SERVICE MANUAL

Fujica
ZXM-500
ZM-800
Single-8
Sound
Movie
Cameras

CONTENTS

I TROUBLESHOOTING

1. Film is not transported correctly.

1 — 1 Film is not transported.

Battery 5.5V
- NO → Replace.
- YES ↓

Battery chamber
- NO → Clean, repair or replace. P. 64
- YES ↓

Motor
- NO → Repair or replace. P. 42, 44, 46
- YES ↓

Friction of take - up spindle
- NO → Adjust or replace. P. 38
- YES ↓

Pressure of pressure plate
- NO → Adjust or replace. P. 40
- YES ↓

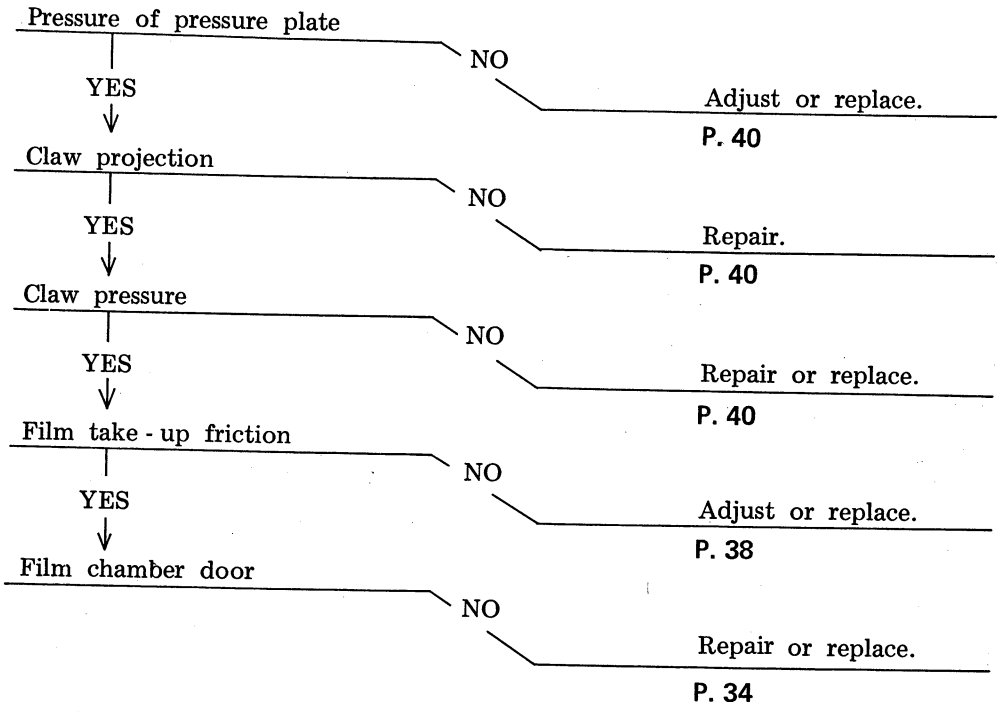
Claw pressure
- NO → Repair or replace. P. 40
- YES ↓

Claw projection
- NO → Repair or replace. P. 40

1 — 2 Film is jammed.

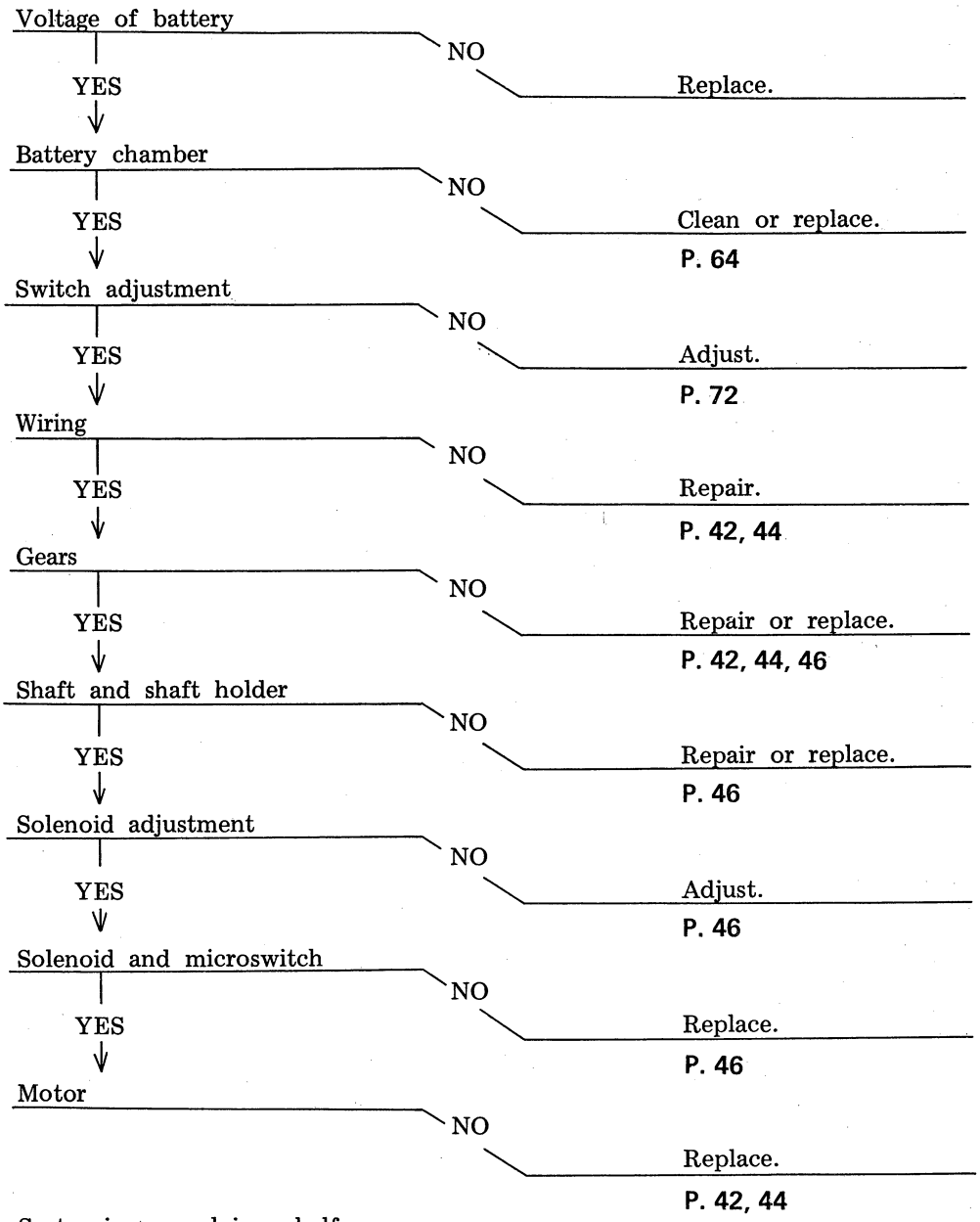
Film take - up friction
- NO → Replace. P. 38

1 — 3 Multiple exposure

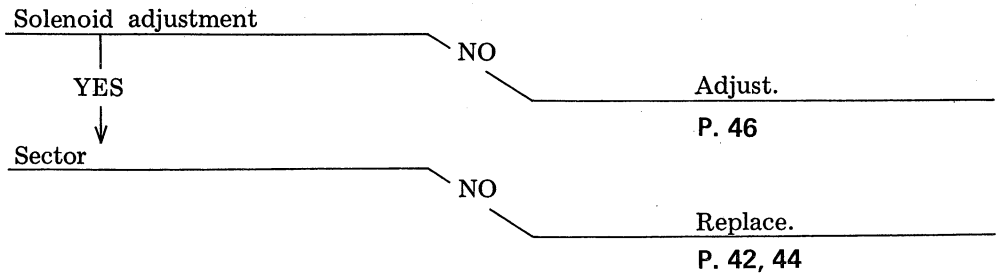


2. Motor

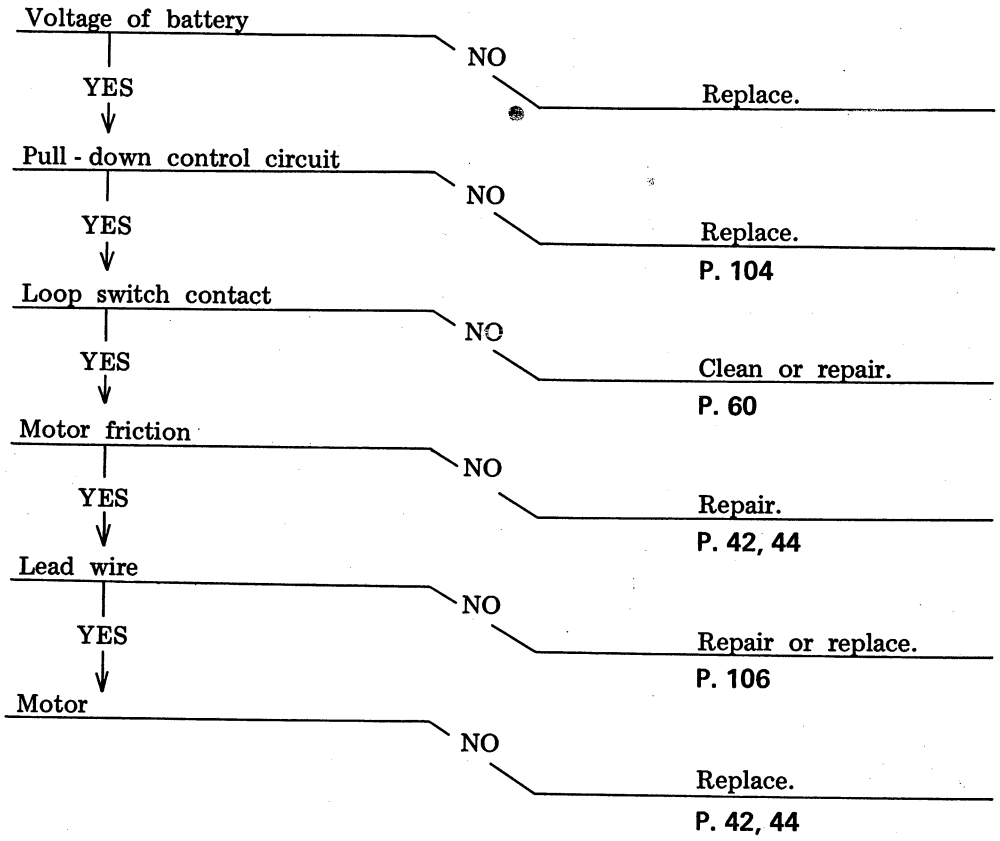
2 — 1 Motor does not work.



2 — 2 Sector is opened in a half way.

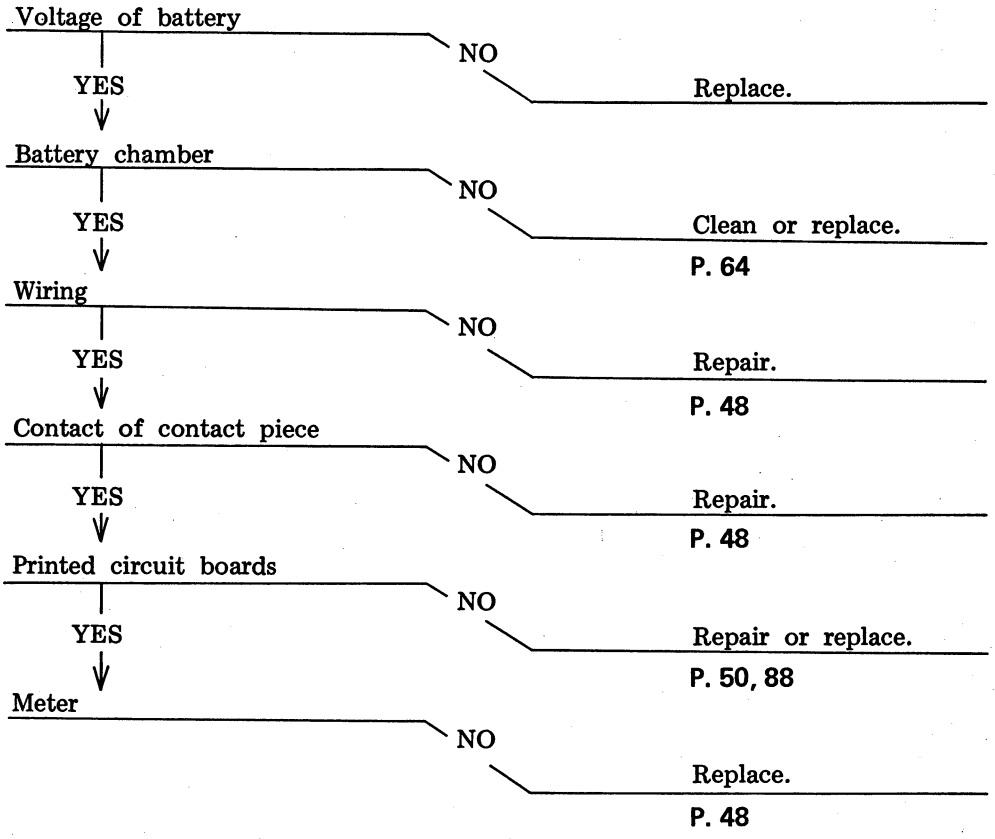


2 — 3 Incorrect filming speed

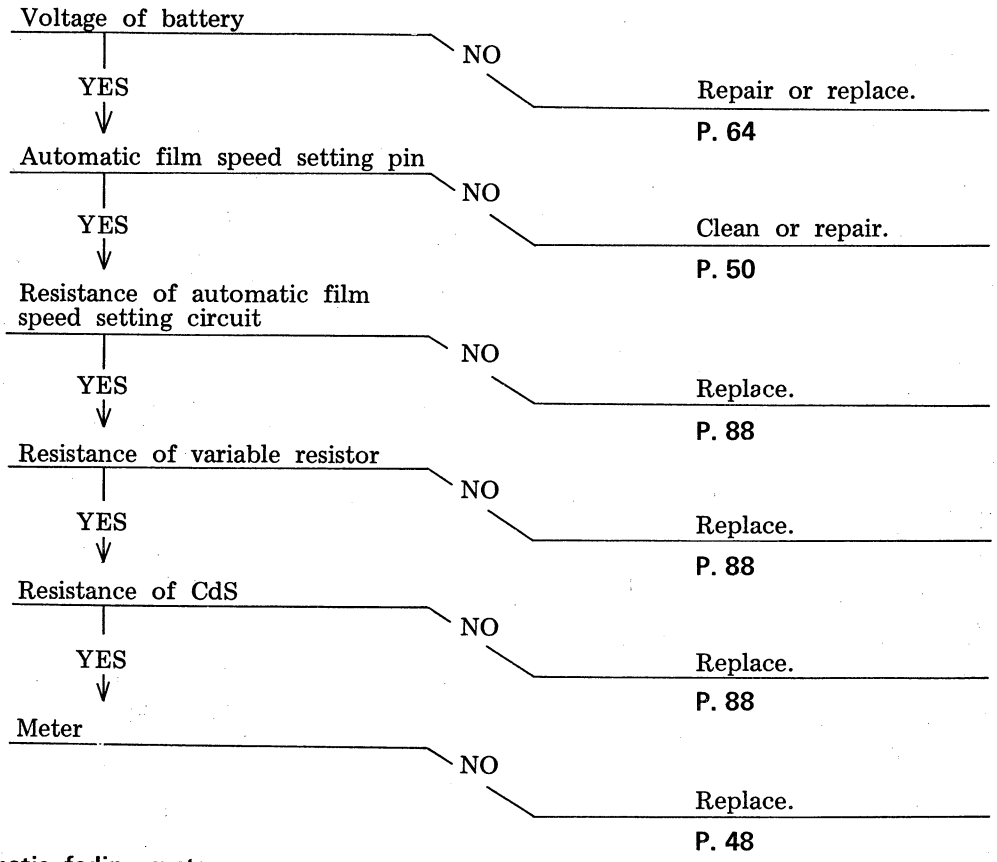


3. Exposure

3 — 1 Meter does not work

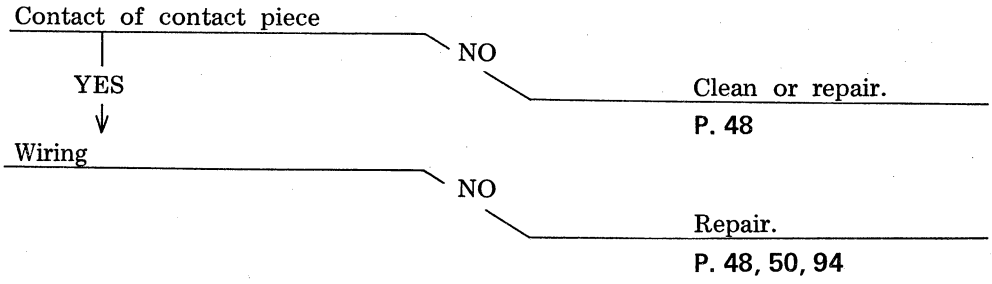


3 — 2 Meter does not work correctly.

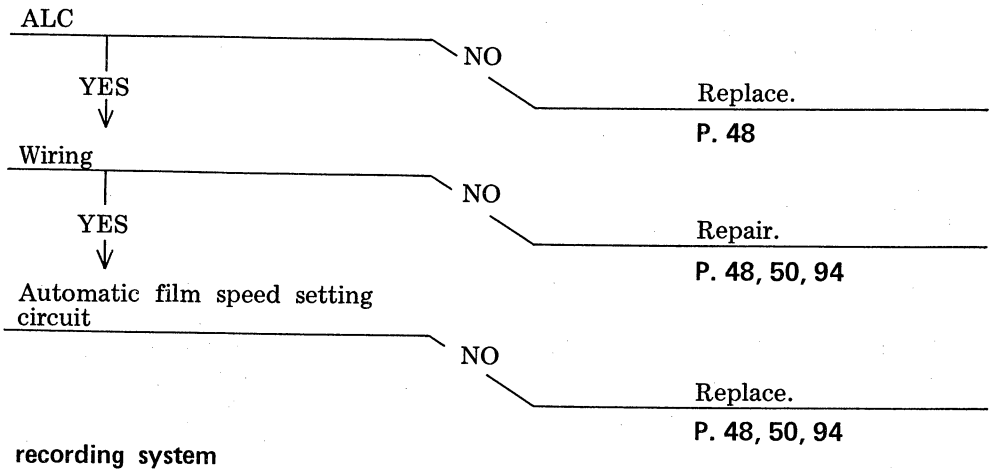


4. Automatic fading system

4 — 1 Meter needle does not work correctly.

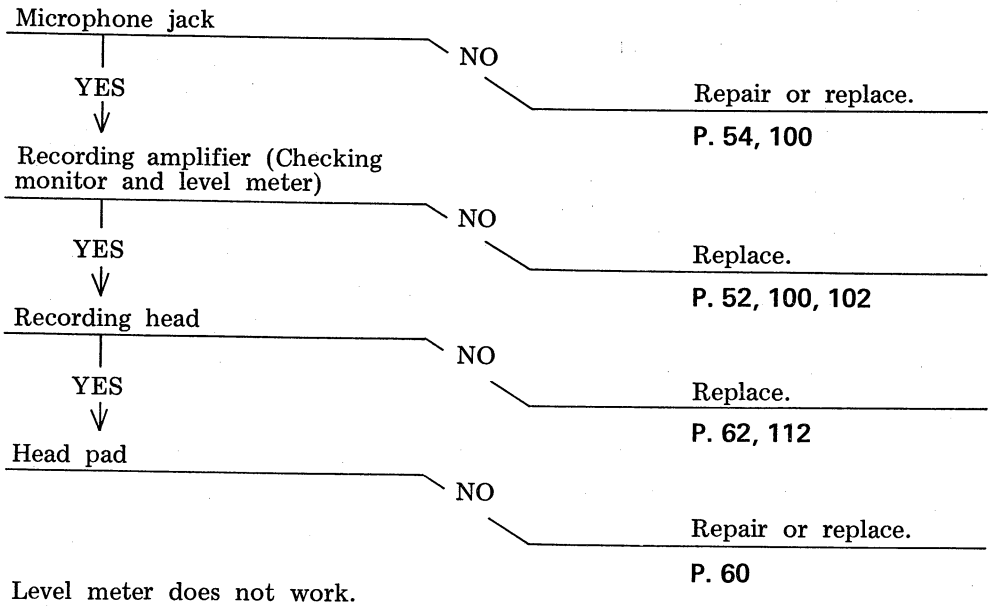


4 — 2 Automatic sound fading cannot be made.

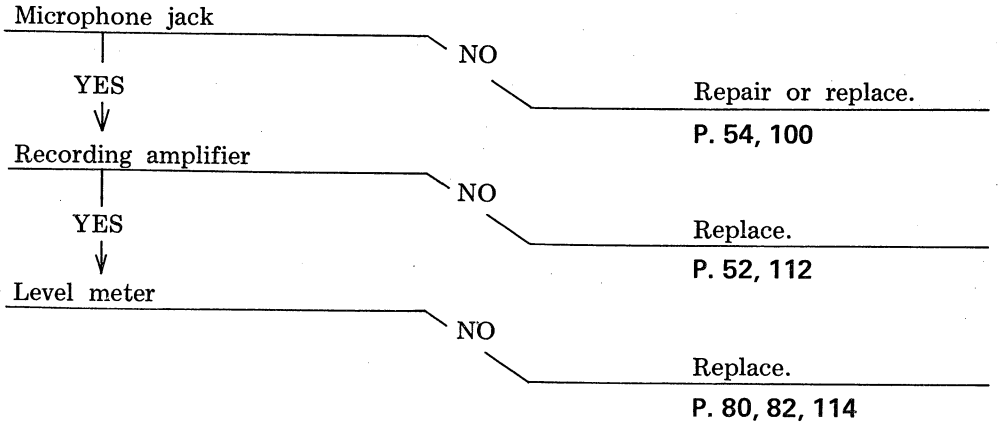


5. Sound recording system

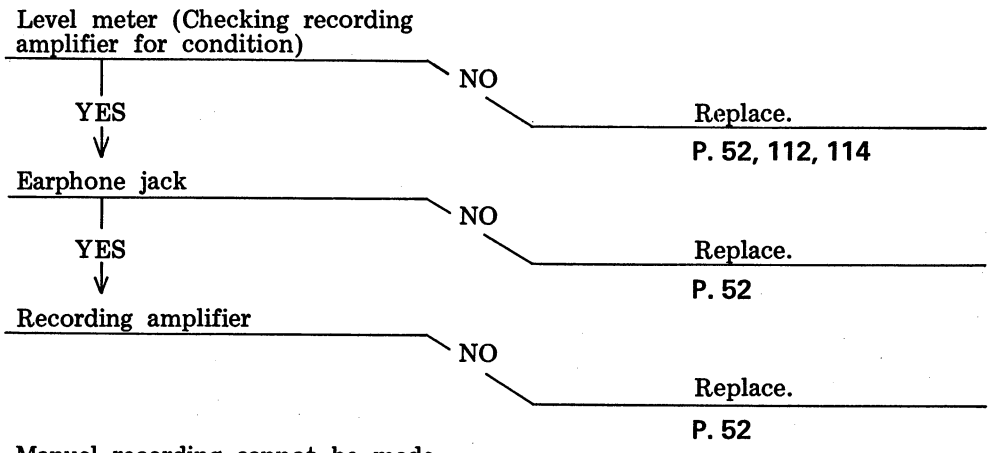
5 — 1 Sound is not recorded.



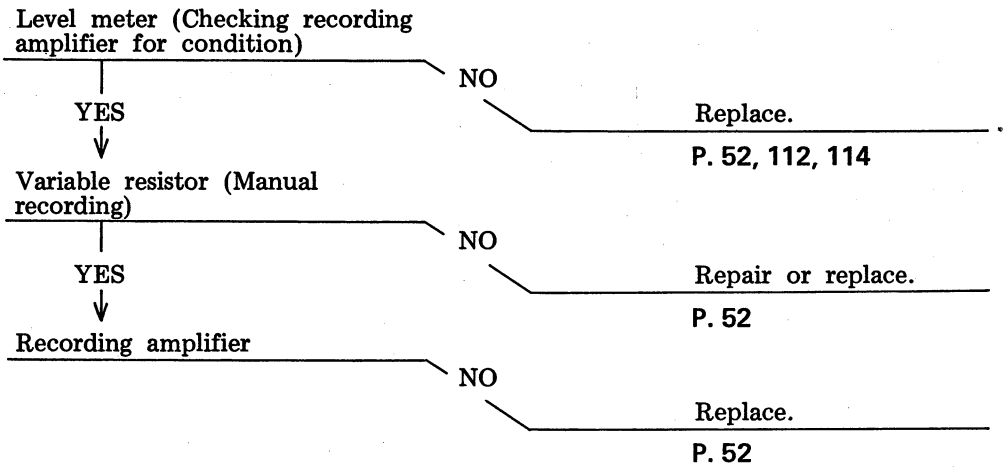
5 — 2 Level meter does not work.



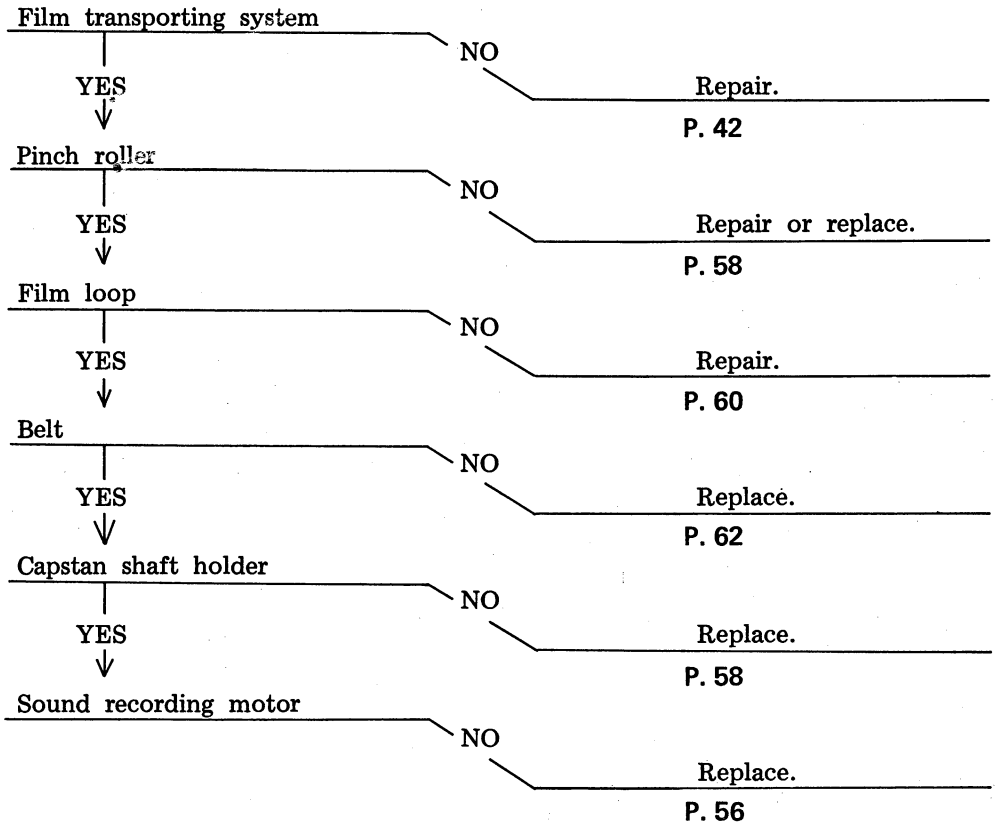
5 — 3 Monitoring cannot be made.



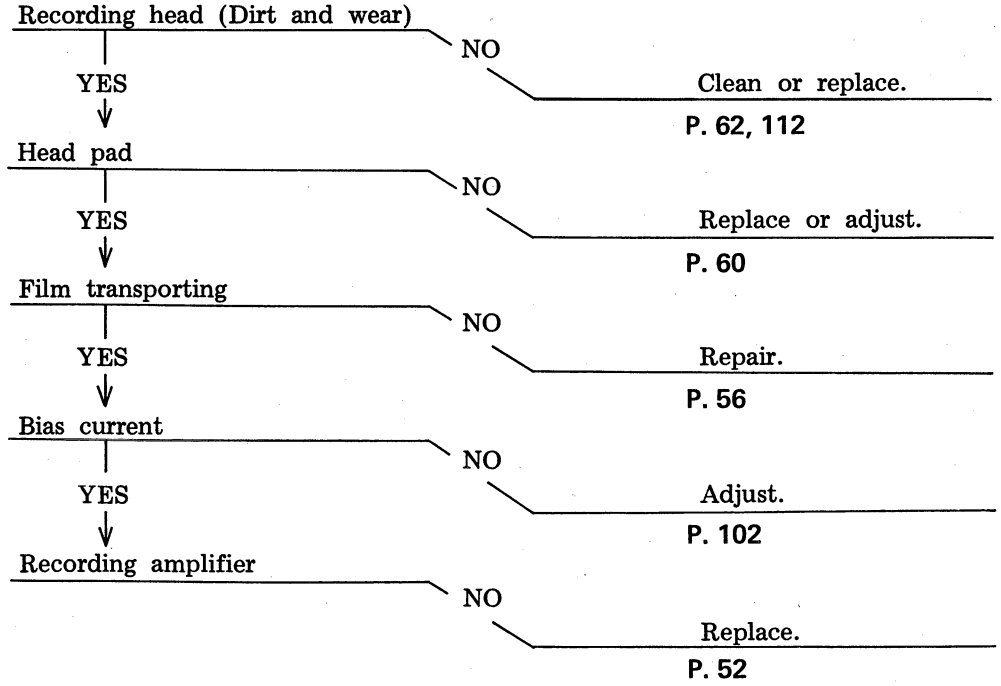
5 — 4 Manual recording cannot be made.



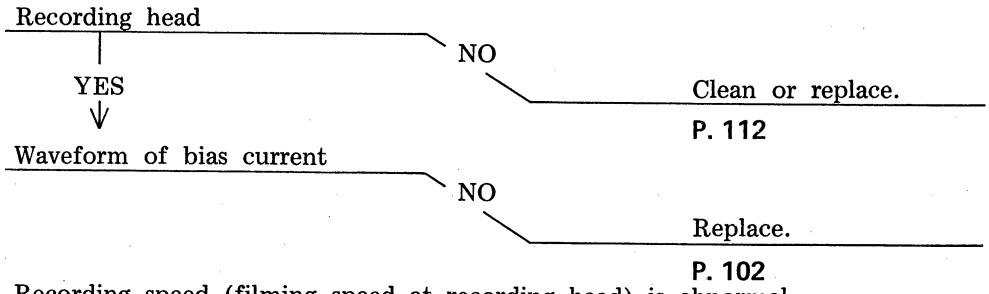
5 — 5 Wow - flutter is too high.



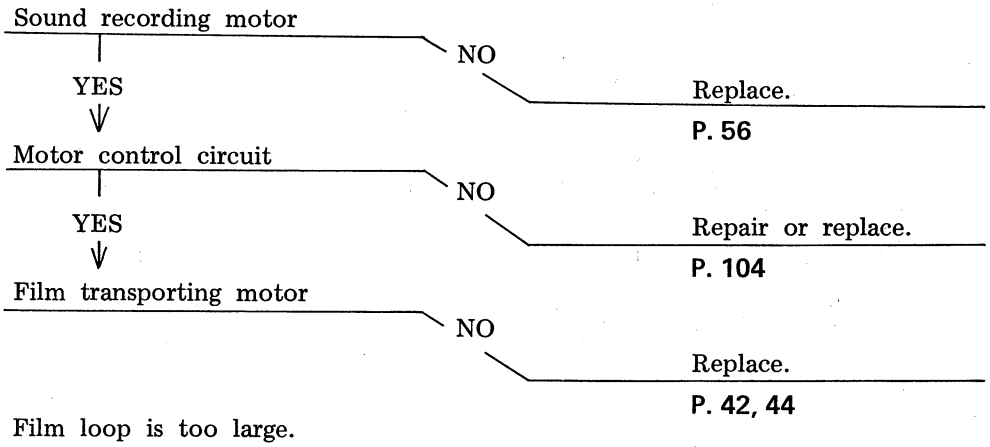
5 — 6 Frequency characteristics are low.



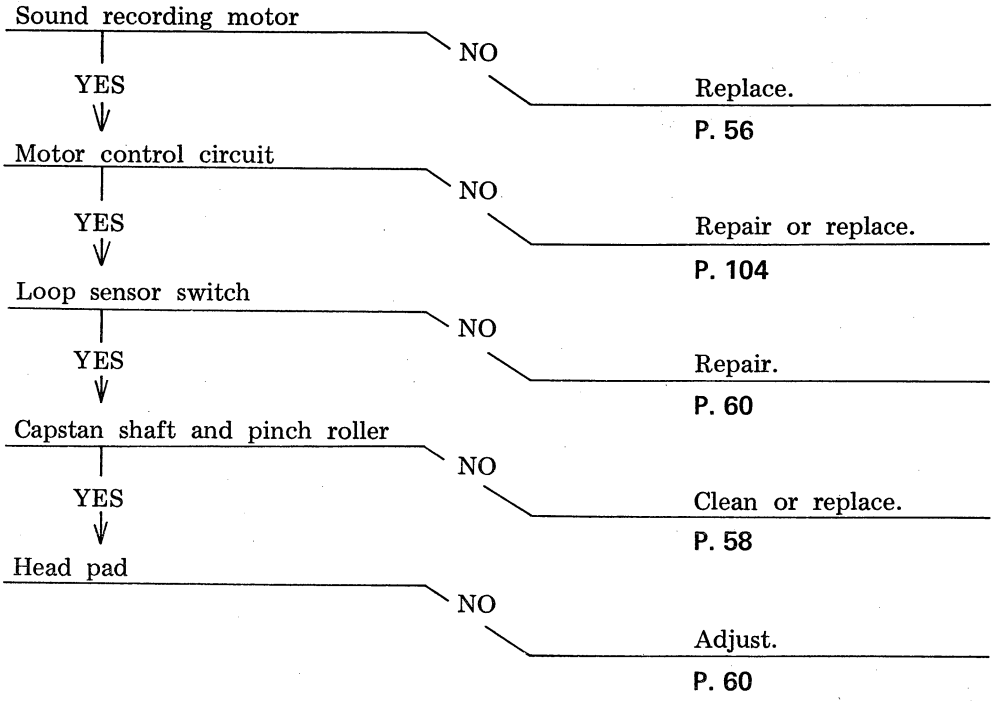
5 — 7 Distortion factor is too high



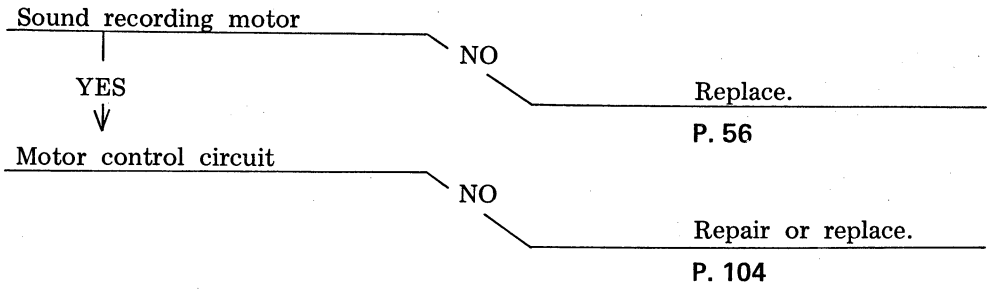
5 — 8 Recording speed (filming speed at recording head) is abnormal.



5 — 9 Film loop is too large.



5 — 10 Film loop is too small.



Ⅱ DISASSEMBLY

1. Upper and lower front covers (1 – 4 and 1 – 5)

a. Remove the leather (1 — 7), and remove the upper front cover (1 — 4) after removing the screw (1 — 6).

b. Remove the leather (1 — 8), and remove the lower front cover (1 — 5) after removing the screw (1 — 6).

2. Accessory shoe (1 – 1)

Remove the cover plate (1 — 3), and remove four screws (1 — 2). The accessory shoe (1 — 1) can then be removed.

3. Side cover assembly (2 – 68)

a. Remove the screw (2 — 89) and remove two screws (1 — 10).

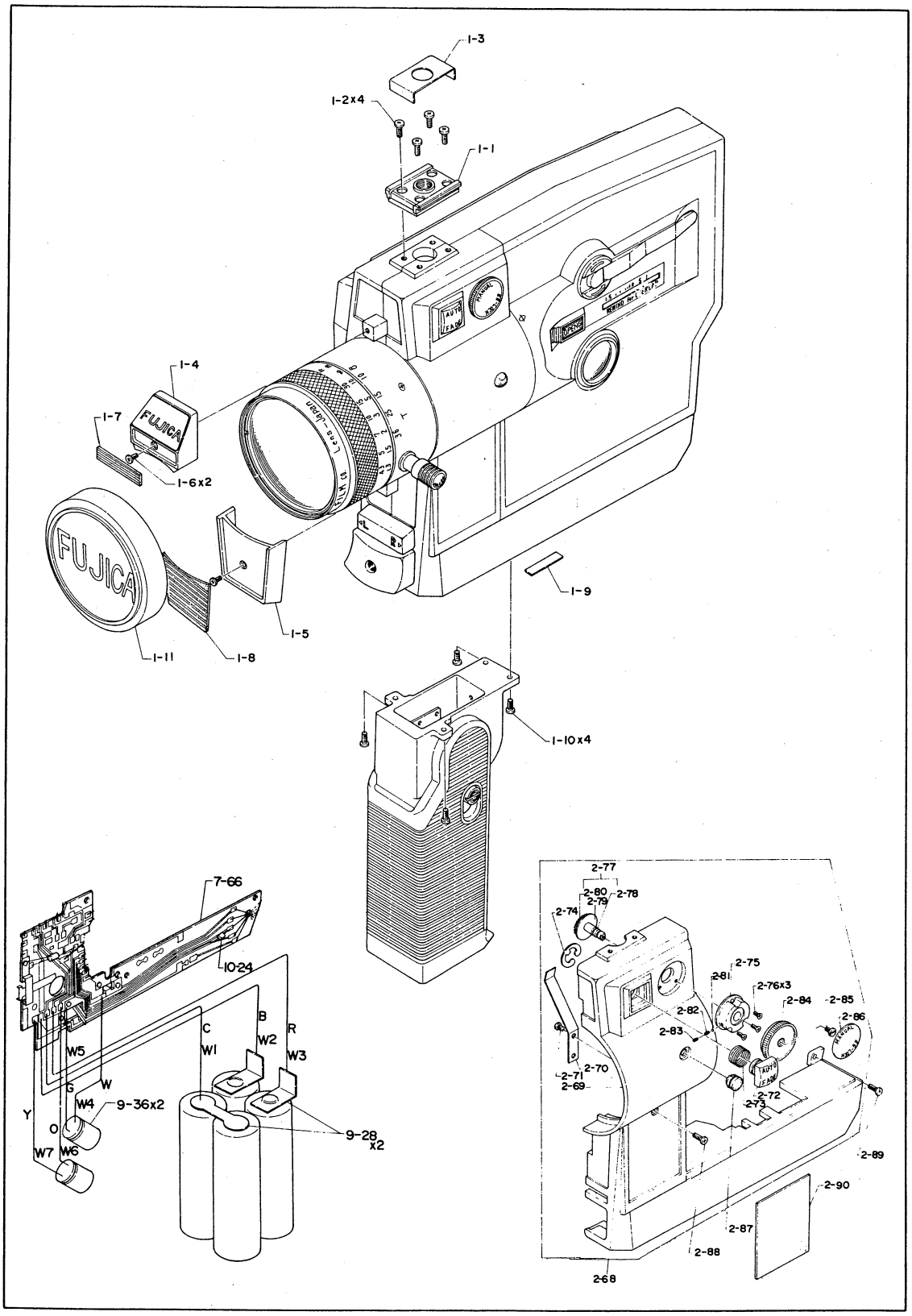
b. Remove the leather (2 — 90), and remove the screw (2 — 88).

4. Grip assembly (9 – 1)

a. Disconnect the seven lead wires (W1 through W7) from the printed circuit board assembly (7 — 66).

b. Remove two screws (1 — 10), and remove the grip assembly (9 — 1).

Fig. 1


1-3
1-2x4
1-1
1-4
1-7
FUJICA
1-6x2
FUJICA
1-11
1-8
1-5
1-9
1-10x4
7-66
10-24
W5
C
W1
B
W2
R
W3
G
W
W4
9-36x2
Y
O
W7
W6
9-28
x2
2-77
2-80
2-79
2-78
2-74
2-75
2-81
2-76x3
2-84
2-85
2-86
2-82
2-83
2-70
2-71
2-69
2-72
2-73
2-89
2-90
2-87
2-88
2-68

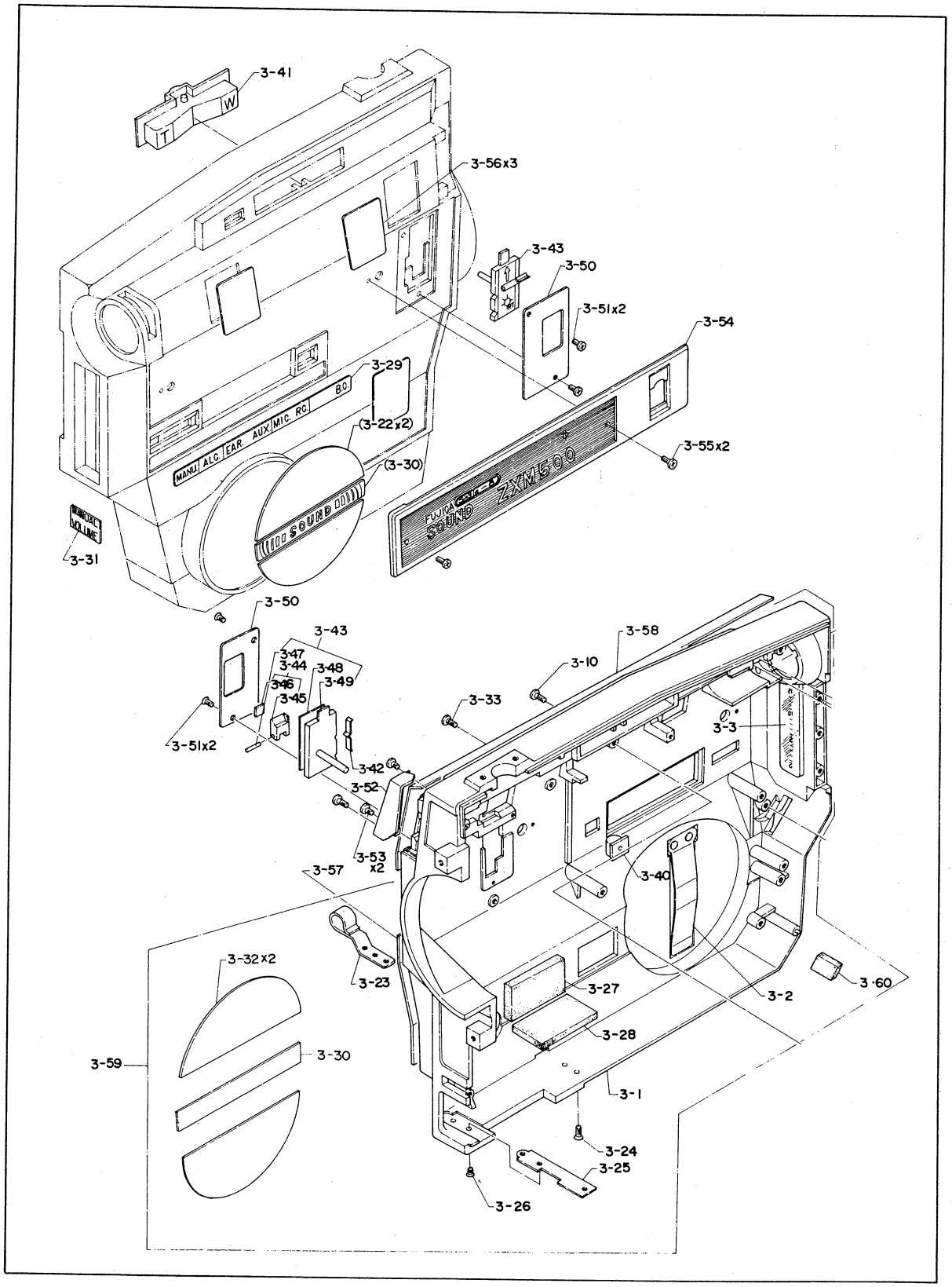
5. **Filter selector assembly (3 – 43)**

a. Remove two screws (3 — 55), and remove the main name plate (3 — 54).

b. Remove the leathers (3 — 57 and 3 — 58).

c. Remove two screws (3 — 51), and remove the plate (3 — 50). The filter selector assembly (3 — 43) can be removed together with the click spring (3 — 42).

Fig. 2


3-41
3-56x3
3-43
3-50
3-51x2
3-54
3-29
(3-22x2)
(3-30)
3-55x2
3-31
3-50
3-43
3-47
3-44
3-48
3-46
3-49
3-45
3-51x2
3-42
3-52
3-53 x2
3-57
3-58
3-10
3-33
3-3
3-40
3-23
3-27
3-2
3-60
3-28
3-1
3-24
3-25
3-26
3-32x2
3-59
3-30

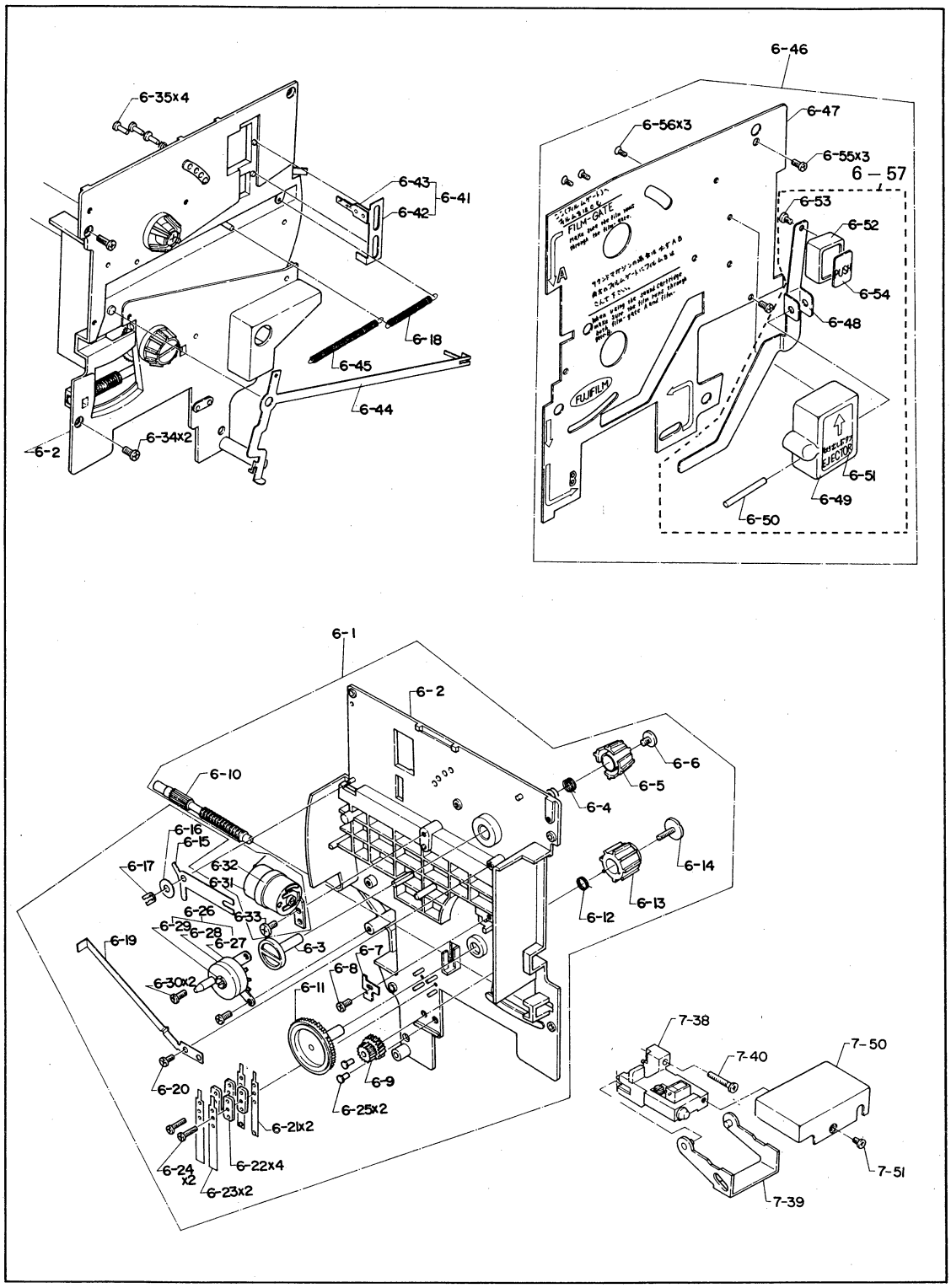
6. Film chamber plate assembly (6 – 46)

a. Remove the screw (7 — 51) and remove the head cover (7 — 50).

b. Remove three screws (6 — 55), and remove the film chamber plate assembly (6 — 46) carefully so that it is not hooked with a tooth of the film feed spindle (6 — 5).

c. To remove the ejector assembly (6 — 57) from the film chamber plate assembly, remove three screws (6 — 56).

