REPAIR MANUAL
&
PARTS LIST

FOR

FUJI HD-M

FUJI PHOTO FILM CO., LTD.
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CONTENTS

I. OPERATION DESCRIPTION

1. Circuit Diagram and Wiring Diagram

1.1 The circuit consists of a shutter, strobo and switches.

1.2 Operations of the shutter are described in paragraph 2 below, and film advancing system is described in paragraph 3 below. For the switches, refer to the table shown below.

Symbol	Name of switch	Condition	
1. SW F	Film sensing switch	When film is loaded	: ON
2. SW W	Film rewinding switch	When rewiding film	: b
3. SW R	Release switch	When released or when rewinding film	: b
4. SW S	Short switch		
5. SSW1	Strobo switch 1	When using strobo	: ON
6. SSW2	Strobo switch 2	When using strobo	: OFF
7. SSW3	Strobo switch 3	When using strobo	: OFF
8. PSW	Power switch	When shutter release is pushed	: ON
9. RESW	Release switch	When shutter release is pushed	: ON
10. TSW	Timing switch		
11. SYSW	Synchro switch		
12. FMSW	FM	When using strobo	: F
13. SESW	Self-timer switch	When using strobo	: OFF

NOTE:

Switches in lines 8 through 13 are accommodated in the shutter.

Fig. 1

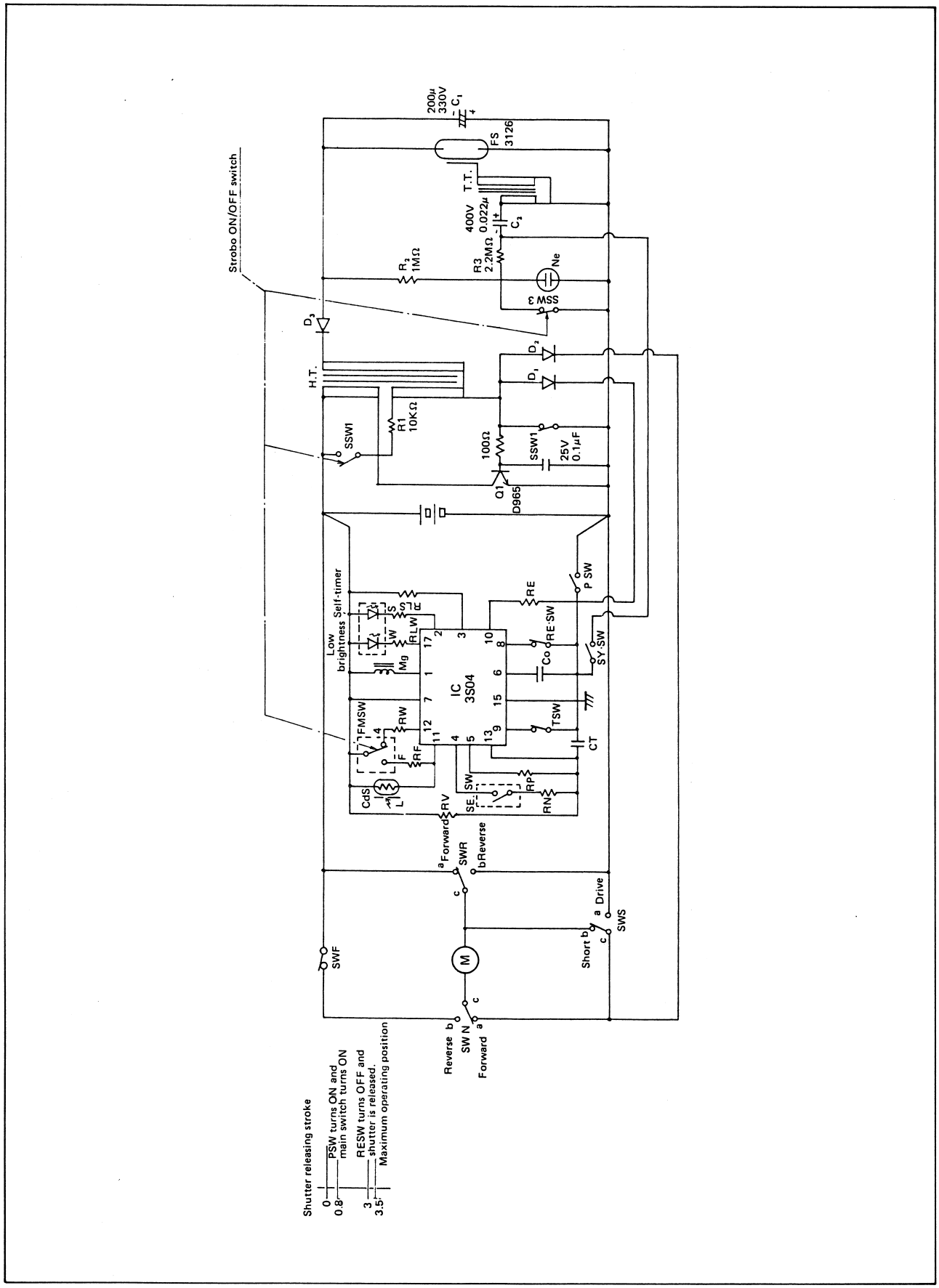
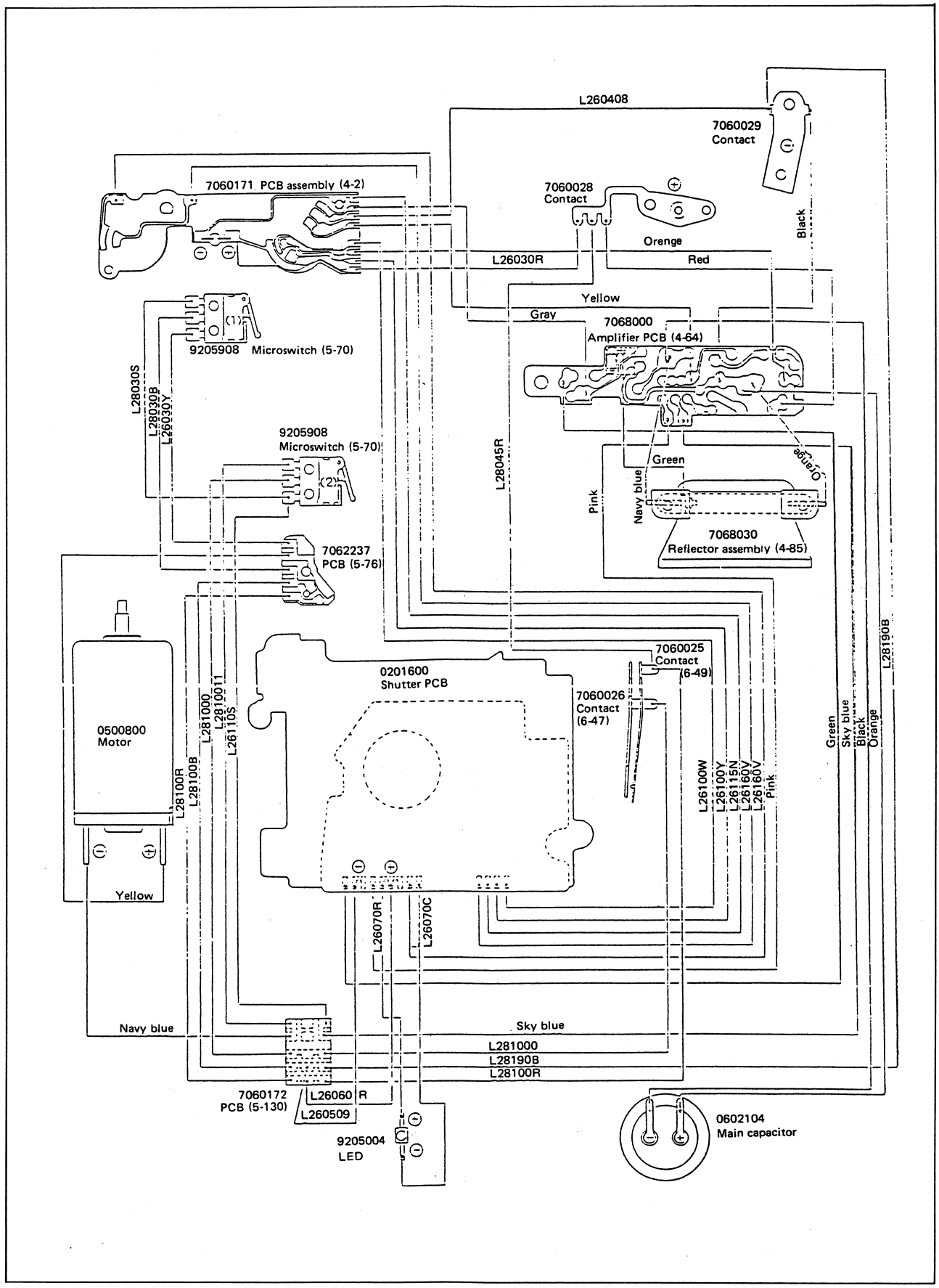

Strobo ON/OFF switch
200μ 330V C1
FS 3126
T.T.
400V 0.022μ C2
R2 1MΩ
R3 2.2MΩ
Ne
SSW
D3
D2
D1
H.T.
SSW1
R1 10KΩ
100Ω
SSW1
25V 0.1μF
Q1 D965
Low brightness
Self-timer
IC 3S04
RE
P SW
RE·SW
SY·SW
Co
TSW
CT
FMSW
RW
RF
CdS
RV
SE
SW
RP
RN
Forward
Reverse
SWR
SWF
M
Drive
SWS
Short
SW N
Reverse b
Forward a
Shutter releasing stroke
0
0.8
PSW turns ON and main switch turns ON
3
3.5
RESW turns OFF and shutter is released.
Maximum operating position

Fig. 2


L260408
7060029
Contact
7060171 PCB assembly (4-2)
7060028
Contact
Orenge
Black
L26030R
Red
Yellow
Gray
7068000
Amplifier PCB (4-64)
9205908 Microswitch (5-70)
L28030S
L28030B
L26030Y
9205908
Microswitch (5-70)
L28045R
Green
Orange
Pink
Navy blue
7068030
Reflector assembly (4-85)
7062237
PCB (5-76)
7060025
Contact
(6-49)
0201600
Shutter PCB
7060026
Contact
(6-47)
L28190B
Green
Sky blue
Black
Orange
0500800
Motor
L281000
L281001
L26110S
L28100R
L28100B
L26100W
L26100Y
L26115N
L26160V
L26160V
Pink
Yellow
L26070R
L26070C
Navy blue
Sky blue
L281000
L28190B
L28100R
7060172
PCB (5-130)
L26060 R
L260509
9205004
LED
0602104
Main capacitor

2. Shutter system

2.1 The shutter is charged under an interlock motion with the film advancing.

2.2 When the shutter release is depressed in a half way, the release lever causes the shutter main power to turn on.

2.3 When power is not supplied, the magnet does not attract the iron core. Then, the iron core lever turns clockwise, causing the lock lever to jump into the power lock position [position (B)] shown in Fig. 3, and thus, the shutter release is locked.

2.4 When power is supplied, the magnet attracts the iron core. Then, the release lever is pushed down further, causing the lock lever to turn clockwise, and Sv switch turns off.

2.5 Thus, the electrical sequence starts.

2.6 First of all, as the Sv switch turns off, integration begins on the CT shown in Fig. 5. This integration operation changes in response to ON-OFF of the Sn switch (self-timer switch). During normal photogaphing mode, when this switch turns on, the timing is set to 40 msec., and when this switch turns off, time timing is set to 10 sec.
In other words, the integration operation controls delay time of the self-timer.

2.7 At this normal delay or self-timer delay mode, the LED (self-timer display) lights. (See Fig. 4-b.)

2.8 For both the normal delay and self-timer delay modes, when integration value in the CT reaches a certain value, Magnet OFF pulse is generated for 4 msec., the iron core leaves the magnet, causing the shutter blade open sector to turn clockwise. (See Fig. 4-c and Fig. 6.)

2.9 After the magnet attracts the iron core again, integration operation starts for exposure. (ST switch turns off.)
To be more specific, integration resistance changes depending on the value of light applied to the CdS, causing the integration time to change in response to the brightness of an object. When the integration operation ends, the second OFF pulse is generated for 4 msec. (See Fig. 4-c and d.)

2.10 Then, the iron core moves further to the left, the iron core lever turns clockwise, causing the lever engaged with the shutter blade sector to turn counterclockwise. As the result, the lever disengages with the sector, causing the shutter blade to close. (See Fig. 6.)

2.11 In addition, as the iron core moves to the left, X-contact makes, causing the strobo to flash in case of a strobo mode.
At this time, aperture is controlled by the cam interlocked with the focusing ring, and exposure time is fixed as a fixed resistor is connected to the circuit instead of the CdS.

Fig. 3

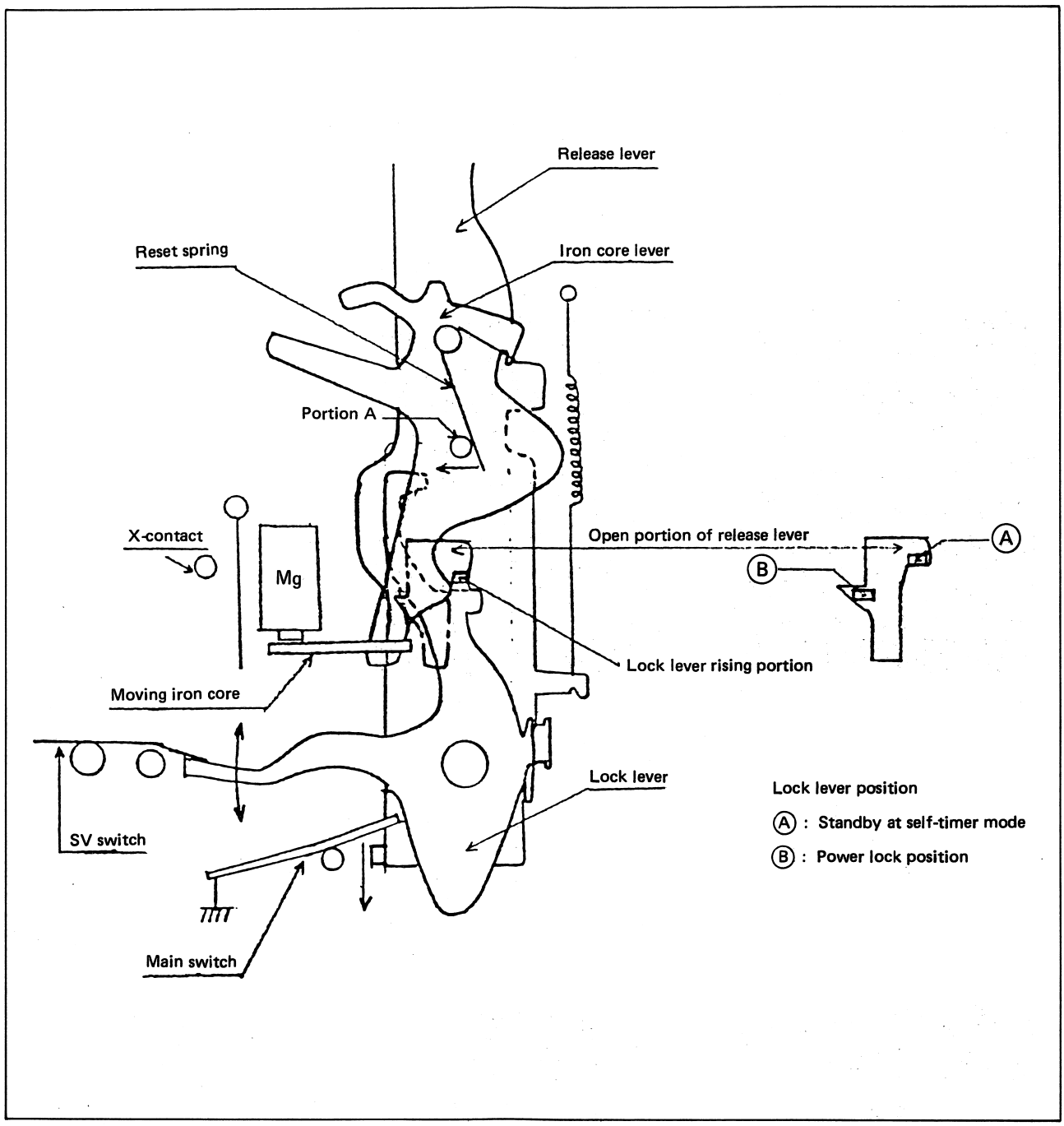
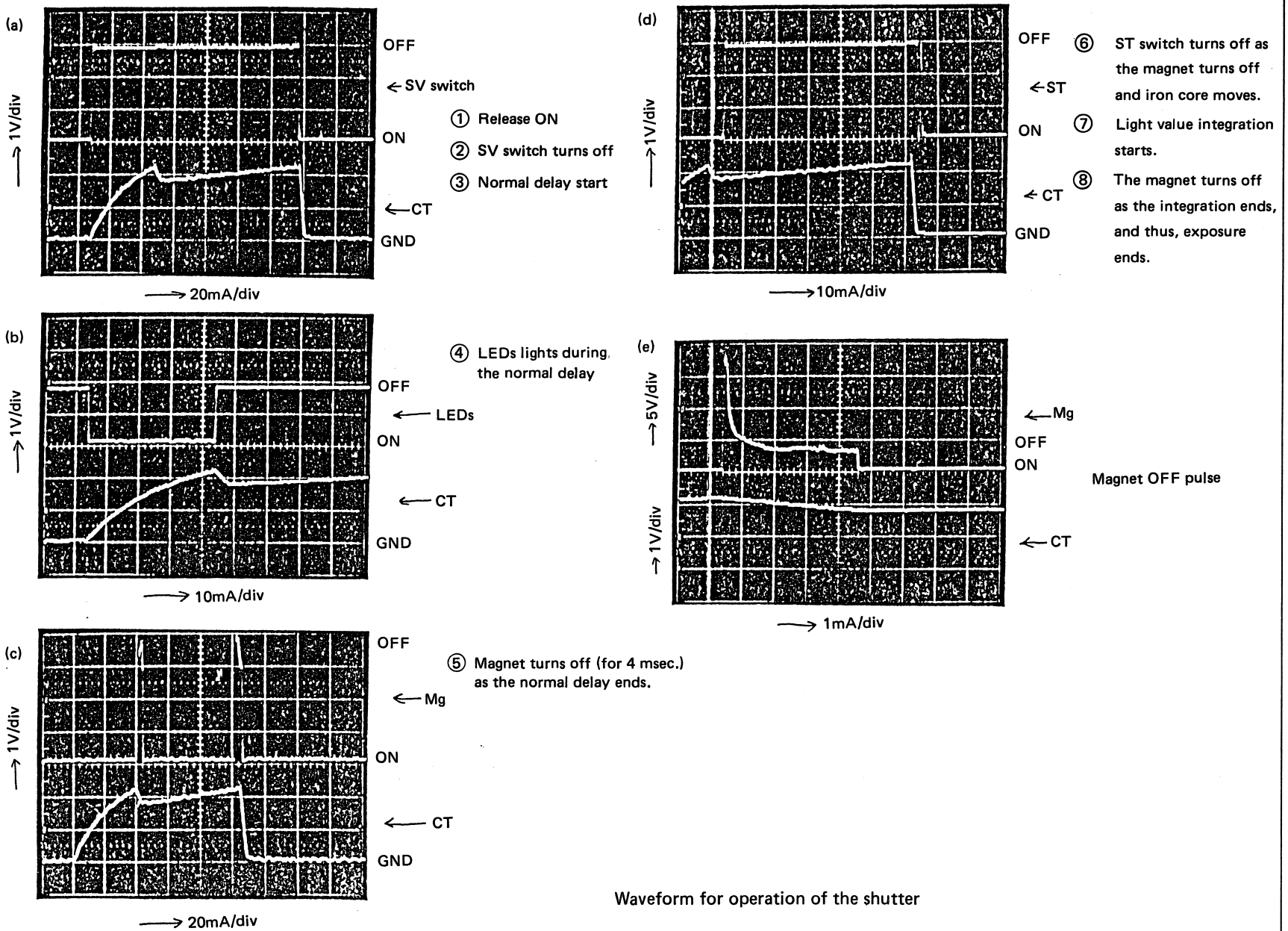

Release lever
Reset spring
Iron core lever
Portion A
X-contact
Mg
Open portion of release lever
A
B
Lock lever rising portion
Moving iron core
Lock lever
SV switch
Main switch
Lock lever position
Ⓐ : Standby at self-timer mode
Ⓑ : Power lock position

Fig. 4



Waveform for operation of the shutter

Fig. 5

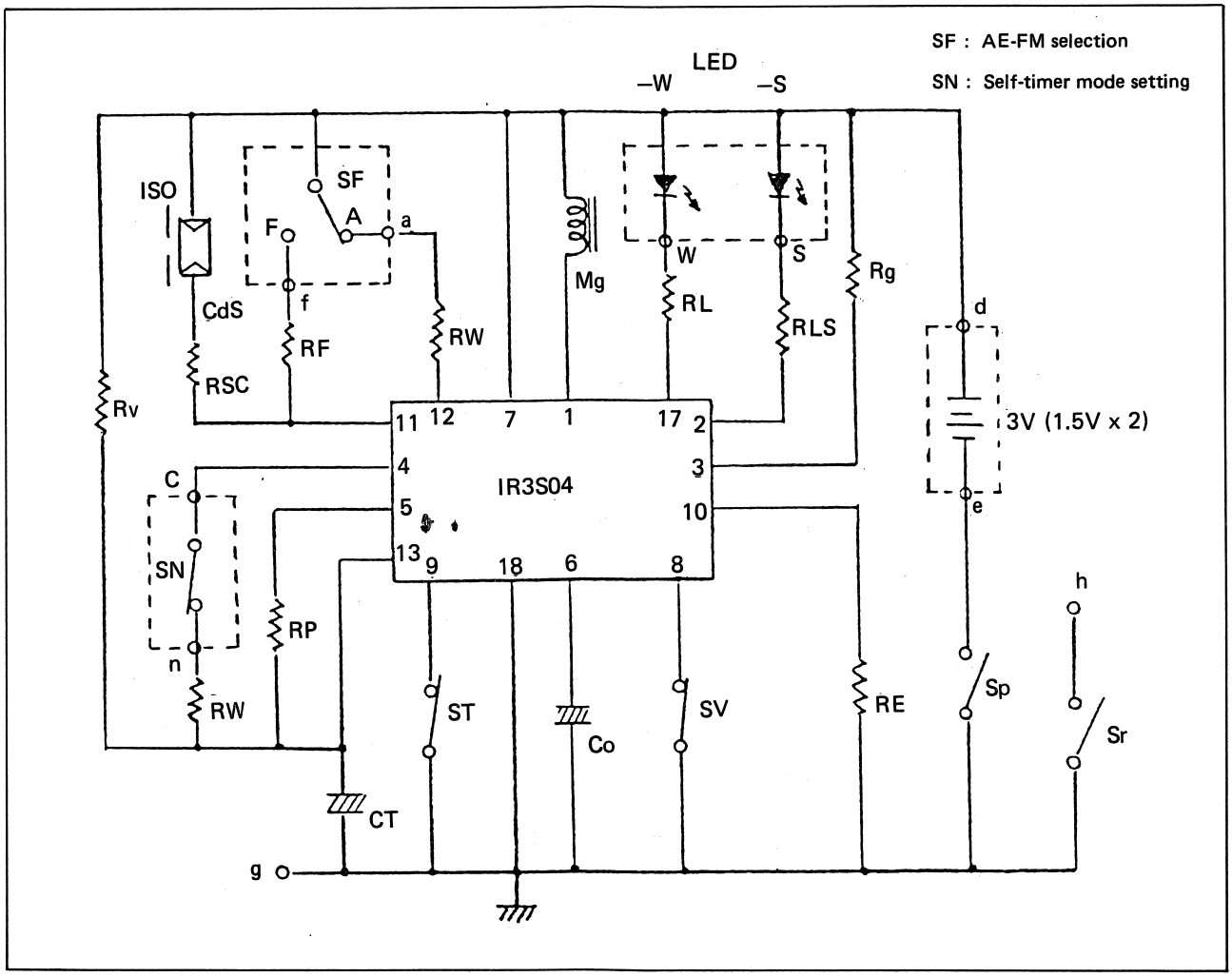
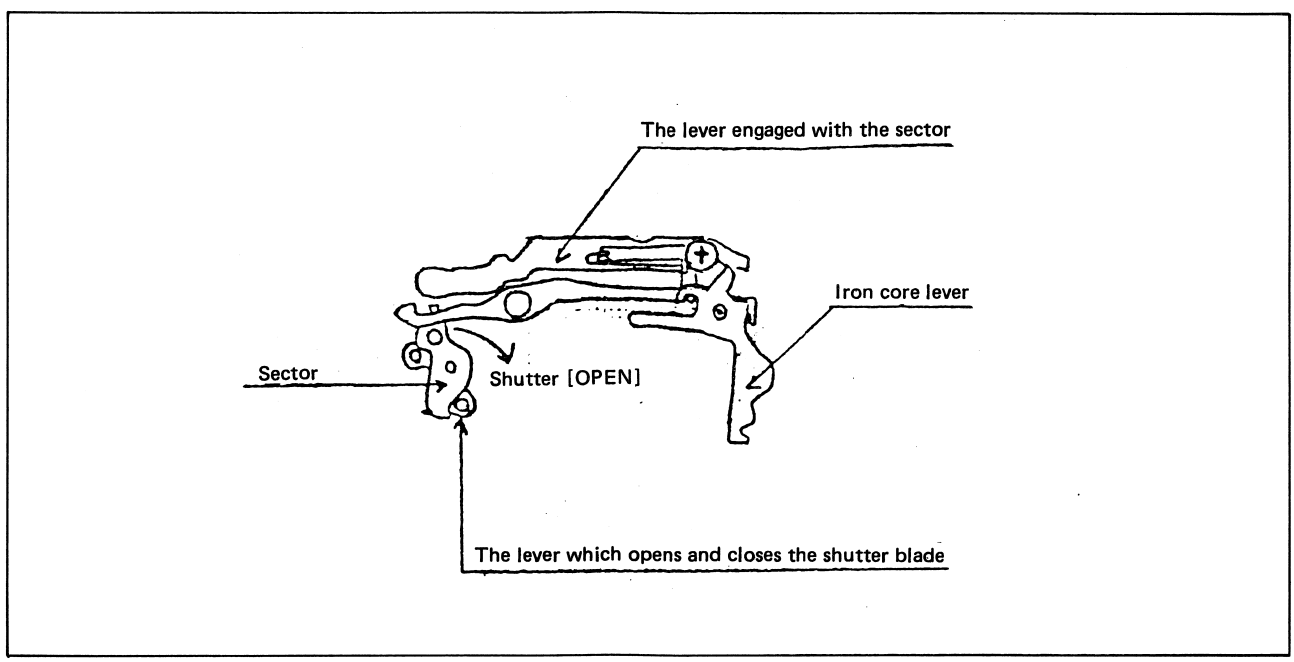

SF : AE-FM selection
SN : Self-timer mode setting
LED
–W
–S
ISO
SF
A
a
F
f
CdS
RSC
RF
RW
Mg
W
S
RL
RLS
Rg
d
3V (1.5V x 2)
e
Rv
11 12 7 1 17 2
4
3
IR3S04
5
10
13 9 18 6 8
C
SN
n
RP
RW
ST
Co
SV
RE
Sp
h
Sr
CT
g

Fig. 6


The lever engaged with the sector
Iron core lever
Sector
Shutter [OPEN]
The lever which opens and closes the shutter blade

3. Film advancing, rewinding and exposure counting systems

3.1 Film advancing mechanism

This camera takes up a roll of film on the spool.

(1) When a film is loaded

1) When the motor turns forward, the spool turns and takes up the film through the following gear train.

1G→2G→3G→4G→5G→6/7G→8G→9G (Arm assembly (5-107) is under film take-up mode)→MG2→10G→SP - - - The film causes the sprocket to turn.

2) As the sprocket turns, the set cam turns through gears SG1, SG2 and set gear, causing the shutter lever to be set. Thus, the film is taken up one frame completely.

3) When the shutter release is depressed, operations 1 and 2 are repeated.

Only when starting advancement of the film (for 1st frame), the sprocket turns until a perforation of the film is hooked by the spool 2. (Refer to 3.1-(2) below.)

When the film is hooked on a claw of the spool 2, the clutch attached to the spool 1 disengages, and it is separated from the cam on the gear SPG1.

(2) When no film is loaded

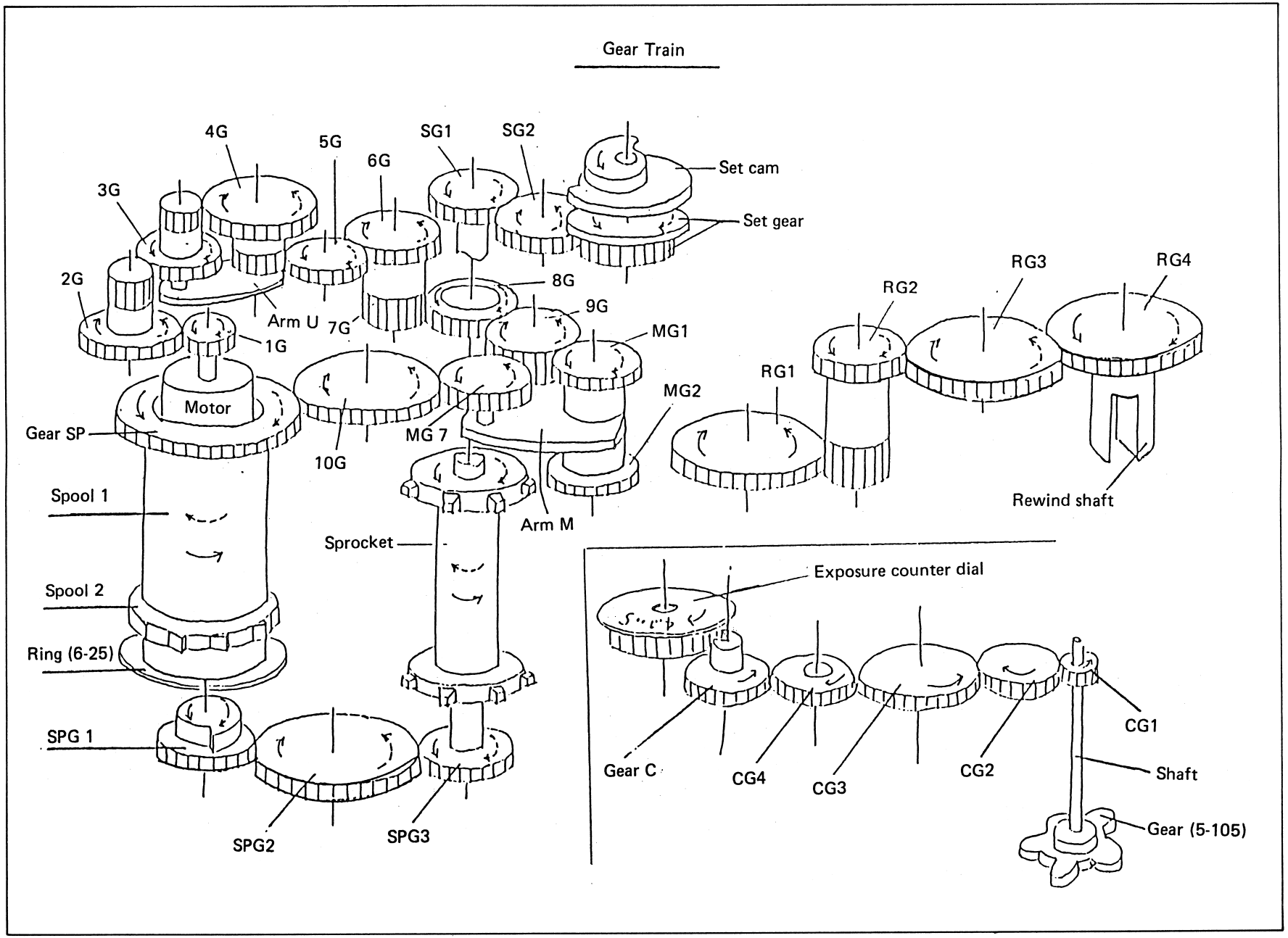
1) When the motor turns, the power is transferred to the gear SPG1 through the following gear train.

