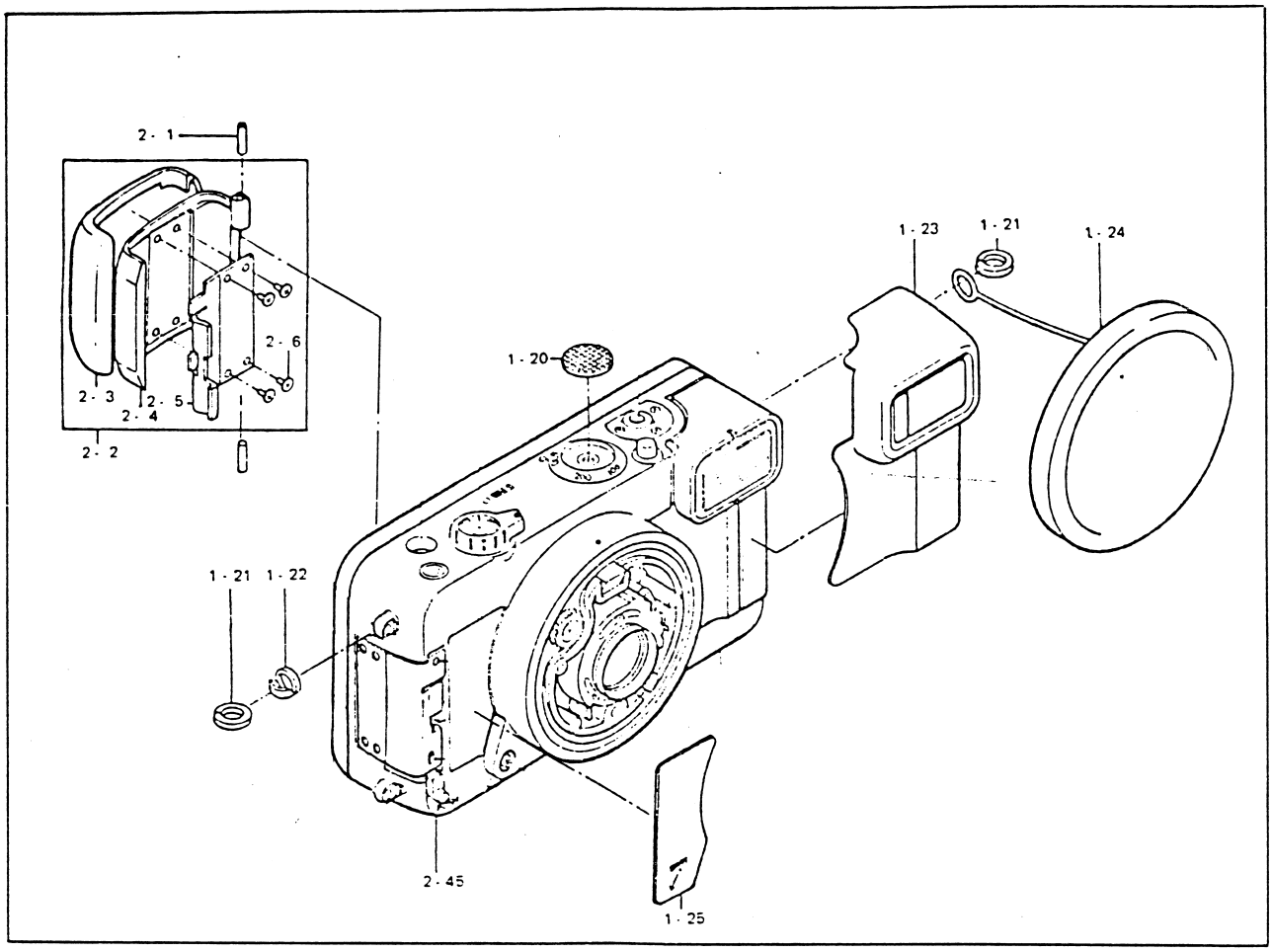
(b) Place the bracket (4 - 85) on the main body and tighten the screw (4 - 84).

NOTE: Adjust pressure of the pressure plate assembly.

(7) Install the cover plate (4 - 83) in the position with adhesive.

NOTE: Be sure to install the cover plate after adjusting the zone focus mark.

Fig. 36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1-24
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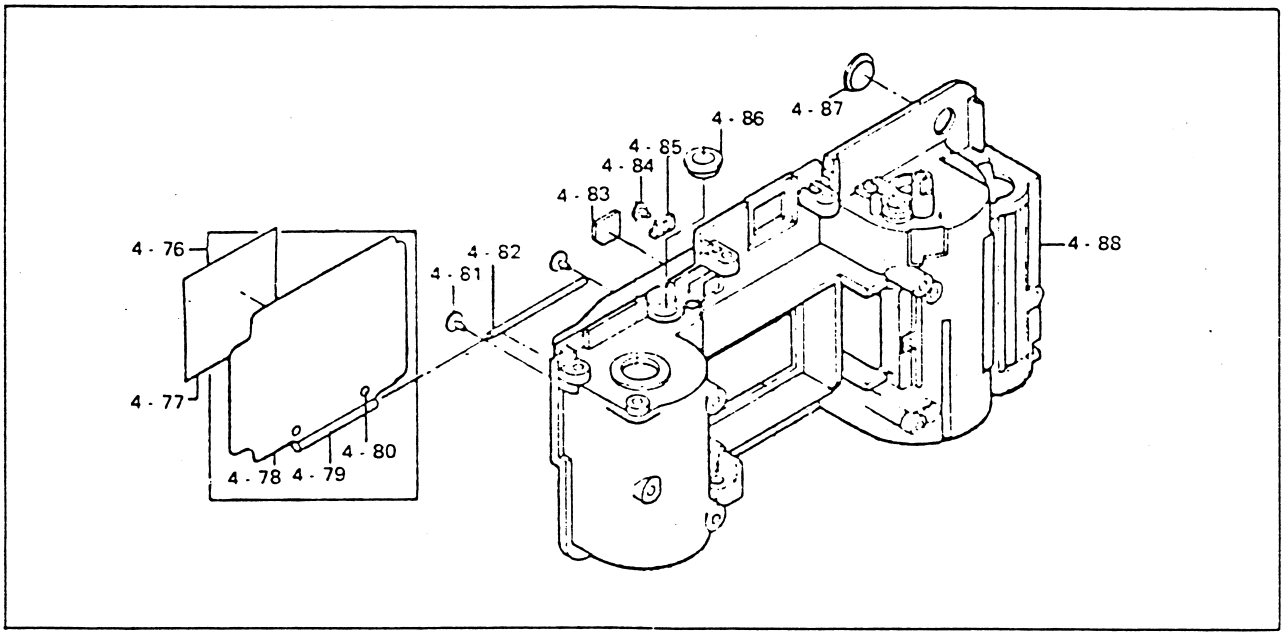
1-22
2-45
1-25

Fig. 37


4-87
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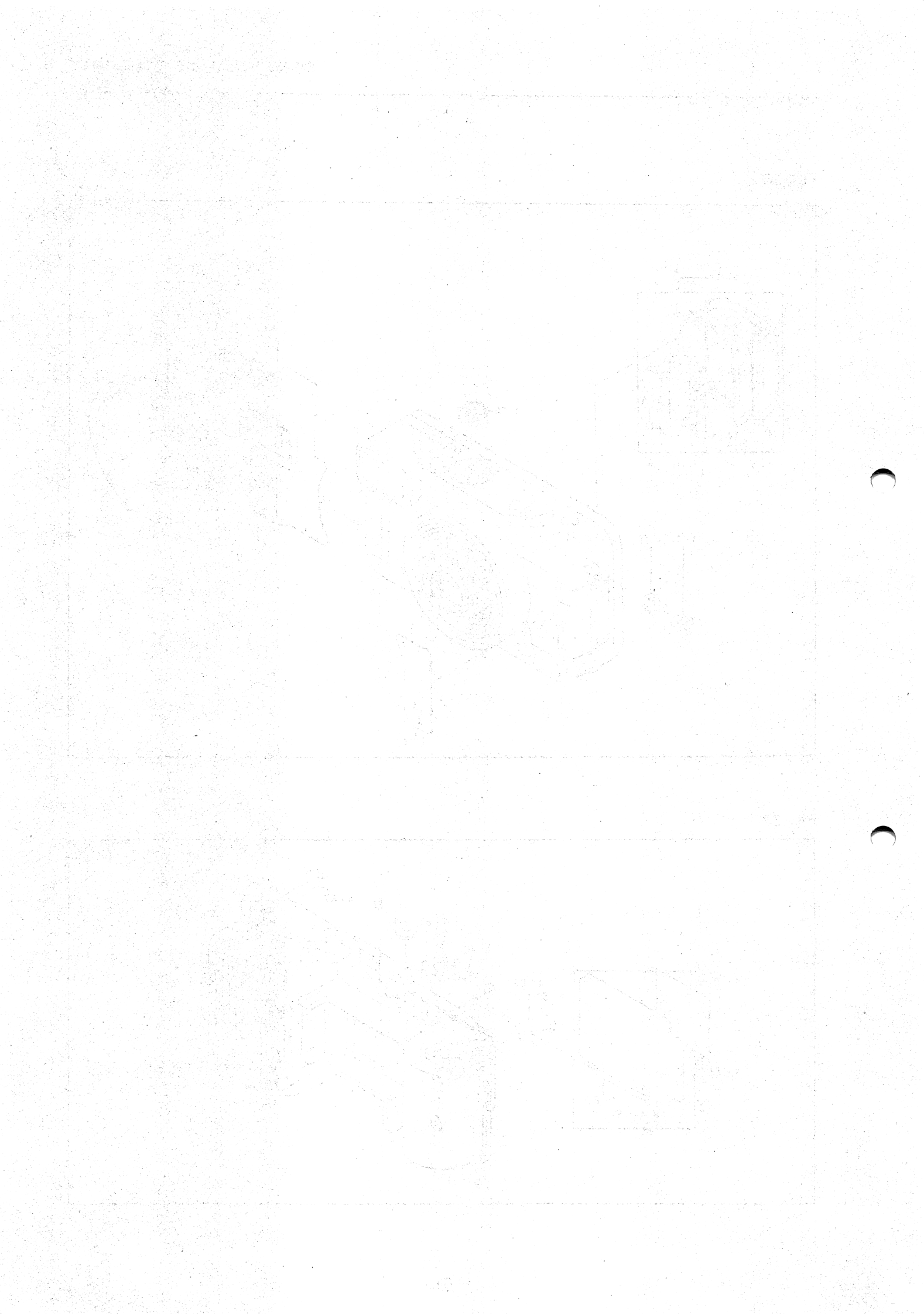


Ⅳ REPAIR AND ADJUSTMENT

1. Electrical System

Circuit Descriptions (Refer to the circuit diagram.)

(1) AE circuit

(a) When the shutter lock is unlocked (LOCK • –), the power switch (main switch) SM bulit in the camera turns on.

(b) When the film advance lever is wound up and the shutter is charged, the shutter timing switch S3 turns on.

(c) When the shutter release button is depressed down to a certain level, the shutter power switch S1 turns on.

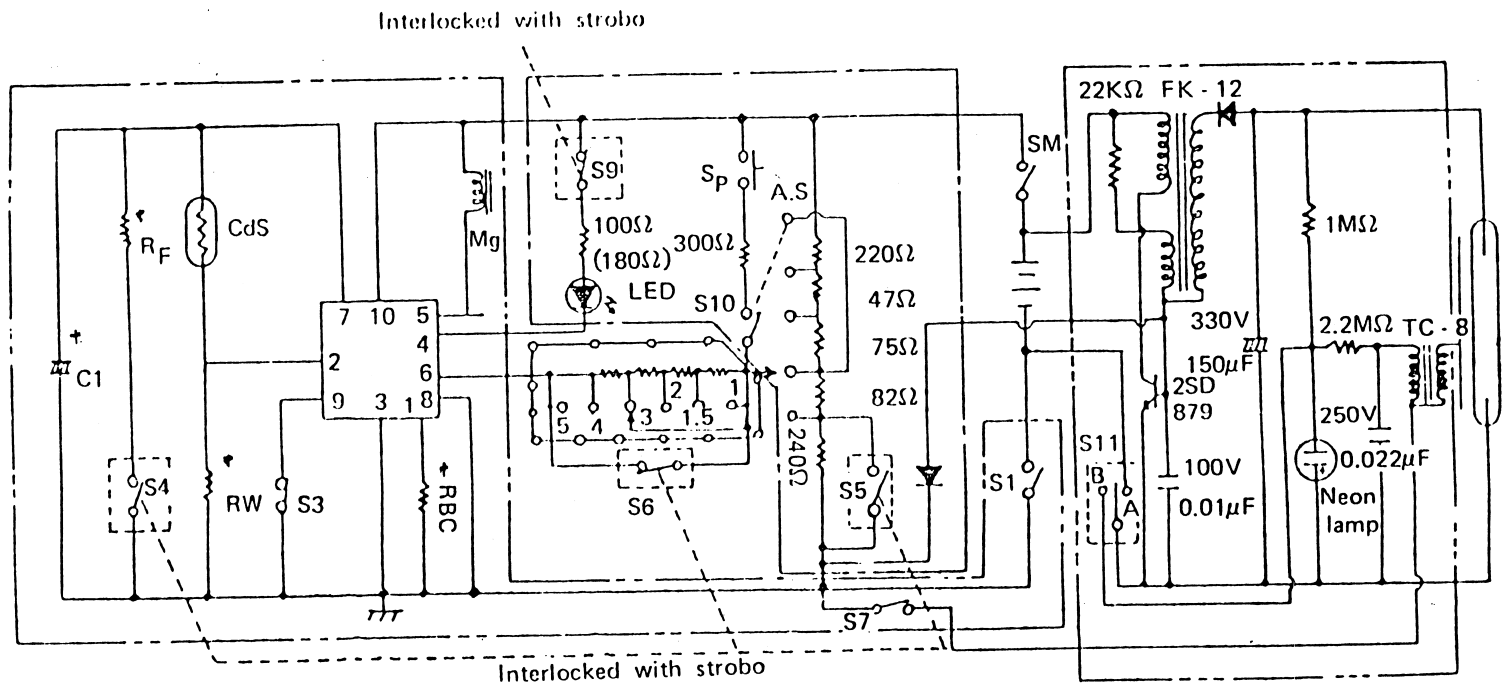
(d) When the switch S1 turns on, current flows to the magnet Mg causing the moving core to be attracted and held in the attracted position, and at the same time, the capacitor (C) is charged with 3V through No. 7 terminal of the IC.

(e) To No. 6 terminal of the IC, voltage decided by set film speed is applied.

(f) When the sector opens and the shutter timing switch S3 turns off, voltage is no longer applied to the No. 7 terminal of the IC, No. 2 and No. 3 terminal of the IC are short-circuited, and thus, the capacitor (C) discharges the voltage through CdS.

(g) When the voltage is discharged from the capacitor (C) and voltage at the capacitor terminal becomes equal to that at the No. 6 terminal of the IC, the magnet Mg is demagnetized.
With the magnet Mg demagnetized. the moving core is released, causing the sector to close.
(When potential difference between No. 7 and No. 6 terminals of the IC becomes zero, the magnet Mg demagnetizes, and the time at this second becomes an exposure time.)

Fig. 38 Circuit Diagram



S1: Power switch

S3: Timing switch

S4: FM changeover switch

S5: Level shift switch

S6: Distance data switch

S7: Synchro switch

S9: Under exposure warning lamp switch

S10: Film speed auto set switch (For Fuji ASA400 film)

S11: A-side: Strobo charging switch

B-side: Forced discharging switch

SM: Main power switch

SP: Film speed auto set switch (In the film chamber)

ASA selector circuit
Shutter
Strobo circuit
FM circuit
P circuit

Those parts accompanied with asterisk differ by each shutter for the reason of adjustment.

(2) FM (Flashmatic) circuit

(a) When the button assembly (2-58) is depressed, switches S4 and S5 of the FM circuit board turn on an switches S6 and S9 turn off.
In other words, when the button assembly (2-58) is depressed, the strobo charging switch (S11) turns on and at the same time, the shutter is switched over to FM circuit.

(b) When the switch S4 turns on, R_F is applied in parallel with the CdS.
When the camera is faced with an insufficient light (causing the underexposure warning lamp to light), resistance of the R_F is so low that resistance of the CdS does not affect exposure.
When the camera is faced with a sufficient light, resistance of the CdS affects allowing a synchronized photographing in daylight.

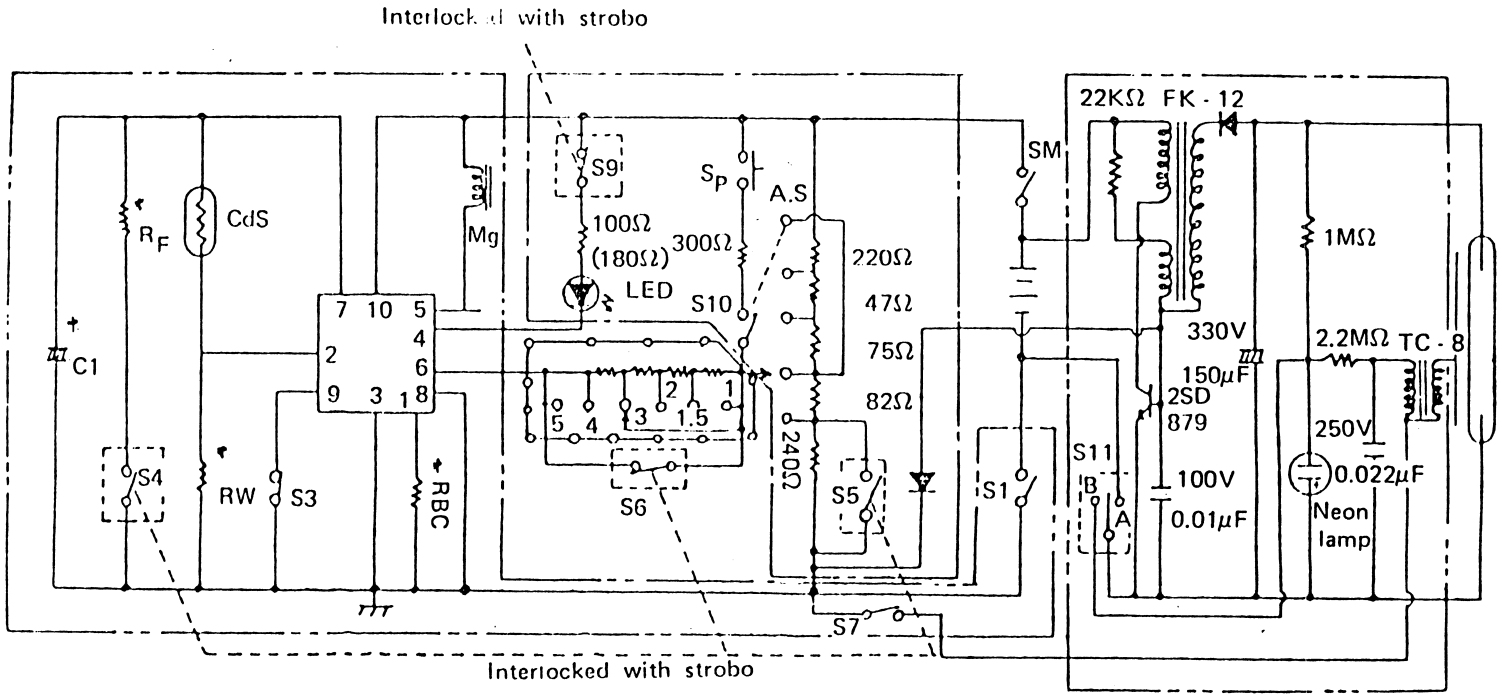
(c) When the switch S5 turns on, resistance of the ASA selector circuit board is shifted accordingly.

(d) When the switch S6 turns off, voltage of distance data is applied to No. 6 terminal of the IC together with voltage of film speed data.

(e) When the shutter is released, switch S7 of the shutter turns on, causing the strobo to flash.

Fig. 39

Circuit Diagram



S1: Power switch

S3: Timing switch

S4: FM changeover switch

S5: Level shift switch

S6: Distance data switch

S7: Synchro switch

S9: Under exposure warning lamp switch

S10: Film speed auto set switch (For Fuji ASA400 film)

S11: A-side: Strobo charging switch

B-side: Forced discharging switch

SM: Main power switch

SP: Film speed auto set switch (In the film chamber)

ASA selector circuit

Shutter

Strobo circuit

FM circuit

P circuit

Those parts accompanied with asterisk differ by each shutter for the reason of adjustment.

(3) Automatic film speed setting circuit

When the film speed selector dial is set to "AUTO" (■), either one of the following circuits is formed depending on the type of a loaded film.

(4) Strobo circuit

When the button assembly (2 - 58) is depressed, switch S11 turns on causing the strobo charging to start.

As soon as the switch S11 turns on, switches S4 and S5 turn on, switches S6 and S9 turn off, and the shutter system is switched over to the FM circuit.

As the switch S11 turns on, the strobo charging circuit charges the eapacitor (330V. 150μF), and as soon as the capacitor is charged completely, the neon lamp lights.

When the shutter is released, the synchro switch S7 turns on, DC high voltage flows to the xenon lamp, and thus, the strobo flashes.