Fig. 3


6-46
6-35x4
6-47
6-56x3
6-55x3
6-57
6-43
6-41
6-42
6-53
6-52
6-54
6-18
6-48
6-45
6-44
6-2
6-34x2
6-51
6-49
6-50
6-1
6-2
6-10
6-6
6-5
6-4
6-16
6-15
6-14
6-17
6-32
6-31
6-13
6-12
6-26
6-33
6-29
6-28
6-27
6-3
6-7
6-19
6-8
6-30x2
6-11
7-38
7-40
7-50
6-20
6-9
6-25x2
6-21x2
7-51
6-24
x2
6-22x4
6-23x2
7-39

7. Filming mechanism assembly

a. Disconnect four lead wires (W13 through W16) from the printed circuit board assembly (7 — 66).

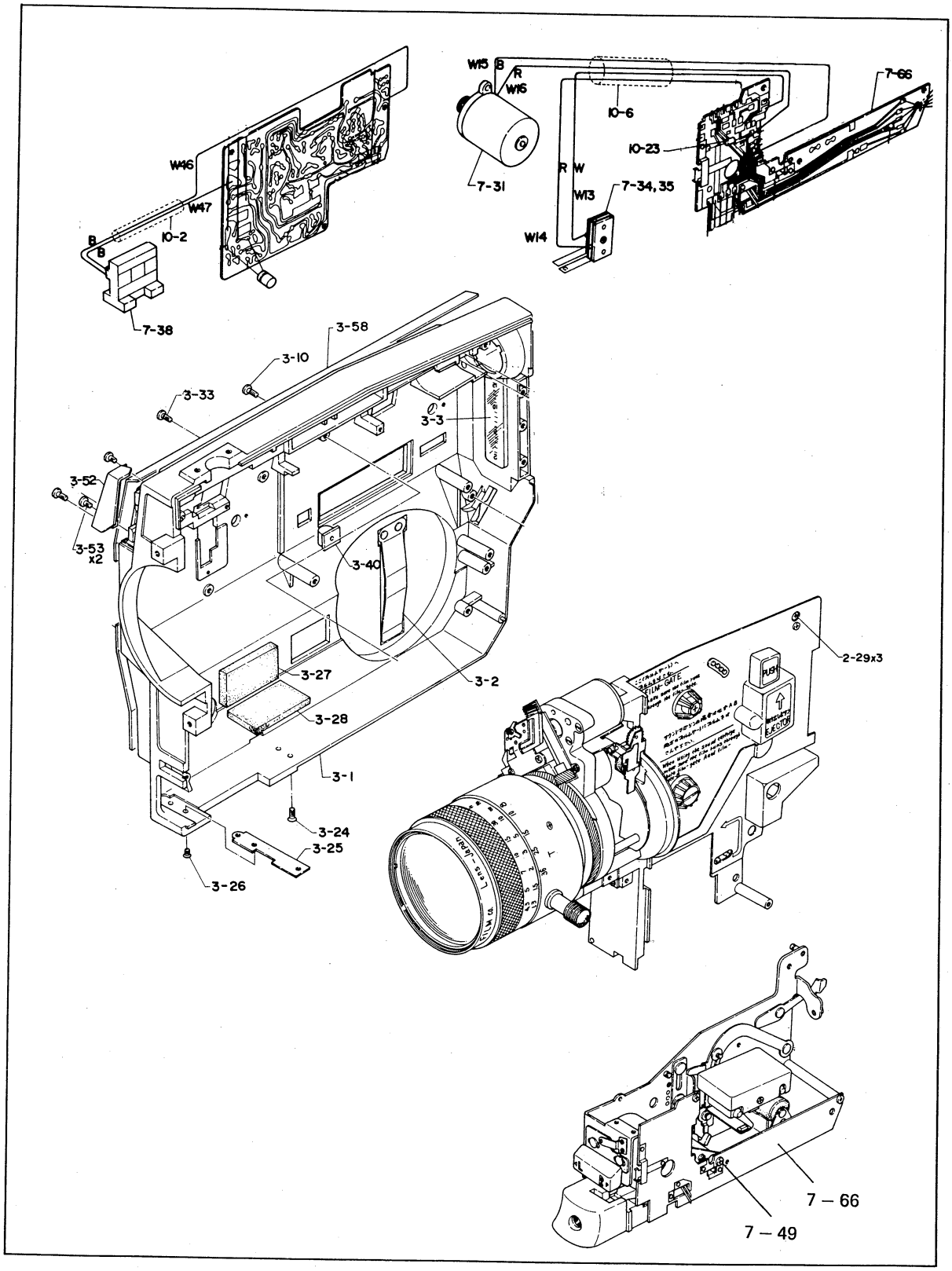
b. Disconnect two lead wires (W46 and W47) from the head holder assembly (7 — 38).

c. Remove three screws (2 — 29) and two screws (3 — 33).

d. Remove the screw (7 — 49) from the printed circuit board assembly (7 — 66).

e. Remove the filming mechanism assembly from the main frame (3 — 1) carefully.

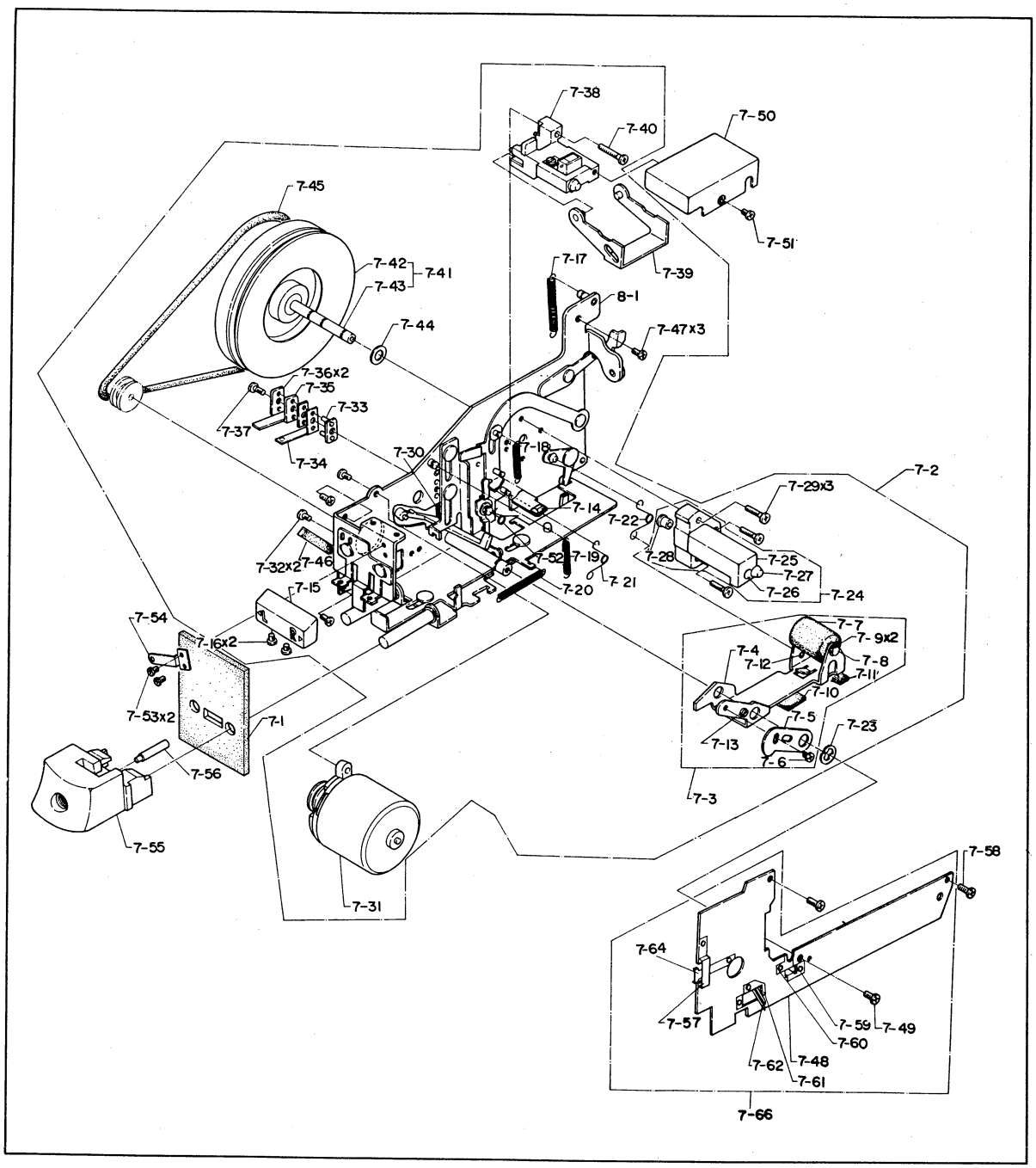
Fig. 4


W15
B
R
W16
10-6
7-66
10-23
R W
7-31
W13
7-34, 35
W14
W46
W47
10-2
B
B
7-38
3-58
3-10
3-33
3-3
3-52
3-53
x2
3-40
3-27
3-2
3-28
3-1
3-24
3-25
3-26
2-29x3
7 – 66
7 – 49

8. Sound recording mechanism assembly (7 – 2)

Remove three screws (7 — 47), and remove the sound recording mechanism assembly (7 — 2) from the main frame (3 — 1) carefully so that the flywheel (capstan shaft assembly (7 — 41)) does not drop off.

Fig. 5


7-38
7-40
7-50
7-51
7-45
7-42
7-41
7-43
7-44
7-39
7-17
8-1
7-47x3
7-36x2
7-35
7-33
7-37
7-34
7-30
7-18
7-2
7-29x3
7-14
7-22
7-28
7-25
7-27
7-26
7-24
7-32x2
7-46
7-15
7-52
7-19
7-21
7-20
7-54
7-16x2
7-53x2
7-1
7-56
7-55
7-7
7-9x2
7-4
7-12
7-8
7-11
7-10
7-5
7-23
7-13
7-6
7-3
7-31
7-58
7-64
7-57
7-59
7-49
7-60
7-62
7-48
7-61
7-66

9. Zoom lens assembly

a. Disconnect two lead wires (W38 and W39) from the automatic film speed setting circuit assembly (6 — 36).

b. Remove four screws (4 — 63), and remove the zoom lens assembly with the following note regarded.

NOTE: The needle of the meter assembly (4 — 64) is inserted in the space between two sheets of the prism (4 — 41). When removing the zoom lens assembly, move it up slightly as indicated by the arrow mark in Fig. 6 once to release the needle from the prism, and then move it to the left.

10. Zooming motor assembly (4 — 51) and gear shaft assembly (4 — 56)

a. Remove two screws (4 — 55), and remove the zooming motor assembly (4 — 51).

b. Remove two screws (4 — 62), and remove the gear shaft assembly (4 — 56).

11. Meter assembly (4 — 64)

a. Disconnect two lead wires (W26 and W51) from the printed circuit board assembly (7 — 66).

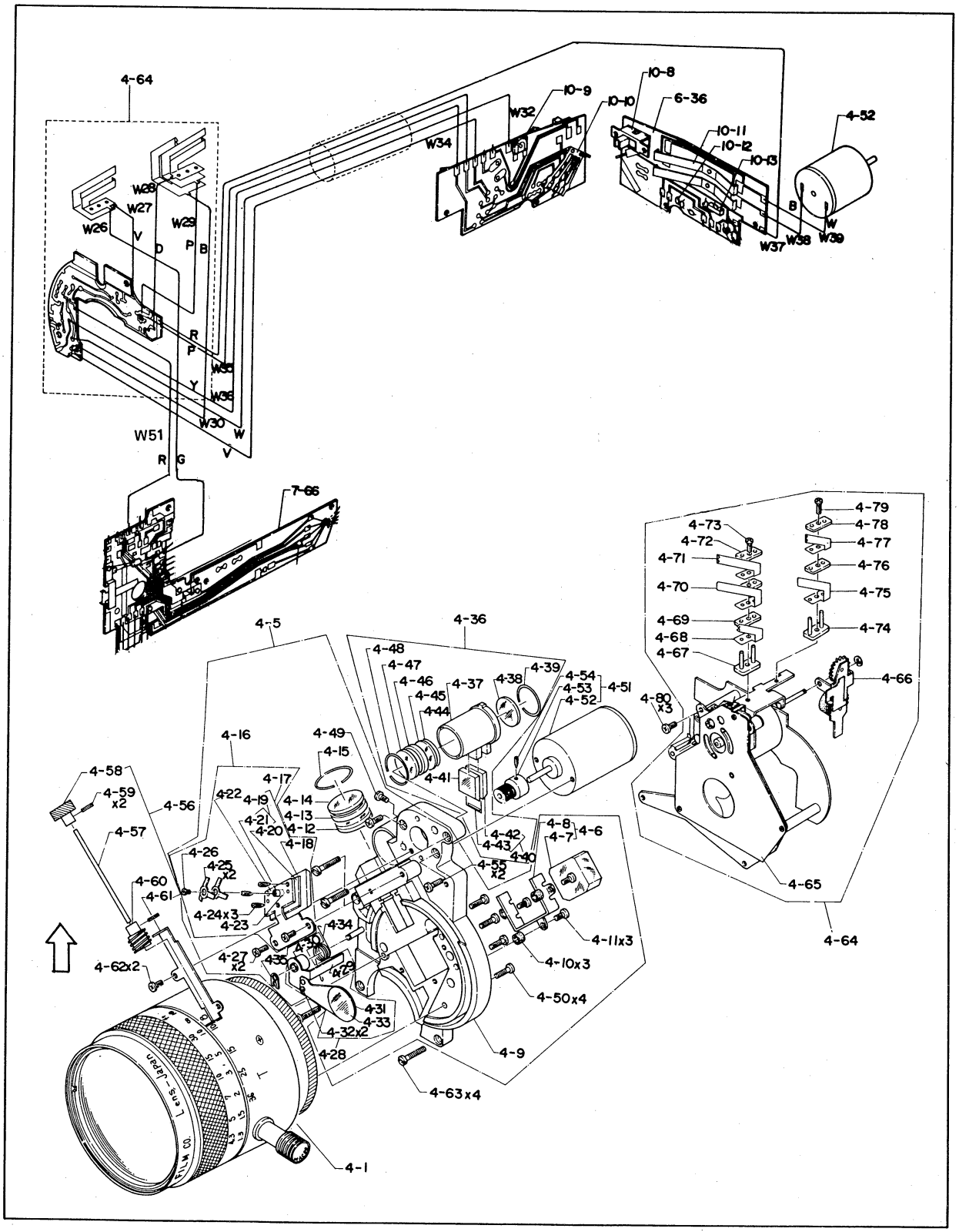
b. Disconnect five lead wires (W32, W34, W35, W36 and W37) from the automatic film speed setting circuit assembly (6 — 36).

NOTE: The lead wire (W37) is connected to the back of the automatic film speed setting circuit assembly (6 — 36).

c. Disconnect both legs of the CdS photocell (5 — 55) from the printed circuit board of the meter assembly (4 — 64).

d. Remove three screws (4 — 80), and remove the meter assembly (4 — 64).

Fig. 6


4-64
W28
W27
W26
W29
V
D
P
B
R
P
W35
Y
W36
W30
W
V
W51
R
G
W34
W32
10-9
10-10
10-8
6-36
10-11
10-12
10-13
4-52
B
W
W37
W38
W39
7-66
4-5
4-36
4-48
4-47
4-46
4-45
4-44
4-37
4-38
4-39
4-54
4-53
4-52
4-51
4-16
4-49
4-15
4-41
4-17
4-58
4-59
x2
4-56
4-22
4-19
4-14
4-57
4-21
4-13
4-20
4-12
4-18
4-26
4-25
x2
4-60
4-61
4-24x3
4-23
4-34
4-30
4-27
x2
4-35
4-29
4-62x2
4-31
4-33
4-32x2
4-28
4-1
4-42
4-43
4-40
4-8
4-7
4-6
4-55
x2
4-11x3
4-10x3
4-50x4
4-9
4-63x4
4-73
4-72
4-71
4-70
4-69
4-68
4-67
4-80
x3
4-79
4-78
4-77
4-76
4-75
4-74
4-66
4-65
4-64

12. Printed circuit board assembly (7 – 66)

a. Disconnect the following lead wires from the printed circuit board assembly (7 — 66) :

- o W31 and W33 extended from the automatic film speed setting circuit assembly.
- o W17 through W19 extended from the film transporting motor.
- o W20 through W23 extended from the solenoid assembly.
- o W24, W25 and W52 extended from the recording amplifier assembly.
- o W9 through W12 extended from the contact pieces.

b. Remove the screws (7 — 49 and 7 — 58), and remove the printed circuit board assembly (7 — 66).

13. Footage counter assembly (6 – 1)

a. Disconnect the lead wire (W20) from the solenoid assembly (5 — 13).

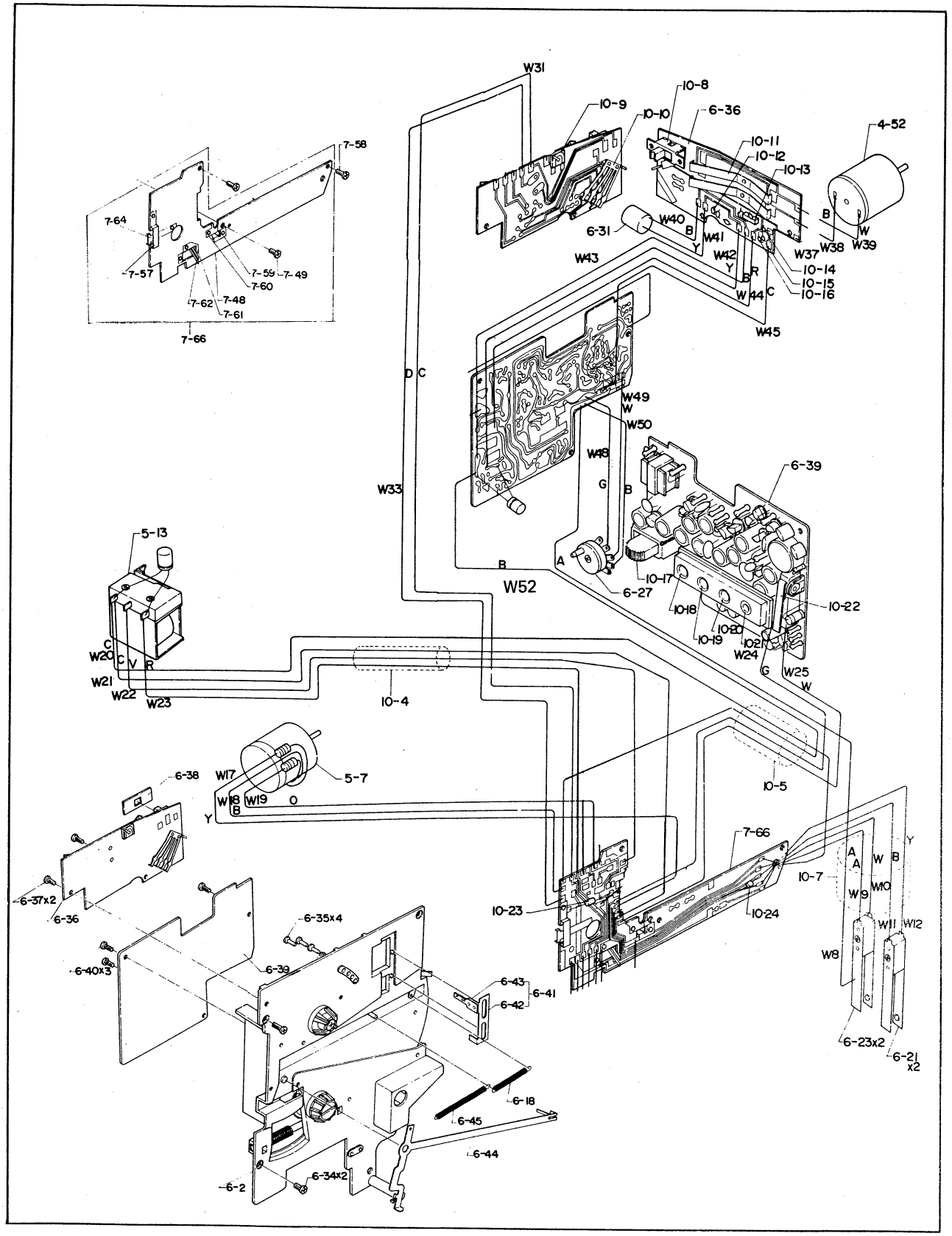
b. Remove two screws (6 — 34) and remove the footage counter assembly (6 — 1).

c. To remove the automatic film speed setting circuit assembly (6 — 36) from the footage counter assembly, disconnect the following lead wires, and remove two screws (6 — 37). (When removing the automatic film speed setting circuit assembly, remove four film speed setting pins (6 — 35) also.)

- o W40 and W41 extended from the level meter (6 — 31)
- o W42 through W45 extended from the recording amplifier assembly.

d. To remove the recording amplifier assembly (6 — 39) from the footage counter assembly, disconnect the lead wire (W8) from the contact assembly (6 — 23), disconnect three lead wires (W48 through W50) from the variable resistor (6 — 27), and remove three screws (6 — 40).

Fig. 7


W31
10-9
10-8
10-10
6-36
10-11
10-12
10-13
4-52
7-58
7-64
7-57
7-59
7-49
7-60
7-62
7-48
7-61
7-66
6-31
W40
W41
W42
W43
W37
W38
W39
10-14
10-15
10-16
W44
W45
W49
W50
W48
W33
6-39
5-13
W52
6-27
10-17
10-18
10-19
10-20
10-21
10-22
W24
W25
W20
W21
W22
W23
10-4
6-38
W17
5-7
W18
W19
10-5
6-37x2
6-36
6-35x4
6-40x3
6-39
6-43
6-41
6-42
10-23
10-24
7-66
10-7
W9
W10
W11
W12
W8
6-23x2
6-21
x2
6-18
6-45
6-44
6-34x2
6-2

14. Motor frame assembly (5 – 1)

a. Remove three screws (5 — 48), and remove the motor frame assembly (5 — 1). When the motor frame assembly (5 — 1) is removed, remove and keep the sector gear assembly (5 — 46) and gear assembly (5 — 47).

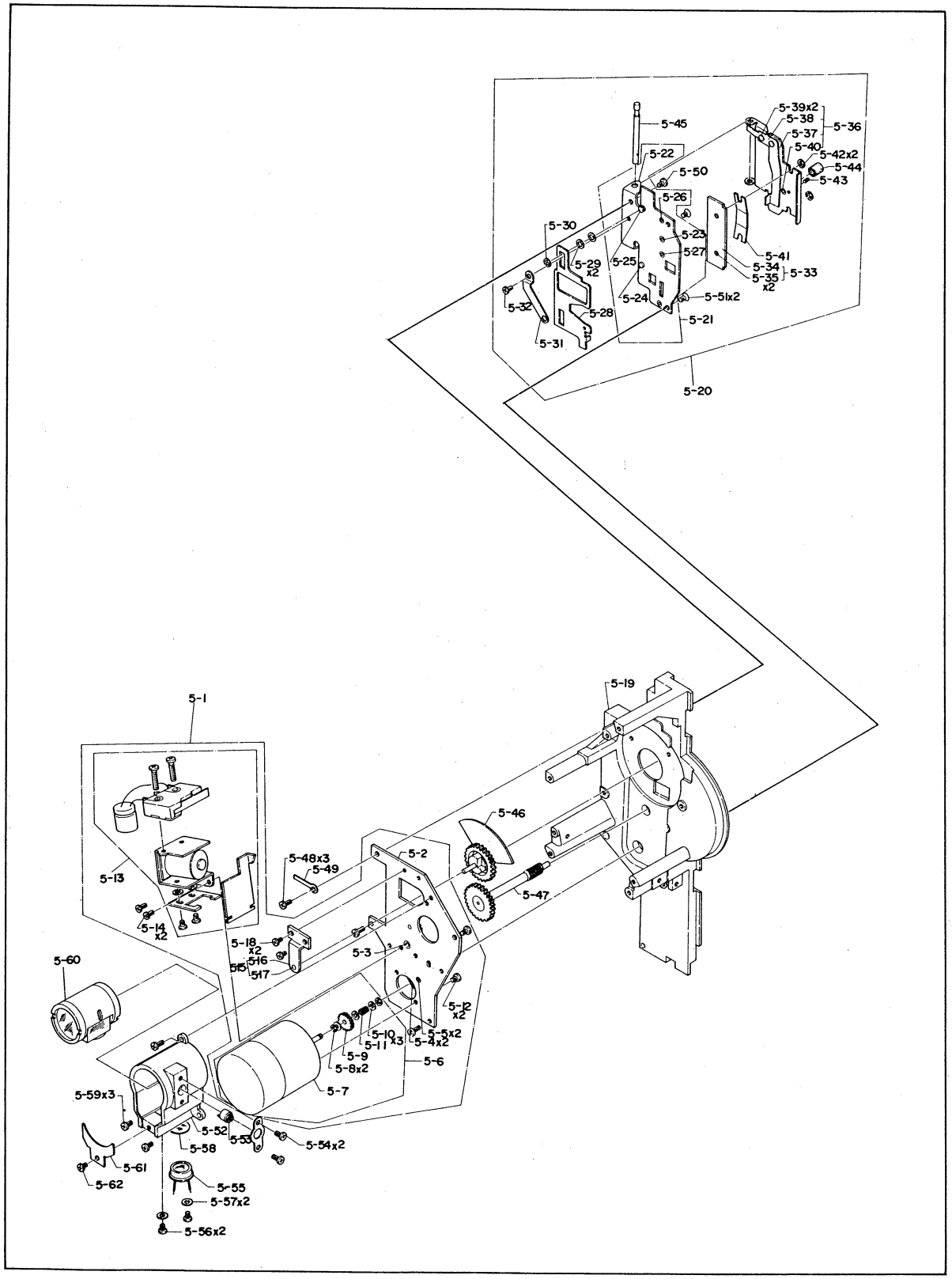
b. To remove the photocell frame (5 — 52) from the motor frame assembly, remove three screws (5 — 59).

c. To remove the solenoid assembly (5 — 13) from the motor frame assembly, remove two screws (5 — 14).

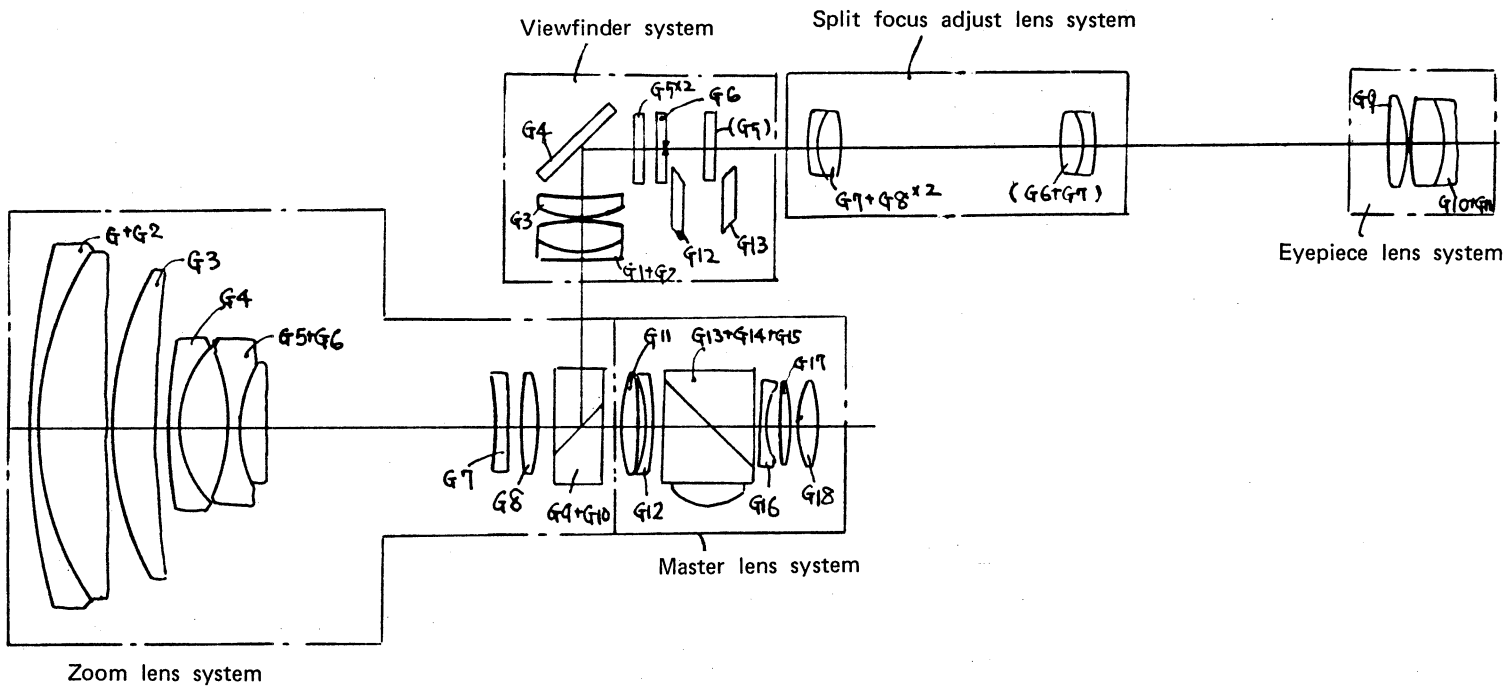
15. Film gate assembly (5 – 20)

Remove the screw (5 — 50) and two screws (5 — 51), and remove the film gate assembly (5 — 20).

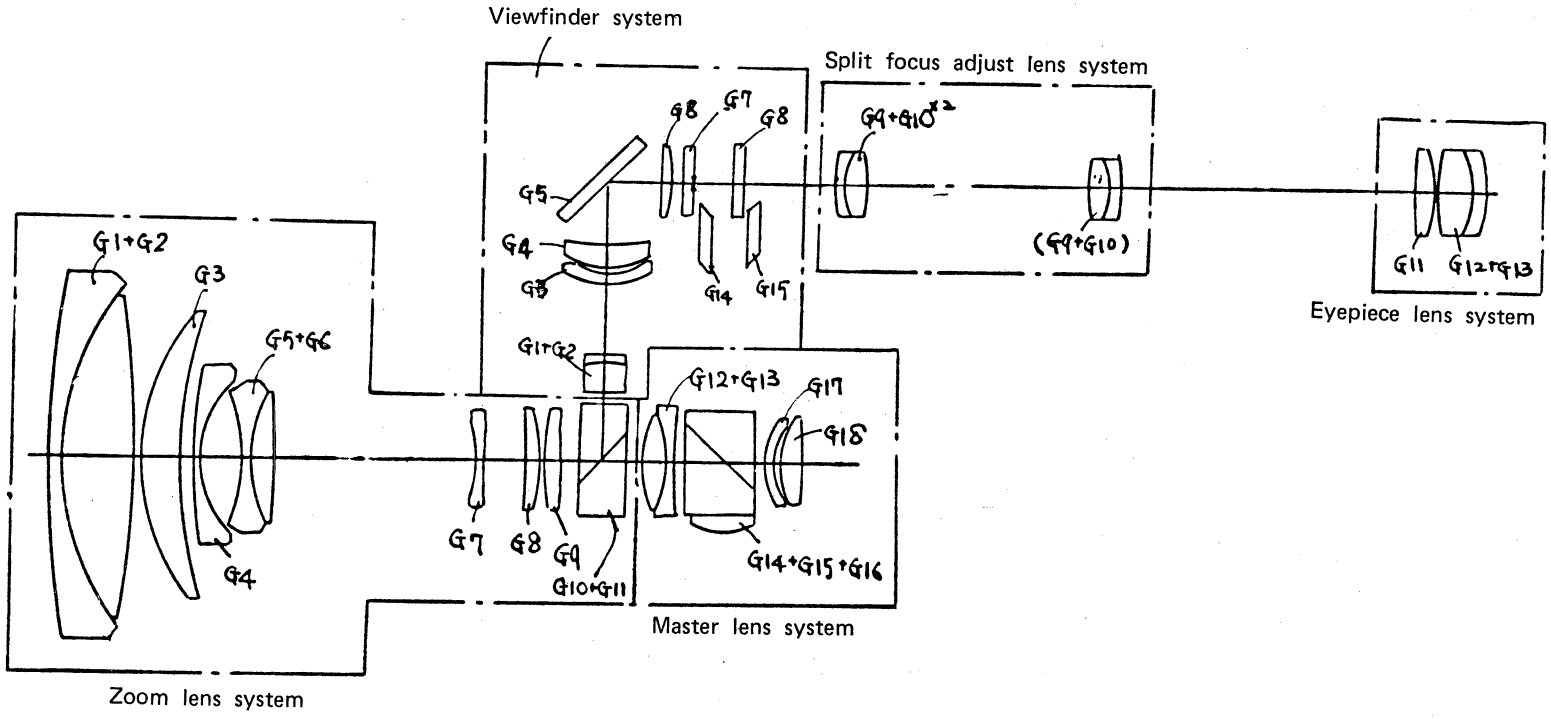
Fig. 8


5-45
5-22
5-50
5-26
5-30
5-29 x2
5-25
5-23
5-27
5-32
5-28
5-24
5-51x2
5-21
5-31
5-20
5-39x2
5-38
5-37
5-36
5-40
5-42x2
5-44
5-43
5-41
5-34
5-35 x2
5-33
5-19
5-1
5-46
5-2
5-48x3
5-49
5-13
5-47
5-14 x2
5-18 x2
5-16
5-15
5-17
5-3
5-60
5-12 x2
5-10
5-11 x3
5-5x2
5-4x2
5-9
5-8x2
5-6
5-7
5-59x3
5-52
5-53
5-58
5-54x2
5-61
5-62
5-55
5-57x2
5-56x2

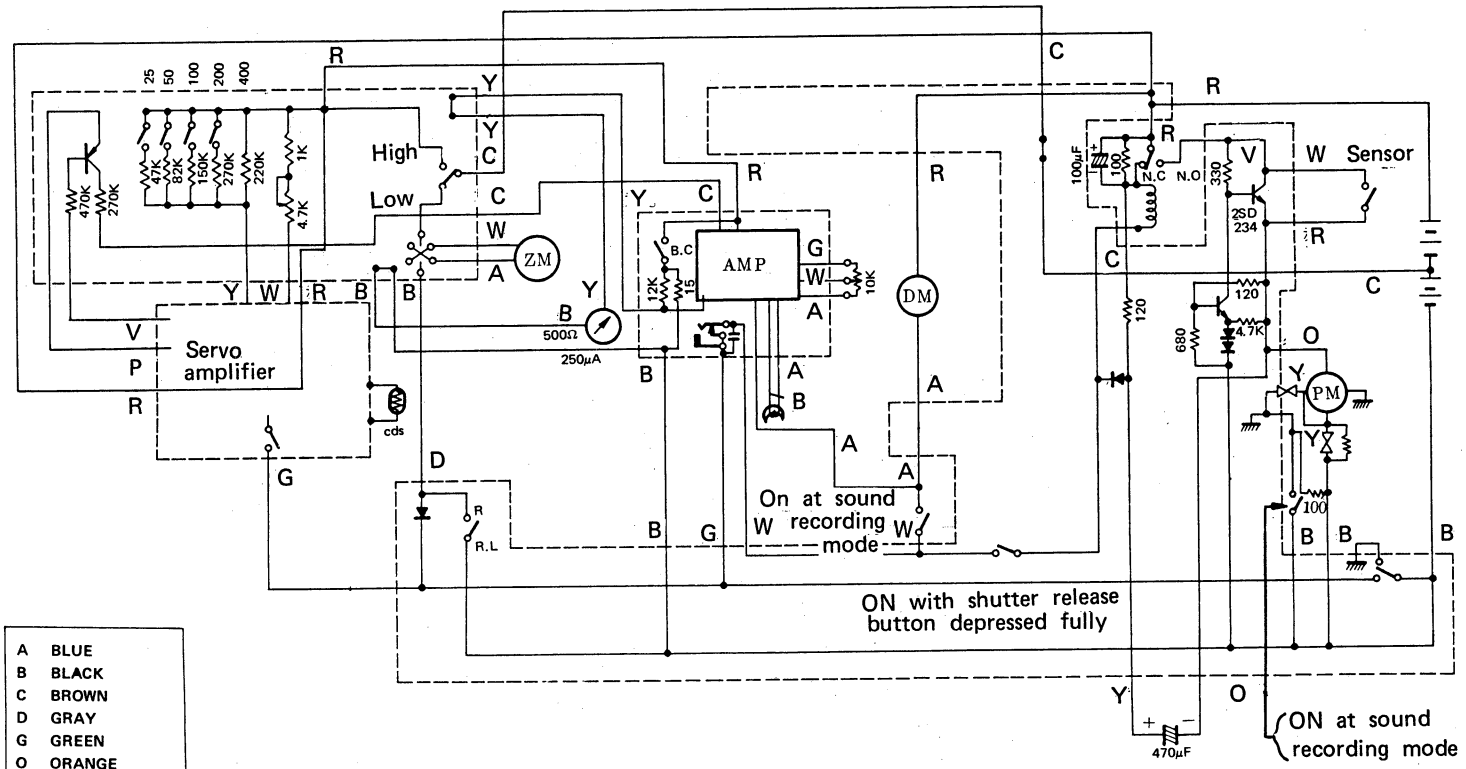
OPTICAL SYSTEM PARTS LAYOUT (ZXM500)



OPTICAL SYSTEM PARTS LAYOUT (ZXM800)



CIRCUIT DIAGRAM (ZXM500 & ZM800)



A	BLUE
B	BLACK
C	BROWN
D	GRAY
G	GREEN
O	ORANGE
P	PINK
R	RED
V	VIOLET
W	WHITE
Y	YELLOW

Ⅲ REASSEMBLY AND ADJUSTMENT

1. Main frame

1 — 1 Leaf spring (3 — 2)

a. Install the leaf spring (3 — 2) on the main frame (3 — 1) securely by caulking.

b. Check the leaf spring to insure that the leaf spring works effectively.

1 — 2 Footage counter window (3 — 3)

a. Check the footage counter window to insure that the scales and characters are clean and that the window glass is not frosted or scarred.

b. Install the footage counter window securely with Pliobond.

1 — 3 Moquette (3 — 27, 3 — 28 and 3 — 60)

a. Install the moquette (3 — 27 and 3 — 28) with Pliobond carefully and correctly. These parts are used to shield light.

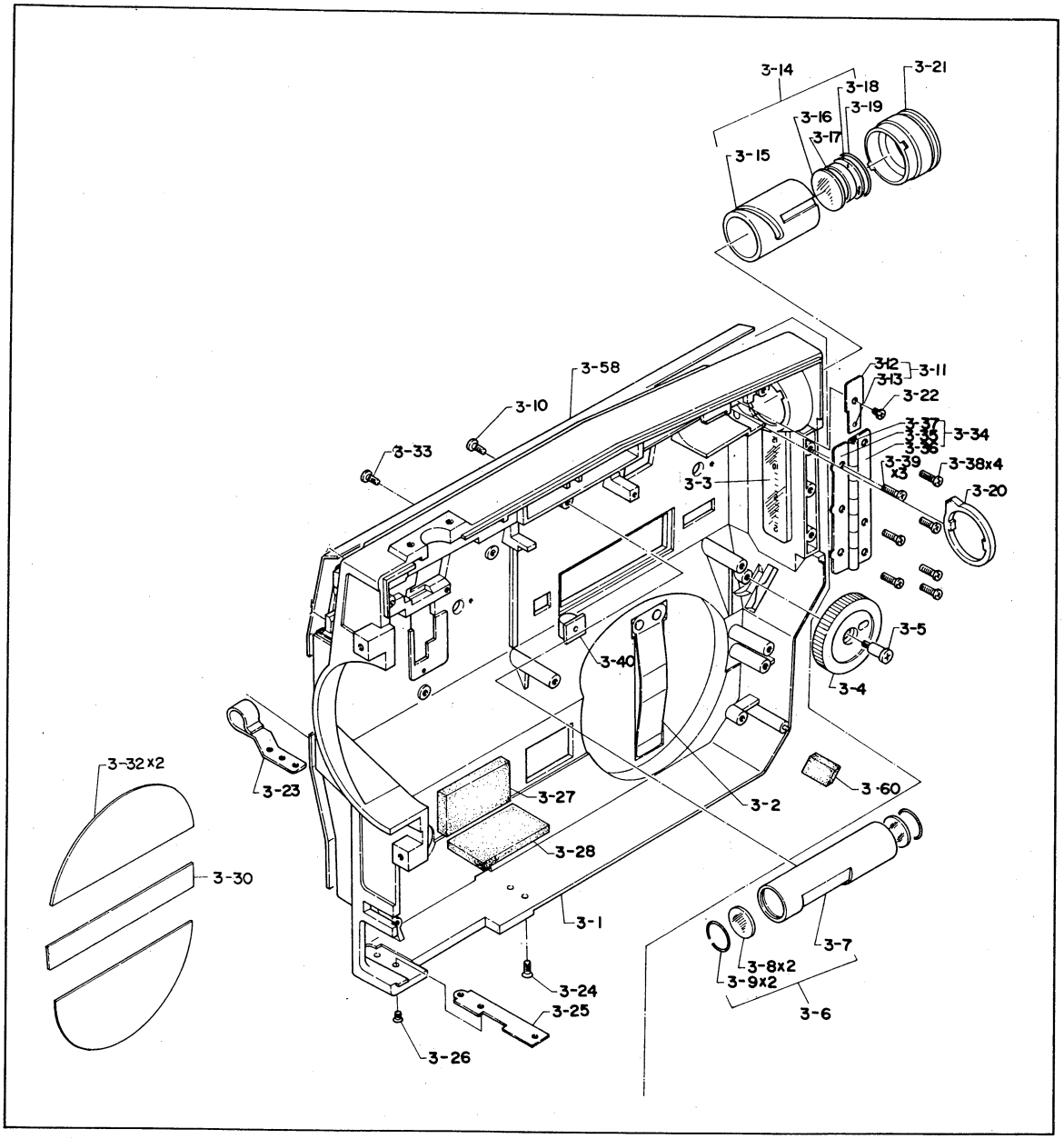
b. Install the moquette (3 — 60) securely and correctly with Pliobond. This moquette is used as a shock absorber during shutter releasing.

1 — 4 Lens barrel assembly (3 — 6)

a. Install the lens correctly so that the inserting direction is correct.
If the lens is inserted in the opposite way, image cannot be seen correctly through the viewfinder. Look a fluorescent lamp through the viewfinder and insure that the lens is inserted correctly. (Recommend the camera be compared with another camera for visibility.)

b. Tighten the lens barrel set screw securely and correctly. If this set screw is loose, projection of the film transporting indicator mark may become improper or battery checker voltage may vary.

Fig. 9


3-14
3-21
3-18
3-19
3-16
3-17
3-15
3-58
3-12
3-13
3-11
3-22
3-10
3-33
3-37
3-34
3-38x4
3-3
3-20
3-5
3-40
3-4
3-32x2
3-23
3-27
3-2
3-60
3-28
3-30
3-1
3-7
3-8x2
3-9x2
3-24
3-25
3-6
3-26

1 — 5 Eyepiece assembly (3 — 14)

a. Carefully assemble the correct parts. If lens inserting direction is incorrect or if a lens having incorrect thickness is installed, visibility is worsened and object will not be seen correctly.

b. With the projected portion of the eyepiece barrel (3 — 21) inserted into the groove on the main frame, turn the eyepiece barrel (3 — 21) 90°, and fix the projected portion of the eyepiece barrel (projected toward the interior of the main frame) with Pliobond.

c. Check the holding plate assembly (3 — 11) for deformation. If this assembly is deformed, turning friction of the eyepiece will be affected.
Apply Losoid grease (1160B) to the cam groove of the eyepiece body (3 — 15), and secure the eyepiece assembly (3 — 14) with the screw (3 — 22).

d. Turn the ring (3 — 20) and insure that the eyepiece assembly (3 — 14) operates smoothly.

1 — 6 Name plates and leathers

a. Install the name plate (3 — 30) with Pliobond carefully so that the characters on the name plate are not up - side - down and that the name plate is aligned horizontally.

b. Install the name plate (3 — 29) with Pliobond carefully and correctly so that none of the portion is floated or peeled off.

c. Install the leathers (two sheets of 3 — 32, 3 — 57 and 3 — 58) correctly with Pliobond so that they are not floated but sticked evenly toward the entire areas.

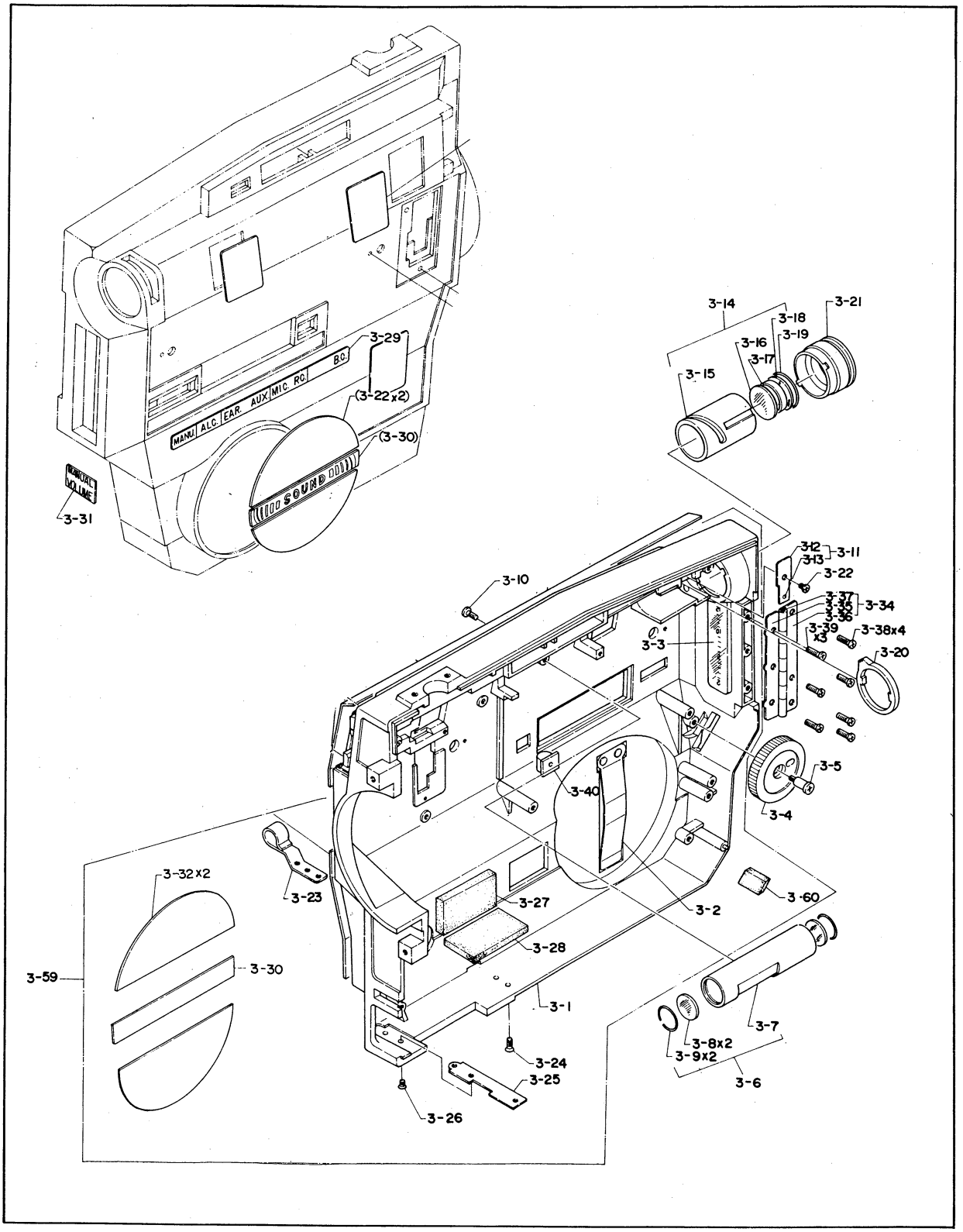
1 — 7 Others

a. Install the strap ring bracket (3 — 23) with the screw (3 — 24).

b. Install the plate (3 — 25) with the screw (3 — 26).

c. Install the dial (3 — 4) with the screw (3 — 5). Turn the dial (3 — 4) and see if it turns smoothly.