1G→2G→3G→4G→5G→6/7G→8G→9G→MG2→10G→SP (Spool 1)

Then, the clutch on the spool 1 engages with the cam on the gear SPG1, causing gears SPG2 and SPG3 (sprocket) to turn.

2) Shutter is set in the same manner as (1)-2) above.

Fig. 7


Gear Train
4G
5G
6G
SG1
SG2
Set cam
Set gear
3G
2G
8G
9G
MG1
Arm U
7G
1G
RG1
RG2
RG3
RG4
Motor
MG2
Gear SP
MG 7
10G
Rewind shaft
Spool 1
Arm M
Sprocket
Exposure counter dial
Spool 2
Ring (6-25)
CG1
Gear C
CG4
CG3
CG2
Shaft
SPG 1
Gear (5-105)
SPG2
SPG3

3.2 Film rewinding mechanism

Automatic return is made by a resistance of the film end. It is also possible to rewind the film manually before the film reaches the end.

(1) Automatic return

1) When the film reaches the end, the spool stops, causing gears 10G, MG2, 9G, 8G, 7/6G and 5G to stop simultaneously and temporarily. However, as gears 1G, 2G and 3G are driving continuously, arm U expands the spring (5-136) and moves, causing the lever (5-52) to disengage. Then, the microswitch (2) is switched over by the lever assembly (5-90), causing the motor to turn reversely.

2) Then, gears reversely turn in the following sequence.

1G→2G→3G→4G→5G→6/7G→8G→9G.

NOTE:

The spool and sprocket are free.

(2) Manual return mechanism

1) With the lever assembly (2-36), the arm U disengages the lever (5-52), and the microswitch (2) is switched over by the lever assembly (5-90), causing the motor to turn reversely.

2) When the motor turns reversely, film is rewound in the same manner as automatic rewinding. (See (1)-2) above.)

NOTE:

Even if you intend to perform manual rewinding without loading film, the camera locks the advancing, rewinding and shutter operations.

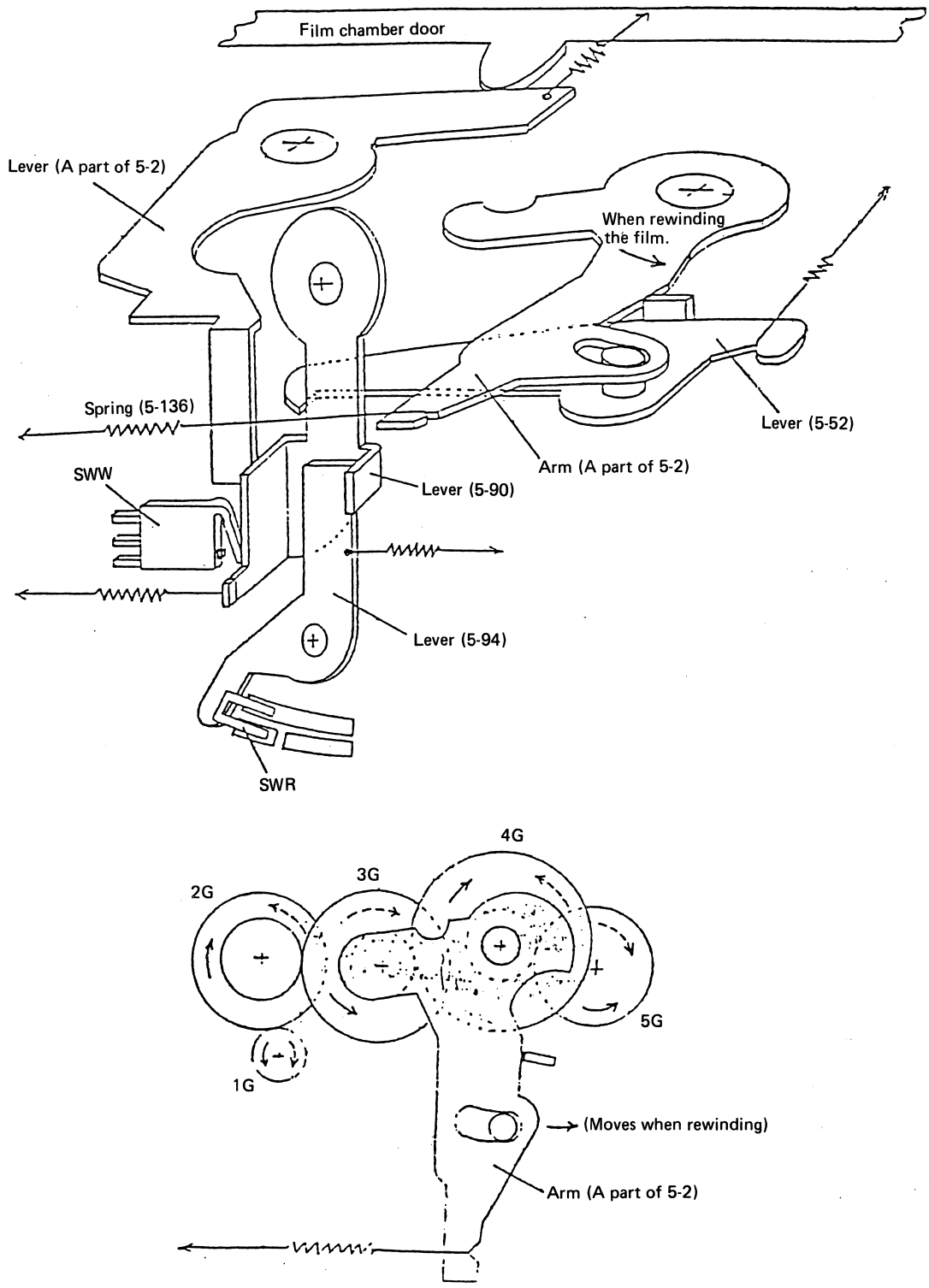
(3) Ending film rewinding

1) When the head of the film leader passes through the film sensor, switch F turns off, causing the motor to stop.

2) When the film chamber door is opened after the motor stops, the lever assembly (5-18) returns, the mode is switched over to film taking up mode, the film is taken up once, and the shutter is set.

Fig. 8

Detailed view of the film rewinding mechanism.



3.3 Exposure counter mechanism

NOTE:

Since the exposure counter operates as the gear (5-105) (free sprocket) turns, the exposure counter operates (advances and returns) only when a film is loaded.

The exposure counter is used also to check film movement.

(1) When advancing

Perforations of the film turn the gear (5-105), and the gear (5-62) turns for one frame through the following gear train.

CG1→CG2→CG3→CG4→C

(2) When rewinding

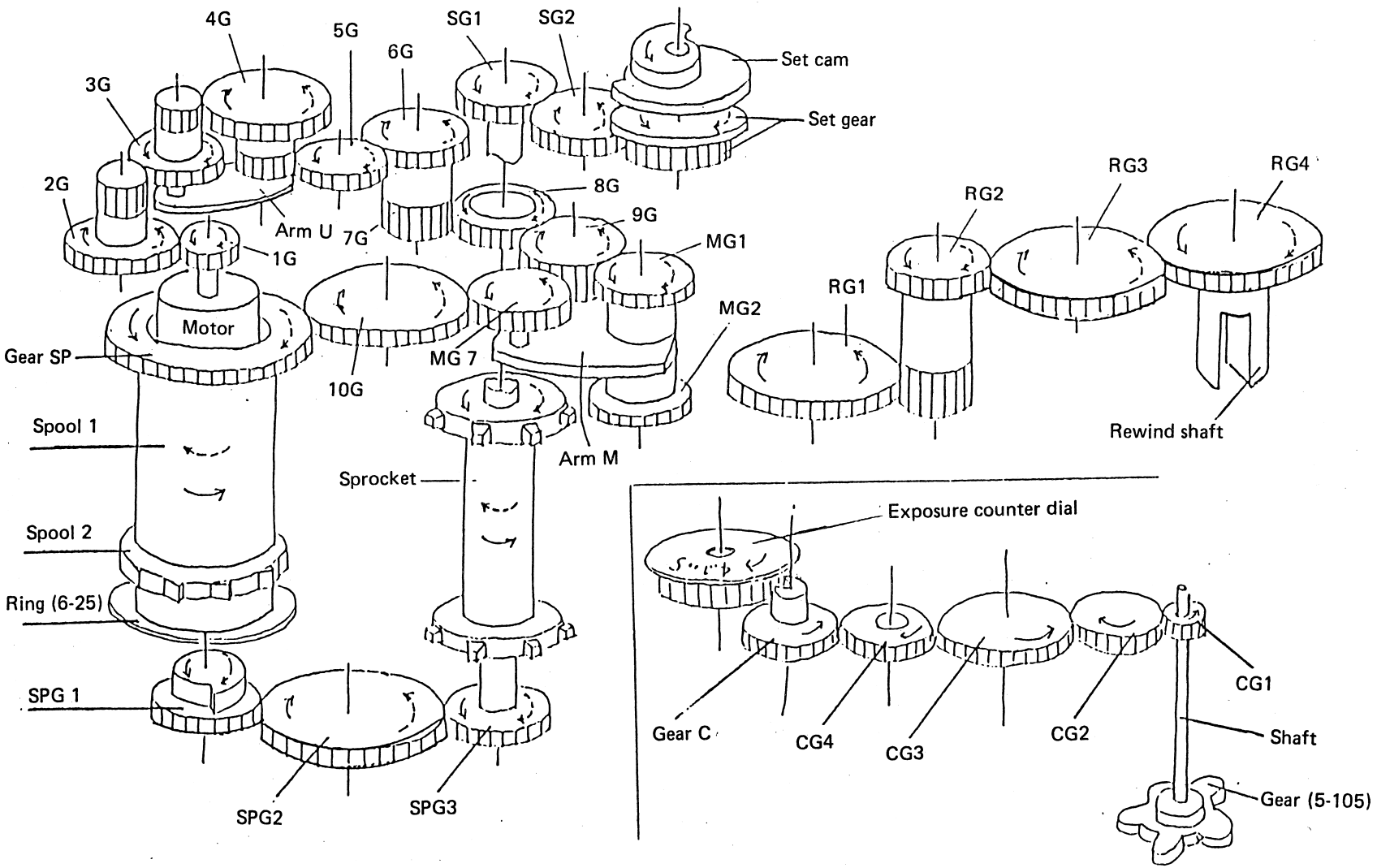
1) The gear (5-105) is turned reversely by film perforations through the following gear train.

Gear (5-105)→CG1→CG2→CG3→CG4→C→Gear (5-62)

2) Then, the exposure counter returns toward "S".

3) The exposure counter returns in the same way also in case of a manual rewind.

Fig. 9


Gear Train
4G
5G
6G
SG1
SG2
Set cam
Set gear
3G
2G
Arm U
7G
8G
9G
MG1
1G
Motor
Gear SP
10G
MG 7
MG2
RG1
RG2
RG3
RG4
Rewind shaft
Spool 1
Sprocket
Arm M
Spool 2
Ring (6-25)
SPG 1
SPG2
SPG3
Exposure counter dial
Gear C
CG4
CG3
CG2
CG1
Shaft
Gear (5-105)

II. DISASSEMBLY

1. Separating front cover, film chamber door and grip from main body

1.1 Remove the battery compartment cover assembly (1-12), and unload the battery.

1.2 Remove the cover (1-10) with a pair of tweezers, remove the screw (1-9), and pull out the dial (1-8).

NOTE:

The cover (1-10) is installed with adhesive.

1.3 Open the film chamber door, and remove the screw (1-4) and two screws (1-5).

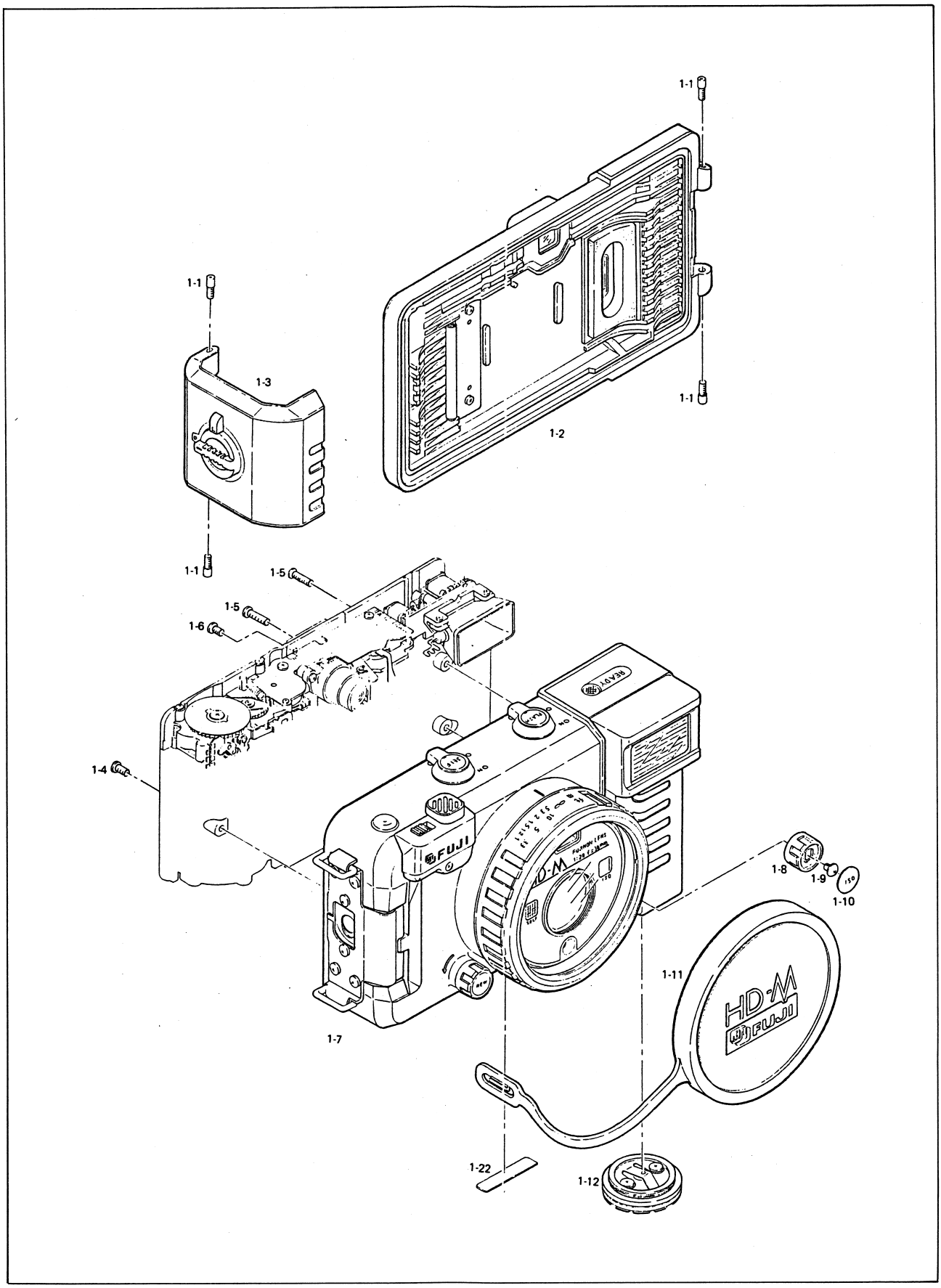
1.4 Set the dial (2-11) to ON, and pull out the main body.

CAUTION:

Do not pull the main body with the dial (2-11) set to OFF. The contact seat assembly (2-17) will be deformed.

1.5 Remove four shafts (1-1), and detach the front cover, film chamber door and grip.

Fig. 10



2. Disassembling front cover

2.1 Remove six screws (2-75), and remove the grip plate (2-74) and two strap eyelets (2-41).

2.2 Remove the front rubber (2-47), remove the screw (2-43) and two screws (2-44), and remove the strap eyelet (2-41).

2.3 Push the protector (2-46) from the inside, and remove it together with the O-ring (2-45). Push the neon lamp window (2-5) from inside to remove it together with the O-ring (2-6) in the same manner.

2.4 Remove the focusing ring cover (2-65), and remove the focusing ring (2-64).

2.5 Remove the holder (2-62) with a pin face spanner, and remove the front glass (2-61) and focusing ring assembly (2-59).

2.6 Peel off the name plate (2-58), and remove the front ring assembly (2-52) and O-ring (2-49) in that order after removing five screws (2-57).

2.7 Push the block (2-48) from the front side to remove it carefully so as not to drop it into the camera.

2.8 Remove the screw (2-51), and remove the gear (2-50).
Fixing the gear (2-26) with your fingers, remove the screw (2-51), and remove the gear (2-50), gear (2-26) and O-ring (2-13).

2.9 Remove the screw (2-70), and remove the cover (2-68) and knob (2-69).
Next, remove the screw (2-73), and remove the button (2-71) and lever (2-72).

2.10 Unhook the spring (2-32), and remove the lever assembly (2-27).

2.11 Remove the clip (2-33), and remove the washer (2-34) and lever (2-35).

2.12 Peel off the dial cover (2-67), and remove the rewind dial (2-66) after removing the screw (2-10).

2.13 Unhook the spring (2-40), and remove the lever assembly (2-36).

2.14 Peel off the cover plate (2-9), remove screws (2-10 and 2-15), and remove the click lever (2-16), dial (2-11), dial seat (2-12), O-ring (2-13) and contact seat assembly (2-17).

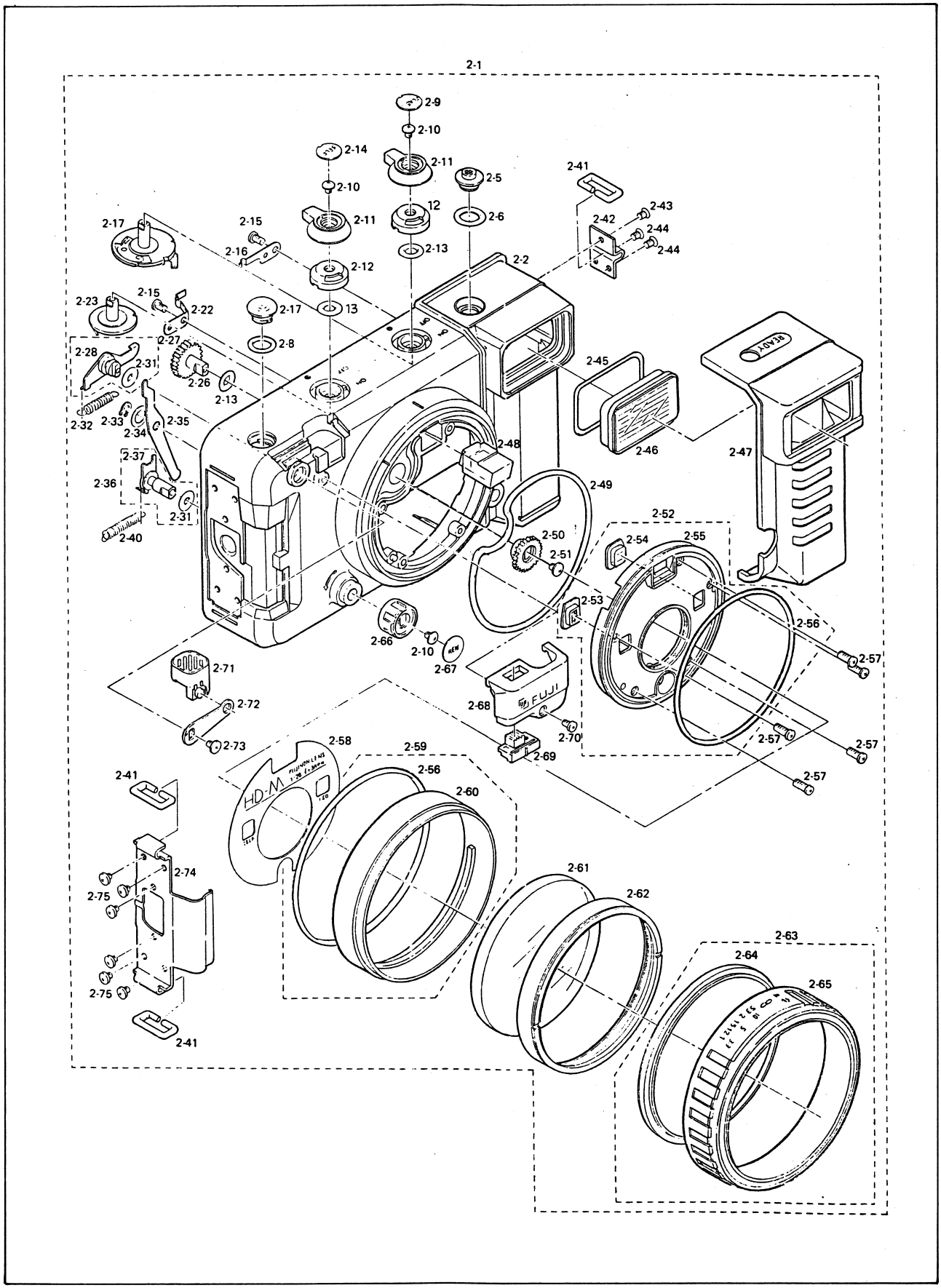
2.15 Peel off the cover plate (2-14), remove screws (2-10 and 2-15), and remove the click lever (2-22), dial (2-11), dial seat (2-12), O-ring (2-13) and contact seat assembly (2-23).

2.16 Match the notch with the groove, and push out the exposure counter window (2-7) from the inside.

NOTE:

Carefully handle O-rings so as not to damage them.

Fig. 11


2-1
2-9
2-10
2-14
2-11
2-5
2-41
2-10
12
2-6
2-43
2-42
2-44
2-17
2-15
2-11
2-44
2-16
2-13
2-2
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2-23
2-15
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2-22
2-45
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2-69
2-57
2-58
2-59
2-41
2-56
2-60
2-74
2-61
2-75
2-62
2-63
2-64
2-75
2-65
2-41

3. Disassembling film chamber door and grip

3.1 Remove the strip (3-21), rubber packing (3-22) and moquette (3-23).

3.2 Remove two screws (3-26), and remove the roller support (3-24) and roller (3-25).

3.3 Remove the back cover (3-20), remove two screws (3-19), and push the film check window (3-18) from the inside to remove it.

Now, remove the O-ring (3-17).

3.4 Peel of the eyepiece frame (3-16), remove two screws (3-15), and remove the window glass (3-13) and O-ring (3-12).

NOTE:

The eyepiece frame (3-16) is installed with adhesive.

3.5 Remove the rubber plate (3-2) from the side opposite to the hinge.

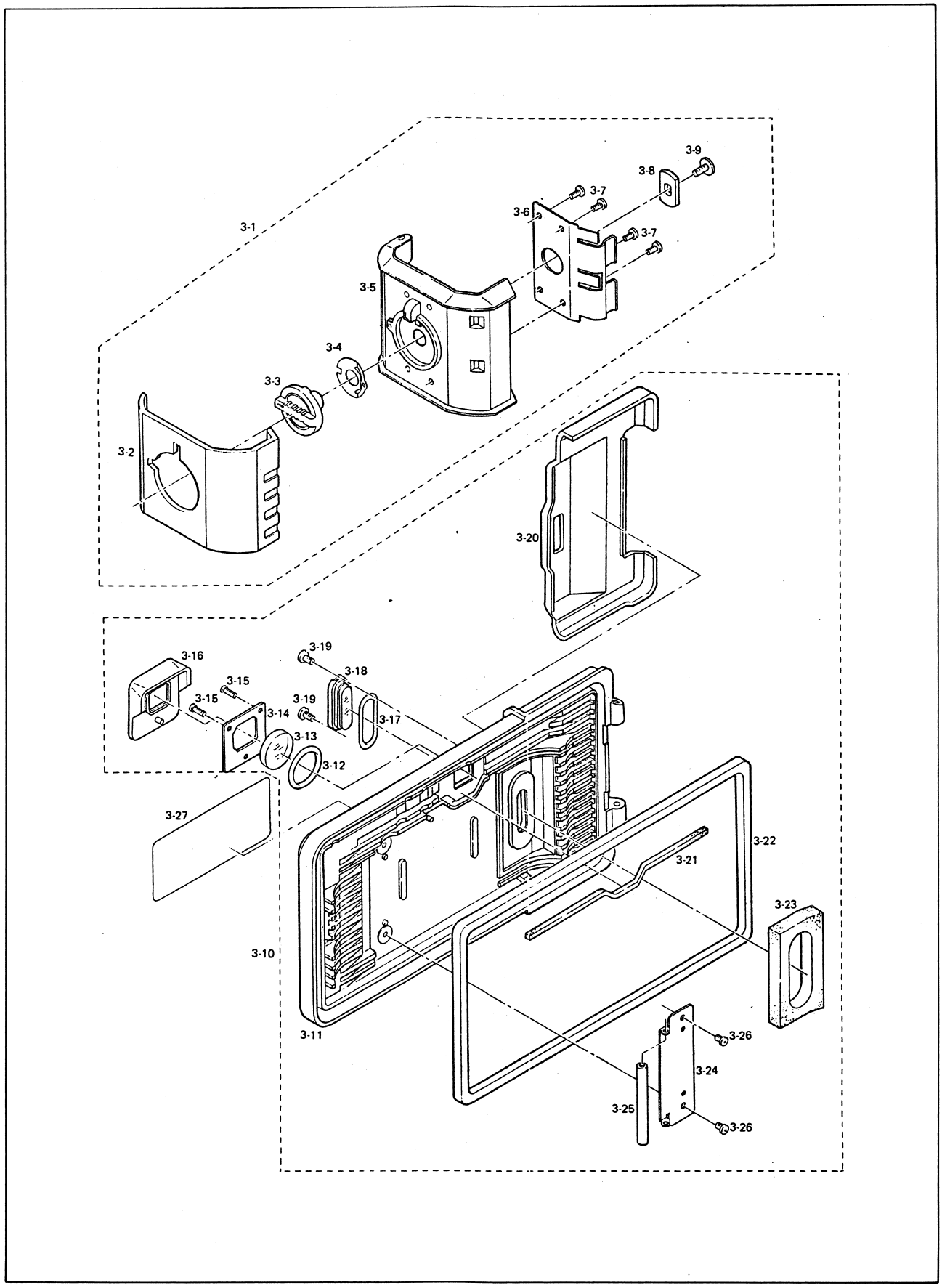
NOTE:

The rubber plate (3-2) is installed with adhesive.

3.6 Remove the screw (3-9), and remove the holder (3-8), dial (3-3) and washer (3-4).

3.7 Remove four screws (3-7), and remove the leaf spring (3-6).

Fig. 12


3-1
3-2
3-3
3-4
3-5
3-6
3-7
3-7
3-8
3-9
3-10
3-11
3-12
3-13
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3-18
3-19
3-19
3-20
3-21
3-22
3-23
3-24
3-25
3-26
3-26
3-27

4. Removing shutter assembly

4.1 Connect a 1K 1W resistor across both terminals of the main capacitor (4-93) to discharge the main capacitor.

4.2 Turn the gear (4-100) to match the screw hole, and remove four screws (4-13).

4.3 Disconnect 11 lead wires on the shutter PCB.

4.4 Turn the ring (4-131) to feed out the lens, and remove the screw (4-112) and two screws (4-111).

Now, raise the lens seat (4-106), and separate the shutter (4-95) from the lens assembly.

4.5 Remove two E-clips (4-98), and remove the gear assembly (4-100) and gear (4-104).

4.6 Remove the spring (4-97), and remove the release lever (4-96).

4.7 Remove two screws (4-60), and remove the pressure plate assembly (4-51).

The pressure plate assembly (4-51) can be further disassembled into the seal (4-52), shaft (4-61), washer and pressure plate (4-53).

NOTE:

The washer is used so that the pressure plate will not ride on the sensor (6-42). This washer may not have been used depending on the body serial number.

4.8 Remove the screw (4-58), and remove the holder (4-59).

5. Disassembling lens assembly

5.1 Detach adhered both ends of the LED (4-113) to remove the LED.

5.2 Remove three screws (4-132), and remove the ring (4-131).

5.3 Remove the clip (4-105), and push out the master lens assembly (4-130). Remove the ring assembly (4-122) also.

NOTE:

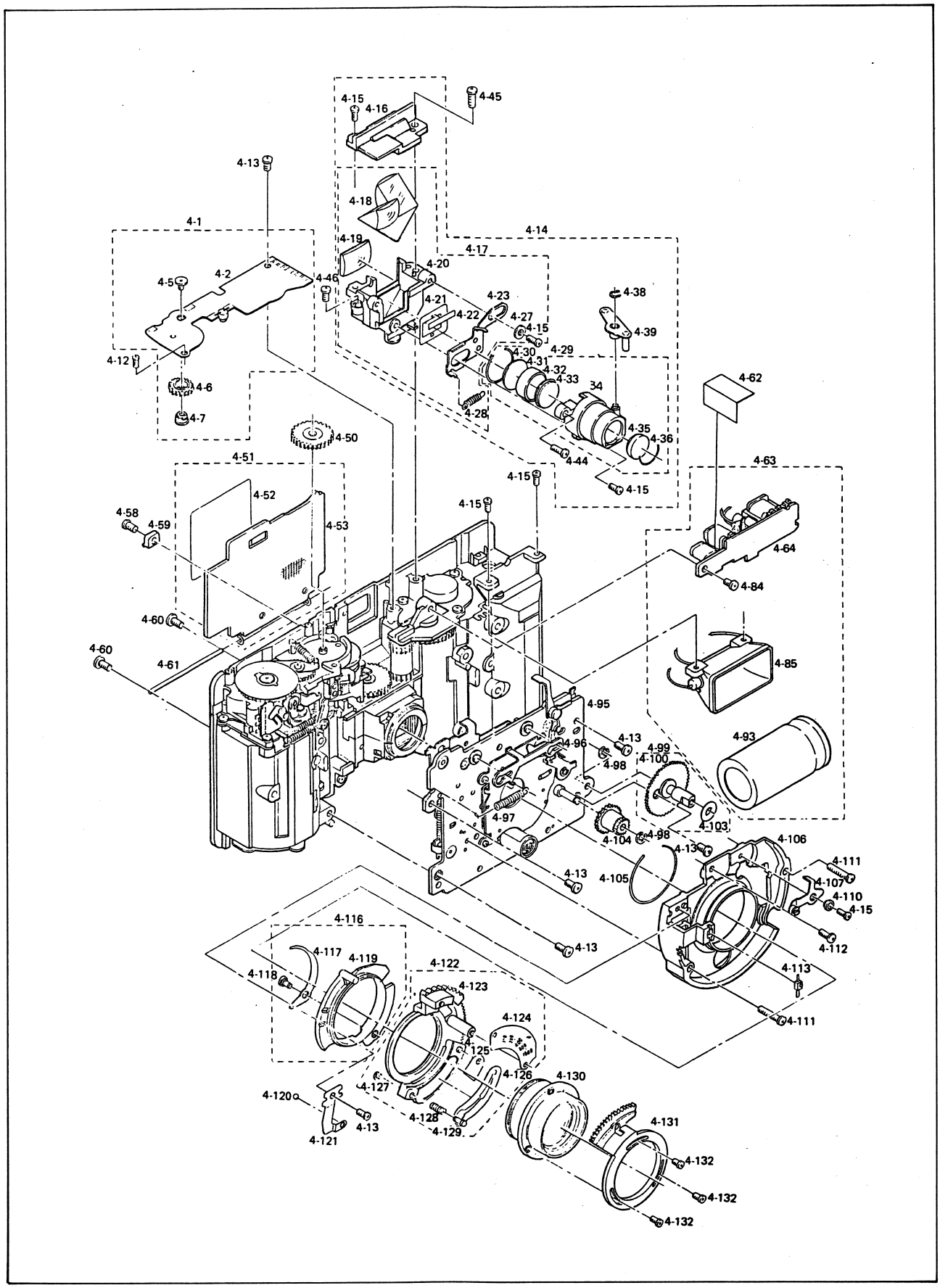
The clip is installed with adhesive.

