

FUJICA G690 REPAIR MANUAL

CONTENTS

	Page
I. DISASSEMBLY	1
1. Top Cover (E1A)	1
2. Bottom Cover (E3)	1
3. Lense Barrel Installation Seat (C1A)	1
4. Film Advance Mechanism (D1A)	3
5. Shutter Set Mechanism Unit (D45A)	3
6. Film Indicator (M1A)	3
7. Range/Viewfinder Unit (S0)	3
8. Light Shielding Curtain (B48A)	4
9. Rear Cover (F1A)	5
10. Rear Cover Lock Key (B83)	5
11. Knobs (B27A and B28A)	5
II. REASSEMBLY, REPAIR AND ADJUSTMENT	6
1. Reassembling the Light Shielding Curtain (B48A)	6
1.1 Adjusting Light Shielding Curtain Overlaps	7
1.2 Adjusting Light Shielding Curtain Position	7
1.3 Installing Light Shielding Hood (B2)	8
2. Repairing and Adjusting the Light Shielding Curtain (B48A)	9
2.1 When the Light Shielding Curtain is set to close, the system does not click	9
2.2 Deviated Light Shidling Curtain Position	9
2.3 Faulty Light Shielding Curtain Operation	9
2.4 Faulty Light Shielding Curtain Return	10
2.5 Faulty Light Shielding Curtain and Signal Lever Interlock Operation	10
2.6 With the Light Shielding Curtain set to Close, the Release Button can be depressed	10
3. Repairing and Adjusting Rear Cover	11
3.1 Defective Rear Cover (F1A) Locking	11
3.2 Light Leakage on the Rear Cover	11
3.3 Scarred Film	11
3.4 Poor Rear Cover (F1A) Operation	12

	Page
4. Reassembling and Adjusting Film Indicator (M1A)	12
5. Repairing and Adjusting Film Indicator (M1A)	12
5.1 Faulty Indicator Advancing	12
5.2 Faulty Film Indicator Resetting	13
5.3 Deviated Film Indicator Panel (M26A) Position	13
5.4 Faulty R ↔ S Changeover (Roll/Sheet Film Selector)	14
5.5 Improper Film Advancing	14
5.6 Poor Film Drum (B41) Rotation	14
6. Reassembling and Adjusting Film Advance Mechanism Unit (D1A) and Shutter Set Mechanism Unit (D45A)	14
7. Repairing and Adjusting Film Advance Mechanism Unit (D1A) and Shutter Set Mechanism Unit (D45A)	16
7.1 Improper Film Advancing	16
7.2 Poor Film Advance Lever return	16
7.3 Defective Film Advance Lever Stop	16
7.4 The Film Advance Lever returns during the initial one turn before the Lever is turned completely	17
7.5 The Film Advance Lever cannot be turned smoothly	17
8. Reassembling and Adjusting the Lens Barrel Installation Seat (C1A).....	17
8.1 Reassembling the Lens Barrel Installation Seat (C1A)	17
8.2 Adjusting the Flange Focus	18
8.3 Adjusting Shutter Set Position	19
8.4 Adjusting Shutter Release Position	19
9. Repairing the Lens Barrel Installation Seat (C1A)	20
9.1 Shutter setting is too heavy	20
9.2 Shutter Release Button does not operate lightly	20
9.3 Poor Shutter Release Button return	20
10. Adjusting the Range/Viewfinder (S0)	21
10.1 Adjusting the direction and elevation	21
10.2 2-meter adjustment	22
10.3 Faulty Range/Viewfinder (S0) operation	22
11. Repairing and Adjusting Knobs (B27A) and (B28A)	23
12. Reassembling the Bottom Plate (E3)	23
13. Reassembling, Repairing and Adjusting the Top Cover (E1A)	24
13.1 Assembling the Top Cover (E1A)	24
13.2 Adjusting Accessory Shoe (E17)	24

I. DISASSEMBLY

1. Top Cover (E1A)

Loosen the shutter release button ring (D35A), and remove the film advance lever unit (D38, D39, and D40). Remove the screws (E20, 4 screws), and remove the top cover (E1A).

(Fig. 1)

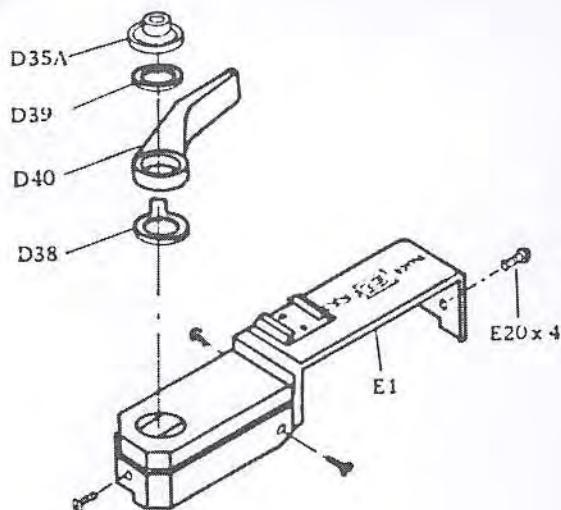


Fig. 1

2. Bottom Cover (E3)

Loosen the set screw (B82) with the tool (E82-TA1), and remove the knob (B77A). (Fig. 2)

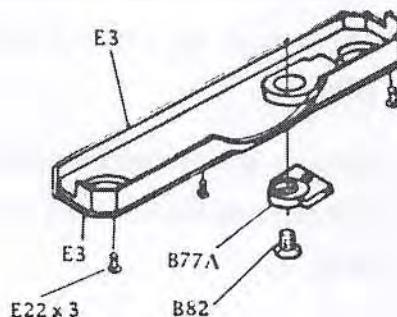


Fig. 2

3. Lense Barrel Installation Seat (C1A)

- Peel off the leather covers (B94 and B95). Remove the screws (B102, 6 each), and remove the lens barrel installation seat (C1A) forward.
- Peel off the leather cover (C47) from the tripod socket unit. Remove the screws (C53, 4 each), and remove the tripod socket (C46). (Fig. 3)

- C. Remove the screws (C33, 2 each),
and remove the release lever
(C24A). (Fig. 3)