Fig. 10


3-14
3-21
3-18
3-19
3-16
3-17
3-15
3-29
(3-22x2)
(3-30)
MANU ALC EAR AUX MIC RC BC
SOUND
MANUAL VOLUME
3-31
3-10
3-12
3-13
3-11
3-22
3-37
3-35
3-36
3-34
3-39 x3
3-38x4
3-3
3-20
3-5
3-40
3-4
3-32x2
3-23
3-27
3-2
3-60
3-28
3-59
3-30
3-1
3-7
3-8x2
3-9x2
3-24
3-25
3-6
3-26

2. Film chamber door assembly

2 — 1 Flicker preventing pins (2 — 14)

a. Check the pins (2 — 14) to insure that they operate smoothly without any dragging.

b. The spring (2 — 13) is weaker than the spring (2 — 12). When these pins do operate correctly, flicker or duplicated exposure will occur.

2 — 2 Glass (2 — 24) and cover plate (2 — 17)

a. Install the glass (2 — 24) with Pliobond. Check the window glass to insure that it is not frosted or scarred.

b. Pee! off the paper from the back of a new cover plate (2 — 17) and install it on the film chamber door. Check the cover plate to insure that it is not scarred or scratched.

2 — 3 Open - close button (2 — 18)

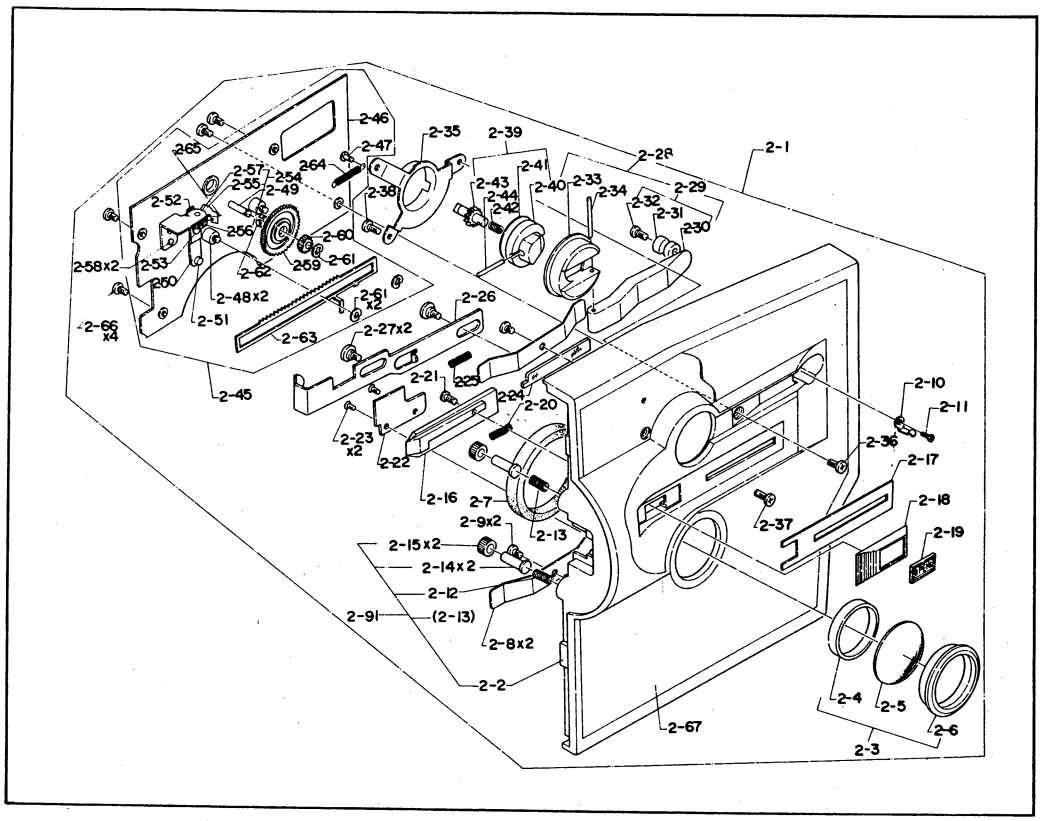
a. Check the open - close button to insure that it is operated smoothly by the spring (2 — 20).

b. Apply silicon grease (G30M) to the sliding portion of the lock lever (2 — 16).

2 — 4 Lever (2 — 26)

This lever pushes the pressure plate when the film chamber door is closed. Check the lever for shape. When the shape is incorrect, film will not be transported correctly or focusing will not be made correctly.
Check the lever also for position. If the lever is not positioned correctly, the pressure plate will be depressed before the pins (2 — 14) come into contact with the film causing an improper film transporting.

Fig. 11


2-46
2-47
2-35
2-39
2-28
2-1
265
264
2-57
2-55
254
2-49
2-38
2-41
2-43
2-44
2-42
2-40
2-33
2-34
2-32
2-31
2-29
230
2-52
256
2-60
259
2-61
2-62
2-58x2
253
250
2-48x2
2-61 x2
2-26
2-66 x4
2-51
2-63
2-27x2
2-45
2-21
225
2-24
2-20
2-23 x2
2-22
2-10
2-11
2-36
2-17
2-16
2-7
2-9x2
2-13
2-37
2-18
2-19
2-15x2
2-14x2
2-12
2-91
(2-13)
2-8x2
2-2
2-4
2-5
2-6
2-67
2-3

2 — 5 Base plate assembly (2 — 45)

a. Check the spring (2 — 65) to insure that it is hooked correctly. The rewind buttom will not return if the spring is unhooked.

b. The leaf spring (2 — 62) is used to protect the gear (2 — 60) and rack (2 — 63) from damaging in the event that the rewind lever (2 — 28) is turned reversely. In addition, the leaf spring (2 — 62) functions to allow the gear (2 — 59) and gear (2 — 60) turning together. Thus, select a slightly high spring force for this leaf spring (2 — 62).

c. Check the rack (2 — 63) to insure that it operates smoothly and that it is returned correctly by the spring (2 — 64).

d. When installing the base plate assembly (2 — 45) on the film chamber door, correctly place the lever (2 — 55) on the collar of the button assembly (2 — 39). In addition, insure that the pin (2 — 51) caulked on the lever (2 — 50) is inserted in the notch of the lever (2 — 26).

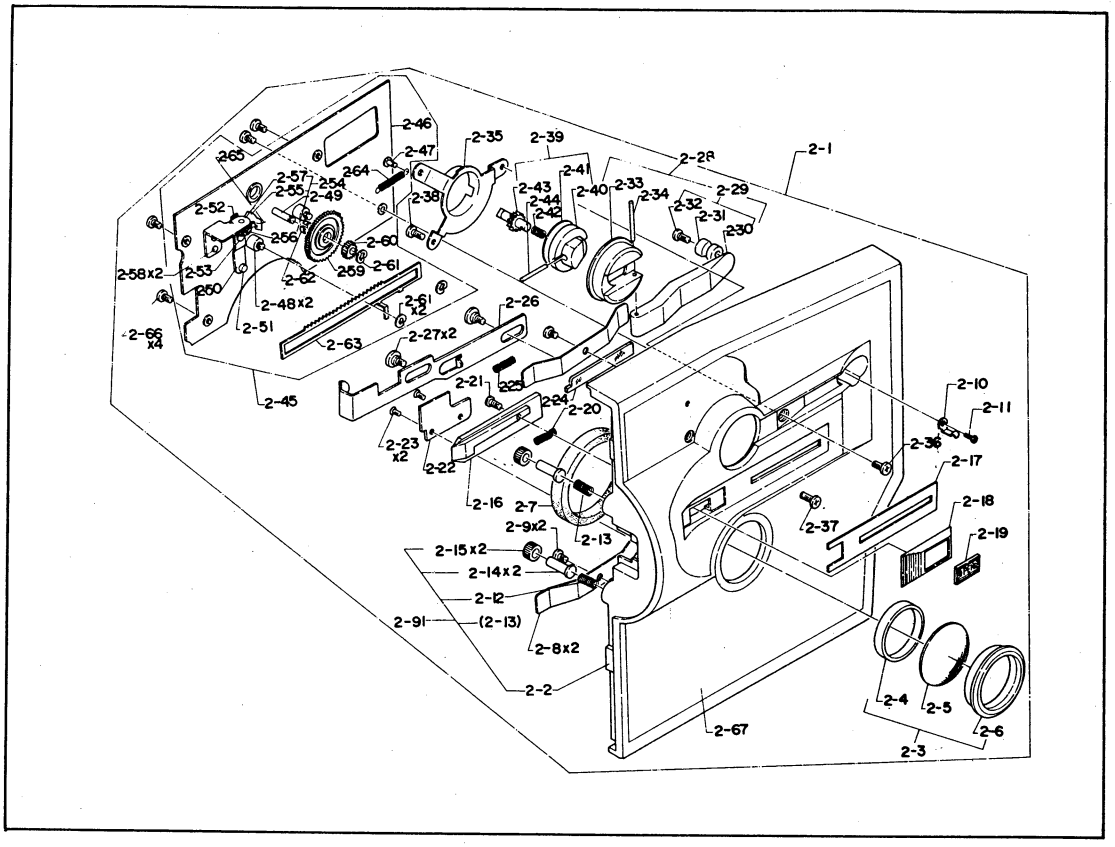
e. When the base plate assembly (2 — 45) is installed on the film chamber door, turn the rewind lever and see if the needle of the rack (2 — 63) moves accordingly.

f. Stop turning the rewind lever and see if the needle of the rack resets to zero as the button (2 — 39) returns to the original position.

2 — 6 Moquette (2 — 7)

This moquette is used for light shielding. Install correctly with Pliobond so that no floating or peeled off portion exists.

Fig. 12


2-1
2-2
2-3
2-4
2-5
2-6
2-7
2-8x2
2-9x2
2-10
2-11
2-12
2-13
2-14x2
2-15x2
2-16
2-17
2-18
2-19
2-20
2-21
2-22
2-23 x2
2-24
2-25
2-26
2-27x2
2-28
2-29
2-30
2-31
2-32
2-33
2-34
2-35
2-36
2-37
2-38
2-39
2-40
2-41
2-42
2-43
2-44
2-45
2-46
2-47
2-48x2
2-49
2-51
2-52
2-53
2-55
2-57
2-58x2
2-60
2-61
2-61 x2
2-62
2-63
2-66 x4
2-67
2-91
(2-13)
254
256
259
260
264
265

3. Footage counter assembly

3 — 1 Take - up torque

a. The rated take - up torque is 45±10 gr - cm. When take - up torque deviates the rated torque, replace the spring (6 — 12) with a proper one.

b. Check the shaft portion of the film take - up gear (6 — 11) for turning. The shaft must turn smoothly without any dragging.

3 — 2 Lubrication

Check the following parts for lubrications, and apply appropriate lubricant to the parts as indicated below if necessary.

a. Squalol grease (M4)

Threaded portion of the spur gear (6 — 10) (Check the thread for deformation.)

b. Helicolube and Molycote mixed grease

Gear teeth of the idler gear (6 — 9), spur gear (6 — 10) and film take - up gear (6 — 11) and shaft holding portion of the shaft holder (6 — 7).

3 — 3 Film end mark on the lever assembly (6 — 41)

Check the filter (6 — 43) to insure that it is installed on the lever (6 — 42) firmly with Pliobond and that the filter is not tilted or bent. (The rated angle of the filter against the lever is 90°.)

4. Film chamber plate assembly (6 — 46)

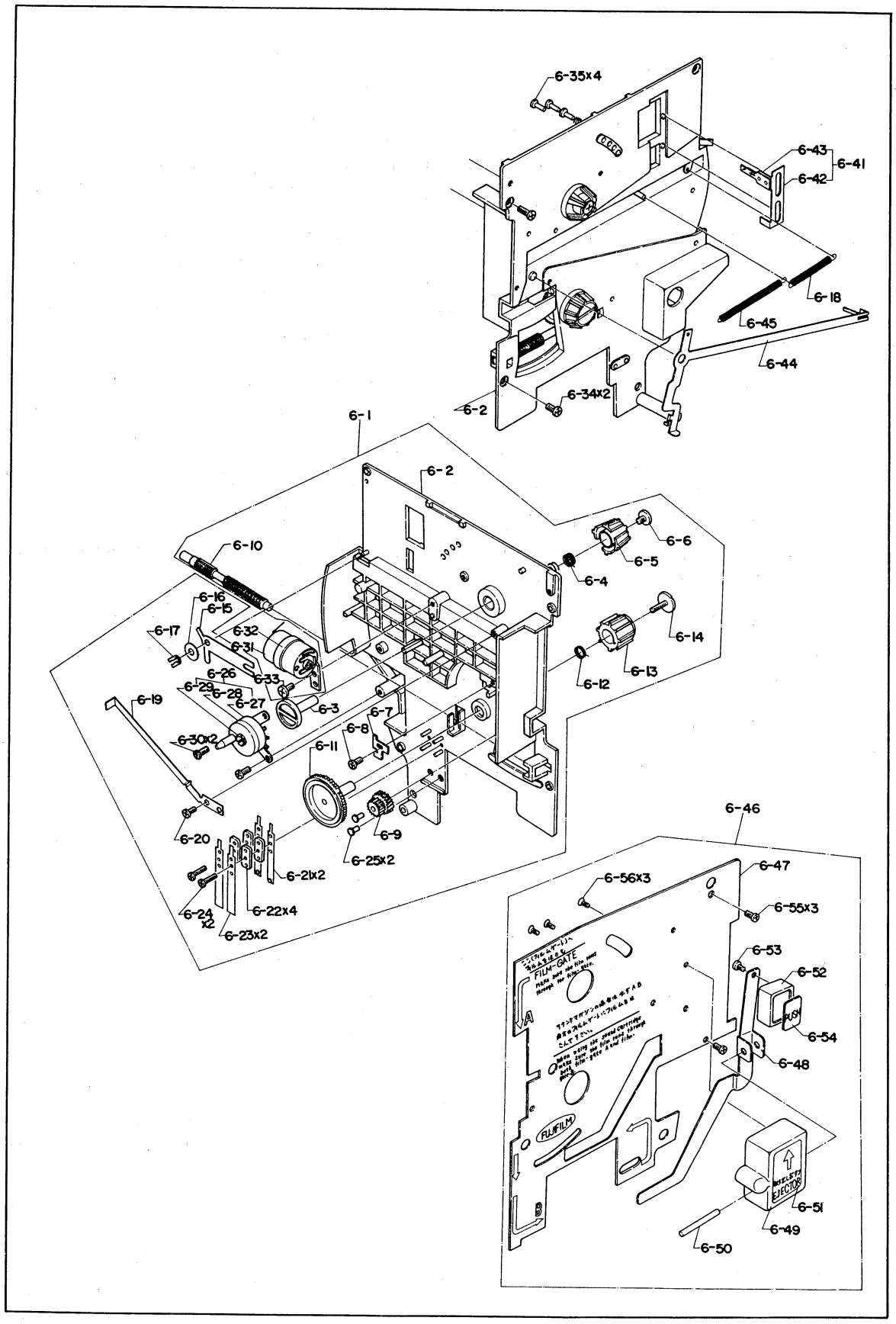
a. Check the filter chamber plate for flatness. It should not be warped or bent.

b. Install the name plate (6 — 54) with Pliobond.

c. Check the name seal (6 — 51) to insure that no floating or peeled off portion exists.

d. Check the lever (6 — 48) for angle of the two risen portions. This angle affects the lever operation.

Fig. 13


6-35x4
6-43
6-41
6-42
6-18
6-45
6-44
6-34x2
6-2
6-1
6-2
6-10
6-6
6-5
6-4
6-16
6-15
6-17
6-32
6-31
6-14
6-26
6-33
6-29
6-28
6-27
6-12
6-13
6-19
6-3
6-7
6-8
6-30x2
6-11
6-20
6-9
6-25x2
6-21x2
6-24
x2
6-22x4
6-23x2
6-46
6-47
6-56x3
6-55x3
6-53
6-52
6-54
6-48
6-51
6-49
6-50
FILM-GATE
FUJIFILM
EJECTOR

5. Film gate assembly

5 — 1 Film pulling out resistance

a. The rated film pulling out resistance is 65±5 grams. Adjust resistance with the adjust screw (5 — 43).

b. When the rated resistance cannot be obtained by adjusting the adjust screw, replace the leaf spring (5 — 41) with a proper one.

c. Note that when the resistance is higher than the rated resistance, film will not be transported correctly in the selected speed, and contrarily, when it is lower than the rated resistance, incorrect focusing of flicker will occur.

5 — 2 Claw (5 — 28)

a. Open the pressure plate seat (5 — 36) and see if the claw sinks below the film gate surface. The claw should not be projected above the film gate surface.

b. Close the pressure plate seat (5 — 36) and see if the claw comes out 0.4±0.1 mm above the film gate surface.

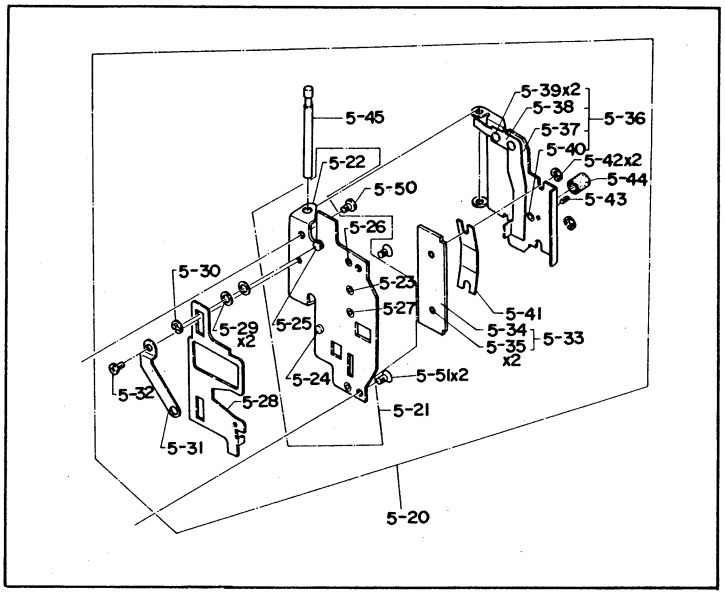
c. When the requirements described in 5 — 2 - a and b above are unsatisfactory, film will not be loaded or transported correctly.
When adjustment is needed, properly bend the leaf spring (5 — 38).

d. The rated claw pressure is 10±2 grams. When adjustment is needed, properly bend the leaf spring (5 — 31) or replace it with a proper one.

5 — 3 Tube (5 — 44)

When the film is not loaded correctly, this tube (5 — 44) stops film transportation. See if this tube is firmly installed on the pin (5 — 40).

Fig. 14


5-45
5-22
5-50
5-26
5-30
5-23
5-27
5-29 x2
5-25
5-24
5-51x2
5-32
5-28
5-21
5-31
5-20
5-39x2
5-38
5-37
5-40
5-36
5-42x2
5-44
5-43
5-41
5-34
5-35 x2
5-33

6. Motor frame assembly (5 – 1)

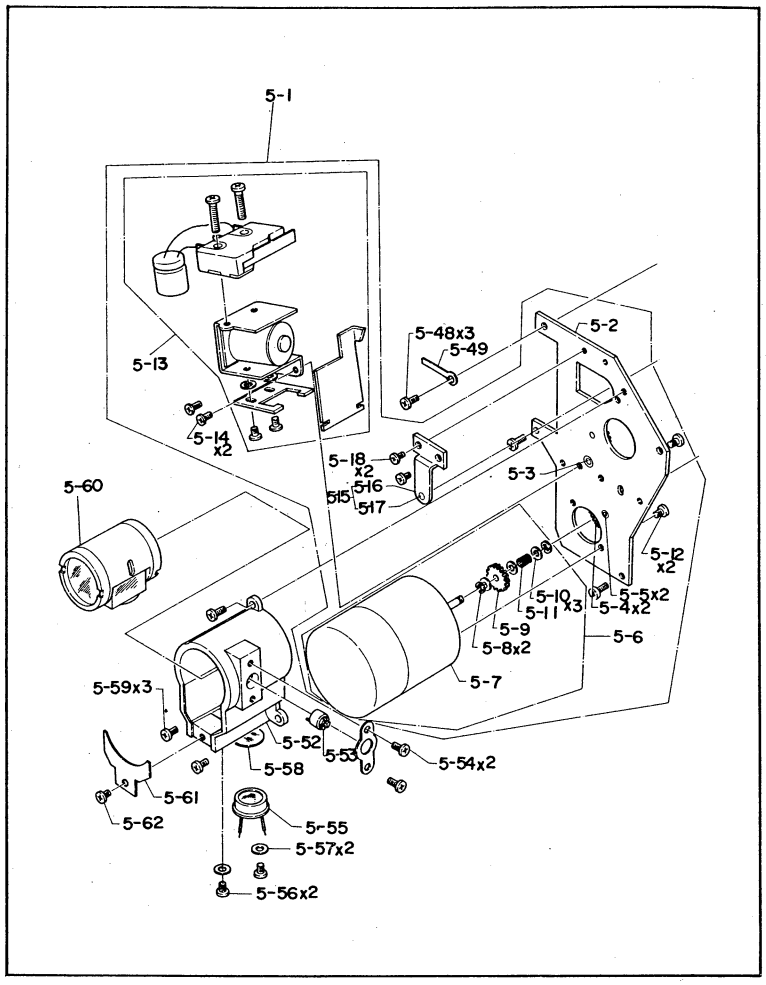
6 – 1 Film transporting motor assembly

Install the film transporting motor assembly (5 – 6) so that engagement of the gear is as deepest as possible and motor driving current is lowest.

6 – 2 Friction current (Motor idling current)

Film will not be transported correctly or correct filming speed will not be obtained unless friction current is 1A or more.
When friction current is lower than 1A, replace the spring (5 – 11) with a proper one.

Fig. 15


5-1
5-13
5-14 x2
5-48x3
5-49
5-2
5-18 x2
5-16
515
517
5-3
5-60
5-12 x2
5-10 x3
5-11
5-5x2
5-4x2
5-9
5-8x2
5-6
5-7
5-59x3
5-52
5-53
5-58
5-54x2
5-61
5-62
5-55
5-57x2
5-56x2

7. Assembling motor frame assembly (5 – 1), film gate assembly (5 – 20) and footage counter assembly (6 – 1)

7 – 1 Assembling

a. Install the film gate assembly (5 – 20) on the base frame (5 – 19) with two screws (5 – 51) and screw (5 – 50).

b. Apply Squalol oil (L1) to both ends of the shaft portions of the sector gear assembly (5 – 46) and gear assembly (5 – 47) slightly.

c. Apply Squalol grease (M4) to the cam surface of the sector gear.

d. Place the sector gear assembly and gear assembly in their positions. (Be sure to insert the cam of the sector gear assembly correctly into the square groove of the claw.)

e. Place the motor frame assembly (5 – 1) on the base frame (5 – 19), align position of the motor frame assembly with a positioning jig (J374), and install the motor frame assembly on the base frame (5 – 19) with three screws (5 – 48). Install the lug (5 – 49) without fail.

f. Install the bracket (5 – 15) in a position where the motor driving current is lowest.

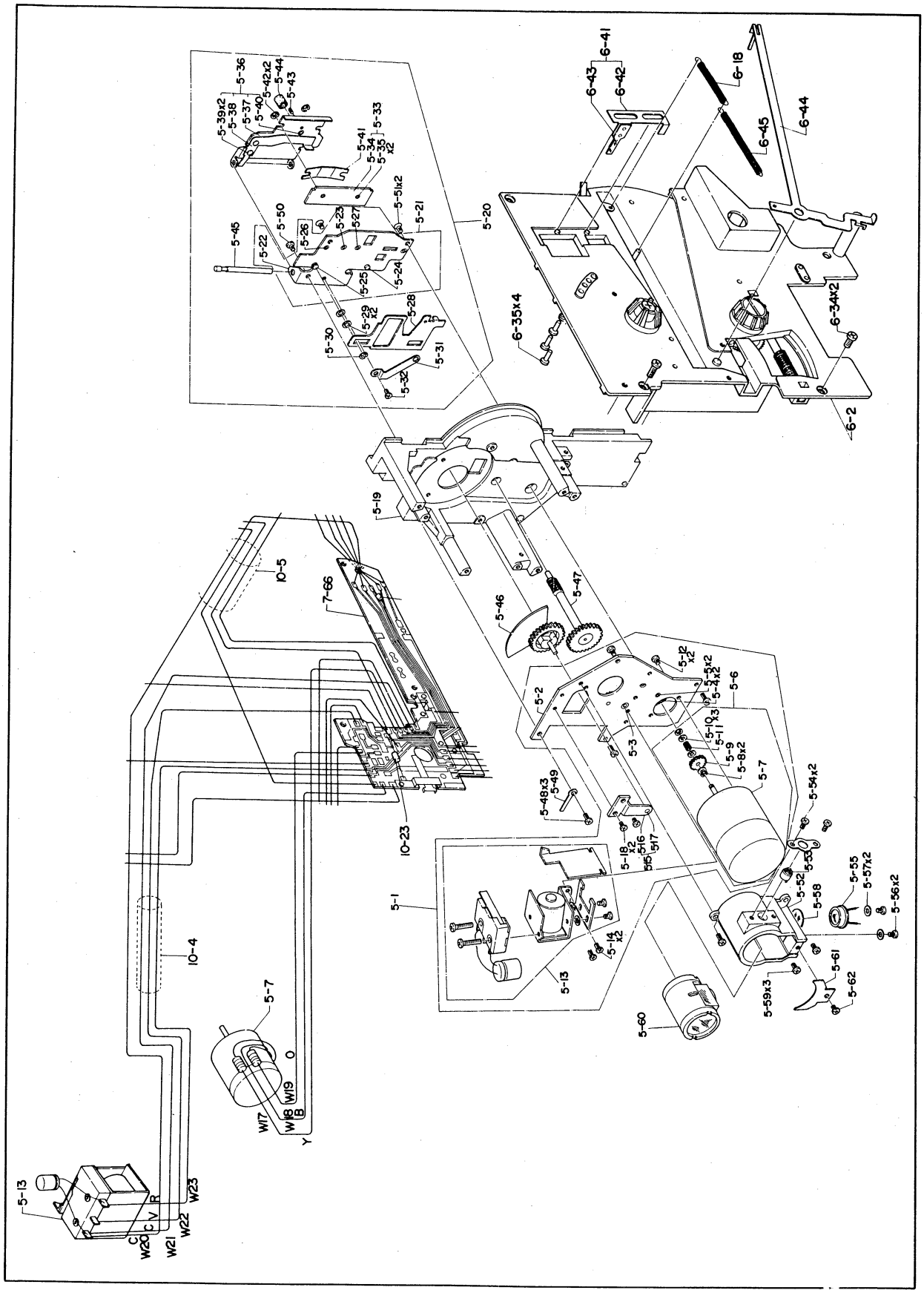
g. Insert the shaft of the gear assembly (5 – 47) into the shaft holder of the footage counter assembly (6 – 1), and install the footage counter assembly (6 – 1) on the base frame (5 – 19) with two screws (6 – 34).

h. Adjust position of the gear assembly (5 – 47) with the shaft holder (6 – 7) so that slackness of the gear assembly (5 – 47) toward the thrust direction is minimum and motor drive current is lowest, and secure the gear assembly.

i. Install the printed circuit board assembly (7 – 66), and connect the solenoid assembly (5 – 13) and motor (5 – 7) to the printed circuit board (7 – 66) with lead wires as shown in the right hand figure by means of soldering.

j. Install the photocell frame (5 – 52) on the base plate (5 – 2).

Fig. 16


5-36
5-42x2
5-44
5-43
5-39x2
5-38
5-37
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5-33
5-41
5-34
5-35 x2
5-51x2
5-21
5-20
5-50
5-23
5-27
5-45
5-22
5-26
5-24
5-25
5-28
5-29 x2
5-30
5-31
5-32
6-41
6-43
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6-34x2
6-2
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5-6
5-2
5-3
5-10x3
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5-8x2
5-7
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5-54x2
10-23
5-18 x2
5-16
5-17
5-15
5-53
5-52
5-58
5-55
5-57x2
5-56x2
5-1
5-14 x2
5-13
5-61
5-62
5-59x3
5-60
10-4
5-7
W17
W18
W19
O
B
Y
5-13
W20
C
W21
V
W22
R
W23

7 — 2 Adjustment of solenoid switch

a. Connect a capacitor having the same capacity as the capacitor (9 — 36) and two lead wires to the printed circuit board assembly (7 — 66) as shown in the right hand figure.

b. Apply power (5.5V) to the lead wires connected as above, release the stopper plate of the solenoid assembly (5 — 13), turn on the circuit switch (the contact pieces (7 — 59 and 7 — 60) close), return the stopper plate slowly, and see of the sector stops at the correct position without being stayed open.

c. Stop applying power (5.5V), place the stopper plate of the solenoid assembly (5 — 13) on the top of the sector cam, and see if a 0.2 mm or more gap exists between them toward the direction along which the stopper plate moves away from the sector.

d. Loosen the screw (5 — 14) and adjust position of the solenoid assembly so that the requirements described in 7 — 2 - b and c are satisfied.

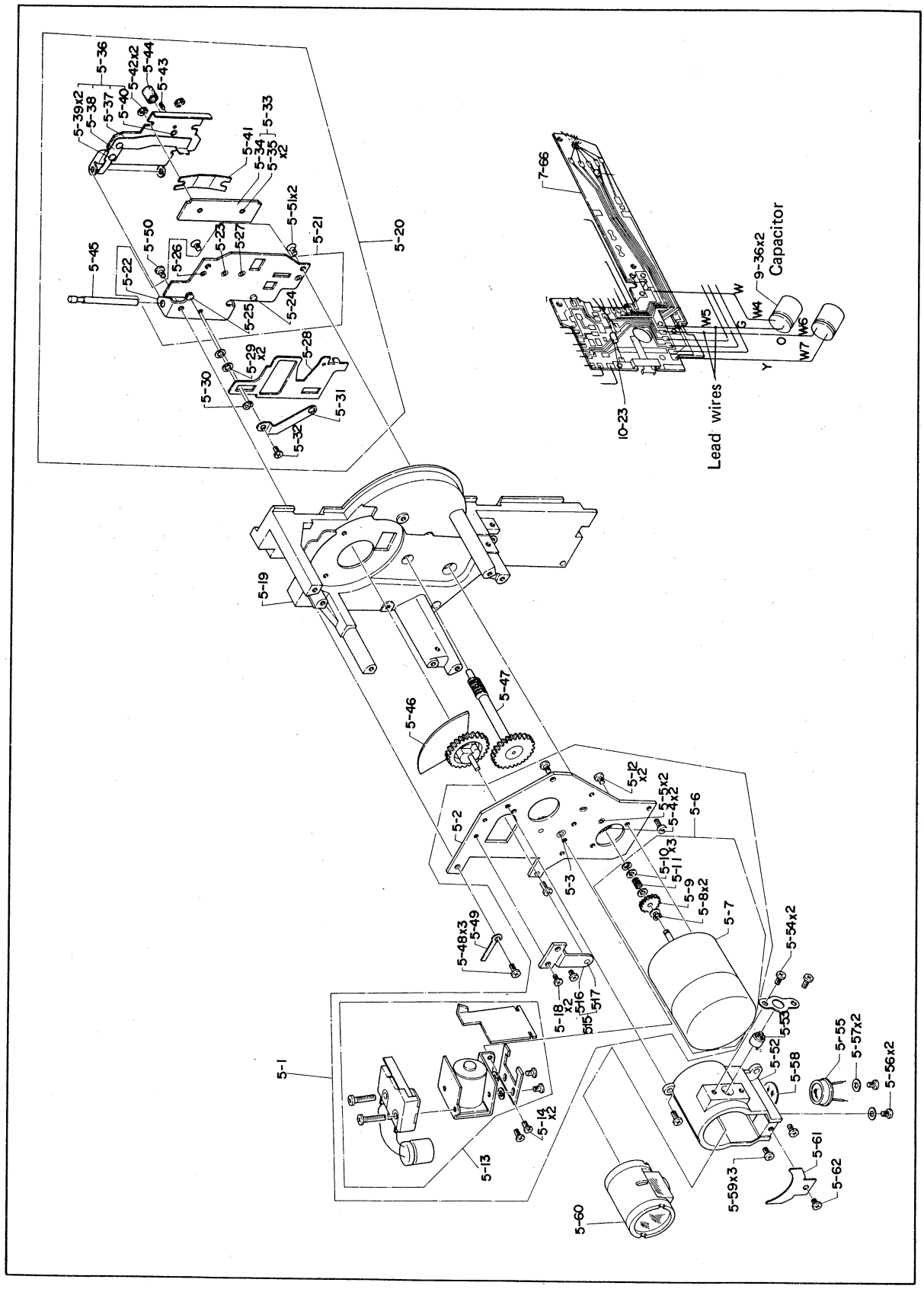
7 — 3 Operating sound

a. When operating sound is abnormal, check each gear for intermeshing and each turning part for lubrication.

b. Check each part for damaging.

c. Check each part for slackness toward the thrust direction.

Fig. 17


5-1
5-2
5-3
5-4x2
5-5x2
5-6
5-7
5-8x2
5-9
5-10x3
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5-12 x2
5-13
5-14 x2
5-15
5-16
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5-18 x2
5-19
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5-31
5-32
5-33
5-34
5-35 x2
5-36
5-37
5-38
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5-41
5-42x2
5-43
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5-45
5-46
5-47
5-48x3
5-49
5-50
5-51x2
5-52
5-53
5-54x2
5-55
5-56x2
5-57x2
5-58
5-59x3
5-60
5-61
5-62
7-66
9-36x2
Capacitor
10-23
Lead wires
W
W4
G
W5
O
W6
W7
Y

8. Installing meter assembly

a. Install the meter assembly (4 — 64) with three screws (4 — 80) on the base frame (5 — 19).

b. Check the contact pieces (4 — 75 and 4 — 77) for cleanliness and insure that they are not in contact.

c. Check the contact pieces (4 — 68, 4 — 70 and 4 — 71) for cleanliness, and insure that the contact piece (4 — 68) is in contact with the contact piece (4 — 70) and that the contact piece (4 — 70) is not in contact with the contact piece (4 — 71).

d. Connect the lead wires (W26 and W51) to the printed circuit board assembly (7 — 66) by means of soldering.

9. Installing viewfinder assembly

a. The optical axis of the half mirror assembly (4 — 6) has been correctly adjusted. Do not touch the three screws (4 — 11).

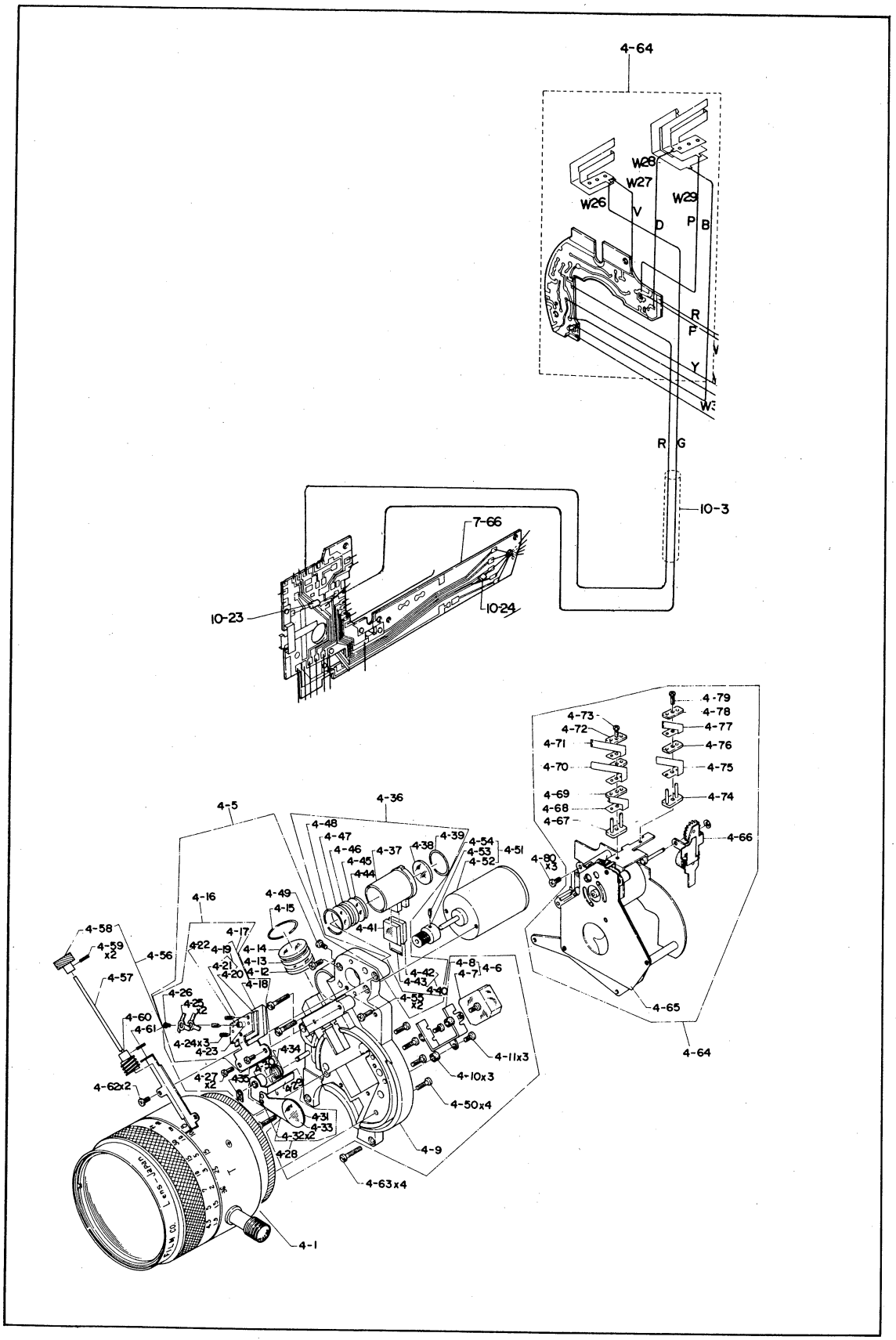
b. When the lens barrel assembly (4 — 36) is removed, adjust position of the lens barrel by the use of a positioning jig (J344). (When adjusting position of the lens barrel, turn the overall lens barrel assembly with the viewfinder assembly (4 — 5) assembled completely.)

c. Install the zooming motor assembly (4 — 51), gear shaft assembly (4 — 56) and afocal lens assembly (4 — 1) so that the gears of these assemblies are intermeshed as deepest as possible but the zooming motor current is as lowest as possible.

d. Tighten the four screws (4 — 63) especially firmly.

e. When installing the viewfinder assembly (4 — 5) on the base frame (5 — 19), be careful not to allow any parts touching the needle of the meter assembly.

Fig. 18


4-64
W28
W27
W26
W29
V
D
P
B
R
P
Y
R
G
10-3
7-66
10-23
10-24
4-79
4-78
4-77
4-76
4-75
4-74
4-73
4-72
4-71
4-70
4-69
4-68
4-67
4-66
4-80 x3
4-65
4-64
4-5
4-36
4-48
4-47
4-46
4-45
4-44
4-37
4-38
4-39
4-54
4-53
4-52
4-51
4-16
4-49
4-15
4-41
4-58
4-59 x2
4-56
4-57
4-17
4-22
4-19
4-14
4-13
4-12
4-18
4-21
4-20
4-42
4-43
4-40
4-8
4-7
4-6
4-55 x2
4-26
4-25 x2
4-60
4-61
4-24x3
4-23
4-34
4-27 x2
4-35
4-29
4-62x2
4-31
4-33
4-32x2
4-28
4-11x3
4-10x3
4-50x4
4-9
4-63x4
4-1

10. Installing automatic film speed setting circuit assembly

a. Be sure to install the four film speed setting pins (6 — 35) without fail.

b. When installing the automatic film speed setting circuit assembly (6 — 36), place it beneath the lever (6 — 19) correctly.

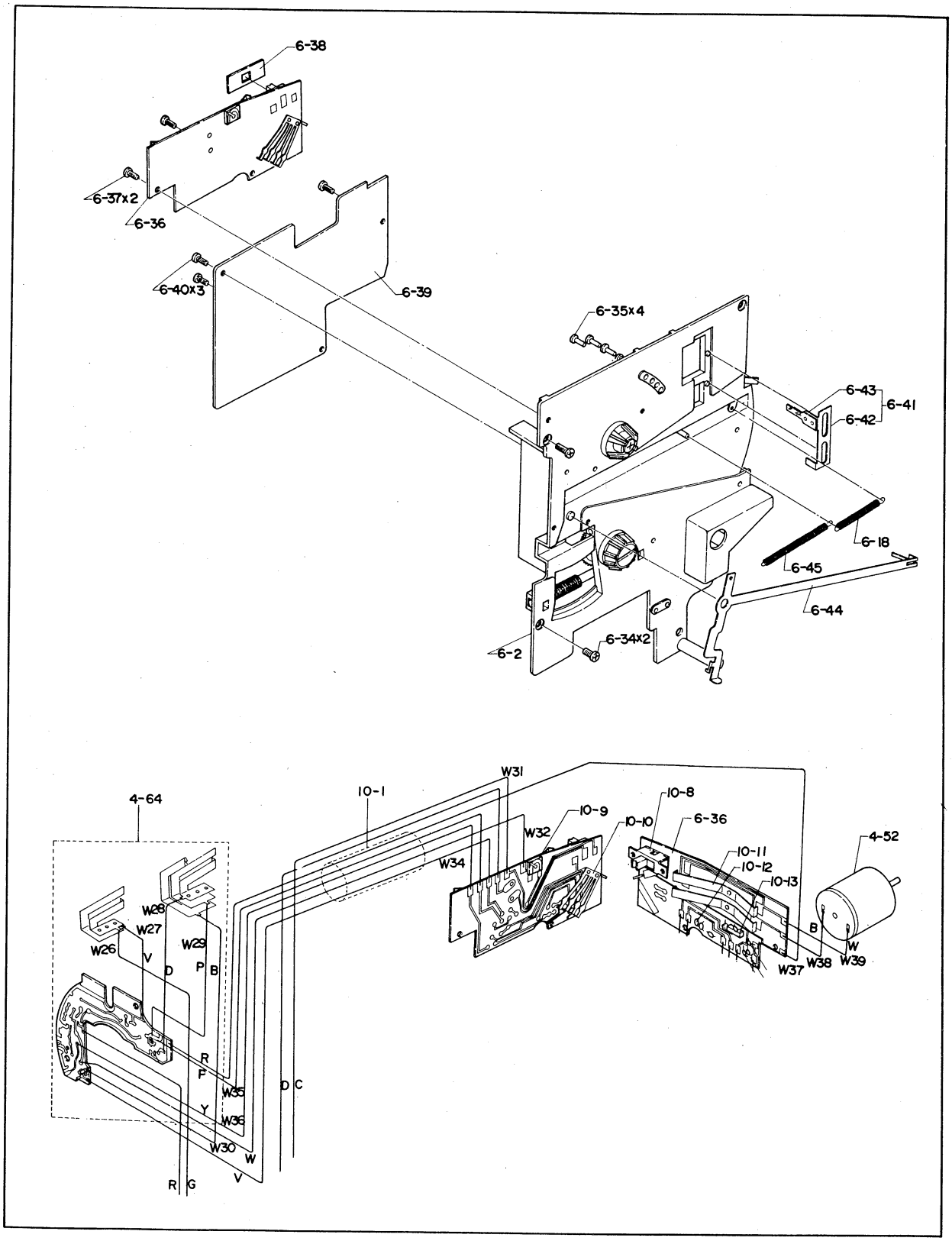
c. Check all four film speed setting pins to insure that they reset correctly.

d. Push each one of the four film speed setting pins, and make sure that the switch turns on.

e. Check the portions where the automatic film speed setting circuit and contact piece (10 — 10) come into contact for cleanliness. When these portions are dirty, clean them with ether alcohol.

g. Connect the lead wires extended from the meter assembly (4 — 64) and lead wires extended from the zooming motor assembly (4 — 51) to the automatic film speed setting circuit assembly (6 — 36) by the use of a soldering iron.

Fig. 19


6-38
6-37x2
6-36
6-40x3
6-39
6-35x4
6-43
6-41
6-42
6-18
6-45
6-44
6-2
6-34x2
4-64
10-1
W31
10-9
W32
W34
10-10
10-8
6-36
10-11
10-12
10-13
4-52
W28
W27
W26
W29
V
D
P
B
R
P
Y
W35
W36
W30
W
V
R
G
D
C
B
W
W37
W38
W39

11. Installing recording amplifier assembly

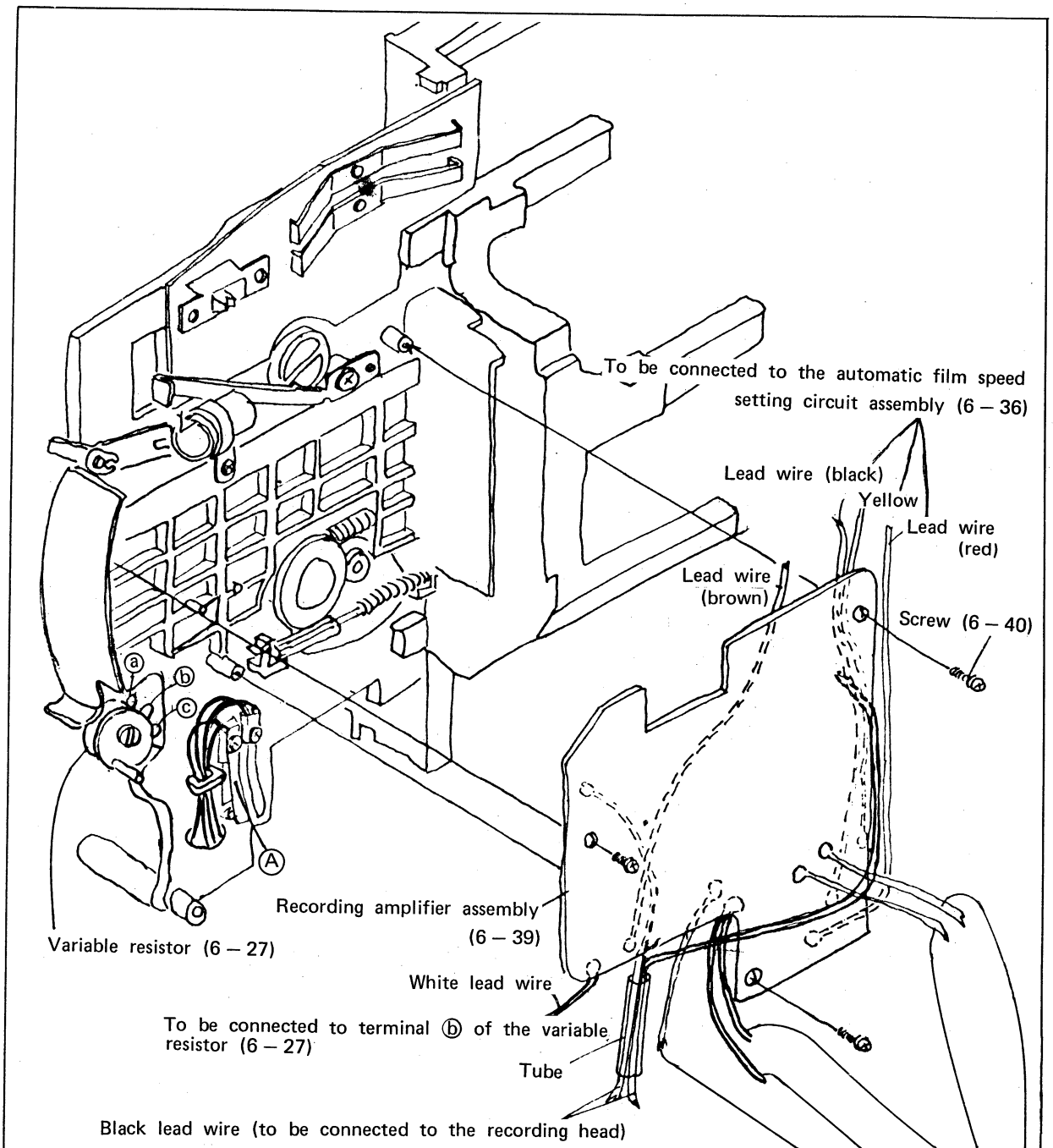
a. Neatly and carefully arrange the lead wires, especially for the lead wires extended from the recording head.

b. After installing the recording amplifier assembly (6 — 39), connect the lead wires to the applicable parts and assemblies as indicated in the right hand figure by means of soldering.

c. When blue lead wire is connected to the terminal c of the variable resistor (6 — 27), bend the terminal c downward in right angle.

d. Connect the two lead wires extended from the level meter (6 — 31) to the automatic film speed setting circuit assembly (6 — 36) by the use of a soldering iron.