Fig. 40

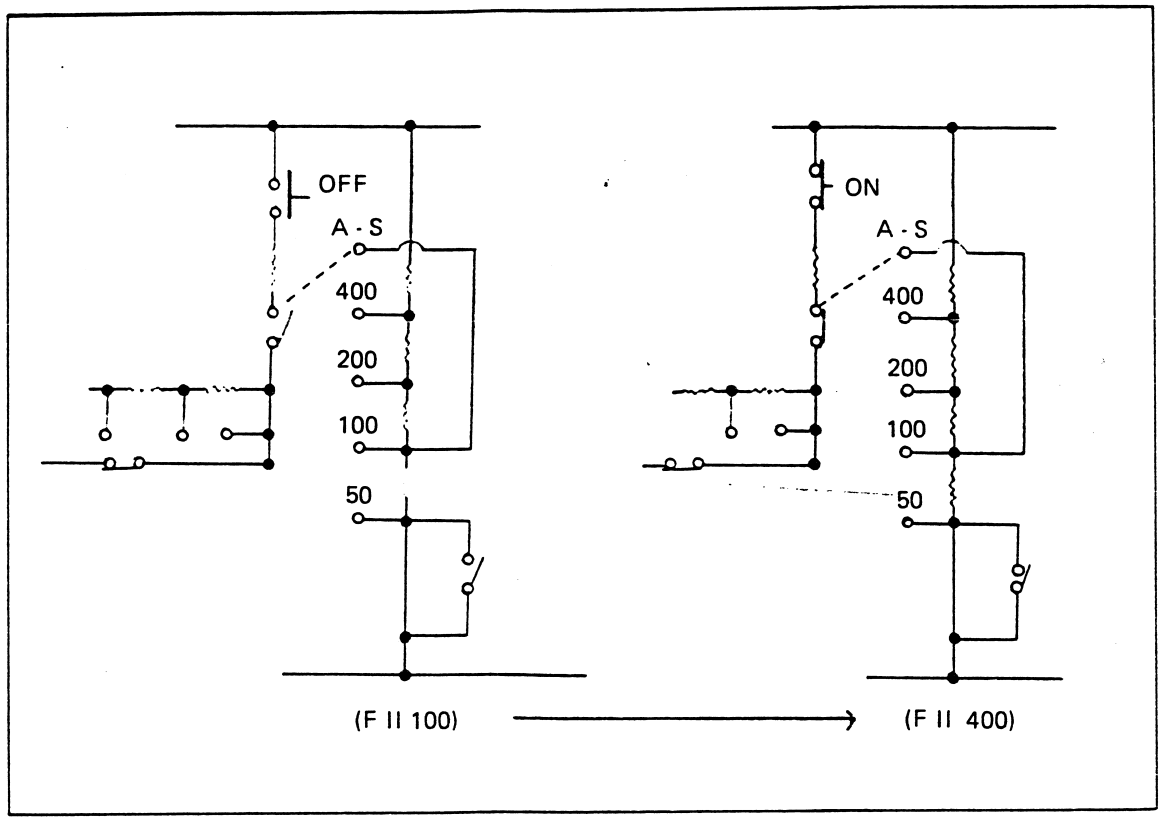
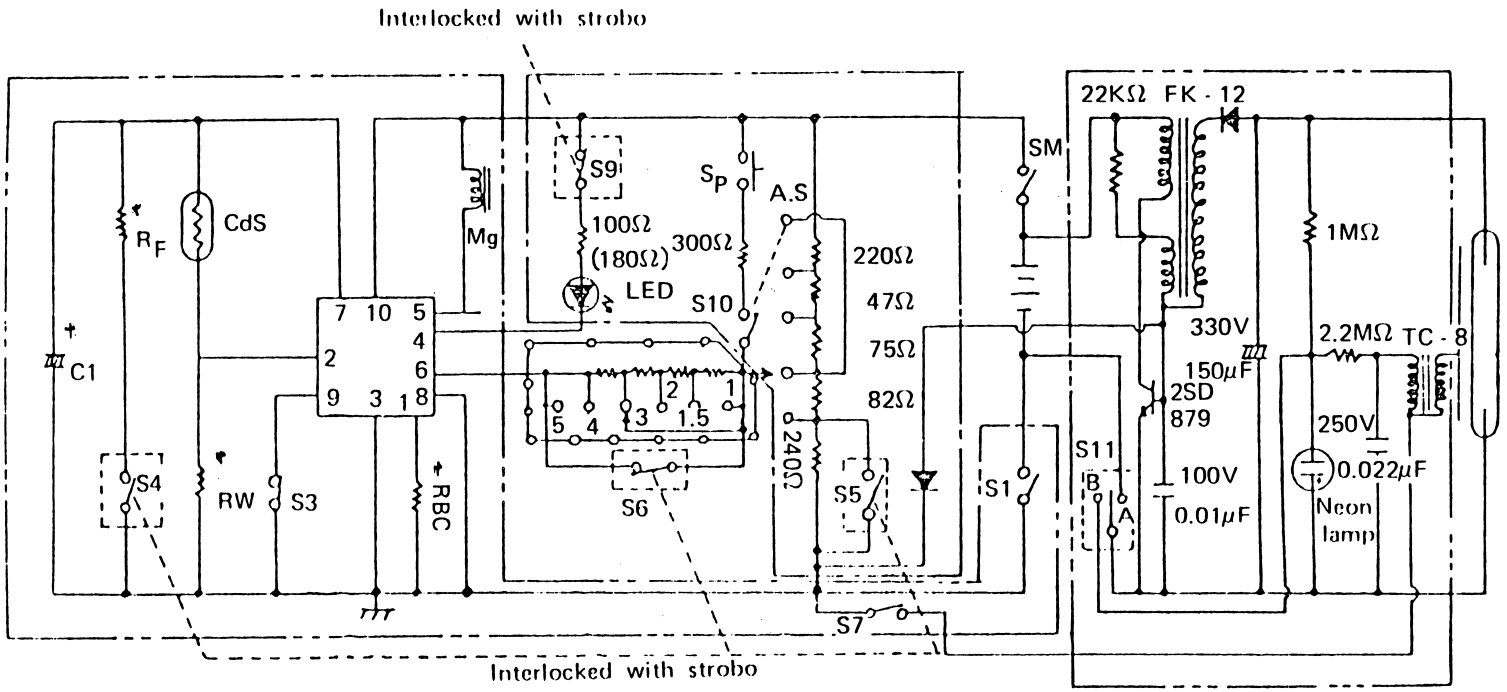


Fig. 41

Circuit Diagram



S1: Power switch

S3: Timing switch

S4: FM changeover switch

S5: Level shift switch

S6: Distance data switch

S7: Synchro switch

S9: Under exposure warning lamp switch

S10: Film speed auto set switch (For Fuji ASA400 film)

S11: A - side: Strobo charging switch

B - side: Forced discharging switch

SM: Main power switch

SP: Film speed auto set switch (In the film chamber)

ASA selector circuit
Shutter
Strobo circuit
FM circuit
P circuit

Those parts accompanied with asterisk differ by each shutter for the reason of adjustment.

2. Mechanical System

2-1 Film advancing/rewinding system

(a) Film advance lever cannot be wound up.

(1) Be sure to check the film advance lever with the camera loaded with batteries (two AM-4 batteries).
The shutter will not be released if no battery is loaded and the film advance lever is not wound up unless the shutter is released.
Now, make sure that :

a. The battery contact is normal and voltage is high enough.

b. The batteries are not loaded reversely.

c. The battery compartment cover is tightned correctly.

d. The button seat is set to "ON" position.

e. The self-timer has not stopped in a half way.

For a through c, check and replace the batteries if necessary.
For b above, the camera is equipped with a device so that batteries cannot be loaded reversely.
However, if you force to load batteries reversely, the batteries may be reversely loaded.
For d above, check the button seat, and when the button seat (switch) does not operate correctly, disassemble it and repair the contacts.
For e above, reset the self-timer.

(2) Regarding the electrical circuit, if the power supply circuit from the batteries is abnormal, the shutter does not operate.
Check the lead wires to insure that they are soldered correctly and not broken or short-circuited, and check the flexible printed circuit assembly (3-75) for a broken circuit pattern and improper soldering.
(Even if the ASA selector circuit board (3-46) or FM circuit board (3-65) is abnormal, the shutter can be charged and released although other camera performance is adversely affected.)

(3) Check the gears and levers of the film advance mechanism assembly (4-4) to insure that they are engaged correctly and they operate normally.
Further, check the springs to insure that they are installed correctly and their spring forces are adequate.

(4) When (1) through (3) above are normal, it may be assumed that a trouble exists in the shutter.

Fig. 42

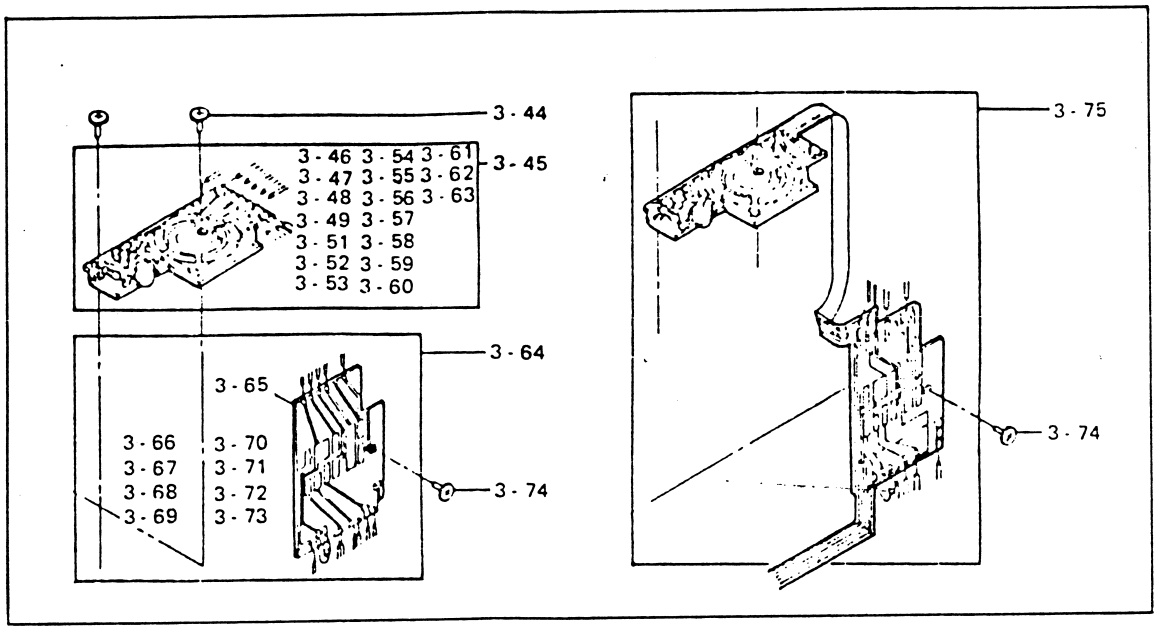

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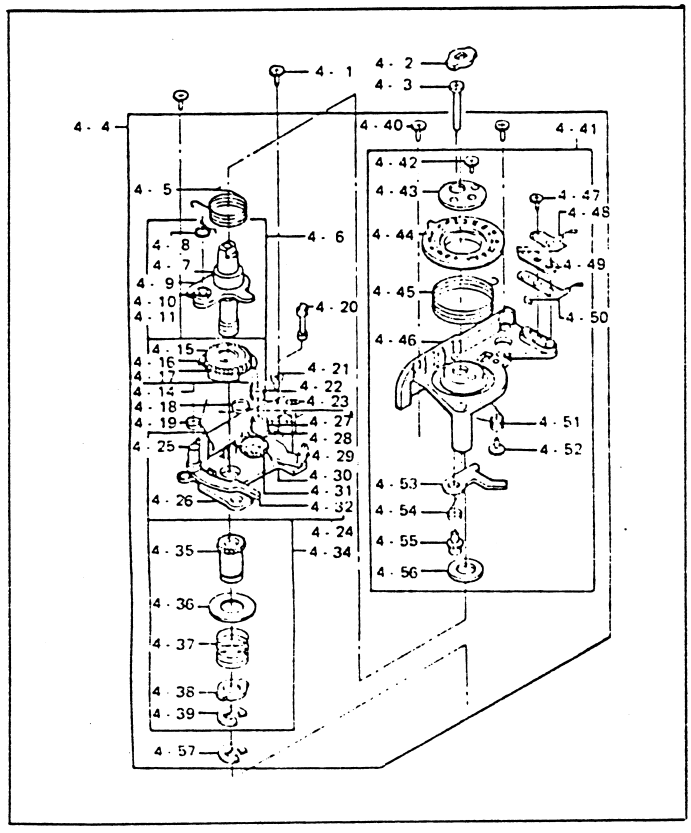
Fig. 43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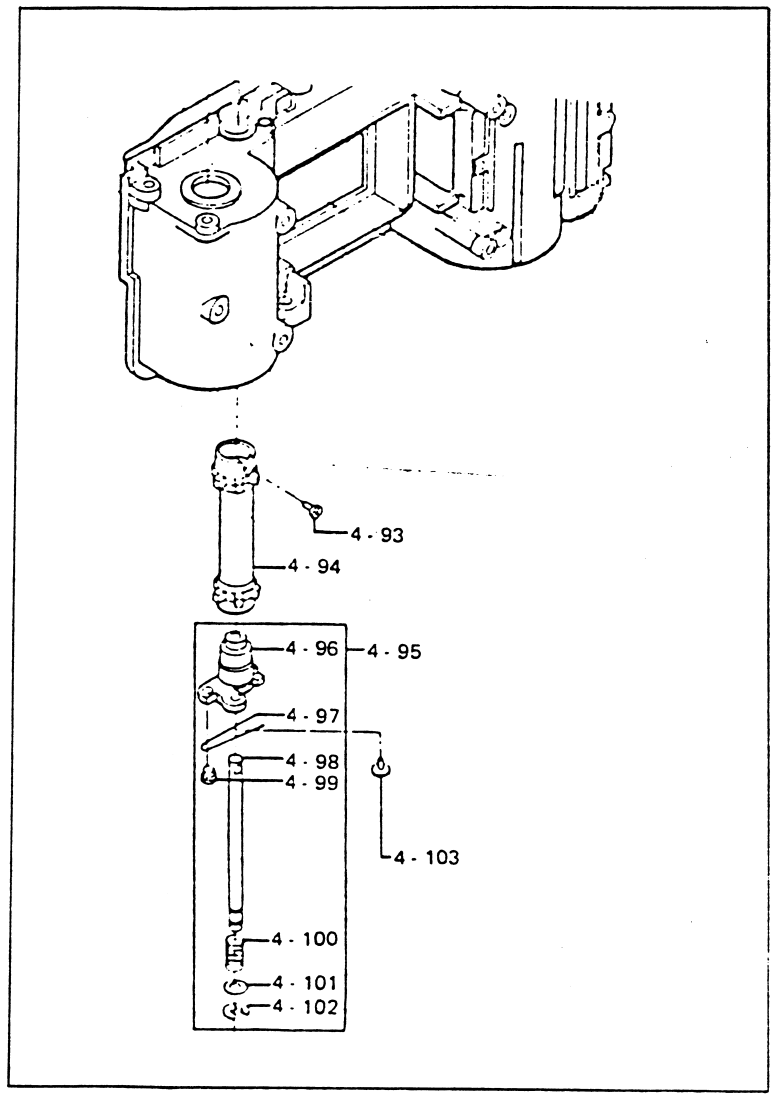
(b) Film cannot be rewound.

(1) Push the film rewind button into the camera body and make sure that the sprocket is released allowing the sprocket to idle.

(2) When the sprocket is not released by pushing the film rewind button (when the sprocket is not freed), repair the spring (4 - 97) to correct the form or replace it with a new one.
Replace the sprocket support assembly (4 - 95) if necessary.

Fig. 44



2-2 Exposure counter is not advanced or reset.

(a) Exposure counter is not advanced.

(1) Check the spring (4-51) to insure that it provides an adequate spring force.
If this spring is too weak (due to a deformation, etc.), the gear (4-20) will not be intermshed with the exposure dial (4-44) even if the kick lever (4-53) is pushed.
Repair the spring (4-51) to strengthen it or replace it with a new one.
When the spring (4-51) is repaired or replaced, make sure that :

a. The gear (4-20) is intermeshed with the exposure dial (4-44) correctly when the kick lever (4-53) is pushed (when the film chamber door is closed).

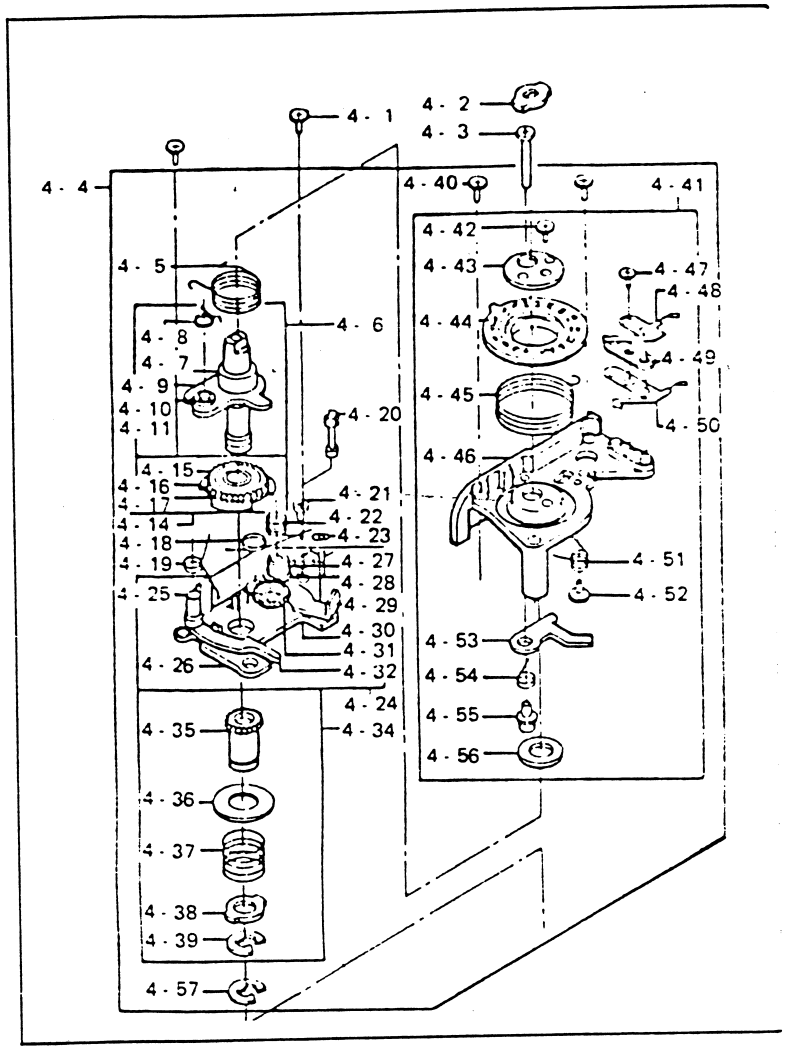
b. The gear (4-20) is disengaged with the exposure dial (4-44) correctly by the kick lever (4-53) (forced by the spring (4-54)) when the kick lever is released from the depression (when the film chamber door is opened).

The above inspections are important because the springs (4-51) and (4-54) must be balanced properly.

(2) Check the spring (4-45) to insure that it is not tangled.
If this spring is tangled, the exposure counter will not be advanced or reset.
Remove the holder (4-43) by loosening the screw (4-42), remove the exposure dial (4-44) and make sure that the spring (4-45) is not tangled.
Repair or replace the spring (4-45) with a new one as required.
When the spring is repaired or replaced, be sure to check the exposure counter to insure that it operate correctly.

(3) Check the exposure dial (4-44) to insure that the gear teeth are normal.

Fig. 45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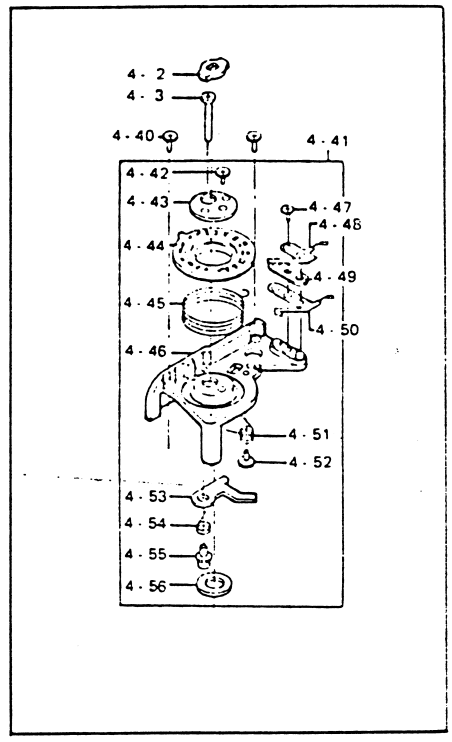
(b) Exposure counter is not reset.

(1) Check the spring (4 - 54) to insure that it provides an adequate spring force.
If this spring is too weak (due to a deformation, etc.), the gear (4 - 20) will not be disengaged with the exposure dial (4 - 44) even if the kick lever (4 - 53) is released from the depression.
Repair the spring (4 - 54) to strengthen it or replace.
The instructions described in 2 - 2 - (a) - (1) - a and b above apply in this case also.
Be careful not to strengthen the spring (4 - 51) too much.
The spring (4 - 51) will be unbalanced with spring (4 - 54) causing the exposure counter not to reset correctly.