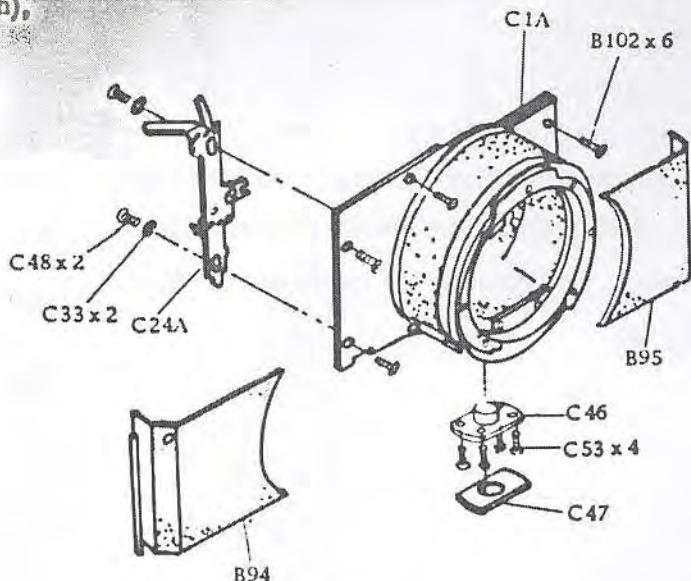


Fig. 3

- D. Remove the screws (C53, 6 each),
and remove the bayonet ring (C16A).
(Fig. 4)

- E. Remove the set screws (C49, 4 each),
and remove the set ring (C3A).
(Fig. 4)

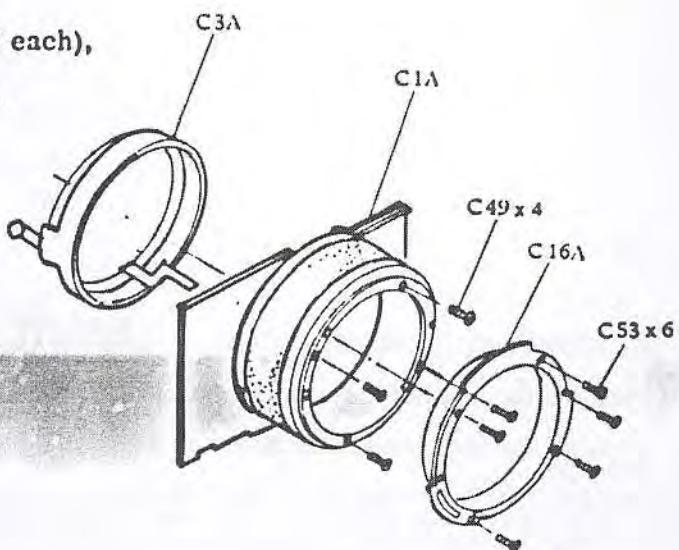


Fig. 4

4. Film Advance Mechanism (D1A)

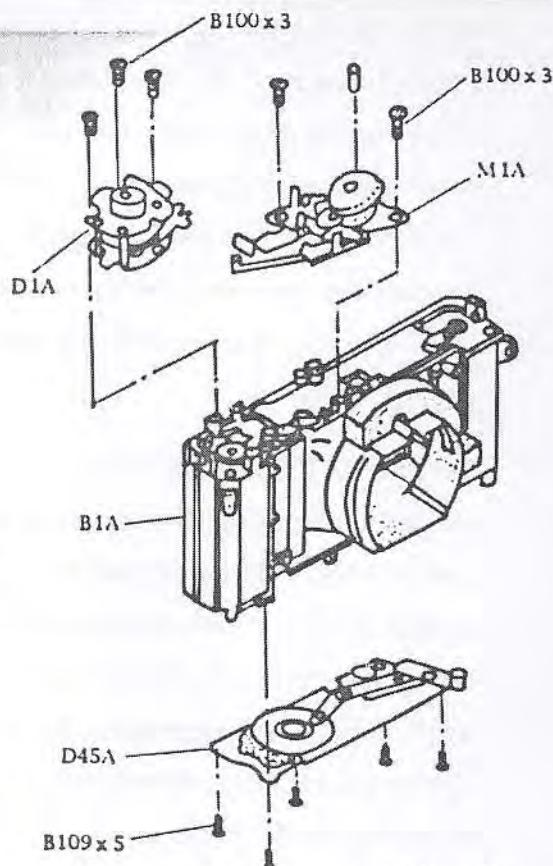
Remove the installation screws (B100, 3 each), and remove the film advance mechanism unit (D1A). (Fig. 5)

5. Shutter Set Mechanism Unit (D45A)

Remove the installation screws (B109, 5 each), and remove the shutter set mechanism unit (D45A). (Fig. 5)

6. Film Indicator (M1A)

Remove the installation screws (B100, 3 each), and remove the film indicator (M1A). (Fig. 5)



(Fig. 5)

7. Range/Viewfinder Unit (S0)

Remove the installation screws (B101, 3 each), and remove the range/viewfinder unit. (Fig. 6)

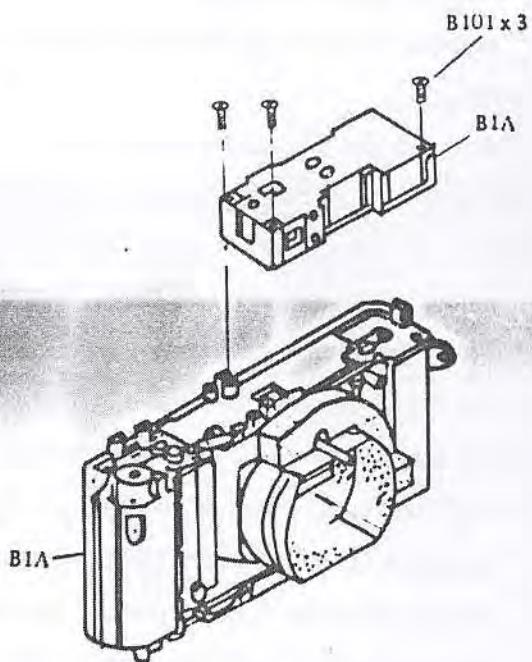


Fig. 6

8. Light Shielding Curtain (B48A)

- A. Peel off a part of the Moltiplene (B110) at the upper side, and remove the light shielding hood installation screws (B99, 4 each). Remove the edge installation screws (B12, 2 each), and set free the edge (B11). (Fig. 7)