Fig. 20



Install the recording amplifier assembly (6 – 39) with three screws (6 – 40).
Carefully arrange the lead wires.
Be sure to solder the lead wires when connecting them to the opposite parts.

12. Checking sound recording system and EE system for their operations

a. Connect a microphone and earphone to the microphone and earphone jacks.

b. Apply power (5.5V) to the lead wires temporarily connected to the printed circuit board assembly (7 — 66).

c. Depress the two pins (6 — 25).

d. Set the ALC - Manual selector switch (10 — 17) to "ALC", and see if any sound is generated or not through the earphone.

e. Set the ALC - Manuel selector switch (10 — 17) to "MANUAL", turn the variable resistor (6 — 26), and make sure that volume of the sound varies accordingly.

f. Check the level meter (6 — 31) to insure that the meter needle deflects as sound is recorded.

g. Depress the switch (10 — 22) and make sure that the level meter (6 — 31) needle deflects. (Checking the battery checker for its function.)

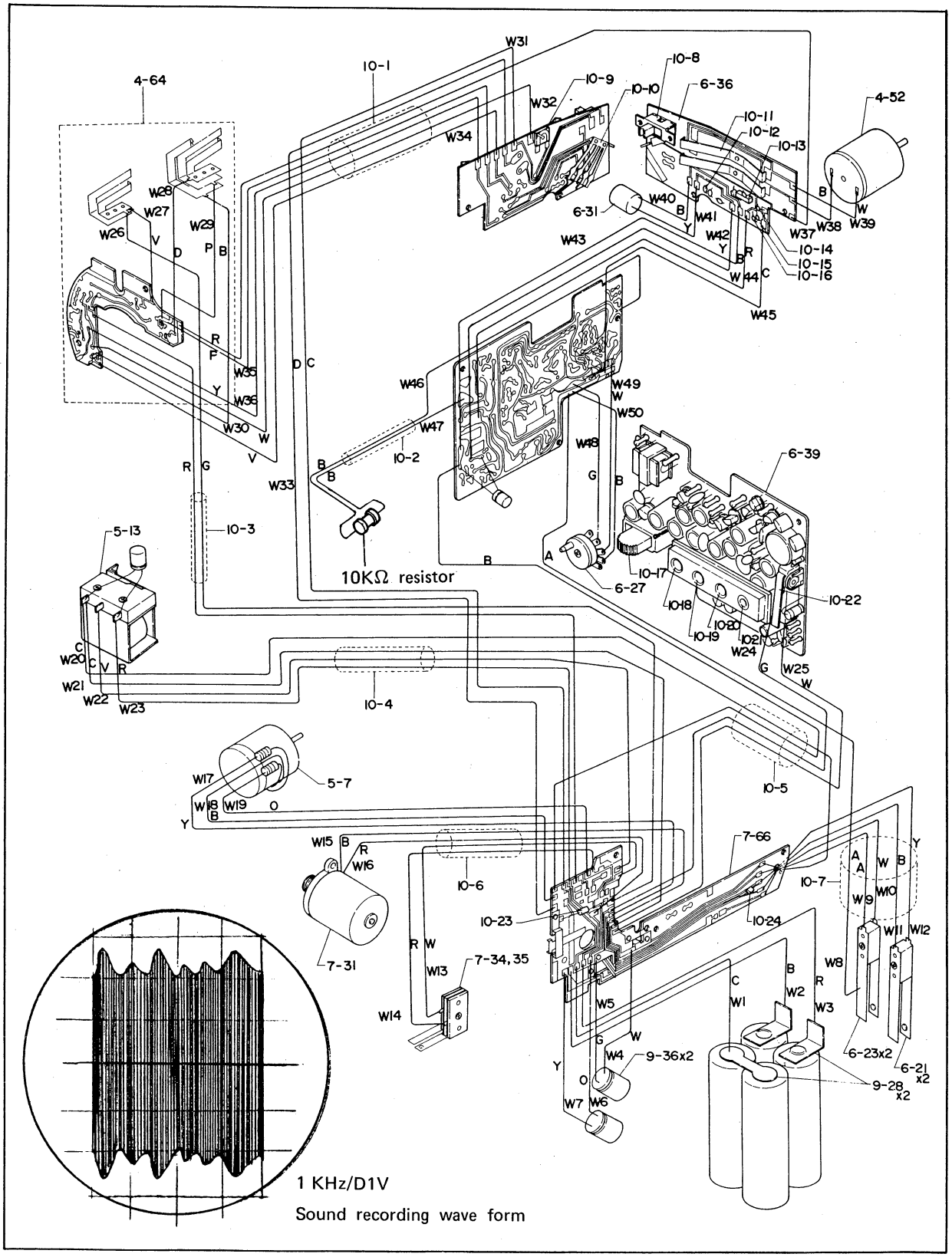
h. Set the ALC - Manual selector switch (10 — 17) to "ALC", contact the contact piece (4 — 75) with the contact piece (4 — 77), and make sure that the meter assembly (4 — 64) operates.

i. With the contact pieces (4 — 75 and 4 — 77) kept in contact, contact the contact piece (4 — 70) with the contact piece (4 — 71), and make sure that the meter moves to stop down gradually and that the sound also goes out simultaneously.

j. Separate the contact piece (4 — 70) from the contact piece (4 — 71), and make sure that the meter moves to open gradually and that the sound volume also increases gradually.

k. Connect a 10 KΩ resistor to the lead wires (W46 and W47) extended from the recording head, connect at oscilloscope to both ends of the resistor, record sound, and see if the oscilloscope displays a waveform as shown in the right hand figure.

Fig. 21



13. Sound recording mechanism assembly (7 – 2)

13 – 1 Lubrication

a. The sound recording mechanism assembly has many parts such as sensor switch, recording head, capstan head, pinch roller and flywheel driving belt which must be kept away from grease or oil. When lubricating necessary parts, be sure to apply the specified lubricant slightly to the correct positions of the necessary parts.

b. No oil or grease is used between the sensor (8 – 32) and shaft (8 – 33).

c. Except for the sensor, apply Squalol Grease (M4) slightly to the sliding parts, and check them for their smooth operations.

13 – 2 Operation

a. Push the lever (8 – 15) to cause the lever (8 – 7) being released.

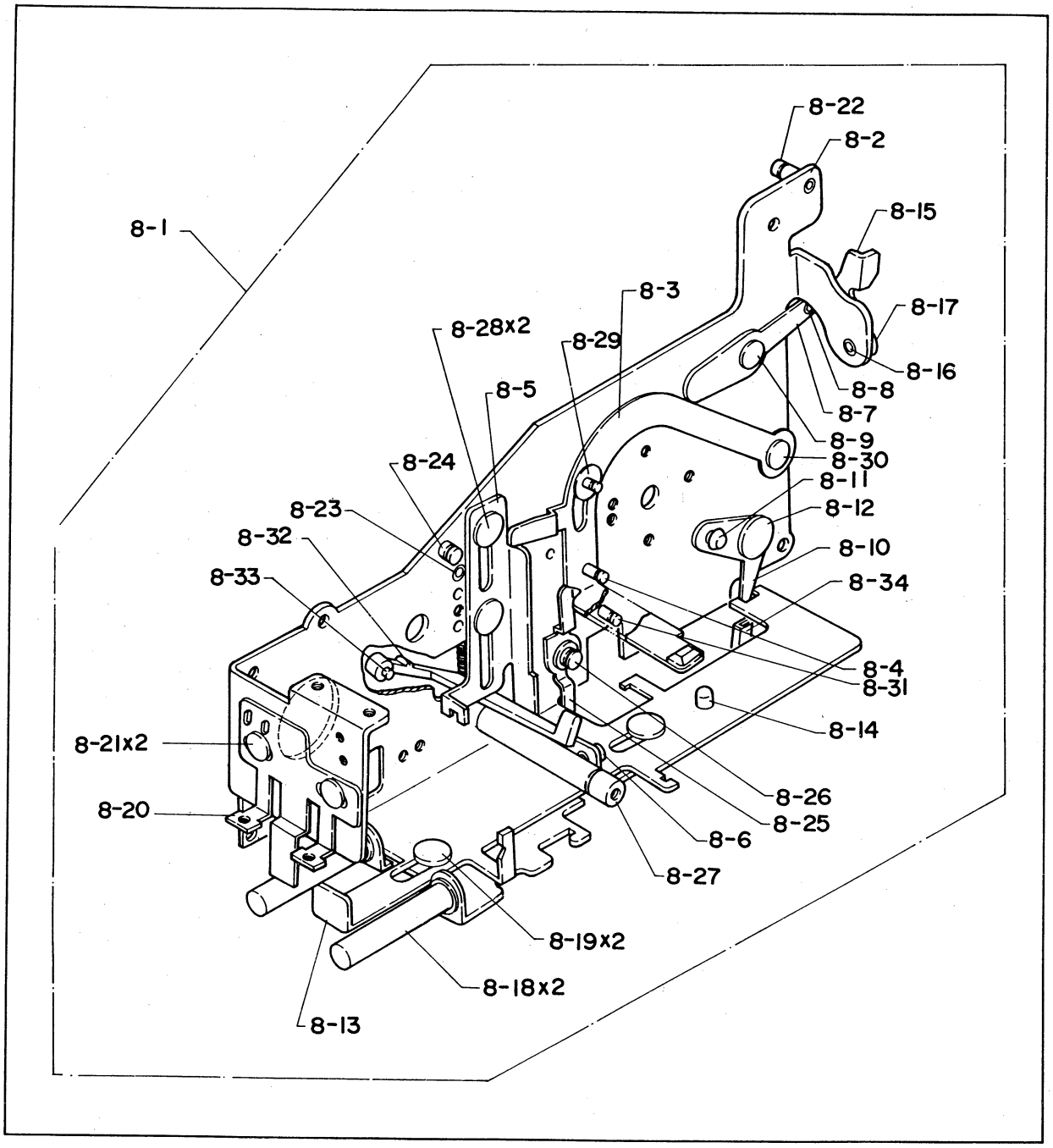
b. Push the shutter lever (8 – 13) and make sure that the lever (8 – 25) and head pad lever (8 – 3) are unhooked causing the film holder (7 – 39), head pad lever (8 – 3) and sensor (8 – 32) to move.

c. Push the lever (8 – 13) further, and make sure that the pinch roller lever assembly (7 – 3) moves and comes into contact with the capstan shaft (7 – 43).

d. Return the shutter lever (8 – 13) and make sure that the pinch roller lever assembly (7 – 3) resets correctly.

e. Return the lever (8 – 15), and make sure that the head pad lever (8 – 3), sensor (8 – 32) and film holder (7 – 39) reset causing the film passage to open.

Fig. 22


8-22
8-2
8-1
8-15
8-3
8-17
8-28x2
8-29
8-16
8-5
8-8
8-7
8-9
8-24
8-30
8-11
8-23
8-12
8-32
8-10
8-33
8-34
8-4
8-31
8-14
8-21x2
8-20
8-26
8-25
8-6
8-27
8-19x2
8-18x2
8-13

13 — 3 Flywheel (capstan shaft)

a. Make sure that the shaft is straight having no eccentricity.

b. Check the flywheel for dynamic balance. It should be 2 gr - cm or less.

c. Check the capstan shaft (7 — 43) to insure that it is held securely and tightly by the pin (7 — 26) and shaft holder (7 — 28) of the holder assembly (7 — 24), and that it turns smoothly.

d. The shaft holder of the holder assembly is impregnated with oil. Do not wash it.

e. When the flywheel does not turn smoothly, replace the relative parts.

f. Check the groove to insure that no scar, cavity or other defective condition exists.

13 — 4 Pinch roller lever assembly

a. Check the pinch roller to insure that it contacts with the capstan shaft evenly.

b. Measure and insure that pressure of the pinch roller is 400 to 500 grams.

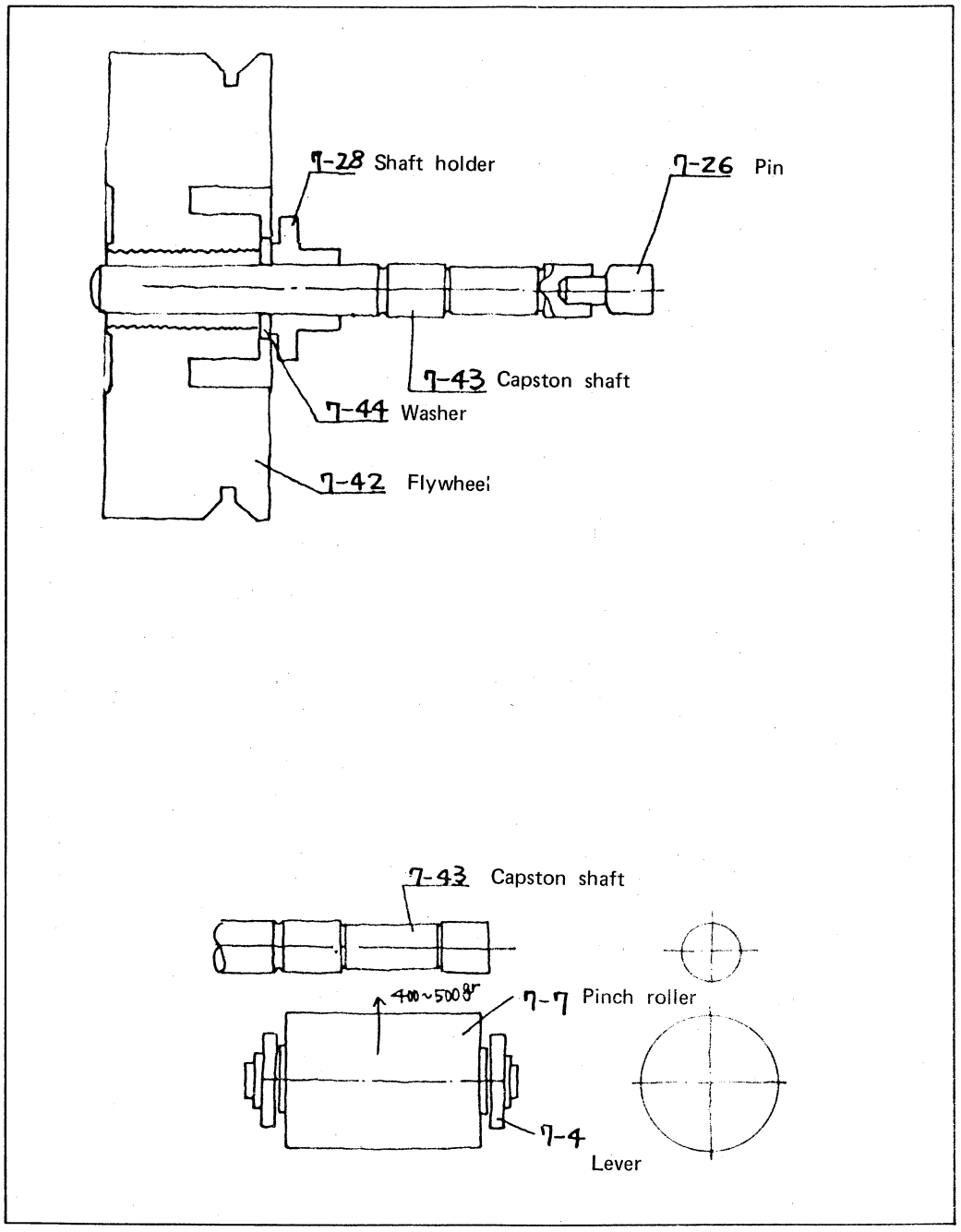
c. To adjust pressure of the pinch roller, the lever (7 — 4) may be bent.

d. Make sure that the pinch roller (7 — 7) is not scarred or deformed.

e. Do not make tha pinch roller dirty with oil, grease or other foreign matter.

f. Make sure that the pinch roller turns smoothly having no eccentricity.

Fig. 23


7-28 Shaft holder
7-26 Pin
7-43 Capston shaft
7-44 Washer
7-42 Flywheel
7-43 Capston shaft
400~500gr
7-7 Pinch roller
7-4 Lever

13 — 5 Film holder (7 — 39)

a. Check the film holder to insure that it contacts with the head holder evenly.

b. Check the film transporting channel and insure that film is not cut or does not oscillate in the transporting channel. (The rated film transporting channel gap is 0.2 mm.)

c. Make sure that film is held by the film holder with a pressure of approximately 150 grams.

d. The portion "A" (oblique - lined) of the film holder should be finished to be smooth by means of buffing.

13 — 6 Head pad (7 — 14)

a. Check the head pad to insure that it is pushed against the head in pressure of approximately 45 grams.

b. Check the head pad to insure that it comes into contact with the head evenly and it is centered correctly against the head. (One sided contact or deviation of the center is not permitted.)

c. Check the head pad (7 — 14) to insure that it is not damaged or deformed. When replacing the head pad, install it with Pliobond.

d. Check the head pad for cleanliness.

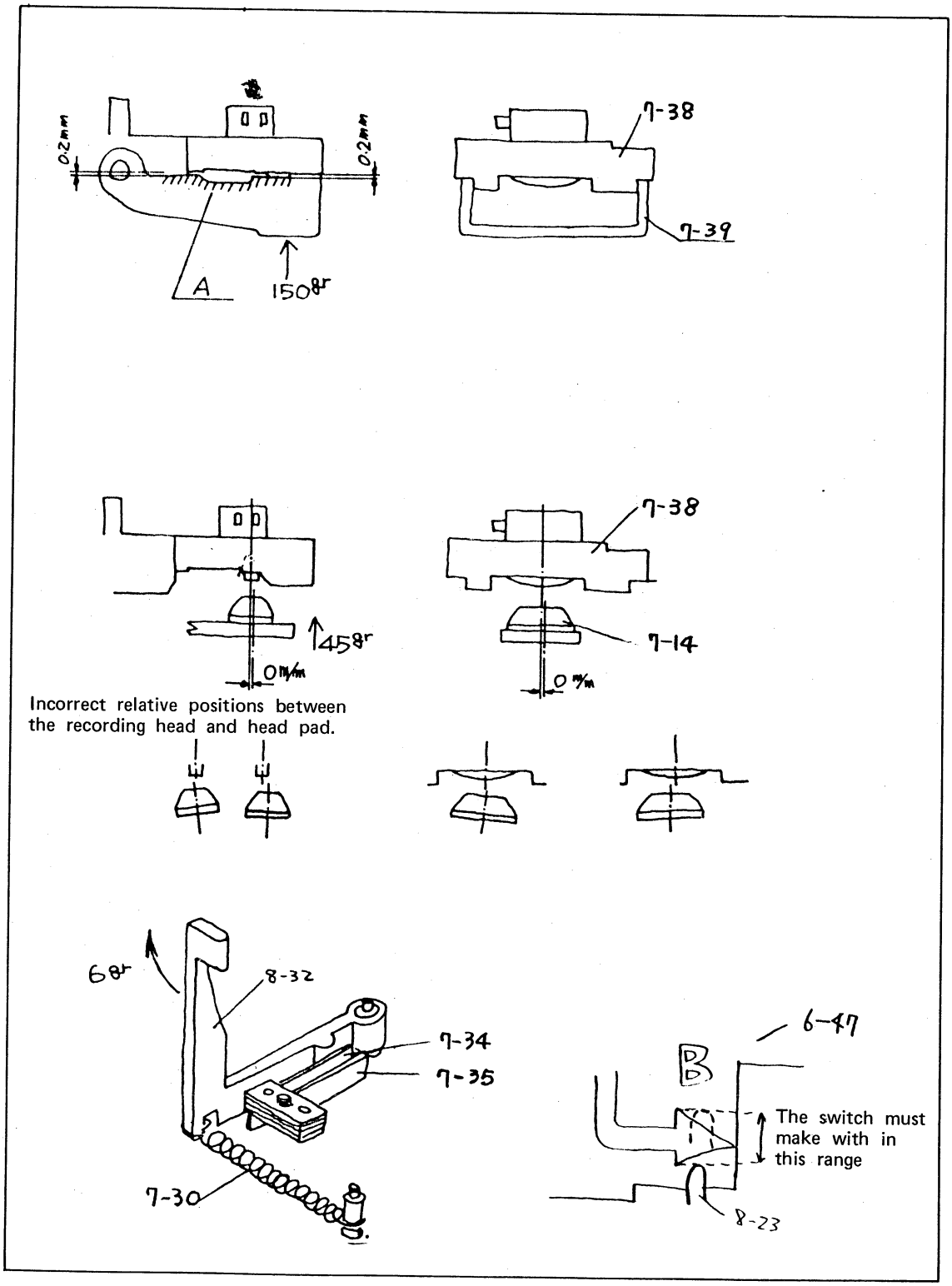
13 — 7 Sensor (8 — 32)

a. Check the sensor to insure that it is caused to operate with a pressure of 6 grams, causing the loop switch to turn on and off.
When pressure of the sensor is incorrect, replace the spring (7 — 30) with a proper one.

b. Make sure that the surface of the sensor to which the film comes into contact is not scarred, dirty or deformed.

c. Check the switch to insure that it makes within the range shown in the right hand figure, making a proper film loop.

Fig. 24


0.2mm
0.2mm
A
150gr
7-38
7-39
458r
0m/m
7-38
7-14
0m/m
Incorrect relative positions between the recording head and head pad.
68r
8-32
7-34
7-35
7-30
6-47
B
The switch must make with in this range
8-23

13 — 8 Position of the recording head

a. Make sure that the recording head is positioned in the center of and in parallel to the sound track of film without any tilting.

b. Make sure that height of the film gate assembly is the same as film guide of the head assembly, and that film is transported in parallel to the head.

c. Make sure that the metal portion of the head is not scarred or damaged.

13 — 9 Belt (7 — 45)

a. Make sure that the belt (7 — 45) is applied to the V - grooves of the sound recording motor (7 — 31) pulley and flywheel (7 — 42) correctly, and that the belt is not twisted.

b. Make sure that width and height of the belt are even toward the entire belt loop, and that the belt is not damaged.

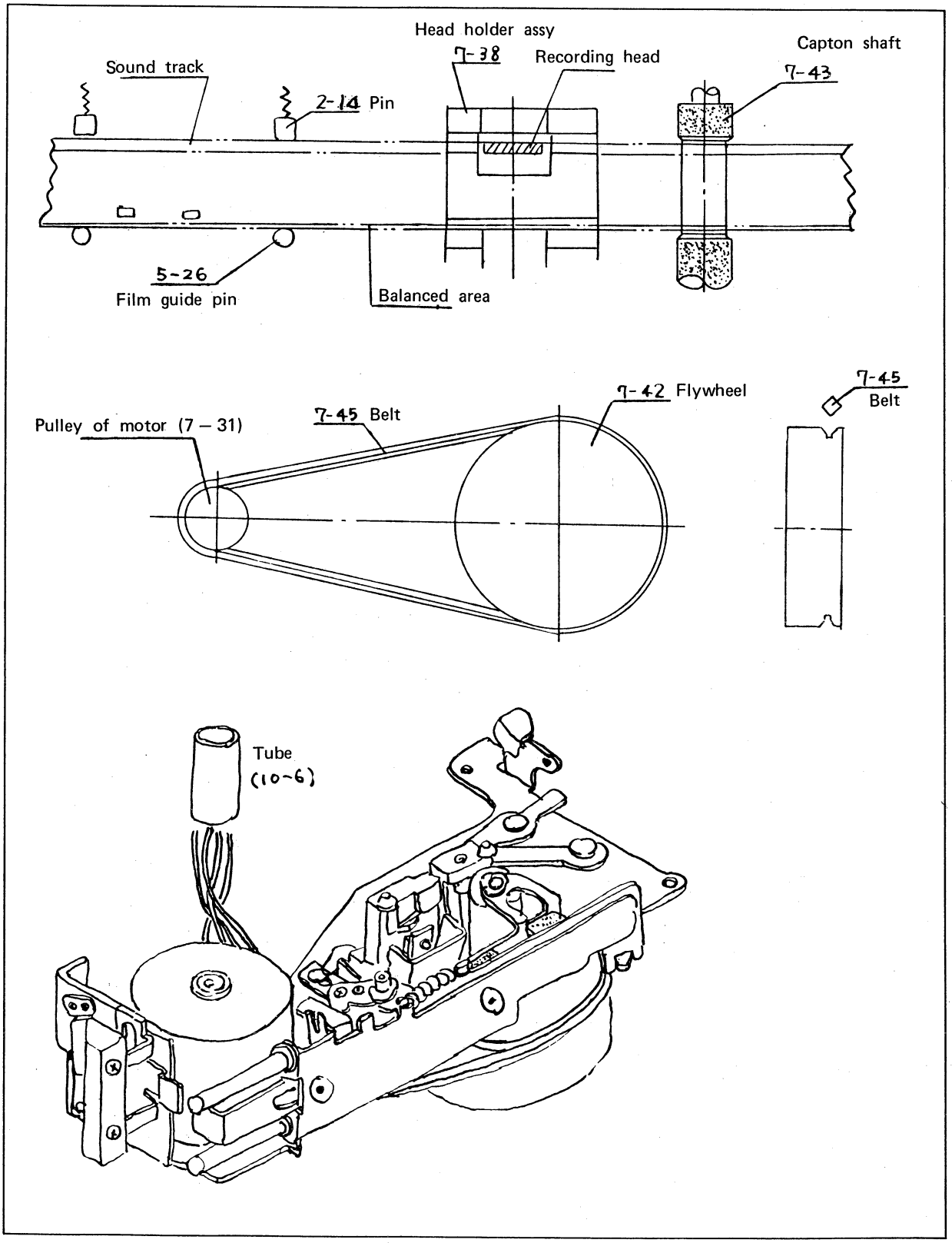
c. Be careful to keep the belt clean. Oil or grease should not stick on the belt.

13 — 10 Wiring and arrangement of lead wire

a. Check each lead wire terminal for soldering and insulation.

b. Align the lead wires as shown in the right hand figure by the use of tube (10 — 6).

Fig. 25


Head holder assy
7-38
Recording head
Capton shaft
7-43
Sound track
2-14 Pin
5-26
Film guide pin
Balanced area
7-42 Flywheel
7-45
Belt
Pulley of motor (7 – 31)
7-45 Belt
Tube
(10-6)

14. Grip assembly

14 — 1 Operation

a. Pull down the knob (9 — 7) and see if the grip can be folded.

b. Stretch the grip, and make sure that the click mechanism effects causing the grip to be not folded.

c. When the grip does not click effectively, replace the lock pin (9 — 6), spring (9 — 5) or stopper (9 — 4) with a new one.

d. With the grip stretched, if any slackness is felt, retighten the four screws (9 — 17).

e. When the screws (9 — 17) are retightened and still the grip is loose, replace the stopper (9 — 4) with a new one.

14 — 2 Lubrication

a. Apply Squalol grease (M4) slightly to the spring (9 — 5) and lock pin (9 — 6).

b. Apply Squalol grease (M4) slightly to the O - ring (9 — 15).

14 — 3 Installing parts with adhesive

a. Install the name plate (9 — 13) and moquette (9 — 14) with Pliobond.

b. The leather (9 — 19) and two plates (9 — 18) are provided with adhesive on their backs and the adhesive is covered with paper.
When installing these parts, peel off the paper from their backs.

14 — 4 Battery contacts

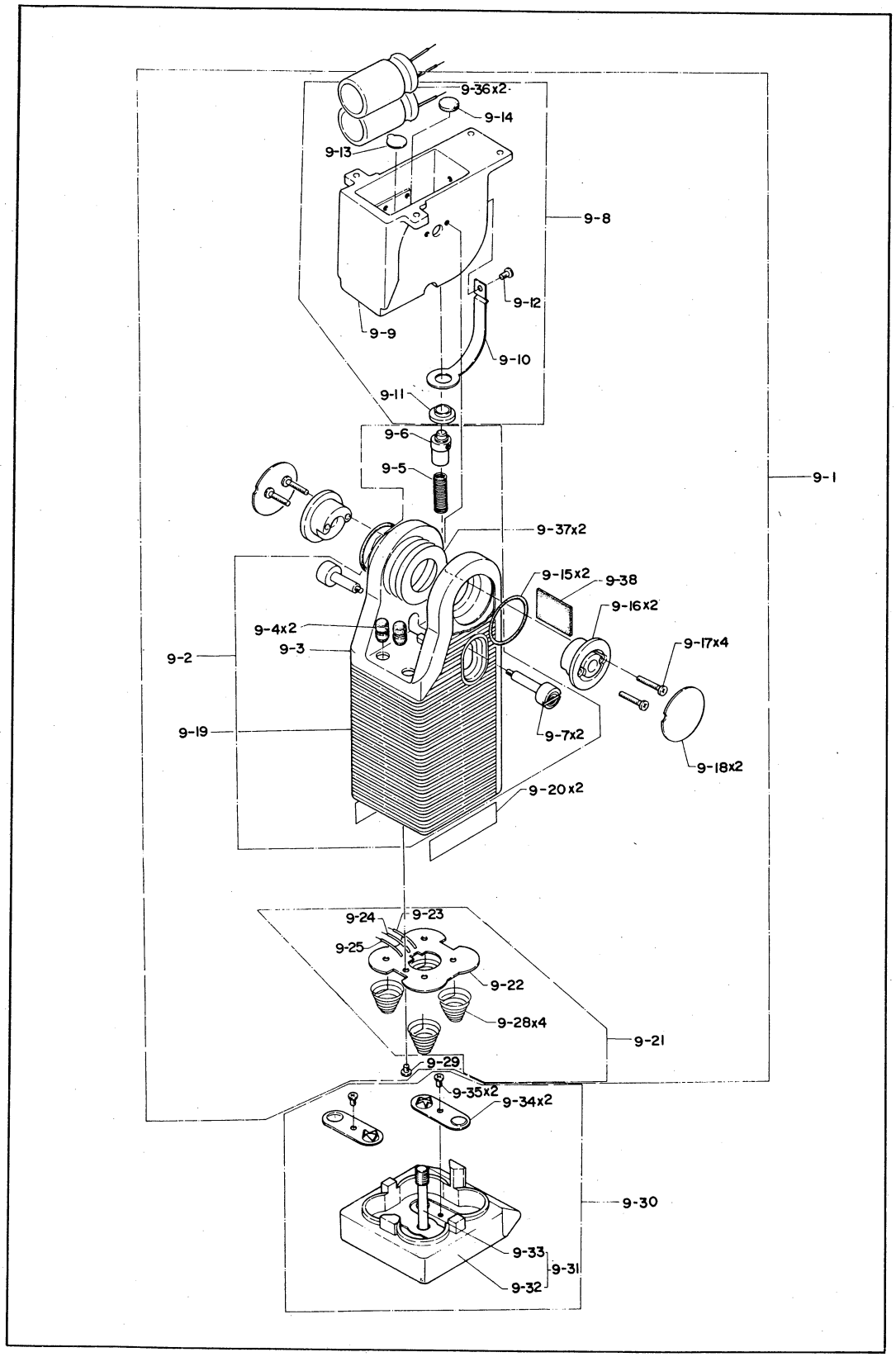
Make sure that the four springs (9 — 28) and two contact pieces (9 — 34) are not corroded or dirty.

14 — 5 Soldering

a. Install the four springs (9 — 28) on the printed circuit board (9 — 22) by soldering them.

b. Connect the lead wires (W1 through W3) and lead wires (W4 through W7) extended from the two capacitors (9 — 36) to the printed circuit board (9 — 22) securely by means of soldering. (Note that the capacitors (9 — 36) drop off easily.)

Fig. 26


9-36x2
9-14
9-13
9-8
9-12
9-9
9-10
9-11
9-6
9-5
9-1
9-37x2
9-15x2
9-38
9-16x2
9-4x2
9-3
9-2
9-17x4
9-19
9-7x2
9-18x2
9-20x2
9-24
9-23
9-25
9-22
9-28x4
9-21
9-29
9-35x2
9-34x2
9-30
9-33
9-31
9-32

15. Installing sound recording mechanism assembly

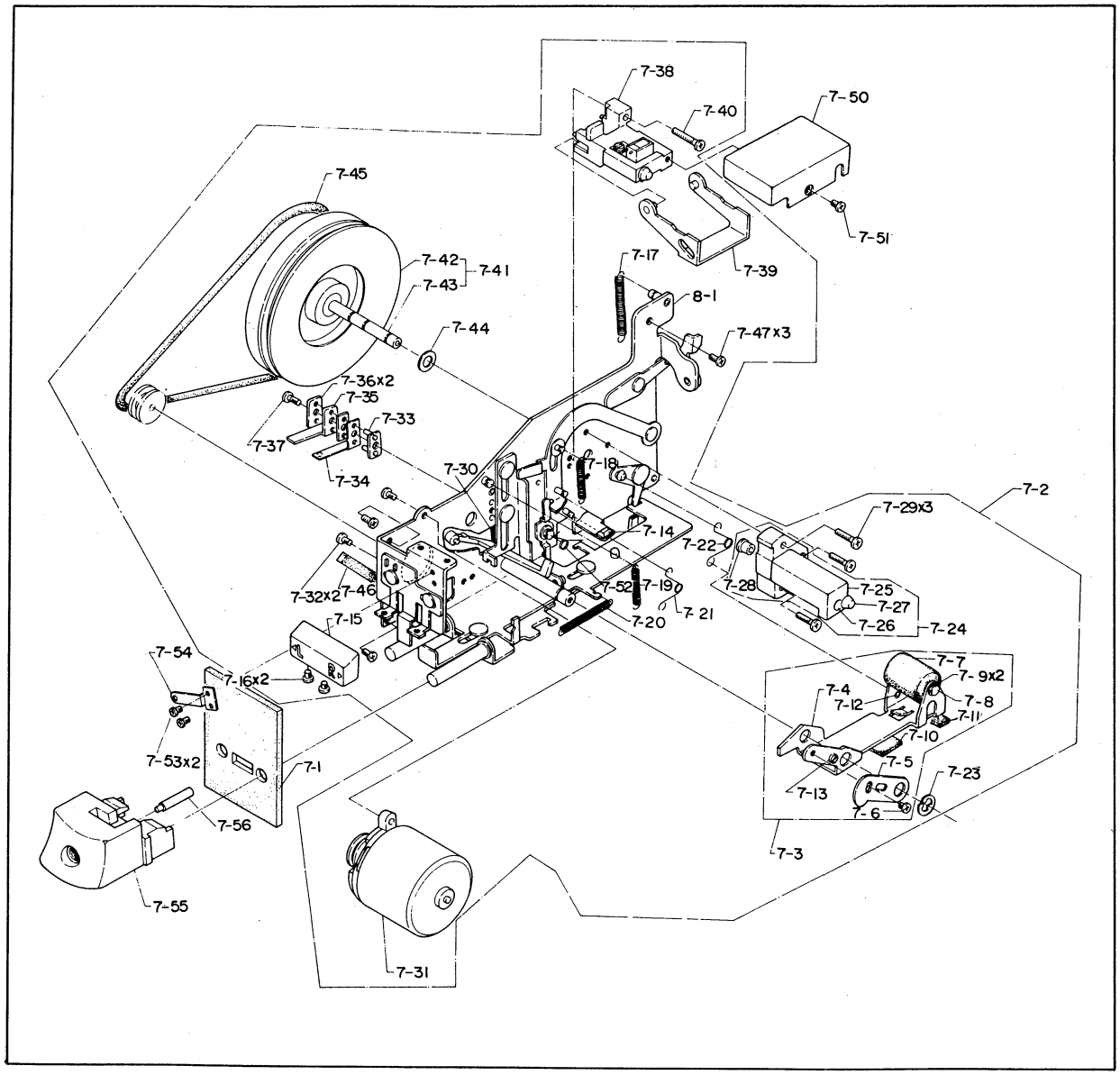
a. Apply Squalol grease (M4) to the leaf spring (3 — 2).

b. Insert the shaft (7 — 56) into the shutter release button (7 — 55), and align them with the guide shaft of the sound recording mechanism assembly (7 — 2).

c. Install the sound recording mechanism assembly on the main frame (3 — 1) with care exercised on the flywheel, and tighten the three screws (7 — 47).

d. Push the shutter release button (7 — 55) to insure that it moves smoothly without dragging, and check the run - lock selector button (7 — 15) to insure that it moves smoothly without dragging on the side frame.

Fig. 27


7-38
7-40
7-50
7-45
7-51
7-42
7-41
7-43
7-17
7-39
8-1
7-44
7-47x3
7-36x2
7-35
7-33
7-37
7-34
7-30
7-18
7-2
7-29x3
7-14
7-22
7-32x2
7-46
7-52
7-19
7-28
7-25
7-27
7-21
7-20
7-26
7-24
7-15
7-54
7-16x2
7-7
7-9x2
7-4
7-12
7-8
7-11
7-10
7-53x2
7-1
7-5
7-23
7-13
7-6
7-56
7-3
7-55
7-31

16. Installing filming mechanism assembly

a. Insert the checker button (3 — 40) and power zoom control (3 — 41) into the main frame (3 — 1) correctly. (Be careful not to insert the power zoom control reversely.)

b. Install the name plate (6 — 38) and plate (6 — 58) on the automatic film speed setting circuit assembly (6 — 36) and recording amplifier assembly (6 — 39) respectively with Pliobond in such an extent that the plates will not drop off when they are turned up - side - down.

c. Match the pin of the variable resistor assembly (6 — 26) with the long groove of the dial (3 — 4) attached to the main frame (3 — 1), and place the filming mechanism assembly on the main frame (3 — 1).

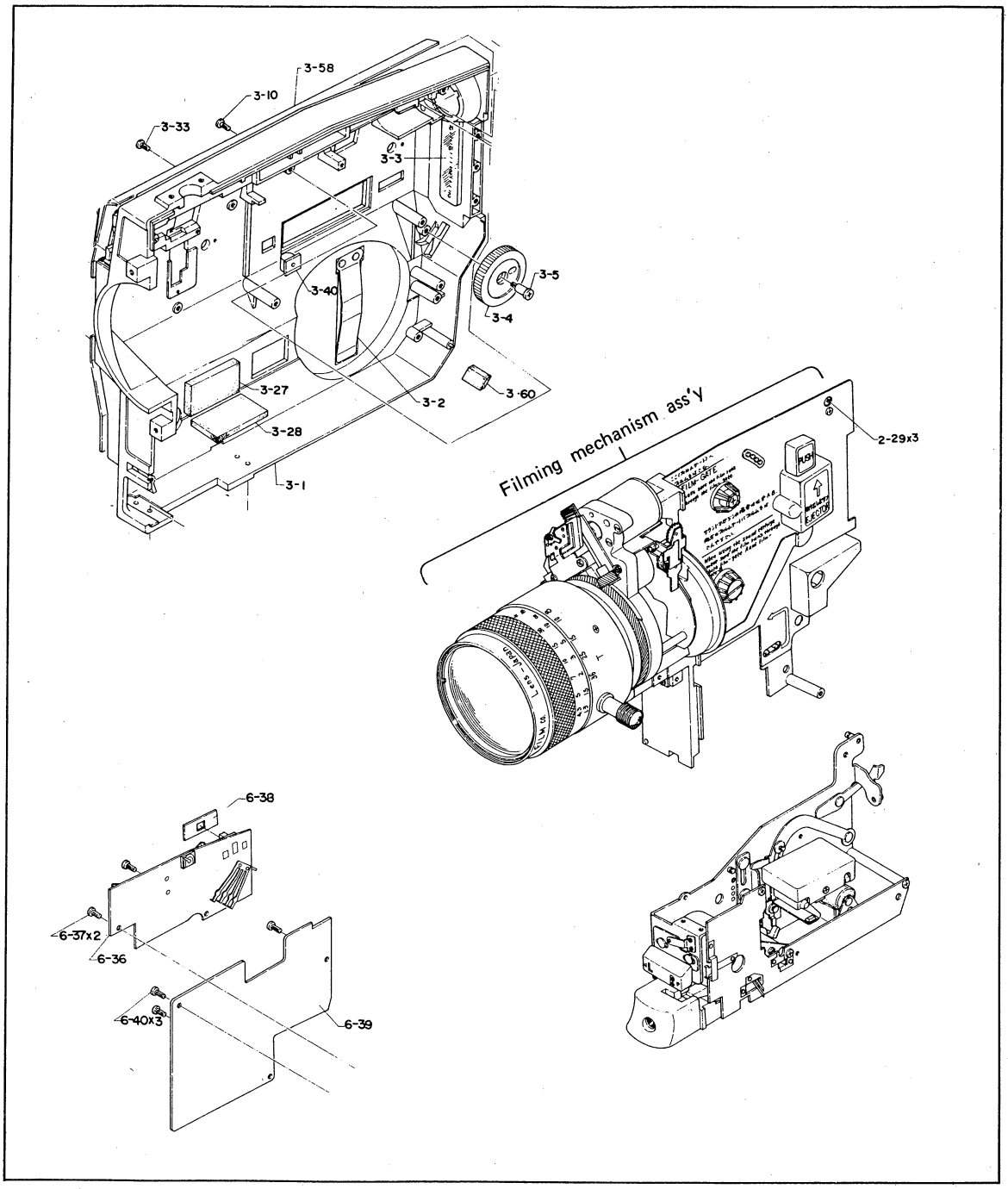
d. Draw out the four lead wires extended from the sound recording mechanism assembly as shown in the right hand figure.

e. Make sure that the filming mechanism assembly is completely fitted to all bosses of the main frame (3 — 1), and then, securely install the filming mechanism assembly on the main frame (3 — 1) with three screws (2 — 29) and two screws (3 — 33).

f. Install the screw (7 — 49) on the printed circuit board assembly (7 — 66).

NOTE: When installing the filming mechanism assembly with the filter selector assembly (3 — 43) installed on the main frame (3 — 1), be sure to set the filter selector knob (3 — 43) to the up side (mark appears).

Fig. 28


3-58
3-10
3-33
3-3
3-5
3-40
3-4
3-27
3-2
3-60
3-28
3-1
Filming mechanism ass'y
2-29x3
6-38
6-37x2
6-36
6-40x3
6-39

17. Installing grip assembly

Install the grip assembly (9 — 1) on the main frame (3 — 1) with two screws (1 — 10).

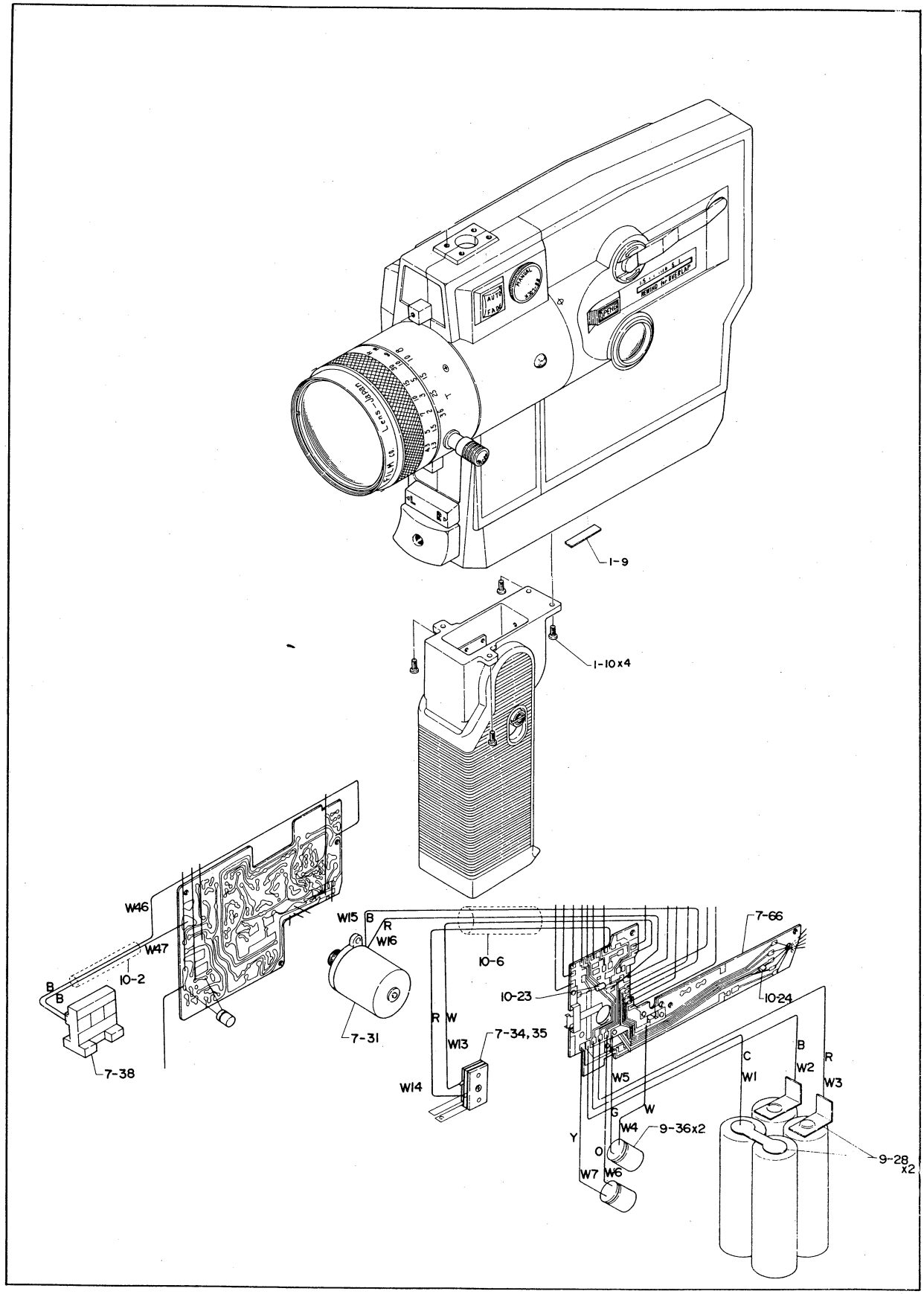
18. Connecting lead wires

a. Connect the lead wires (W1 through W7) extended from the grip assembly (9 — 1) to the printed circuit board assembly (7 — 66) by means of soldering.

b. Connect the lead wires (W13 through W16) extended from the sound recording mechanism assembly (7 — 2) to the printed circuit board assembly (7 — 66) by means of soldering.

c. Connect the lead wires (W46 and W47) extended from the recording amplifier assembly (6 — 39) to the recording head (7 — 38) by means of soldering.

Fig. 29


1-9
1-10x4
W46
W47
10-2
B
B
7-38
W15
B
R
W16
7-31
10-6
10-23
7-66
10-24
R W
W13
7-34,35
W14
W5
G
W
W4
9-36x2
Y
O
W7
W6
C
B
R
W1
W2
W3
9-28
x2

19. Adjustment of switching operations

a. Depress the shutter release button, and make sure that the contact piece (7 — 61) comes into contact with the contact piece (7 — 62) before the pinch roller (7 — 7) begins to operate.