5.4 Remove the screw (4-13), and remove the ring (4-119) after removing the leaf spring (4-121).

5.5 Remove the screw (4-15), remove the shaft (4-110), and remove the lever assembly (4-107).

5.6 Remove the E-clip (4-127), and remove the spring (4-128) and pin (4-129).

Fig. 13


4-15
4-16
4-45
4-13
4-18
4-1
4-14
4-19
4-17
4-20
4-5
4-2
4-46
4-21
4-23
4-22
4-27
4-15
4-38
4-39
4-12
4-30
4-29
4-31
4-32
4-33
34
4-6
4-28
4-62
4-7
4-50
4-35
4-36
4-51
4-44
4-63
4-15
4-15
4-52
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4-13
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4-112
4-13
4-117
4-119
4-122
4-113
4-118
4-123
4-111
4-124
4-125
4-126
4-130
4-120
4-127
4-128
4-131
4-13
4-121
4-129
4-132
4-132
4-132

6. Removing strobo assembly

6.1 Remove screws (4-12 and 4-13), and remove the PCB assembly (4-1).

NOTE:

The gear (4-50) can be removed.

6.2 Remove the screw (4-5), and remove the gear (4-6) and shaft (4-7).

6.3 Unsolder and detach the LED (4-4).

6.4 Remove the screw (4-84) and two screws (4-15), and raise the amplifier PCB assembly (4-64).

6.5 Disconnect the lead wires from the following terminals.

(1) Gray, yellow and orange lead wires from PCB assembly II (4-2)

(2) Black lead wire from the right of contact (6-56)

(3) Red lead wire from the right of contact (6-58)

(4) Light blue lead wire from PCB (5-130) Total six.

6.6 Remove the amplifier PCB assembly (4-64), reflector assembly (4-85) and main capacitor (4-93) all together.

NOTE:

The main capacitor is fixed with a piece of double sided adhesive tape.

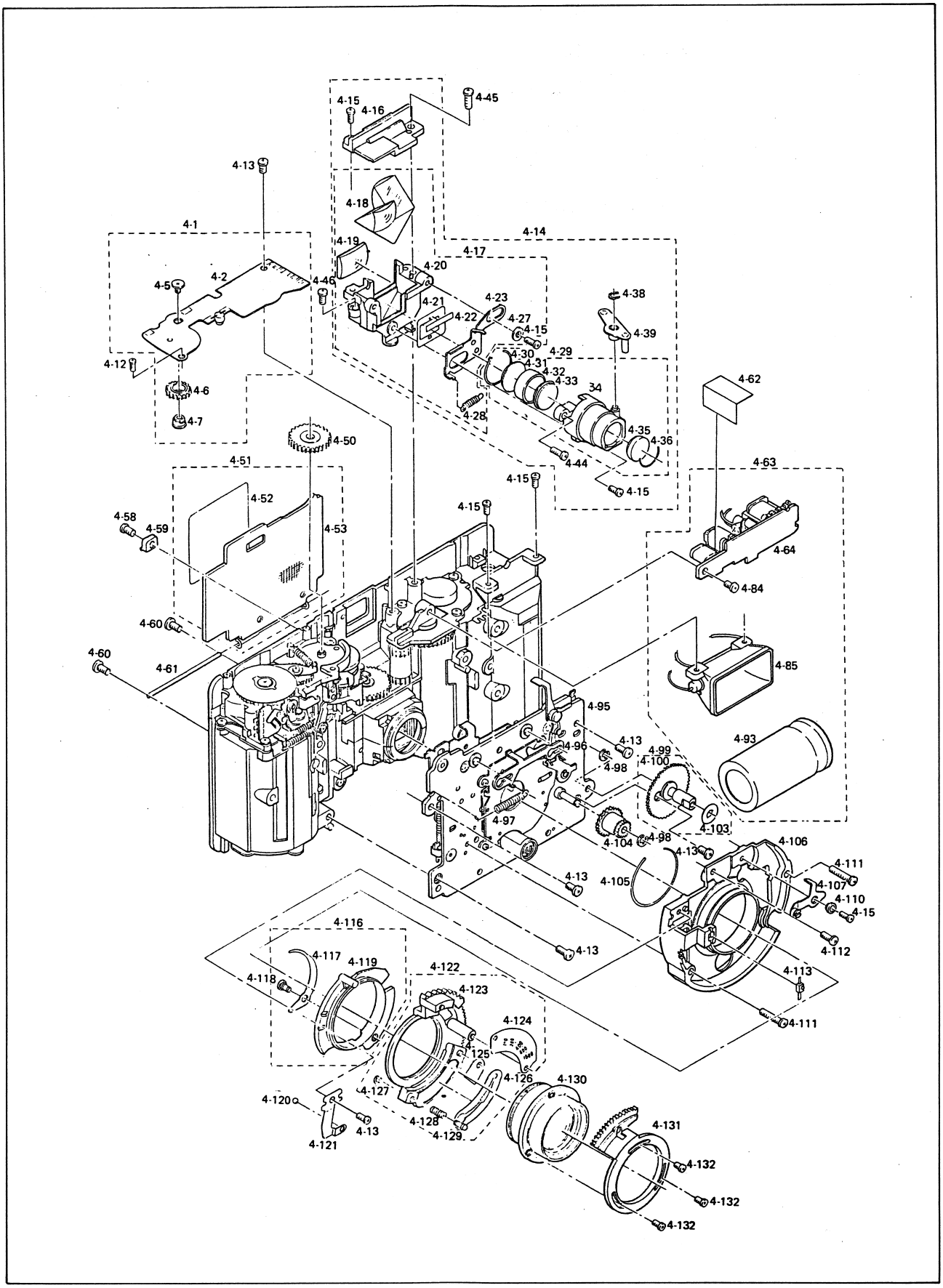
The insulator (4-62) is placed on the trigger coil.

Be careful not to lose it.

6.7 Disconnect the following lead wires, and remove the PCB assembly (4-2).

Black lead wire and red lead wire.

Fig. 14


4-15
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4-132
4-132
4-132

7. Disassembling viewfinder assembly

7.1 Peel off the rubber strip (5-102), remove the screw (4-45) and screw (4-46), and remove the viewfinder assembly (4-14).

7.2 Remove the screw (4-15), and remove the cover I (4-16).

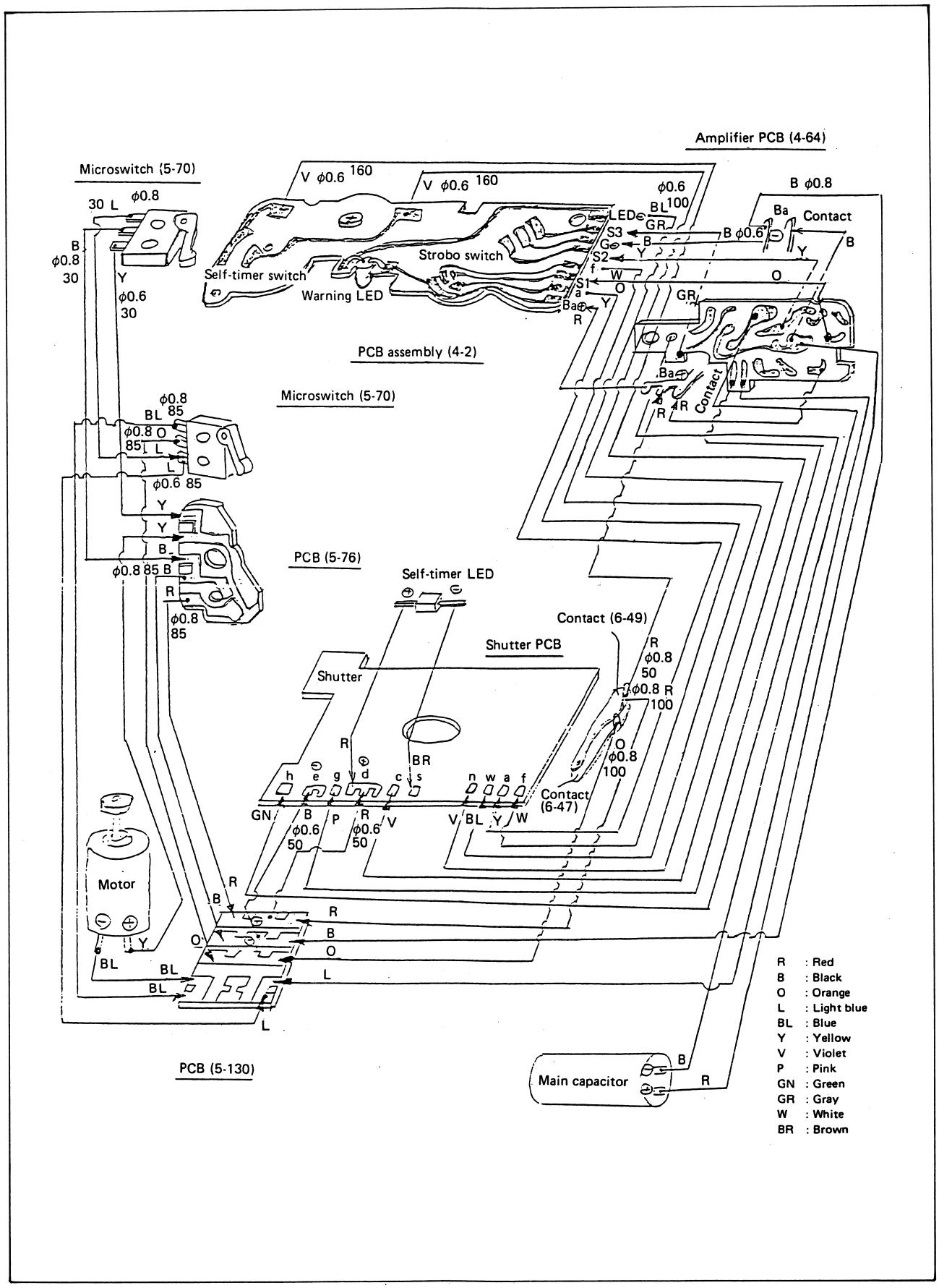
7.3 Remove the clip (4-38), and remove the lever assembly (4-39).

NOTE:

Remove the clip (4-38) carefully by the use of a pair of stripping pliers so as not to damage the boss.

7.4 Remove the spring (4-28), remove the screw (4-44) and two screws (4-15), and remove the holder (4-27), case assembly (4-29) and lever assembly (4-23).

Fig. 15


Amplifier PCB (4-64)
Microswitch (5-70)
V φ0.6 160
V φ0.6 160
φ0.6
B φ0.8
30 L φ0.8
BL 100
LED
GR
Ba
Contact
B φ0.6
S3
G
S2
f
S1
a
Ba
R
B φ0.8
30
Y
φ0.6
30
Self-timer switch
Warning LED
Strobo switch
B
Y
W
O
GR
PCB assembly (4-2)
Microswitch (5-70)
φ0.8
BL 85
φ0.8 O
85
L
L
φ0.6 85
Y
Y
B
φ0.8 85 B
R
φ0.8
85
PCB (5-76)
Self-timer LED
Contact (6-49)
Shutter PCB
Shutter
R
φ0.8
50
φ0.8 R
100
O
φ0.8
100
R
BR
h e g d c s
n w a f
Contact
(6-47)
GN
B
φ0.6
50
P
R
φ0.6
50
V
V BL Y W
Motor
R
B
R
B
O
L
Y
O
BL
BL
BL
L
PCB (5-130)
Main capacitor
B
R
R : Red
B : Black
O : Orange
L : Light blue
BL : Blue
Y : Yellow
V : Violet
P : Pink
GN : Green
GR : Gray
W : White
BR : Brown

8. Disassembling exposure counter and film take-up mechanism

8.1 Disconnect the following lead wires.

(1) Red, black, orange, blue (x2) and light blue lead wires [Total 6 lead wires] from the PCB (5-130).

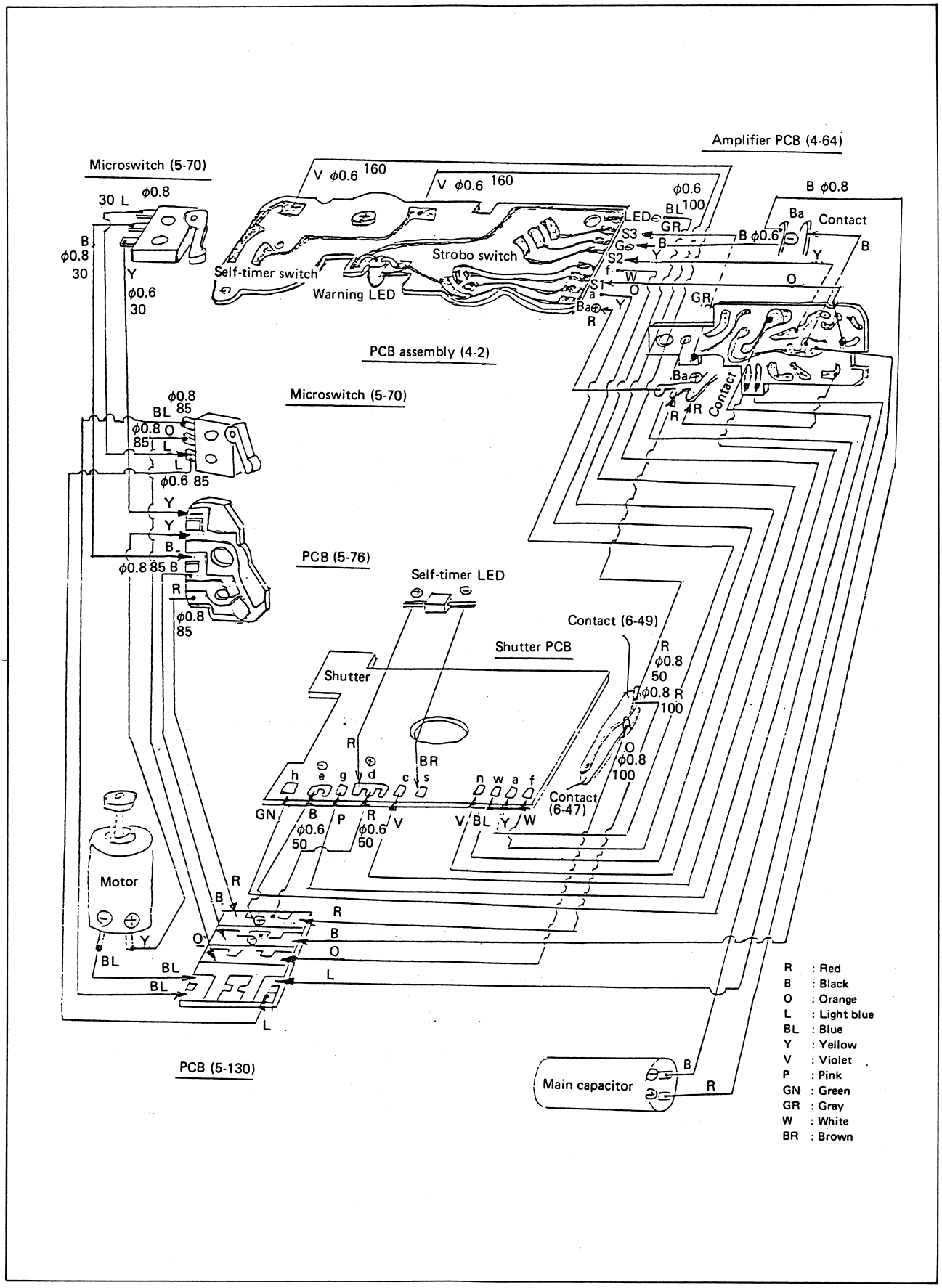
(2) Yellow (x2) and black lead wires [Total 3 lead wires] from the PCB (5-76).

8.2 Remove the spring (5-137), and remove the gear train assembly (5-1) after removing the shaft (5-87) and two screws (5-86 and 5-88).

NOTE:

Be careful not to drop off the gear (5-105) and washer applied to the shaft (5-87). The washer may not have been used.

Fig. 16


Amplifier PCB (4-64)
Microswitch (5-70)
Strobo switch
Self-timer switch
Warning LED
PCB assembly (4-2)
Microswitch (5-70)
PCB (5-76)
Self-timer LED
Contact (6-49)
Shutter PCB
Shutter
Contact (6-47)
Motor
PCB (5-130)
Main capacitor
Contact
R : Red
B : Black
O : Orange
L : Light blue
BL : Blue
Y : Yellow
V : Violet
P : Pink
GN : Green
GR : Gray
W : White
BR : Brown

8.3 Remove two screws (5-85), and separate the exposure counter assembly (5-56). Now, remove the gear (5-30), gear (5-29), gear assembly (5-46) and cover (5-84).

8.4 Remove the spring (5-64) and screw (5-65), and remove the shaft (5-66), arm (5-67), gear (5-68) and gear (5-58).

8.5 Remove the screw (5-63), peel off the dial (5-61) installed with adhesive, unhook the spring (5-59), and remove the counter dial assembly (5-60) and spring (5-59).

8.6 Unhook the spring (5-100), remove the clip (5-101), and remove the lever assembly (5-94), spring (5-93) and lever assembly (5-90).

NOTE:

To protect the boss which holds clip (5-101) from damaging, use a pair of stop ring pliers.

8.7 Remove the screw (5-83), and remove the microswitch (5-70).

8.8 Remove the screw (5-79), and remove the PCB (5-76) and microswitch (5-70).

8.9 Disconnect the light blue lead wire from the microswitch, and separate two microswitches.

8.10 Remove the set lever assembly (5-41), spring (5-40), set cam (5-50) and set gear assembly [set gear (5-47), spring (5-48) and clutch (5-49)] by raising them.

8.11 Unhook the spring (5-36), and remove the lever assembly (5-37), spring (5-36) and lever assembly (5-33).

8.12 Now, remove the gear (5-32) and gear (5-28) in that order.

8.13 Remove two E-clips (5-27), and remove the gear (5-31), gear (5-26), gear (5-25) and spring (5-136).

8.14 Remove the E-clip (5-53) carefully so that the spring (5-54) will not spring out, remove the spring (5-54), remove the second E-clip (5-53), and remove the lever (5-52).

8.15 Raise and remove the arm assembly (5-107), and remove the gear (5-108).

8.16 Remove the screw (5-117), and remove the gear assembly (5-113) and gear (5-114).

8.17 Remove the E-clip (5-53), and remove the gear assembly (5-109) and spring (5-112).

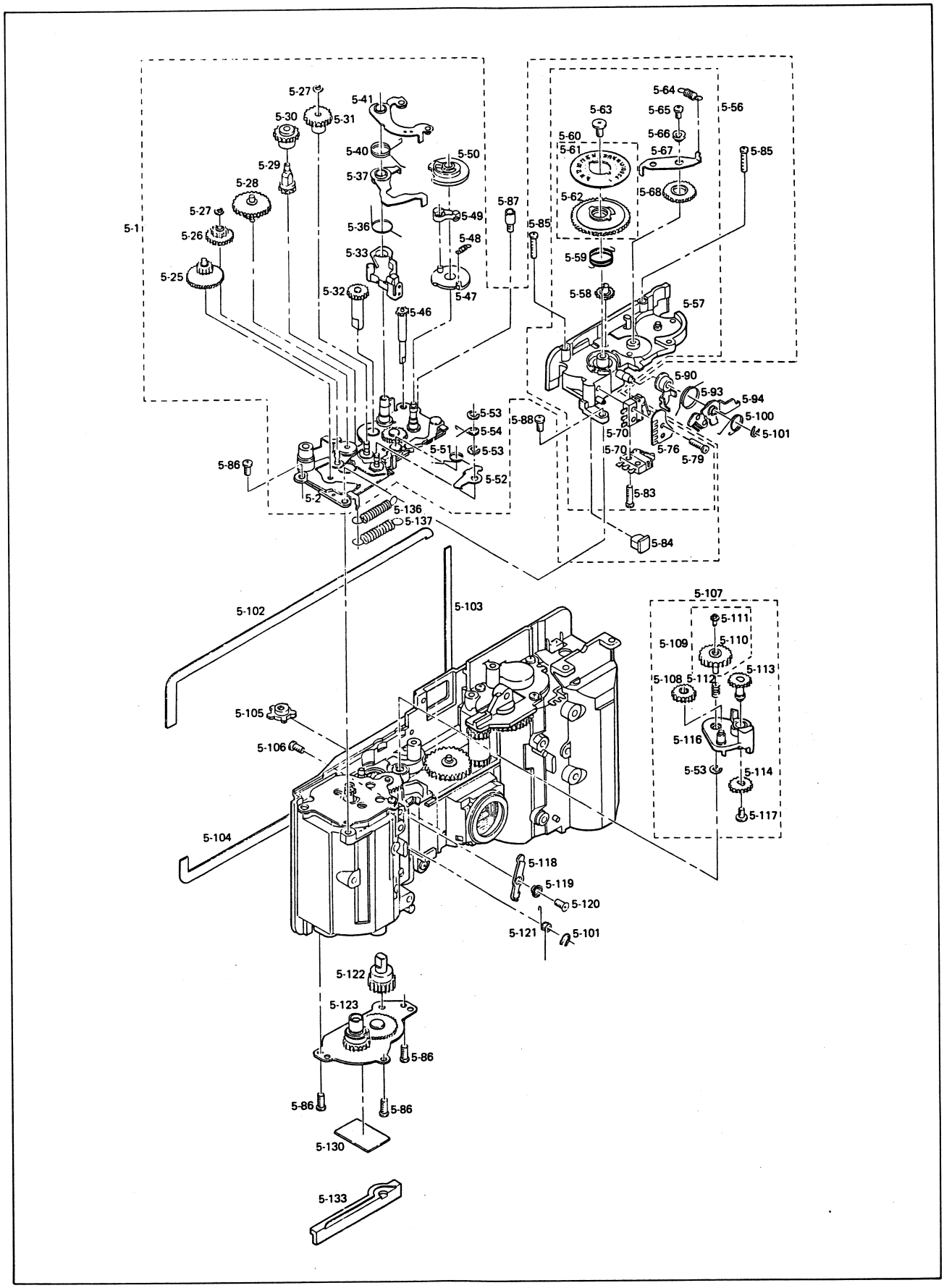
8.18 Remove the spring (5-121) after removing the clip (5-101), and remove the lock lever (5-118) and shaft (5-119) after removing the screw (5-120).

8.19 Peel off the PCB (5-130) which is installed with a piece of double sided adhesive tape.

8.20 Peel off the rubber strip (5-104), and pull out the bottom cover (5-133).

8.21 Remove three screws (5-86), and remove the base plate assembly (5-123). At the same time, pull out the sprocket gear (5-122).

Fig. 17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5-136
5-137

9. Removing rewinding mechanism

9.1 Remove the gear (6-8) from the chassis (6-59).

9.2 Remove three screws (6-1), and remove the seat plate (6-2), spring (6-3), gear (6-5), rewind shaft (6-4), gear (6-6) and gear (6-7) in that order.

10. Removing motor assembly

10.1 Remove the screw (6-11), and remove the motor assembly (6-17) and base plate assembly (6-13).

10.2 Turn the gear (6-15) of the base plate assembly (6-13) to match the screw hole, remove two screws (6-12), and separate the motor assembly (6-17) from the base plate assembly (6-13).

10.3 Remove the gear (6-9) and washer (6-10).

10.4 Remove two screws (6-11), and remove the sprocket (6-23) and arm cover assembly (6-26).

10.5 Unhook the spring (6-29), pull out the shaft (6-28), and remove the arm (6-30) on which the roller (6-31) is installed.

10.6 Remove two screws (6-60) and arbor for the spring (6-40) carefully so as not to damage the boss, and remove the spool (6-20), spool (6-24), ring (6-25) and sprocket base assembly (6-33).

11. Disassembling chassis

11.1 Remove the screw (6-50), and remove the contact (6-49), contact seat (6-48) and contact (6-47).

NOTE:

Be careful not to deform the contacts.

11.2 Peel off the seal (6-55), remove two screws (6-54), and remove the hool assembly (6-44).

NOTE:

A slight amount of adhesive is in between the chassis and hook assembly.

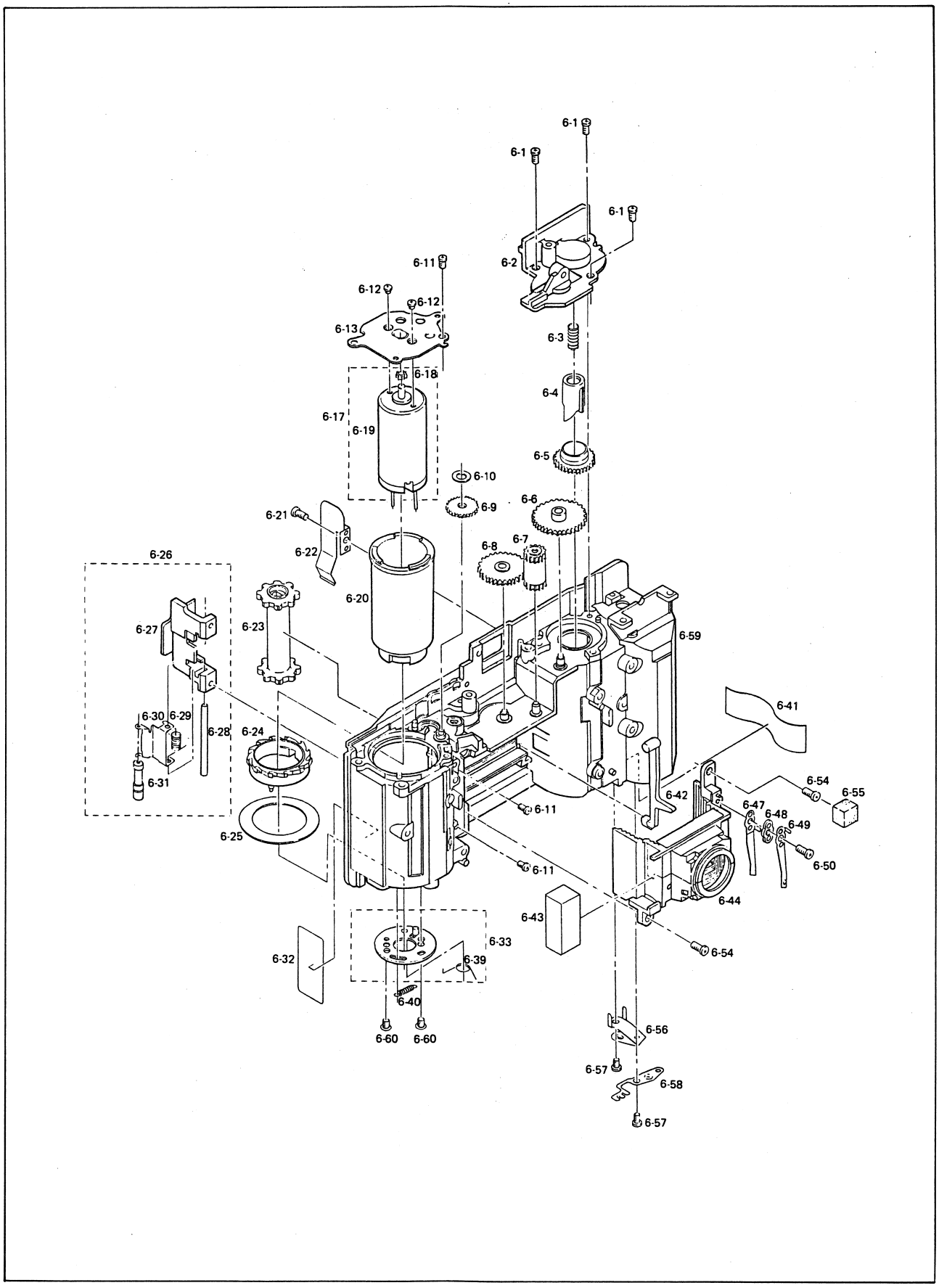
11.3 Remove the silicagel (6-43) installed with a piece of double sided adhesive tape.

11.4 Remove the sensor (6-42).

11.5 Remove two screws (6-57), and remove the contact (6-58) and contact (6-56). For the contact (6-56), raise the terminal, and pull out the contact toward the battery compartment.

11.6 Remove the screw (6-21), and remove the holder (6-22).

Fig. 18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6-57

III. REASSEMBLY AND ADJUSTMENT

1. Installing chassis

1.1 Make sure that the labels (6-32 and 6-41) are respectively positioned in the film spool chamber and battery compartment correctly.

1.2 Fit the holder (6-22) completely to two bosses on the chassis, and secure it with the screw (6-21).

1.3 Place the contact (6-58) into the battery compartment from the nut portion on the top of the chassis, position it by fitting the opening of the contact (6-58) to the boss, and secure it with the screw (6-57).

Fit the contact (6-56) to two rising square holes from the battery compartment side, and after matching the screw holes, secure it with two screws (6-57).

NOTE:

For both contacts (6-58 and 6-56), perform preliminary soldering.

1.4 Place the sensor (6-42) on the chassis, and check it for operation.

NOTE:

Make sure that the molded gate is not projected.

1.5 Install the silicagel (6-43) on the hood assembly (6-44) with a piece of double sided adhesive tape, drop the hood assembly (6-44) into the chassis, and secure it with two screws (6-54). Fill the gap beyween the hood assembly and chassis with adhesive (Three Bond 1521B), and install the seal (6-55).

1.6 Connect orange lead wire (100mm) to the contact (6-47), and connect red lead wire (45mm) and red lead wire (100mm) to the contact (6-49).

Now, place the contact (6-47), contact seat (6-48) and contact (6-49) on the chassis in that order, and secure them with the screw (6-50).