- B. E-clips (B113, 2 each) are installed on the range finder interlock rod (B111A). Remove the rear E-clip (B113), withdraw the range finder interlock rod (B111A) forward, with attention paid on the spring (B114), and remove the light shielding hood. (Fig. 7)

- C. Remove the set screw (B100), and holding down the control lever (B45), turn the lever slowly to the left to release the spring from the tension. (Fig. 7)

- D. Remove the set screw (B62) and signal lever (B59A), and loosen the shielding curtain installation collar (B53) set screws (B55, 2 each). Next, remove the shaft (B54) downward and remove the guide rollers (B35 and B36) from the openings on the body top. (Fig. 7 and 8)

- E. Remove the set screws (B106, 2 each), and remove the light shielding curtain (B48A) and the light shielding curtain shaft holder (B44). (Fig. 7)

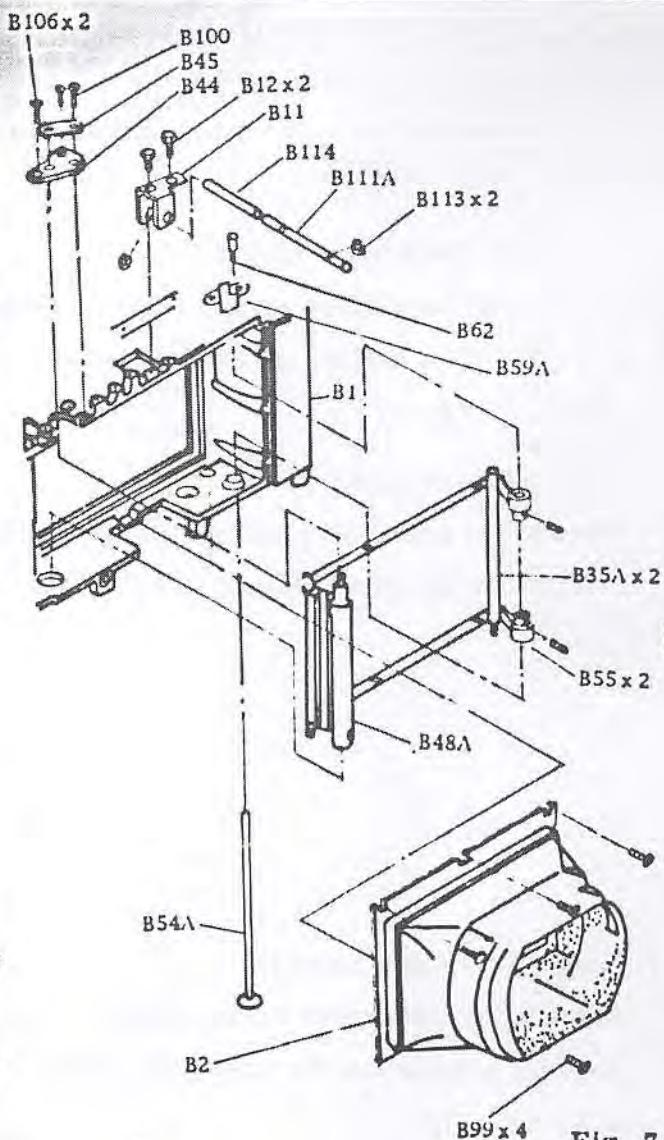


Fig. 7

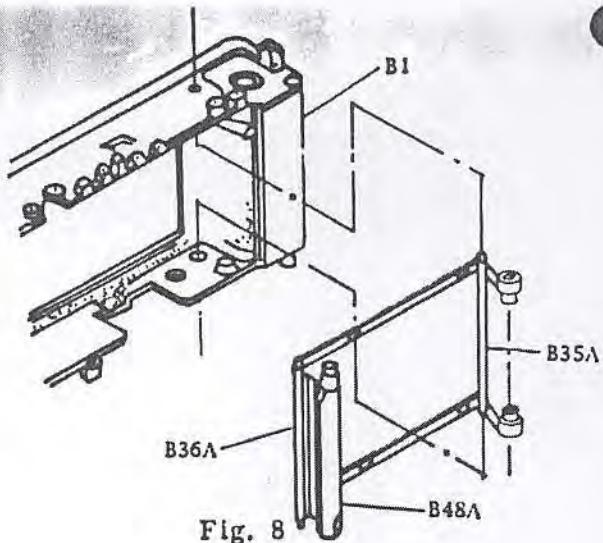


Fig. 8

9. Rear Cover (F1A)

Peel off the leather cover (B95). Remove the hinge set screws (B104, 4 each), and remove the rear cover (F1A). (Fig. 9)

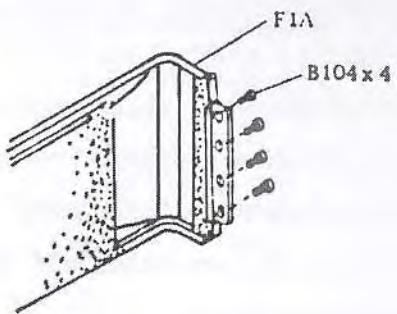


Fig. 9

10. Rear Cover Lock Key (B83)

Peel off the leather cover (B94) and remove the screws (B105, 2 each). Remove the collars (B85, 2 each), lock key (B83), and spring (B84). (Fig. 10)

11. Knobs (B27A and B28A)

Peel off the leather covers (B33, 2 covers), and remove the screws (B32, 2 each).