(2) Check the spring (4 - 45) to insure that it is not tangled.
If this spring is tangled, the exposure counter will not reset.

Fig. 46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2-3 Film speed is not switched over.

(a) With the film speed selector (2-50) set to "AUTO" (■) and Fuji ASA400 film (F-II 400) loaded, automatic film speed setting system does not function.

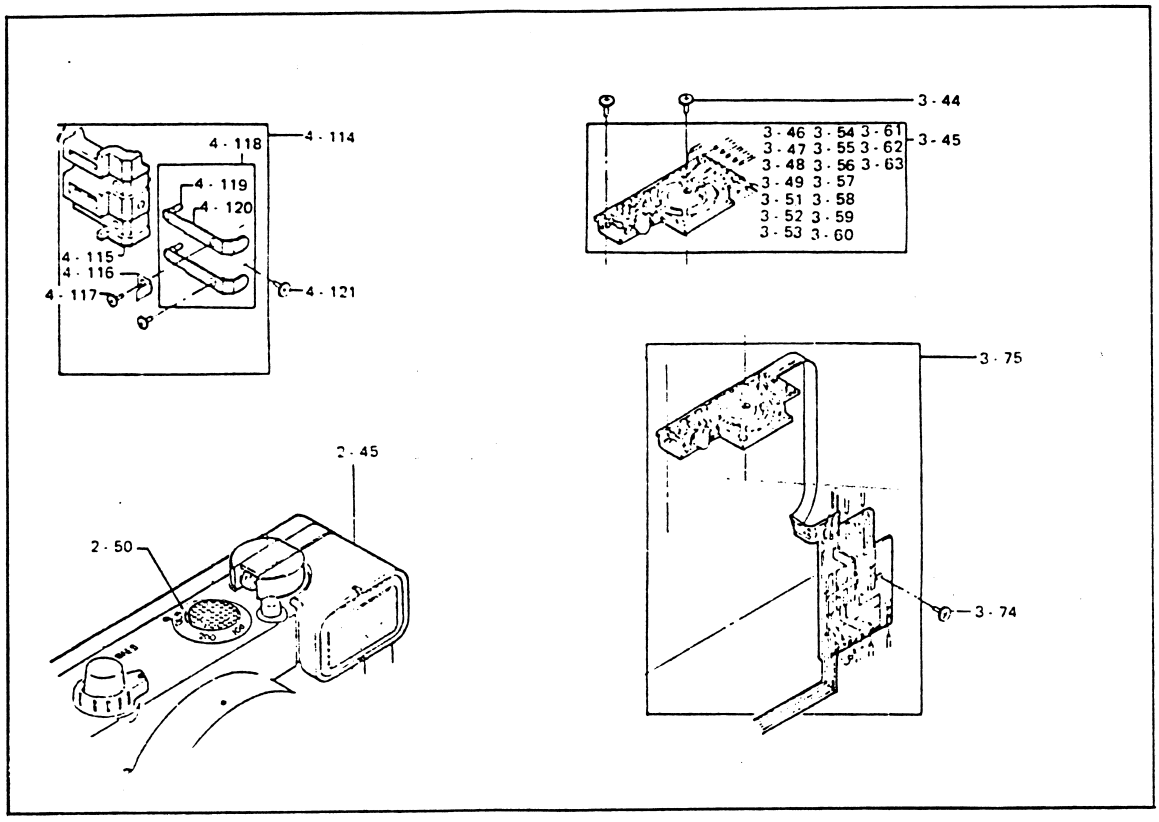
(1) Check the automatic set pins (4-119) to insure that they are projected evenly and correctly, and check the leaf spring (4-120) to insure that it is not deformed.

(2) Check the orange lead wire (3-60) and red lead wire (3-63) extended from the ASA selector circuit board to the lead springs (4-120) to insure that they are not broken or short-circuited and that they are soldered correctly. Repair if necessary.

NOTE: ○ When the red lead wire (3-63) is short-circuited with the orange lead wire (3-60), ASA400 is resulted and the automatic film speed setting does not function correctly.

○ When the lead wire is broken, ASA100 is resulted even if the film speed selector dial is set to "AUTO" and a F-II400 film is loaded.

Fig. 47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3-48 3-56 3-63
3-49 3-57
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3-52 3-59
3-53 3-60
3-45
3-75
2-45
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3-74

(3) Check the contact piece (2-48) heat-caulked on the ASA selector dial (2-50) to insure that it is in a proper contact with the ASA selector circuit board (3-46).
(If this contact piece (2-48) is deformed or dirty or the ASA selector circuit pattern is dirty, correct contact will not be given.)
When joining the main body with the front cover, the ASA selector dial (2-50) must be set to "AUTO" position (■) or otherwise, the contact piece (2-48) will be deformed.
Reform the contact piece (2-48) correctly and clean the contact piece (2-48) and printed pattern of the ASA selector circuit board (3-46) with alcohol.

(4) Check the No. 7 300 ohm resistor (3-48) of the ASA selector circuit assembly (3-45) to insure that this resistor is not broken and that this resistor is soldered correctly.
If this resistor is broken or not soldered correctly, film speed selecting system does not switch over from ASA100 to ASA400 even if the film speed selector is set to "AUTO" and an F-II400 film is loaded.

(b) Film speed cannot be switched over by the film speed selector.

(1) Check as described in (a)-(2) and (3) above.

(2) Check the resistors built in the ASA selector circuit assembly (3-45) to insure that each resistor has correct resistance and that they are not damaged and they are soldered correctly.
The rated resistance of each resistor is shown below.

Resistor 1 (3-53): 47 ohms
Resistor 2 (3-52): 75 ohms
Resistor 3 (3-51): 82 ohms
Resistor 4 (3-49): 220 ohms
Resistor 8 (3-47): 240 ohms

Even one out of the resistors 1, 2, 3, 4 and 8 is defective, film speed cannot be switched over correctly.
Check these resistors to insure that they are effective and soldered correctly, and repair or replace as required.

Fig. 48

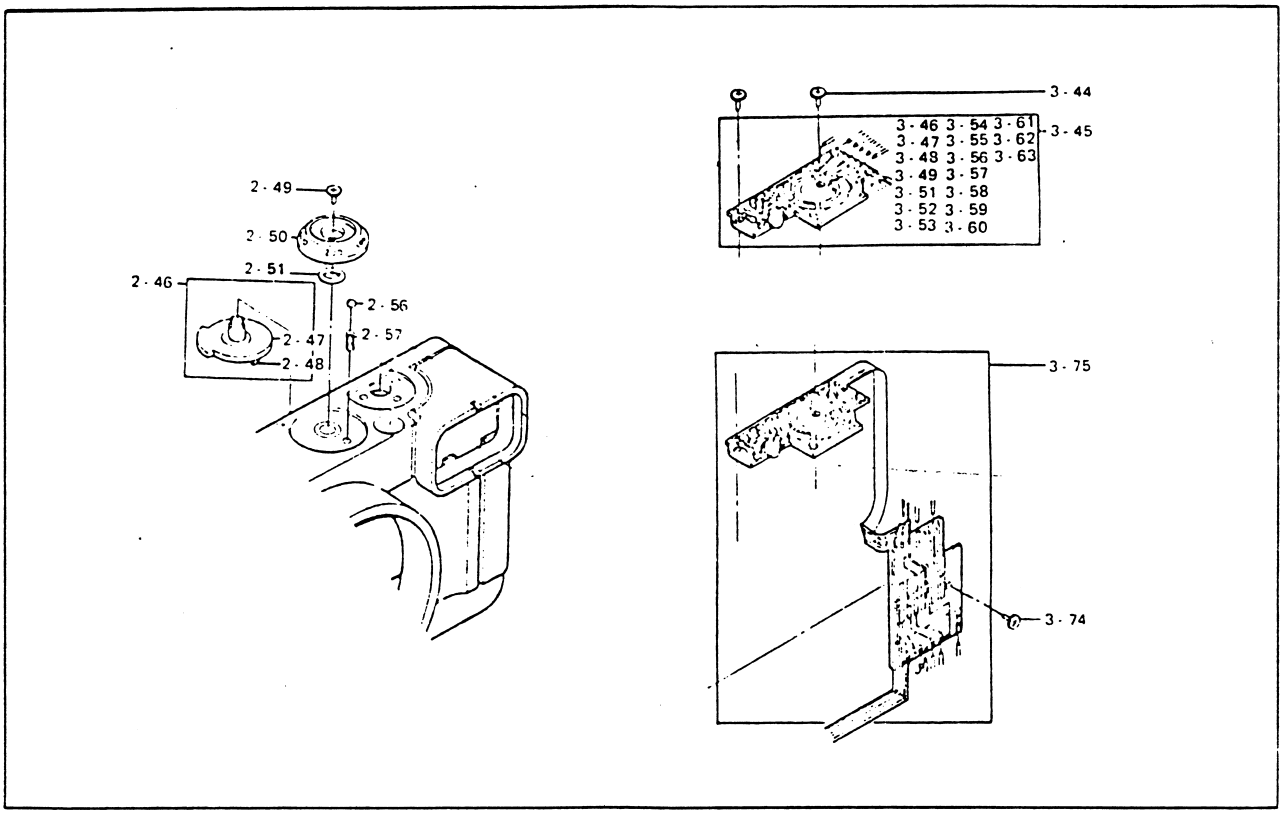
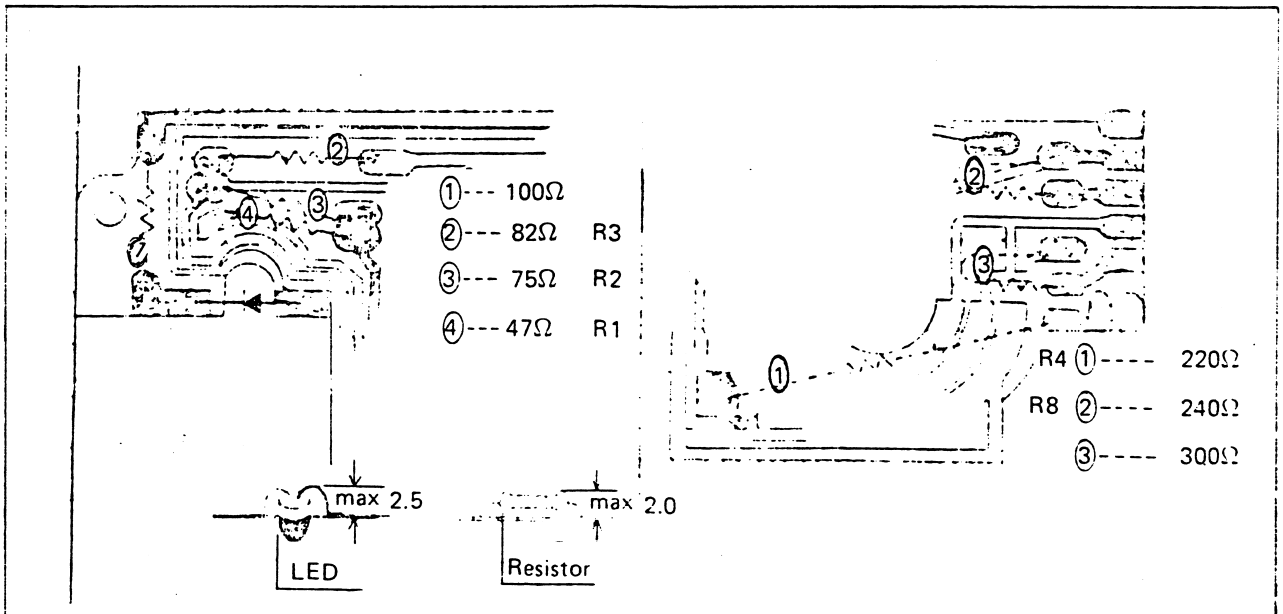


Fig. 49



Resistors on the front face of the ASA selector circuit assembly

Resistors on the back face of the ASA selector circuit assembly

2 - 4 Flashmatic system

(1) First, load the camera with two AM - 4 batteries.

(2) Depress the button (2 - 58) on the camera top.
With the button (2 - 58) depressed, the strobo system is switched over to the flashmatic mode and strobo charging begins.
When the strobo is charged completely, the neon lamp on the camera back lights.

(3) Open the film chamber door. Watching the sector, set the focusing ring to ∞, 3m, 1.5m and 1m, release shutter at each distance and examine the aperture diameter with the film speed selector set to ASA100.
Conduct this test in a comparatevely dark place.
Synchronization of the strobo can also be checked.
When capacity of the batteries has been reduced, a longer time will be required to charge the strobo, and even if the shutter release button is depressed during charging, the shutter release button may not be depressed as it is locked.
Note that this does not mean a trouble of the shutter release.

(a) When the FM button is depressed, the shutter operation is not switched over to FM. (The strobo is chaged and flashes.)

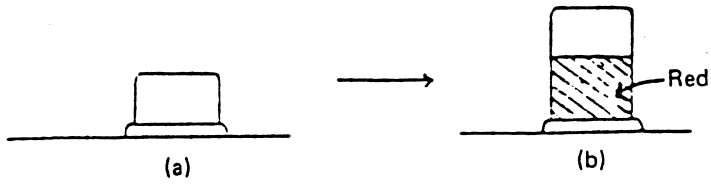
(1) Check the button (2 - 58) to insure that it operates correctly.

(2) Check the FM switch (2 - 70) for contact with the flexible circuit board (3 - 75) or FM circuit (3 - 64), and make sure that the contact pieces are clean and not deformed.

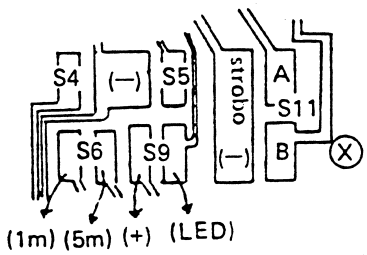
(3) Check the switches S4, S5, S6 and S9 shown on the circuit diagram.
Check lead wires of the FM circuit (3 - 65) or printed pattern of FPC (3 - 75) to insure that they are not broken.

(4) The shutter assembly is considered to be defective when (1) through (3) above are normal.

Fig. 50



(a) shows the normal position of the FM button (knock button). When this button is depressed for flash-photographing, this button is positioned to (b), and the operating mode is switched over to flashmatic. When the button is depressed once again, the state (b) is changed to state (a), causing the flashmatic mode to go out.



S4: FM changeover switch

S5: Level shift switch

S6: Distance data switch

S9: Underexposure warning (LED) switch

S11: A-side: Strobo charging switch

B-side: Forced discharging switch

The FM circuit has the above shown circuit pattern at the switch portion. (Flexible printed circuit board has the same pattern at the switch portion.)

(b) The shutter operation is switched over to FM but aperture is not switched over correctly. (Strobo flashes normally.)

(1) Release the shutter with the focusing ring set to 1m, 1.5m, 3m and ∞, and check diameter of the aperture at each distance. AT ASA100, the rated aperture at each distance should be as follows :

1 m :	F8.9	3 m :	F2.9
1.5 m :	F5.9	∞ :	F2.8 (non - interlock)

NOTE: Perform the above inspection at a dark place (EV8 or less).
The HD - 1 is capable of a daylight synchronization and if the inspection is conducted in a bright place, it cannot be judged if the aperture is within the rating or not.

(2) When FM aperture deviates remarkably at each distance, check the FM - aperture control circuit assembly (3 - 116) for the resistor built in this assembly.
The rated resistance of each resistor is shown below.

Even one out of the resistors (1) through (4) is defective, flashmatic aperture cannot be switched over correctly.
Check these resistors to insure that they are effective and soldered correctly, and repair or replace as required.

(c) The shutter is switched over to FM but the strobo does not flash.

(1) Check contact between FM switch and FM circuit.
To be more specific, check contact pieces A and B of switch S11 to insure that these contact pieces are clean and not deformed.

(2) Check the following lead wires to insure that these lead wires are soldered correctly and not broken.

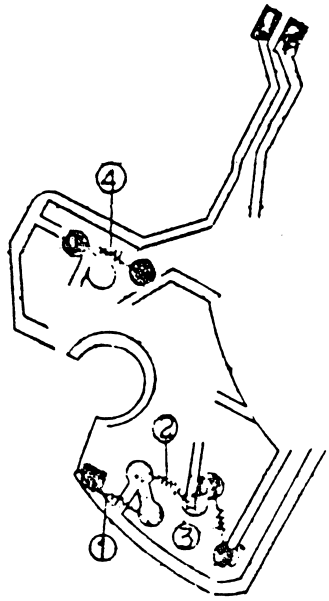
a. Red, brown and black lead wires between FM circuit and strobo.

b. Yellow lead wire (3 - 70) between FM circuit and strobo.

(3) Check contact piece B to insure that this contact piece is soldered on the FM circuit correctly.

(4) Check the FM circuit or flexible printed circuit board to insure that the printed circuit patter is normal.

Fig. 51



①--- 4.7KΩ

②--- 2.7KΩ

③--- 1.8KΩ

④--- 0.39KΩ

Install the resistor 2 from the back of the circuit board.

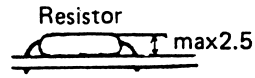
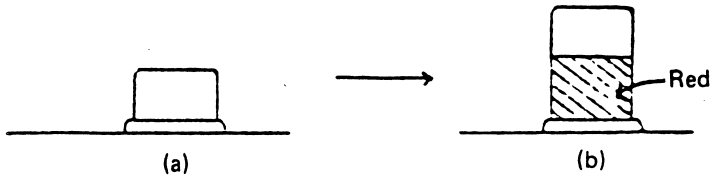
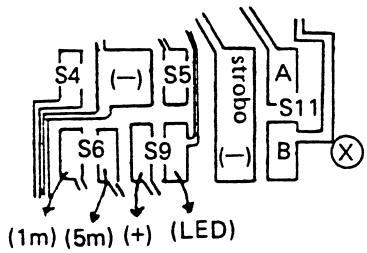


Fig. 52



(a) shows the normal position of the FM button (knock button). When this button is depressed for flash-photographing, this button is positioned to (b), and the operating mode is switched over to flashmatic. When the button is depressed once again, the state (b) is changed to state (a), causing the flashmatic mode to go out.



S4: FM changeover switch

S5: Level shift switch

S6: Distance data switch

S9: Underexposure warning (LED) switch

S11: A-side: Strobo charging switch

B-side: Forced discharging switch

The FM circuit has the above shown circuit pattern at the switch portion. (Flexible printed circuit board has the same pattern at the switch portion.)

2 - 5 Adjustment of focus (Rating : +0.05 ±0.02 at ∞)

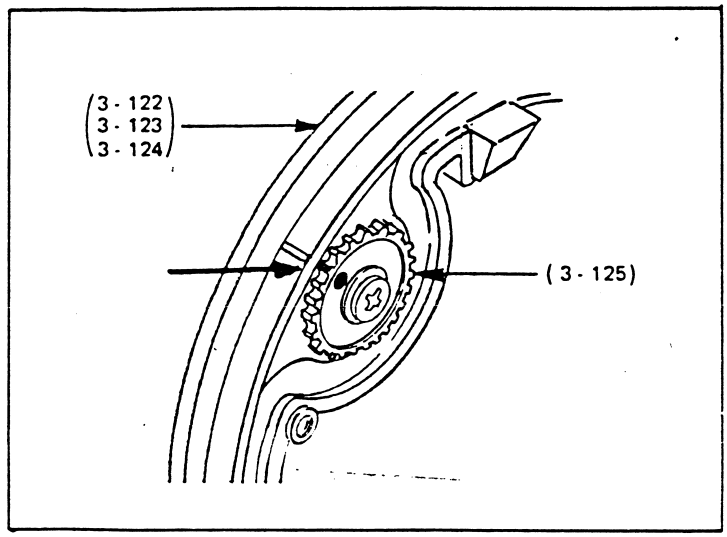
Perform adjustment of focus after fitting the main body to the front cover.

(1) Making the shutter to "Bulb" state

Charge the shutter (wind up the film advance lever), insert a jig in the camera through the zone focus adjust hole on the camera back, and thus, make the shutter to "Bulb" state.
(When the cover plate (4 - 83) is installed, remove this plate first.)

(2) Make sure that the circle mark of the gear II (3 - 125) has matched with the index ■ on the female helicoid (3 - 91). (∞ position)
Actually, however, the front ring assembly (1 - 45) has been installed and the circle mark on the gear II (3 - 125) cannot be checked.
For this reason, the gear II (3 - 125) has a white mark at the tooth corresponding to the circle mark.
Mark sure that this white mark has matched with the index on the female helicoid.