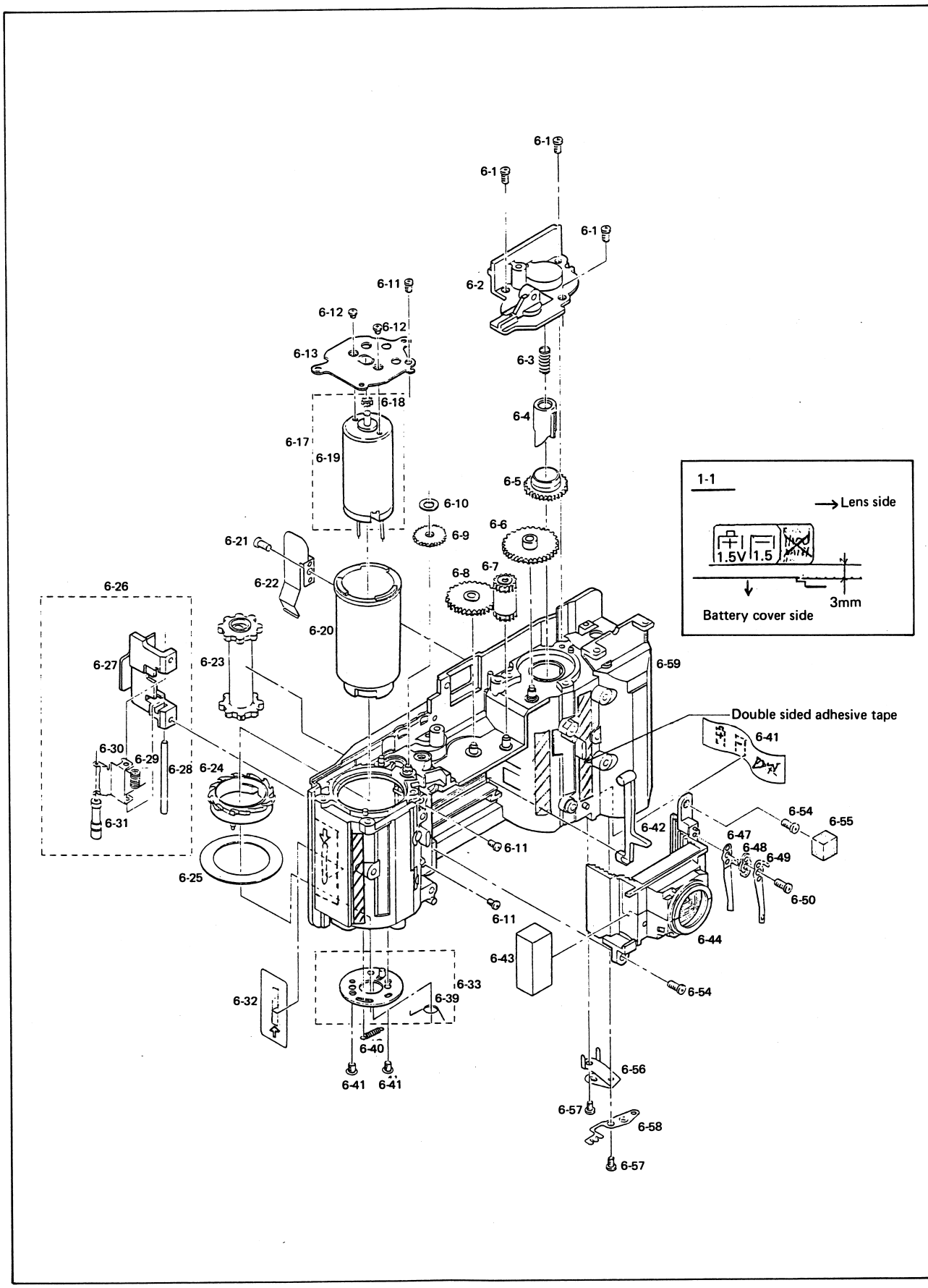
NOTE:

Check the contacts for cleanliness, deformation and soldering.

No excessive solder should exist on the inside terminals of the contacts.

1.7 Apply a piece of double sided adhesive tape (10 x 30mm) to the bottom of the hood assembly (6-44), and three pieces of double sided adhesive tape (5 x 25mm, 5 x 45mm and 5 x 40mm) to the oblique lined portions on the chassis.

Fig. 19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6-49
6-50
6-54
6-55
6-56
6-57
6-58
6-59
1-1
Lens side
1.5V
1.5
3mm
Battery cover side
Double sided adhesive tape

2. Installing motor assembly

2.1 Apply grease (015M) to the interior of the gear (6-16) and sliding surface of the shaft (6-15) slightly.

2.2 Turn the gear (6-16) on the base plate assembly (6-13) to match the screw hole, and install the base plate assembly (6-13) on the motor assembly (6-17) with two screw (6-12).

2.3 Install the spring (6-39) on the sprocket base assembly (6-33) as shown in the right hand figure carefully so as not to deform the spring.

2.4 Fit the spools (6-20 and 6-24) to the groove, drop the ring (6-25) and spools into the chassis, apply the sprocket base assembly (6-33) to the bottom, and secure them with two screws (6-60).

2.5 Hook the spring (6-40) on the bosses of the spools (6-20 and 6-24), break the heads of the bosses and fix them with adhesive (Cemedine 551A).

2.6 After applying grease (015M) to the gear (6-9) and washer (6-10), drop them in to the chassis, and install the motor assembly (6-17) and base plate assembly (6-13) with screws (6-11).

Pull out the blue and yellow lead wires of the motor through the opening on the sprocket base assembly (6-33).

2.7 Fit the roller (6-31) to the arm (6-30), arrange the apring (6-29) and arm cover (6-27) as shown in the right hand figure, apply the shaft (6-28) through the square hole on the arm cover (6-27), and secure them with two screws (6-11).

NOTE:

Check the arm for operations.

3. Installing rewinding mechanism

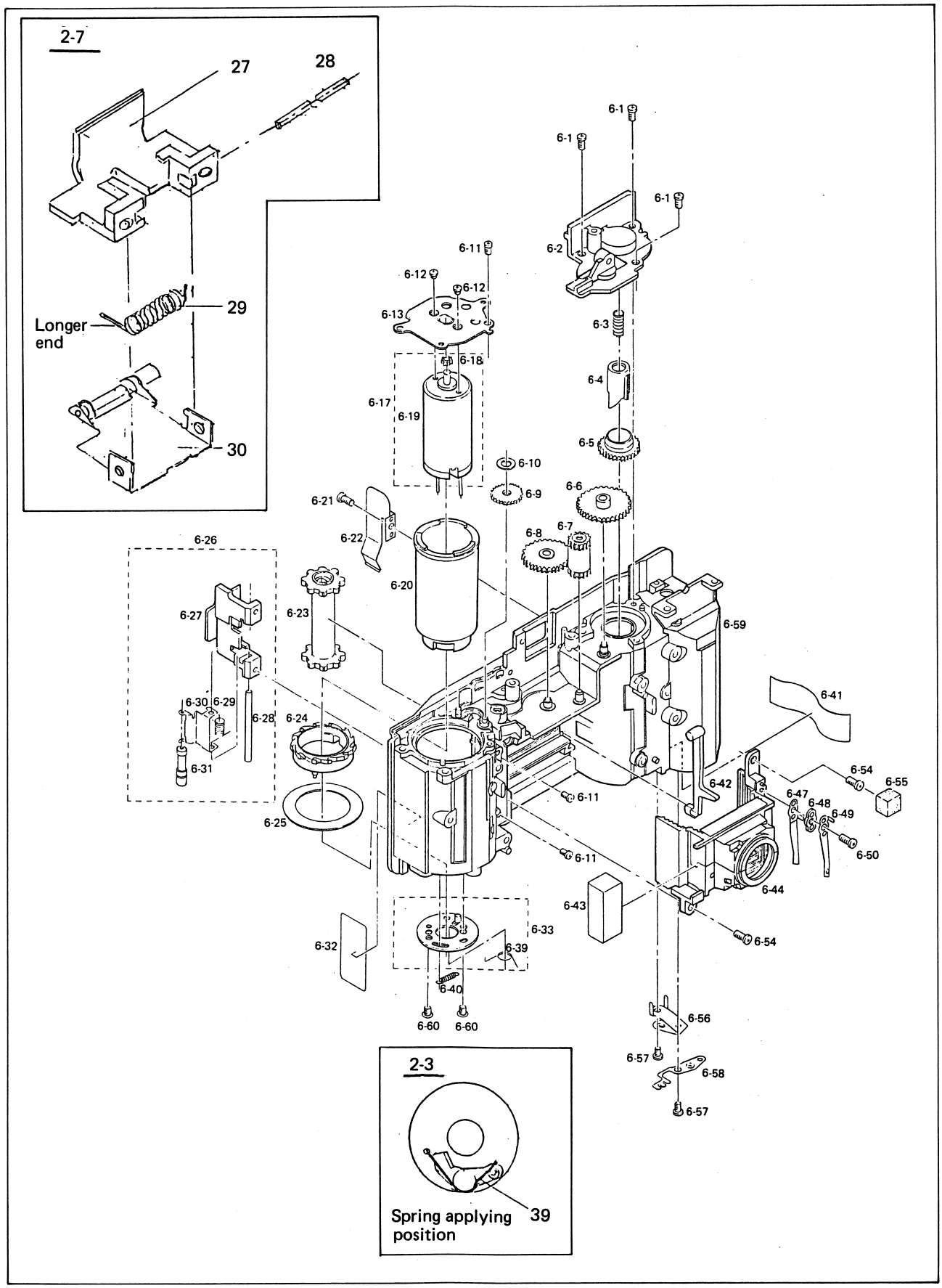
3.1 Apply grease (015M) to the interior and exterior teeth of each gear slightly.

3.2 With four molding pin tracks on the gear (6-8) faced downward, apply the gear (6-8), and then, apply the gear (6-7) and gear (6-6) in that order.

3.3 Apply the gear (6-5) to the rewind shaft (6-4), and place them in the chassis.

3.4 Apply the spring (6-3) to the boss on the seat plate (6-2), and secure the seat plate on the chassis with three screws (6-1).

Fig. 20


2-7
27
28
29
Longer end
30
6-1
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6-8
6-9
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6-11
6-12
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6-55
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6-59
6-60
2-3
Spring applying position
39

4. Assembling film taking up mechanism and exposure counter

4.1 Apply grease (015M) slightly to the interior, shaft and teeth of each gear.

4.2 Apply the sprocket gear (5-122), insert the motor lead wires through the opening on the base plate assembly (5-123) from the gear side, and install the base plate assembly (5-123) with three screws (5-86).

4.3 Apply solder to 12 positions on the PCB (5-130) prelimarily, and connect red lead wire (60mm) and black lead wire (50mm) by the use of soldering iron.

4.4 Install the PCB (5-130) with a piece of double sided adhesive tape (7 x 15mm).

4.5 Fit the bottom cover (5-133), and install the rubber strip (5-104) with adhesive (551A).

4.6 Apply the spring (5-112) to the gear assembly (5-109), apply the gear assembly to the opening on the arm (5-116), and secure it with the E-clip (5-53).

4.7 Fit the gear assembly (5-113), insert it into the opening on the arm (5-116), fit the gear (5-114) from the opposite side, and secure it with the screw (5-117).

4.8 With the molding pin track faced downward, place the gear (5-108) on the arm (5-116).

4.9 Apply grease (015M) sufficiently to the portion on the chassis where the boss of the arm assembly (5-107) is fitted, and place the arm assembly (5-107) on the chassis.

4.10 Engage the lever (5-52) with the associated lever, apply it to the shaft on the base plate assembly (5-2), secure it with the E-clip (5-53), and further, apply the spring (5-54) and secure it with the E-clip (5-53). (See the right hand figure.)

NOTE:

Be sure to face the bent side of the E-clip downward.

4.11 Apply the gears (5-26 and 5-31) to the individual shafts, and secure them with E-clips (5-27).

Further, apply the gear (5-32).

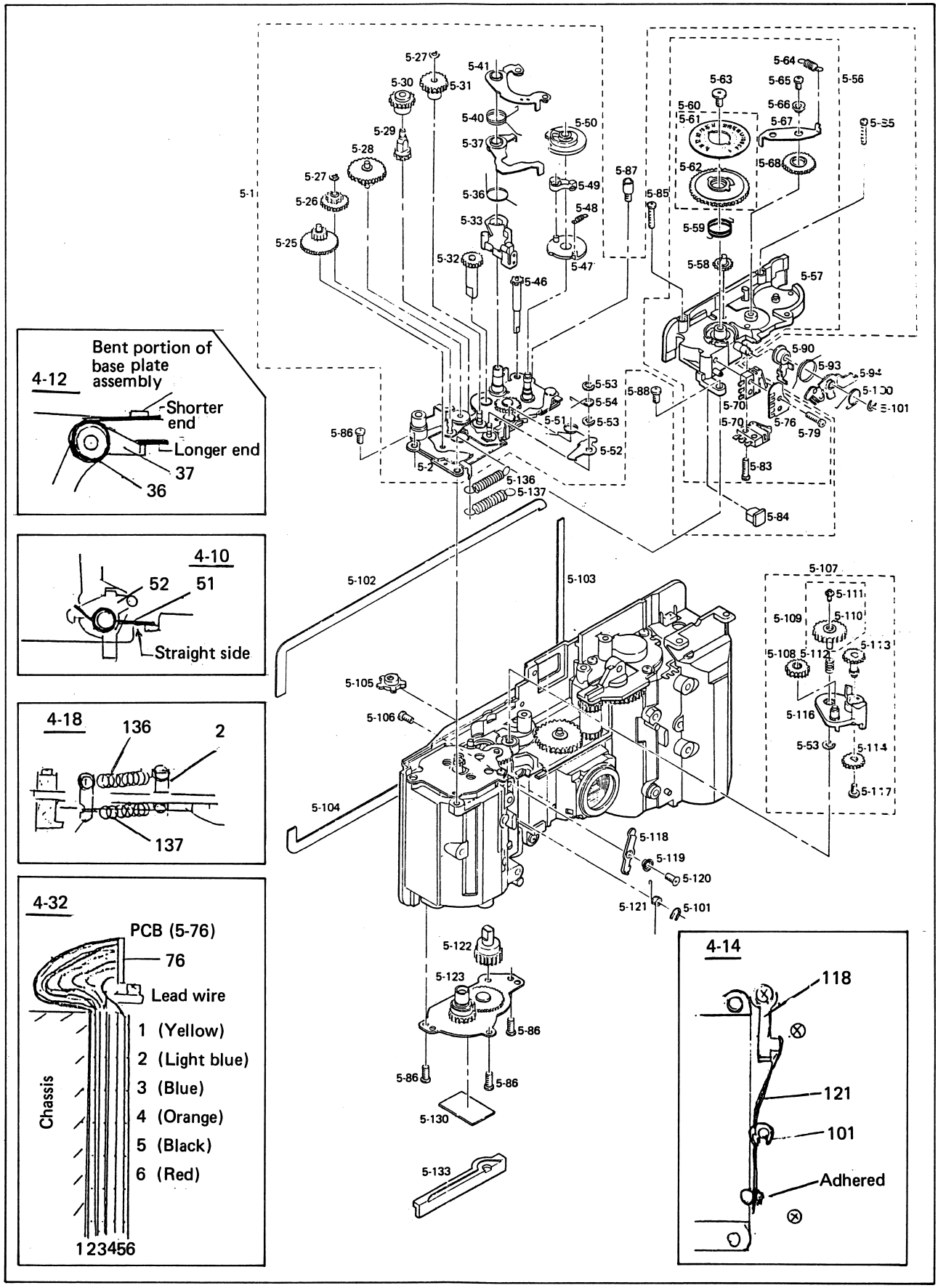
4.12 Apply the lever assembly (5-33) to the shaft, fit the spring (5-36) to the lever assembly (5-37) with the longer side of the spring (5-36) faced to the lever assembly (5-37), place the spring (5-36) and lever assembly (5-37) on the lever assembly (5-33), and apply the shorter end of the spring (5-36) to the bent portion of the base plate assembly (5-2).

NOTE:

The spring (5-36) has a high spring force.

4.13 Apply the gears (5-25 and 5-28) to the individual shafts, and fit the gears (5-30 and 5-29) to the base plate assembly (5-2).

Fig. 21


4-12
Bent portion of base plate assembly
Shorter end
Longer end
37
36
4-10
52
51
Straight side
4-18
136
2
137
4-32
PCB (5-76)
76
Lead wire
1 (Yellow)
2 (Light blue)
3 (Blue)
4 (Orange)
5 (Black)
6 (Red)
Chassis
123456
4-14
118
121
101
Adhered
5-1
5-2
5-25
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4.14 Apply the clutch (5-49) to the set gear (5-47), apply the spring (5-48) to the clutch, secure the spring with adhesive (551A), and Apply them to the shaft on the base plate assembly. Now, fit the set cam (5-50) on them.

4.15 Apply the bent end of the spring (5-40) to the set lever assembly (5-41), place them on the lever assembly (5-37), and apply the spring to the kever assembly (5-33).

4.16 Place the gear train assembly (5-1) on the chassis, turn the sprocket to engage it with the gear train, and secure the gear train assembly with the screw (5-86).

4.17 Apply a 0.1mm thick washer beneath the base plate assembly (5-2) at the axis of the screw (5-87), and tighten the screw (5-87).

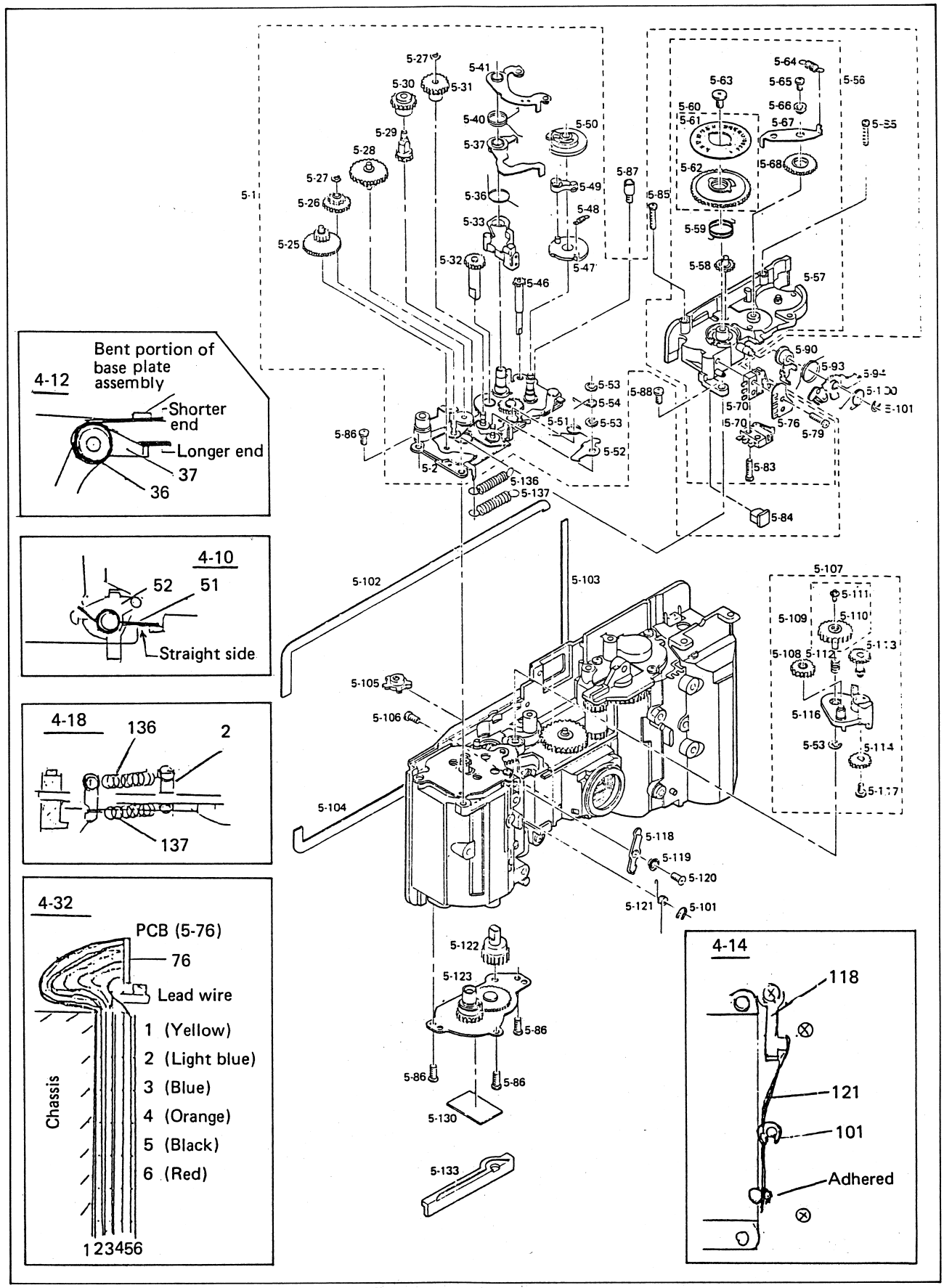
NOTE:

There should be a 0.1mm or larger gap between the base plate assembly (5-2) and arm assembly (5-107). This gap is adjusted with a washer.

Check the arm assembly (5-107) for its horizontal operations also.

4.18 Install the springs (5-136 and 5-137) as shown in the right hand figure.

Fig. 22


4-12
Bent portion of base plate assembly
Shorter end
Longer end
37
36
4-10
52
51
Straight side
4-18
136
2
137
4-32
PCB (5-76)
76
Lead wire
1 (Yellow)
2 (Light blue)
3 (Blue)
4 (Orange)
5 (Black)
6 (Red)
Chassis
123456
4-14
118
121
101
Adhered

4.19 Apply grease (015M) to four holes inside the base plate (5-57) and one boss on the base plate (5-57).

4.20 Connect the lead wires to two microswitches (5-70) and PCB (5-76) as shown in the right hand figure by the use of a soldering iron.

4.21 Place the microswitch to which four lead wires are connected on the PCB (5-76), and secure them on the base plate (5-57) with the screw (5-79).

Install the other microswitch (5-70) with the screw (5-83) also.

4-22 Arrange three lead wires (light blue, yellow and black) through the groove, and connect them to the microswitches and PCB as shown in the right hand figure by the use of a soldering iron.

NOTE:

Finish soldering as quick as possible, and do not allow bare portion of the lead wire being projected out of the terminal. Do not use flux.

4-23 Apply the lever assembly (5-90) to the shaft, and apply the bent side of the spring (5-93) to the lever assembly (5-90) and the other side of the spring to the base plate (5-57).

4-24 Apply the lever assembly (5-94) to the lever assembly (5-90) so that the lever assembly (5-94) engages with the lever assembly (5-90).

Now hook the shorter end of the spring (5-100) to the lever assembly (5-94) and longer end of the spring (5-100) to the lever assembly (5-90), and secure them with the clip (5-101).

4-25 Apply the spring (5-59) to the base plate (5-57) after insuring that the spring (5-59) is not twisted, drop the counter dial assembly (5-60) into the chassis so that the hook portion of the spring (5-59) enters the square hole of the counter dial assembly (5-60), and secure the counter dial assembly (5-60) with the screw (5-63).

4-26 Apply the gear (5-68) to the boss with the grooved side of the gear (5-68) faced upward. Apply the gear (5-58) to the arm (5-67), place the shaft (5-66) on the hole of the arm (5-67), and secure it on the boss of the base plate (5-57) with the screw (5-65).

4-27 Join the arm (5-67) and base plate (5-57) with the spring (5-64).

4-28 With the groove faced upward, apply the gear (4-50) to the base plate (5-57).

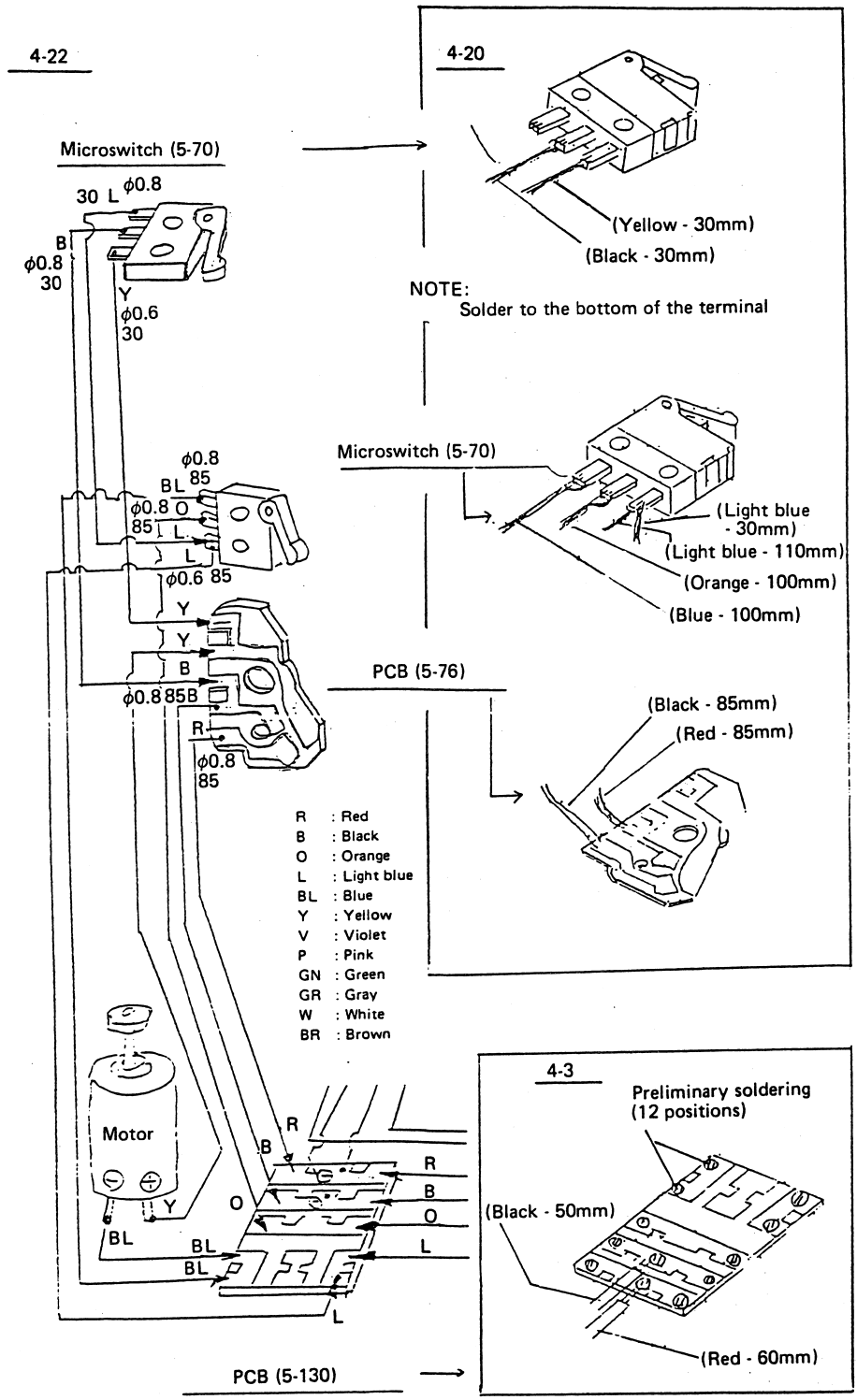
4.29 Turning the gear (5-105), apply the gear assembly (5-46).

4.30 Insert the cover (5-84) into the hole, place the exposure counter assembly (5-56) on the gear train assembly (5-1), and secure the exposure counter assembly with the screw (5-88) and two screws (5-85).

NOTE:

Check each gear and lever for smooth operations.

Fig. 23


4-22
4-20
Microswitch (5-70)
30 L φ0.8
B
φ0.8
30
Y
φ0.6
30
(Yellow - 30mm)
(Black - 30mm)
NOTE:
Solder to the bottom of the terminal
Microswitch (5-70)
φ0.8
BL 85
φ0.8 O
85 L
L
φ0.6 85
Y
Y
B
φ0.8 85B
R
φ0.8
85
(Light blue
- 30mm)
(Light blue - 110mm)
(Orange - 100mm)
(Blue - 100mm)
PCB (5-76)
(Black - 85mm)
(Red - 85mm)
R : Red
B : Black
O : Orange
L : Light blue
BL : Blue
Y : Yellow
V : Violet
P : Pink
GN : Green
GR : Gray
W : White
BR : Brown
Motor
Y
BL
R
B
O
BL
BL
L
R
B
O
L
4-3
Preliminary soldering
(12 positions)
(Black - 50mm)
(Red - 60mm)
PCB (5-130)

4.31 Connect the yellow lead wire extended from the motor to the PCB (5-76) by the use of a soldering iron, and connect the following lead wires to the PCB (5-130).

(1) Blue and light blue lead wires from two microswitches (5-70)

(2) Black and red lead wires from the PCB (5-76)

(3) Blue lead wire from the motor

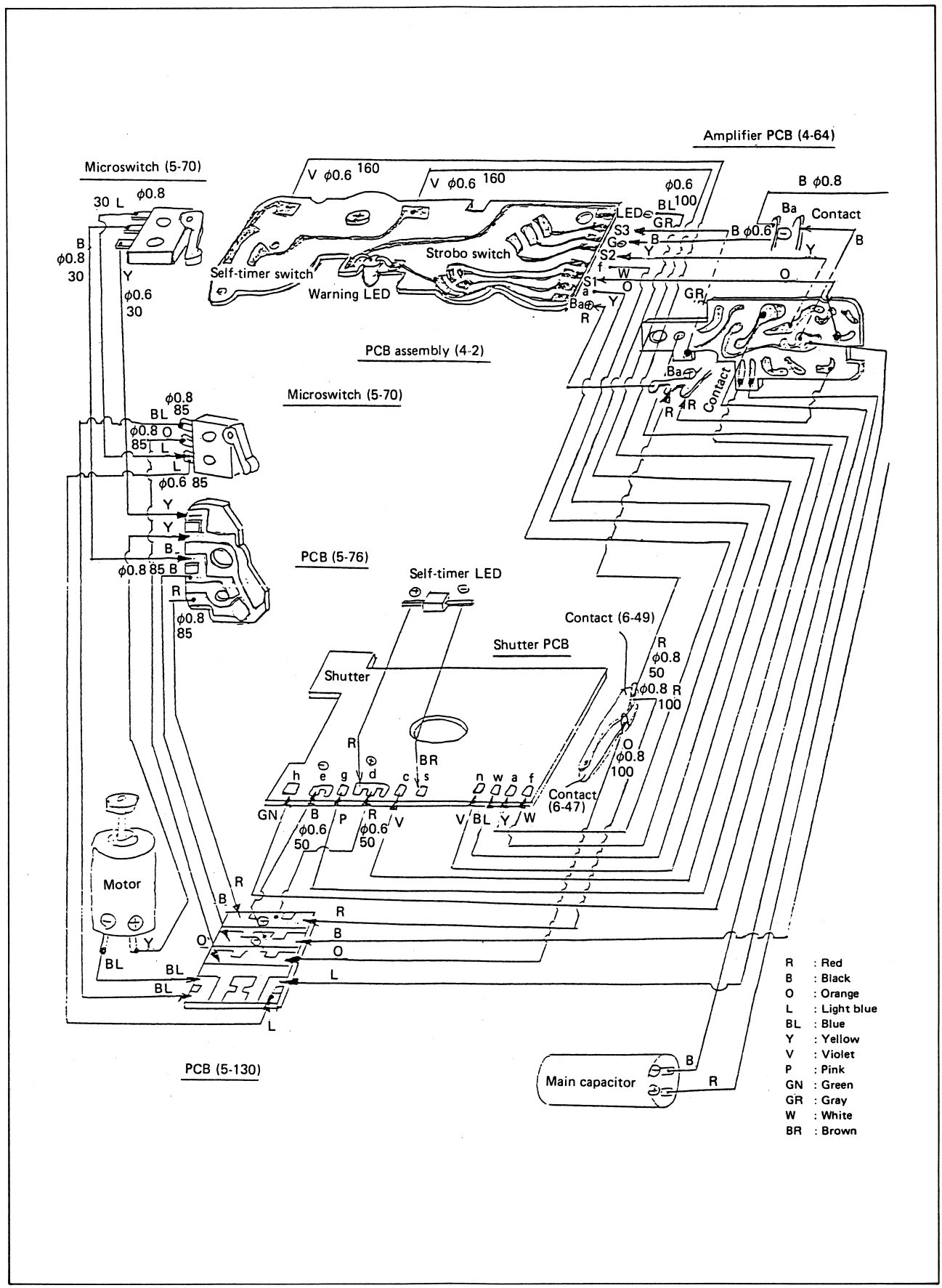
(4) Red lead wire from the contact (6-49)

(5) Orange lead wire from the contact (6-47)

(6) Black lead wire from the contact (6-56)

4.32 Arrange the lead wires on the double sided adhesive tape. (See the figure in the right hand.)

Fig. 24


Amplifier PCB (4-64)
Microswitch (5-70)
Strobo switch
Self-timer switch
Warning LED
PCB assembly (4-2)
Microswitch (5-70)
PCB (5-76)
Self-timer LED
Contact (6-49)
Shutter PCB
Shutter
Contact (6-47)
Motor
PCB (5-130)
Main capacitor
Contact
R : Red
B : Black
O : Orange
L : Light blue
BL : Blue
Y : Yellow
V : Violet
P : Pink
GN : Green
GR : Gray
W : White
BR : Brown

5. Installing strobo assembly

5.1 Moving a way from the terminals and pins of the parts, arrange the lead wires extended from the amplifier PCB assembly (4-64).