Remove the spool shaft holder (B24), spring (B26), and knobs (B27A and B28A). (Fig. 10)

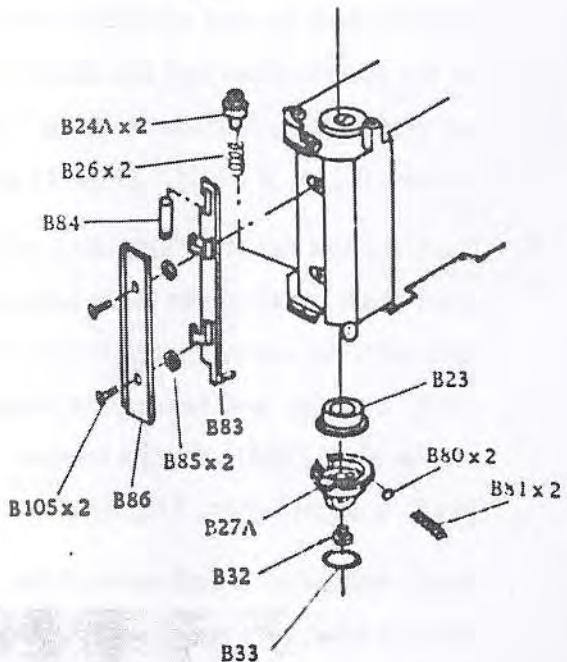


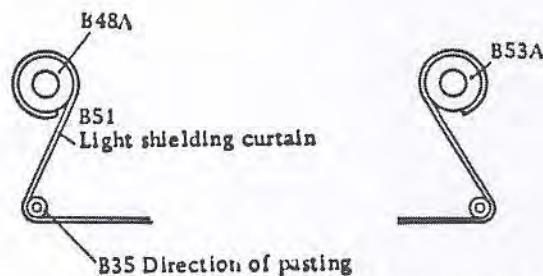
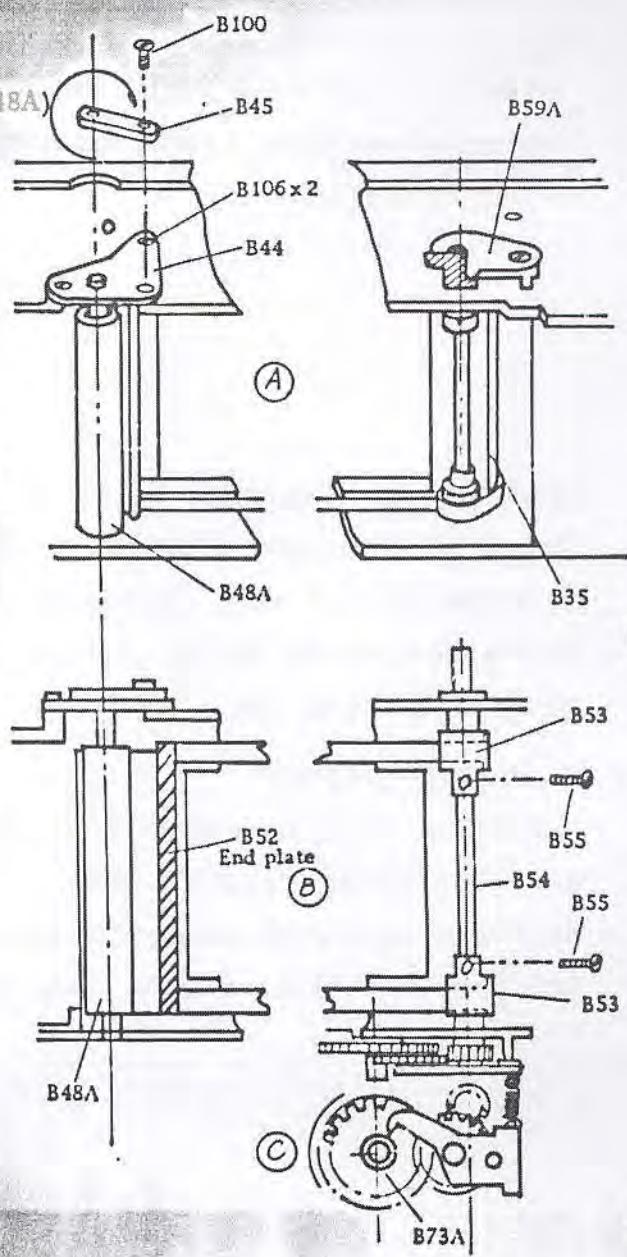
Fig. 10

II. REASSEMBLY, REPAIR AND ADJUSTMENT

1. Reassembling the Light Shielding Curtain (B48A)

Reassemble and adjust those parts which have been disassembled based on the instructions described in the para. I-8A and 8B above, in accordance with the following instructions:

- A. First, supporting the light shielding curtain (B48A) shaft with the shaft hole on the bottom plate and the shaft holding plate (B44), secure the shaft with screws (B106, 2 each). (Fig. 11 (A))
- B. Next, install the light shielding curtain wind shaft (B54) on the main body together with the curtain installation rings (B53, 2 each), and secure the rings on the shaft (B54) with the screws (B55, 2 each). (Fig. 11 (B))
- C. Apply adhesive to both ends of the curtain (overlaps for adhesive in both ends of the curtain), covering 270° of the curtain installation ring circumference, at the position where the gear (B73A) stops during turning toward the arrow mark direction shown in the Fig. 11 (C), and paste up both ends of the curtain on the curtain installation rings (B53). With the light shielding curtain faced inward, install the guide rollers (B35, 2 each) on the main body.



Apply adhesive to 3/4
(270°) of the circumference.
Fig. 11

1.1 Adjusting Light Shielding Curtain Overlaps

Fit the shaft holder stopper (B45) to the shaft (B48A), and turning it to the right, provide 2.5 to 3 turn overlaps. Tighten the shaft holder stopper (B45) with the screw (B100), and make sure that the curtain is wound and rewound smoothly. (Fig. 11 (A))

1.2 Adjusting Light Shielding Curtain Position

- When the light shielding curtain is positioned correctly and the light shielding curtain is set to the open position, the end plate stops at a position 0.5 mm from the film picture frame as shown in Fig. 12.

When the position is deviated, holding down the gear shaft (B54A) by hand, loosen the screw (B69). In addition, disengage the gear (B64A) from the gear (B57A), and turning the gear shaft (B57A) slowly, decide the stop position of the end plate. Re-engage the gear (B64A) with the gear (B57), and tighten the screw (B69) securely.

Next, set the light shielding curtain to the close position, and make sure that the film picture frame is shielded with the curtain completely.