Fig. 53



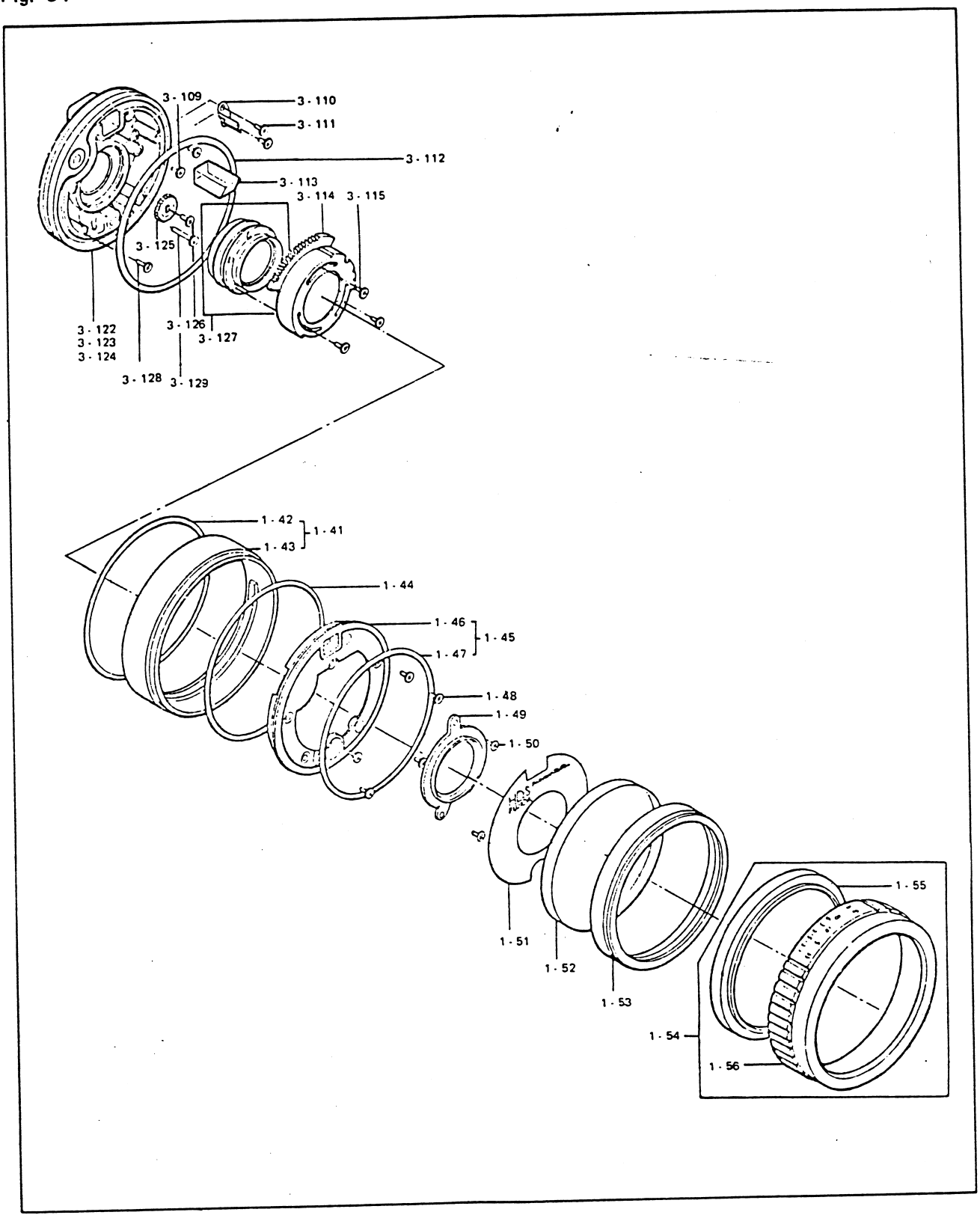
(3) Adjust visibility of a collimater and after insuring that the scale is in the zero position (∞), place the camera on the camera holder.

(4) Look into the collimater, move the lens back and forth and finally tighten the screws (3-115) which have installed the interlock ring (3-114) temporarily.
The interlock ring (3-114) is connected to the gear II (3-125) through the gear and therefore, when the lens frame and interlock ring (3-114) are fitted too tight and the lens is moved back and forth, the interlock ring (3-114) will move causing the position of the gear II (3-125) to be deviated.
Fit and hold the focusing ring I (1-41) first so that the interlock ring (3-114) (gear II (3-125)) will not be turned.

(5) Securely tighten the two screws (3-111) which have installed the leaf spring (3-110) temporarily.

(6) Fit the focusing ring I (1-41) and check it for operation and click effect.

Fig. 54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2 - 6 Adjustment of zone focus mark in the viewfinder

When the focusing ring is turned, zone focus marks which correspond to the 1m, 1.5m, 3m and ∞ distance scales on the focusing ring are displayed in the viewfinder.

To be more specific, when the focusing ring is turned and the helicoid is moved forward and backward, the interlock ring (3 - 114) pushes the pin (3 - 104). Then, the interlock lever (3 - 30) operates and thus, the zone focus plate (3 - 12) moves under an interlock motion.

On the zone focus plate (3 - 12), zone focus mark (3 - 11) is installed.

Adjustment of zone focus mark

(1) Fit the focusing ring after completing adjustment of focus, look into the viewfinder and check the zone focus mark for the position (vignetting, etc.).

At ∞ and 1m, the focusing ring stops and at 3m and 1.5m, it clicks.

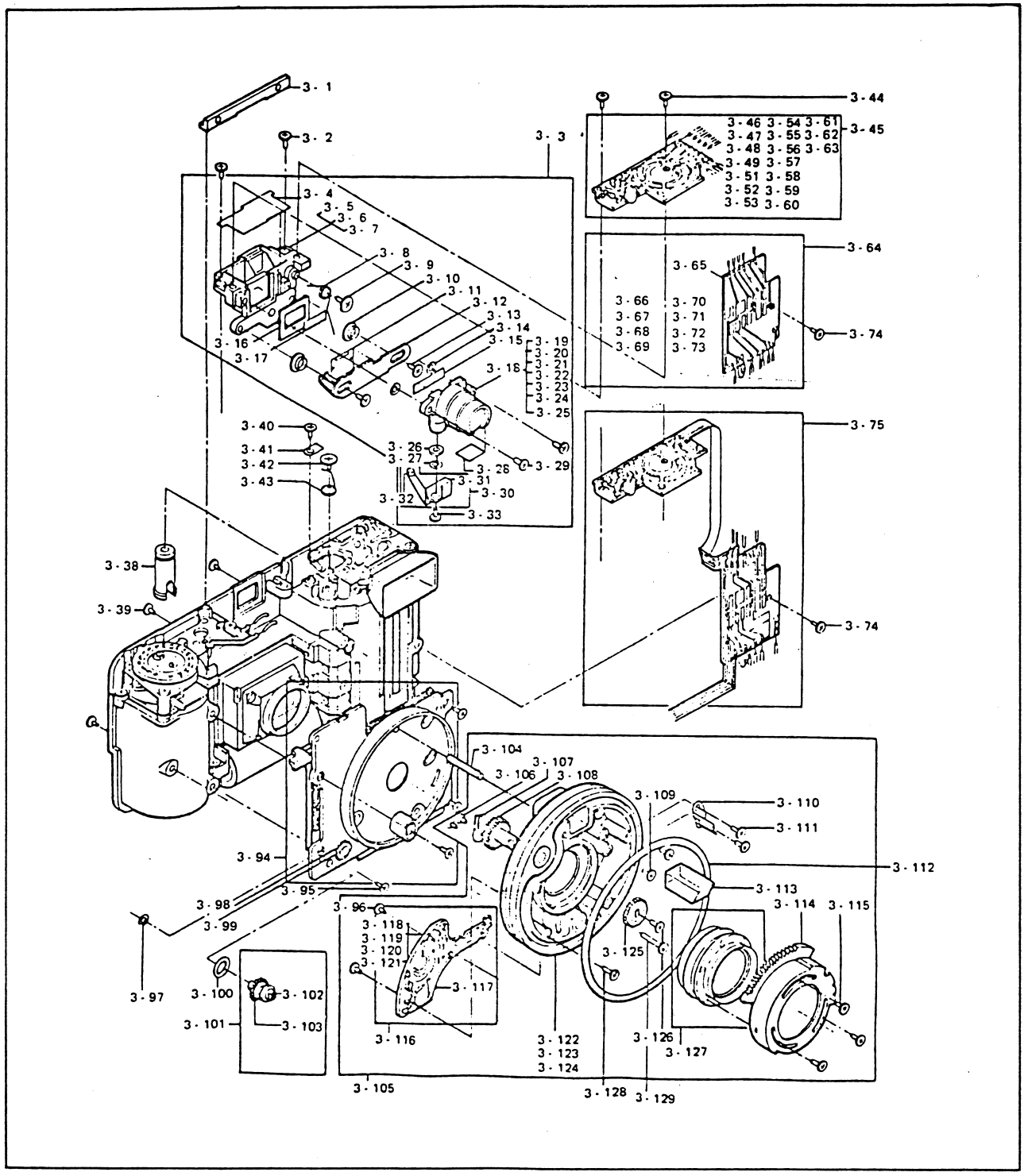
(2) Set the focusing ring to ∞, and make sure that zone focus mark (⛰) is displayed in the zone focus window.

When the zone mark is deviated from the zone focus window, peel off the cover plate (4 - 83), insert a screw driver into the opening beneath the cover plate, and adjust the fork portion of the zone focus plate (3 - 12) properly so that the zone focus mark (⛰) is in the zone focus window.

(3) Check each zone focus mark for 3m, 1.5m and 1m distances.

All the zone marks for 3m, 1.5m and 1m distances must be in the individual zone focus windows correctly without any remarkable vignetting. If any vignetting exists, repeat 2 - 6 - (2) and (3) above.

Fig. 55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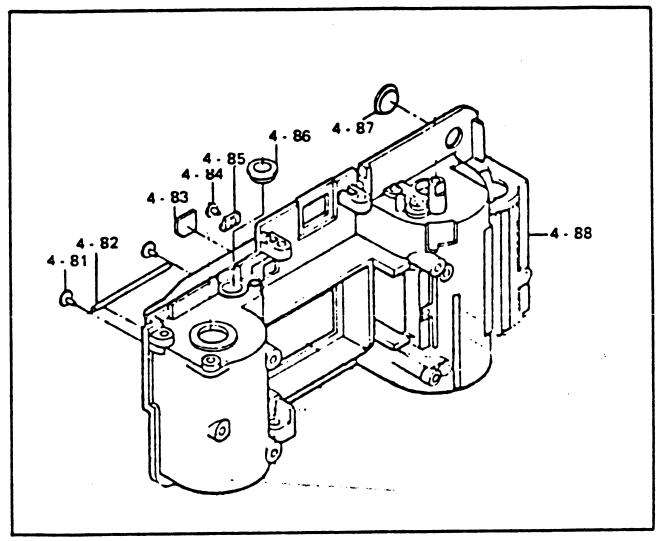
2-7 Adjustment of automatic exposure value

Automatic exposure value cannot be adjusted in the camera but in the shutter.

2-8 Adjustment of pressure plate lock

Adjust lock of the pressure plate with the bracket (4-85).
The bracket (4-85) inself is soft. Carefully tighten the screw (4-84)
When the pressure plate is locked, it should not come out as the camera is shaked.

Fig. 56



2 - 9 Self - timer

(1) Normally, the self - timer operates in eithe r one of the following sequences.

- 1. Winding up film advance lever
  2. Setting the self - timer
  3. Starting the self - timer
- 1. Setting the self - timer
  2. Winding up film advance lever
  3. Starting the self - timer

The self - timer starts as the self - timer lever is pushed toward the arrow mark direction.
The operating time is 7 to 13 sec.

(2) When the self - timer is started without winding up the film advance lever, the self - timer will stop in a half way.
In this case, reset the self - timer first, and start it after winding up the film advance lever.
When the self - timer is reset and started after winding up the film advance lever, the self - timer may stop in a half way causing the film advance lever not be wound and shutter not to be released.
In this case, also, be sure to start the self - timer after resetting the self - timer.

(a) The self - timer stops in a half way

(1) Has the film advance lever been wound up?

Check it by operating the camera normally.

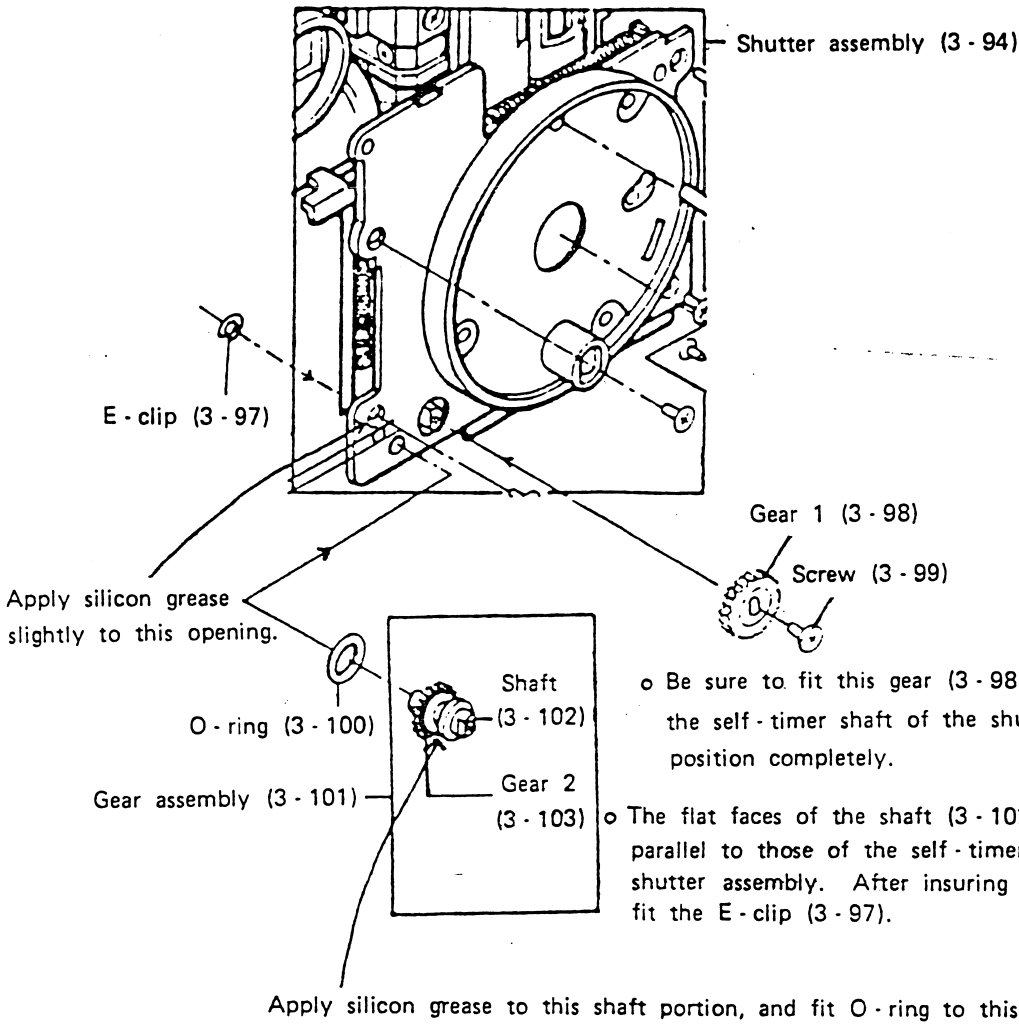
(2) As the result of above checking, of the self-timer stops in a half way:

a. Make sure that adhesive used to install the cover (1 - 32) has not been squeezed out.
If any adhesive is squeezed out, remove the cover (1 - 32) once and reinstall it correctly so that no adhesive is squeezed out.

b. Make sure that the O - ring (3 - 100) fitted to the gear assembly (3 - 101) is not fitted to the front cover too tightly. Further, make sure that the O - ring is properly lubricated with grease.
When the used O - ring (3 - 100) is not made of silicon rubber, replace it with one made of silicon rubber.
When lubrication is needed, apply grease.

CAUTION: In no event should the opening on the front cover be increased. Water leaking will be resulted.

Fig. 57



Installing self - timer gears to the shutter assembly.

c. Make sure that the positional relationship between the shaft (3-102) of the gear assembly (3-101) and self-timer shaft of the shutter is proper.
If this positional relationship is deviated, remove the gear assembly (3-101) once and reassemble it correctly.

(b) The shutter is not released by the self-timer

a. Reset the self-timer and recheck.

b. Remove the shutter and check the self-timer.
Check and adjust engagement between the self-timer and shutter.
Replace the self-timer and/or shutter with a new one if necessary.

(c) The self-timer connot be set.

a. Recheck the self-timer to see if it can be set or not.

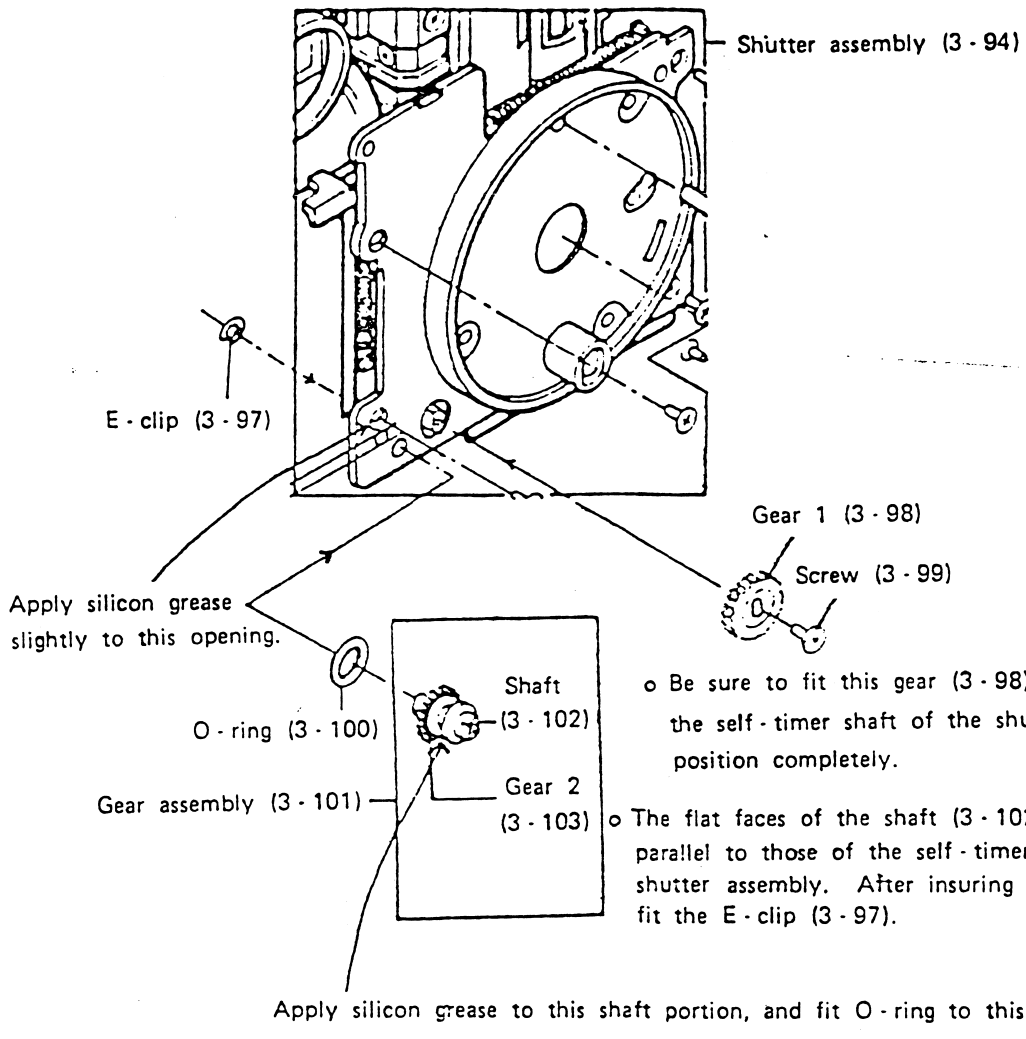
b. Remove the shutter and check the self-timer.
Check and adjust engagement between the self-timer and shutter.
Replace the self-timer and/or shutter with a new one if necessary.

(d) Self-timer starts due to a shock caused by winding up the film advance lever, etc. after setting the self-timer.

a. After setting the self-timer, wind up the film advance lever and release the shutter repeatedly several times, and see if the self-timer starts or not.

b. Remove the shutter assembly and check the self-timer.
Check and adjust engagement between the self-timer and shutter.
Replace the self-timer and/or shutter with a new one if necessary.

Fig. 58



Installing self - timer gears to the shutter assembly.

2 - 10 Water leaking

This camera is of a water - resisting type and to protect the camera from water intrusion, special sealing treatments have been made.
For this reason, when disassembling, repairing and reassembling the camera, particular care must be exercised for the water resisiting treatments.
Fujica HD - S has the built - in strobo while HD - 1 uses a separate strobo.
Note that if water intrudes into the high voltage applied parts of the strobo, a serious trouble occurs.

(a) Parts treated for water - resisting

(1) Film advance lever

a. The O - ring (1 -3) is fitted to the screw (1 - 2).

b. The O - ring (1 - 7) is fitted to the film advance lever (1 - 6).

c. Silicon grease is applied to both O - rings (1 - 3) and (1 - 7).

(2) Shutter release button

The rubber cap (1 - 9) is installed on the shutter release button (1 - 10).

(3) Button seat

a. The button seat (2 - 26) is provided with the O - ring (2 - 28).

b. The O - ring (2 - 28) is lubricated with silicon grease.

(4) Rewind crank assembly

The O - ring (2 - 54) is fitted between the shaft holder (2 - 53) and rewind spindle II (2 - 55).

(5) Film speed selector

The O - ring (2 - 51) is fitted between the front cover and ASA selector dial I (2 - 50) and silicon grease is applied to the O - ring (2 - 51).