5.2 Referring to the wiring diagram, connect lead wires to the following terminals by the use of soldering iron.

(1) Black lead wire extended from the amplifier PCB to the right side terminal of the contact (6-56)

(2) Black lead wire extended from the left side terminal of the contact (6-56) to the terminal G of the PCB assembly (4-2) and PCB (5-130)

(3) Red lead wire from the amplifier PCB assembly (4-64) and red lead wire from the contact (6-49) to contact (6-58)

(4) Red lead wire from the left side of the contact (6-58) to terminal (Ba) of the PCB assembly (4-2)

(5) Gray, yellow and orange lead wires from the amplifier PCB assembly (4-64) to the PCB assembly (4-2), and light blue lead wire from the amplifier PCB assembly (4-64) to the PCB (5-130)

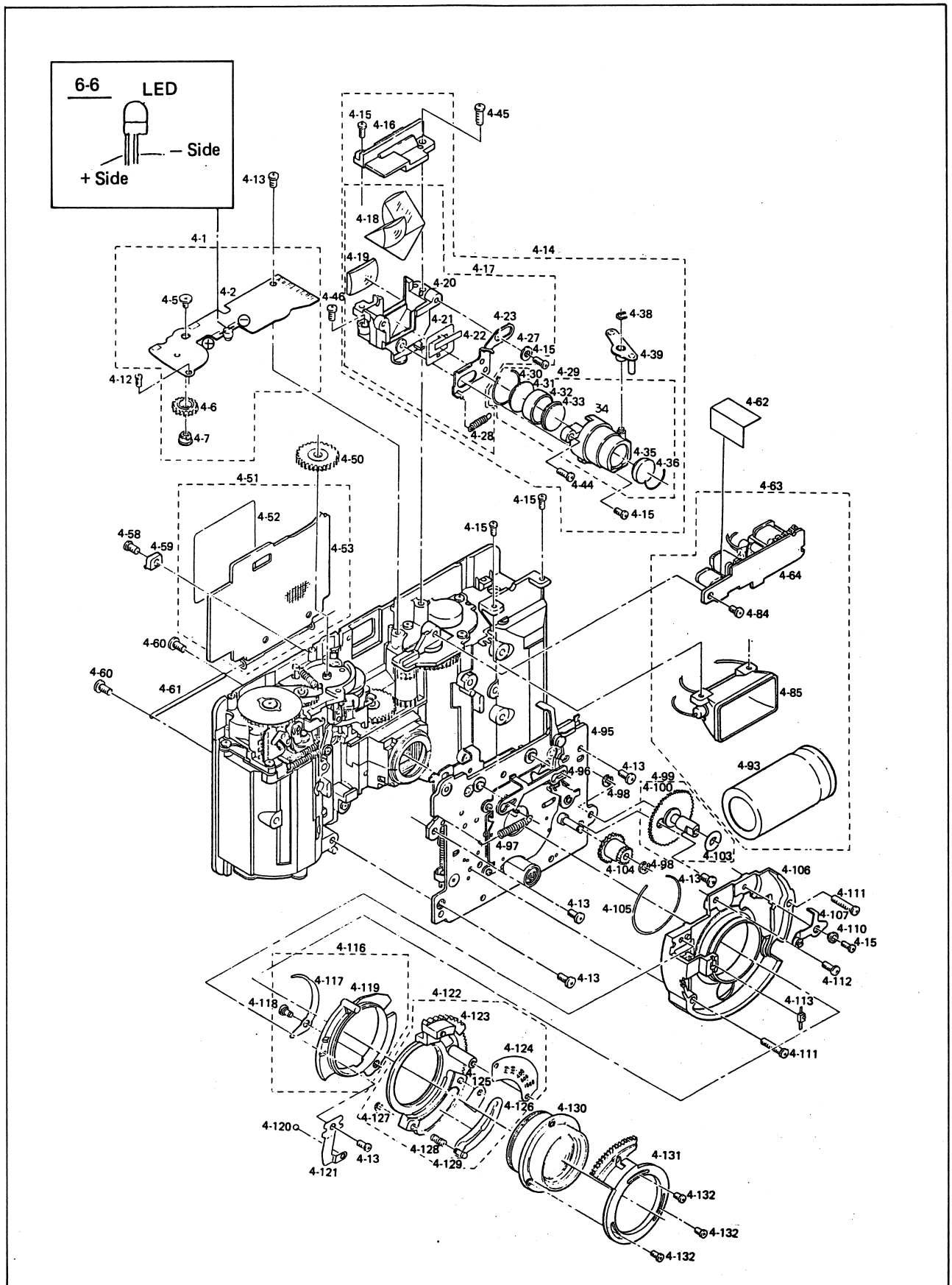
(6) Extend out two violet lead wires and blue, white and yellow lead wires from the PCB assembly (4-2).

5.3 Fit the projection of the amplifier PCB (4-64) to the square hole on the chassis, and secure the amplifier PCB with the screw (4-46).

5.4 Install the reflector assembly (4-85) with two screws (4-15).
Install the main capacitor (4-93) on the double sided adhesive tape located beneath the hood assembly (6-44) in such a posture as that the terminal is faced to the battery compartment.

5.5 Place the insulator on the trigger coil.

Fig. 25


6-6
LED
– Side
+ Side
4-1
4-2
4-5
4-6
4-7
4-12
4-13
4-14
4-15
4-16
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4-119
4-120
4-121
4-122
4-123
4-124
4-125
4-126
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4-128
4-129
4-130
4-131
4-132

6. Installing viewfinder assembly

6.1 Place the cover I (4-16) on the case (4-20), and secure it with the screw (4-15).

6.2 Place the lever assembly (4-23) on the case (4-20), secure it with the screw (4-15) together with the holder (4-27), and apply the spring (4-28).

6.3 Place the case assembly (4-29) on the case (4-20) and secure it with screws (4-15 and 4-44).

6.4 Engaging with the lever assembly (4-23), apply the case assembly (4-29) to the boss of the case (4-34), and secure it with the clip (4-38).

6.5 Place the viewfinder assembly (4-14) into the chassis, and secure it with the screws (4-45 and 4-46).

NOTE:

Operate the lever assembly (4-39), and make sure that the lever assembly (4-23) operates smoothly.

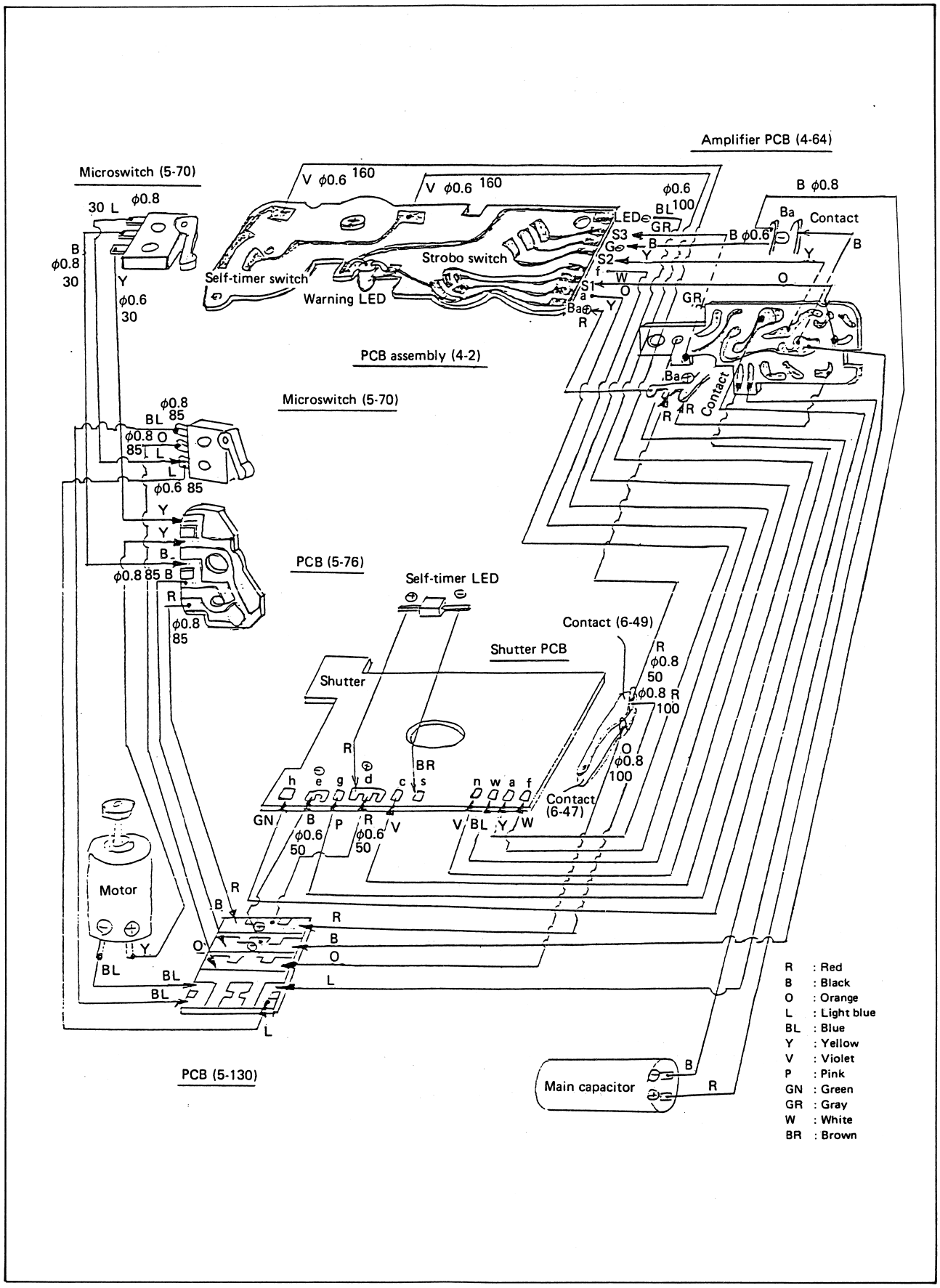
6.6 Connect and LED (4-4) to the PCB assembly II (4-2) by the use of a soldering iron, and after applying the gear (4-6) and shaft (4-7), secure the gear (4-6) and shaft (4-7) on the PCB assembly (4-2) with the screw (4-5).

NOTE:

The positive (+) and negative (—) terminals of the LED should be faced respectively to the outside and center of the PCB.

6.7 Place the PCB assembly I (4-1) on the viewfinder, and secure the PCB assembly with the screws (4-12 and 4-13).

Fig. 26


Amplifier PCB (4-64)
Microswitch (5-70)
Self-timer switch
Warning LED
Strobo switch
Contact
PCB assembly (4-2)
Microswitch (5-70)
PCB (5-76)
Self-timer LED
Contact (6-49)
Shutter PCB
Shutter
Contact (6-47)
Motor
PCB (5-130)
Main capacitor
R : Red
B : Black
O : Orange
L : Light blue
BL : Blue
Y : Yellow
V : Violet
P : Pink
GN : Green
GR : Gray
W : White
BR : Brown

7. Assembling lens assembly

7.1 Apply grease (015M) to the interior of the ring (4-119), and fit it to the lens seat (4-106).

7.2 Place the lever assembly (4-107) on the lens seat (4-106), fit the shaft (4-110), and secure the lever assembly and shaft with the screw (4-15).

7.3 Connect red and brown lead wires respectively to the positive (+) and negative (—) terminals of the LED (4-113) by means of a soldering first. Next, properly bend the pins of the LED, fit the LED to the lens seat so that the brown lead wire is faced downward, and secure the LED with adhesive (551A).

7.4 Matching with the boss, fit the leaf spring (4-121), and secure it with the screw (4-13). Make sure that the leaf spring clicks correctly.

7.5 Insert the pin (4-129) and spring (4-128) into the hole of the ring (4-123), and secure them with the E-clip (4-127).

Now, install the aperture plate (4-126) and plate (4-124) with adhesive (551A).

7.6 Match the ring assembly (4-116) with the position of 3m (lower click position), place the ring assembly (4-122) on the ring assembly (4-116), and insert the master lens assembly (4-130).

7.7 Fit the clip (4-105) to the groove from the back of the lens seat (4-106), and secure it with adhesive (551A).

NOTE:

When the master lens assembly is not fitted to the lens seat correctly, the clip (4-105) will not be fitted into the groove.

Fit the clip at a position where the left side of the ring (4-131) set screw hole is 2mm below the bottom position of the spring (4-121).

7.8 Match the column (2.4mm diameter) of the ring assembly (4-116) with the hole of the ring (4-131).

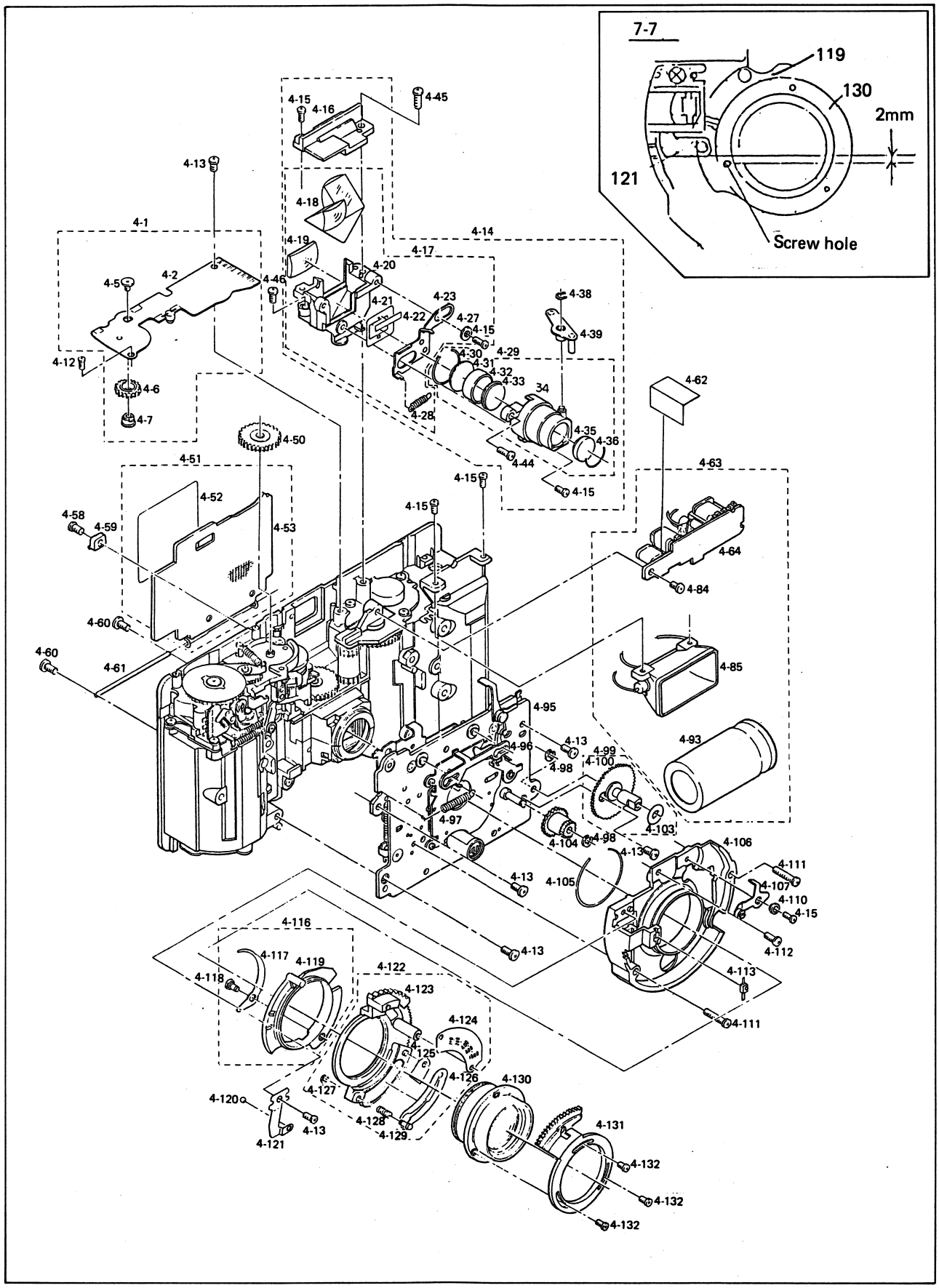
Match the long hole of the ring (4-131) with the screw hole of the master lens assembly, and secure them with the screw (4-132).

NOTE:

(1) Loosen this screw (4-119) when adjusting focus.

(2) To clean the lens, use ether and metanole mixed fluid.

Fig. 27


7-7
119
130
2mm
121
Screw hole
4-1
4-2
4-5
4-6
4-7
4-12
4-13
4-14
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4-129
4-130
4-131
4-132

8. Installing shutter assembly

8.1 Apply the gear (4-104) to the shaft of the shutter (4-95), and secure it with the E-clip (4-98).

8.2 Apply the O-ring (4-103) to the gear assembly (4-100), and after inserting them into the hole of the shutter, secure them with the E-clip (4-98).

8.3 With the left end of the long opening of the release lever (4-96) matched with the boss on the shutter, fit the release lever to the shutter, and install the spring (4-97) as shown in the left hand figure.

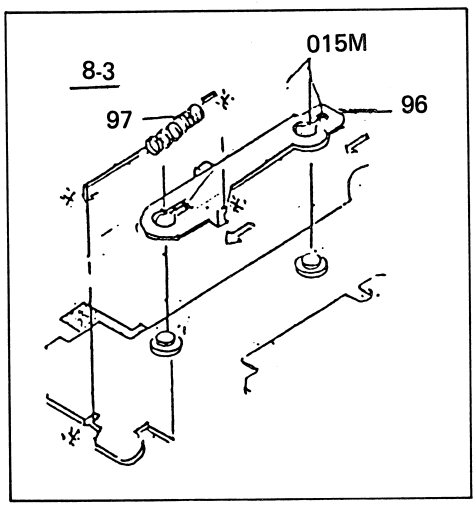
Now, apply grease (015M) to the boss.

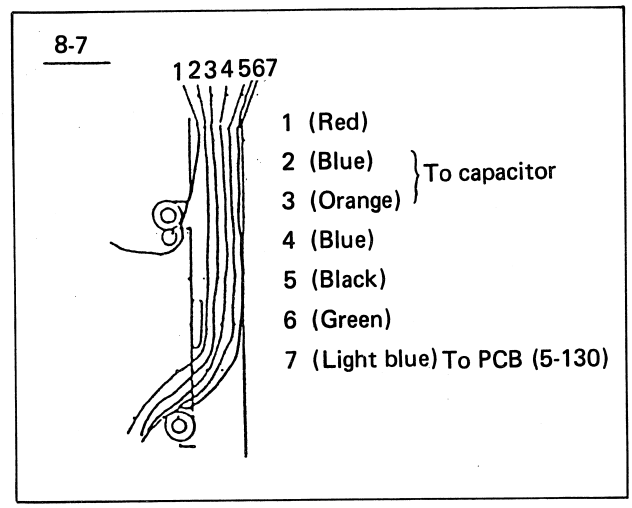
8.4 Check the sector lens for cleanliness, and turn the gear assembly (4-100) counterclockwise until it stops.

Set the levers FM1 and FM2 (components of the shutter) as shown in the left hand figure, match the opening (7.8mm dia.) of the lens seat with the shutter CdS, and join the shutter (4-95) with the lens seat (4-106) so that the bent portion of the lever assembly (4-107) is in between the viewfinder assembly (4-14) and lever assembly (4-39).

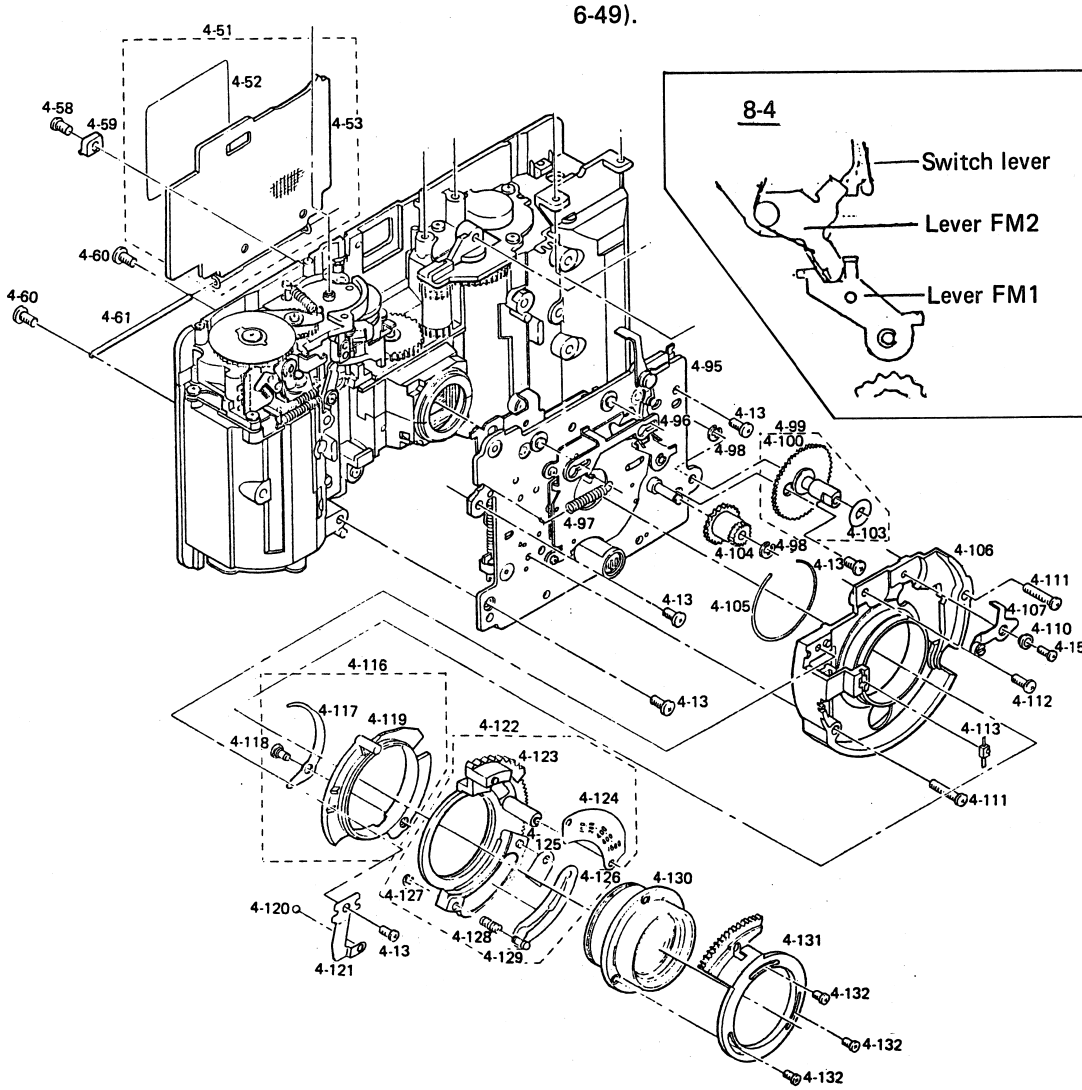
8.5 After insuring that the lens seat (4-106) is flush with the shutter (4-95), tighten two screws (4-111).

Fig. 28





NOTE:
Carefully arrange the remaining five lead wires (violet x 2, yellow, white and pink) so that they will not be in contact with the contacts (6-47 and 6-49).



8.6 Solder and connect the following lead wires to the individual terminals of the shutter PCB.

(1) White, yellow and blue lead wires extended from the PCB assembly II (4-2) respectively to terminals f, a and w.

Further, two violet lead wires extended from the PCB assembly II (4-2) respecitively to terminals n and c.

(2) Brown and red lead wires extended from the LED (4-113) respectively to terminal s and left side of terminal d.

(3) Pink and green lead wires extended from the amplifier PCB assembly (4-64) respectively to terminals g and h.

(4) Red and black lead wires extended from the PCB (5-130) respectively to the center of terminal d and terminal e.

8.7 Arrange the lead wires on a piece of double sided adhesive tape as shown in the left hand figure, and put another piece of double sided adhesive tape (5 x 45mm) on them.

8.8 Place the shutter (4-95) on the chassis, turn the gear assembly (4-99) to match the screw hole, and tighten four screws (4-13) to secure the shutter on the chassis.

8.9 Apply the shaft (4-61) to the pressure plate assembly (4-53), place them on the chassis, and secure them with two screws (4-60).

NOTE:

Watching the seal (4-52), apply a 0.1mm thick washer to the left shaft. This washer is to prevent the pressure plate riding on the sensor (6-42). This washer is used for those manufactured during the early stage, will be eliminated evantually.

8.10 Adjust focusing by the use of a collimater.

1) Set the click of the lens assembly to 3m, and set ISO to 100.

2) Insert a jig (thin rod) into the hood to release the shutter and turn off the power to fully open the aperture.

3) Loosen the screw (4-132), and place the camera on the collimater.

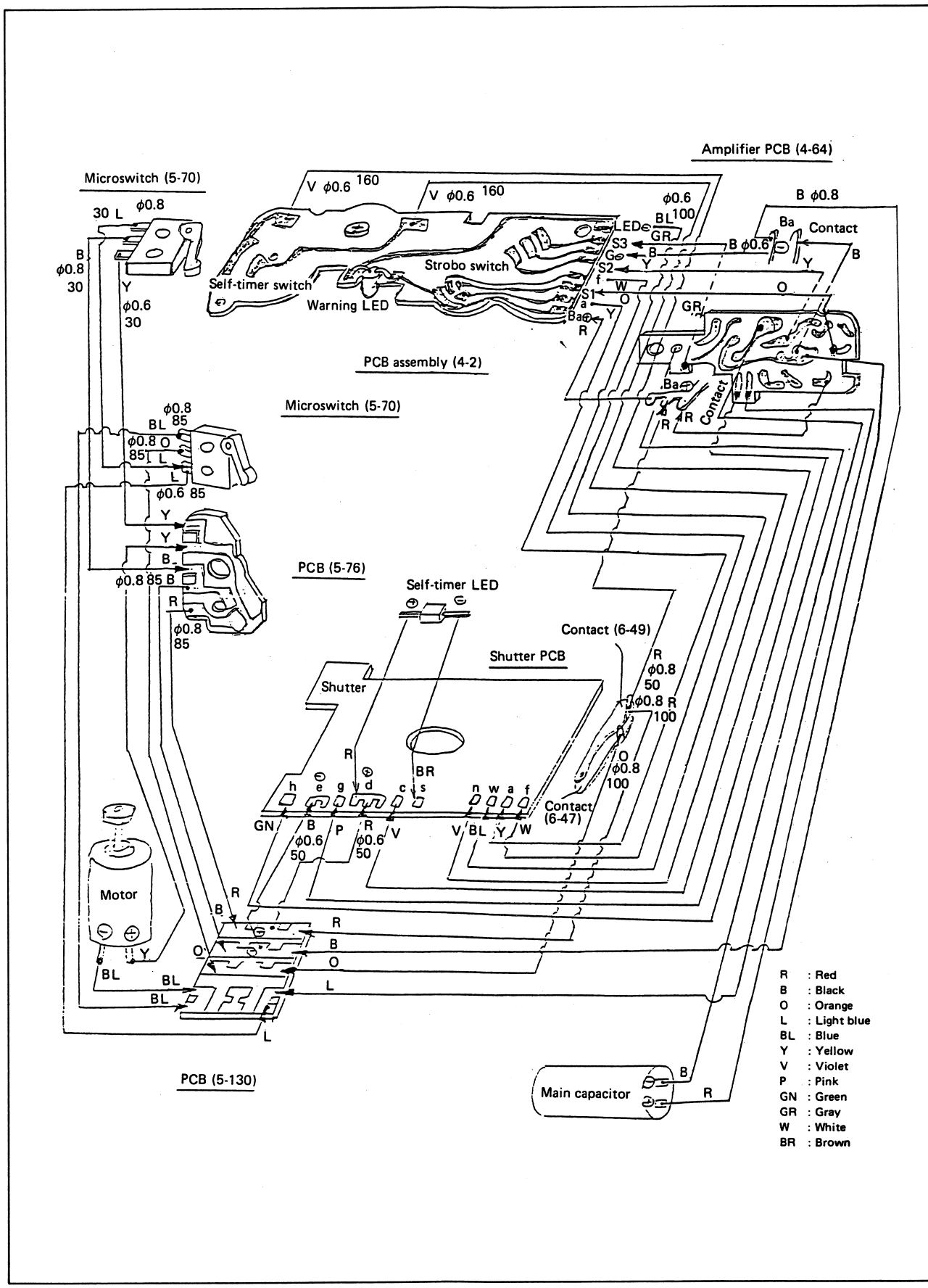
4) Look into the collimater, and retighten the screw (4-132) when the collimater setting is 3m and the image can be seen most sharply.

The rating is —11.5 ±0.07mm at 3m.

5) Turn the ring (4-131), make sure that it clicks at 3m and 1.5m, and recheck the focusing.

6) Lock the screw (4-132) with adhesive (551A).

Fig. 29


Amplifier PCB (4-64)
Microswitch (5-70)
Strobo switch
Self-timer switch
Warning LED
PCB assembly (4-2)
Microswitch (5-70)
PCB (5-76)
Self-timer LED
Contact (6-49)
Shutter PCB
Shutter
Contact (6-47)
Motor
PCB (5-130)
Main capacitor
Contact
R : Red
B : Black
O : Orange
L : Light blue
BL : Blue
Y : Yellow
V : Violet
P : Pink
GN : Green
GR : Gray
W : White
BR : Brown

9. Assembling film chamber door and grip

9.1 Apply grease (Permalube C2) to O-rings slightly.

9.2 Install the O-ring (3-17) and film check window (3-18) with two screws (3-19).

9.3 Install the O-ring (3-12), window glass (3-13) and holder (3-14) with two screws (3-15), and install the eyepiece frame (3-16) with adhesive (551A).

NOTE:

- Make sure that the window glass is clean and that the O-ring is not damaged.
- When four hours after installing the eyepiece frame, pull it with a piece of adhesive tape (such as scotch tape) to insure that it is adhered securely. To ensure the firm installation, apply adhesive to the boss sufficiently.

9.4 Install the roller (3-25) on the roller support (3-24), and install the roller support (3-24) with two screws (3-26).

NOTE:

Make sure that the roller shaft is applied to the roller support sufficiently (a half of the roller support thickness or more).

9.5 Now, install the rubber packing (3-22), strip (3-21) and moquette (3-23) with adhesive.

NOTE:

Use Three Bond 1521B for the rubber packing (3-22), and double sided adhesive tape for the strip (3-21) and moquette (3-23).

9.6 Insert leaf portions of the leaf spring (3-6) into the square openings of the grip base (3-5), and install the leaf spring (3-6) with four screws (3-7).