(Fig. 12 and 13)

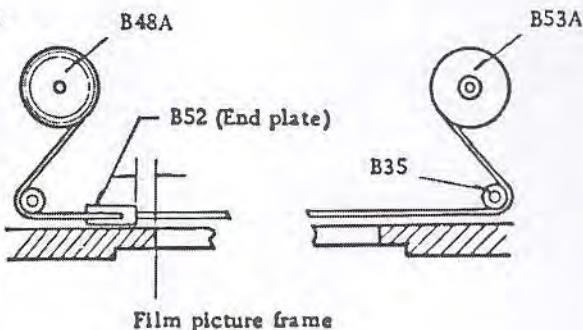


Fig. 12

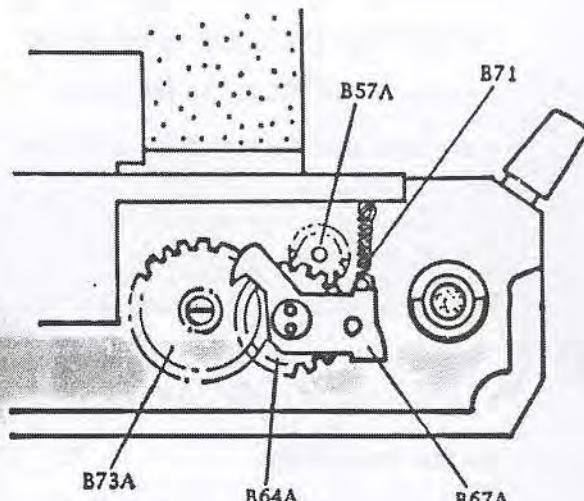


Fig. 13

b. Screw the signal lever (B59A) into the threaded hole on the shaft (B54) end. Secure the screw (B62) at a position where the threaded hole end is aligned flush with the signal lever surface. (Fig. 14)

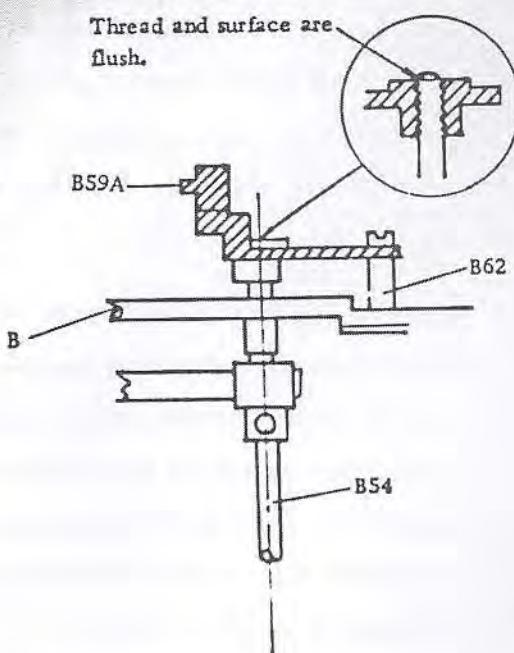


Fig. 14

1.3 Installing Light Shielding Hood (B2)

Fit the edge (B11) and range finder interlock rod (B111) to the main body top, and secure them with the E-clips. Carefully insert the range finder interlock rod (B111) into the light shielding hood so that the light shielding curtain is not damaged, and install the light shielding hood (B2) on the main body.

Securely tighten the screws (B99, 4 each), and secure the edge (B11) of the range finder interlock rod (B111A) with screws (B12, 2 each).

Now, make sure that the light shielding curtain operates smoothly.

(Fig. 15)

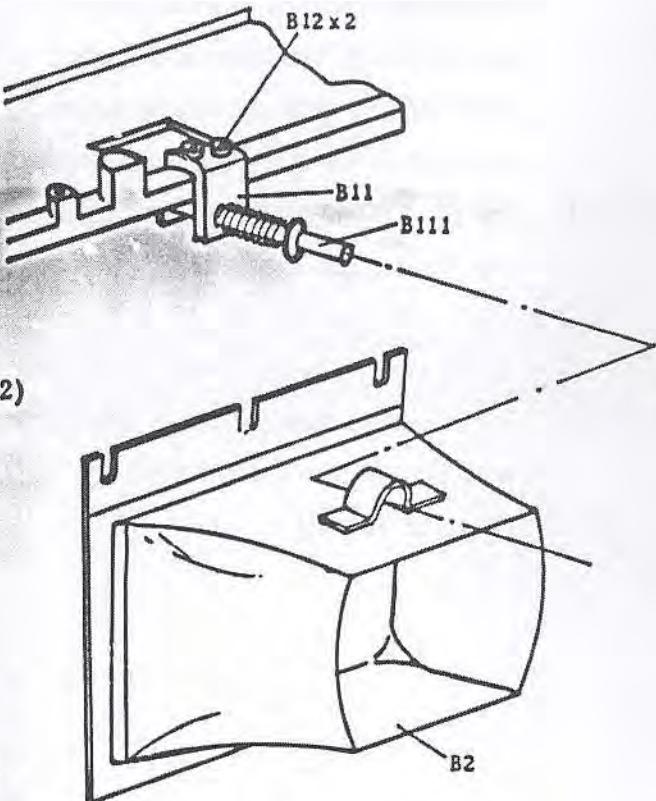


Fig. 15

2. Repairing and Adjusting the Light Shielding Curtain (B48A)

2.1 When the light shielding curtain is set

to close, the system does not click.

Check the system for faulty stop lever (B67A) operation, unhooked and/or weakened spring (B71). When the parts are defective, repair or replace.

(Fig. 16)

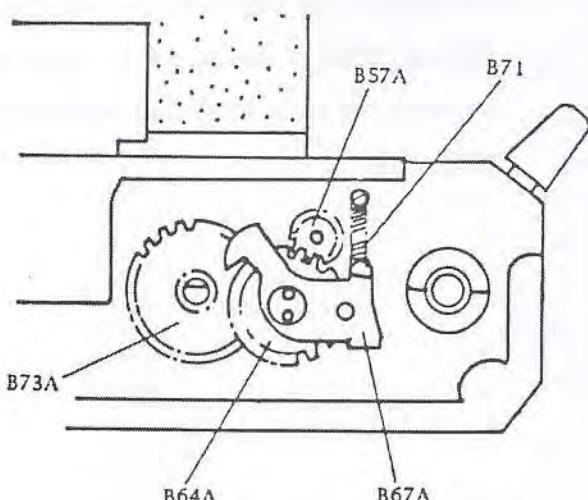


Fig. 16

2.2 Deviated light shielding curtain position

When the light shielding curtain (B51A) is set to open or close and the end plate (B52) is deviated from the correct position (projected out to the film picture frame), refer to the instructions described in the para. II-1.2 above, and readjust the position.