(6) Knock button seat

The button seat (2 - 61) is fitted to the front cover after applying O - ring (2 - 62) and the O - ring is lubricated with silicon grease.

(7) Flash assembly

The O - ring (2 - 64) is fitted to the protector (2 - 65) before fitting the protector to the front cover and silicon grease is applied to the O - ring.

NOTE: The front rubber (1 - 23) is not for sealing water.

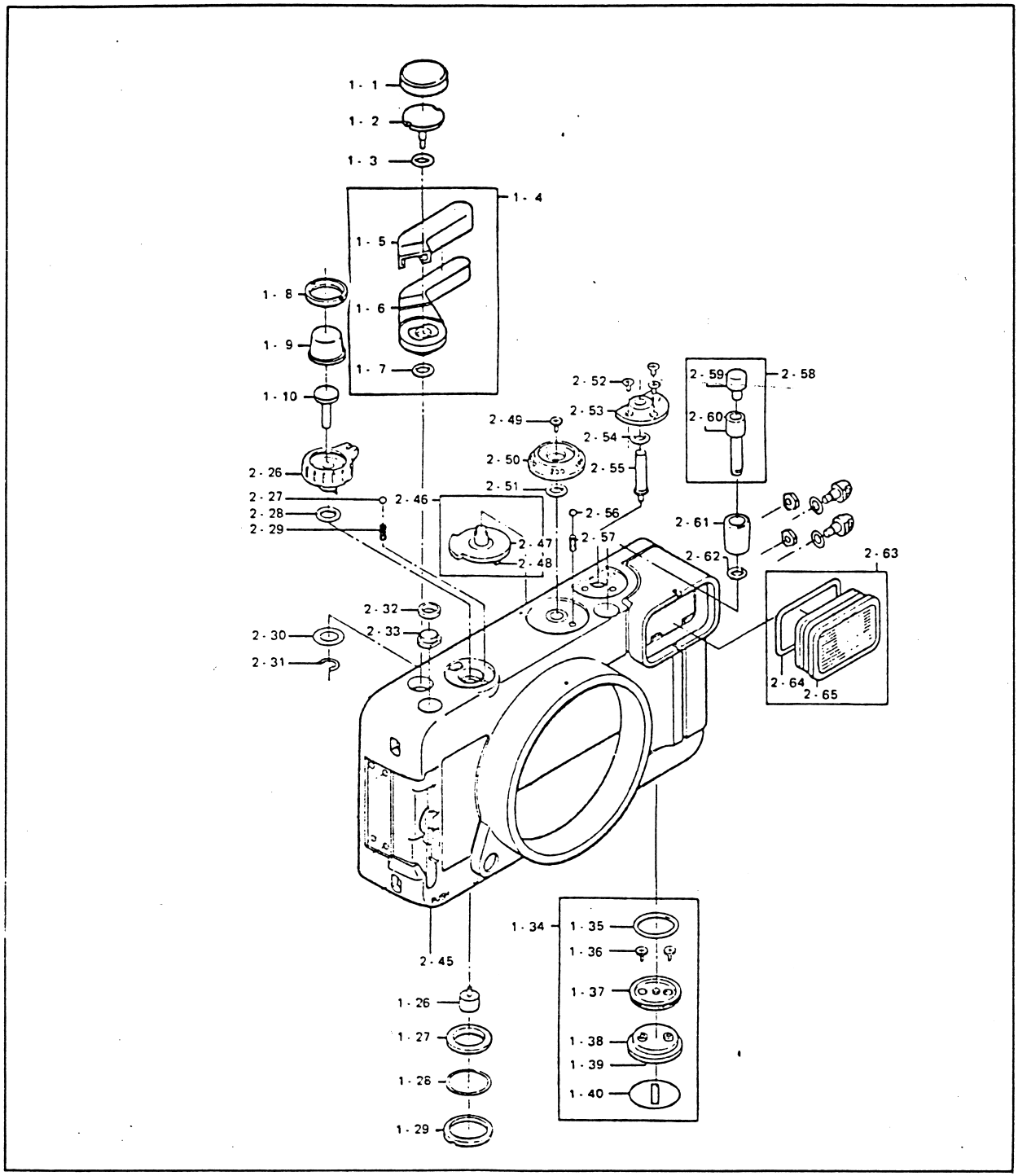
Film rewind button

(8) The film rewind button (1 - 26) is covered with cover ring (1 - 27).

(9) Battery compartment cover

The O - ring (1 - 35) is fitted to the battery compartment cover (1 - 38).

Fig. 59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(10) Neck strap eyelets

Packings (2 - 34) are fitted to the four neck strap eyelets on the front cover.

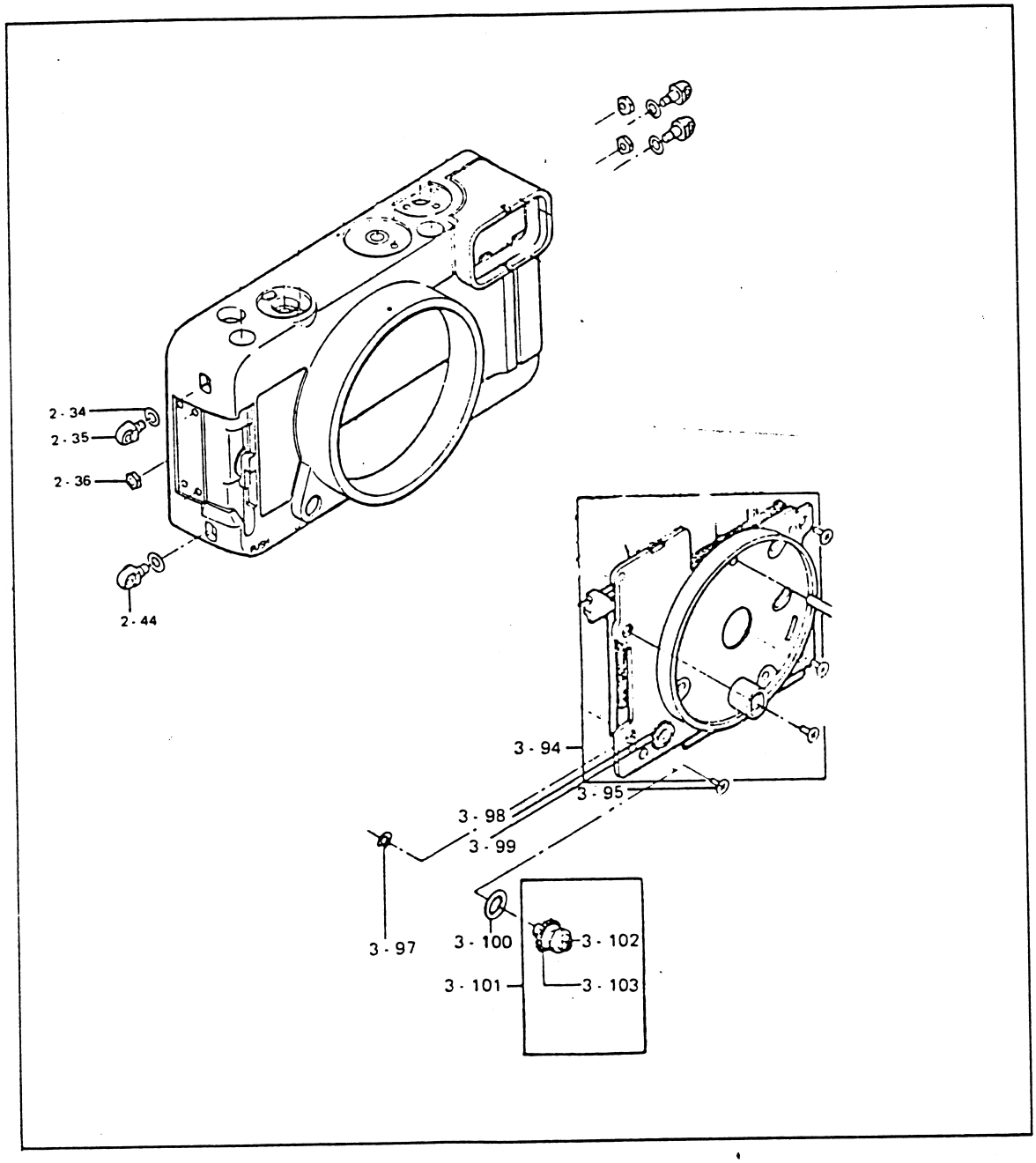
(11) Self - timer

The O - ring (3 - 100) is fitted to the shaft (3 - 102) of the gear assembly (3 - 101) and silicon grease is applied to the O - ring.

(12) Exposure counter window

The window is sealed with adhesive.

Fig. 60



(13) Film chamber door

a. The gasket (2 - 10) is installed on the inside of the film chamber door.

b. The window glass (2 - 12) is scaled with adhesive.

c. The O - ring (2 - 16) is fitted to the window (2 - 18).

d. The O - ring (2 - 15) is fitted to the window plug (2 - 14).

(14) Lens assembly

a. The O - ring (1 - 42) is fitted to the focusing ring I (1 - 43).

b. The O - ring (3 - 112) is fitted to the female helicoid (3 - 122).

c. The O - ring (3 - 123) is fitted to the gear holder (3 - 124).

d. The O - ring (1 - 44) is fitted between the female helicoid (3 - 122) and front ring assembly (1 - 46).

e. The O - ring (1 - 42) is fitted to the front ring (1 - 46).

Fig. 61

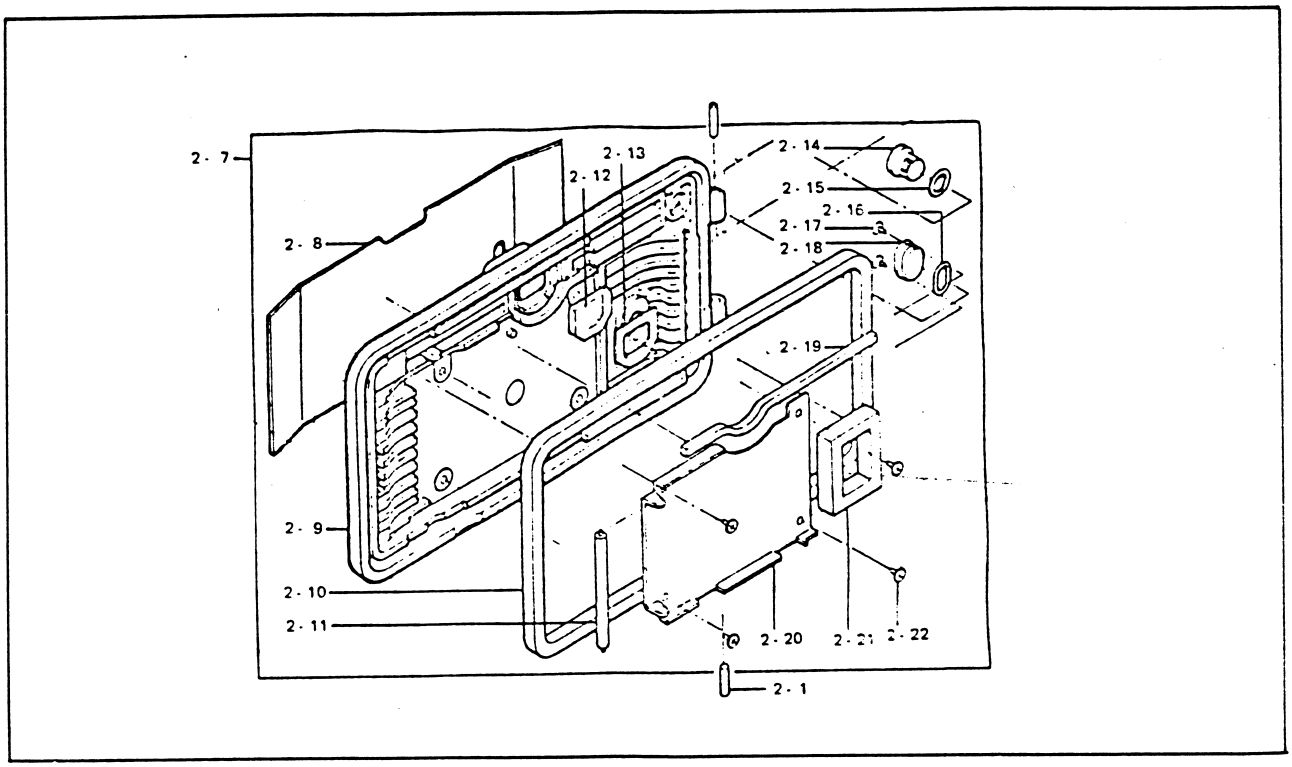

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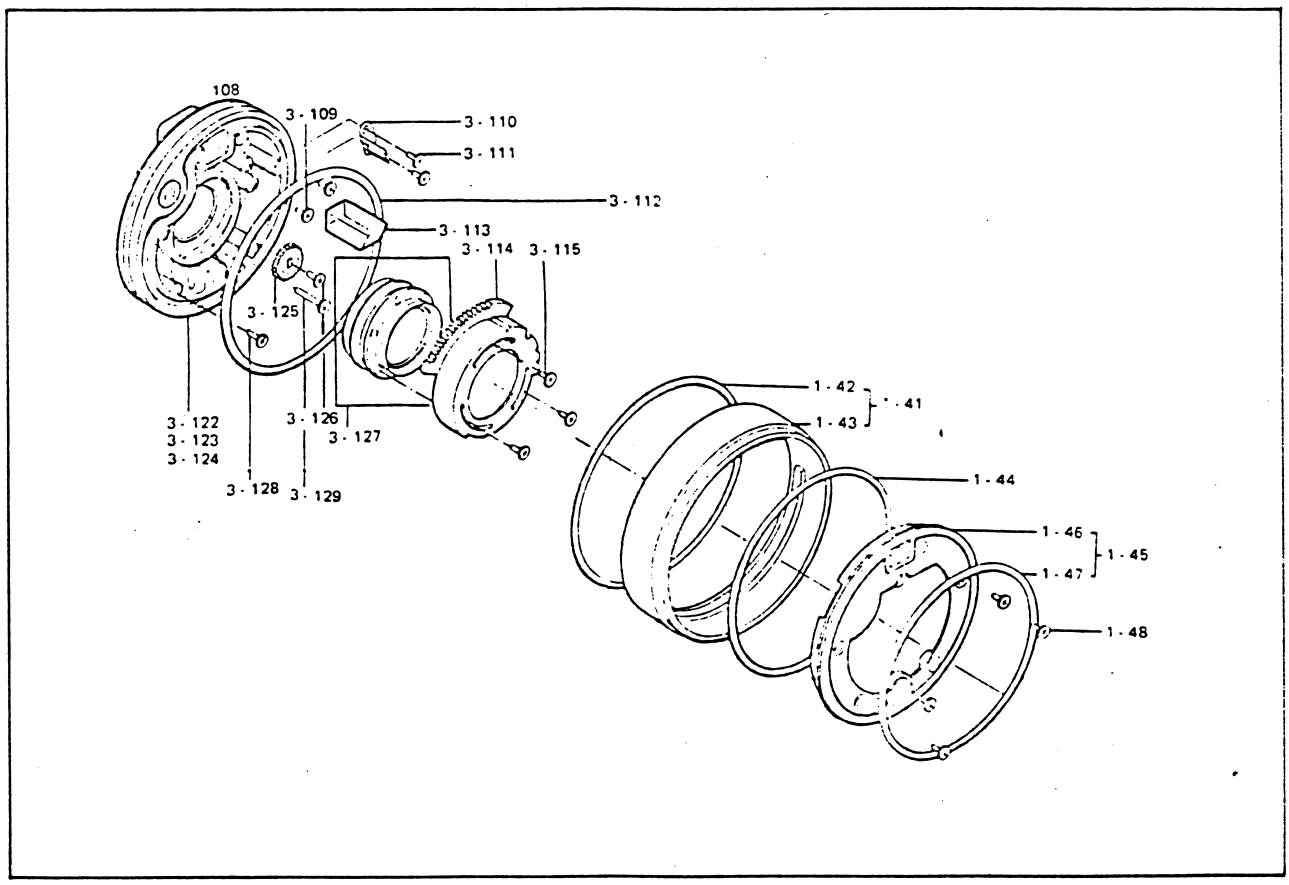
Fig. 62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(b) Descriptions for water-resisting treatments

When diassembling or reassembling the camera, carefully handle the O-rings so that they are not damaged, they are properly greased, no dust and foreign matter exist on them and they are installed correctly.

(1) Film advance lever

Apply silicon grease (slightly excessively) to the shaft portion of the film advance lever (1-6), fit the O-ring (1-7) to the film advance lever (1-6), and after applying grease to the outer circumference of the O-ring (1-7), fit the film advance lever to the film take-up spindle assembly (4-6).

Apply silicon grease to the shaft portion of the screw (1-2), fit the O-ring (1-3) to the screw (1-2), and after applying grease to the outer circumference of the O-ring (1-3) slightly, tighten the screw (1-2).

(2) Suhtter release button

Fit the shutter release button (1-10) to the button seat (2-26) installed on the front cover, put the rubber cap (1-9) on the shutter release button after checking the rubber cap, and tighten the lock nut (1-8).

NOTE: When tightening the lock nut (1-8), be careful not to twist the rubber cap (1-9).

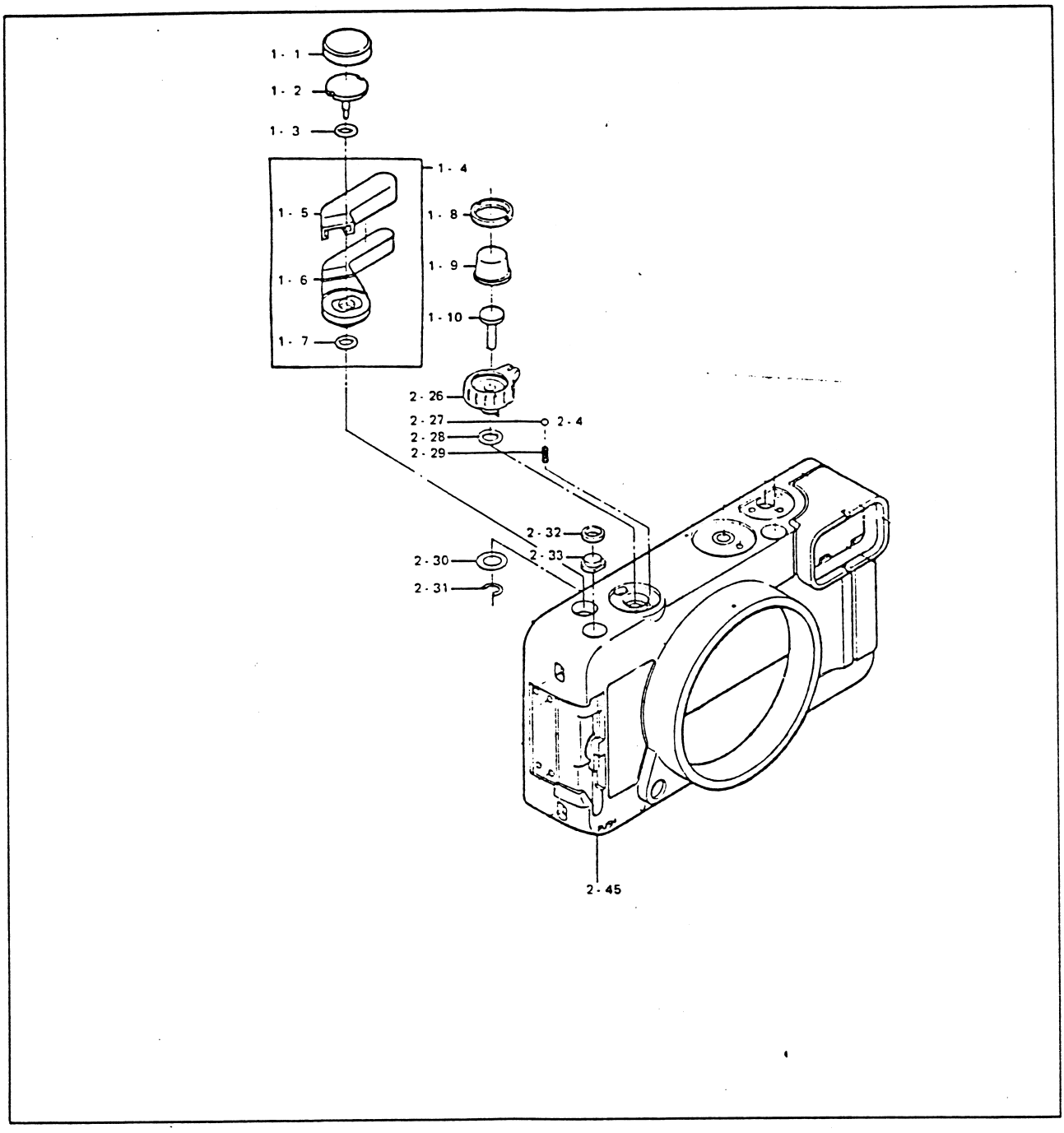
(3) Button seat (2-26)

Apply silicon grease to the shaft portion of the button seat (2-26), and fit the O-ring (2-28) to the shaft portion.

Place the spring (2-29) and steel ball (2-27) on the front cover, fit the button seat, and apply the clip (2-31) from the inside of the front cover.

Make sure that the shutter release button operates correctly.