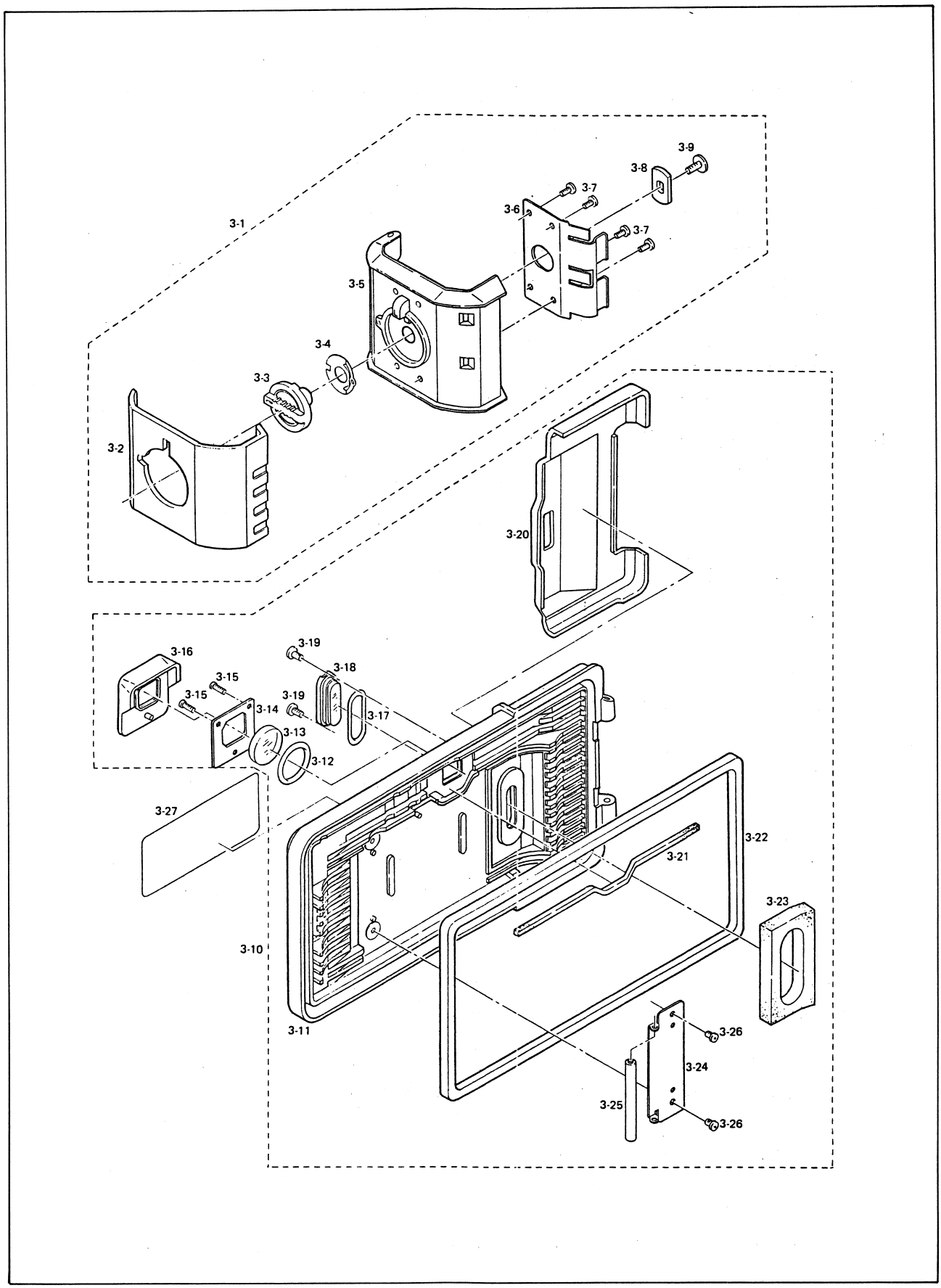
9.7 Fit the washer (3-4) and dial (3-3) into the positions on the grip base (3-5), and install the holder (3-8) with the screw (3-9).

9.8 Install the rubber plate (3-2) and back cover (3-20) respectively to the grip base (3-5) and film chamber door (3-11) with Sony Bond SC210.

NOTE:

Apply Sony Bond SC210 toward the entire area, especially at four corners.

Fig. 30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10. Assembling front cover

10.1 Except for the O-ring (2-49), apply qrease (C2) to all O-rings.

10.2 Fit the O-ring (2-8) to the exposure counter window (2-7), match the projection on the exposure counter window to the front cover (The red index should be faced to the shutter release side.), and fit the exposure counter window to the front cover, and watching inside the front cover, turn the exposure counter window until it stops (About 45°).

10.3 Matching the click lever (2-22) with the boss, install the click lever with the screw (2-15).

10.4 Matching the click, insert the contact seat assembly (2-23), push the O-ring (2-13) down to the front cover, fit the dial seat (2-12) to the front cover with the [◎] portion of the dial seat matched with the red index on the front cover, and install the dial (2-11) with the screw (2-10).

10.5 Now, install the cover plate (2-14) with adhesive (551A).

10.6 Install the click lever (2-16) with the screw (2-15) in the same manner as 10.3 above.

10.7 Matching the click, insert the contact seat assembly (2-17), push the O-ring (2-13) down to the front cover, fit the dial seat (2-12) to the front cover with the [◎] portion of the dial seat matched with the red index on the front cover, and install the dial (2-11) with the screw (2-10).

10.8 Now, install the cover plate (2-9) with adhesive (551A).

10.9 Fit the O-ring (2-6) to the front cover, and install the neon lamp window (2-5) with the rugged surface faced downward.

NOTE:

The neon lamp window will not be fitted easily.

Be sure to install it completely without floating.

10.10 Put the O-ring (2-45) on the protector (2-46), and fit the protector to the front cover. The O-ring may come off the protector. Push the O-ring carefully so as not to damage it.

10.11 Hold the strap eyelet (2-41) on the bracket (2-42), and install the bracket (2-42) on the front cover with the screw (2-43) and two screws (2-44).

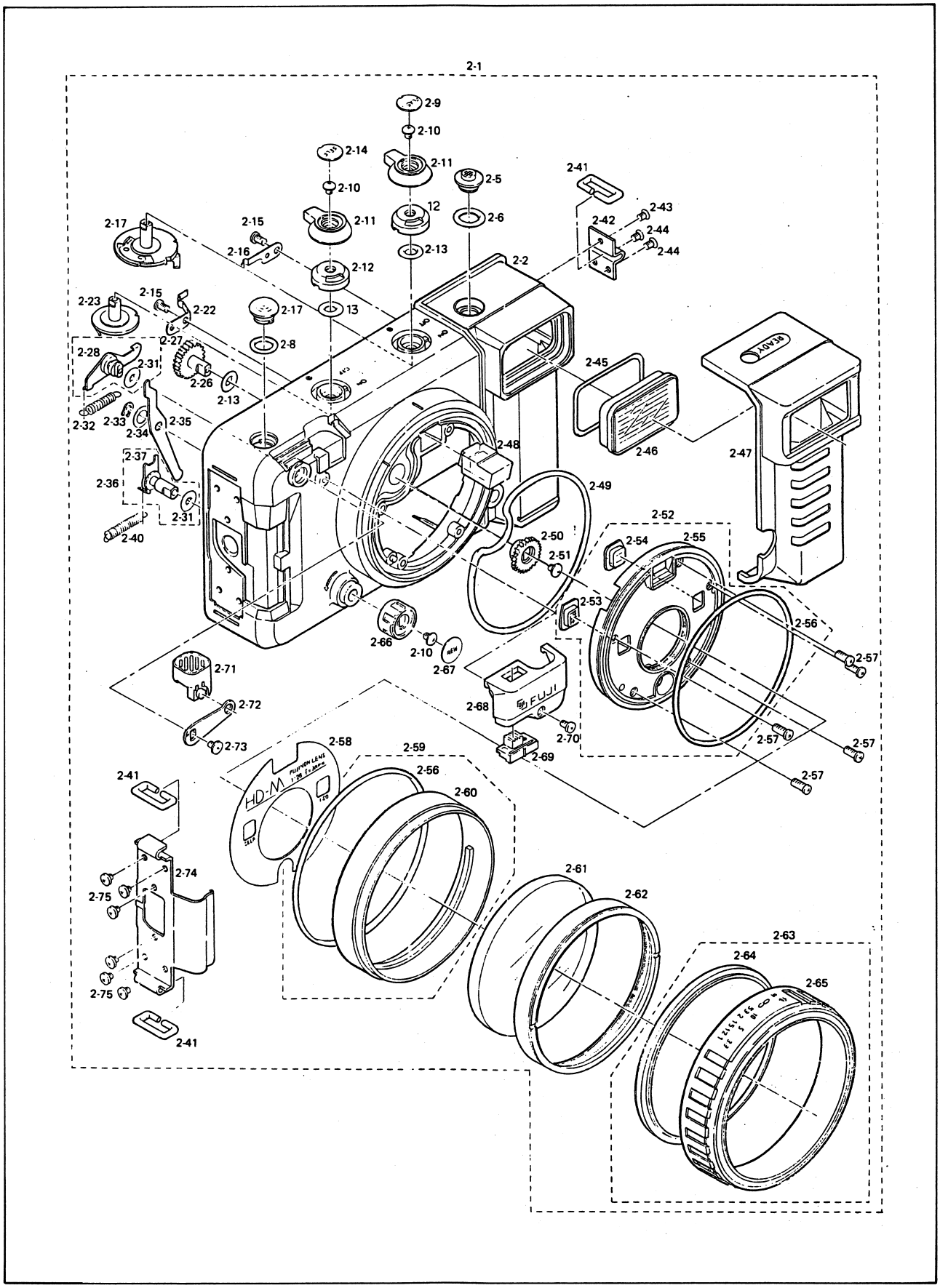
10.12 Install the front rubber (2-47) on the front cover with adhesive (SC210) after applying adhesive thoroughly and carefully so that the adhesive will not come out.

10.13 Hold two strap eyelets (2-41) on the grip plate (2-74) and install the grip plate with six screws (2-75).

10.14 Matching with the boss, apply the lever (2-35), put the washer (2-34), and secure the lever and washer with the clip (2-33).

10.15 Apply the O-ring (2-31) to the shaft of the lever assembly (2-37), and insert the lever assembly into the front cover.

Fig. 31


2-1
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10.16 Fit the rewind dial (2-66) to the front cover, and secure it with the screw (2-10). Next, turn the rewind dial fully clockwise, and install the dial cover (2-67) with adhesive (551A) so that the letters are horizontal.

10.17 Hook the spring (2-40) on the lever assembly (2-36) and notch on the boss of the front cover.

10.18 Apply the O-ring (2-31) to the lever assembly (2-28), and fit the lever assembly (2-28) to the front cover.

10.19 Install the lever (2-72) on the front cover lightly with the screw (2-73) with the rough surfaced faced to the front cover.

10.20 Place the knob (2-69) on the front cover so that the letter "L" is faced to the exposure counter window, fit the button (2-71) to the round hole of the lever (2-72), and finally tignten the screw (2-73).

10.21 Put the cover (2-68) from the button (2-71) side, and secure it with the screw (2-70).

10.22 Hook the spring (2-32) on the boss on the front cover from the lever assembly (2-27) side.

10.23 Apply the gear (2-26) to the front cover, push the O-ring (2-13) from the opposite side, fit the gear (2-50), and secure the gear (2-50) with the screw (2-51).

10.24 Fit the block (2-48) from the inside, and apply adhesive (1521B) to a portion of the top so that the block will not move.

10.25 Fit the O-ring (2-49).

NOTE:

Do not apply grease to this O-ring.

10.26 Install the window (2-54) and self-timer window (2-53) on the front ring (2-55) with adhesive (551A).

10.27 Install the O-ring (2-56) with adhesive (SC210).

NOTE:

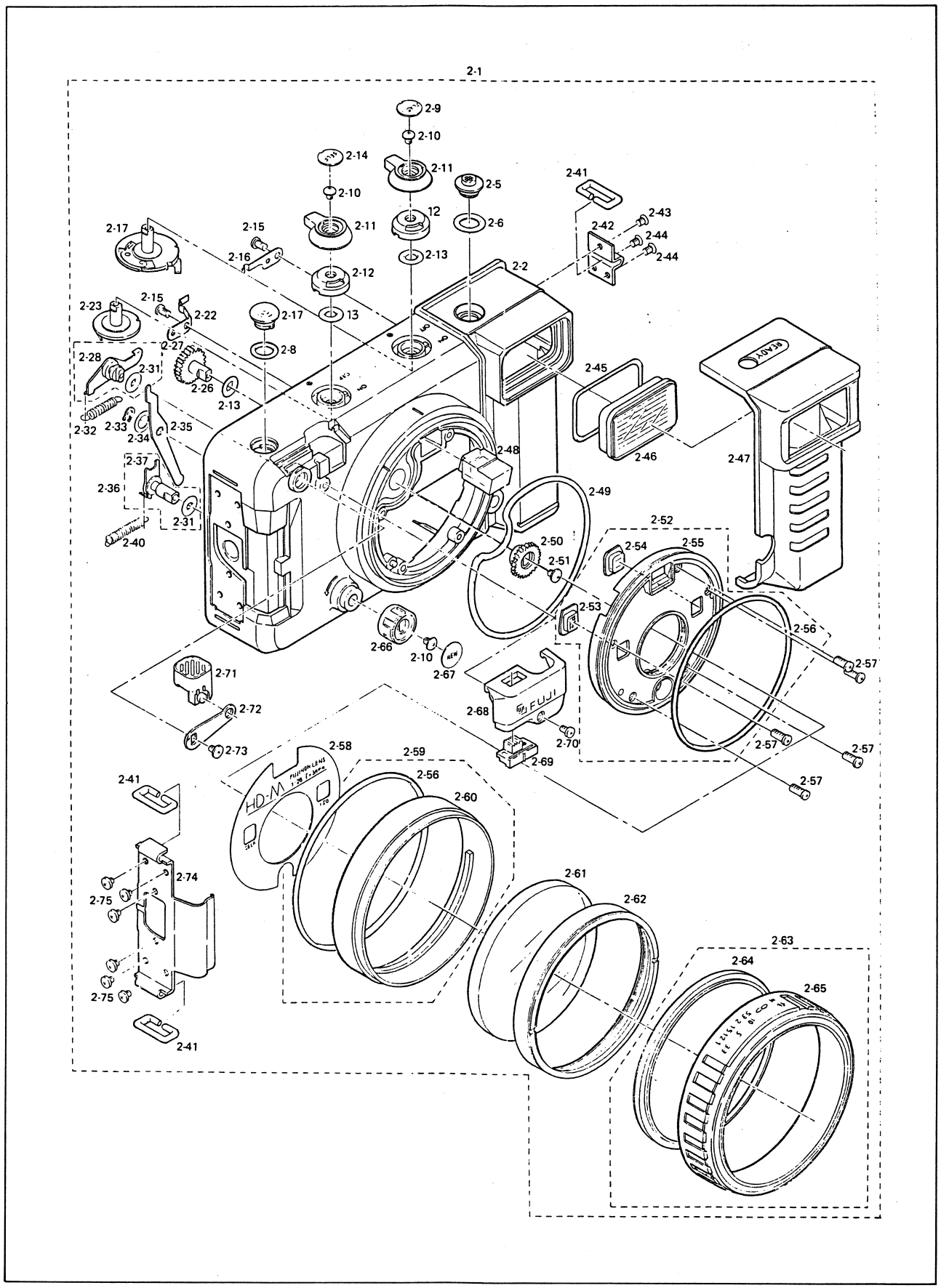
If this O-ring is not adhered thoroughly, water leakage will result. Push the O-ring with your thumb lightly, and make sure that it is not peeled off.

10.28 Install the front ring assembly (2-52) with five screws (2-57).

10.29 Install the name plate (2-58) with adhesive (SC210).

10.30 Fit the focusing ring assembly (2-59) by intermeshing it with the gear portion of the front ring assembly (2-52).

Fig. 32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10.31 Clean the front glass (2-61), fit the holder (2-62), and tighten it with a pin-face spanner.

NOTE:

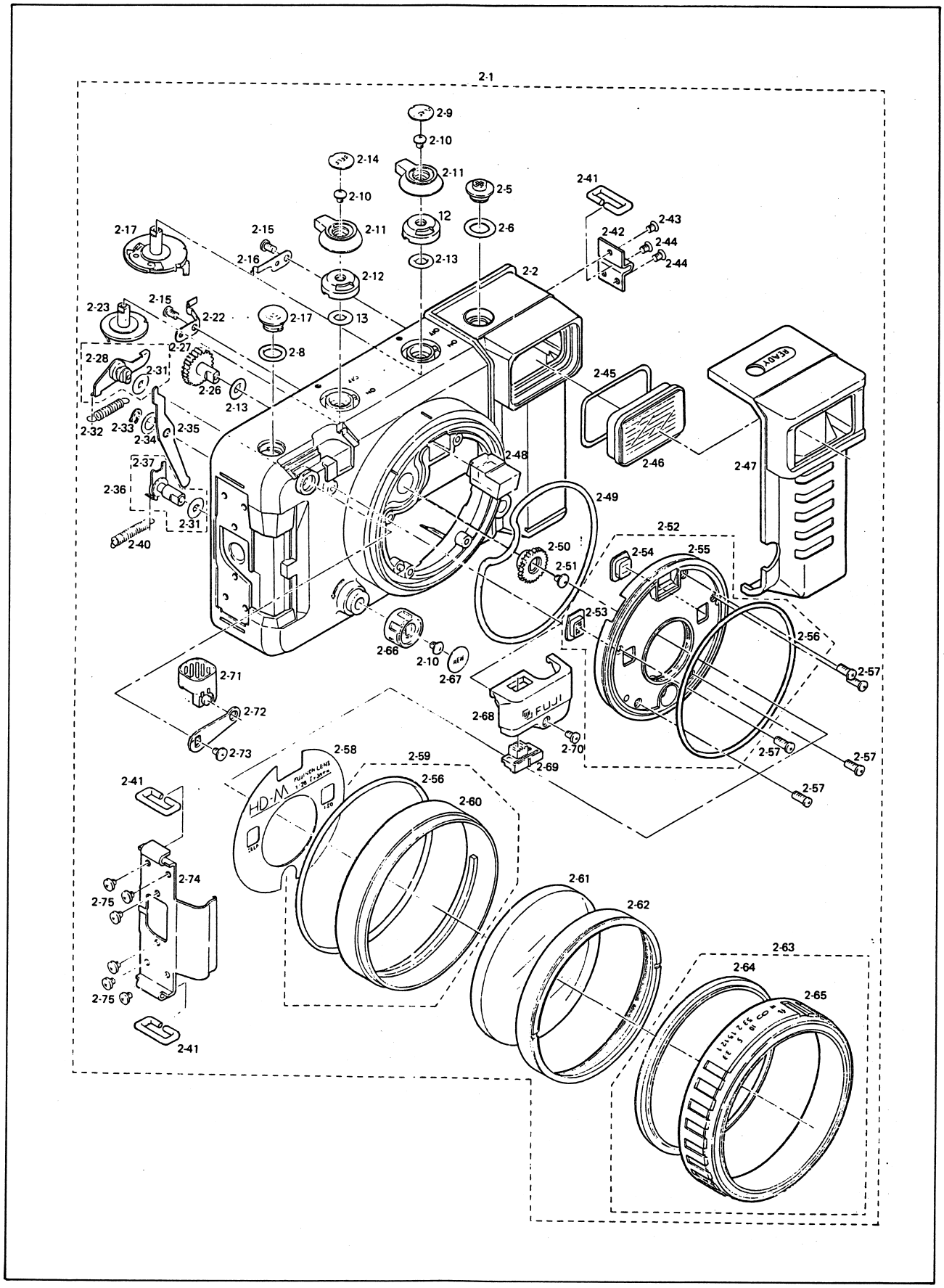
Tightenss of the holder decides lightness of the focusing ring. If this is too light, water leaks. Tighten the holder slightly tightly.

10.32 Fit the focusing ring (2-64) to the focusing ring cover (2-65), turn the focusing ring assembly (2-51) clockwise until it stops, and secure the focusing ring cover (2-65) on the focusing ring (2-64) with adhesive (SC210) at the position where indication on the focusing ring cover (2-65) is 1m.

NOTE:

Adhere the focusing ring cover (2-65) at the front and side of the focusing ring (2-64).

Fig. 33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11. Installing front cover assembly, film chamber door assembly and grip assembly on chassis

11.1 Install the film chamber door assembly (1-2) on the front cover assembly (1-7) with two shafts (1-1).

11.2 Install the grip assembly (1-3) on the film chamber door assembly (1-2) with two shafts (1-1).

NOTE:

Water leaking can be checked without the chassis. In this case, however, the opening for the dial (1-8) must be plugged.

11.3 Turn the ring (4-131) so that the [♨] mark is displayed in the viewfinder, set the strobo switch to ON, set self-timer switch to OFF, place the main body into the front cover assembly, and tighten the screw (1-4) and two screws (1-5).

NOTE:

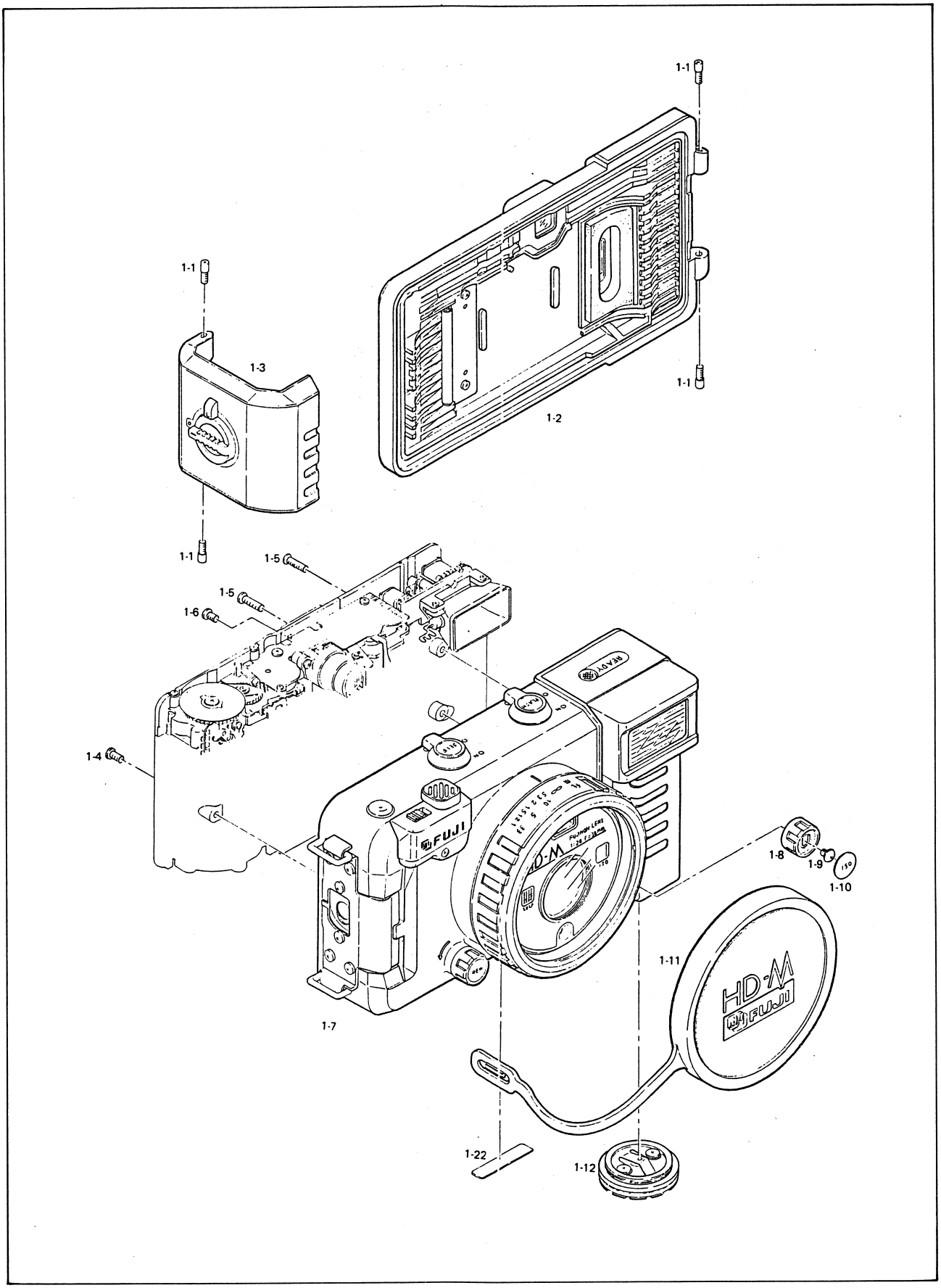
Before placing the main body into the front cover assembly, properly arrange the lead wires, or otherwise it will be hard to place the main body into the front cover assembly.

11.4 Install the dial (1-8) with the screw (1-9), set ISO to 100, and install the cover (1-10) with adhesive (551A) so that the letters on the cover (1-10) are horizontal.

11.5 Install the battery compartment cover assembly (1-12).

11.6 Install the number plate (1-22) with adhesive (551A).

Fig. 34

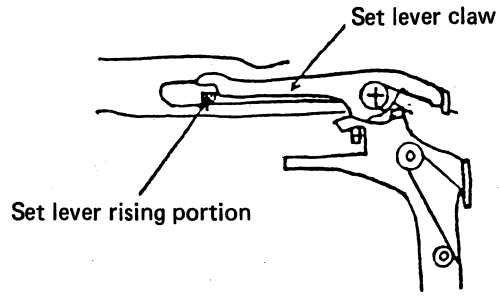


Ⅳ. REPAIR AND ADJUSTMENT

1. Shutter is not released/Shutter release cannot be depressed.

1.1 When the shutter release is depressed, LED lights.

The set lever claw of the shutter is hooked on the rising portion of the set lever.



NOTE:

The lever cannot be repaired. Replace the shutter with a new one.

1.2 Shutter release cannot be depressed. (LED does not light.)

(1) Check each part for soldering and lead wires for short-circuit.

(2) Microswitch (2) is turned on. (Under rewind mode) ..... Spring (2-40) has come off.

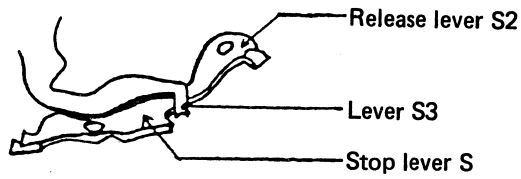
(3) Check the battery for voltage, and contact B for firm contact.

2. Film is not taken up.

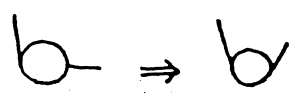
2.1 Check the battery for voltage, and contact B for firm contact.

2.2 Stop lever S does not release.

Check the stop lever S for its releasing torque. Correct, if it exceeds 70 grams. (Stop lever S and lever S3.)

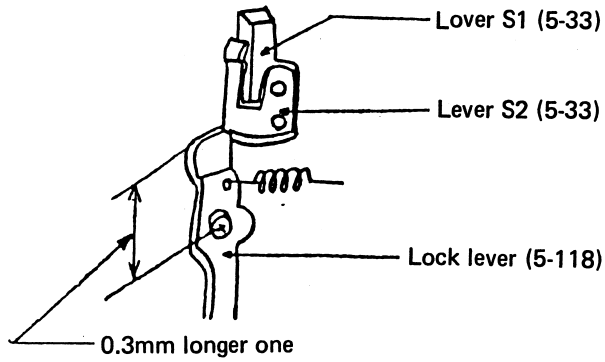


To correct releasing torque, change shape of the spring (5-36). (Weaken the spring (5-36).)



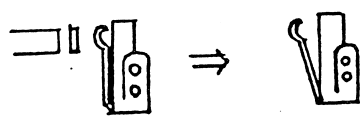
2.3 Lock lever (5-118) has bit lever S1 (5-33)

Replace the lock lever with a 0.3mm longer one.



2.4 Insufficiently depressed microswitch (1)

Increase operating stroke of the lever S2 (5-33).



(Expand the lever S2 within such a range as that it does not come into contact with the lever of the microswitch.)

2.5 Check each lead wire to insure that none of them is held between parts, and for soldering.

2.6 Defective motor

When the motor is defective, replace it with a new one. (Unsolder to disconnect blue and yellow lead wires, and connect them to a battery. When the motor does not operate, it is defective.)

3. Motor does not operate correctly.

3.1 After completing film rewinding, the motor does not stop.

(1) Check the springs (6-40, 6-39 and 5-48) to insure that they are installed correctly.

(2) When the spools 1 and 2 do not operate correctly, apply grease (015M) to the cam portion of the spool.

(3) Check engagement of the 30% cam of the gear CG1 with the claw.

3.2 When advancing film, it does not stop at each frame.

(1) Stop lever S does not effect. In this case, replace the base plate assembly (5-2) with a new one.

(2) Lever S1 does not operate correctly. In this case, replace the base plate assembly (5-2) with a new one.

4. Film is not rewound.

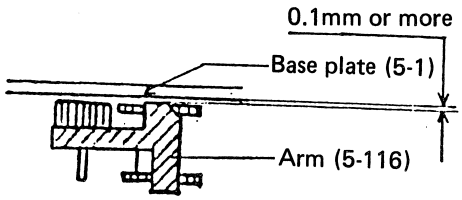
4.1 Check the battery for voltage and contact B or firm contact.

NOTE:

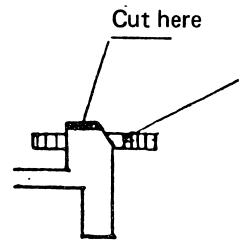
To check the battery for dropped voltage, perform manual rewinding.

4.2 Arm (5-116) does not operate correctly.

Make sure that there is a 0.1mm or more gap between the arm (5-116) and base plate (5-1).



Cut the arm (5-116) when gap is less than 0.1mm.



4.3 Poor contact of contact L

(1) When the contact is dirty, clean it with ether or alcohol.

(2) When the contact L is not in contact with the circuit pattern, correct shape of the contact L.

4.4 Poor contact of contact F of sensor.

Check and correct contact pressure.

5. Exposure counter does not advance and/or return.

5.1 Exposure counter does not advance and return.

(1) Check the counter dial gear (5-62) to insure that it is engaged with the gear C.

(2) Check the arm (5-67) for operation.

(3) Check the gear (5-62) for operation.

5.2 Exposure counter does not return.

(1) When the exposure counter reaches 36th frame and it does not return:

Check the spring (5-59) for jamming or check the spring (5-59) to insure that it is not held between the dial and gear.

When the spring is jammed, loosen the screw, repair the spring, and fit a washer (t = 0.05mm) on the gear to reduce the play.

NOTE:

For body serial number 15,000 and thereafter, the spring has been revised.

Check the gear for operation only.

(2) When the exposure counter does not return to "S".

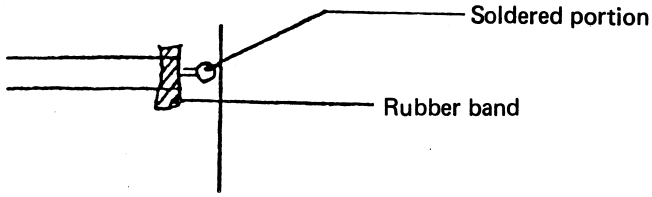
This trouble occurs when abnormal operating sound is generated during rewinding.

Check the gear (5-105) for operation. When this gear is not operating normally, remove the exposure counter base plate (5-57), and reinstall it after checking the gears for intermeshing, or replace the gear train assembly (5-1) with a new one.