2.3 Faulty light shielding curtain operation

When the light shielding curtain return spring is not wound sufficiently (when the spring tension is not sufficient), turn the shaft holder stopper (B45) approximately one half turn and wind the spring sufficiently (increase the spring tension). See the para. II-1.1 above.

Moreover, when dust and/or other foreign matters are present in the space between the light shielding hood (B2A) and body (B1), clean and make sure that the light shielding curtain operates correctly. (Fig. 17)

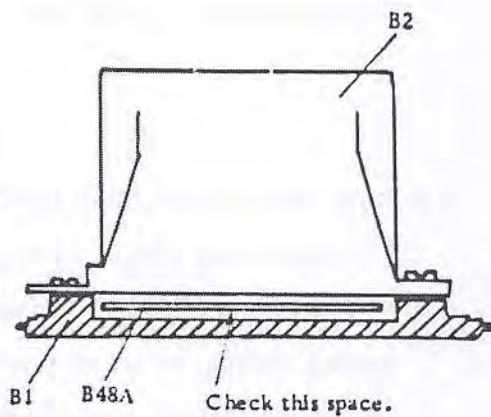


Fig. 17

2.4 Faulty light shielding curtain return

When the light shielding curtain return spring (B49) is weakened or unhooked, replace the light shielding curtain (B48A).

(Fig. 18)

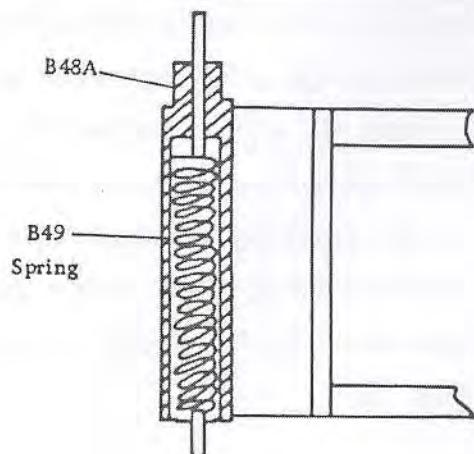


Fig. 18

2.5 Faulty light shielding curtain and signal lever interlock operation

Correct the position or repair the peeled off signal plate (B61) on the signal lever (B59A).

Set the light shielding curtain to close, and make sure that the red spot is seen in the finder. Set the light shielding curtain to open and make sure that the red spot goes out completely. (Fig. 19)

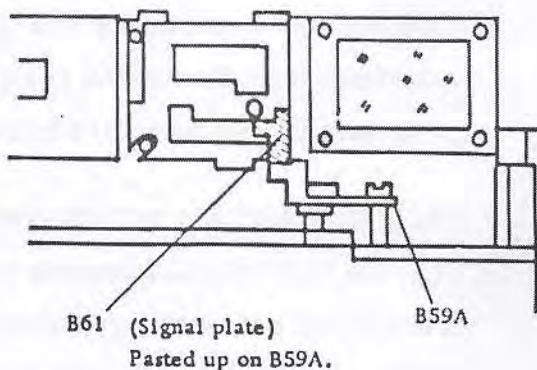


Fig. 19

2.6 With the light shielding curtain set to close, the release button can be depressed.

The stop lever (B118) does not operate correctly or the spring (B122) is unhooked. Rehook the spring (B122), or check the operation. Take corrective action, and adjust the operation. In addition, make sure that the shutter operates correctly and timely. (Fig. 20)

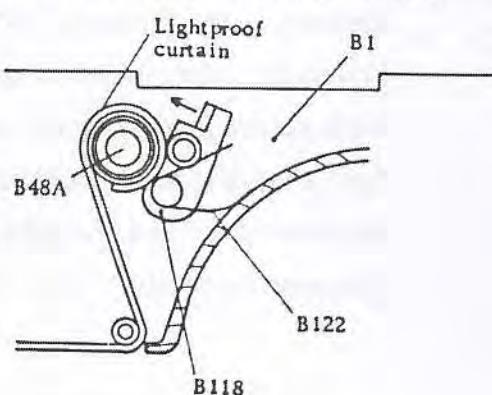


Fig. 20

3. Repairing and Adjusting Rear Cover

3.1 Defective rear cover (F1A) locking

When the lock key (B83) is deformed or does not engage correctly, check the key (B83) and repair or replace. At the same time, make sure that the spring (B84) is not weakened or unhooked. (Fig. 21)

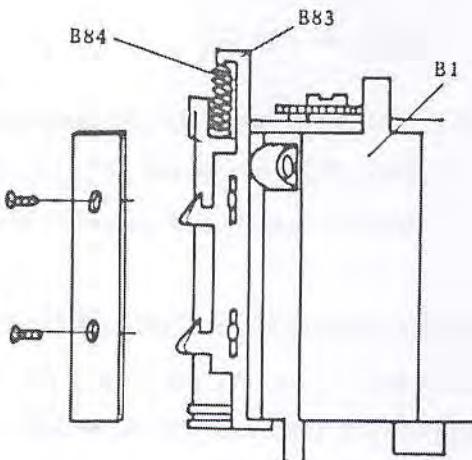


Fig. 21

3.2 Light leakage on the rear cover

When Moltiplene (F21) covers (2 sheets) are peeled off, completely paste up with adhesive. When the rear cover is too loose, lightly tap the curved portion of the rear cover (F1) with a wooden mallet and adjust the tightness. In addition, retighten the screws (B104, 4 each). (Fig. 22)