Fig. 63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(4) Rewind crank assembly

Apply silicon grease to the rewind spindle II (2 - 55), fit the O - ring (2 - 54), and apply grease to the outer circumference of the O - ring also.

Now fit the rewind spindle II (2 - 55) to the shaft holder (2 - 53), place them on the front cover, and tighten the three screws (2 - 52).

(5) Film speed selector

Apply silicon grease to the shaft portion of the ASA selector dial II (2 - 47), and fit it to the front cover from the inside of the front cover.

Apply the spring (2 - 57) and steel ball (2 - 56) to the outside of the front cover, fit the O - ring (2 - 51) to the shaft of the ASA selector dial II (2 - 47), place the ASA selector dial I (2 - 50) on it and tighten the screw (2 - 49).

(6) Button seat (2 - 61)

Fit the O - ring (2 - 62) to the hole on the front cover into which the button seat (2 - 61) is to be fitted, and tightly fit the button seat (2 - 61) into this opening.

Now, apply silicon grease to the button I (2 - 60) of the button assembly (2 - 58), and fit it to the button seat.

(7) Flash assembly

Fit the O - ring (2 - 64) to the protector (2 - 65), apply silicon grease to the outer circumference, and fit the protector to the front cover.

(8) Film rewnid button

Fit the film rewind button (1 - 26) to the bottom of the front cover, place the cover ring (1 - 27) on the film rewind button, fit the cover seat (1 - 28), and tighten the ring (1 - 29).

When tightening the ring (1 - 28), be careful not to allow it projecting out from the front cover.

It should be flush with the front cover surface or rather it should sink below the front cover surface.

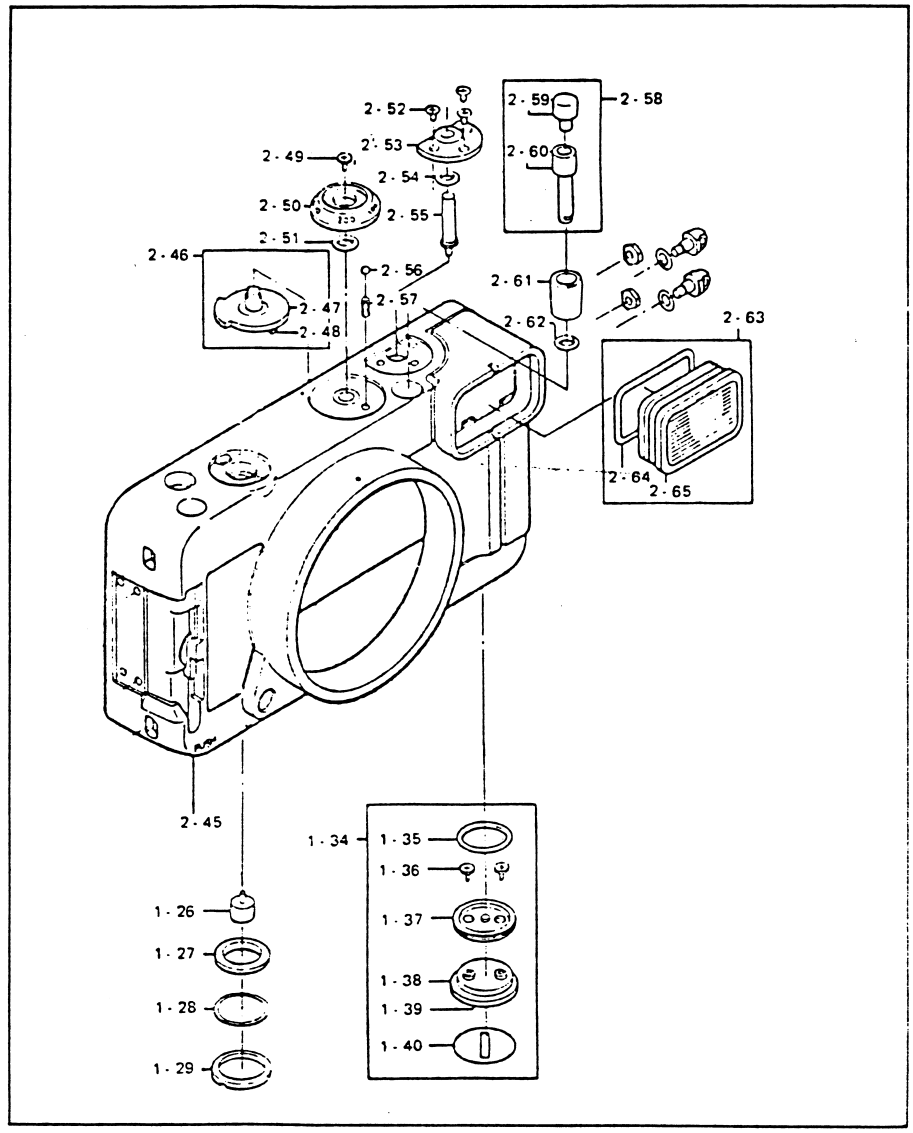
When tightening is insufficient, the ring (1 - 29) will be projected out of the front cover surface.

Be sure to fit the cover seat (1 - 28) without fail.

(9) Battery compartment cover

Install the cover ring (1 - 39) on the battery compartment cover (1 - 38) with adhesive, fit the O - ring (1 - 35), place the battery holder (1 - 37) on it, and tighten two screws (1 - 36).

Fig. 64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(10) Neck strap eyelets

All the four neck strap eyelets ((2 - 35)×3 and (2 - 44)) in the four positions of the front cover are provided with the packings (2 - 34) individually.

It will be very seldom to replace the neck strap eyelet with a new one.

In the event the neck strap eyelet is to be replaced, however, regard the following instructions.

a. Do not reuse a used packing but be sure to replace it with a new one.

b. The neck strap eyelets are tightened and adhered so that they will not come off easily.
When the neck strap eyelet is twisted to remove it, fitting of the neck strap eyelet against the front cover will be loosened.
Then, water leaking will occur even if the neck strap eyelet is reinstalled with a new packing used.
Thus, when removing the neck strap eyelet, do not twist it but hold the neck strap eyelet securely and loosen the nut.

c. When the neck strap eyelet is installed, be srue to lock the nut with adhesive.
(For the adhesive, use one of cyanide or epoxy resin type.)

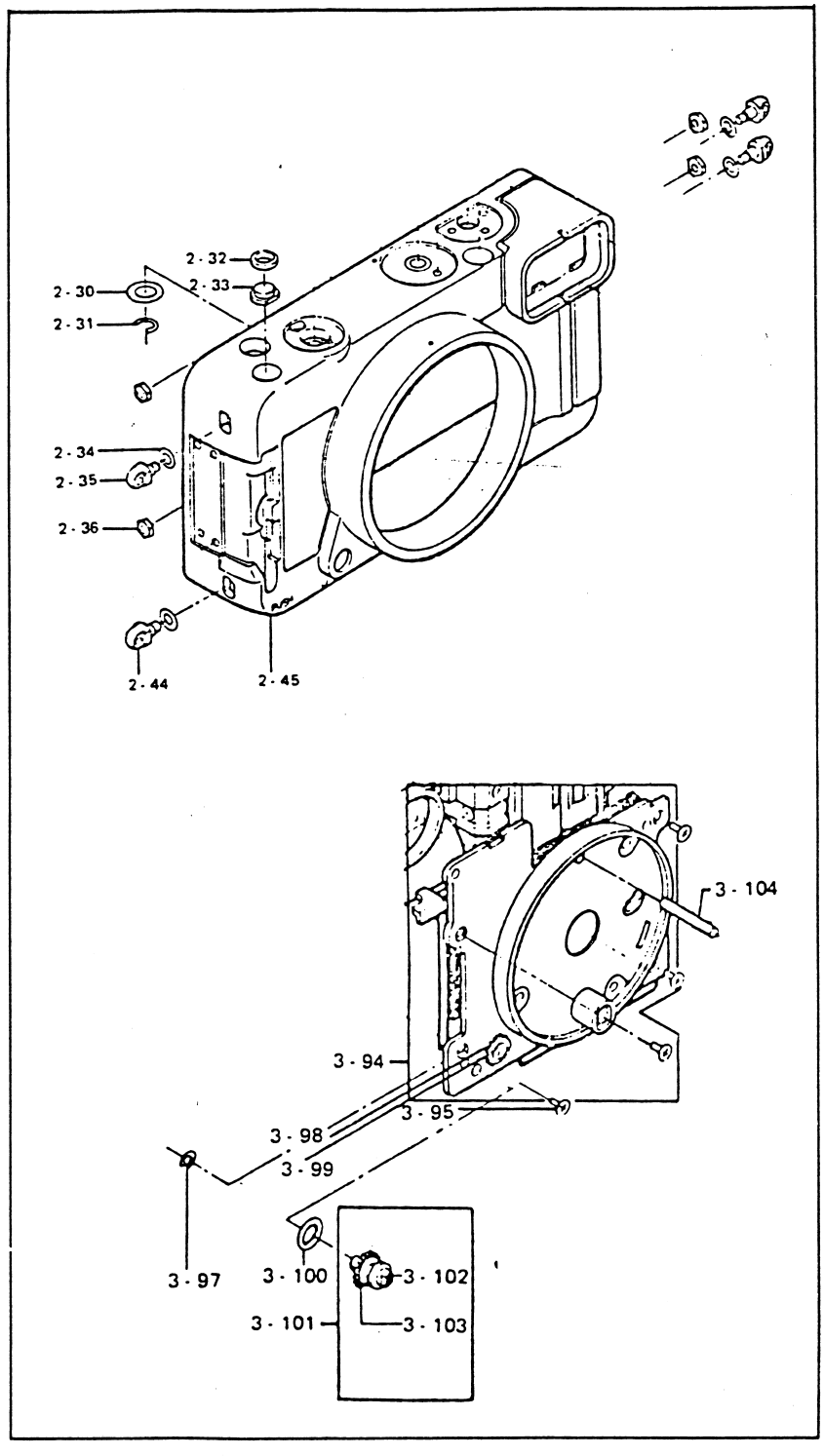
(11) Self - timer

Apply silicon grease to the O - ring groove on the shaft (3 - 102) of the gear assembly (3 - 101), and fit the O - ring (3 - 100) to the groove. This O - ring is fitted to the self - timer shaft hole on the front cover.

(12) Exposure counter window

Install the exposure counter window (2 - 33) on the front cover with adhesive and pad the periphery with adhesive. Next, fit the ring (2 - 32) tightly.

Fig. 65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(13) Exposure counter window

Install the exposure counter window (2-33) on the front cover with adhesive and pad the periphery with adhesive.
Now, fit the ring (2-32).

(14) Film chamber door

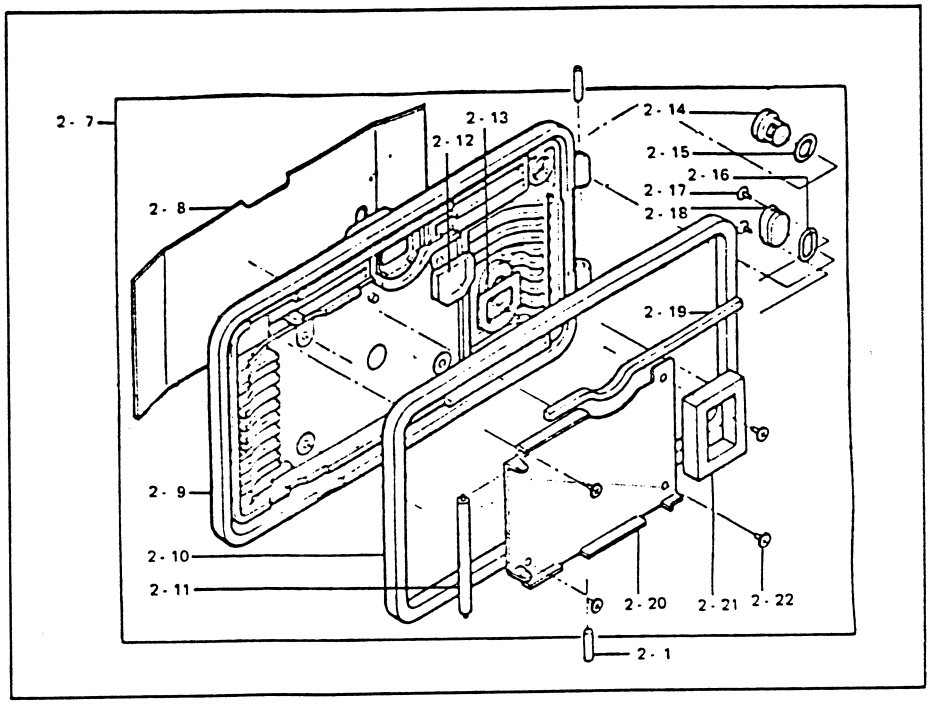
a. Apply adhesive to the groove on the inside of the film chamber door, and install the gasket (2-10) after insuring that the gasket is not damaged.

b. Apply adhesive to the periphery of the window glass (2-12), install the window glass on the film chamber door, and then, pad the periphery with adhesive.
Now, install the holder (2-13) with adhesive.
When the adhesive is dry, no opening should exist toward the entire periphery of the window glass or adhesive should not come out to the camera exterior.

c. Fit the O-ring (2-16) to the window (2-18), fit them to the film chamber door, and tighten two screws (2-17).

d. Fit the O-ring (2-15) to the window plug (2-14), and fit them to the opening on the film chamber door.

Fig. 66



(15) Lens assembly

a. Apply adhesive to the stepped portion in the shutter side (gear side) of the focusing ring I (1 - 43), and install the O - ring (1 - 42) on the focusing ring I (1 - 43).
Carefully install the O - ring (1 - 42) so that it will not be twisted or adhesive will not come out of the O - ring.

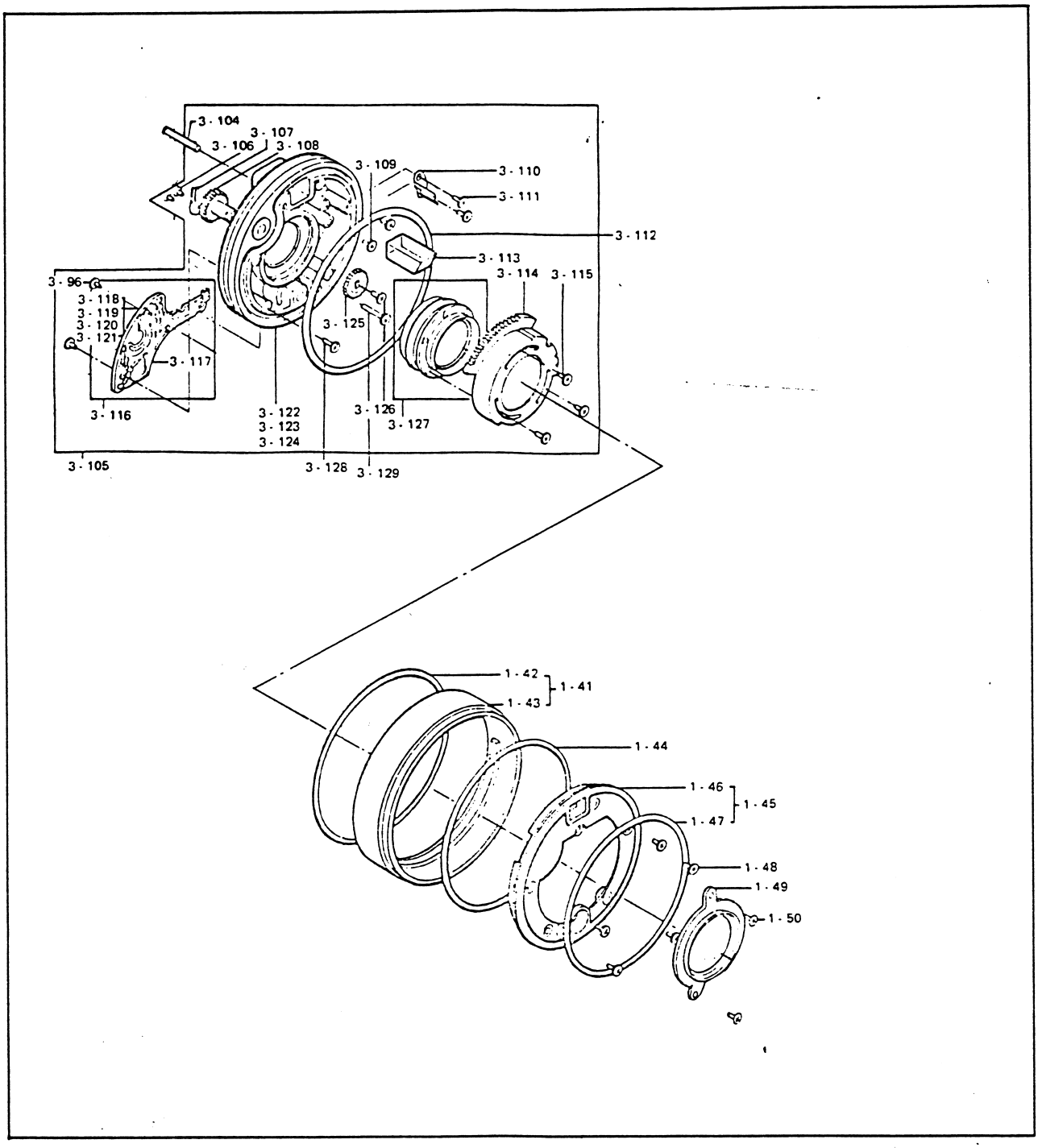
b. Fit the O - ring (3 - 112) to the groove in the periphery of the female helicoid (3 - 122).
When fitting the main body to the front cover, be sure to apply silicon grease to the outer periphery of the O - ring (3 - 112).

c. In the gear holder (3 - 124) of the helicoid assembly (3 - 122), the O - ring (3 - 123) is placed and the gear holder (3 - 124) is fitted.
When fitting the gear I (3 - 108), apply grease to the shaft portion without fail.

d. Fit the O - ring (1 - 44) to the groove in the front ring (1 - 46) side of the helicoid assembly (3 - 122).
When installing the front ring (1 - 46), make sure that the O - ring has nto come out, is not bitten, damaged or no dust exists on it.

e. Apply adhesive to the stepped portion in the front side of the front ring (1 - 46), and install the O - ring (1 - 47).
Be careful not to twist the O - ring or to allow the adhesive coming out from the O - ring.

Fig. 67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V INSPECTION

Set the following parts to the position indicated below.

(1) Film speed selector : Auto (■)

(2) Focusing ring : ∞

(3) Exposure counter : S

(4) Shutter lock : Unlocked position (White circle)

INSPECTION POINT	METHOD OF INSPECTION	REMARKS
1. Shutter	Load new batteries (AM - 4 X 2), wind up the m film advance lever to charge the shutter, release the shutter and check the shutter for operation.	
1 - 1 Shutter releasing	Make sure that the shutter release button is locked and shutter is not released even if the shutter release button is depressed when the film advance lever has not been wound up (the shutter is not charged). Wind up the film advance lever (charge the shutter) and make sure that the shutter is released correctly. The film advance lever can be wound up little by little (inching). Make sure that the shutter cannot be released when the film advance lever is wound up in a half way. Set the shutter lock to "LOCK" and make sure that the shutter release button is locked (power switch turns off). Now, unlock shutter lock and make sure that the shutter can be released.	
1 - 2 Automatic operation.	Face the camera to a dark object (LV7 to LV8) and release the shutter. Next, face the camera to a bright object (LV15 or more), release the shutter and compare the shutter releasing sound for the dark object with that for the bright object to insure that the automatic operation is attained. (At ASA100) When necessary, open the film chamber door and visually check the sector of the shutter for aperture.	

INSPECTION POINT	METHOD OF INSPECTION	REMARKS
2. Film advancing/rewinding system		
2-1 Advancing	Load a film and make sure that the film chamber door is locked correctly. Repeat winding up the film advance lever and releasing the shutter, and make sure that the film advance lever can be wound up smoothly, film is advanced one frame by one frame correctly and that the exposure counter is advanced accordingly.	
2-2 Rewinding	When the film is advanced to the end (up to the 36th exposure), depress the film rewind button, turn the rewind knob and make sure that the film is rewound smoothly and completely. Now, open the film chamber door and make sure that the exposure counter resets to "S" automatically. Take out the film, wind up the film advance lever and make sure that the film rewind button resets automatically. Depress the film rewind button and wind up the film advance lever a couple times to check these automatic setting and resetting systems.	
3. Film speed selector system		
3-1 Automatic film speed setting	Set the film speed selector to Auto ( ) and compare the shutter operations with and without loading Fuji ASA400 film to insure that film speed setting is changed over from ASA400 to ASA100 or from ASA100 to ASA400 correctly. When film speed setting is changed over correctly, aperture of the shutter changes accordingly. Make sure that the system is switched to ASA100 when the film speed selector is set to Auto and a film other then Fuji ASA400 film is loaded.	
3-2 Manual film speed selection	Set the film speed selector to "400", "200", "100" and "64" successively, release the shutter and make sure that film speed setting is switched accordingly.	