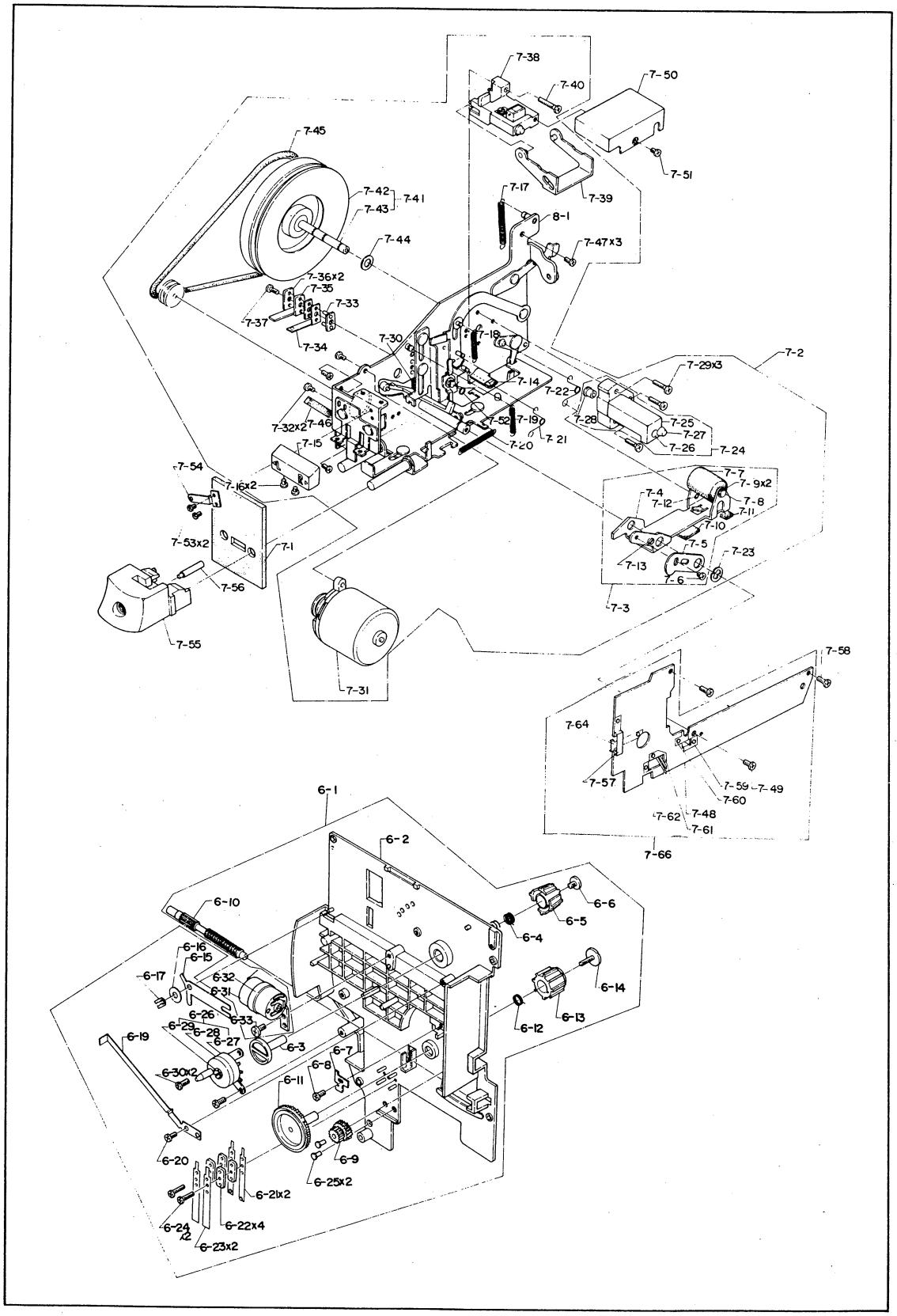
NOTE: Make sure that the meter assembly (4 — 64) operates under the automatic exposure mode, and that the recording motor assembly (7 — 31) works with the two pins (6 — 25) depressed.

b. Depress the shutter release button slowly, loosen the screw (7 — 6), turn the eccentric pin (7 — 13) to adjust the motor (5 — 6) operating timing so that the motor (5 — 6) turns as soon as the pinch roller (7 — 7) comes into contact with the capstan shaft (7 — 43).

c. Set the run - lock selector button (7 — 15) to "LOCK", and make sure that the shutter release button cannot be depressed.

d. With the shutter release button depressed, set the run - lock selector button to "L", and make sure that the shutter release button is continuously depressed causing the camera to operate continously.

Fig. 30


7-38
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8-1
7-44
7-47x3
7-36x2
7-35
7-33
7-37
7-34
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7-29x3
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7-28
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7-27
7-26
7-24
7-32x2
7-46
7-52
7-19
7-21
7-20
7-15
7-54
7-16x2
7-7
7-9x2
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7-10
7-5
7-23
7-13
7-6
7-53x2
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7-3
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7-64
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7-60
7-62
7-48
7-61
7-66
6-1
6-2
6-10
6-6
6-5
6-4
6-16
6-15
6-17
6-32
6-31
6-14
6-26
6-33
6-29
6-28
6-27
6-3
6-12
6-13
6-19
6-7
6-8
6-30x2
6-11
6-20
6-9
6-25x2
6-21x2
6-24
12
6-22x4
6-23x2

20. Installing filter selector assembly (3 – 43)

a. Install the click spring (3 — 42).

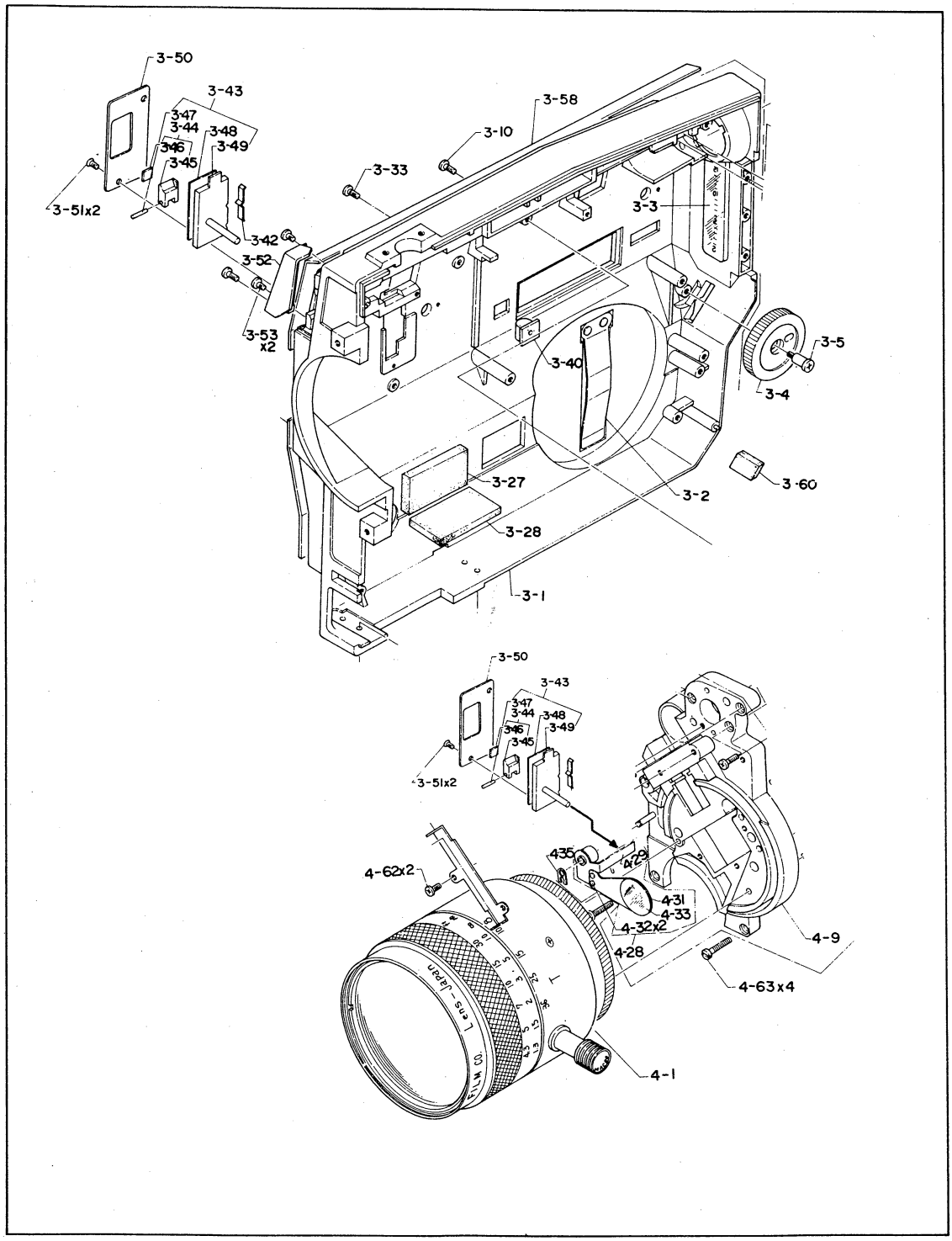
b. Match the rod portion of the filter selector assembly (3 — 43) with the risen portio of the filter lever assembly (4 — 28), and fit the click spring (3 — 42) further into the groove.

c. Install the plate (3 — 50) with two screws (3 — 51).

d. Make sure that the filter comes into the position in front of the aperture blade when the filter selector lever is moved to the side for application of the filter.

e. Check the filter selector assembly to insure that it clicks effectively.

Fig. 31


3-50
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3-47
3-44
3-48
3-46
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3-45
3-51x2
3-42
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3-53
x2
3-33
3-10
3-58
3-3
3-40
3-5
3-4
3-60
3-27
3-2
3-28
3-1
3-50
3-43
3-47
3-44
3-48
3-46
3-49
3-45
3-51x2
4-35
4-62x2
4-31
4-33
4-32x2
4-28
4-9
4-63x4
4-1

21. Installing side cover assembly

a. Open the film chamber door, and place the side cover assembly (2 — 68) on the main frame (3 — 1).

b. Tighten the screws (2 — 88 and 2 — 89).

c. Tighten the two grip set screws (1 — 10) from the side cover side.

d. Install the accessory shoe (1 — 1) with four screws (1 — 2).

e. Install the cover plate (1 — 3) on the accessory shoe with adhesive.

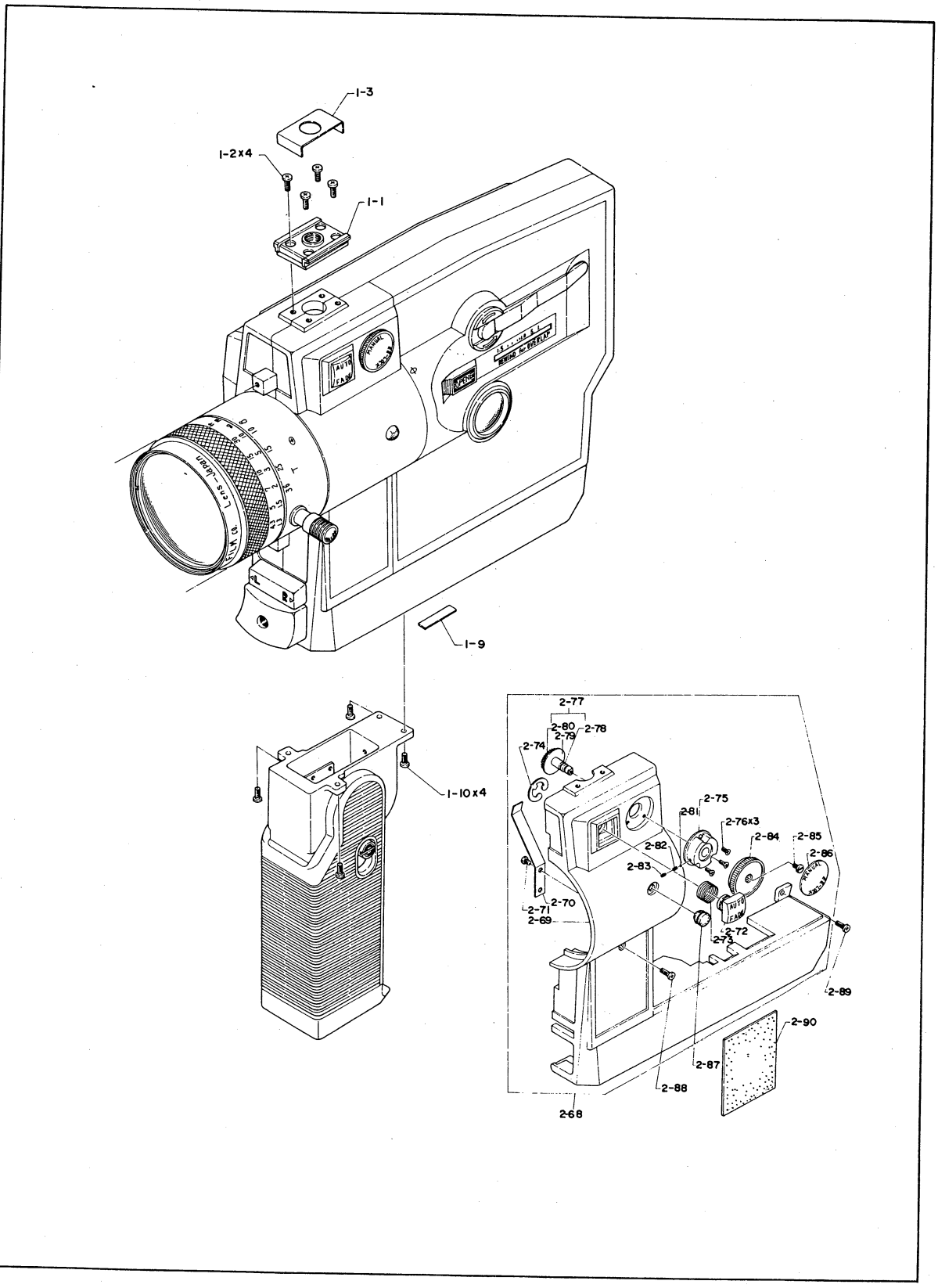
f. Check the dial (2 — 84) to insure that it clicks correctly.

g. When adjusting click effect of the dial (2 — 84), use the screw (2 — 83).

h. Pull out the dial (2 — 84) and make sure that the metering system (EE system) is locked and the manually selected aperture is not changed. Turn the dial and make sure that the meter needle moves smoothly and accordingly.

NOTE: When installing the side cover assembly (2 — 68), be careful not to hold lead wires between the side cover and main frame.

Fig. 32


1-3
1-2x4
1-1
1-9
1-10x4
2-77
2-80
2-79
2-78
2-74
2-75
2-81
2-76x3
2-84
2-85
2-86
2-82
2-83
2-70
2-71
2-69
2-72
2-73
2-89
2-90
2-87
2-88
2-68

22. Adjustment of parallax

a. Use a parallax adjuster.

b. Fully open the aperture (use EE lock), set the focusing ring to "1.3 m" and set the zooming ring to "TELE".

c. Apply power, and with the sector being turned, adjust vertical and horizontal positions of the aperture against the viewfinder frame with three adjust screws (4 — 24) so that gaps remained on the top and bottom of the aperture against the viewfinder frame are balanced and that gaps remained on both sides of the aperture are even.

d. When parallax cannot be adjusted by the method described above or when image tilting or deviation of the optical axis is considerable after adjusting the parallax, perform positioning of the relative components as described in III — 7 - 7.1 - e above. In the most cases, the center of the aperture is deviated from the optical axis.

23. Matching split images

a. Set the zooming ring to "TELE", focusing ring to "∞", watch a rod shape object in a distance approximately 100 meters from the camera through the viewfinder, and properly slide the lens barrel assembly (4 — 36) sc that the upper and lower split images are matched. (The adjustment can be made through the square opening on the main frame (3 — 1).
When the adjustment is completed, tighten the screw (4 — 49).

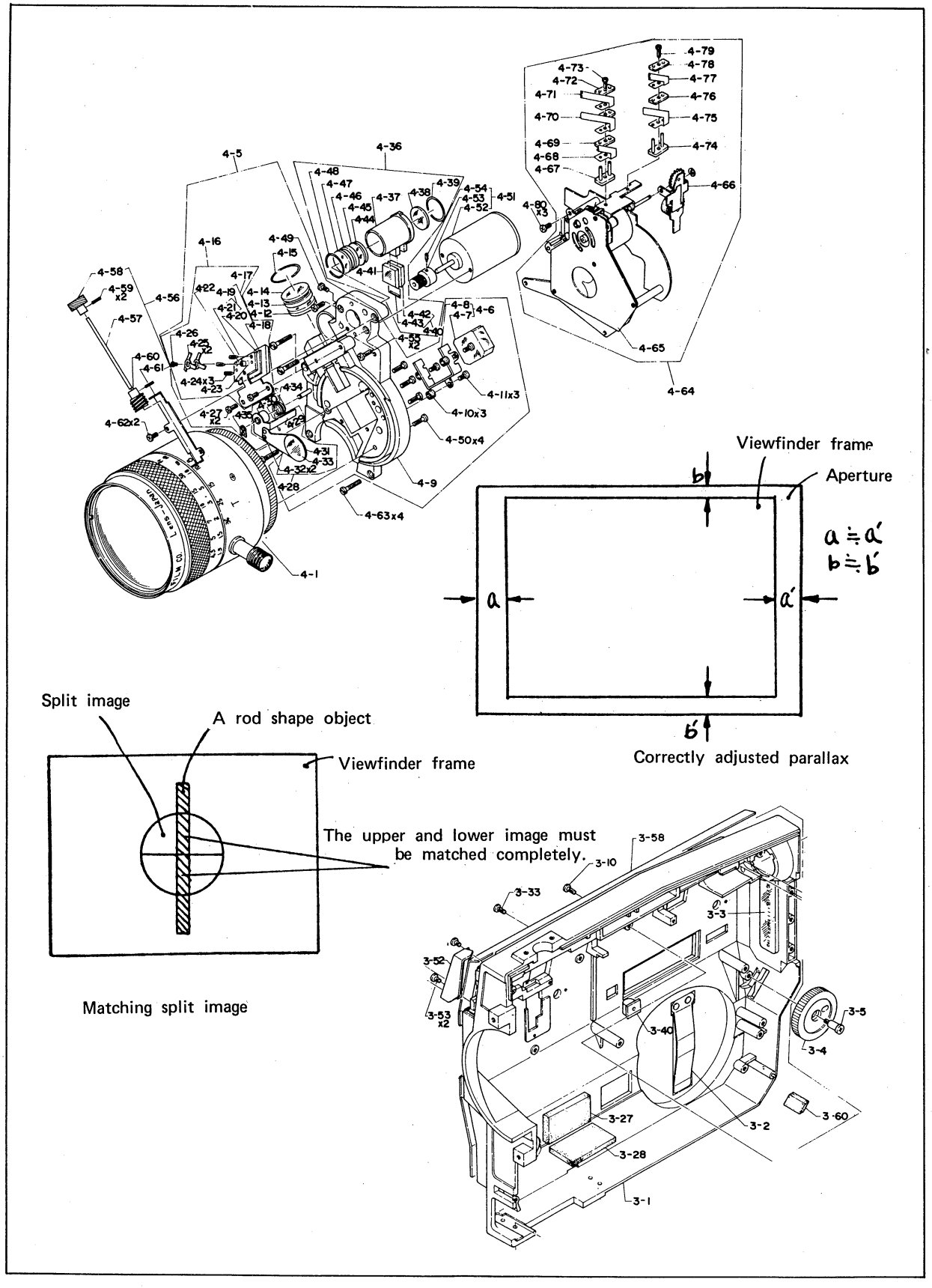
NOTE: (1) When matching the split images, correctly adjust visibility first. Adjusting point varies depending upon the visibility.

(2) When adjustment of parallax is conducted, be sure to match the split images.

(3) When matching the split images, be sure to locate the rod shape object in the center of the split image line.

b. When the above adjustment is completed, install the cover (3 — 52) with the two screws (3 — 53).

Fig. 33


Viewfinder frame
Aperture
a ≒ a'
b ≒ b'
Correctly adjusted parallax
Split image
A rod shape object
Viewfinder frame
The upper and lower image must be matched completely.
Matching split image

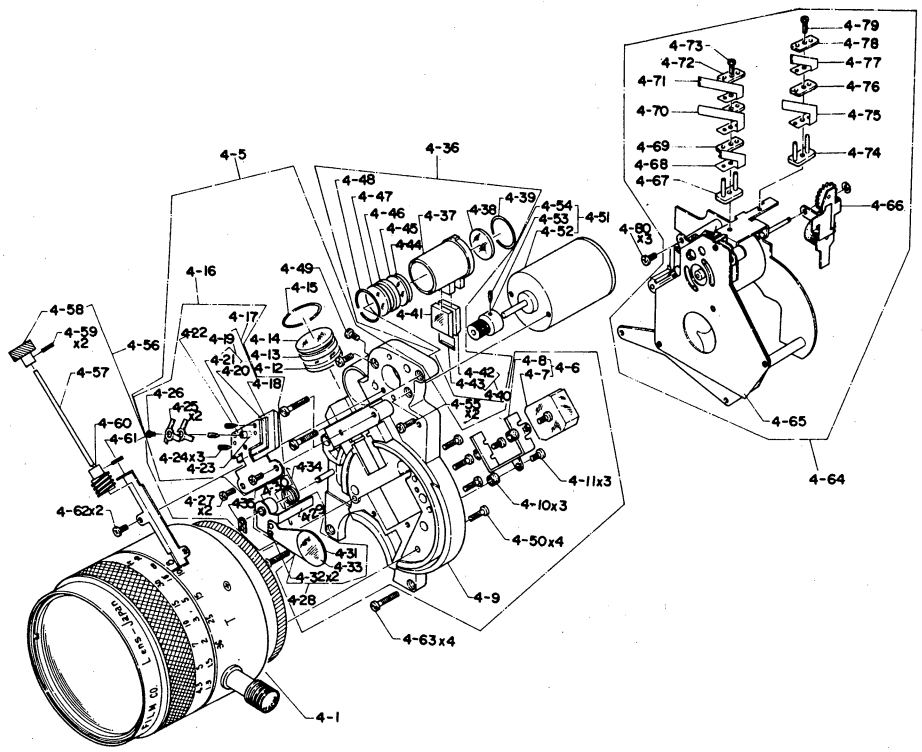
24. Adjustment of meter needle

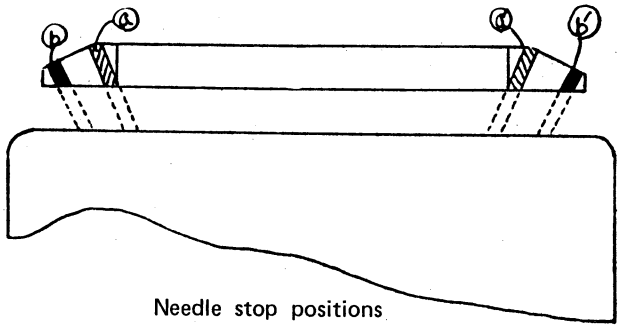
a. Set the EE operating mode to manual, and properly bend the meter needle so that positions where the meter needle stops at the opened side and stopped down side are balanced. (This adjustment can be done through the square opening on the main frame (3 — 1).)

b. When the meter needle is seen as if it is blurred, slightly and properly move the meter needle to the prism (4 — 42) on which stop down numbers are marked,
Be careful not to move the meter needle to the prism too much.
The meter needle may be resisted by the prism.

c. When the adjustment is completed, install the blind cover (3 — 56) ((a) in Fig. 36) with Pliobond.

Fig. 34





Needle stop positions

The needle stop positions in the right and left sides must be balanced.

25. Adjustment of battery checker needle

a. Load an R - 25 film.

b. Set voltage to 4.2V, depress the battery checker button (3 — 40), and make sure that the needle of the level meter (6 — 31) is not in the red mark area.

c. Set voltage to 4.8V, depress the battery checker button (3 — 40), and make sure that the needle of the level meter (6 — 31) is in the red mark area.

d. When the requirements described in b and c above are unsatisfactory, turn the level meter (6 — 31) to change its posture. The level meter can be turned through the squeare opening on the main frame (3 — 1).

e. Make sure that the needle of the level meter is not projected into the viewfinder frame at any operating range.

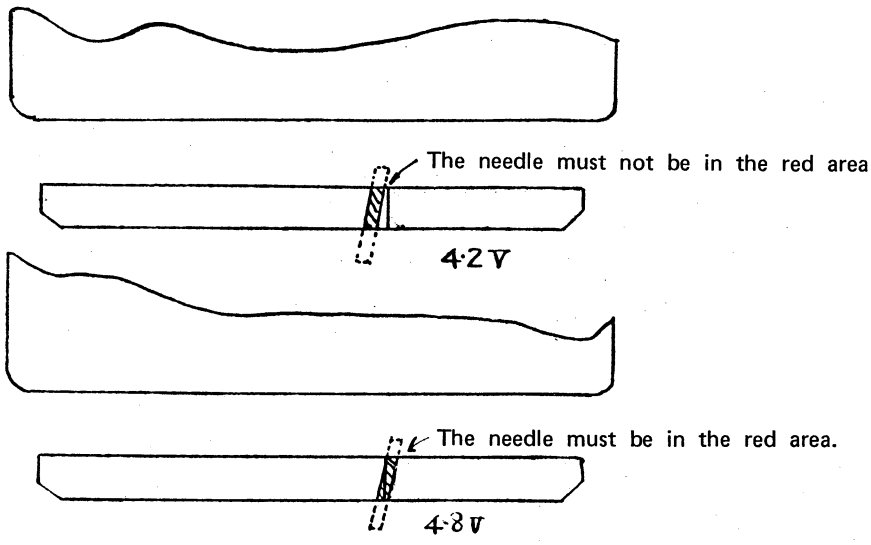
f. When the adjustment is completed, apply Pliobond to the contact surfaces of the level meter (6 — 31) and holder (6 — 32).

NOTE: (1) The needle of the level meter is seen in the bottom of the viewfinder.

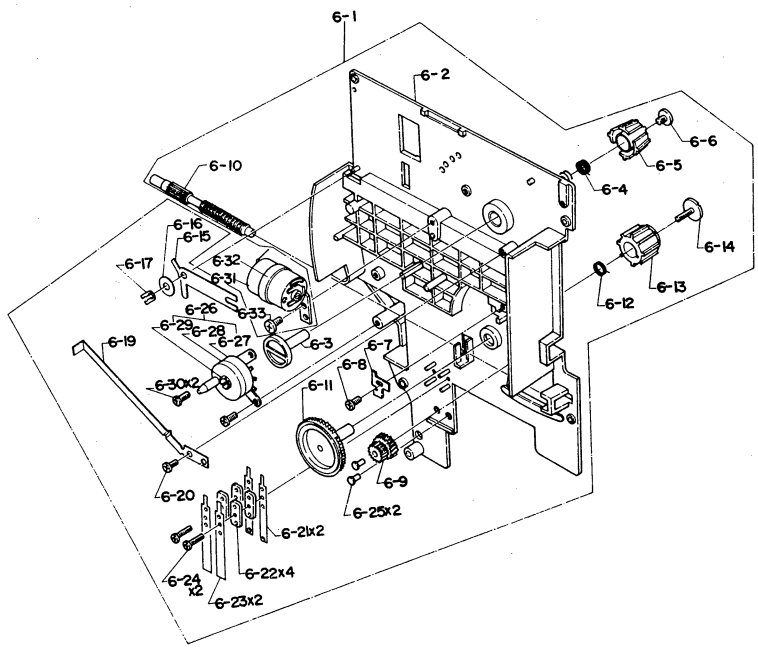
(2) When checking voltage indicated by the level meter, be sure to check it before starting the motor. (When the motor is operated, capacity of the capacitor lowers, causing needle position to change in a width equivalent to one needle.)

(3) Be careful not to push the battery checker button continuously for more than 30 seconds. Capacity of the capacitor will lower.

Fig. 35



Level meter (battery checker) needle position



26. Adjustment of film transporting signal

a. Load an RT200 film.

b. Look into the viewfinder, and advance the film.

c. See if the film transporting signal comes in and out the circled portion in the left side of the viewfinder.

d. Make sure that the film transporting signal is projected within the range shown in the right hand figure.

e. When the film transporting signal is projected beyond the range, properly bend the stopper plate (10 — 25) upward or downward. This adjustment can be made through the square opening on the main frame (3 — 1).

f. When the adjustment is completed, install the blind cover (3 — 56 — (b)) on the main frame (3 — 1) with Pliobond.

27. Adjustment of focus

a. Load an R - 25 film.

b. Fully open the aperture and apply EE lock.

c. Set the zooming ring to "TELE" and focusing ring to ∞.

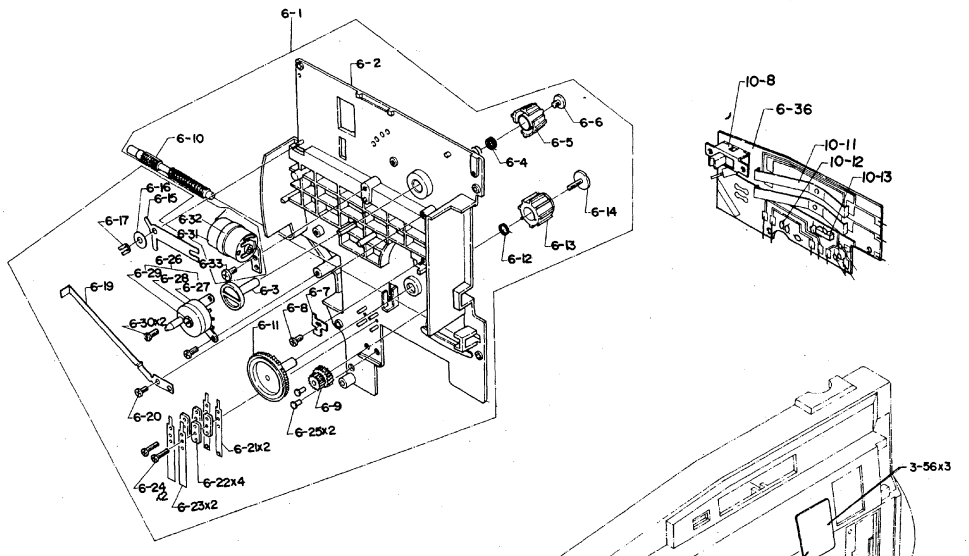
d. Use a collimater (Gokosha Model 400 mm).

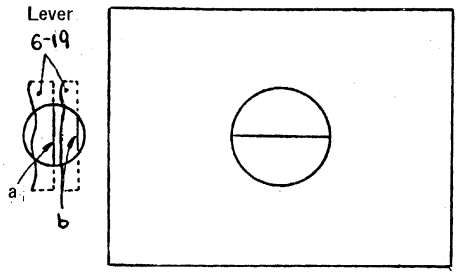
e. With the film being transported, insert a screwdriver and turn the eccentric pin (5 — 53) to adjust focused position.

f. The focused position must be read 0±1 on the collimater.

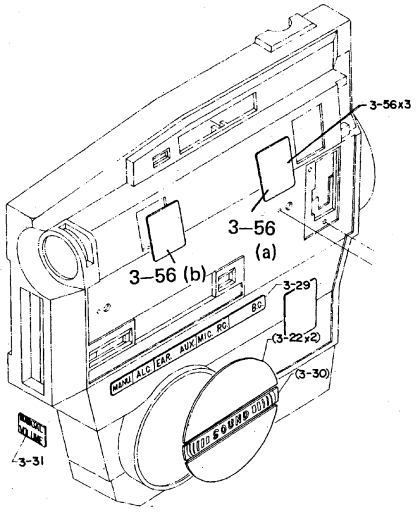
g. When the adjustment is completed, fit the plug (2 — 87) into the side cover.

Fig. 36

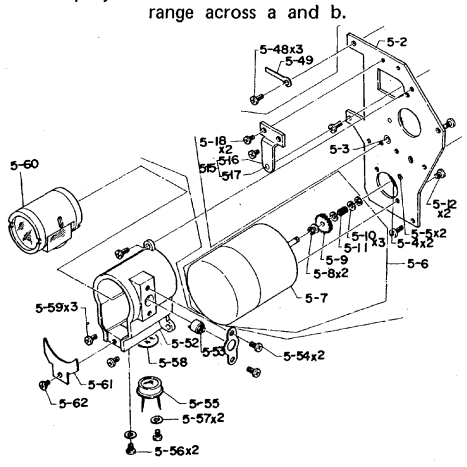


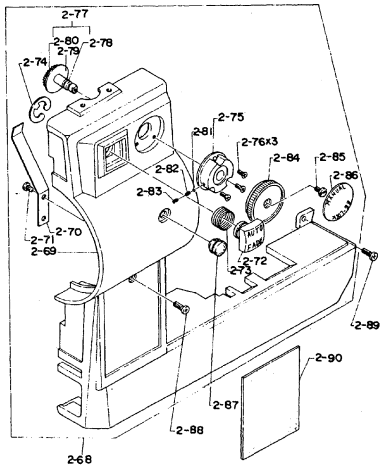


Position of film transporting signal



Maximum projection must be within the range across a and b.





28. Adjustment of exposure

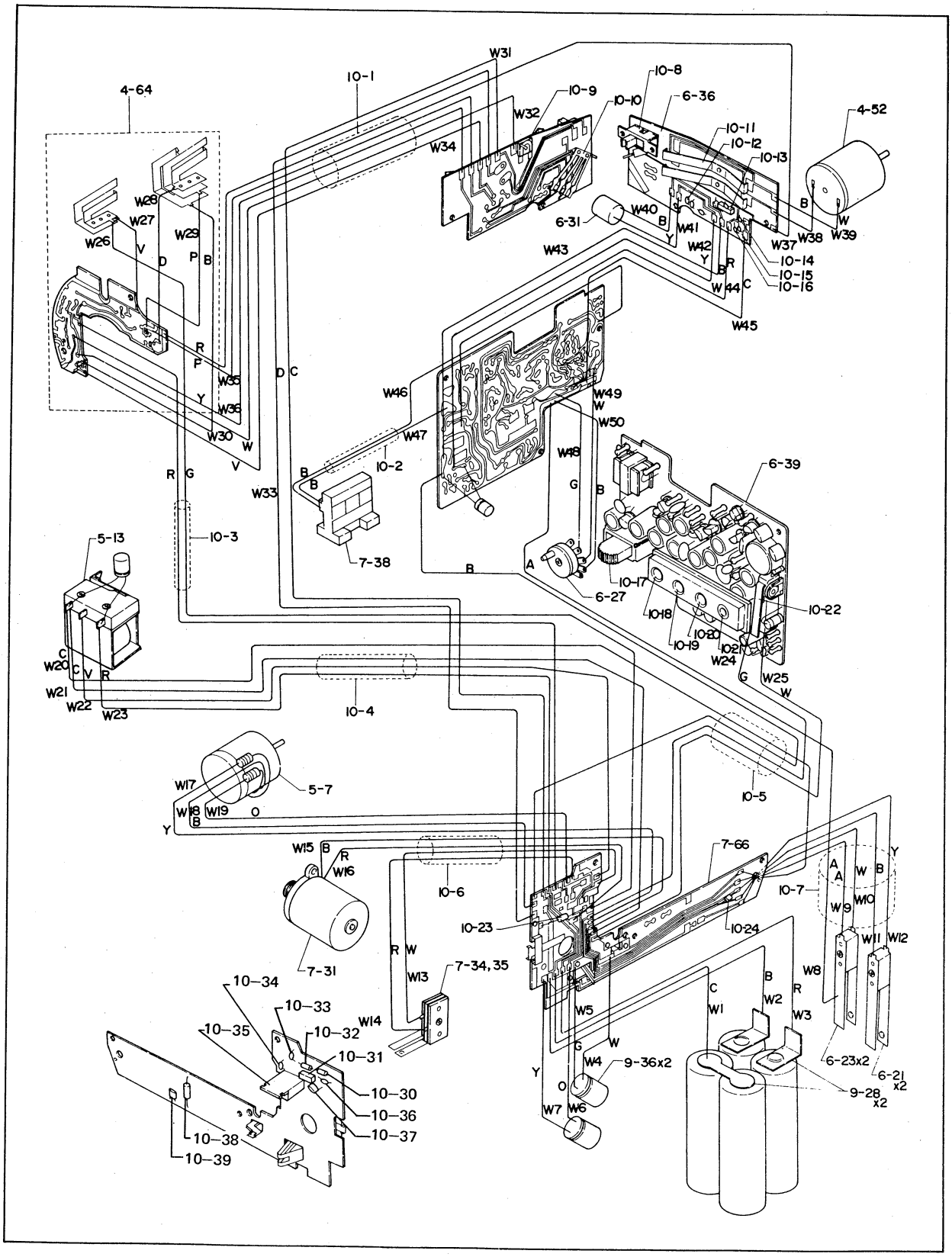
Make sure that voltage of the battery is 5.5V or higher.
Set the filter selector so that no filter is applied.
Adjust the variable resistor (10 — 9) so that the values shown in the following table are satisfied.
Set the focusing ring and zooming ring respectively to ∞ and W.

ASA	Light source (rlx)			Rated exposure	
25	Low luminosity	1,274	(Equivalent to F:2.8)	4.31 lx — 10.8 lx	±2/3 of a step
	Medium luminosity	5,097	(Equivalent to F:5.6)	Same as above	Same as above
	High luminosity	20,388	(Equivalent to F:11)	Same as above	Same as above
200	Super low luminosity	159	(Equivalent to F:28)	0.54 lx — 1.35 lx	±2/3 of a step
	Low luminosity	1,274	(Equivalent to F:8)	Same as above	Same as above
	Medium luminosity	5,097	(Equivalent to F:16)	Same as above	Same as above
	High luminosity	20,388	(Equivalent to F:32)	Same as above	Same as above

a. When exposure cannot be adjusted, check resistances of the automatic film speed setting circuit and CdS. (Refer to c and e below.)

b. Meter assembly (4 — 64) does not work.
Check the automatic film speed setting circuit assembly (6 — 36), printed circuit board assembly (7 — 66) and contact pieces (4 — 68, 4 — 70, 4 — 71, 4 — 75, 4 — 77, 7 — 61 and 7 — 62) for their functions, and when all these assemblies and parts are normal, replace the meter assembly (4 — 64) with a new one.

Fig. 37


4-64
10-1
W31
10-9
10-8
10-10
6-36
4-52
W32
W34
10-11
10-12
10-13
6-31
W40
W41
W42
W43
W37
W38
W39
10-14
10-15
10-16
W44
W45
W46
W49
W50
W47
10-2
W48
6-39
W33
7-38
10-3
5-13
6-27
10-17
10-18
10-19
10-20
10-21
10-22
W24
W25
W20
W21
W22
W23
10-4
5-7
W17
W18
W19
10-5
W15
W16
7-31
10-6
7-66
10-7
10-23
10-24
W13
7-34,35
W14
10-34
10-33
10-35
10-32
10-31
10-30
10-36
10-37
10-38
10-39
W5
W4
9-36x2
W7
W6
W1
W2
W3
W8
W9
W10
W11
W12
6-23x2
6-21
x2
9-28
x2

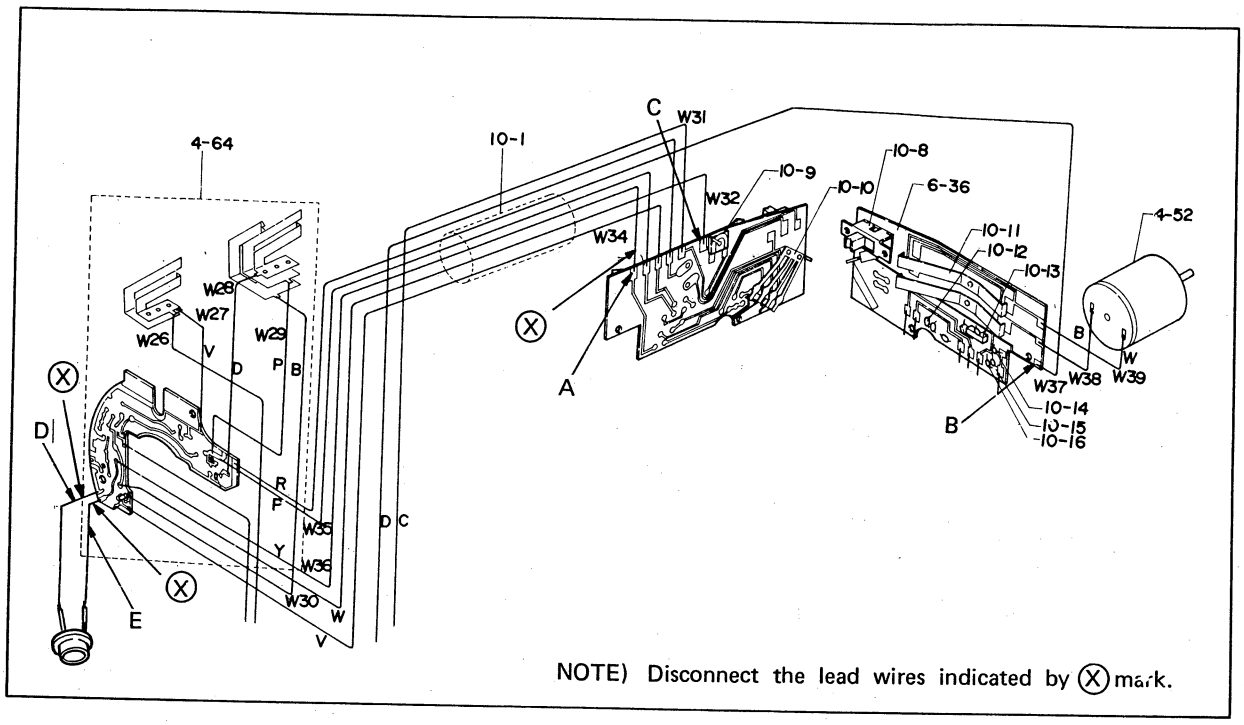
c. The rated resistances of the automatic film speed setting circuit assembly at the individual film speeds are indicated below:

ASA	Resistance
25	19 to 22 KΩ
50	34 to 40 KΩ
100	61 to 73 KΩ
200	110 to 130 KΩ
400	200 to 240 KΩ

d. Resistance of the variable resistor (10 — 9)
Resistance of the variable resistor (10 — 9) can be measured across terminals B and C shown in the right hand figure. The varying range is from 2.5 to 4 KΩ.
The contact position of the variable resistor must be in the center of the varying range.

e. Resistance of CdS
With the CdS built in the camera, measure resistance across terminals D and E shown in the right hand figure. (Fully open the aperture when measuring this resistance.)
The rated resistance is approximately 15 KΩ when the light source is 500 rlx.

Fig. 38



NOTE) Disconnect the lead wires indicated by Ⓧ mark.

29. Automatic fading system

Before checking this system, make sure that voltage of the battery is 5.5V or higher.

29 — 1 Silent filming

Before checking the silent filming function, make sure that the EE - LOCK MANUAL dial (2 — 84) is pushed - in completely.

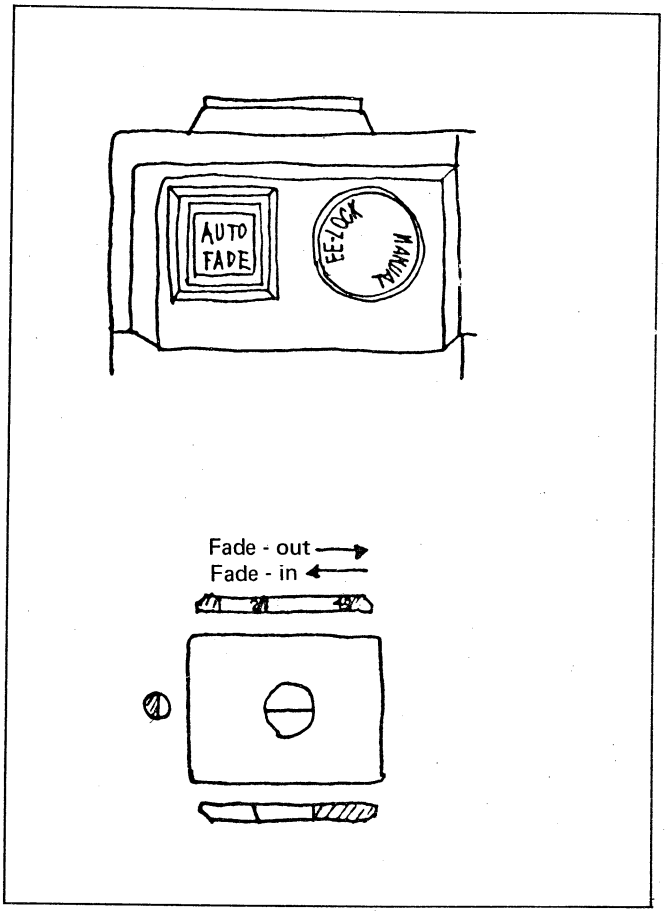
a. Fade - out

Face the camera to an object so that the aperture indicator needle indicates 2.8 (approximately), depress the AUTO FADE button (2 — 72), and make sure that the aperture indicator needle stops down within 2 to 4 seconds and enters the right side red mark zone.

b. Fade - in

Face the camera to an object so that the aperture indicator needle indicates 2.8 (approximately), make sure that the aperture indicator needle is in the right side red mark zone, make the AUTO FADE button free from the depression, and make sure that the aperture indicator needle returns to 2.8 within 2 to 4 seconds.
For both the fading - out and bading - in operations, the aperture indicator needle should not drag during the movements but it should move smoothly.

Fig. 39



29 — 2 Sound filming

Before checking the sound filming function, make sure that the EE - LOCK. MANUAL dial (2 — 84) is pushed - in completely and that the ALC - MANU. selector button is set to "ALC".

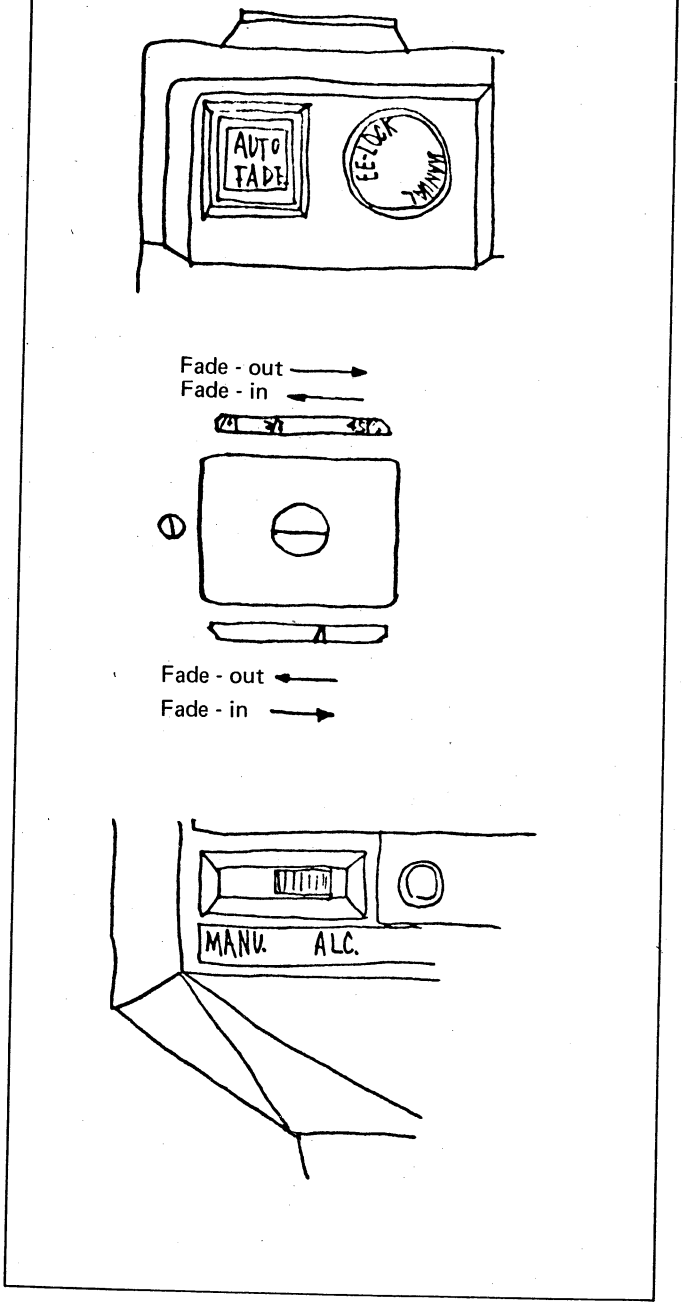
a. Fade - out

Face the camera to an object so that the aperture indicator needle indicates 2.8 (approximately) and make sure that volume of the sound is sufficient. Depress the AUTO FADE button (2 — 72), and make sure that the aperture indicator needle enters the right side red mark zone, the level meter needle goes to the left side and sound goes out gradually within 2 to 4 seconds.

b. Fade - in

Under the condition described in 29 — 2 - a above, make the AUTO FADE button free from the depression, and make sure that the aperture indicator needle returns to 2.8 (approximately), volume of sound returns to the level before the fading, and the level meter needle moves accordingly within 2 to 4 seconds.