6. Strobo does not flash.

6.1 Improperly installed Xenon tube.

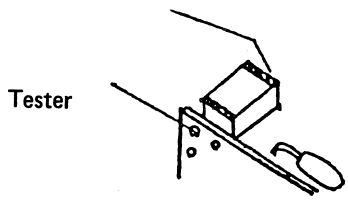
The Xenon tube is dragging on the reflector, causing a leak . . . Reinstall it correctly.



Project the head of the Xenon tube out of the rubber band.
(Do not allow it projecting over the camera side.)

6.2 Broken trigger coil

(1) Check the trigger coil with a tester.



Method:
Apply the tester probes to the head of the trigger coil and PCB.
(When resistance is 1kΩ, the condition is normal.)

(2) Check the trigger coil pin for soldering. When it is not soldered correctly, repair.

(3) Improperly soldered lead wires.

(4) Poor contact of shutter X-contact . . . . . Check contact pressure and clean.

7. Neon tube lights or strobo flashes when strobo switch is turned off.

NOTE:

When the strobo switch is turned off after the neon lamp lights, the neon lamp continues to light. When the shutter is released, the strobo will flash once.

Check contact S for contact pressure . . . . . Properly bend contact S of the front cover assembly to increase contact pressure.

8. Water leaking

8.1 Water leads from the film chamber door.

(1) Replace the rubber packing (3-22) with a new one.

Apply adhesive (Three Bond 1521B) slightly excessively.

(2) When the film chamber door is deformed remarkably, replace it with a new one.

8.2 Water leaks from the lens assembly

Remove the font glass (2-61), and replace all the relative O-rings with new ones.

NOTE:

When the O-ring (2-56) is defective, replace the front ring assembly (2-52) with a new one.

For all other cases, replace the appropriate O-rings.

NOTE:

When any O-ring and/or front cover assembly is detached from the main body, be sure to check the camera for water leaking by the use of water leaking tester.

Set to 25 to 30cmHg for 5 minutes, and make sure that no water leaks.

9. Incorrect shutter operation

9.1 Not synchronized

(1) When X-contact is deformed, correct it.

(2) When the shutter is defective, replace it with a new one.

9.2 Incorrect AE

The shutter is defective. Replace it with a new one.

9.3 Time lag

Check the capacitor for soldering.

9.4 Defective ring assembly (4-116)

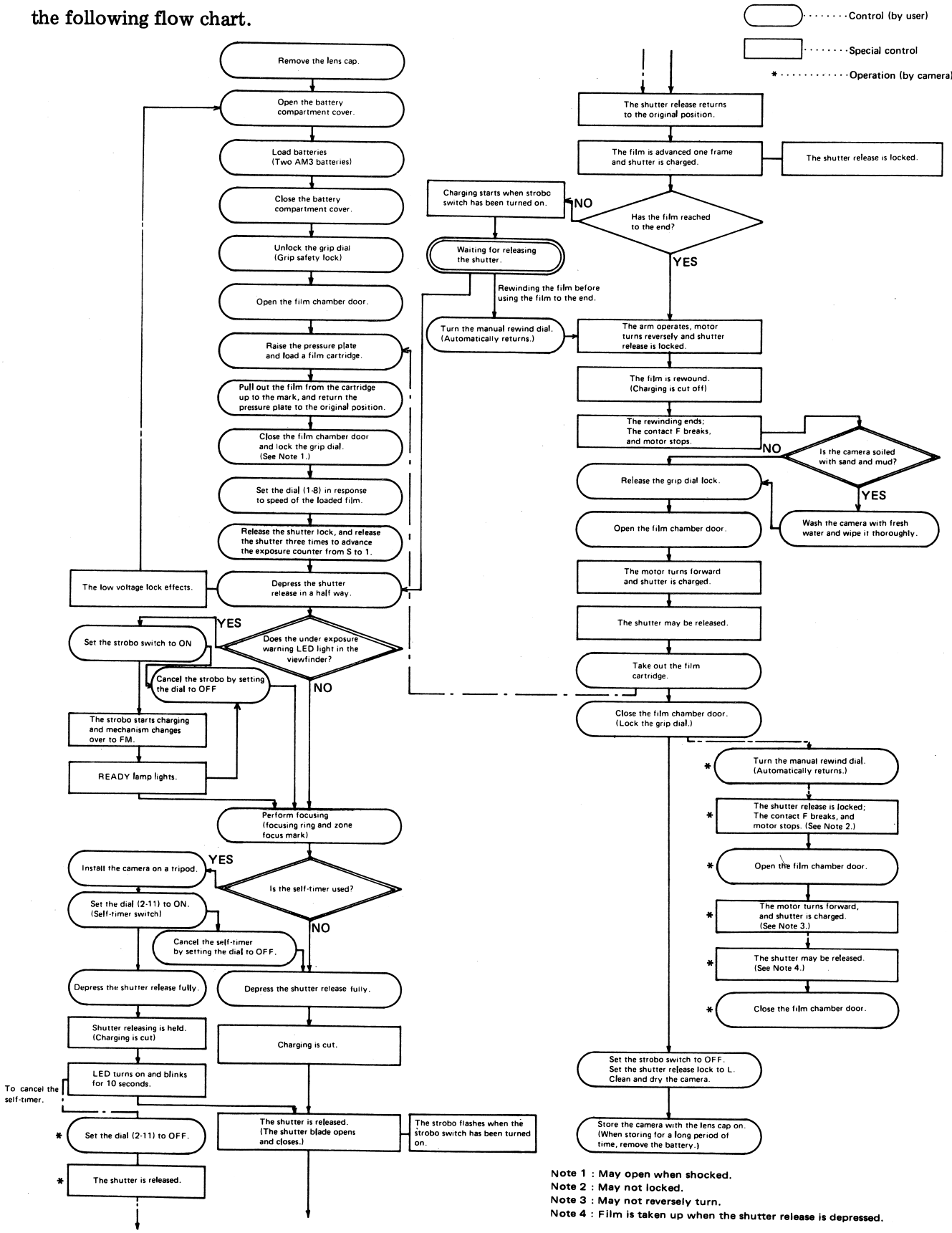
(1) Lever FM (A part of the shutter) is dragging on the lens seat . . . Reinstall it correctly.

(2) The shutter lever is hooked by green lead wire extended from the strobo . . . Rearrange the lead wire.

(3) Deformed lever FM . . . . . Replace the shutter with a new one.

V. INSPECTION

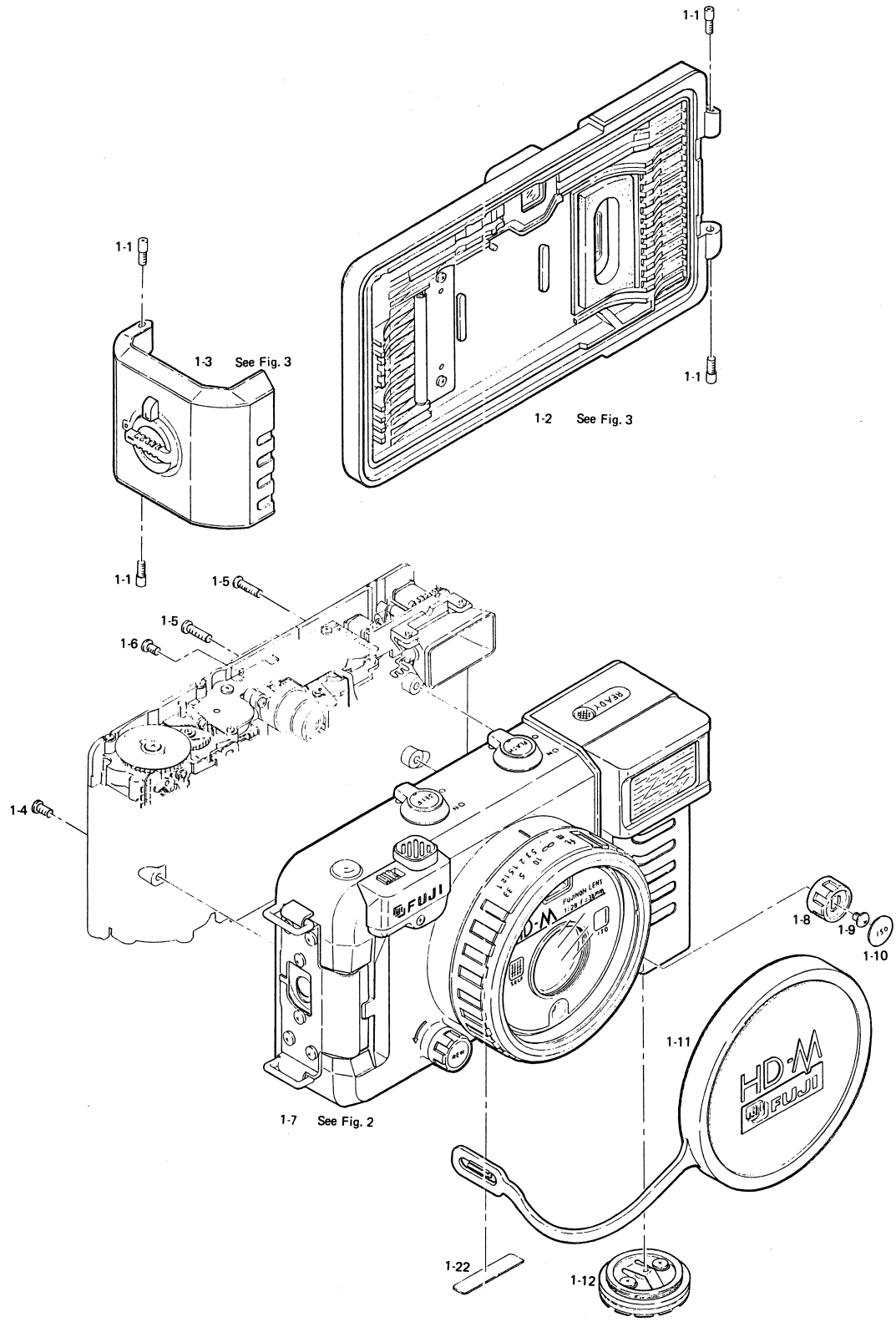
When repair and adjustment are completed, check the camera for the functions in accordance with the following flow chart.



Note 1 : May open when shocked.
Note 2 : May not locked.
Note 3 : May not reversely turn.
Note 4 : Film is taken up when the shutter release is depressed.

Ⅵ. PARTS LIST

Fig. 1


1-1
1-2 See Fig. 3
1-3 See Fig. 3
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1-7 See Fig. 2
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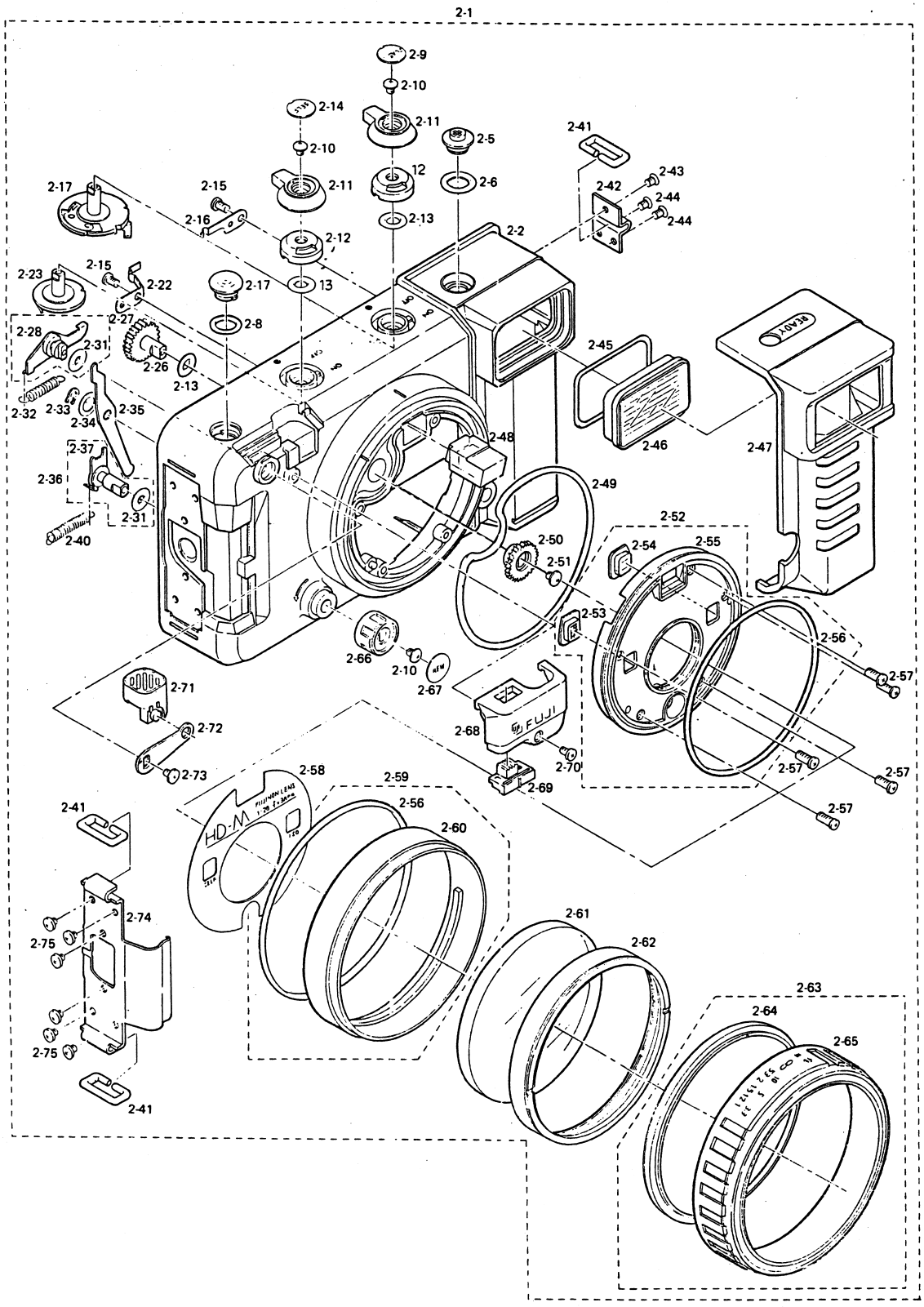
Ref No.	Part No.	Part Name	Q'ty	Remarks
1- 1	7060425	Shaft	4	
2	7067510	Film chamber door assembly	1	
3	7067520	Grip assembly	1	
4	BM2030B	Screw	1	
5	BM2075B	Screw	2	
6	YM2020I	Screw	1	
7	7067436	Front cover assembly	1	
8	7060131	Dial	1	
9	9100047	Screw	1	
10	7060132	Cover	1	
11	7060101	Cap	1	
12	7067540	Battery compartment cover assembly	1	
22	7060192	Number plate	1	

Fig. 2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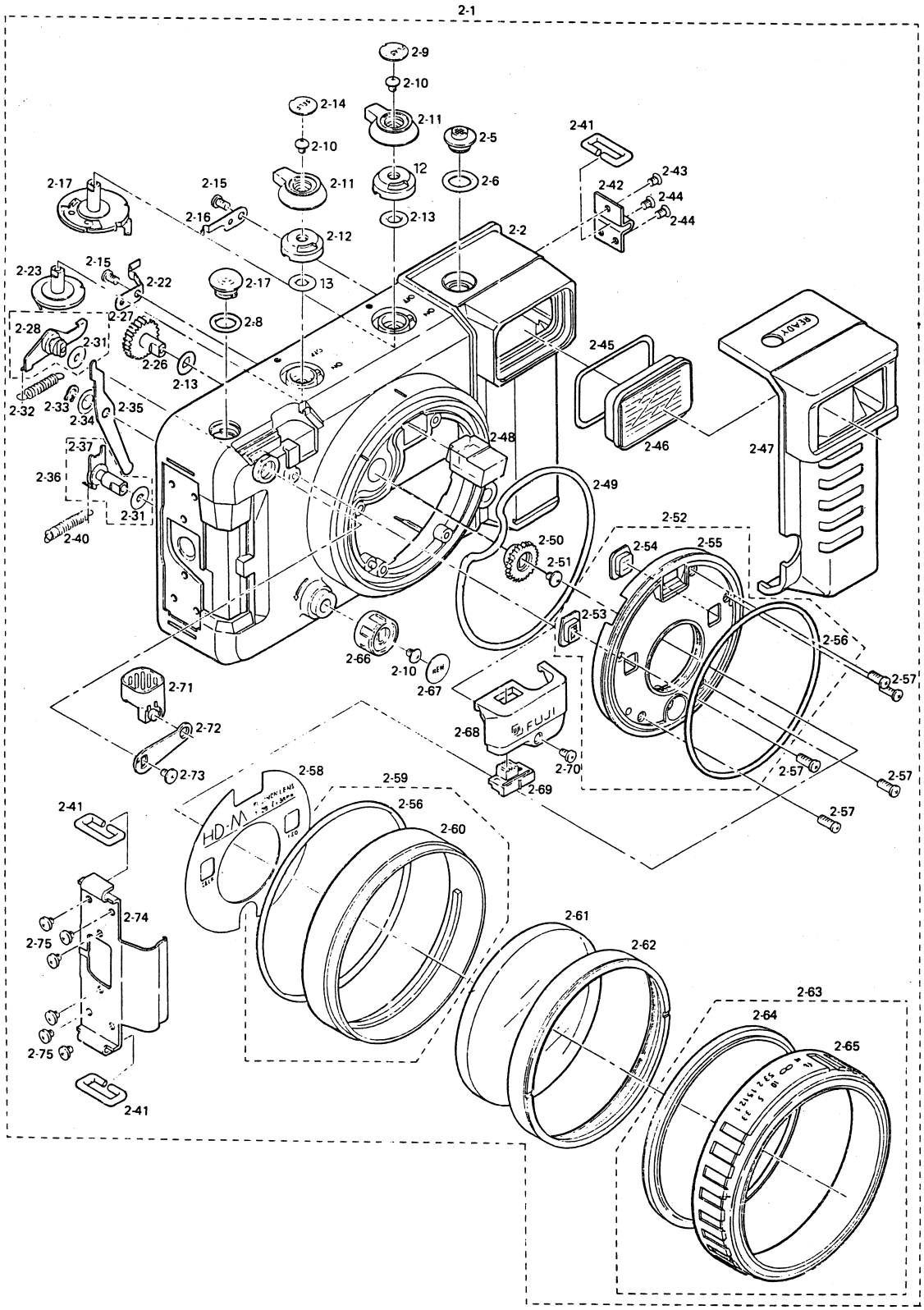
Ref No.	Part No.	Part Name	Q'ty	Remarks
2- 1	7067436	Front cover assembly II	1	
2	7067435	Front cover assembly I	1	
5	7060336	Neon lamp window	1	
6	9103013	O-ring	1	
7	7060309	Exposure counter window	1	
8	9103011	O-ring	1	
9	7060134	Cover plate	1	
10	9100047	Screw	3	
11	7060321	Dial	2	
12	7060323	Dial seat	2	
13	9103002	O-ring	3	
14	7060133	Cover plate	1	
15	BM2030B	Screw	2	
16	7060330	Click lever	1	
17	7067460	Contact seat assembly	1	
22	7060326	Click lever	1	
23	7067450	Contact seat assembly	1	
26	7063004	Gear	1	
27	7067440	Lever assembly	1	
28	7067445	Lever assembly	1	
31	9103008	O-ring	2	
32	7060308	Spring	1	
33	RG00200	Clip	1	
34	W31501C	Washer	1	
35	7060340	Lever	1	
36	7067470	Lever assembly	1	
37	7067475	Lever assembly	1	
40	7060341	Spring	1	
41	7060352	Strap eyelet	3	
42	7060351	Bracket	1	
43	YS2030E	Screw	1	
44	BS2040E	Screw	2	

Fig. 2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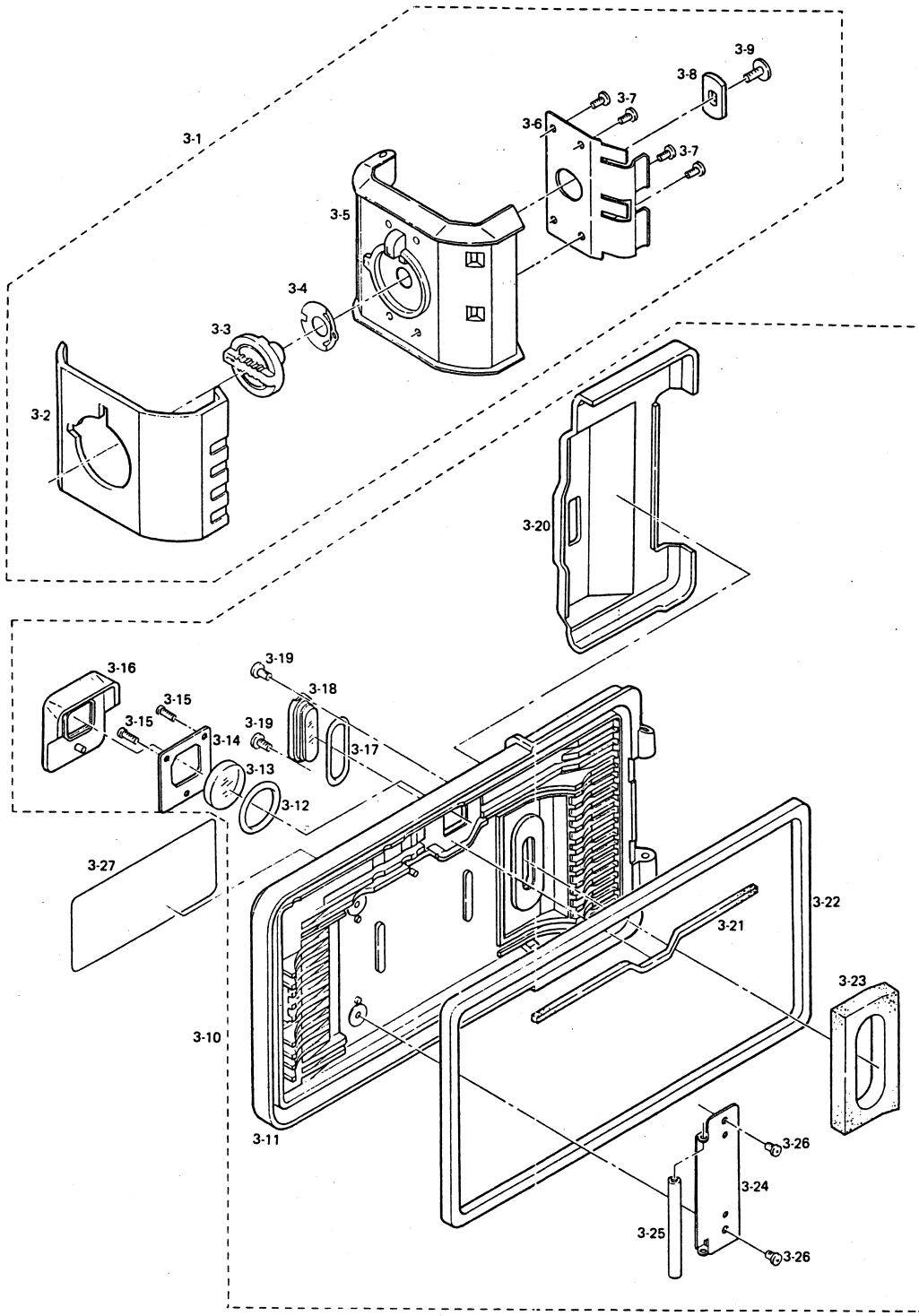
Ref No.	Part No.	Part Name	Q'ty	Remarks
2-45	7060343	O-ring	1	
46	0602101	Protector	1	
47	7060342	Front rubber	1	
48	7010507	Block	1	
49	7063131	O-ring	1	
50	7063003	Gear	1	
51	9100003	Screw	1	
52	7067480	Front ring assembly	1	
53	7063113	Self-timer window	1	
54	7063112	Window	1	
55	7063104	Front ring	1	
56	7013111	O-ring	2	
57	BM2060B	Screw	5	
58	7063108	Name plate	1	
59	7017450	Focusing ring assembly (7067490)	1	
60	7013101	Focusing ring	1	
61	7013107	Front glass	1	
62	7013106	Holder	1	
63	7067500	Focusing ring cover assembly	1	
64	7023102	Focusing ring	1	
65	7063103	Focusing ring cover	1	
66	7060131	Rewind dial	1	
67	7060135	Dial cover	1	
68	7060303	Cover	1	
69	7060312	Knob	1	
70	BM2040M	Screw	1	
71	7060304	Button	1	
72	7060305	Lever	1	
73	9100057	Screw	1	
74	7060311	Grip plate	1	
75	BM2030S	Screw	6	

Fig. 3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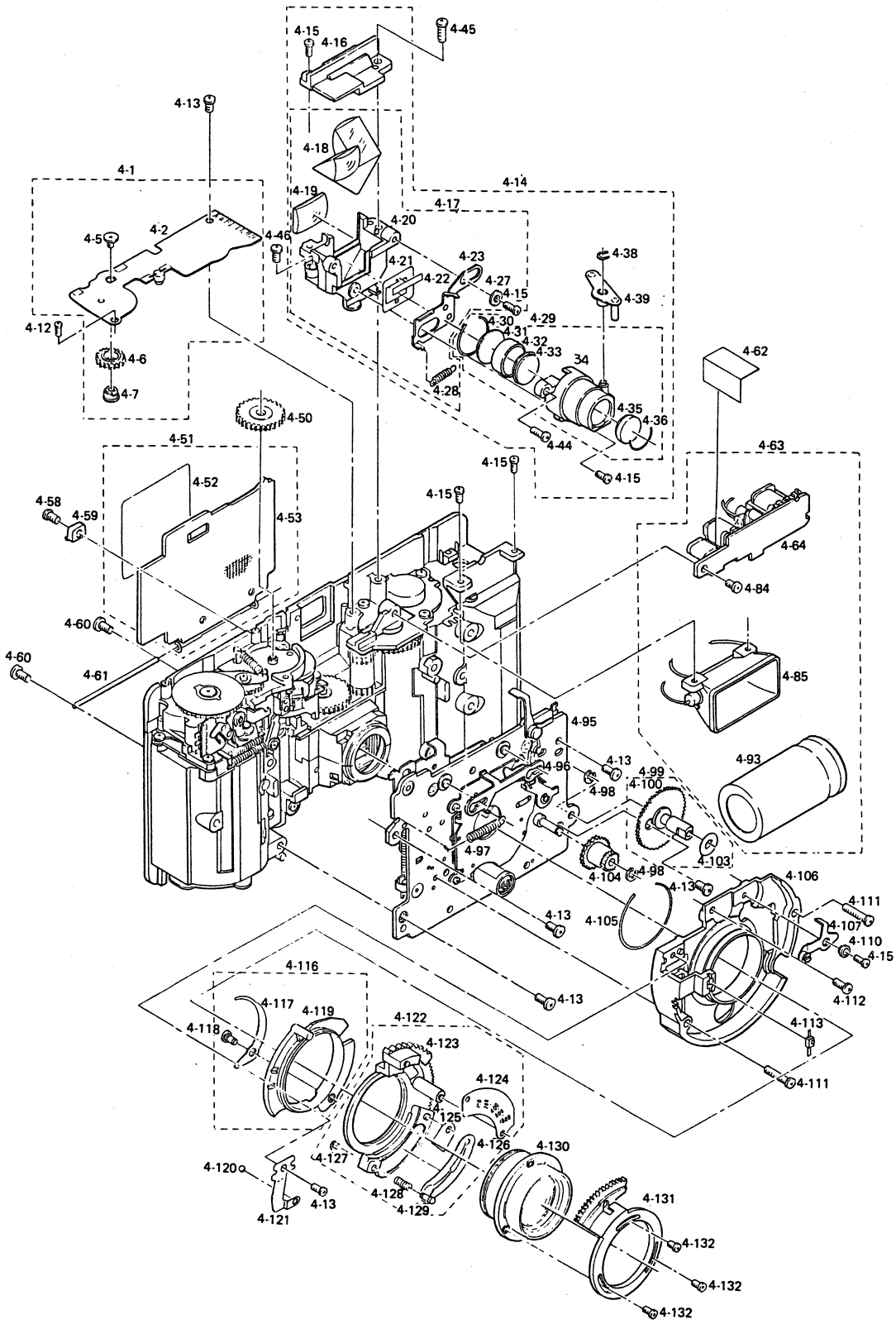
Ref No.	Part No.	Part Name	Q'ty	Remarks
3- 1	7067520	Grip assembly	1	
2	7060419	Rubber plate	1	
3	7060420	Dial	1	
4	7060422	Washer	1	
5	7060417	Grip base	1	
6	7060418	Leaf spring	1	
7	BM2030S	Screw	4	
8	7060421	Holder	1	
9	9100046	Screw	1	
10	7067510	Film chamber door assembly	1	
11	7060401	Film chamber door	1	
12	9103017	O-ring	1	
13	7060415	Window glass	1	
14	7060416	Holder	1	
15	BM1740E	Screw	2	
16	7060414	Eyepiece frame	1	
17	9103014	O-ring	1	
18	7060427	Film check window	1	
19	9100048	Screw	2	
20	7060410	Back cover	1	
21	7010412	Strip	1	
22	7060413	Rubber packing	1	
23	7060409	Moquette	1	
24	7060411	Roller support	1	
25	9000004	Roller	1	
26	BM2030B	Screw	2	
27	7060428	Seal	1	