INSPECTION POINT	METHOD OF INSPECTION	REMARKS
4. Flashmatic (FM) system	Check FM mode changeover and strobo flashing. FM mode changeover operation, strobo flashing operation and synchronization can be checked simultaneously. Depress the knock button (2 - 58) once and then release it from the depression. Then the red portion of the knock button appears and the shutter is switched over to the FM mode and at the same time, strobo charging begins. This can be checked by listening to the charging sound. When the strobo charging completes and neon lamp lights, check the shutter for operation. Charge focusing ring setting, and make sure that aperture diameter changes accordingly and make sure that the strobo is synchronized. (At ASA100). When film speed is ASA100, the rated aperture at each distance should be as follows. 1m : F8.9 1.5m : F5.9 3m : F2.9 As long as this camera is concerned, even if the operating mode is changed over to FM, when brightness of object is LV9 or more, EE effect is added to the AE system and it will be difficult to conduct this inspection. Recommend this inspection be conducted in a slightly dark place. When the strobo charging completes (the neon lamp lights), wind up the film advance lever, release the shutter, and make sure that the strobo flashes correctly. When the strobo is charged completely, depress the knock button so that the red portion disappears, and make sure that the neon lamp goes out and that the strobo does not flash even if the shutter is released.	

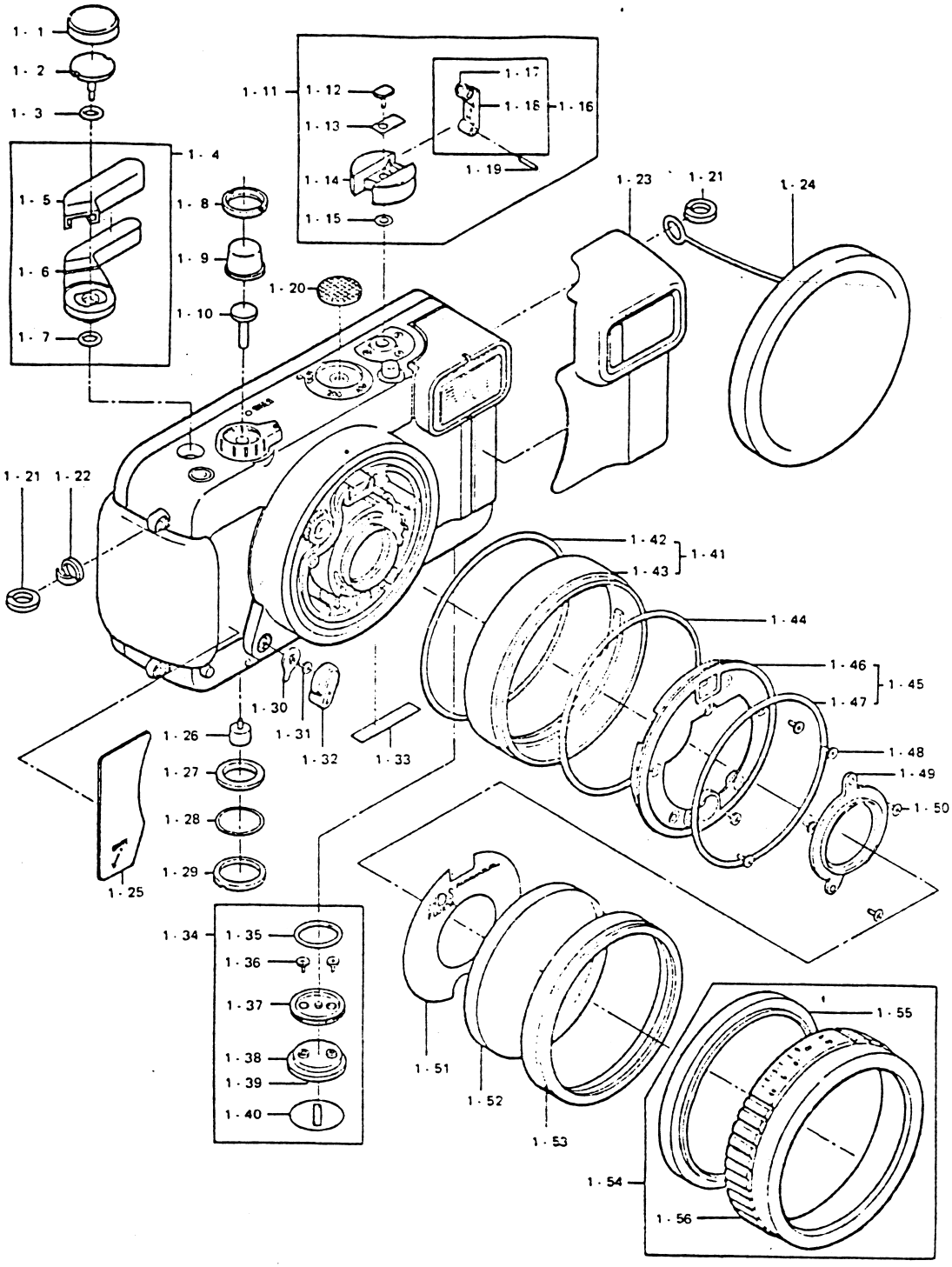
INSPECTION POINT	METHOD OF INSPECTION	REMARKS
5. Focusing system 5-1 Focusing ring and focusing	Make sure that the focusing ring can be turned smoothly from ∞ to 1m and from 1m to ∞ and that the focusing ring clicks at 1.5m and 3m. After turning the focusing ring back and forth several times, mount the camera on a collimater and recheck the focusing.	
6. AE (automatic exposure) system	After checking the shutter for automatic operations against dark and bright objects, set the camera on an EE tester, and check exposure value for each film speed. The rated exposure values are shown below. ASA100 : LV9, 12 and 15 ASA400 : LV12 ASA64 : LV12 Further, make sure that the under-exposure warning lamp (red LED) lights in the viewfinder when EV is 8±1.3 or less.	

INSPECTION POINT	METHOD OF INSPECTION	REMARKS
7. Self - timer	Set the self - timer, wind up the film advance lever, start the self - timer or wind up the film advance lever. set the self - timer and start the self - timer, and make sure that the shutter is released correctly and timely (7 to 13 seconds). Conduct this inspection with the camera operating mode switched over to FM. Releasing of the shutter can be readily checked as the strobo flashes. When the self - timer is started without charging the shutter, the self - timer will stop in a half way. In this case, reset the self - timer first, and then wind up the film advance lever and start the self - timer.	
8. Battery compartment	Check the battery compartment for deformation, cleanliness and existence of foreign matter such as rust on the battery contacts.	
9. Water resisting	When a water leaking occurs actually, it may be possible to find the portion where the water leaks. However, when the camera is disassembled and reassembled, it is difficult to check the water resisting structures for water leaking. For this reason, it is very important to carefully examine the parts equipped with water resisting attachments at each step of the disassembly or reassembly. (1) Check each water resisting parts such as O - rings carefully for damaging. Examine each of these parts carefully for correct location. Be sure to apply grease to the necessary parts without fail, and apply adhesive adequately. (2) Particularly for those parts such as exposure counter window and window glass on the film chamber door, apply adhesive slightly excessively to such an extent that adhesive does not come out from these parts.	

INSPECTION POINT	METHOD OF INSPECTION	REMARKS
	(3) When a complately assembled camera must be checked for water leaking due to an unavoidable reason, water leaking location may be found by placing the camera under about 40°C hot water. (Because of temperature difference between inside and outside of the camera, water leaking may be found.) If water intrudes into the strobo circuit, the HD - S camera is entirely damaged. Avoid to employ this method as much as possible. Recommend the pneumatic method employed in the manufacturing process be employed.	
10. Appearance	Check the camera exterior to insure that no remarkable scratch, scarr deformation, squeezed out adhesive, etc. which harm to appearance exist. Further, make sure that no remarkable scratch, dust, etc. exists in the viewfinder or on the protective front glass. Absolutely be sure that none of the parts is missing. Lack of a parts causes water leaking (particularly, an O - ring). When repairing the camera, carefully examine the nature of repairing and parts to be repaired, and before ending the repair, recheck the relative parts to insure that they are adjusted completely.	

Ⅵ PART LIST

Fig. 1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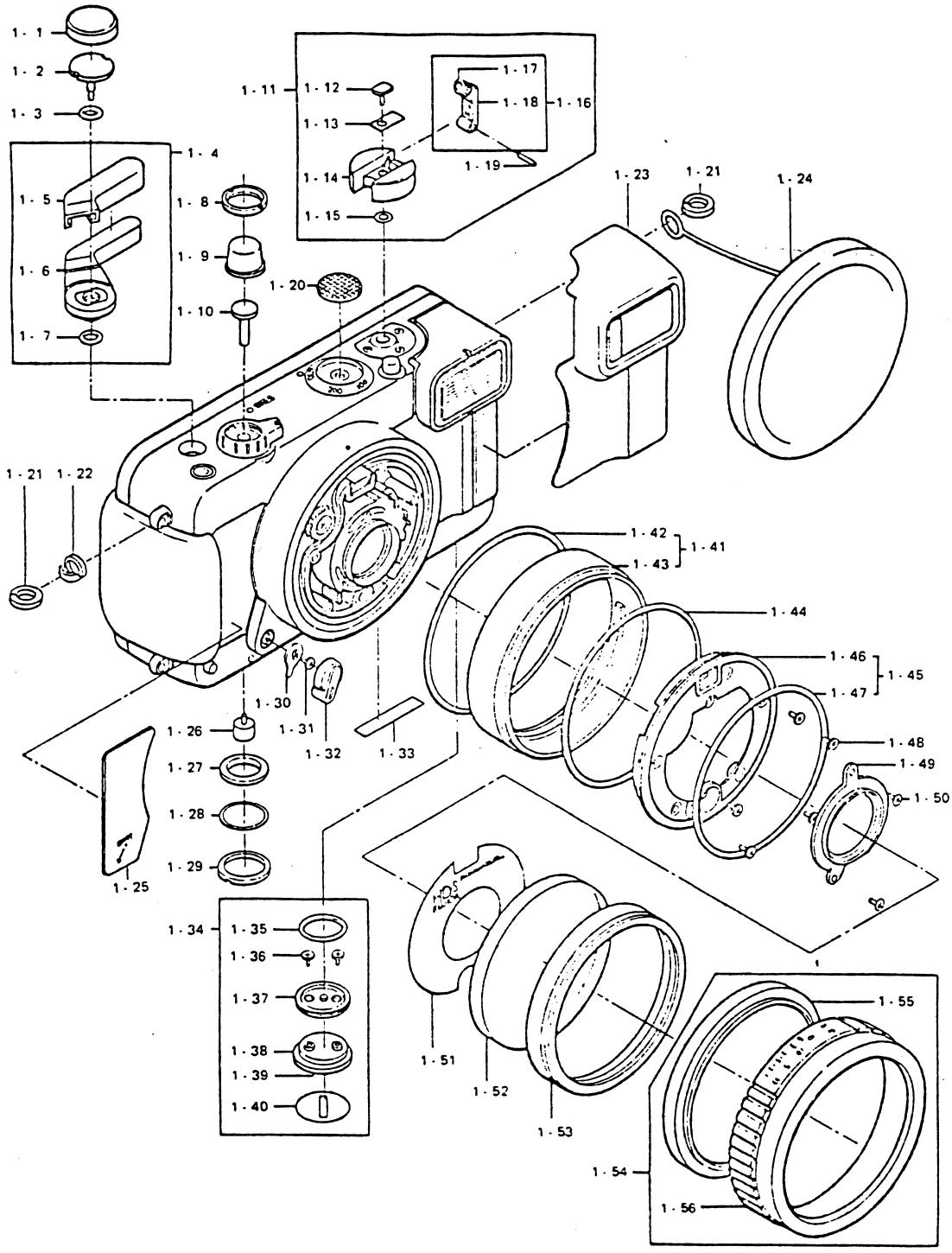
REF NO.	PART NO.	PART NAME	Q'TY	REMARKS
1- 1	211002071	Cover plate	1	
1- 2	211002031	Screw	1	
1- 3	211007340	O-ring	1	
1- 4	211052020	Film advance lever assembly	1	
1- 7	211007330	O-ring	1	
1- 8	211101041	Lock nut	1	
1- 9	211101020	Rubber cap	1	
1-10	211101010	Shutter release button	1	
1-11	211150110	Rewind crank assembly	1	
1-16	211150140	Film rewind crank assembly	1	
1-19	211000100	Pin	1	
1-20	211000850	Cover plate	1	
1-21		Neck strap eyelet ring	2	
1-22	211000921	Eyelet ring cover	1	
1-23	211101520	Front rubber	1	
1-24		Lens cap	1	
1-25	211101531	Rubber plate	1	
1-26	211002361	Film rewind button	1	
1-27	211002421	Cover ring	1	
1-28	211002450	Cover seat	1	
1-29	211002431	Ring	1	
1-30	211100700	Self-timer lever	1	
1-31	211107530	Seal ring	1	
1-32	21110071	Cover	1	
1-33	212101420	Number plate	1	
1-34	211150440	Battery compartment cover assembly	1	
1-35	211007350	O-ring	1	
1-40	211100510	Seal	1	
1-41	211053020	Focusing ring assembly	1	
1-42	211003210	O-ring	1	
1-44	211007370	O-ring	1	
1-45	211052050	Front ring assembly	1	

Fig. 1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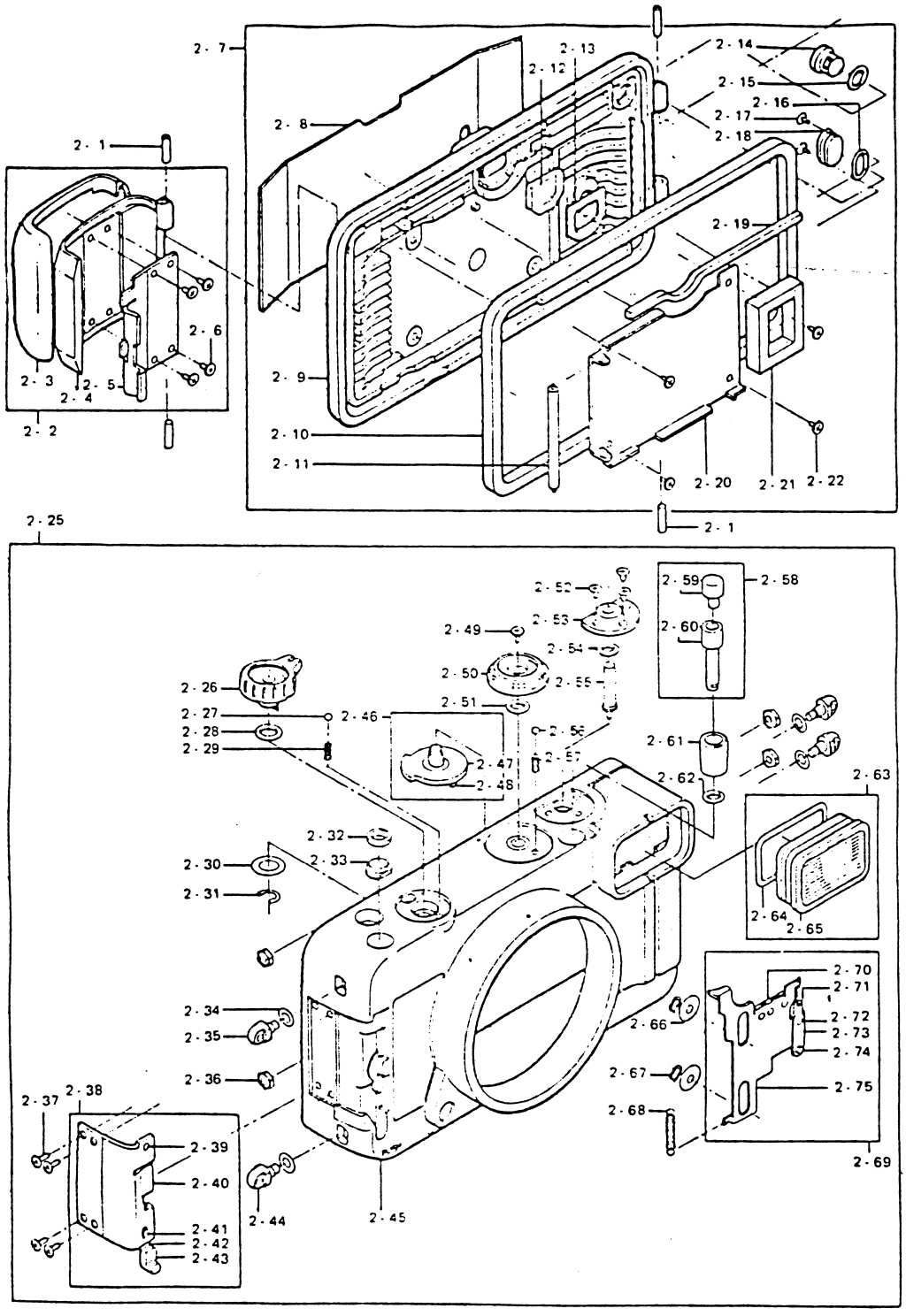
REF NO.	PART NO.	PART NAME	Q'TY	REMARKS
1-47	211003210	O-ring	1	
1-48	942205500	Screw	5	
1-49	211003060	Lens cover	1	
1-50	952204000	Screw	2	
1-51	211103090	Name plate	1	
1-52	211003081	Protection galss	1	
1-53	211003070	Glass holder	1	
1-54	211153040	Focusing ring cover assembly	1	
1-56	211103040	Cover ring	1	

Fig. 2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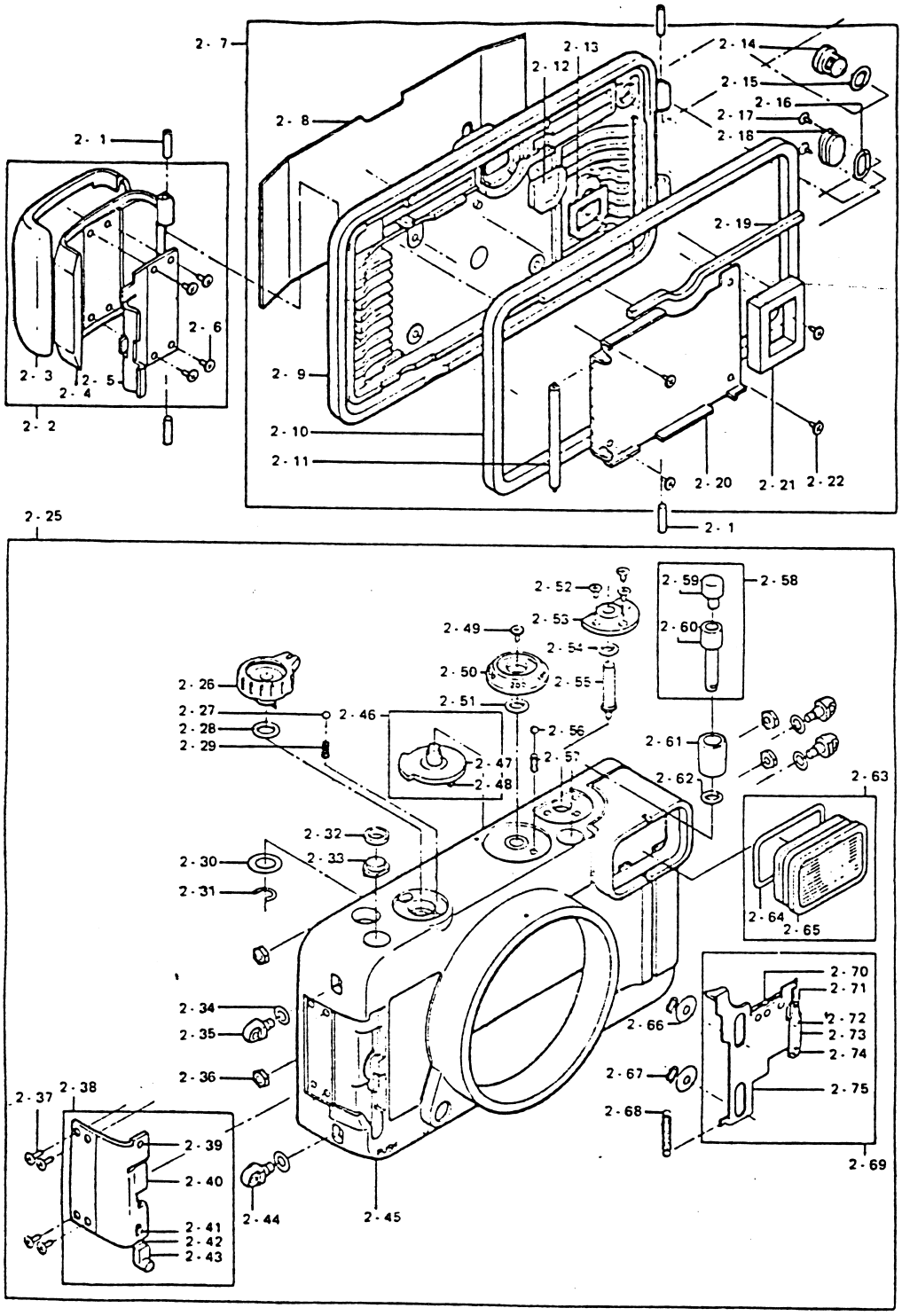
REF NO.	PART NO.	PART NAME	Q'TY	REMARKS
2- 1	211000431	Shaft	4	
2- 2	211150310	Right grip assembly	1	
2- 7	211151310	Film chamber door assembly	1	
2-10	211101391	Gasket	1	
2-11	220301390	Roller	1	
2-12	211104120	Window glass	1	
2-13	211104191	Holder	1	
2-15	211107390	O-ring	1	
2-16	211107420	O-ring	1	
2-20	211001372	Roller support	1	
2-25	211151510	Front cover assembly	1	
2-26	211101031	Button seat	1	
2-27	930015828	Steel ball	1	
2-28	211107410	O-ring	1	
2-29	21100861	Spring	1	
2-31	212102560	Clip	1	
2-32	211001060	Ring	1	
2-33	211001050	Exposure counter window	1	
2-38	211150320	Leaf spring assembly	1	
2-46	211050820	ASA selector dial assembly II	1	
2-49	211007510	Screw	1	
2-51	211007320	O-ring	1	
2-52	952203513	Screw	3	
2-53	211000190	Shaft holder	1	
2-54	211007310	O-ring	1	
2-55	211100130	Rewind sprindle II	1	
2-56	930015828	Steel ball	1	
2-57	211000861	Spring	1	
2-58	211155010	Button assembly	1	
2-62	211007310	O-ring	1	
2-63	211155100	Protector assembly	1	
2-64	211105110	O-ring	1	