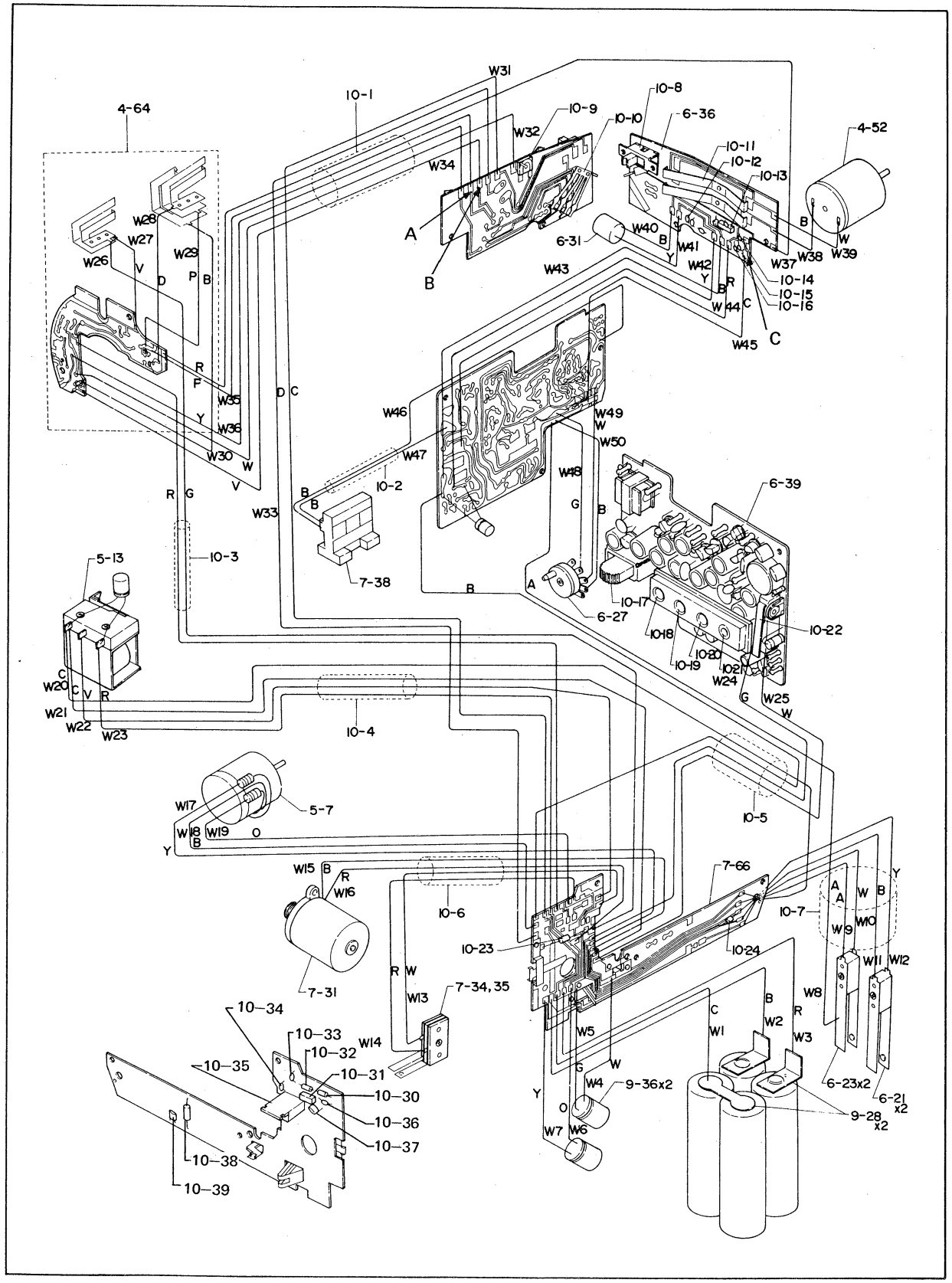
Fig. 40


AUTO FADE
EE-LOCK
MANU
Fade - out
Fade - in
Fade - out
Fade - in
MANU. ALC.

29 — 3 Method of inspection of automatic fading system

<table>
<tr><th>DEFECTIVE CONDITION</th><th>METHOD OF INSPECTION</th></tr>
<tr><td>The meter needle does not move.</td><td>1) Check the contact pieces (4 — 68, 4 — 70 and 4 — 71) for contact conditions.
2) Check lead wires (W28, W29 and W30) for soldering and breaking.</td></tr>
<tr><td>Automatic sound fading cannot be made.</td><td>1) Check the ALC for operation. The recording amplifier is defective when the ALC does not effect.
2) Check the lead wire (W45) to insure that it is correctly soldered to the automatic film speed setting circuit assembly (6 — 36).
3) Check the lead wires (W34 and W35) to insure that they are correctly soldered to the automatic film speed setting circuit assembly (6 — 36).
4) Measure voltages across terminal A and (—) and across terminal B and (—) to insure that voltage of the automatic film speed setting circuit assembly (6 — 36) varies as indicated below:
<table>
<tr><th></th><th>Across A and (—)</th><th>Across B and (—)</th></tr>
<tr><td>Fade - out</td><td>3.5 to 5V</td><td>3.5V</td></tr>
<tr><td>Fade - in</td><td>5 to 3.5</td><td>5 to 3.5V</td></tr>
</table>
NOTE: 1) Voltage of the battery should be 5.5V or higher
2) The above table applies when the meter is balanced and voltage across terminals A and B is 3.5V.
When the voltages do not vary as indicated above, the meter assembly (4 — 64) is defective.
5) Measure voltage across terminal C of the automatic film speed setting circuit assembly (6 — 36) and (—) to insure that it varies as indicated below.
Fade - out: 0 to 1.5V
Fade - in: 1.5 to 0V
When the voltage does not vary as indicated above, the circuit assembly (6 — 36) is defective.</td></tr>
</table>

Fig. 41

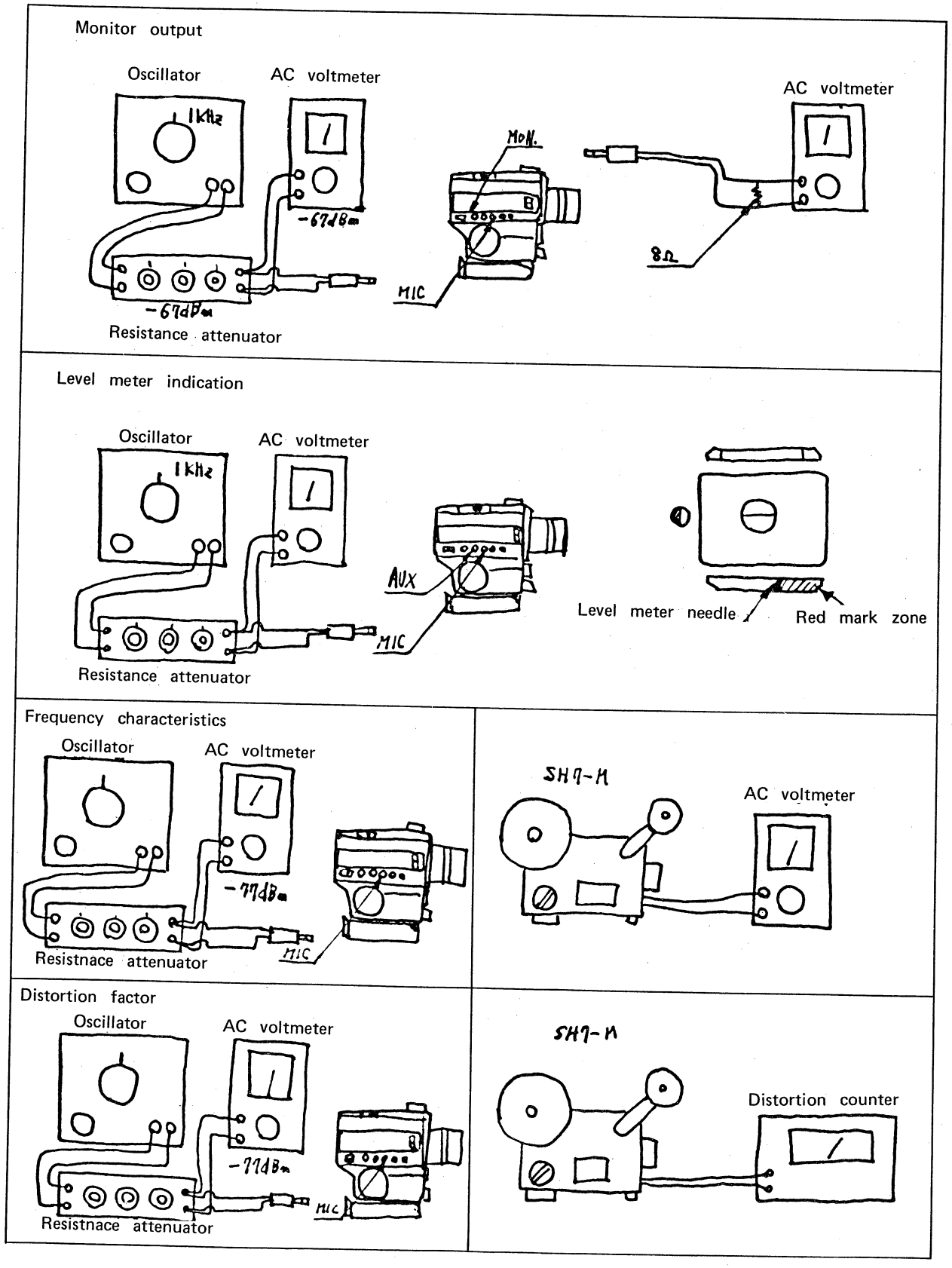

4-64
10-1
W31
10-8
10-9
10-10
6-36
4-52
W32
W34
10-11
10-12
10-13
A
B
W40
6-31
W41
W42
W43
W37
W38
W39
10-14
10-15
10-16
W44
W45
C
W28
W27
W26
W29
W35
W36
W30
W46
W49
W50
W47
W48
10-2
W33
7-38
6-39
10-3
5-13
6-27
10-17
10-18
10-19
10-20
10-21
10-22
W24
W25
W20
W21
W22
W23
10-4
W17
5-7
W18
W19
10-5
W15
W16
10-6
7-66
10-7
10-23
10-24
7-31
W13
7-34,35
W14
10-34
10-33
10-32
10-31
10-35
10-30
10-36
10-37
10-38
10-39
W1
W2
W3
W4
9-36x2
W5
W6
W7
W8
W9
W10
W11
W12
6-23x2
6-21
x2
9-28
x2

30. Sound recording system

30－1 Before checking the sound recording system, make sure that voltage of the battery is 5.5V or higher and that the ambient temperature is in range from 20 to 24° C.
For the specifications, ratings and method of inspection, the following table applies:

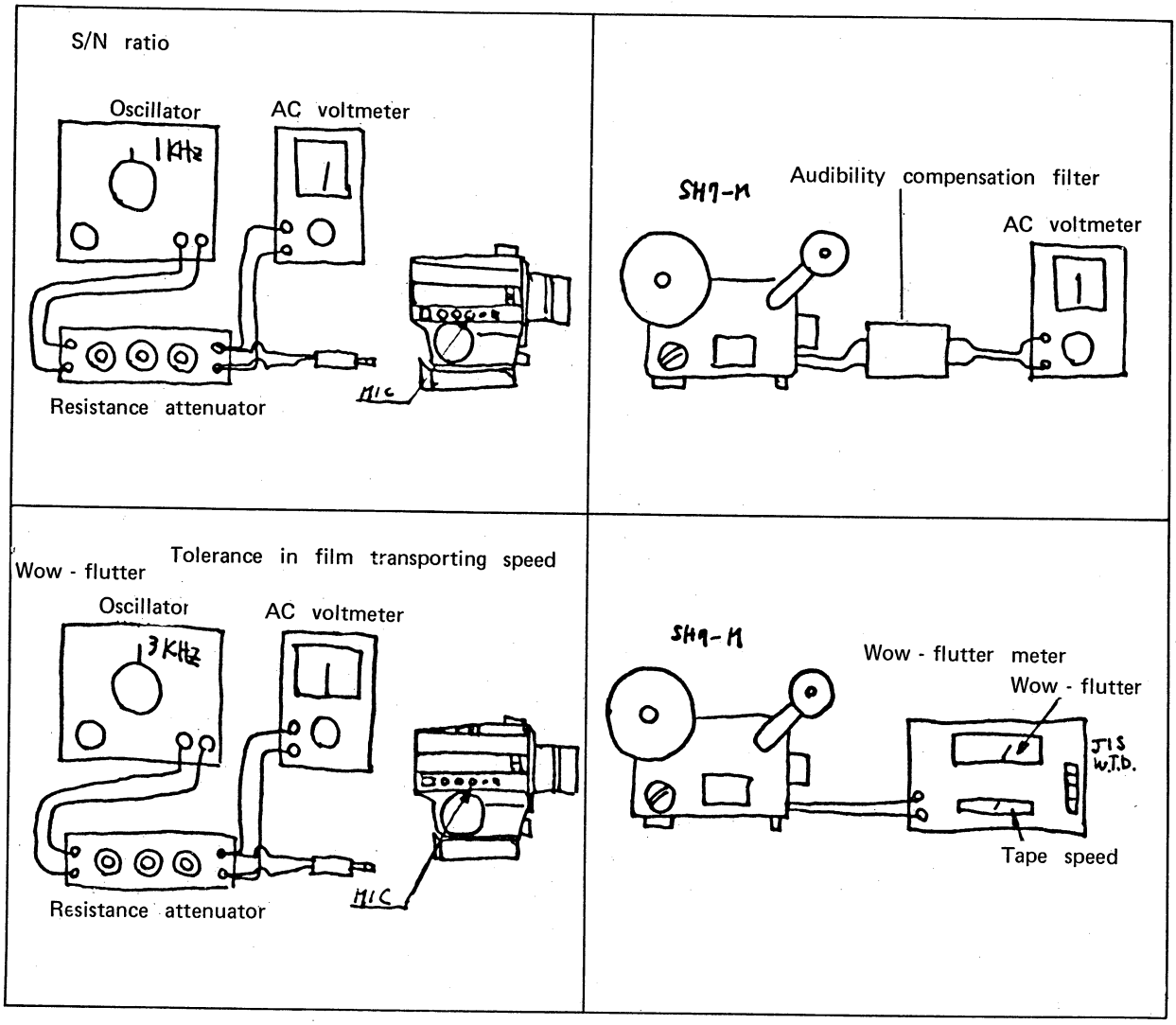
ITEM	RATING	METHOD OF INSPECTION
Microphone input	1) −77dBm 2) −84dBm	Measure the standard input applied to the microphone input jack when ALC is effected. Measure the standard input applied to the microphone input jack when manual control is effected and volume of sound is maximum.
AUX. input	−19dBm	Measure the standard input applied to the AUX input jack when ALC is effected.
Monitor output	−23dBm±3dB	Apply −67 dBm to the microphone input jack and measure monitor output. (ALC, 1 KHz, Impedance: 8Ω)
Level meter indication	1) MIC −80dBm±5dB 2) Difference between AUX input and micro-phone input 53dB ± 5dB	Measure microphone input when the level meter needle enters the red mark zone. (ALC) Measure AUX input when the level meter needle enters the red mark zone. (ALC)
Frequency characteristics	200Hz 0±15dB 8KHz +11±3dB	Apply inputs of −77 dBm to the microphone input jack at 200 Hz, 1 KHz and 8 KHz, record the sounds, reproduce the recorded sounds by the use of a sound projector or standard reproducer, and compare the reproduced sounds with the output when the output level is 1 KHz.
Distortion factor	6% or less	Apply −77 dBm at 400 Hz to the microphone input jack to record the sound, reproduce the sound, and measure distortion.

Fig. 42


Monitor output
Oscillator
AC voltmeter
1kHz
-67dBm
MON.
AC voltmeter
8Ω
MIC
-67dBm
Resistance attenuator
Level meter indication
Oscillator
AC voltmeter
1kHz
AUX
MIC
Level meter needle
Red mark zone
Resistance attenuator
Frequency characteristics
Oscillator
AC voltmeter
-77dBm
SHT-M
AC voltmeter
MIC
Resistnace attenuator
Distortion factor
Oscillator
AC voltmeter
-77dBm
SHT-M
Distortion counter
MIC
Resistnace attenuator

ITM	RATING	METHOD OF INSPECTION
S/N ratio	30 dBm or more	Apply input of 1 KHz —64 dBm to the microphone input jack to record it, make recording without applying input, reproduce these two types of sound, measure levels of the reproduced outputs through an audibility compensation filter, and compare the level difference.
Wow - flutter	0.45% or less (JIS. WTD)	Apply 3 KHz —77 dBm to the microphone input terminal, reproduce the recorded sound, and measure wow - flutter.
Tolerance of speed	Within ±3%	Apply 3 KHz —77 dBm to the microphone input jack, reproduce the recorded sound, and measure the speed at the time of reproduction.
Battery checker voltage	4.3 to 4.8V	Increasing voltage applied to the camera, repeat ON - OFF operations of the battery checker button, and measure voltage when the level meter needle enters the red mark zone.

Fig. 43

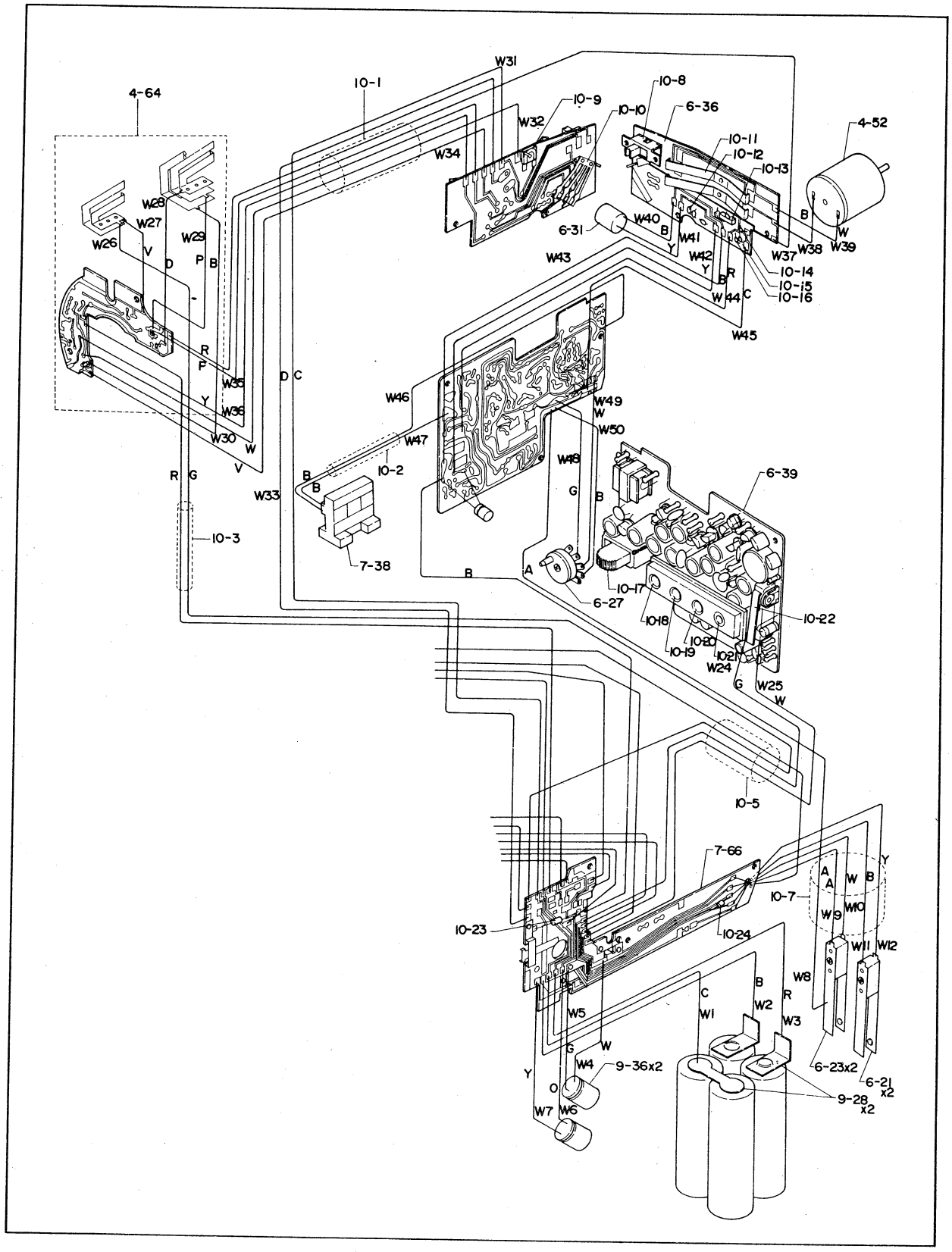

S/N ratio
Oscillator
1KHz
AC voltmeter
Resistance attenuator
MIC
SH7-M
Audibility compensation filter
AC voltmeter
Wow - flutter
Tolerance in film transporting speed
Oscillator
3KHz
AC voltmeter
Resistance attenuator
MIC
SH7-M
Wow - flutter meter
Wow - flutter
JIS W.T.D.
Tape speed

30 — 2 Recording performance inspecting procedure

Voltage applied to the camera: DC 5.5V

OPERATION FOR INSPECTION	METHOD OF INSPECTION AND RESULT
Connect a microphone to the microphone input jack of the camera, apply audio signal, and let the camera recording the signal.	1) The amplifier is normal when the level meter operates. If the level meter needle does not deflect, the amplifier is defective, the circuit is open, or the level meter is defective. 2) Connect an earphone to the earphone jack, and listen monitoring sound when voice is applied. When sound can be heard, the amplifier is normal. If not, the amplifier is defective or an open circuit exists.
Reproduce a recorded film, and listen the reproduced sound.	1) When no sound is reproduced, the recording amplifier is defective, the surrounding circuits have an open line, or the wire of the recording head coil is broken. 2) When recording performance is unsatisfactory, the recording head is dirty, contact between the recording head and film is poor, the recording amplifier is defective, wow - flutter is incorrect, or film transporting is improper.

Fig. 44


4-64
10-1
W31
10-9
10-8
10-10
6-36
W32
W34
4-52
10-11
10-12
10-13
W28
W27
W26
W29
6-31
W40
W41
W42
W37
W38
W39
W43
10-14
10-15
10-16
W44
W45
W46
W49
W50
W47
W48
10-2
W33
6-39
10-3
7-38
6-27
10-17
10-18
10-19
10-20
10-21
10-22
W24
W25
10-5
7-66
10-7
10-23
10-24
W5
W4
9-36x2
W7
W6
W1
W2
W3
W8
W9
W10
W11
W12
6-23x2
6-21
x2
9-28
x2

OPERATION FOR INSPECTION	METHOD OF INSPECTION AND RESULT
Remove the recording head cover (7 — 50) and check the lead wires (W46 and W47) connected to the head.	When either one of the lead wires is disconnected causing a short - circuit, sound cannot be recorded correctly.
Disconnect the lead wires form the recording head, and measure bias current and bias oscillation waveform.	Bias current: The recording amplifier is normal when bias current is 1.05 to 1.95 mA. Bias oscillation waveform: The recording amplifier is normal when measured waveform is a 50 KHz sine wave having no distortion.
Connect a 10 KΩ resistor to the lead wires (W46 and W47) of the recording head, apply audio signal, and measure waveform.	When the measured waveform is similar to that shown in Fig. 54, the recording amplifier is normal. When bias current is not generated, one of the following troubles may exist. 1. Defective recording amplifier. 2. Open line in the surrounding circuits Broken W8, W10 Broken W46, W47 3. Poor contact between the contact assembly (6 — 21) and contact assembly (6 — 23).

Fig. 45

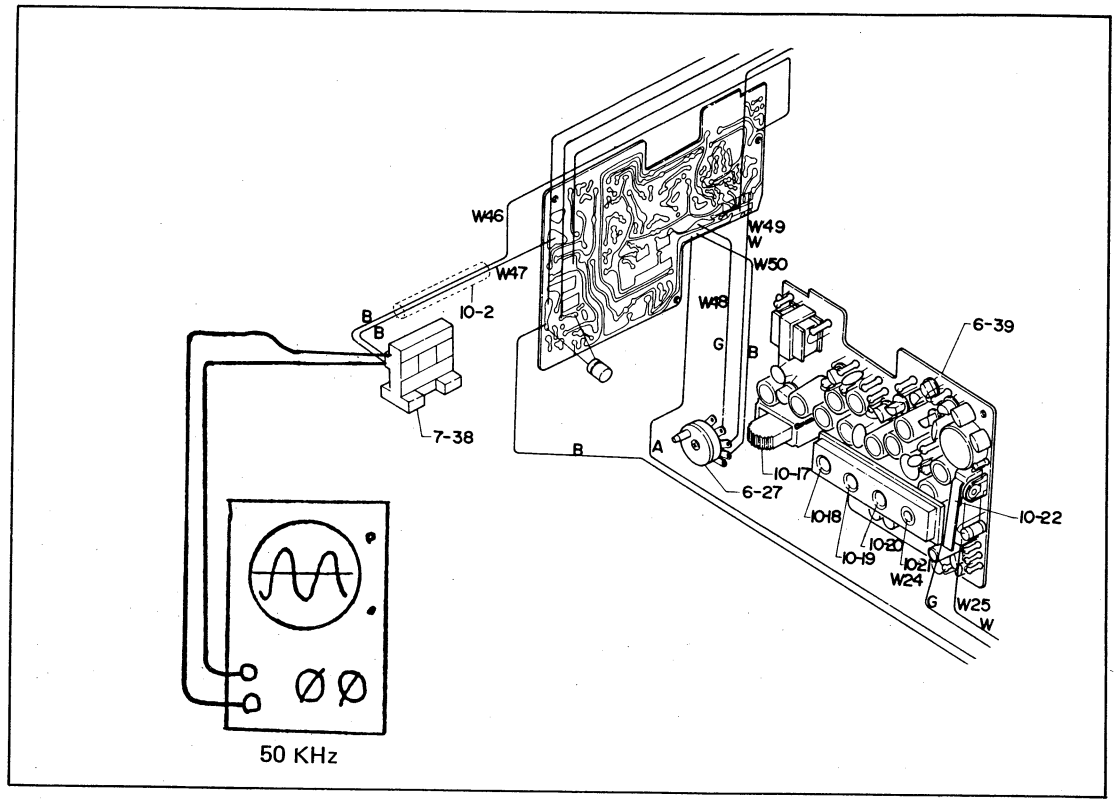
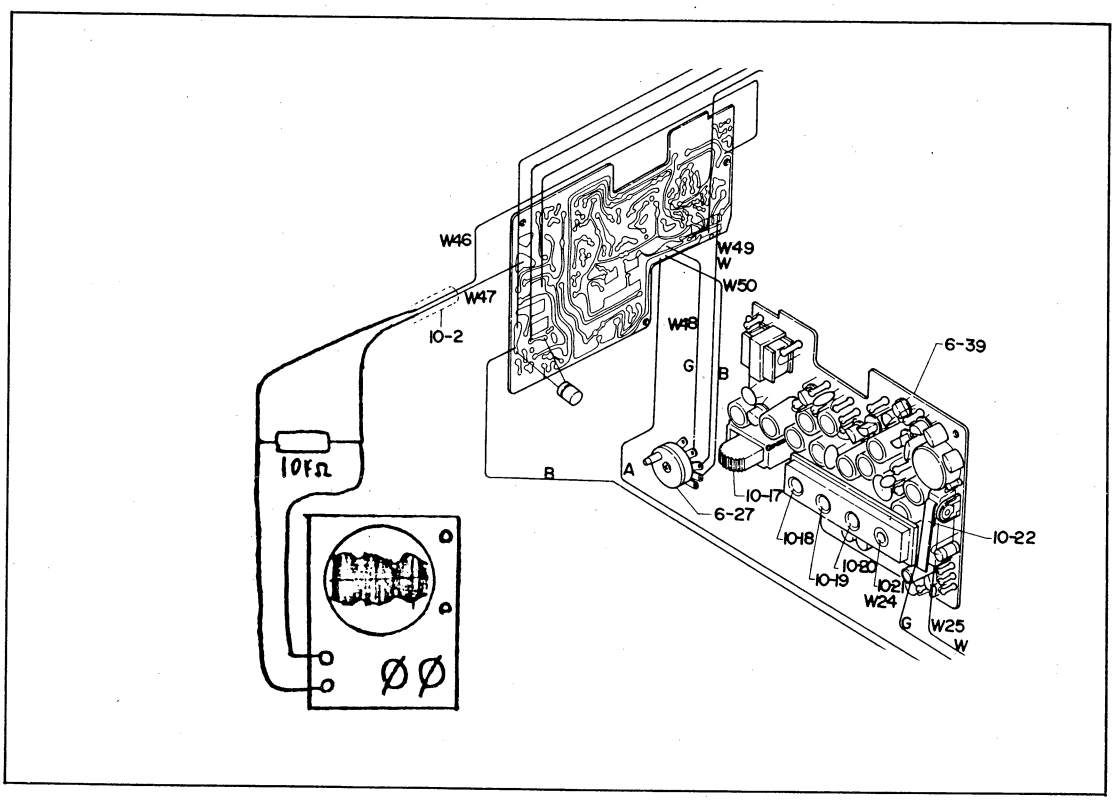

W46
W47
10-2
B
B
7-38
W49
W
W50
W48
G
B
6-39
B
A
6-27
10-17
10-18
10-19
10-20
10-21
W24
G
W25
W
10-22
50 KHz

Fig. 46


W46
W47
10-2
W49
W
W50
W48
G
B
6-39
10FΩ
B
A
6-27
10-17
10-18
10-19
10-20
10-21
W24
G
W25
W
10-22

30 — 3 Pull - down control system

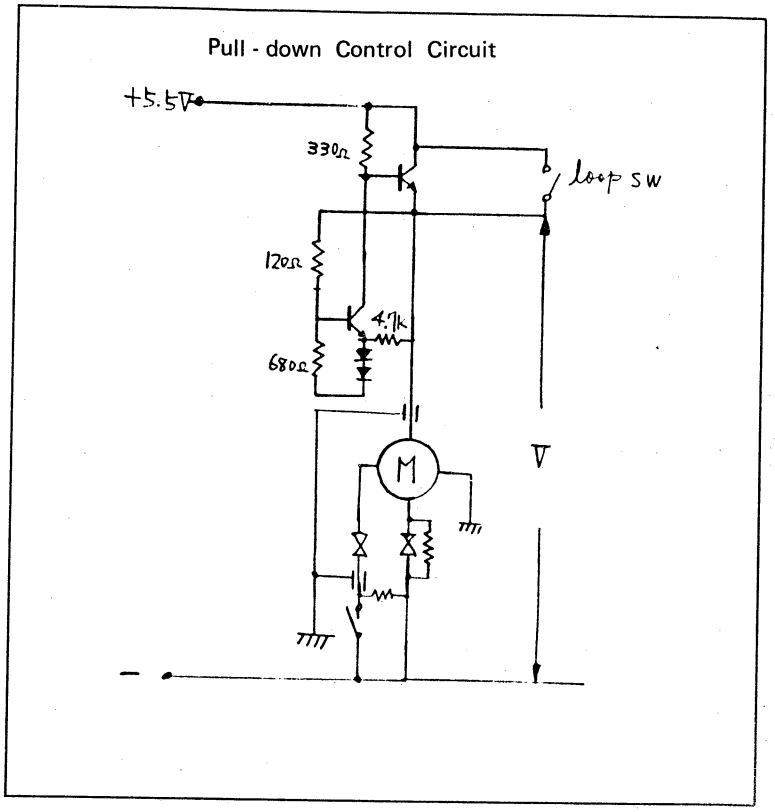
a. Operation of the pull - down control system

CAMERA OPERATION	CONDITION OF LOOP SWITCH	FILMING SPEED	SPEED OF FILM TRANSPORTING MOTOR
(1) Without loading film, close the film chamber door, and operate the camera.	ON	19.5F/S ~ 21F/S	
(2) Load a silent film, close the film chamber door, and operate the camera.	ON	18F/S ± 1.5F/S	
(3) Without loading film, open the film chamber door, and operate the camera.	OFF	14F/S ~ 17F/S	
(4) Load a sound film, close the film chamber door, and operate the camera.	Repeats ON-OFF switching once per frame	18F/S ± 0.5F/S	

b. Method to inspect the pull - down control circuit.

OPERATION FOR INSPECTION	METHOD OF INSPECTION AND RESULT
Remove the side cover, and measure voltage across the film transporting motor terminals.	The pull - down control curcuit is normal when voltage across terminals is: Approx. 5.5V ..... Loop switch ON Approx. 2.5V ..... Loop switch OFF

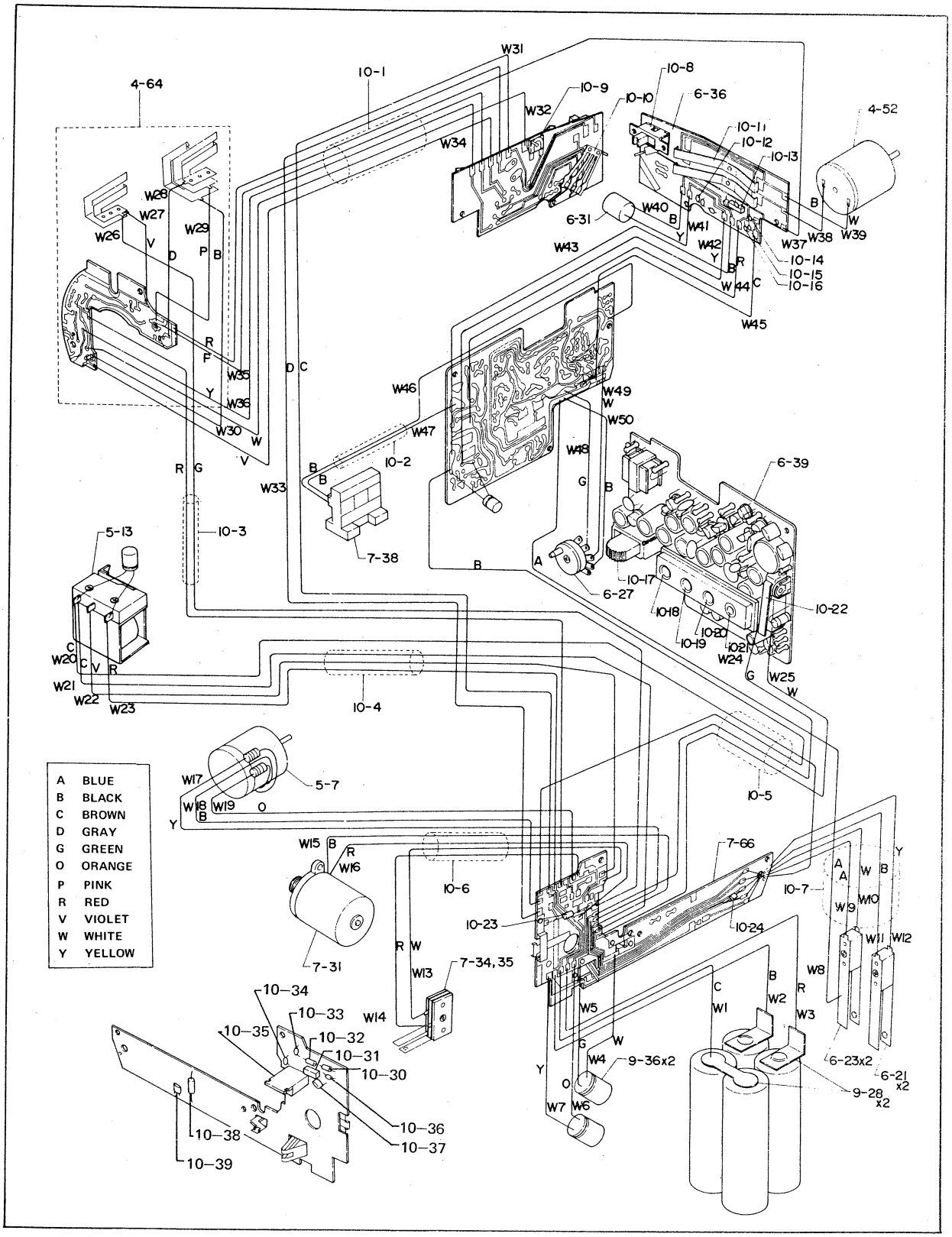
Fig. 47



30 — 4 Inspection for incorrect filming speed

TROUBLE	INSPECTION
Correct filming speed cannot be obtained with a sound film loaded.	(1) Pull - down control circuit (2) Loop switch contact (Contact pressure: 3 to 6 gr - cm) (3) Friction of film transporting motor (4) Motor lead wires for breakdown
Correct filming speed cannot be obtained with a silent film loaded.	(1) Loop switch contact (2) Friction of film transporting motor (3) Motor lead wires for breakdown

Fig. 48


A BLUE
B BLACK
C BROWN
D GRAY
G GREEN
O ORANGE
P PINK
R RED
V VIOLET
W WHITE
Y YELLOW
4-64
10-1
W31
10-8
10-9
10-10
6-36
W32
W34
4-52
10-11
10-12
10-13
W40
W41
W42
W43
6-31
W37
W38
W39
10-14
10-15
10-16
W44
W45
W46
W47
W48
W49
W50
10-2
6-39
10-17
6-27
10-18
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10-21
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W24
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5-7
10-5
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W16
7-31
10-6
7-66
10-7
10-23
10-24
W9
W10
W11
W12
W13
7-34,35
W14
10-34
10-33
10-35
10-32
10-31
10-30
10-36
10-37
10-38
10-39
W1
W2
W3
W4
W5
W6
W7
W8
9-36x2
6-23x2
6-21
x2
9-28
x2

30 — 5 Gargle

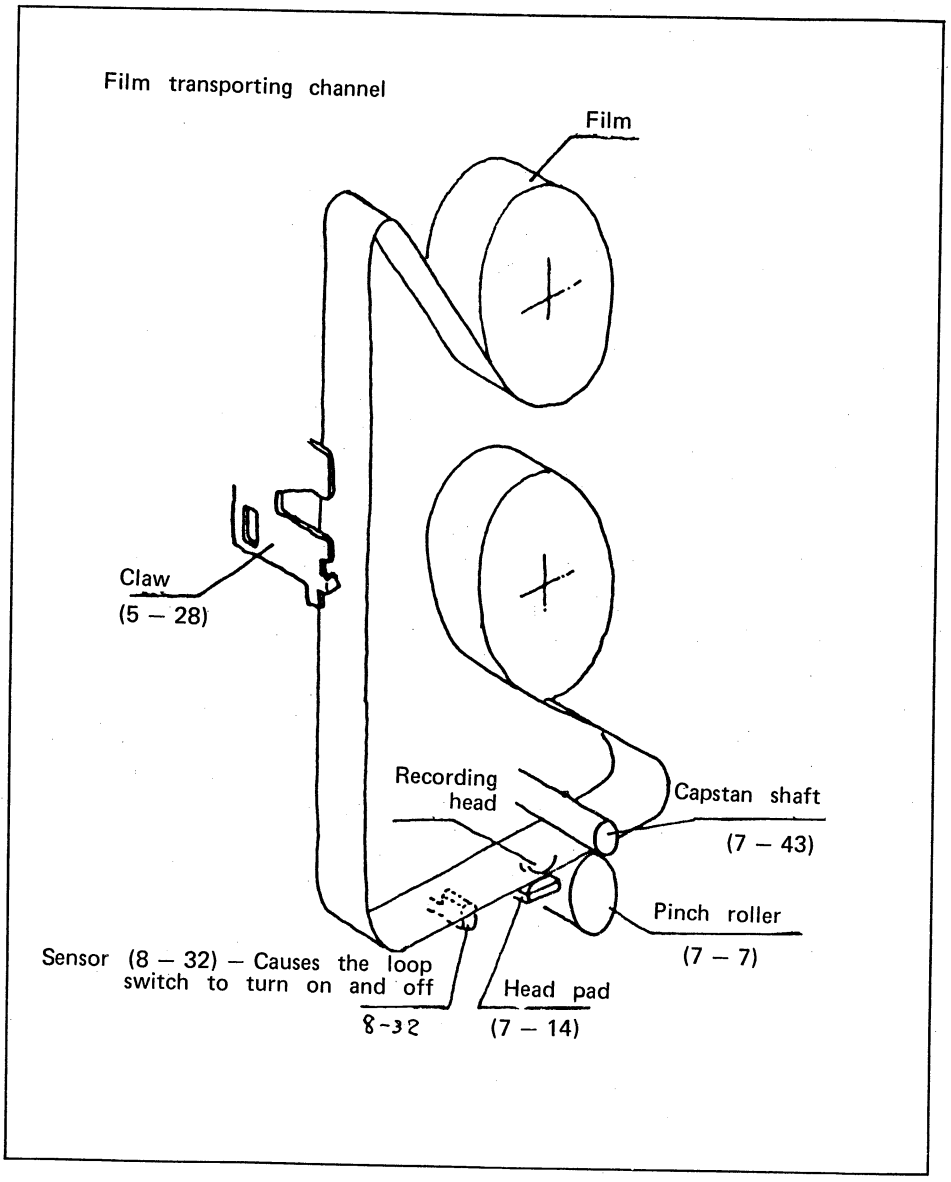
When loop switch contact is poor, the pull - down motor control circuit does not operate correctly. With this circuit operated incorrectly, correct voltage is not applied to the terminals of the motor for the sound system, causing the motor speed to drop. With the motor speed dropped, film is not pulled down in the correct speed.

Consequently, no film loop is formed.

When the film is pulled by the film transporting motor without having a proper film loop, the film does not come into contact with the recording head correctly and recording skips. This occurrence is called "Gargle".

Gargle occurs when the loop switch contacts are dirty or contact pressure is incorrect.

Fig. 49

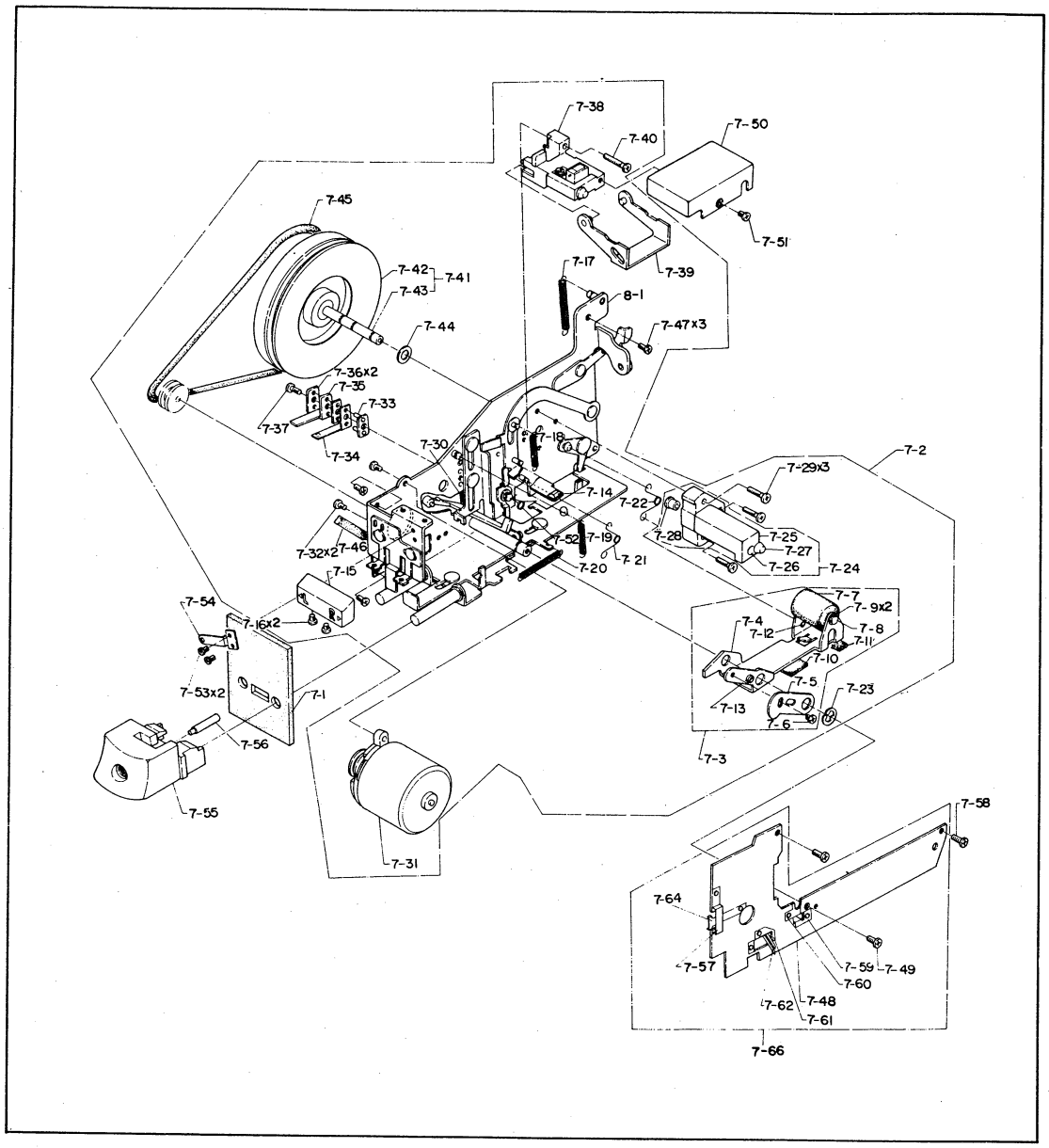

Film transporting channel
Film
Claw
(5 – 28)
Recording head
Capstan shaft
(7 – 43)
Pinch roller
(7 – 7)
Sensor (8 – 32) – Causes the loop switch to turn on and off
8-32
Head pad
(7 – 14)

30 — 6 Procedure for repairing recording mechanism assembly (improper wow - flutter)

Rated wow - flutter: 0.45% or less (JIS. WTD)

RELATIVE PARTS	INSPECTION	CORRECTIVE ACTION
Fitting of capstan shaft (7 — 41) into the holder (7 — 28)	Remove the belt, turn the flywheel (7 — 42) and make sure that it stops naturally. If it stops as if it is braked, the fitting of the capstan shaft is incorrect.	Clean and lap.
Belt (7 — 45)	Check the belt for existence of oil or dirt, deformation, and oscillation of the belt during operation of the recording mechanism assembly.	Clean or replace.
Head pad (7 — 14)	Check the head pad for tape squeaking, floated head pad, dirty head pad and head pad pressure (30 to 40 gr.).	Clean, adjust pressure or replace.
Pinch roller (7 — 7)	Check the pinch roller for smooth rotation, deformation (roughened surface), existence of dirt, and pinch roller pressure (350 to 400 gr.)	Clean or replace.
Contact between capstan shaft and leaf spring	Check the leaf spring for the surface wear.	Replace.

Fig. 50


7-38
7-40
7-50
7-45
7-51
7-39
7-17
7-42
7-41
7-43
8-1
7-44
7-47x3
7-36x2
7-35
7-33
7-37
7-34
7-30
7-18
7-2
7-29x3
7-14
7-22
7-28
7-25
7-27
7-26
7-24
7-32x2
7-46
7-52
7-19
7-21
7-20
7-15
7-54
7-16x2
7-7
7-9x2
7-4
7-12
7-8
7-11
7-10
7-5
7-23
7-53x2
7-1
7-13
7-6
7-3
7-56
7-55
7-31
7-58
7-64
7-57
7-59
7-49
7-60
7-62
7-48
7-61
7-66

30 — 7 Ratings for sound recorder components and inspection method

NAME OF COMPONENT	RATING	INSPECTION METHOD
Head	Input impedance 300Ω ± 30% (1KHz)	(1) Measure impedance with an impedance meter. (2) As a simple method, use a tester to measure impedance. The recording head is normal when measured impedance is approximately 70Ω.
Recording amplifier	Bias current 1.5mA±30%	Apply DC 5.5V, and measure current flowing through the recording head. In this measurement, connect wires as shown in Fig. 60.
	Level meter output	(1) Apply DC 5.5V, apply input of —77 dBm to the microphone input jack, and measure voltage at both sides of a 500Ω resistor connected to the output terminals of the level meter.
	Battery checker output	(2) Apply DC 5.5V, push the microswitch, and measure voltages at both sides of the 500Ω resistor.
	ALC characteristics + 3.5 ± 2dB	Set output to zero at —77 dBm, and measure output at —38 dBm.