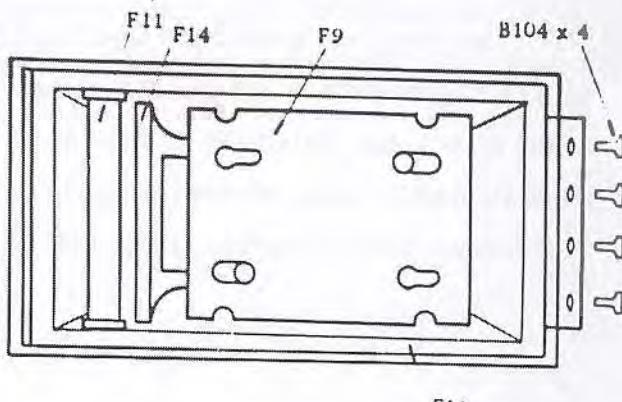


Fig. 22

3.3 Scarred film

Check the pressure plate (F9) for scar and/or bur. When the pressure plate is scarred or scratched, replace the pressure plate (F9) with new one.

Check the pressure plate for flatness with a linear scale. When bent, correct the bending to 0.05 mm or less.

Next, check the rollers (F11 and F14) for scars and/or bur. When the rollers do not rotate lightly and smoothly, take corrective action on the holders.

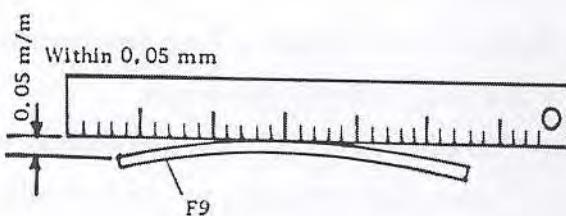


Fig. 23

Moreover, check the camera interior and exterior for possible dust accumulation. Clean, if dusts are accumulated. Accumulated dusts may scratch film.
(Fig. 22 and 23)

3.4 Poor rear cover (F1A) operation

When the rear cover (F1A) is bent or warped, tap the rear cover lightly with a wooden mallet and adjust. Moreover, retighten the screws (B104).

4. Reassembling and Adjusting Film Indicator (M1A)

Reassemble and adjust those parts relative to the film indicator (M1A) which have been disassembled based on the instructions described in the para. I-7 above, in accordance with the following instructions. First, open the rear cover, and inserting the reset lever (M38A) end into the groove on the main body, install the film (M1A) on the main body. Now, secure the counter with screws (B100, 3 each). (Fig. 24)

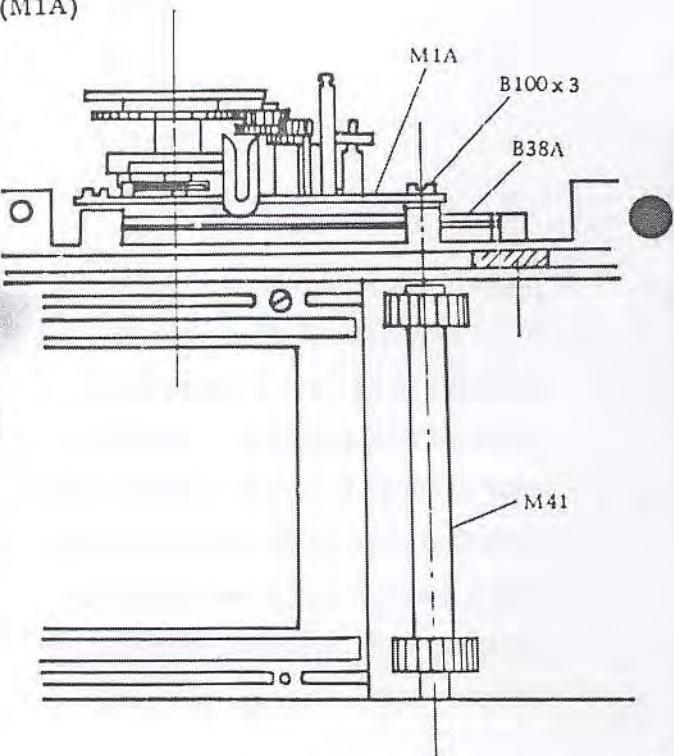


Fig. 24

5. Repairing and Adjusting Film Indicator (M1A)

5.1 Faulty indicator advancing

The hook lever (M29A) end bending or operation is defective. Correct the bending, and when the operation is still defective, replace the film indicator (M1A) with new one.

Next, when the toothed wheel (M15) does not return correctly, check the

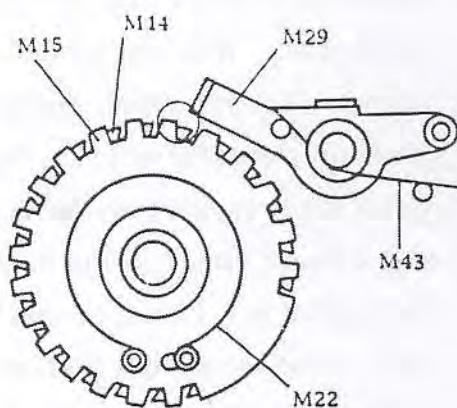


Fig. 25

spring (M22). Moreover, check the toothed wheels (M14) and (M15) for the lapping. If the lapping is improper, take corrective action by means of lapping. (Fig. 25)

5.2 Faulty film indicator resetting

a. Unhooked reset spring (M23)

When the reset spring (M23) is unhooked, hook it correctly. When the reset spring is warped, weakened, or broken, replace. When replacing the spring with new one, remove the spring carefully. The gear (M5) adopts a left hand screw. When the spring (M12) is removed, simultaneously remove the lever (M7A) and toothed wheel (M14A) upward, and replace the spring (M23) with new one. (Fig. 26)

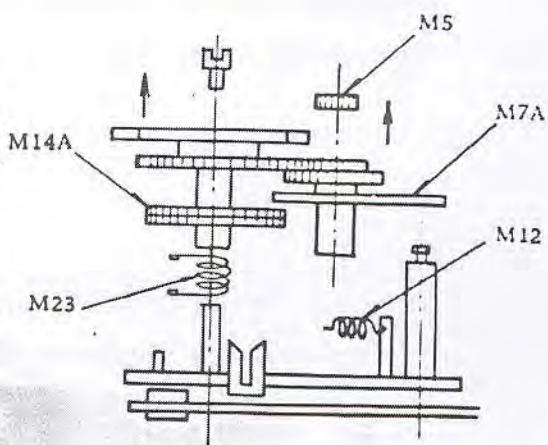


Fig. 26

b. Faulty reset lever (M38A) or lever (M7A)

Check the reset lever (M38A) or lever (M7A) for proper operation and the springs (M41), (M12), and (M57) for unhooking or weakness.