Fig. 2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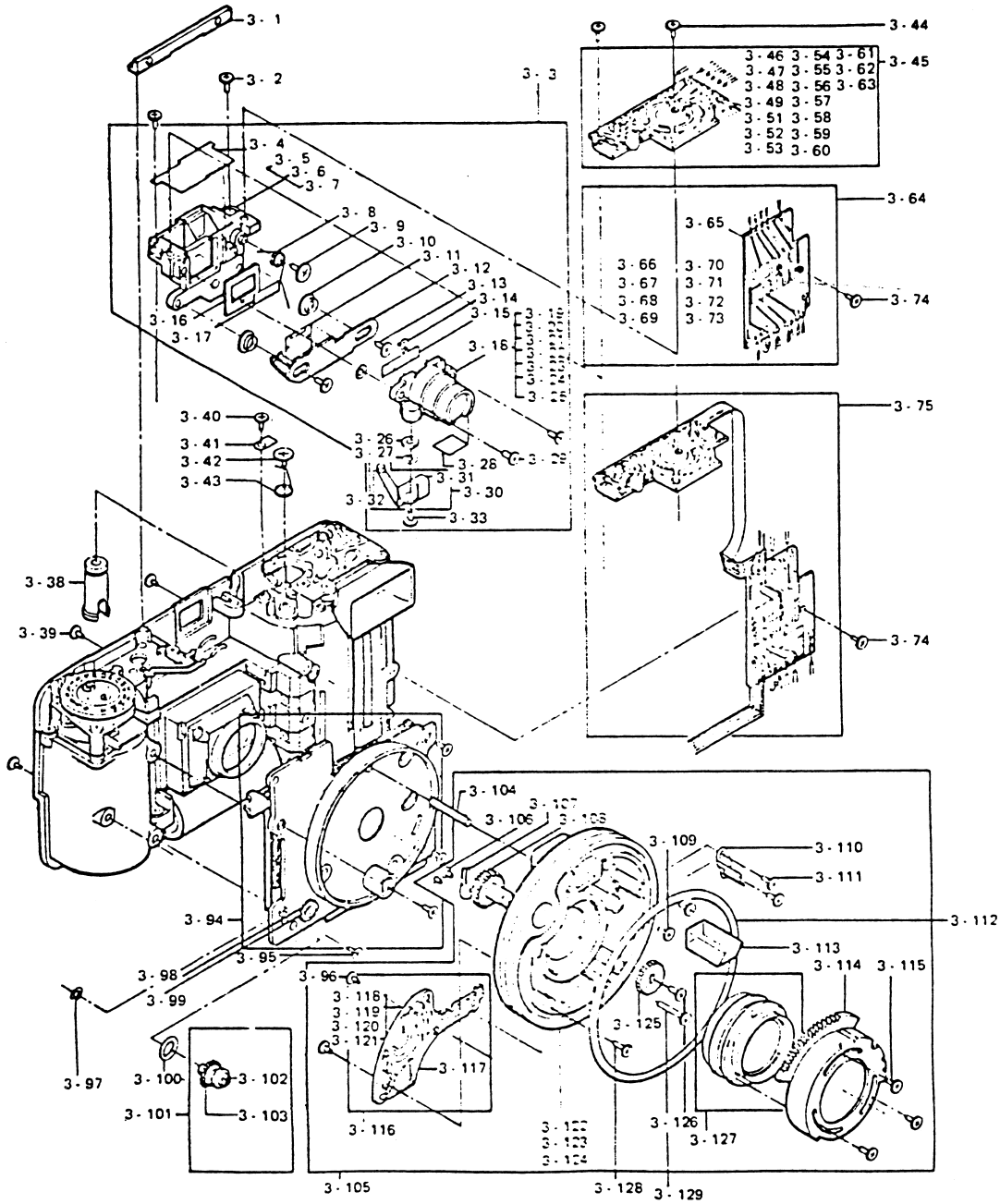
REF NO.	PART NO.	PART NAME	Q'TY	REMARKS
2 - 65	211105100	Protector	1	
2 - 68	211105051	Spring	1	
2 - 69	211155040	Base plate assembly	1	

Fig. 3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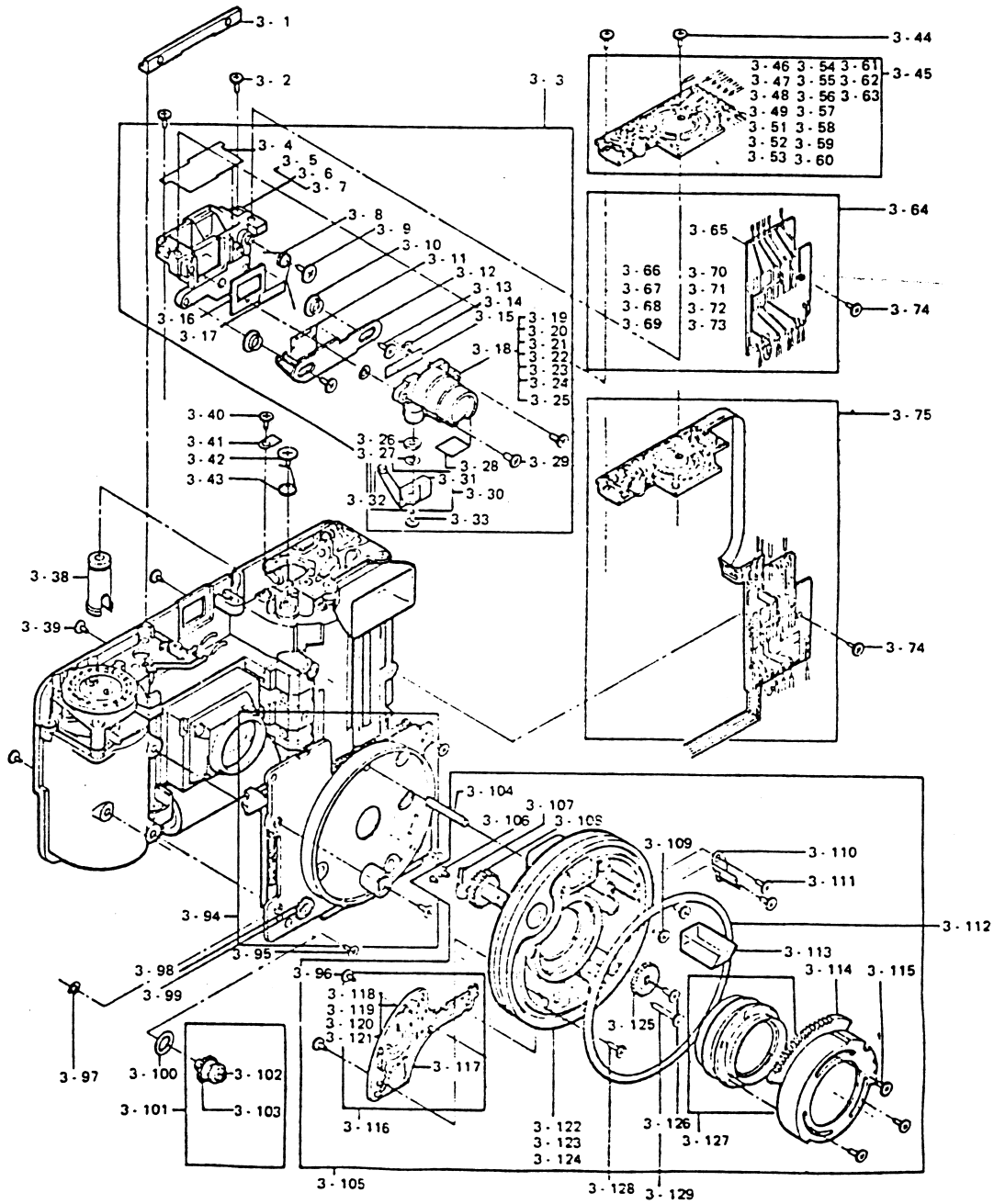
REF NO.	PART NO.	PART NAME	Q'TY	REMARKS
3 - 1	211000261	Rib	1	
3 - 2	942204000		2	
3 - 3	211054010	Viewfinder assembly	1	
3 - 4	211004350	Finder cover I	1	
3 - 5	211004011	Finder case I	1	
3 - 11	211004041	Zone focus mark	1	
3 - 27	211007040	Washer	1	
3 - 30	211054140	Interlock lever assembly	1	
3 - 33	211007530	Screw	1	
3 - 38	211000121	Rewind spindle I	1	
3 - 39	942204013	Screw	3	
4 - 40	942203000	Screw	1	
3 - 41	211100211	Spring holder	1	
3 - 42	211007540	Screw	1	
3 - 43	211100201	Spring	1	
3 - 44	942203000	Screw	2	
3 - 45	211158020	Printed circuit assembly	1	
3 - 64	211155070	FM circuit assembly	1	
3 - 74	942203000	Screw	1	
3 - 75	211158030	Flexible printed circuit assembly	1	
3 - 94	211159010	Shutter assembly	1	
3 - 95	952204000	Screw	4	
3 - 96	942203000	Screw	2	
3 - 97	925001500	E - clip	1	
3 - 98	211100670	Gear 1	1	
3 - 99	211007520	Screw	1	
3 - 100	211007380	O - ring	1	
3 - 101	211150680	Gear assembly	1	
3 - 104	211104161	Pin	1	
3 - 105	211153010	Helicoid assembly	1	
3 - 106	910142000	Screw	2	
3 - 107	211003161	Contact piece	1	

Fig. 3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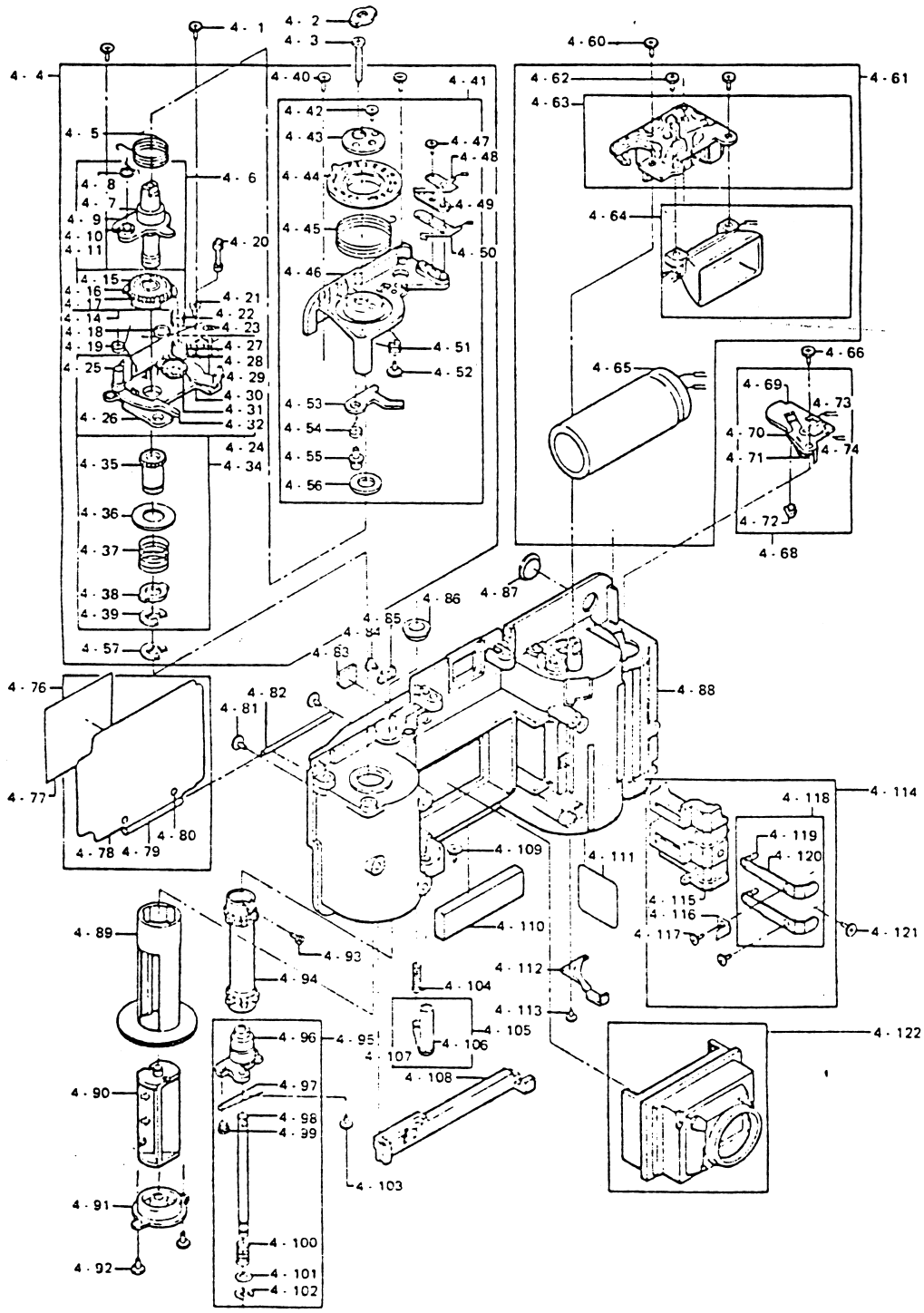
REF NO.	PART NO.	PART NAME	Q'TY	REMARKS
3 - 108	211003111	Gear I	1	
3 - 109	910202200	Screw	1	
3 - 110	211003140	Leaf spring	1	
3 - 111	942203500	Screw	2	
3 - 112	211007360	O - ring	1	
3 - 113	211004050	Prism	1	
3 - 114	211003101	Interlock ring	1	
3 - 115	211003180	Screw	3	
3 - 116	211153150	FM - aperture control circuit assembly	1	
3 - 123	211007310	O - ring	1	
3 - 124	211003131	Gear holder	1	
3 - 125	211003120	Gear II	1	
3 - 126	211007520	Screw	1	
3 - 127	113190000	Lens assembly	1	
3 - 128	916205000	Screw	2	
3 - 129	211003170	Screw	1	

Fig. 4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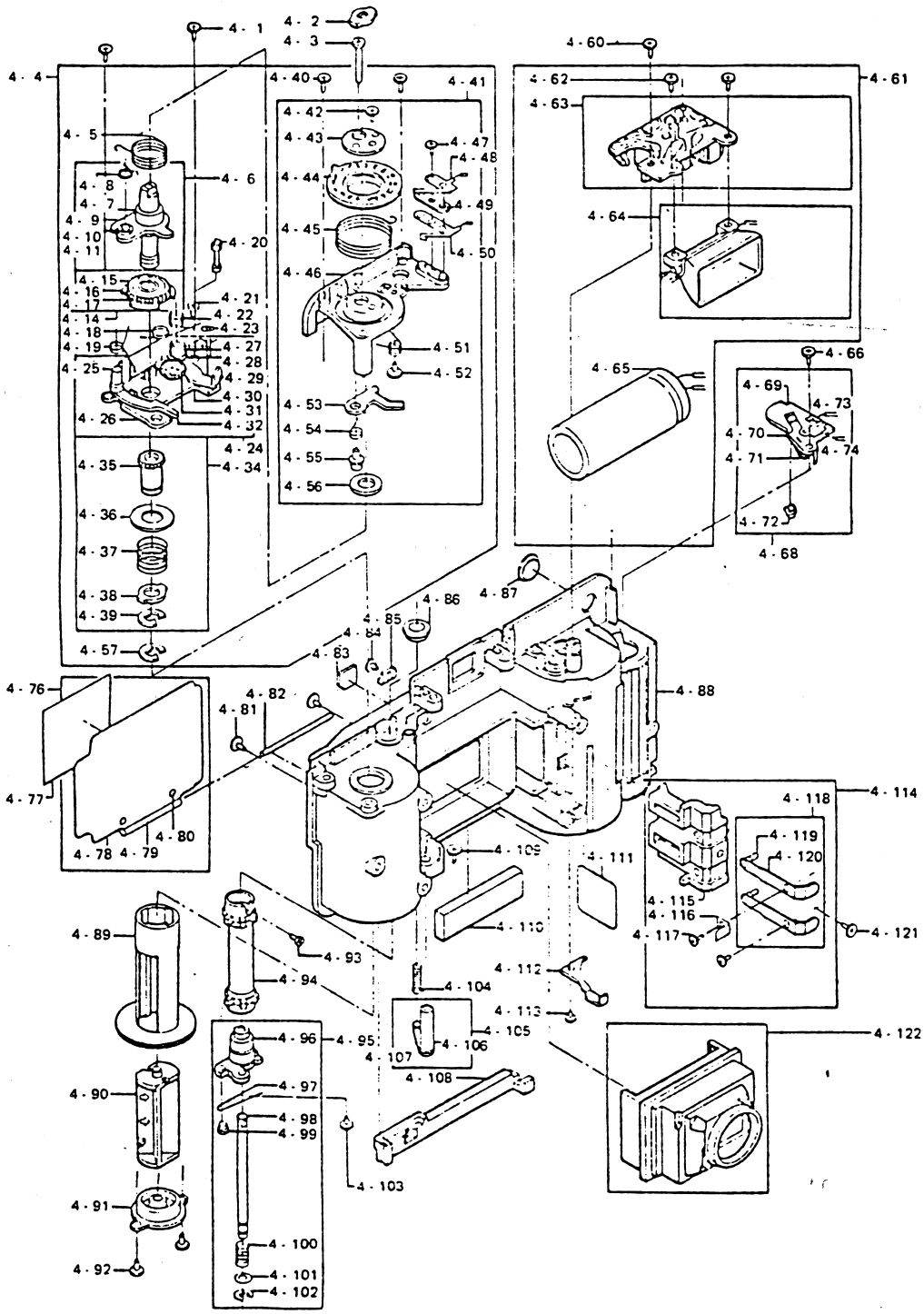
REF NO.	PART NO.	PART NAME	Q'TY	REMARKS
4 - 1	942203500	Screw	2	
4 - 2	211002040	Washer	1	
4 - 3	211002320	Screw	1	
4 - 4	211152010	Film advance mechanism assembly	1	
4 - 5	211002102	Spring		
4 - 6	211052000	Film take-up spindle assembly I	1	
4 - 14	211042200	Gear assembly	1	
4 - 18	211002190	Spring	1	
4 - 19	211002161	Spring	1	
4 - 20	211102870	Gear	1	
4 - 21	912172000	Screw	1	
4 - 22	211002310	Spring	1	
4 - 23	211007010	Washer	1	
4 - 24	211042010	Base plate assembly	1	
4 - 34	211052250	Gear assembly	1	
4 - 40	910174500	Screw	2	
4 - 41	211152810	Exposure counter assembly	1	
4 - 45	211002831	Spring	1	
4 - 51	211002891	Spring	1	
4 - 54	211002861	Spring	1	
4 - 57	925003000	E-clip	1	
4 - 60	942203500	Screw	1	
4 - 61	211158010	Flash assembly	1	
4 - 62		Screw	2	
4 - 63		Amplifier assembly	1	
4 - 64		Flash bulb assembly	1	
4 - 65		Capacitor	1	
4 - 66	942203000	Screw	1	
4 - 68	211150460	Circuit board assembly	1	
4 - 76	211051330	Pressure plate assembly	1	
4 - 77	211001410	Label	1	
4 - 81	211107520	Screw	2	

Fig. 4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REF NO.	PART NO.	PART NAME	Q'TY	REMARKS
4-82	211001350	Shaft	1	
4-83	211004301	Cover plate	1	
4-84	910173513	Screw	1	
4-85	211001400	Bracket	1	
4-86	211102450	Holder	1	
4-87	211101061	Window	1	
4-89	211100020	Spool I	1	
4-90	211100031	Spool II	1	
4-91	211102330	Support	1	
4-92	942204000	Screw	2	
4-93	212007510	Screw	1	
4-94	211000040	Sprocket	1	
4-95	211052340	Sprocket support assembly	1	
4-97	211002371	Spring	1	
4-100	211002440	Spring	1	
4-103	942204000	Screw	1	
4-104	211002410	Spring	1	
4-105	211152390	Rewind button assembly	1	
4-108	211100271	Bottom cover	1	
4-109	214007520	Screw	1	
4-110	211105120	Silicagel	1	
4-111	213400570	Name plate	1	
4-112	211100480	Bracket	1	
4-113	942172500	Screw	1	
4-114	211150870	Automatic film speed setting assembly	1	
4-121	942204000	Screw	1	
4-122	211150900	Hood assembly	1	