Fig. 51

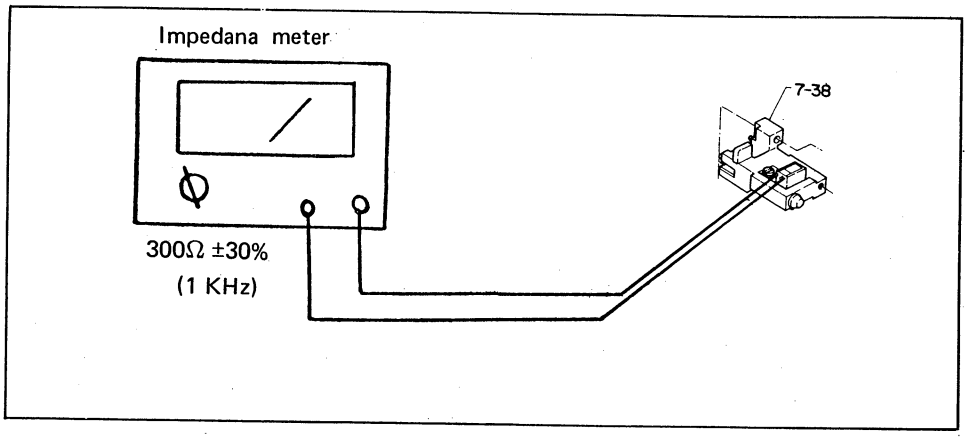
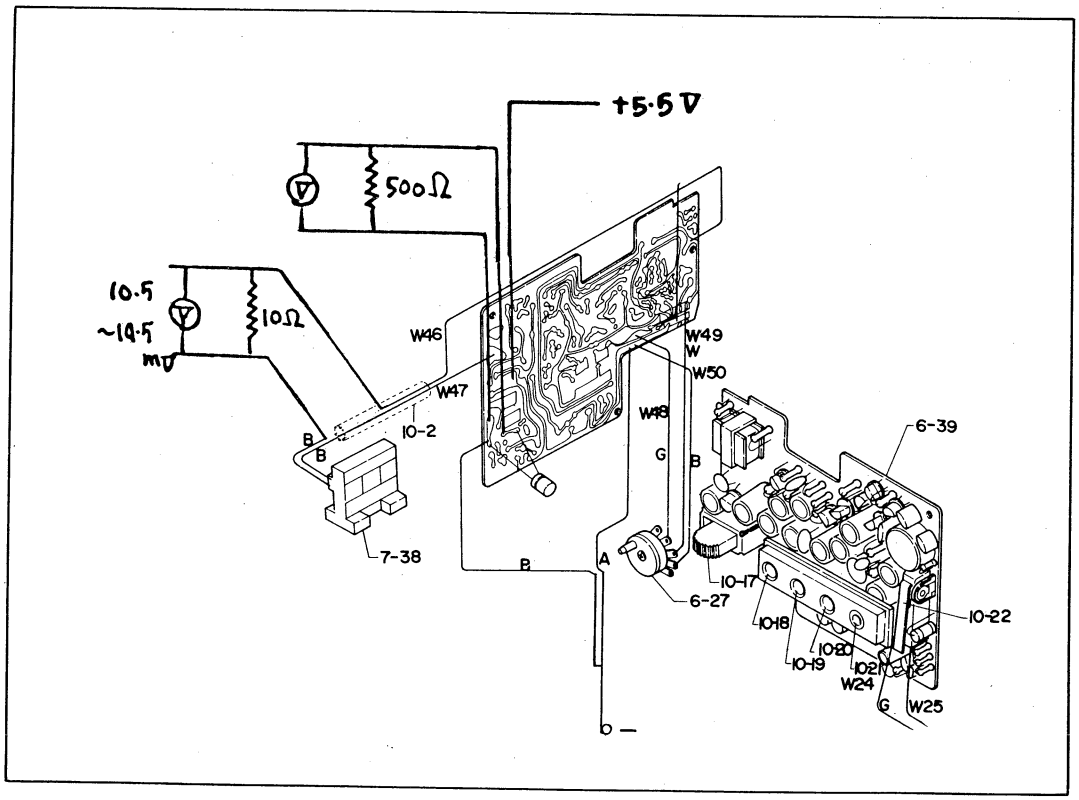
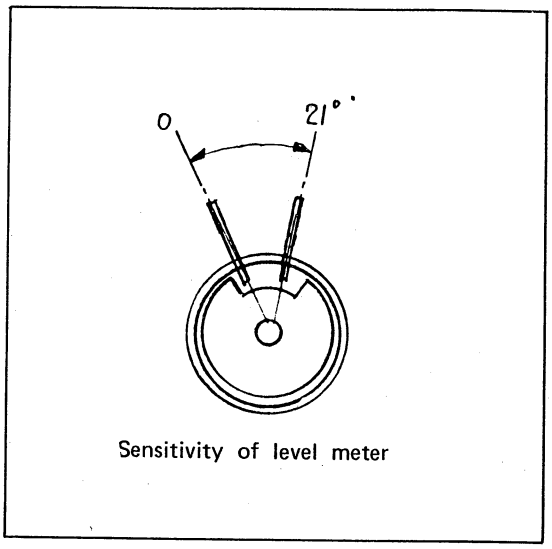

Impedana meter
300Ω ±30%
(1 KHz)
7-38

Fig. 52


+5.5V
500Ω
10.5
~19.5
mV
10Ω
W46
W47
10-2
B
B
7-38
W49
W
W50
W48
G
B
6-39
A
B
6-27
10-17
10-18
10-19
10-20
10-21
W24
G
W25
10-22

NAME OF COMPONENT	RATING	INSPECTION METHOD
Level meter	Internal resistance 500Ω ± 10%	Connect an ohmmeter to the lead wires of the level meter, and measure internal resistance.
	Sensitivity Deflection angle 0° 0μA 21° 250μA ±12%	Measure meter needle deflection angle when the rated current is flowed through the level meter. (The position where the meter needle is about to enter the red mark zone represents approximately 21°.)

Fig. 53



Sensitivity of level meter

31. Installing film chamber plate assembly (6 – 46)

a. Fit the portion (bent in right angle) of the lever assembly (6 — 41) into the slit of the lever (6 — 15), and match the two bosses of the base frame (6 — 2) with the two openings on the lever assembly (6 — 41).

b. Apply one end of the spring (6 — 45) to the hole on the footage counter lever (6 — 44), apply the other end of the spring to the boss on the base frame (6 — 2), and match the large boss on the base frame (6 — 2) with the hole on the footage counter lever (6 — 44).

c. Place the film chamber plate assembly (6 — 46) on the base frame (5 — 19) with the film chamber plate squeezed under the claw of the base frame, and thus, install the film chamber plate assembly (6 — 46) on the base frame (5 — 19) with three screws (6 — 55).

d. Check the film chamber plate (6 — 47) to insure that it is not floated.

e. Check the footage counter lever to insure that it moves smoothly.

f. Make sure that the film end mark (lever assembly 6 — 41) begins to move when the footage counter is about to reach "15 m" and that the filter (6 — 43) of the lever assembly (6 — 41) entirely appears in the viewfinder frame when the footage counter passed the "15 m".

g. Open the film chamber door, and make sure that the footage counter lever (6 — 44) zero - resets.

h. When the footage counter lever (6 — 44) does not move smoothly, replace the spur gear (6 — 10) with a new one.

i. When film end mark does not move timely, properly bend the lever (6 — 15).

j. When the film chamber door is opened and the footage counter does not zero - reset, check the footage counter lever (6 — 44). When this lever is bent improperly, the lever comes into contact with the spur gear (6 — 10).
Separate the lever from the spur gear.

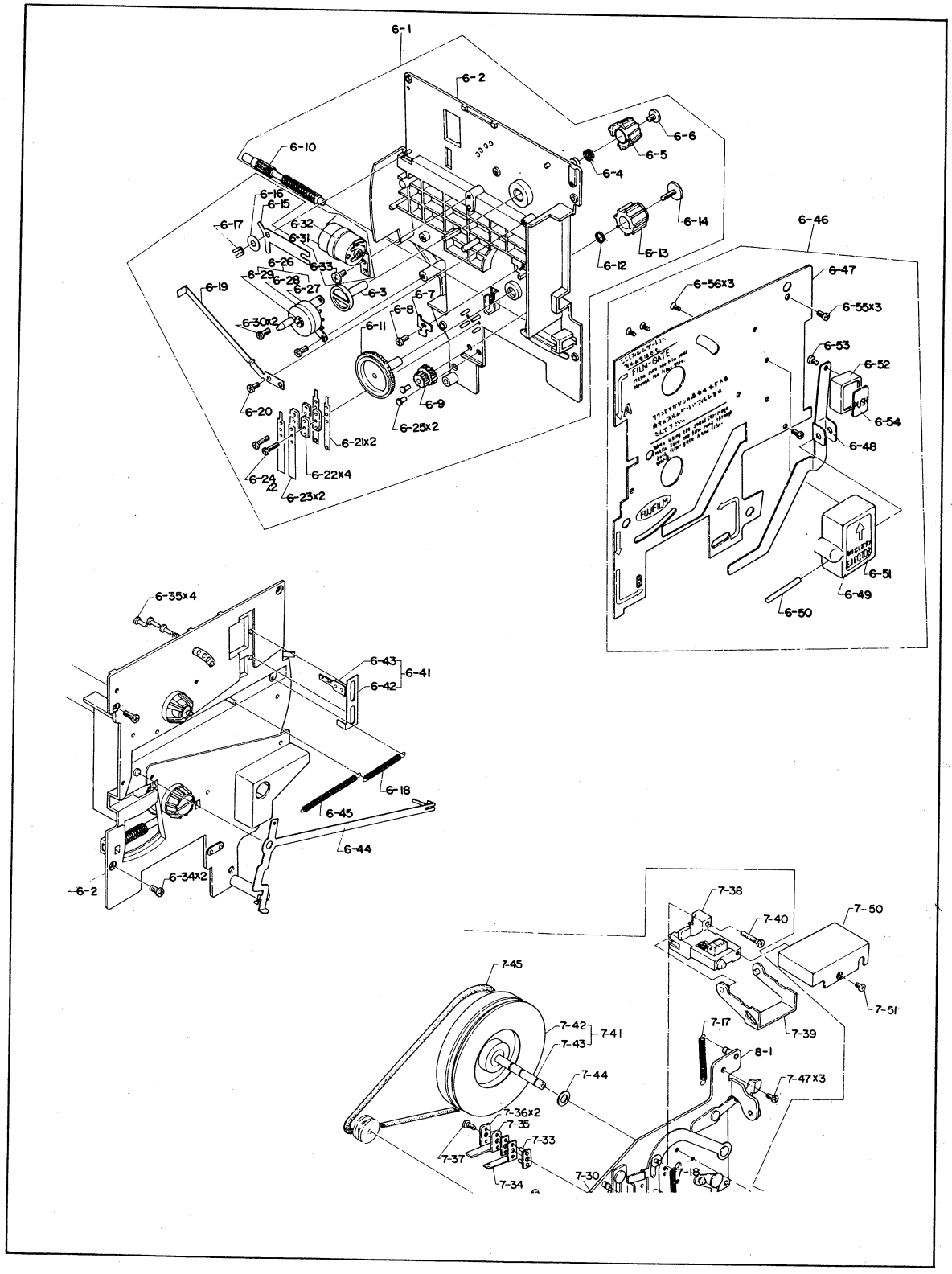
NOTE: Make sure that the filter (6 — 43) is not dirty or scarred.

32. Installing head cover

a. Install the head cover (7 — 50) with the screw (7 — 51).

b. When installing the head cover, be careful not to hook the two lead wires soldered on the recording head causing them to be disconnected.

Fig. 54


6-1
6-2
6-10
6-16
6-15
6-17
6-32
6-31
6-26
6-33
6-29
6-28
6-27
6-19
6-30x2
6-20
6-24x2
6-23x2
6-22x4
6-21x2
6-25x2
6-9
6-11
6-8
6-7
6-3
6-4
6-5
6-6
6-14
6-13
6-12
6-46
6-47
6-56x3
6-55x3
6-53
6-52
6-54
6-48
6-51
6-49
6-50
6-35x4
6-43
6-41
6-42
6-18
6-45
6-44
6-34x2
6-2
7-38
7-40
7-50
7-45
7-42
7-41
7-43
7-44
7-36x2
7-35
7-33
7-37
7-34
7-30
7-18
7-17
7-39
8-1
7-47x3
7-51

33. Installing front covers

a. Install the upper front cover (1 — 4) with the screw (1 — 6).

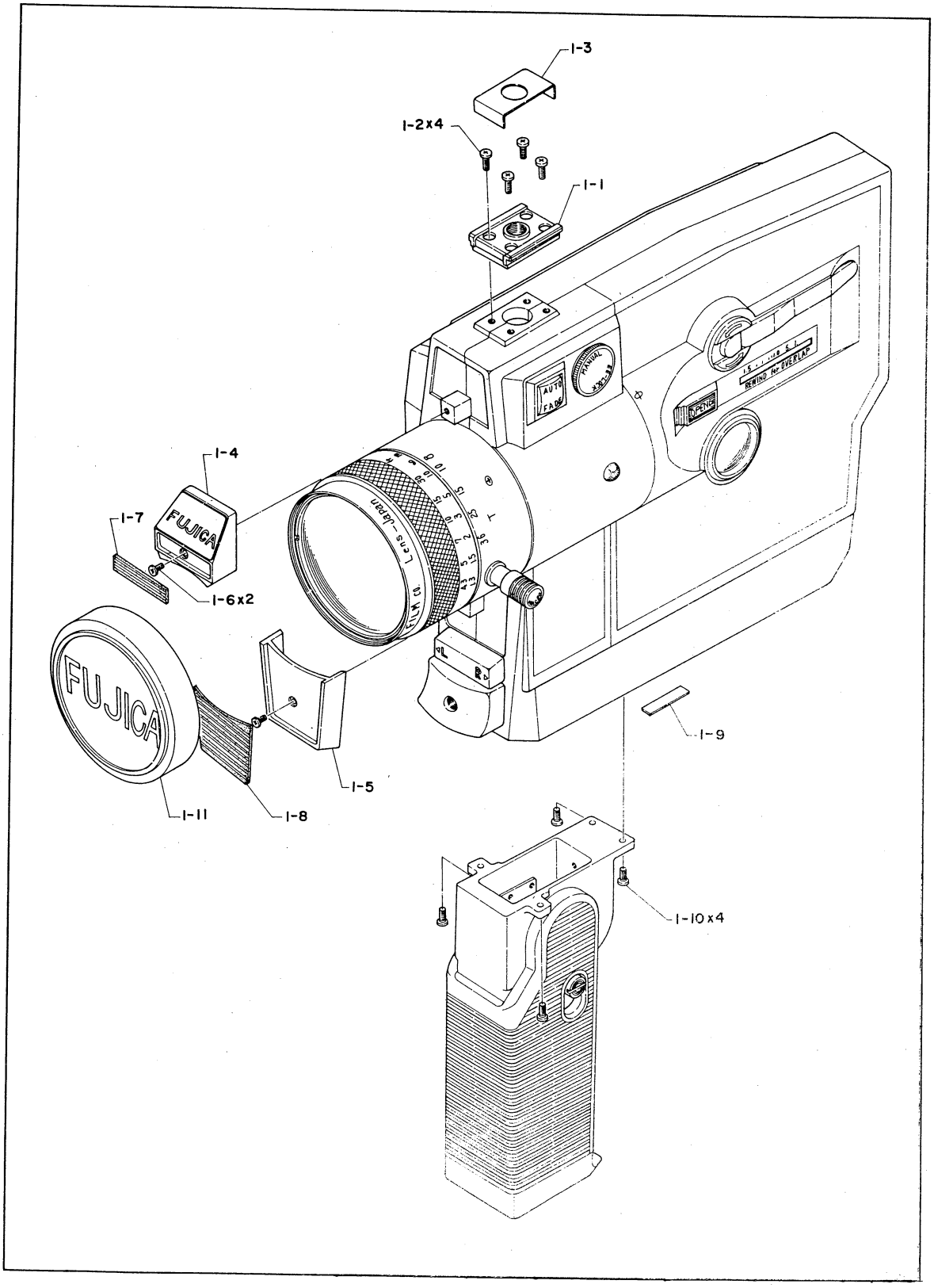
b. Install the leather (1 — 7) with Pliobond.

c. Carefully align posture of the leather. Do not turn the up - side - down.

d. Install the lower front cover (1 — 5) with the screw (1 — 6).

e. Install the leather (1 — 8) with Pliobond.

Fig. 55


I-3
I-2x4
I-1
I-4
I-7
I-6x2
I-5
I-11
I-8
I-9
I-10x4
FUJICA
AUTO FADE
MANUAL
OPEN
REWIND for OVERLAP
Lens-Ubaan

34. Installing leathers

a. Install the leather (2 — 90) on the side cover (2 — 69) with Pliobond.

b. Install the leather (2 — 67) on the film chamber door (2 — 2) with Pliobond.

c. Install the leathers (3 — 57 and 3 — 58) on the main frame (3 — 1) with Pliobond.

d. Install the name plate (3 — 30) and two sheets of leather (3 — 32) on the main frame (3 — 1) with Pliobond.

e. Check all installed leathers to insure that they are perfectly adhered without any floating or peeled off portion.

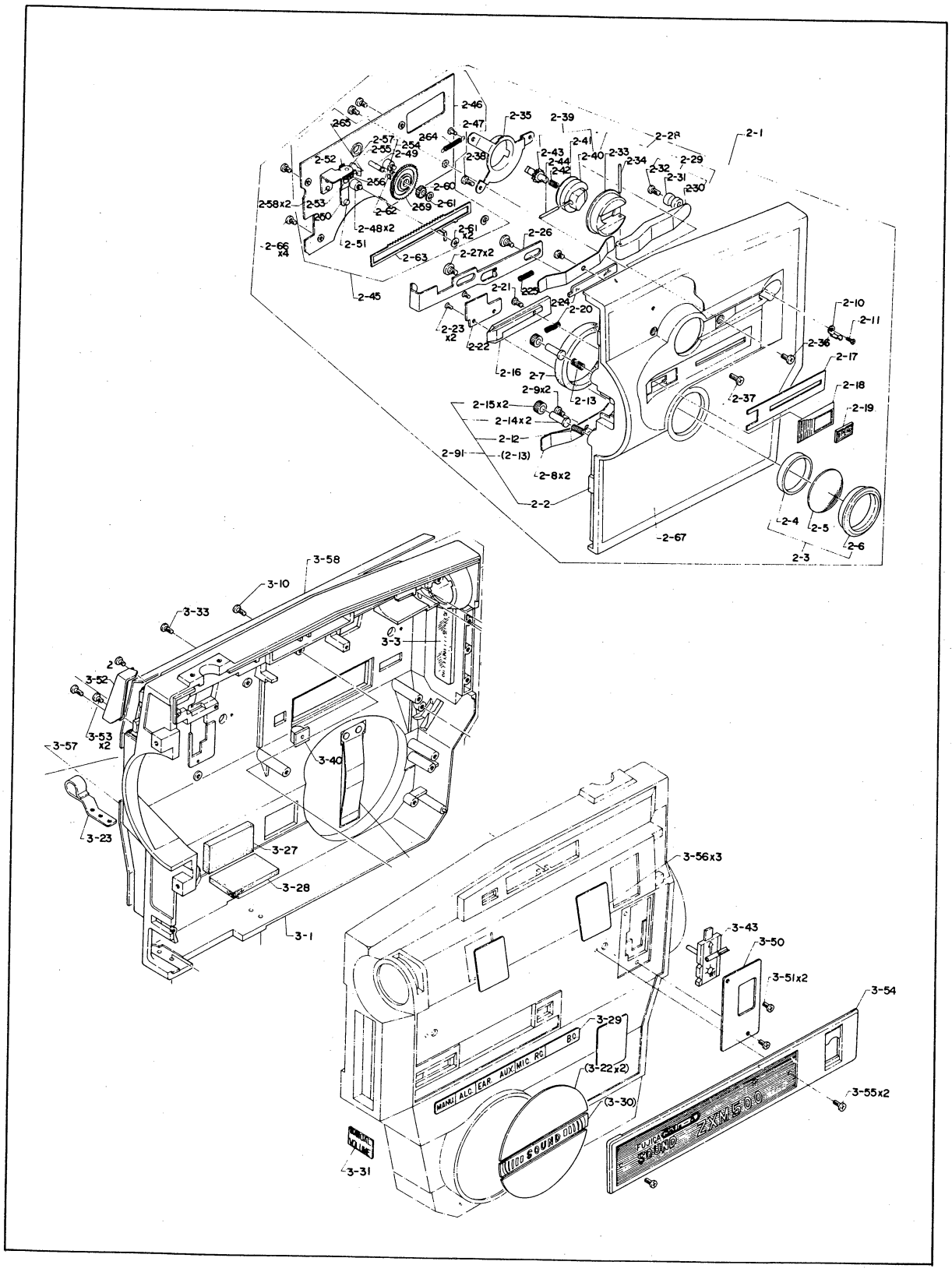
35. Installing main name plate

a. Install the main name plate (3 — 54) on the main frame (3 — 1) with two screws (3 — 55).

b. Make sure that the filter selector assembly (3 — 43) operates smoothly.

c. Install the name plate (3 — 31) on the main frame (3 — 1) with Pliobond.

Fig. 56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2-4
2-5
2-6
2-67
2-8x2
2-9x2
2-10
2-11
2-12
2-13
2-14x2
2-15x2
2-16
2-17
2-18
2-19
2-20
2-21
2-22
2-23 x2
2-24
2-26
2-27x2
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2-35
2-36
2-37
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2-39
2-40
2-41
2-42
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3-1
3-3
3-10
3-23
3-27
3-28
3-29
3-30
3-31
3-33
3-40
3-43
3-50
3-51x2
3-52
3-53 x2
3-54
3-55x2
3-56x3
3-57
3-58
MANU ALC EAR AUX MIC RC
SOUND ZXM500

Ⅳ

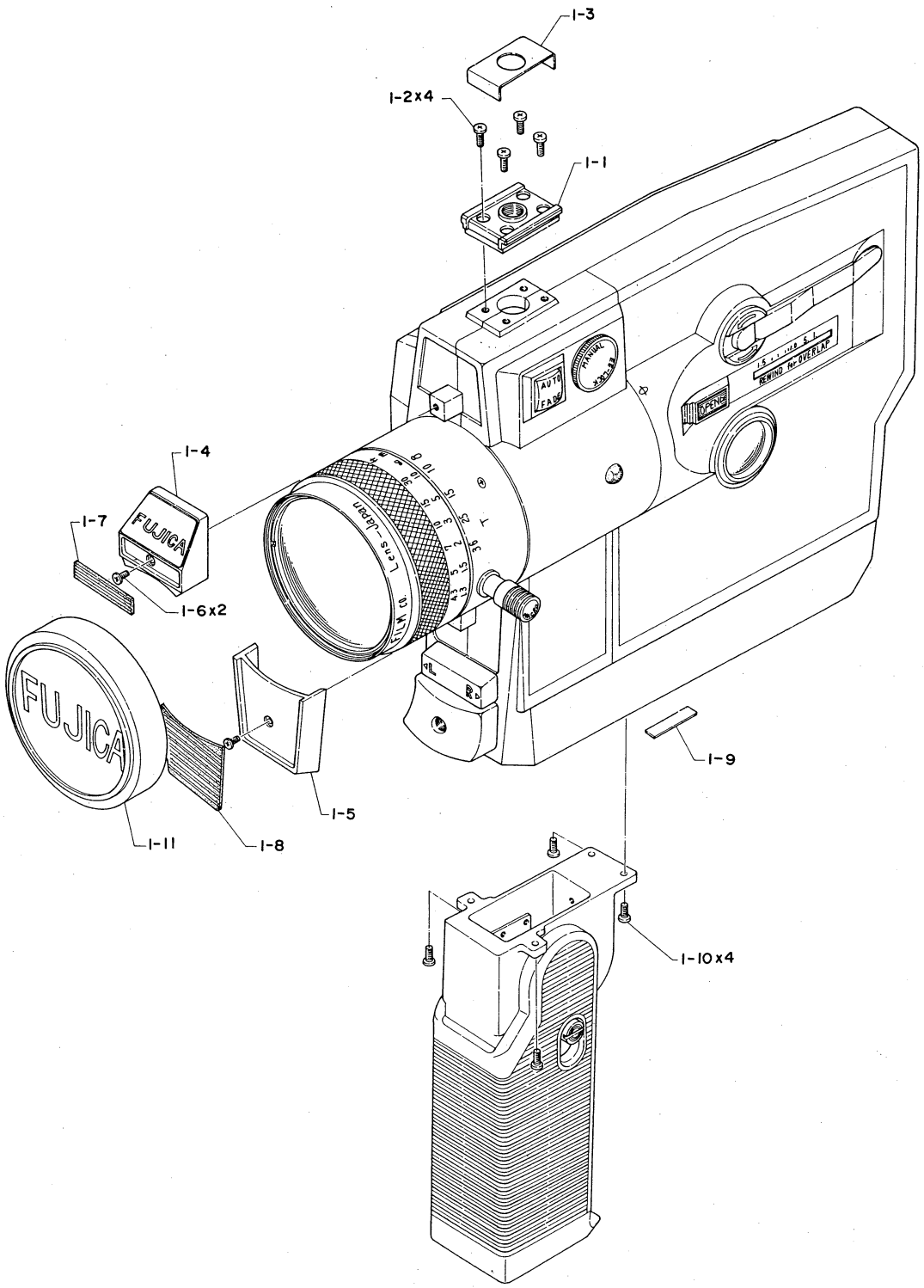
PART LIST

CAUTION

ZXM500 and ZM800 use same component parts except for several parts used for ZM800 only. When placing your order for parts or referring to this parts list for repairing, your attention is invited to the right end column titled "Commonly used with".

The parts used for ZM800 are remarkable with their Gozic - printed charactors.

Fig. 1


1-3
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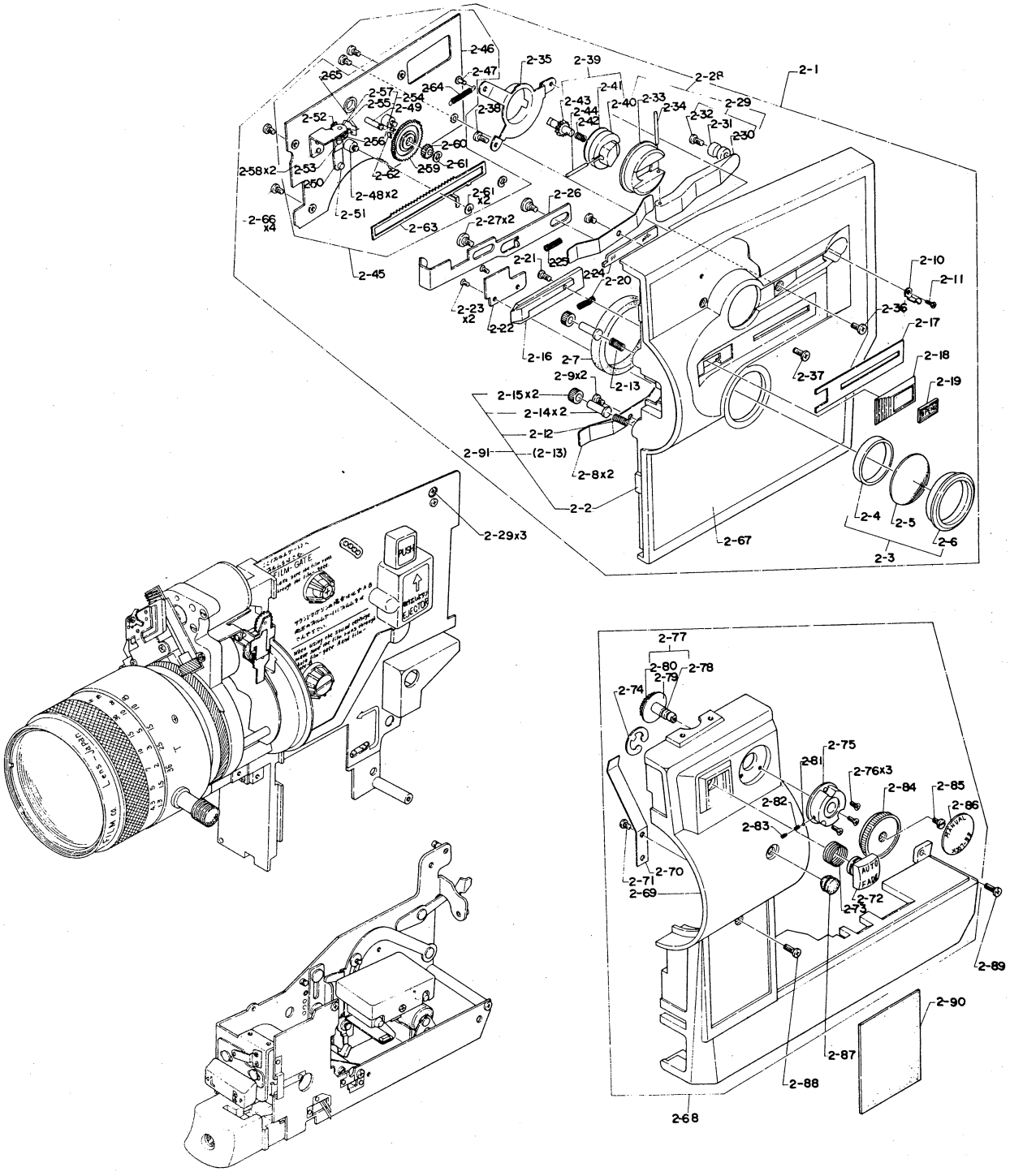
1-8
1-9
1-10x4
FUJICA
FUJICA
AUTO
MANUAL
OPEN
REWIND AV-OVERLAP

Ref No.	Part No.	Part Name	Q'ty	Commonly used with
1 — 1	41B355830	Accessory shoe	1	ZC1000
1 — 2	113M230401S	Screw	4	
1 — 3	58B355840	Cover plate	1	ZC1000
1 — 4	84B1447380	Upper front cover	1	
1 — 5	84B1447390	Lower front cover	1	
1 — 6	113M200601S	Screw	2	
1 — 7	59B1447560	Leather	1	
1 — 8	59B1447570	Leather	1	
1 — 9	58B14600	Number plate	1	
1 — 10	110M200603S	Screw	4	
1 — 11	57B657110	Lens cap	1	ZX500
1 — 11	**57B72630**	**Lens cap**	**1**	**Z800**

Fig. 2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2-15x2
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2-26
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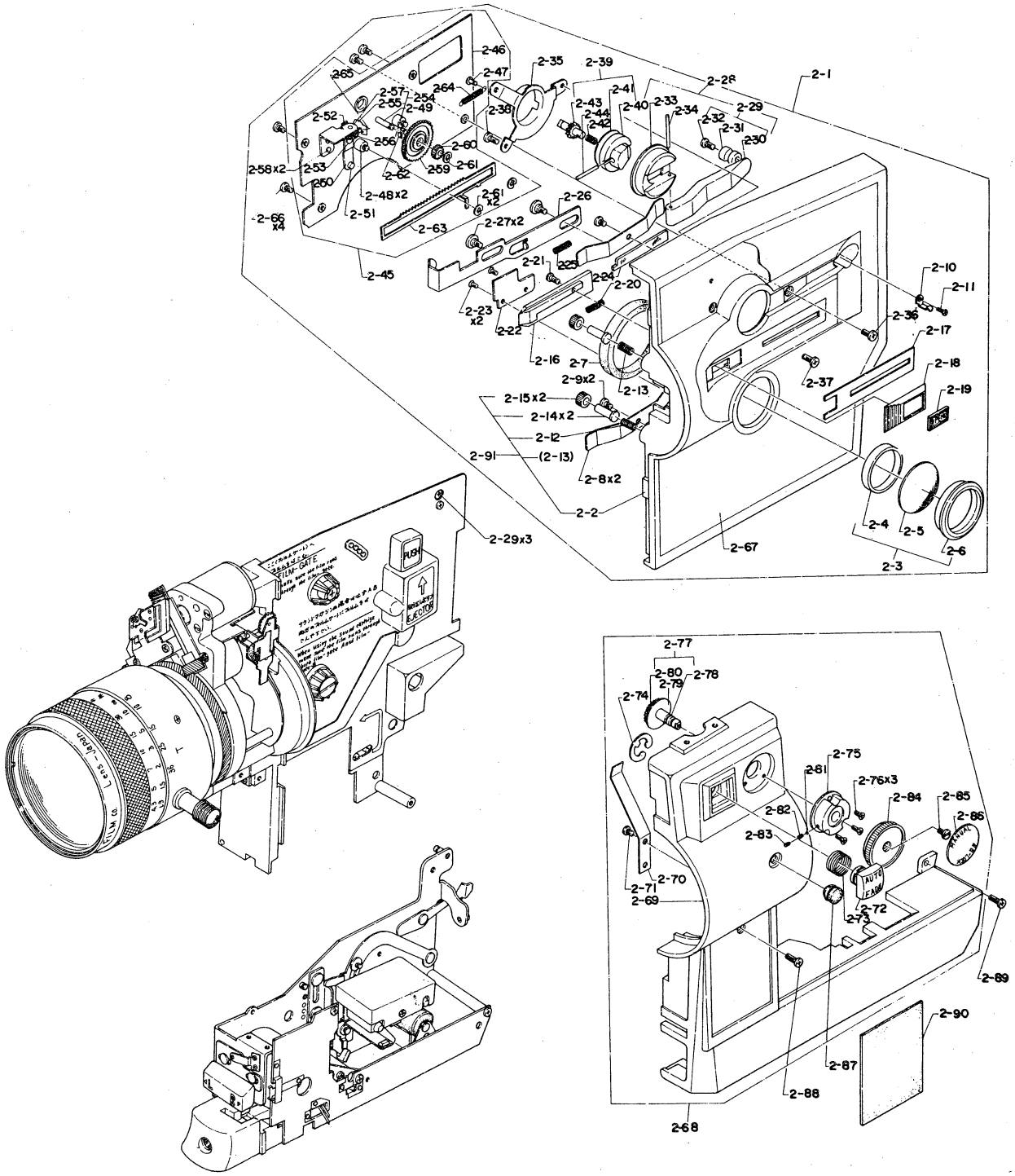
(2-13)
PUSH
AUTO LEAN
MANUAL

Ref No.	Part No.	Part Name	Q'ty	Commonly used with
2— 1	302A145080	Film chamber door assembly	1	
2— 3	84A9960	Film confirmation window assembly	1	P1
2— 7	27B10610	Moquette	1	P1
2— 8	50B49370	Leaf spring	2	P300
2— 9	113M200251C	Screw	2	
2—10	50B1451460	Leaf spring	1	
2—11	113M200451S	Screw	1	
2—16	47B1451310	Lock lever	1	
2—17	58B1451400	Cover plate	1	
2—18	16B1451290	Open - close button	1	
2—19	58B1294500	Cover plate	1	ZXM300
2—20	50B1276060	Spring	1	ZXM300
2—21	113M200603S	Screw	1	
2—22	85B1451270	Plate	1	
2—23	114M200501S	Screw	2	
2—24	6B1451392	Glass	1	
2—25	50B654670	Spring	1	ZX300
2—26	47B1451300	Lever	1	
2—27	53B654750	Screw	2	ZX300
2—28	32A1451130	Rotary shaft assembly	1	
2—33	32B1451340	Rotary shaft	1	
2—34	180M121201N	Pin	1	
2—35	55B1451410	Holder	1	
2—36	110M200303S	Screw	1	
2—37	111M200251S	Screw	1	
2—38	113M200451S	Screw	1	
2—39	16A1451110	Button assembly	1	
2—40	16B1451350	Button	1	
2—41	55B14512401	Washer	1	
2—42	50B1451500	Spring	1	
2—43	32A1451120	Shaft	1	

Fig. 2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2-9x2
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2-13
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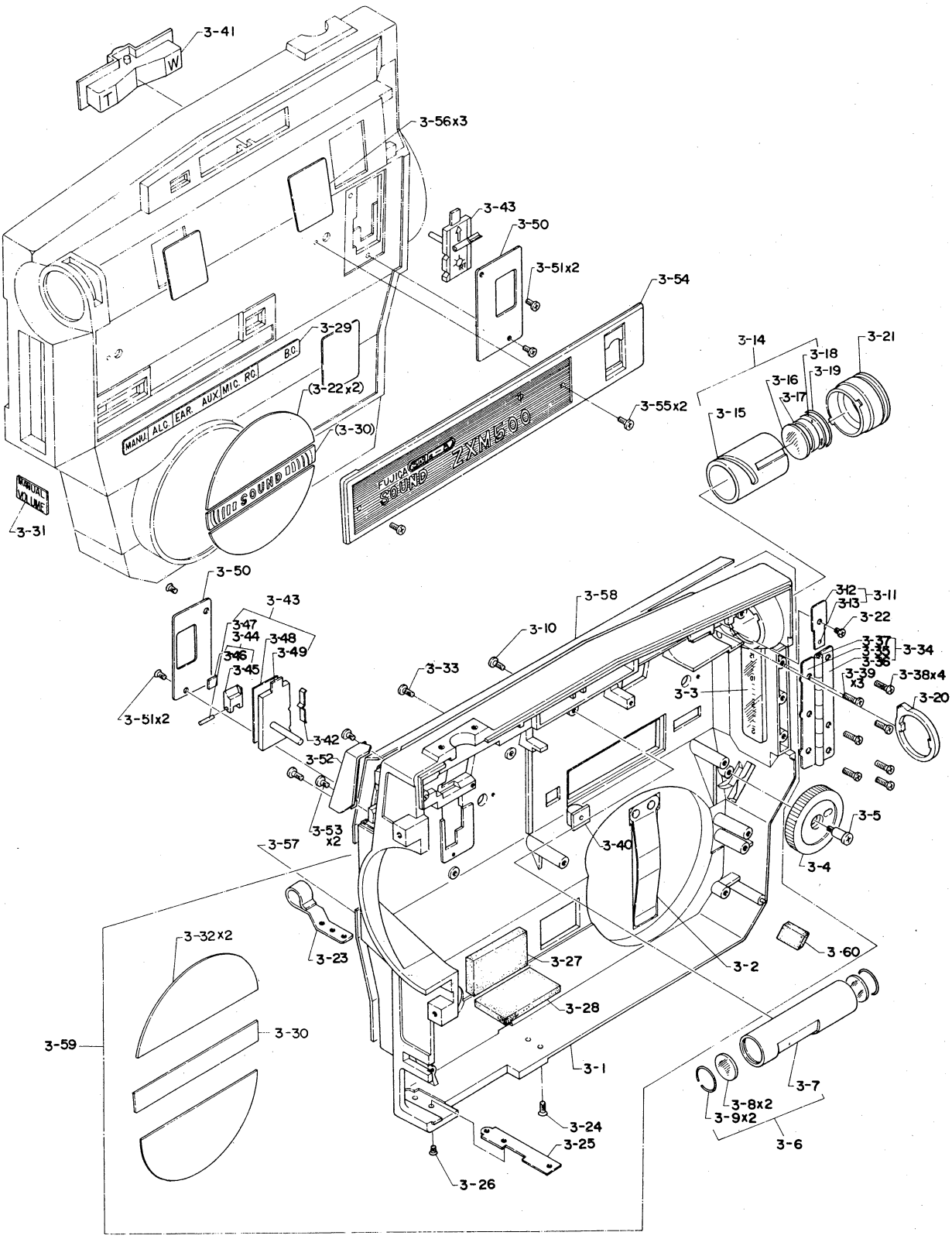
Ref No.	Part No.	Part Name	Q'ty	Commonly used with
2 — 44	32B1451210	Pin	1	
2 — 45	46A1451090	Base plate assembly	1	
2 — 59	34B1451373	Gear	1	
2 — 60	34B1451260	Gear	1	
2 — 61	191M015T	E - clip	3	
2 — 62	50B1451250	Leaf spring	1	
2 — 63	34B1451380	Rack	1	
2 — 64	50B1451522	Spring	1	
2 — 65	50B1451531	Spring	1	
2 — 66	113M200501S	Screw	4	
2 — 67	58B1451330	Leather	1	
2 — 68	303A1449580	Side cover assembly	1	
2 — 69	10B1449710	Side cover	1	
2 — 70	50B1449780	Leaf spring	1	
2 — 71	113M200303S	Screw	1	
2 — 72	16B1449770	Button	1	
2 — 73	50B1449760	Spring	1	
2 — 74	191M050T	E - clip	1	
2 — 75	24B327590	Seat	1	Z800
2 — 76	114M170351S	Screw	3	
2 — 77	32A1449590	Shaft assembly	1	
2 — 81	200M16	Steel ball	1	
2 — 82	50B10850	Spring	1	Z800
2 — 83	120M200183S	Screw	1	
2 — 84	16B72521	Dial	1	Z800
2 — 85	53B72460	Screw	1	Z800
2 — 86	58B72330	Cover plate	1	Z800
2 — 87	57B1275030	Plug	1	ZXM300
2 — 88	110M200601S	Screw	1	
2 — 89	113M200703S	Screw	1	
2 — 90	59B1447420	Leather	1	
2 — 91	10A1451180	Door assembly	1	

Fig. 3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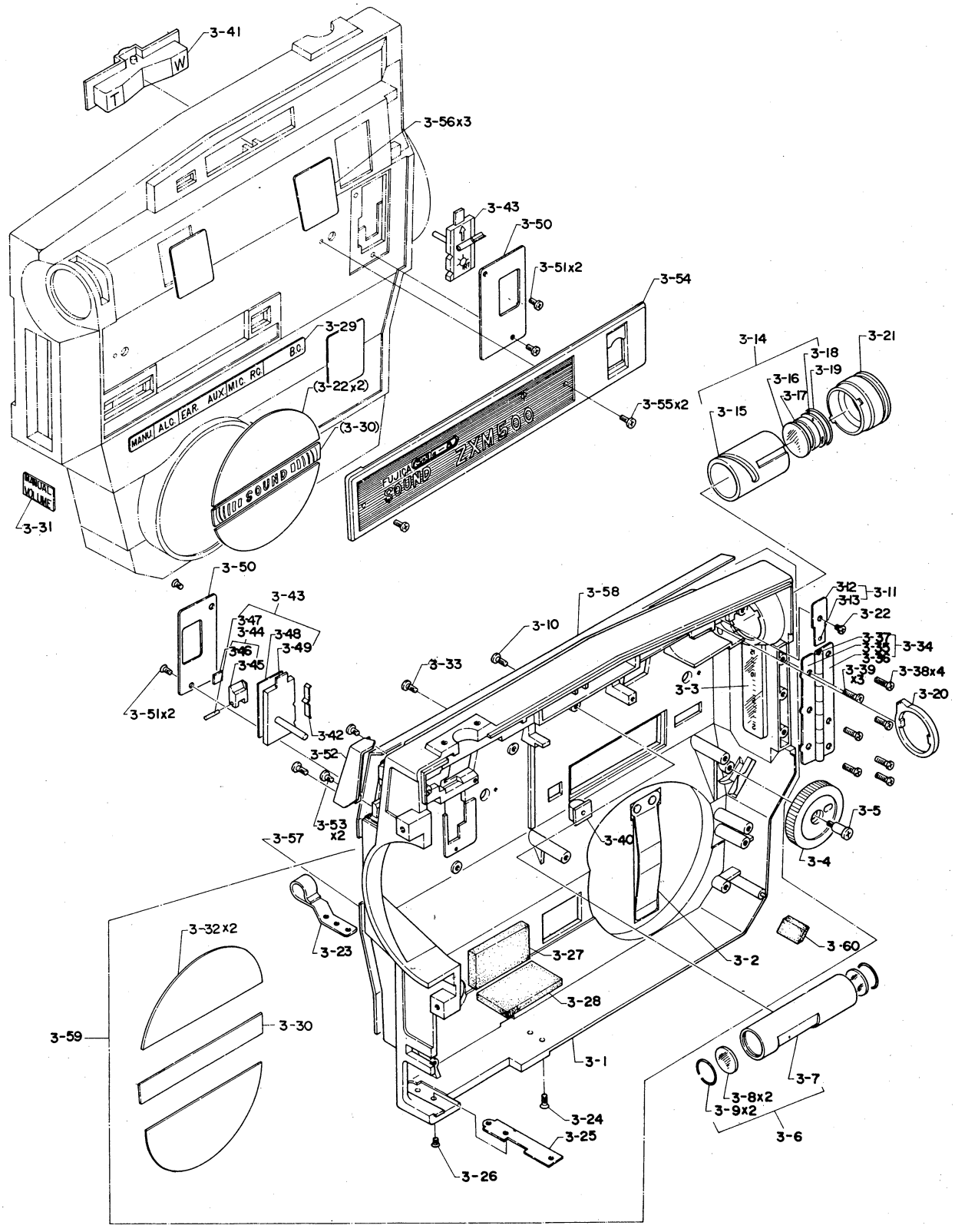
Ref No.	Part No.	Part Name	Q'ty	Commonly used with
3— 3	6B1448420	Footage counter window	1	
3— 4	16B1448441	Dial	1	
3— 5	32B1448470	Shaft	1	
3— 6	21A1456230	Lens barrel assembly	1	
3— 8	1A1445150	Lens	2	
3— 9	50B1078410	Clip	2	Z800
3—10	113M200601S	Screw	1	
3—11	85A1270180	Holding plate assembly	1	ZXM300
3—14	21A1456220	Eyepiece assembly	1	
3—20	23B1448460	Ring	1	
3—21	53B1448450	Eyepiece barrel	1	
3—22	113M200401S	Screw	1	
3—23	41B1288780	Strap ring bracket	1	ZXM300
3—24	111M200401S	Screw	1	
3—25	85B1288850	Plate	1	ZXM300
3—26	111M200281S	Screw	1	
3—27	27B1290280	Moquette	1	ZXM300
3—28	51B1288880	Moquette	1	ZXM300
3—29	58B1447480	Name plate	1	
3—30	58B1288890	Name plate	1	ZXM300
3—31	58B1447510	Name plate	1	
3—32	59B1288840	Leather	2	ZXM300
3—33	110M200601S	Screw	2	
3—34	19A359560	Hinge assembly	1	ZC1000
3—38	113M200501S	Screw	4	
3—39	113M200601S	Screw	3	
3—40	16B1447400	Button	1	
3—41	16B1447460	Power zoom control	1	
3—42	50B69900	Click spring	1	ZX300
3—43	16A1447100	Filter selector assembly	1	
3—44	16A1270210	Knob assembly	1	ZXM300
3—45	16B1274190	Knob	1	ZXM300

Fig. 3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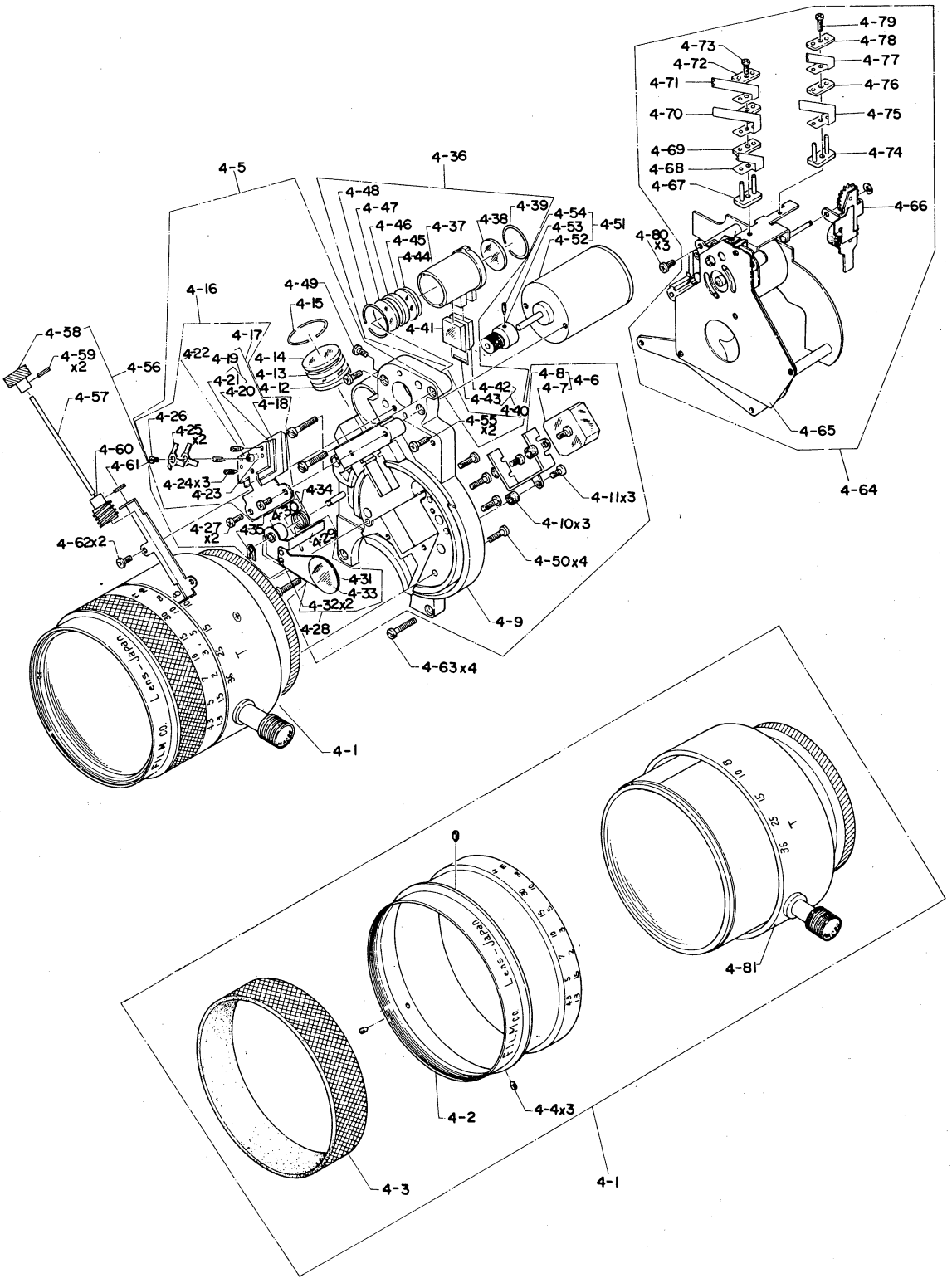
Ref No.	Part No.	Part Name	Q'ty	Commonly used with
3 — 46	58B652340	Plate	1	ZX300
3 — 47	32B652240	Shaft	1	ZX300
3 — 48	58B1447470	Filter plate	1	
3 — 49	16B1447440	Filter selector lever	1	
3 — 50	46B1447450	Plate	1	
3 — 51	114M200401S	Screw	2	
3 — 52	11B1447430	Cover	1	
3 — 53	113M200401S	Screw	2	
3 — 54	58B1447530	Main name plate	1	
3 — 54	**58B1447600**	**Main name plate**	**1**	
3 — 55	113M170401S	Screw	2	
3 — 56	85B1447580	Blind cover	3	
3 — 57	59B1447540	Leather	1	
3 — 58	59B1447550	Leather	1	
3 — 59	301A1448080	Side frame assembly	1	
3 — 60	27B1447630	Moquette	1	