Fig. 4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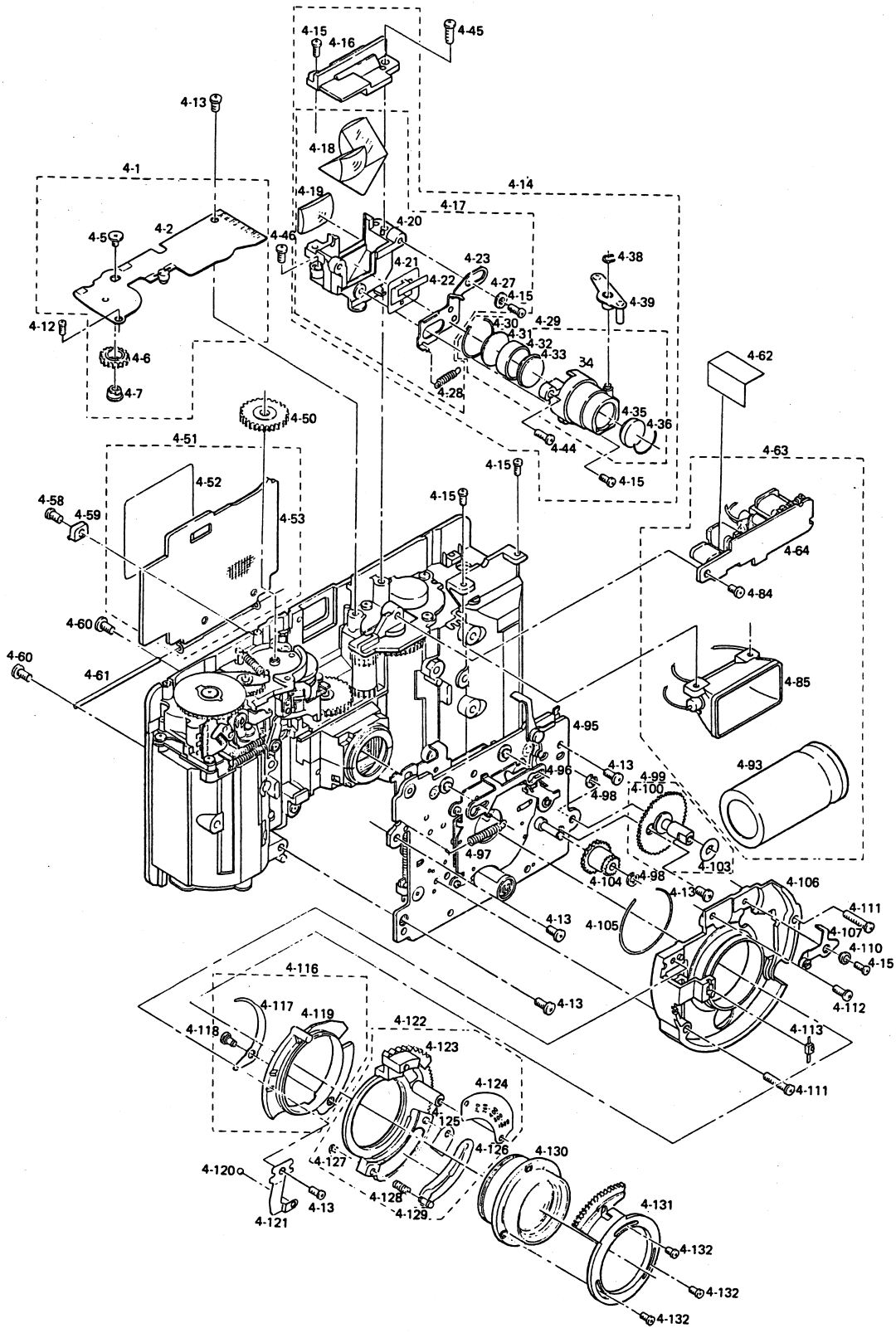
Ref No.	Part No.	Part Name	Q'ty	Remarks
4- 1	7067425	PCB assembly I	1	
2	7067426	PCB assembly II	1	
3	7060171	PCB	1	
4	9205007	LED	1	
5	9100015	Screw	1	
6	7062209	Gear	1	
7	7062210	Shaft	1	
12	BM1730B	Screw	1	
13	BM2035B	Screw	6	
14	7067360	Viewfinder assembly	1	
15	BM1740B	Screw	6	
16	7060521	Cover I	1	
23	7067400	Lever assembly	1	
27	7060559	Holder	1	
28	7060560	Spring	1	
38	RG00150	Clip	1	
39	7067410	Lever assembly	1	
44	BM2050B	Screw	1	
45	BM2060B	Screw	1	
46	PM2040B	Screw	1	
50	7062211	Gear	1	
51	7067535	Pressure plate assembly	1	
52	7060046	Seal	1	
53	7067530	Pressure plate	1	
58	BM1730I	Screw	1	
59	7060045	Holder	1	
60	9100017	Screw	2	
61	7060043	Shaft	1	
62	7060141	Insulator	1	
63	0602100	Strobo assembly	1	
64	7068000	Amplifier PCB assembly	1	
66	7068002	Transformer	1	

Fig. 4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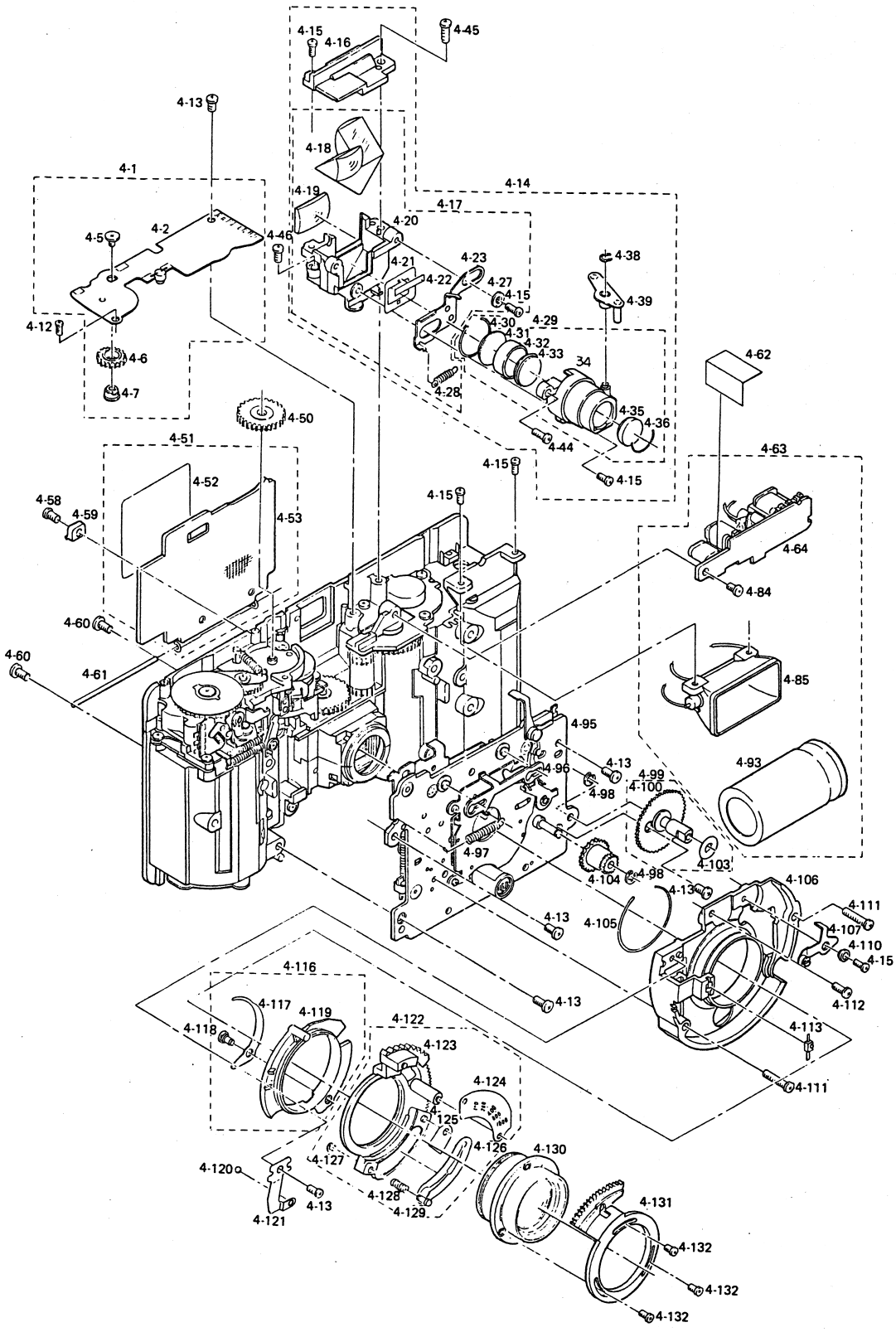
Ref No.	Part No.	Part Name	Q'ty	Remarks
4- 67	7068003	Trigger coil	1	
68	7068004	Transistor	1	
69	7068005	Silicon diode	1	
70	7068006	Silicon diode	2	
77	0602105	Neon lamp	1	
84	BM2040B	Screw	1	
85	7068030	Reflector assembly	1	
88	0602103	Xenon tube	1	
93	0602104	Main capacitor	1	
95	0201600	Shutter	1	
96	7062154	Release lever	1	
97	7062155	Spring	1	
98	RE00150	E-clip	2	
99	7067300	Gear assembly	1	
100	7067305	Gear assembly	1	
103	9103001	O-ring	1	
104	7060032	Gear	1	
105	7063033	Clip	1	
106	7063001	Lens seat	1	
107	7067330	Lever assembly	1	
110	7060552	Shaft	1	
111	PM2090B	Screw	2	
112	PM2045B	Screw	1	
113	9205004	LED	1	
116	7067320	Ring assembly	1	
118	7063122	Shaft	1	
119	7063120	Ring	1	
120	B015800	Steel ball	1	
121	7063005	Leaf spring	1	
122	7067340	Ring assembly	1	
123	7063115	Ring	1	
124	7063114	Plate	1	

Fig. 4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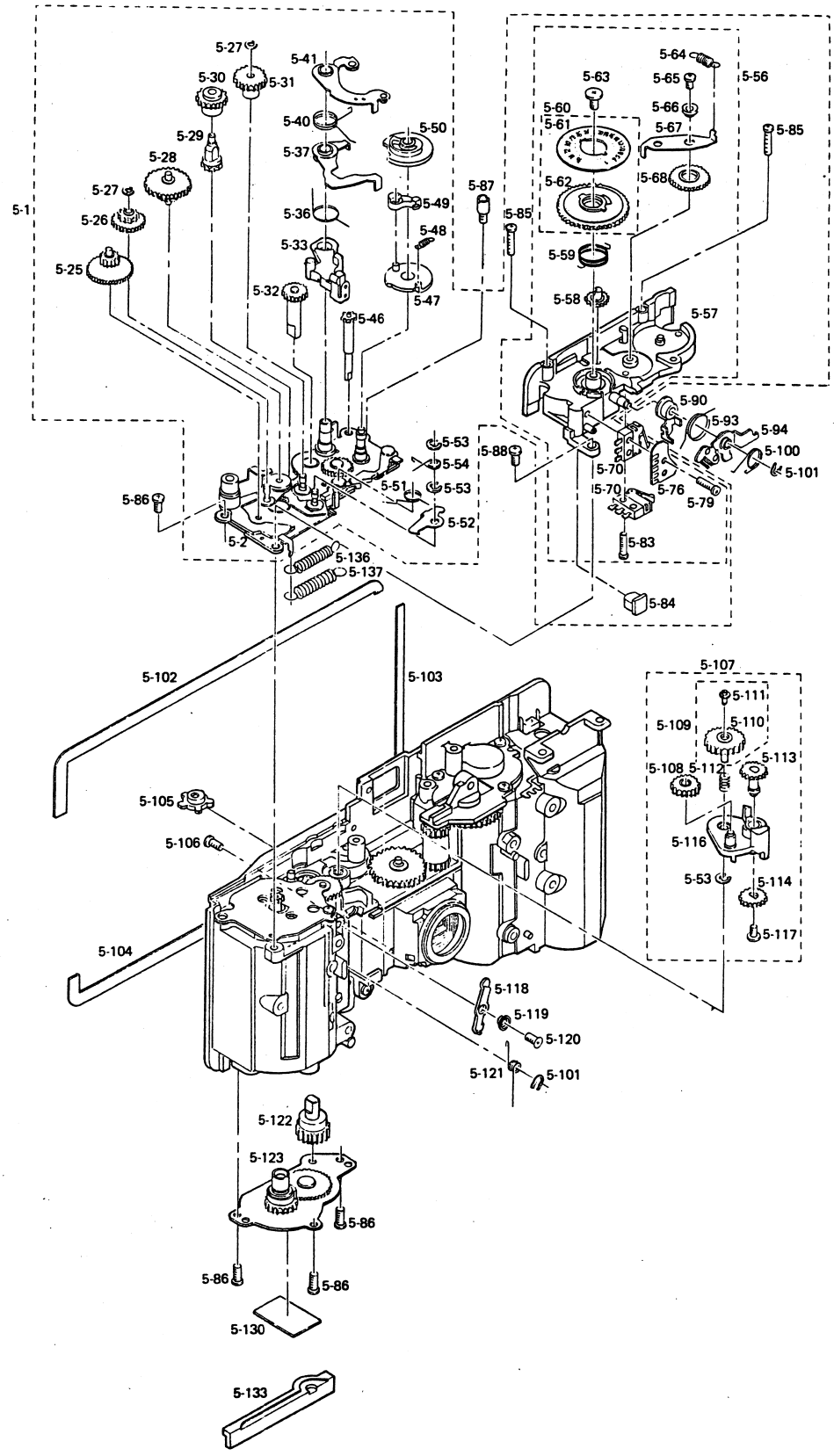
Ref No.	Part No.	Part Name	Q'ty	Remarks
4-125	7063116	Filter	1	
126	7063117	Aperture plate	1	
127	RE00080	E-clip	1	
128	7063118	Spring	1	
129	7063119	Pin	1	
130	0101500	Master lens assembly	1	
131	7063002	Ring	1	
132	9100012	Screw	3	

Fig. 5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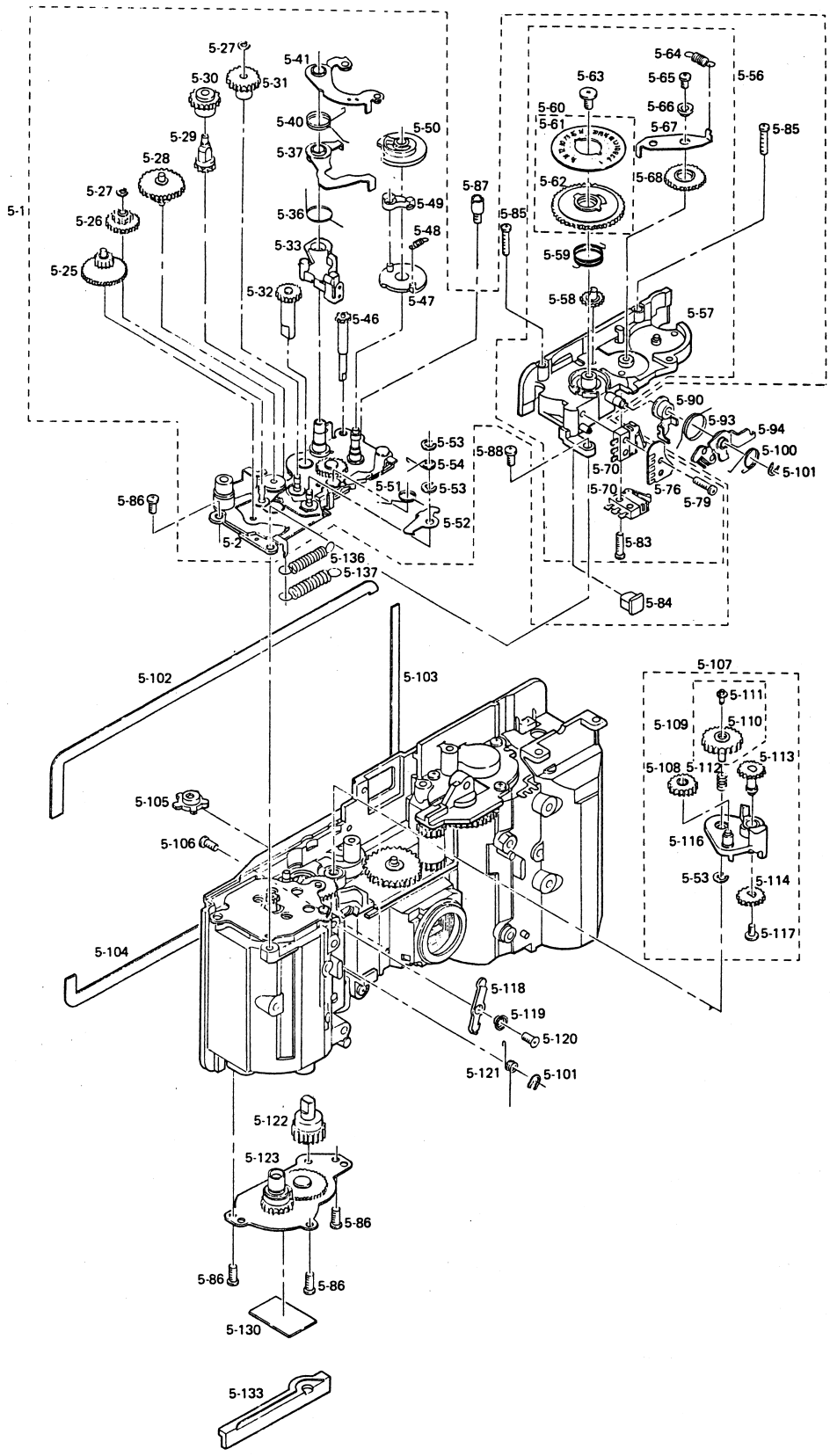
Ref No.	Part No.	Part Name	Q'ty	Remarks
5- 1	7067130	Gear train assembly	1	
2	7067135	Base plate assembly	1	
25	7062102	Gear	1	
26	7062103	Gear	1	
27	RE00120	E-clip	2	
28	7062109	Gear	1	
29	7062113	Gear	1	
30	7062112	Gear	1	
31	7062110	Gear	1	
32	7062131	Gear	1	
33	7067160	Lever assembly	1	
36	7062147	Spring	1	
37	7067170	Lever assembly	1	
40	7062142	Spring	1	
41	7067180	Set lever assembly	1	
46	7067240	Gear assembly	1	
47	7062134	Set gear	1	
48	7062140	Spring	1	
49	7062136	Clutch	1	
50	7062137	Set cam	1	
51	7062160	Spring	1	
52	7062125	Lever	1	
53	RE00150	E-clip	3	
54	7062127	Spring	1	
56	7067190	Exposure counter assembly	1	
57	7062201	Base plate	1	
58	7062214	Gear	1	
59	4042204	Spring	1	
60	7067230	Counter dial assembly	1	
61	7062202	Dial	1	
62	7062203	Gear	1	
63	9100056	Screw	1	

Fig. 5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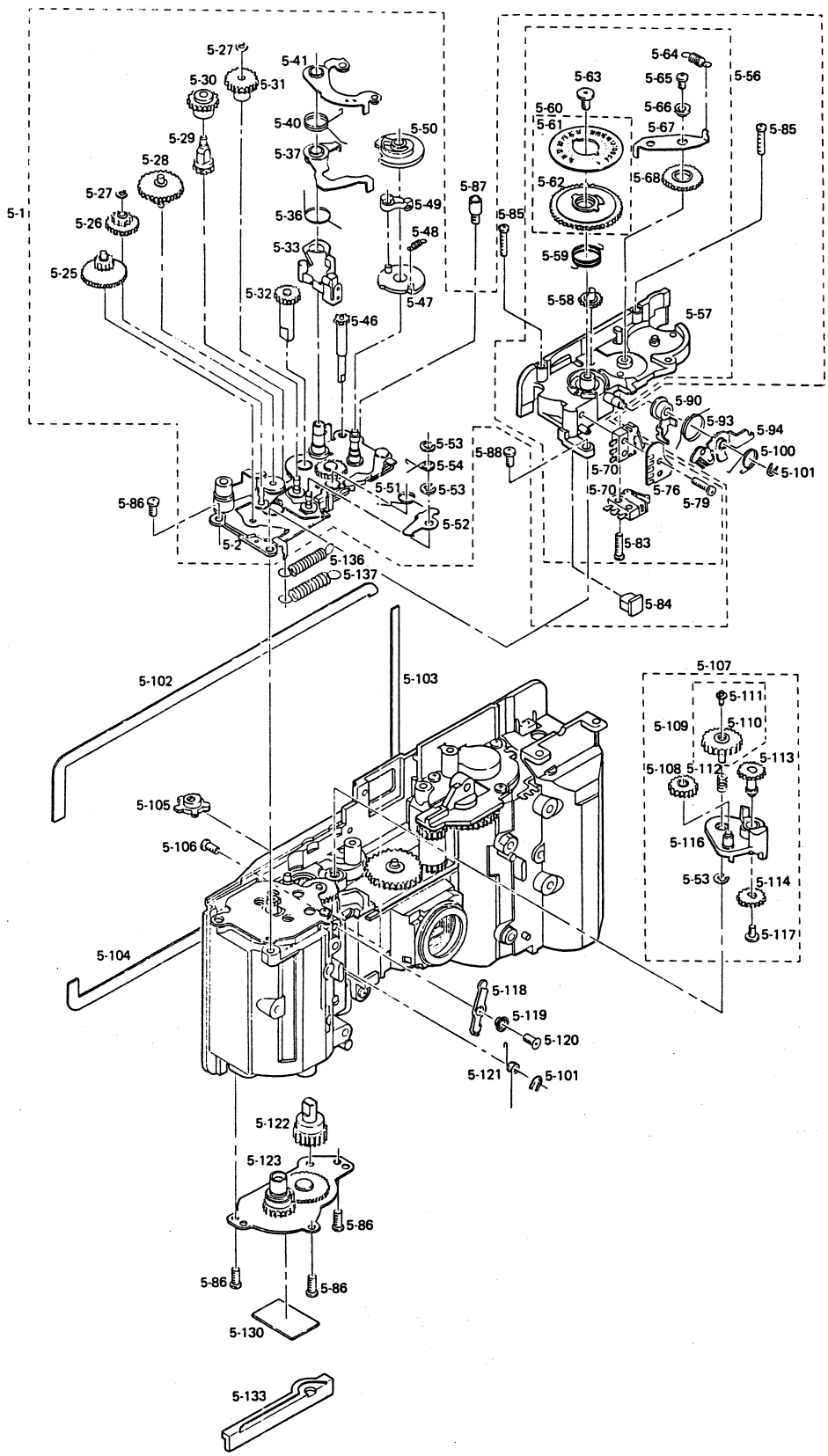
Ref No.	Part No.	Part Name	Q'ty	Remarks
5- 64	7062216	Spring	1	
65	BM1730B	Screw	1	
66	7062213	Shaft	1	
67	7062215	Arm	1	
68	7062212	Gear	1	
70	9205908	Microswitch	2	
76	7062237	PCB	1	
79	BM1760B	Screw	1	
83	BM1745B	Screw	1	
84	7062241	Cover	1	
85	PM1780B	Screw	2	
86	BM2040B	Screw	3	
87	7062161	Shaft	1	
88	BM2050B	Screw	1	
90	7067250	Lever assembly	1	
93	7062223	Spring	1	
94	7067260	Lever assembly	1	
100	7062233	Spring	1	
101	RG00150	Clip	2	
102	7060181	Rubber strip	1	
103	7060182	Rubber strip	1	
104	7060183	Rubber strip	1	
105	7062206	Gear	1	
106	YM1745H	Screw	1	
107	7067100	Arm assembly	1	
108	7062120	Gear	1	
109	7067120	Gear assembly	1	
110	7062116	Gear	1	
111	7062129	Shaft	1	
112	7062130	Spring	1	
113	7067110	Gear assembly	1	
114	7062118	Gear	1	

Fig. 5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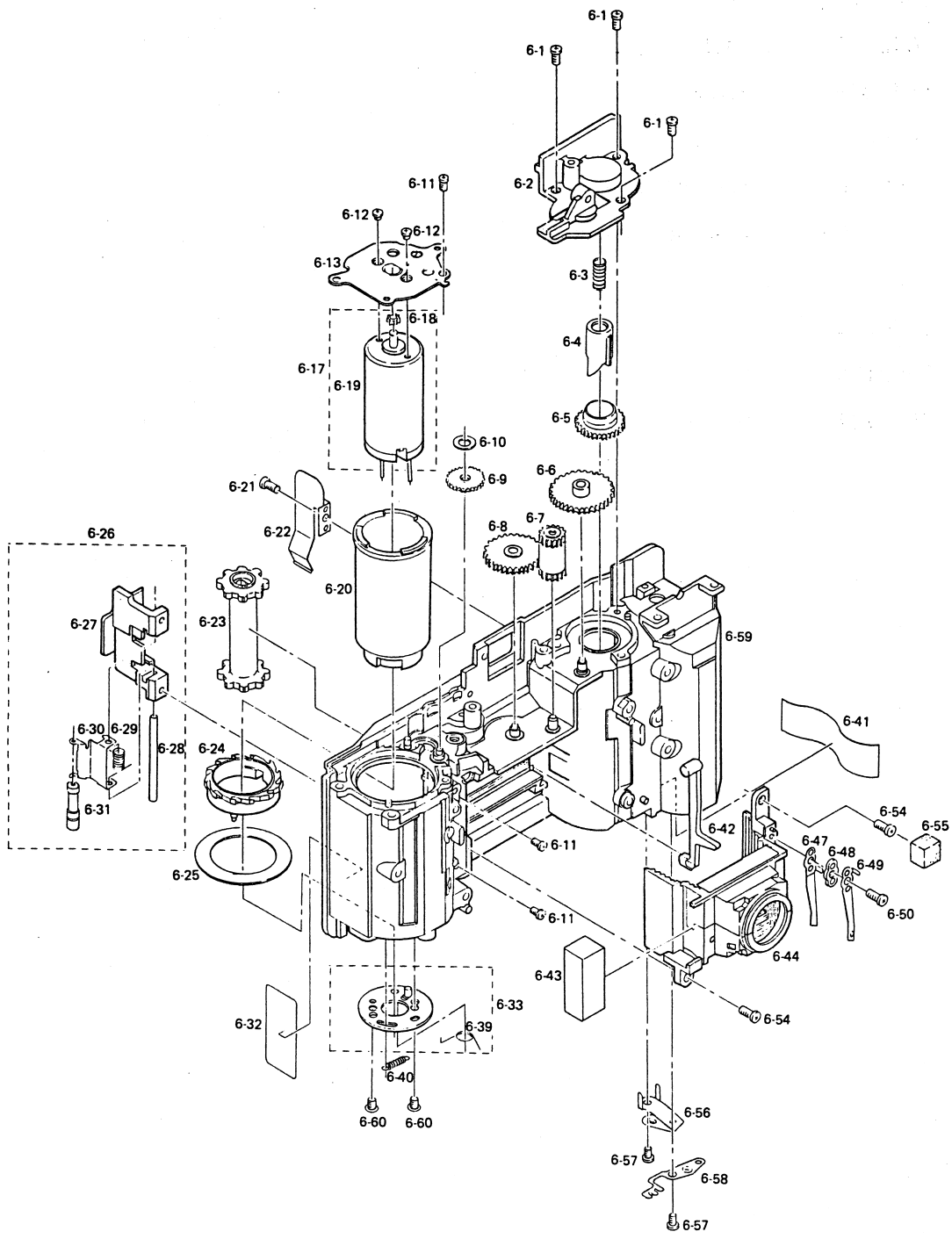
Ref No.	Part No.	Part Name	Q'ty	Remarks
5-116	7062117	Arm	1	
117	9100001	Screw	1	
118	7060075	Lock lever	1	
119	7060077	Shaft	1	
120	BS1740B	Screw	1	
121	7060076	Spring	1	
122	7062169	Sprocket gear	1	
123	7067070	Base plate assembly	1	
130	7060172	PCB	1	
133	7060053	Bottom cover	1	
136	7062108	Spring	1	
137	7062124	Spring	1	

Fig. 6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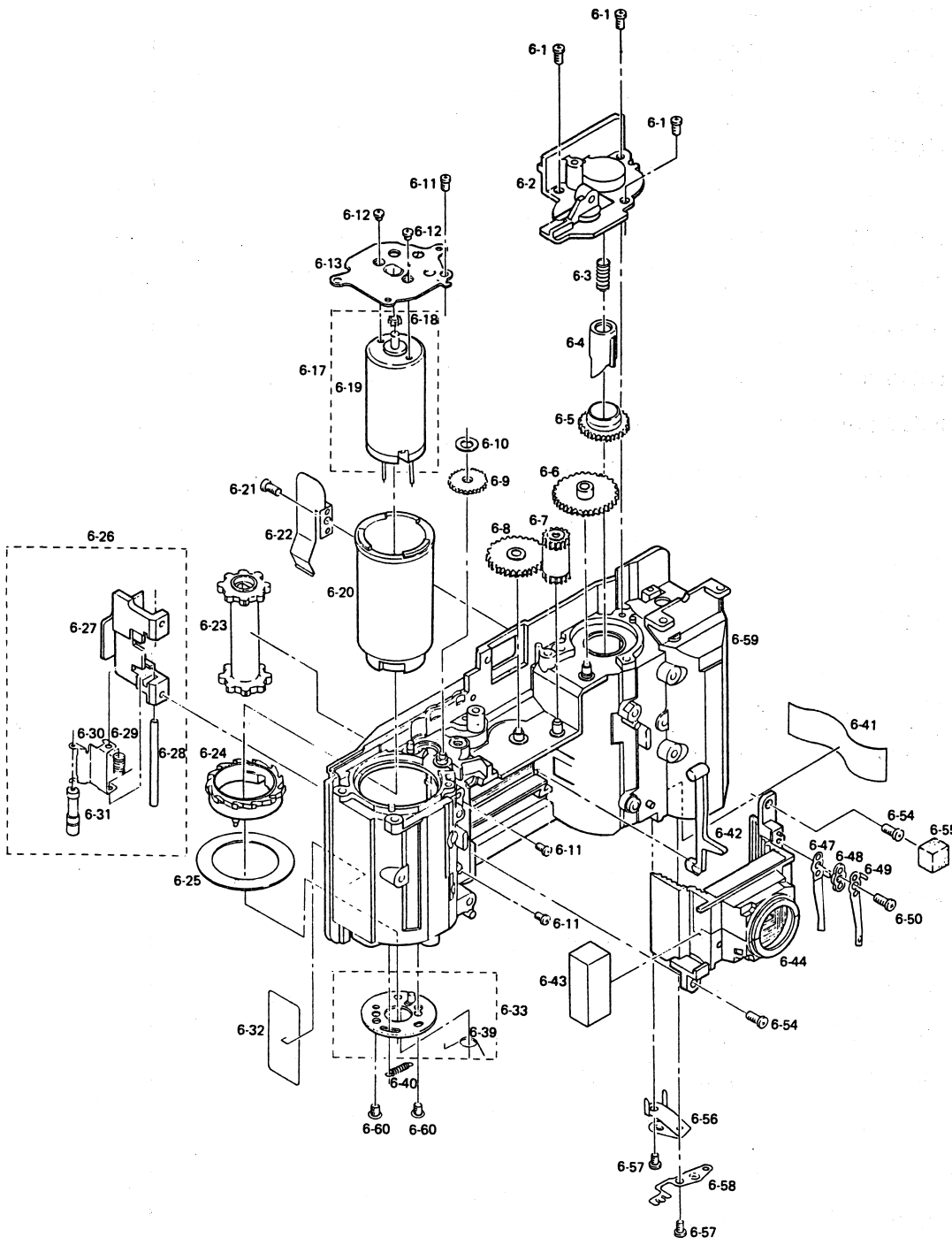
Ref No.	Part No.	Part Name	Q'ty	Remarks
6- 1	BM2040B	Screw	3	
2	7062175	Seat plate	1	
3	4042149	Spring	1	
4	7062176	Rewind shaft	1	
5	7062174	Gear	1	
6	7062173	Gear	1	
7	7062172	Gear	1	
8	7062171	Gear	1	
9	7062121	Gear	1	
10	W20402C	Washer	1	
11	BM1730B	Screw	3	
12	PM1720B	Screw	2	
13	7067035	Base plate assembly	1	
17	7067040	Motor assembly	1	
18	4042104	Gear	1	
19	0500800	Motor	1	
20	7062001	Spool	1	
21	BM2035I	Screw	1	
22	7060023	Holder	1	
23	7062011	Sprocket	1	
24	7062002	Spool	1	
25	7062052	Ring	1	
26	7067080	Arm cover assembly	1	
27	7060038	Arm cover	1	
28	7060037	Shaft	1	
29	7060039	Spring	1	
30	7060035	Arm	1	
31	7060036	Roller	1	
32	7060006	Label	1	
33	7067070	Sprocket base assembly	1	
39	7062056	Spring	1	
40	7062053	Spring	1	

Fig. 6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Ref No.	Part No.	Part Name	Q'ty	Remarks
6- 41	7060004	Label	1	
42	7060024	Sensor	1	
43	7060047	Silicagel	1	
44	7067025	Hood assembly	1	
47	7060026	Contact	1	
48	7060027	Contact seat	1	
49	7060025	Contact	1	
50	BM1740B	Screw	1	
54	BM2050B	Screw	2	
55	7060142	Seal	1	
56	7060029	Contact	1	
57	BM1725B	Screw	2	
58	7060028	Contact	1	
59	7060001	Chassis	1	
60	BS2030B	Screw	2	