Fig. 4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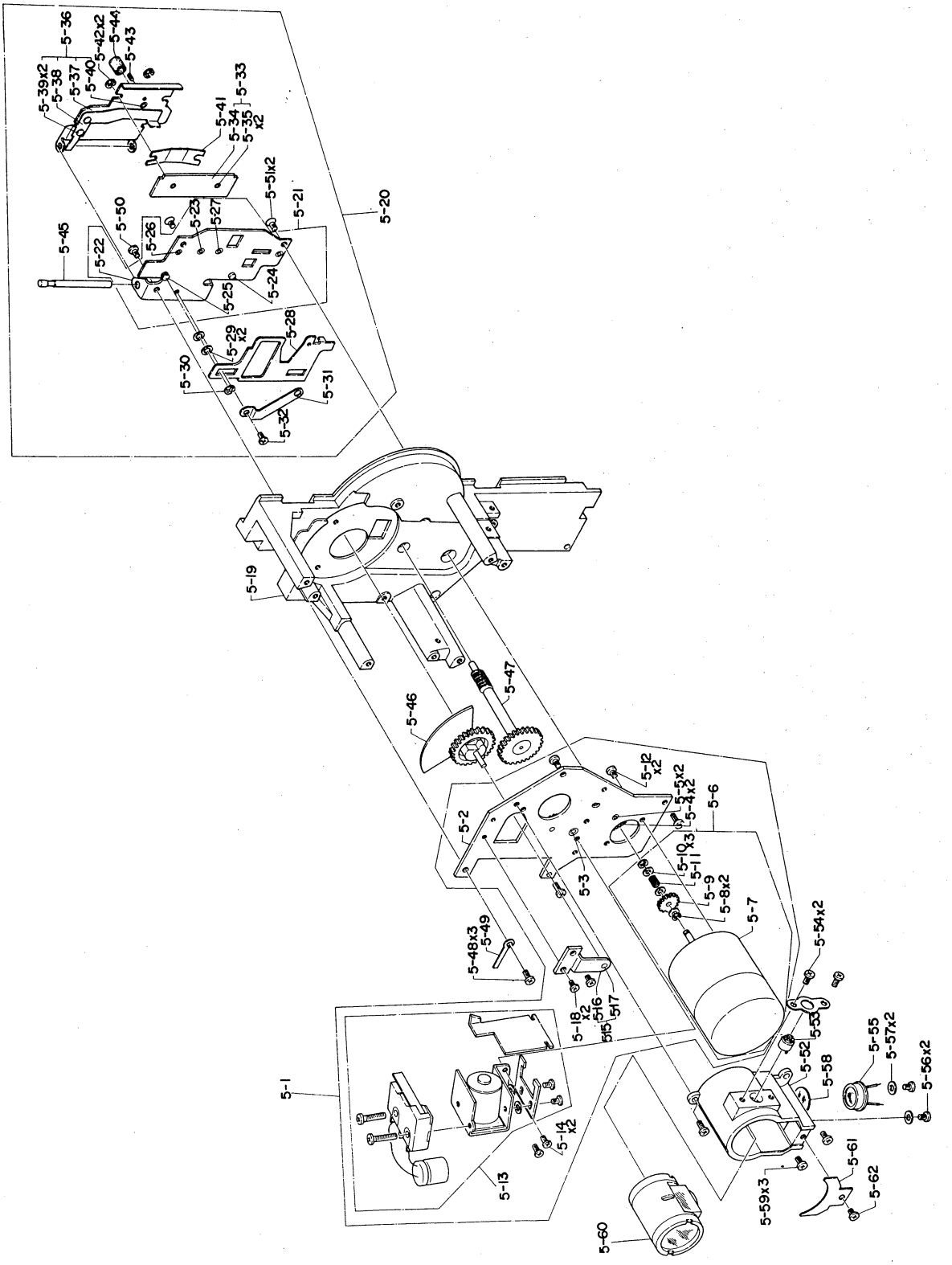
Ref No.	Part No.	Part Name	Q'ty	Commonly used with
4— 1	324A1453680	Afocal lens assembly	1	
4— 1	**324A1453580**	**Afocal lens assembly**	**1**	
4— 2	23B1076480	Focusing ring	1	ZX500
4— 2	**23B1453880**	**Focusing ring**	**1**	Z800
4— 3	59B1076560	Rubber ring	1	ZX500
4— 3	**59B1454020**	**Rubber ring**	**1**	Z800
4— 4	120M230351N	Screw	3	
4— 5	10A1456190	Viewfinder assembly	1	
4— 5	**10A1456220**	**Viewfinder assembly**	**1**	
4—26	110M170253S	Screw	1	
4—27	113M200451S	Screw	2	
4—28	47A1456110	Filter lever assembly	1	
4—34	20B1456370	Spring	1	
4—35	25K249010	Clip	1	
4—36	21A1456200	Lens barrel assembly	1	
4—36	**21A1456090**	**Lens barrel assembly**	**1**	
4—49	120M170301S	Screw	1	
4—50	110M200903S	Screw	4	
4—51	101A1454590	Zooming motor assembly	1	
4—55	110M200503S	Screw	2	
4—56	34A1454580	Gear shaft assembly	1	
4—62	113M200551S	Screw	2	
4—63	110M230903S	Screw	4	
4—64	317A1455080	Meter assembly	1	
4—81	23A1456780	Zoom ring assembly	1	ZX500

Fig. 5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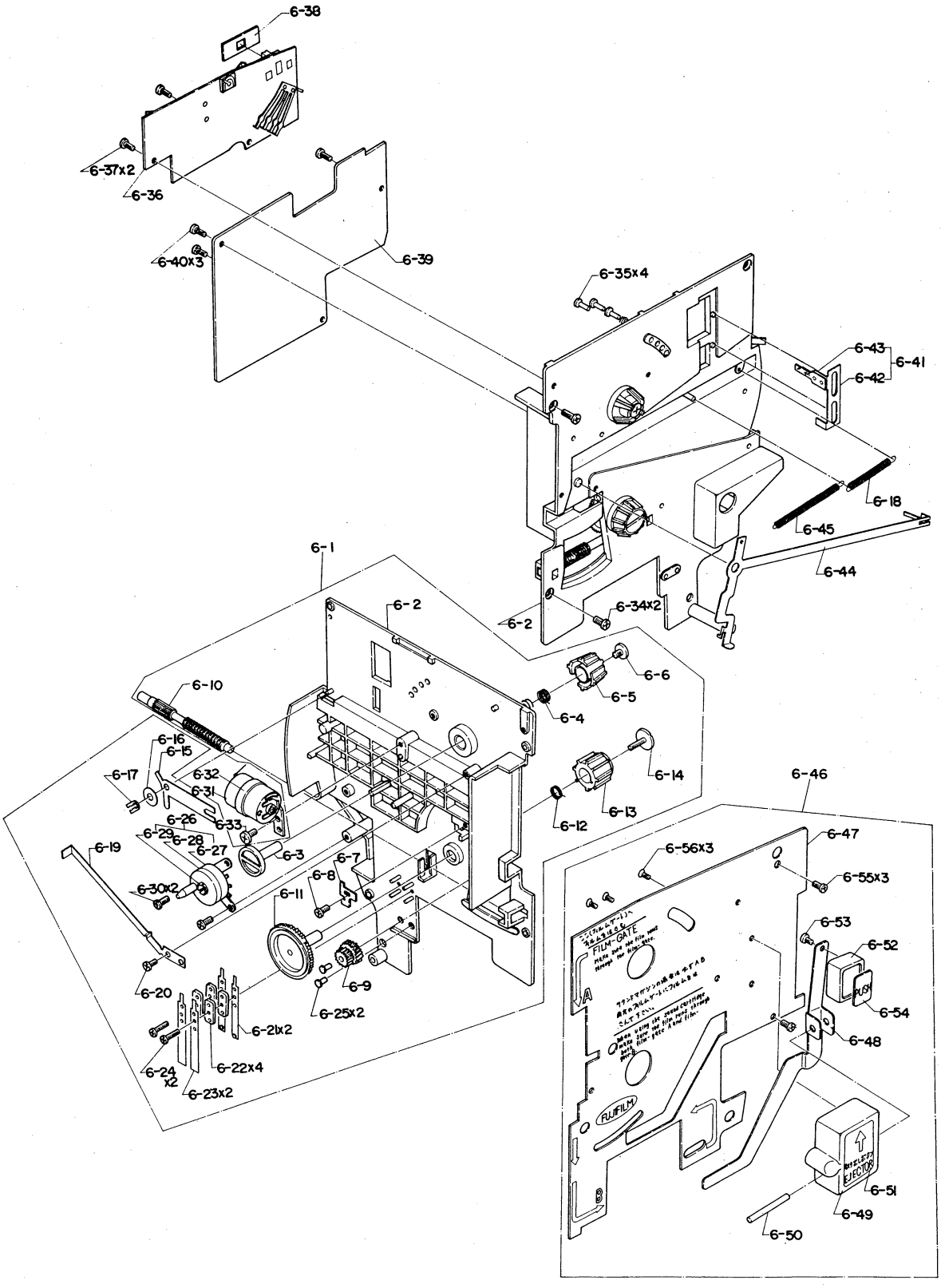
Ref No.	Part No.	Part Name	Q'ty	Commonly used with
5— 1	46A1450110	Motor frame assembly	1	
5— 6	46A1450110	Film fransporting motor assembly	1	
5—12	110M200303S	Screw	2	
5—13	125A1450130	Solenoid assembly	1	
5—14	110M200251S	Screw	2	
5—15	31A1450120	Bracket assembly	1	
5—18	110M200251S	Screw	2	
5—19	10B1450410	Base frame	1	
5—20	315A1296680	Film gate assembly	1	ZXM300
5—44	110B1447651	Tube	1	
5—46	34A1450100	Sector gear assembly	1	
5—47	34A1450090	Gear assembly	1	
5—48	110M200401S	Screw	3	
5—49	111B24300	Lug	1	
5—50	110M200351S	Screw	1	
5—51	111M200401N	Screw	2	
5—52	10B1449280	Photocell frame	1	
5—53	32B1449312	Eccentric pin	1	
5—54	113M200403S	Screw	2	
5—55	106B72580	CdS photocell	1	Z800
5—56	113M200403S	Screw	2	
5—57	55B11270	Washer	2	Z800
5—58	4B72610	Filter	1	Z700
5—59	110M200601S	Screw	3	
5—60	324A1453600	Master lens assembly	1	
5—61	60B1449290	Light shielding plate	1	
5—62	113M200401S	Screw	1	

Fig. 6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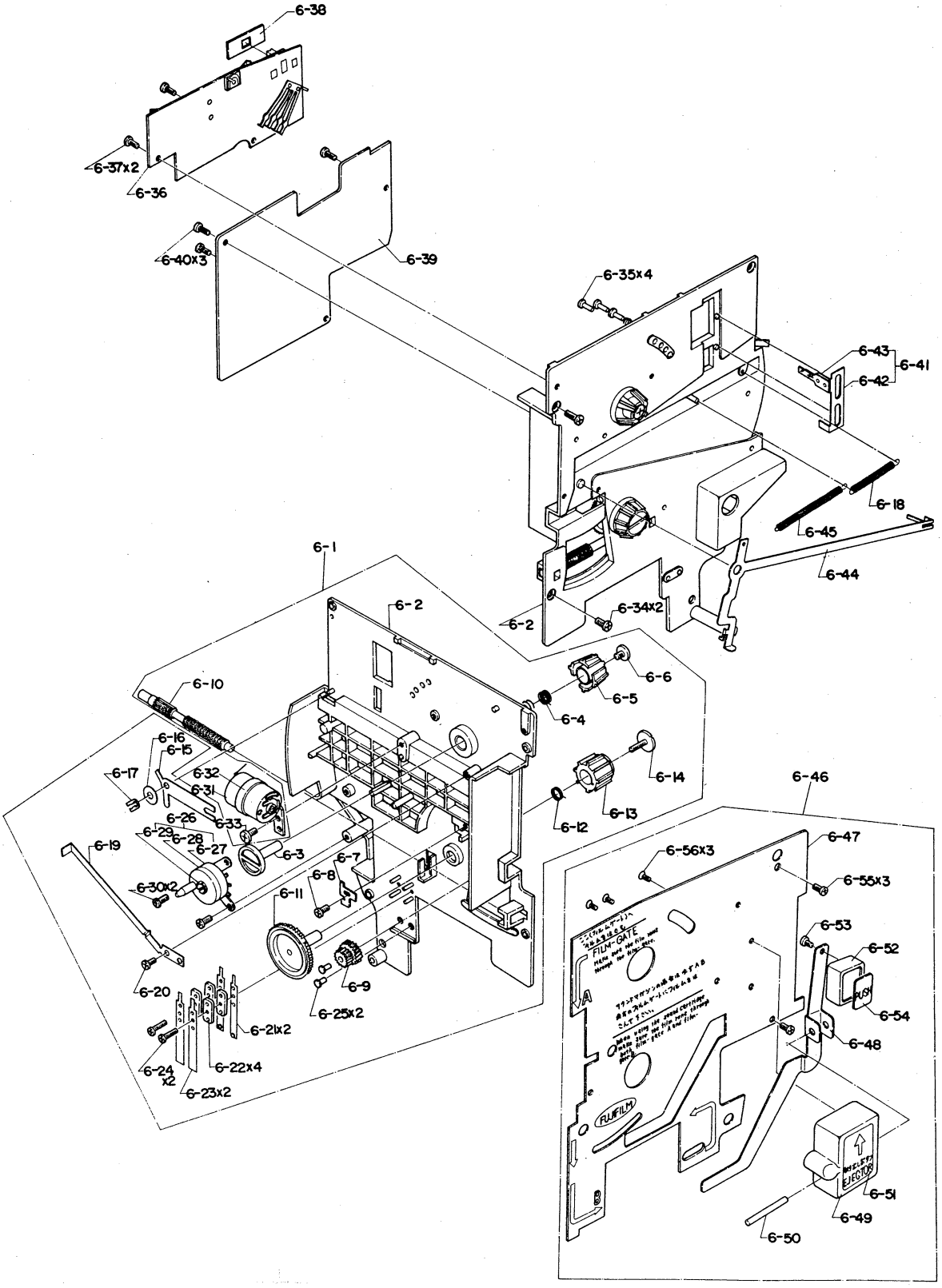
Ref No.	Part No.	Part Name	Q'ty	Commonly used with
6— 1	322A1451580	Footage counter assembly	1	
6— 3	35B1452030	Camshaft	1	
6— 4	50B65510	Spring	1	ZXM300
6— 5	37B1452170	Film feed spindle	1	
6— 6	53B1295800	Screw	1	
6— 7	31B1276590	Shaft holder	1	
6— 8	113M200401S	Screw	1	
6— 9	34B1452120	Idler gear	1	
6—10	34B1276560	Spur gear	1	
6—11	34B1276550	Film take - up gear	1	
6—12	50B655110	Spring	1	
6—13	37B655150	Film take - up spindle	1	ZXM300
6—14	53B11560	Screw	1	ZXM300
6—15	47B1452060	Lever	1	
6—16	55B11820	Washer	1	ZXM300
6—17	25K249010	Clip	1	
6—18	50B1452082	Spring	1	
6—19	83B1452040	Lever	1	
6—20	113M200401S	Screw	1	
6—21	109A1298290	Contact assembly	2	ZXM300
6—22	115B127050	Contact piece	4	ZXM300
6—23	109A1298270	Contact assembly	2	ZXM300
6—24	113M140403S	Screw	2	
6—25	17B1277530	Pin	2	ZXM300
6—26	117A1451590	Variable resistor assembly	1	
6—30	113M200401S	Screw	2	
6—31	101B1452100	Level meter	1	
6—32	41B26630	Holder	1	Z400
6—33	113M200401S	Screw	1	
6—34	110M200601S	Screw	2	
6—35	17B1277530	Film speed setting pin	4	ZXM300

Fig. 6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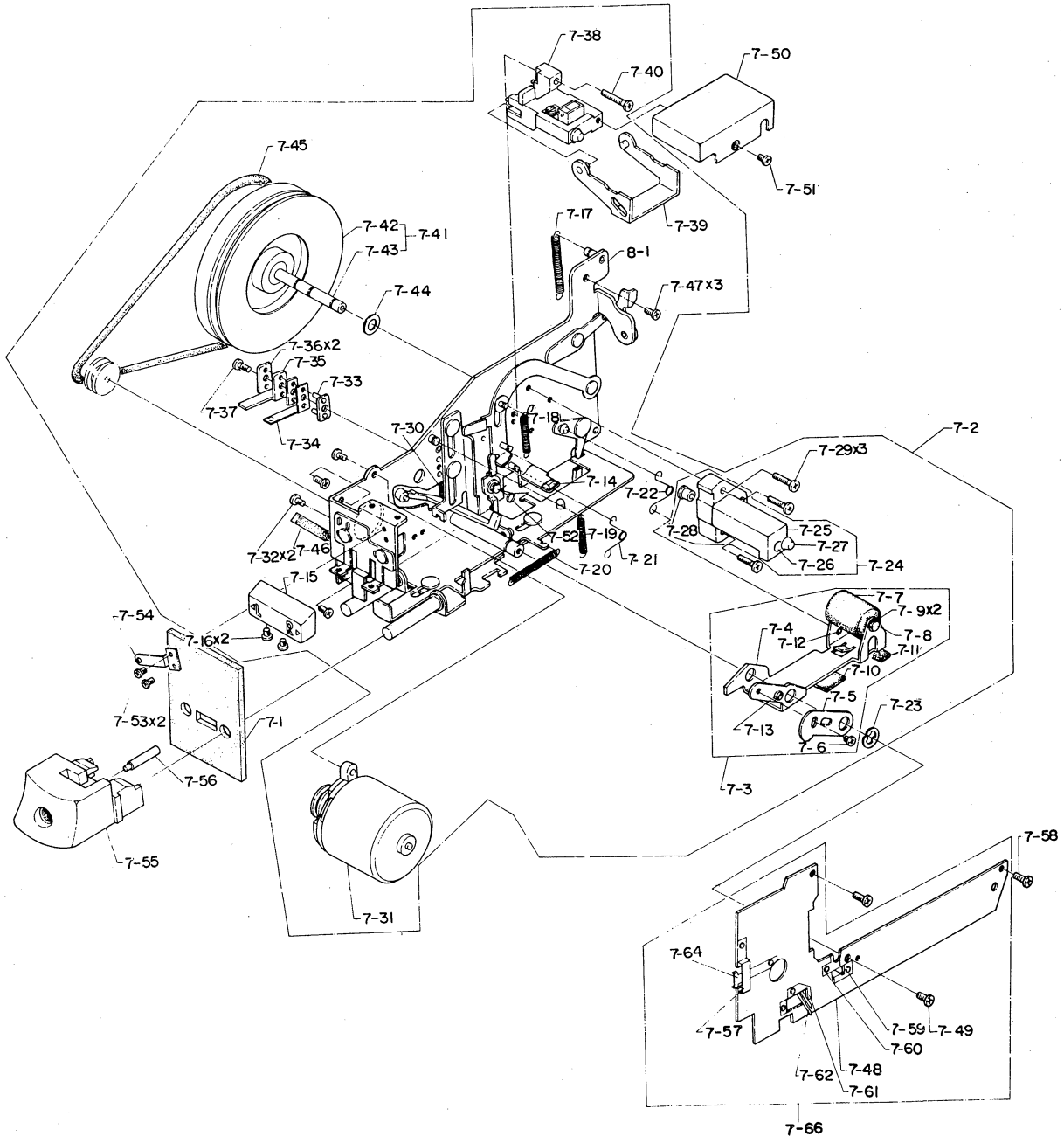
Ref No.	Part No.	Part Name	Q'ty	Commonly used with
6 — 36	318A14503080	Automatic film speed setting circuit assembly	1	
6 — 37	113M200401S	Screw	2	
6 — 38	58B1447500	Name plate	1	
6 — 39	113A1451870	Recording amplifier assembly	1	
6 — 40	113M200401S	Screw	3	
6 — 41	47A1447090	Lever assembly	1	
6 — 44	50B1452090	Footage counter lever	1	
6 — 45	50B1452080	Spring	1	
6 — 46	58A1447080	Film chamber plate assembly	1	
6 — 47	58B1447410	Film chamber plate	1	
6 — 48	47B1288810	Lever	1	ZXM300
6 — 49	11B1288790	Cover	1	ZXM300
6 — 50	32B1288820	Rod	1	ZXM300
6 — 51	58B1288900	Name seal	1	ZXM300
6 — 52	16B1288800	Button	1	ZXM300
6 — 53	114M200501S	Screw	1	
6 — 54	58B1288710	Name plate	1	ZXM300
6 — 55	114M200501S	Screw	3	
6 — 56	113M170301S	Screw	3	
6 — 57	11A1288220	Ejector assembly	1	
6 — 58	58B1447491	Plate	1	

Fig. 7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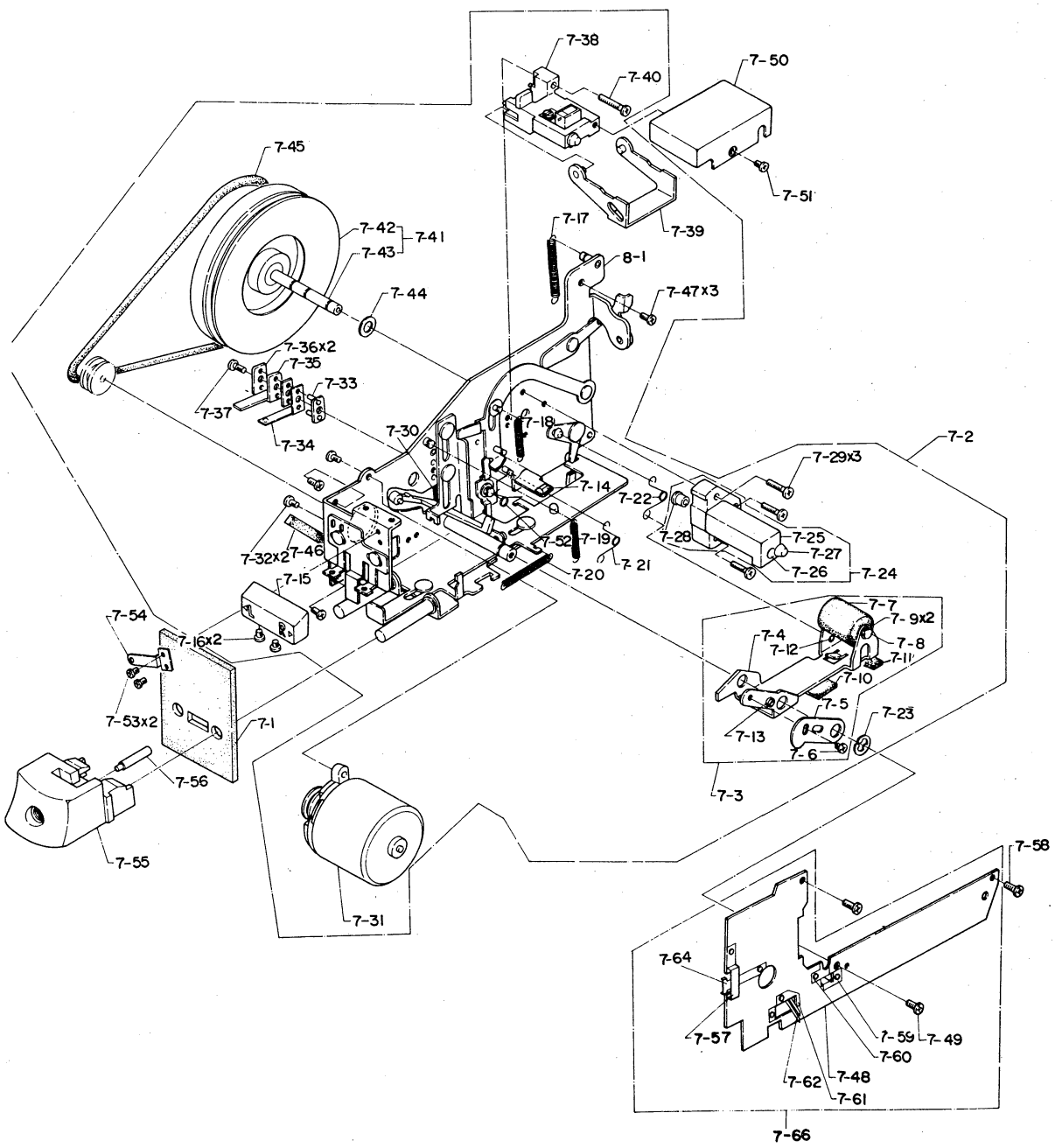
Ref No.	Part No.	Part Name	Q'ty	Commonly used with
7— 1	95B1302900	Moquette	1	ZXM300
7— 2	347A1454080	Sound recording mechanism assembly	1	
7— 3	47A1298310	Pinch roller lever assembly	1	ZXM300
7— 5	47B1454330	Lever	1	
7— 6	110M200253S	Screw	1	
7— 7	36B1298870	Pinch roller	1	ZXM300
7— 8	32B1298880	Shaft	1	ZXM300
7— 9	191M020T	E - clip	2	ZXM300
7—10	95B1303030	Moquette	1	ZXM300
7—11	51B1299240	Moquette	1	ZXM300
7—14	51B1298710	Head pad	1	ZXM300
7—15	16B1299050	Run - lock selector button	1	ZXM300
7—16	111M200551S	Screw	2	ZXM300
7—17	50B1299250	Spring	1	ZXM300
7—18	50B1299090	Spring	1	ZXM300
7—19	50B1299080	Spring	1	ZXM300
7—20	27B1299250	Spring	1	ZXM300
7—21	50B1298830	Spring	1	ZXM300
7—22	50B1298960	Spring	1	ZXM300
7—23	191M030T	E - clip	1	ZXM300
7—24	10A1298300	Holder assembly	1	ZXM300
7—29	110M200551S	Screw	3	
7—30	50B1299190	Spring	1	ZXM300
7—31	101A1298200	Recording motor assembly	1	ZXM300
7—32	110M200551S	Screw	2	ZXM300
7—33	115B127030	Insulation plate	1	ZXM300
7—34	109A1298240	Contact assembly	1	ZXM300
7—35	109A1298220	Contact assembly	1	ZXM300
7—36	115B1278230	Insulation plate	2	ZXM300
7—37	110M140351S	Screw	1	ZXM300
7—38	10A1298190	Head holder assembly	1	ZXM300

Fig. 7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7-37
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7-29x3
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7-24
7-32x2
7-46
7-52
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7-9x2
7-4
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7-11
7-10
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7-23
7-13
7-6
7-54
7-16x2
7-53x2
7-1
7-56
7-55
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7-60
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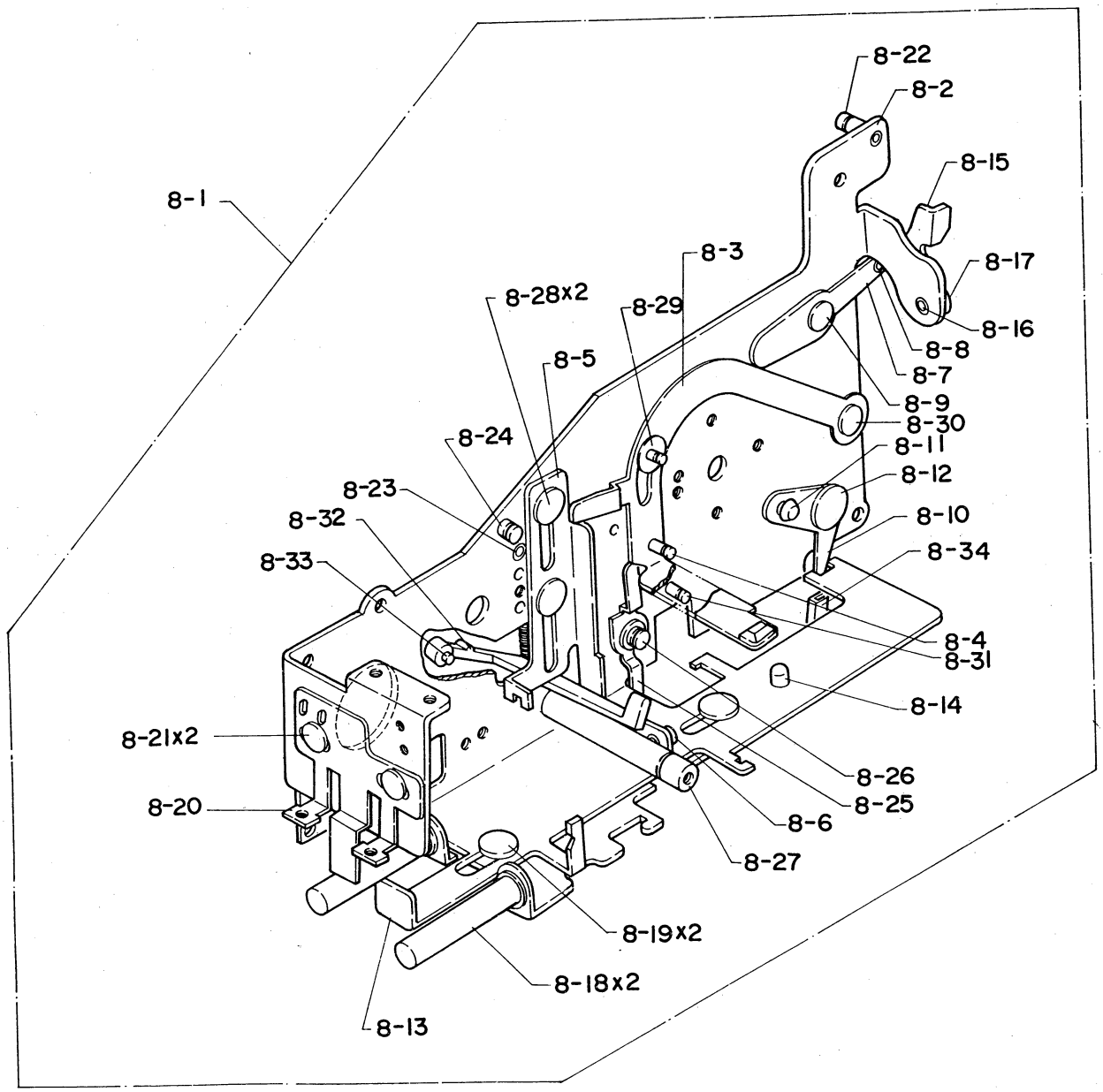
7-61
7-66

Ref No.	Part No.	Part Name	Q'ty	Commonly used with
7 — 39	44B1298690	Film holder	1	ZXM300
7 — 40	110M200653S	Screw	1	ZXM300
7 — 41	32A1454090	Capstan shaft assembly	1	
7 — 44	55K252710	Washer	1	ZXM300
7 — 45	56B1298750	Belt	1	ZXM300
7 — 46	95B1302970	Moquette	1	ZXM300
7 — 47	113M200703S	Screw	3	ZXM300
7 — 49	110M200351S	Screw	2	
7 — 50	11B1298730	Head cover	1	ZXM300
7 — 51	110M200351S	Screw	1	
7 — 52	50B1299320	Click spring	1	ZXM300
7 — 53	110M17Q201S	Screw	2	ZXM300
7 — 54	50B1299320	Click spring	1	ZXM300
7 — 55	16A1288190	Shutter release button	1	ZXM300
7 — 56	32B1299000	Shaft	1	ZXM300
7 — 58	113M200401S	Screw	1	
7 — 66	110A1454100	Printed circuit board assembly	1	

Fig. 8


8-22
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8-15
8-1
8-3
8-17
8-28x2
8-29
8-16
8-5
8-8
8-7
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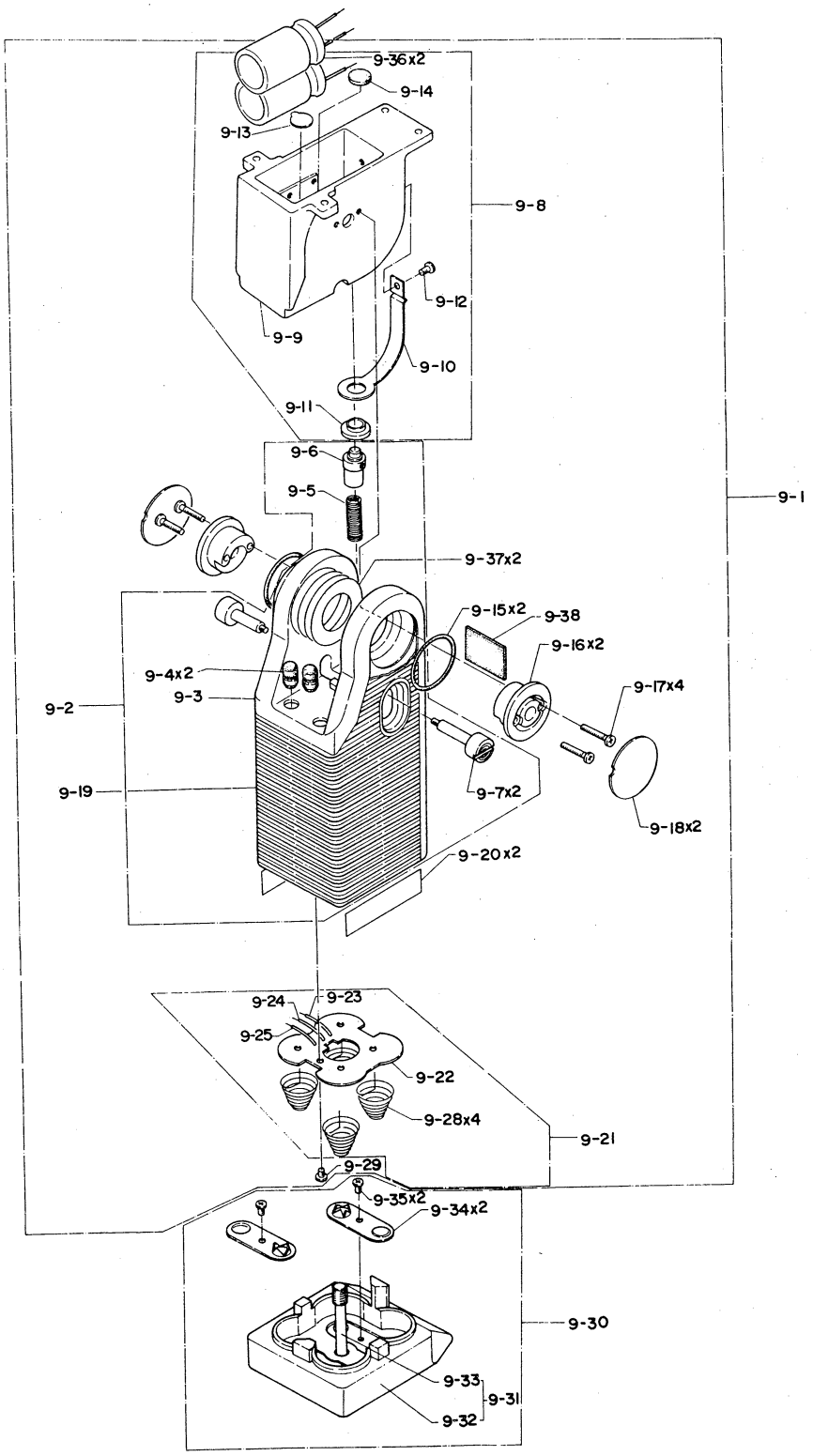
8-14
8-21x2
8-26
8-20
8-25
8-6
8-27
8-19x2
8-18x2
8-13

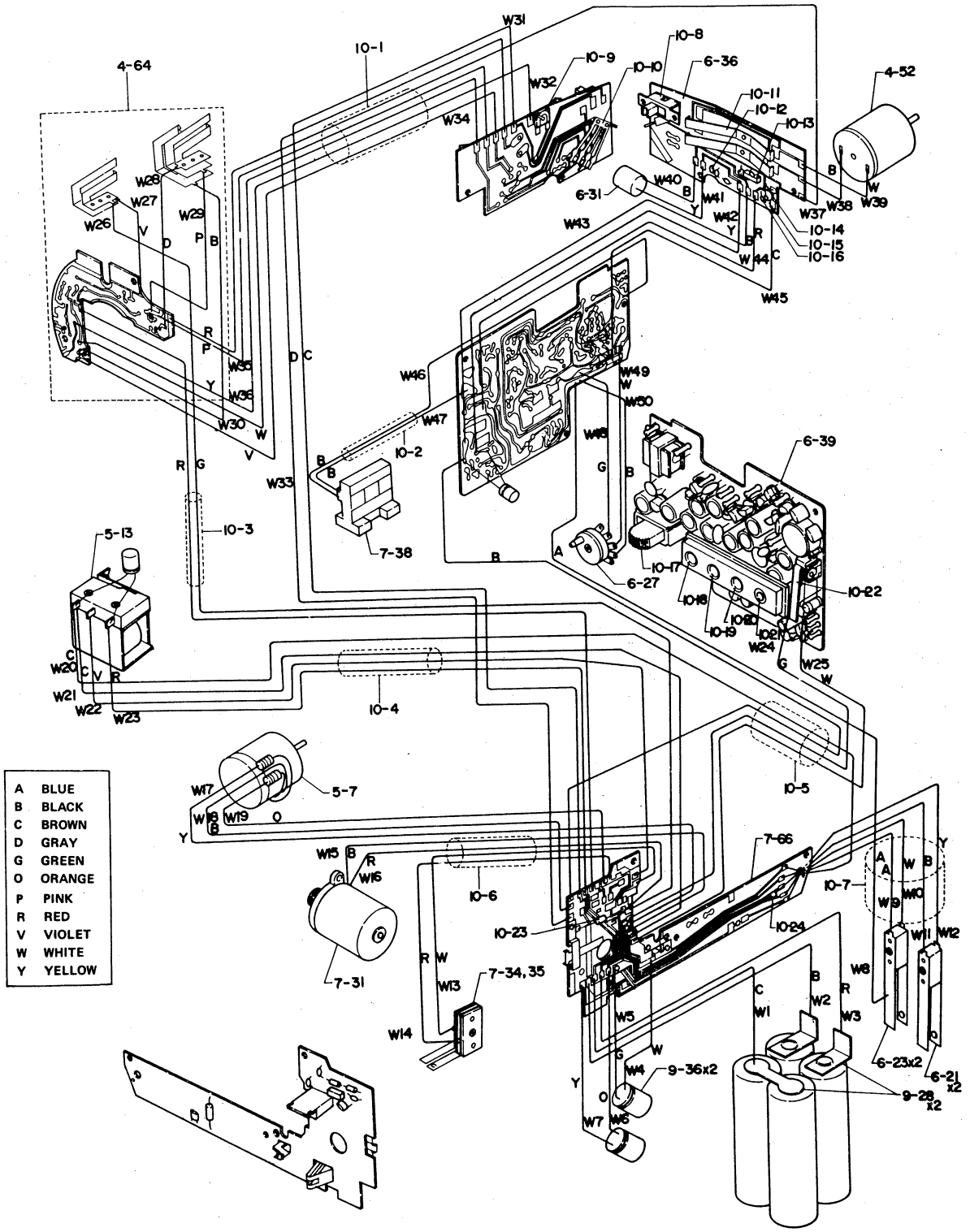
Ref No.	Part No.	Part Name	Q'ty	Commonly used with
8— 1	46A1298400	Recorder base plate assembly	1	ZXM300
8—34	115B1299330	Tube	1	ZXM300

Fig. 9


9-36x2
9-14
9-13
9-8
9-12
9-9
9-10
9-11
9-6
9-5
9-1
9-37x2
9-15x2
9-38
9-16x2
9-4x2
9-3
9-2
9-17x4
9-19
9-7x2
9-18x2
9-20x2
9-24
9-23
9-25
9-22
9-28x4
9-21
9-29
9-35x2
9-34x2
9-30
9-33
9-31
9-32

Ref No.	Part No.	Part Name	Q'ty	Commonly used with
9— 1	321A1456590	Grip assembly	1	
9— 2	41A1300690	Grip assembly	1	
9— 4	87B330662	Stopper	2	ZXM300
9— 5	50B1301320	Spring	1	ZXM300
9— 6	17B1301250	Lock pin	1	ZXM300
9— 7	16B1301260	Knob	2	ZXM300
9— 8	10A1300740	Grip base assembly	1	ZXM300
9—12	110M200251N	Screw	1	
9—13	58B1301350	Name plate	1	ZXM300
9—14	27B93890	Moquette	1	ZXM300
9—15	60K252700	O - ring	2	ZXM300
9—16	32B1301230	Seat	2	ZXM300
9—17	110M200901S	Screw	4	ZXM300
9—18	58B1301310	Plate	2	ZXM300
9—19	59B1301330	Leather	1	ZXM300
9—20	58B71582	Label	2	ZXM300
9—21	109A1456780	Contact base assembly	1	
9—22	110B1301400	Printed circuit board	1	ZXM300
9—23	111B1447250	Lead wire	1	ZXM300
9—24	111B1447260	Lead wire	1	
9—25	111B1447240	Lead wire	1	
9—28	109B1301410	Spring	4	ZXM300
9—29	113M200401S	Screw	1	ZXM300
9—30	57A1300750	Battery chamber cover assembly	1	ZXM300
9—31	57B1300750	Cover assembly	1	ZXM300
9—32	57B1301190	Cover	1	ZXM300
9—33	53B331000	Screw	1	ZXM300
9—34	109B14550	Contact piece	2	ZXM300
9—35	113M170301S	Screw	2	ZXM300
9—36	116K268500	Capacitor	2	
9—37	55B29730	Washer	2	
9—38	51B1301360	Plate	1	ZXM300

Fig. 10


A BLUE
B BLACK
C BROWN
D GRAY
G GREEN
O ORANGE
P PINK
R RED
V VIOLET
W WHITE
Y YELLOW
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W14
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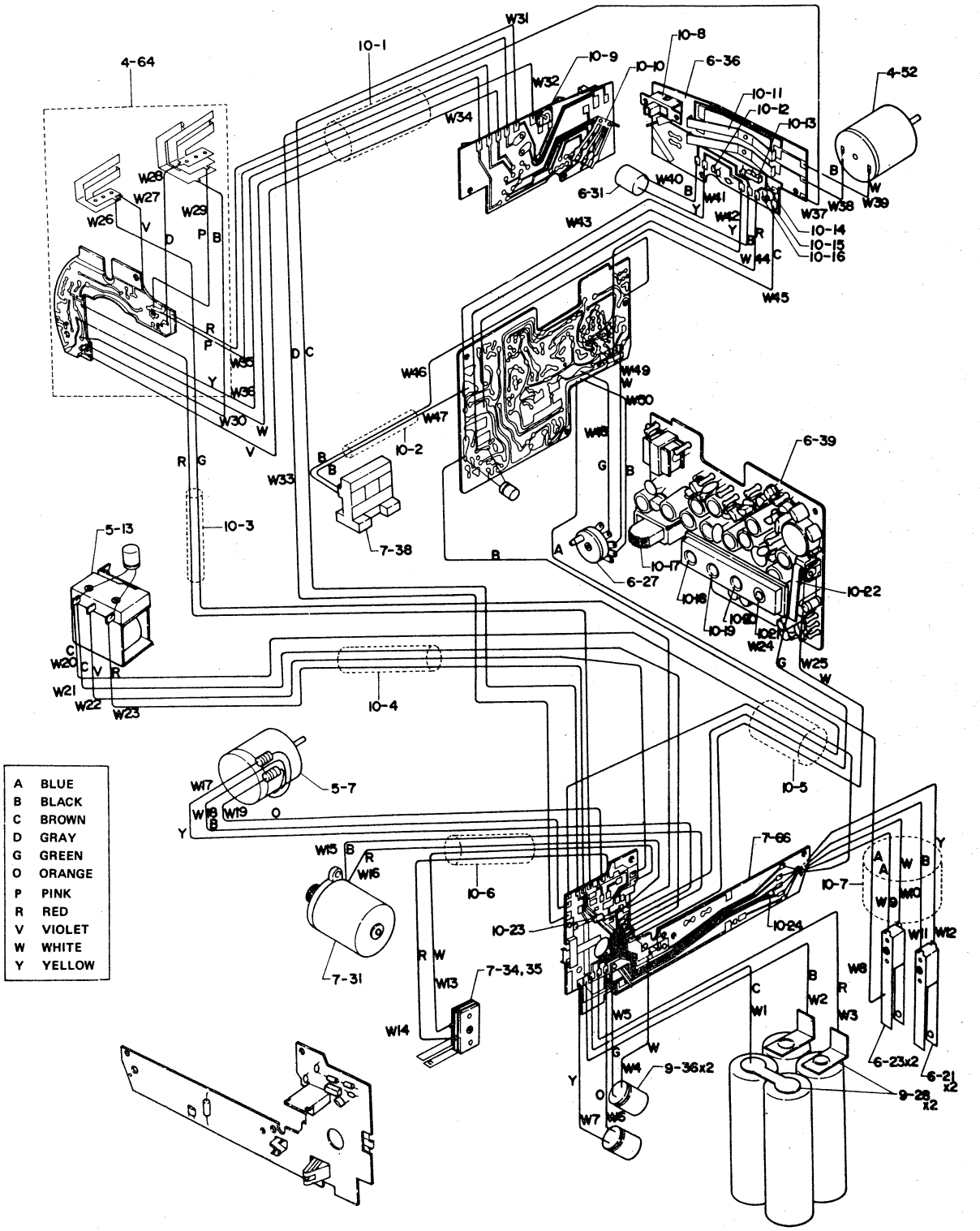
W1
W2
W3
W8
W4
9-36x2
W7
W6
6-23x2
6-21 x2
9-28 x2

Ref No.	Part No.	Part Name	Q'ty	Commonly used with
10— 1	240M007030N	Tube		
10— 3	240M020020B	Tube		
10— 4	240M016030N	Tube		
10— 5	240M015030N	Tube		
10— 6	240M017030N	Tube		
10— 7	240M025030N	Tube		
10— 8	121K268270	Switch		
10— 9	117K110910	Variable resistor		
10—10	109B1277520	Contact piece		
10—11	109B1453283	Contact piece	2	
10—12	117K268321	Resistor		
10—13	106K268450	Transistor		
10—14	117K268352	Resistor		
10—15	117K268352	Resistor		
10—16	117K268440	Resistor		
10—23	106K268421	Diode		
10—24	95K268620	Diode		
10—25	110B1452160	Stopper plate		
10—26	117K268331	Resistor		
10—27	117K268360	Resistor		
10—28	117K268341	Resistor		
10—29	117K268490	Resistor		
10—30	106K268291	Diode		
10—31	106K268380	Transistor		
10—32	106K268291	Diode		
10—33	117K268410	Resistor		
10—34	117K268372	Resistor		
10—35	106K252750	Transistor		
10—36	117K268400	Resistor		
10—37	117K268510	Resistor		
10—38	106K268421	Diode		
10—39	117K268510	Resistor		

Fig. 10


4-64
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W4
9-36x2
6-23x2
6-21 x2
9-28 x2
W7
W6
A BLUE
B BLACK
C BROWN
D GRAY
G GREEN
O ORANGE
P PINK
R RED
V VIOLET
W WHITE
Y YELLOW

Ref No.	Part No.	Part Name	Q'ty	Commonly used with
W 1	111B1447260	Lead wire (brown)		
W 2	111B1447250	Lead wire (black)		
W 3	111B1447240	Lead wire (red)		
W 4	95B1447200	Lead wire (white)		
W 5	95B1447190	Lead wire (green)		
W 6	111B1447280	Lead wire (orange)		
W 7	111B1447270	Lead wire (yellow)		
W 9	111B1447300	Lead wire (blue)		
W 10	111B1447320	Lead wire (white)		
W 11	111B1447290	Lead wire (black)		
W 12	111B1447310	Lead wire (yellow)		
W 13	111B1302470	Lead wire (white)		
W 14	111B1302470	Lead wire (red)		
W 17	111B1447170	Lead wire (yellow)		
W 18	111B1447160	Lead wire (black)		
W 19	111B1447180	Lead wire (orange)		
W 20	111B1447210	Lead wire (brown)		
W 31	111B1447230	Lead wire (brown)		
W 33	111B1447220	Lead wire (gray)		