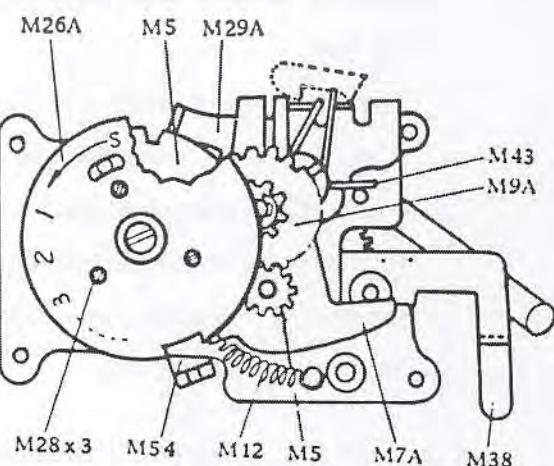


Fig. 27

5.3 Deviated film indicator panel (M26A) position

Loosen the set screws (M28, 3 each), turn the film indicator panel (M26A) either to the right or left, and correctly adjust the "S" position. (Fig. 27)

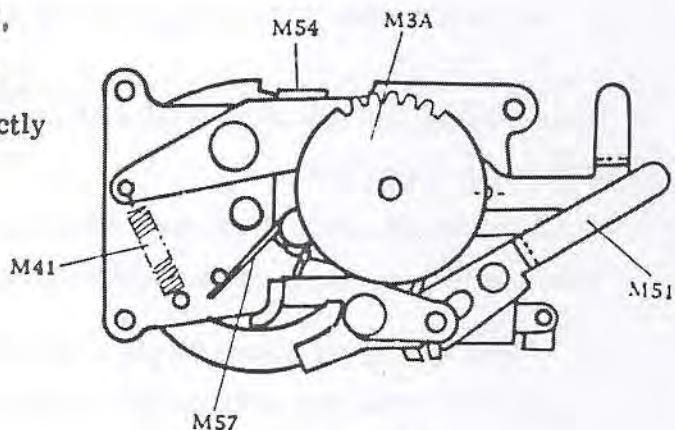


Fig. 28

5.4 Faulty R → S changeover (Roll/Sheet Film Selector)

When the spring (M57) is unhooked or weakened, hook the spring or replace the spring with new one. Moreover, make sure that the changeover pin (E33) is correctly fitted to the groove on the lever (M54). (Fig. 29)

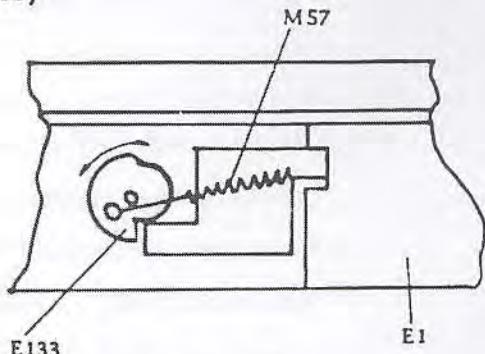


Fig. 29

5.5 Improper film advancing

Particularly when "Brownie" size (6×9 cm ($2\frac{1}{2} \times 3\frac{1}{2}$ in.)) film (J120) is used and the film is insufficiently advanced, bend the lever (E7) to the left.

Load the camera with a roll of test film, and make sure that the film is correctly advanced at each frame up to the counter number "8" and is free when the film counter counts the number "8". When the film is not free and stops at the number "9" position, bend the lever to the right and adjust the film advancing correctly. (Fig. 30)

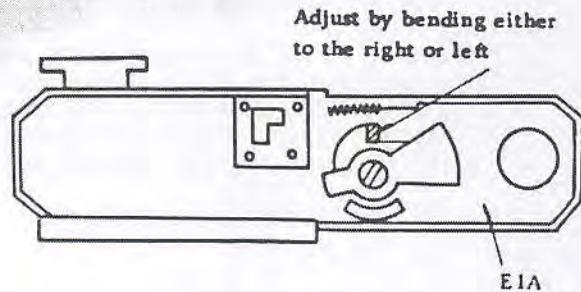


Fig. 30

5.6 Poor film drum (B41) rotation

When the film drum (B41) does not rotate lightly and smoothly, repair the shaft (B39) and shaft holer (B38) by means of lapping so that the drum rotates lightly. (Fig. 24)

6. Reassembling and Adjusting Film Advance Mechanism Unit (D1A) and Shutter Set

Mechanism Unit (D45A)

Reassemble and adjust those parts which have been disassembled based on the instructions described in the para. I-4 and 5 above, in accordance with the following instructions:

- First, fitting the eccentric pin of the film indicator unit (M1A) into the stop claw (D1) groove on the film advance mechanism unit (D1A), secure the film advance mechanism unit (D1A) on the main body with screws (D100, 3 each).

Tighten the film advancing lever (D40A) temporarily, and turn the film advance limiting ring (D29) to the left until it stops. With the film advance limiting ring stopped, turn over the main body. Correctly position the shutter set mechanism unit (D45A) as shown in Fig. 32, turn the shutter set ring (C6A) to the right (direction indicated by the arrow mark), securely install the shutter set mechanism unit (D45A) with screws (B109, 5 each) at a position where the shutter set ring stops, and hook the spring (D34) to the spring hook pin (M46). (Fig. 31, 32, and 33)

- B. Shutter set mechanism unit (D45A)**
- When the shutter set mechanism is installed completely, install the lens barrel on the body. Set the roll/sheet film selector to "S" (sheet) position, turn the film advance lever completely, and return the lever slowly. (The lever does not return during the initial one turn, unless the lever is turned completely.) Next, depress the shutter release button, and make sure that the shutter operates correctly.

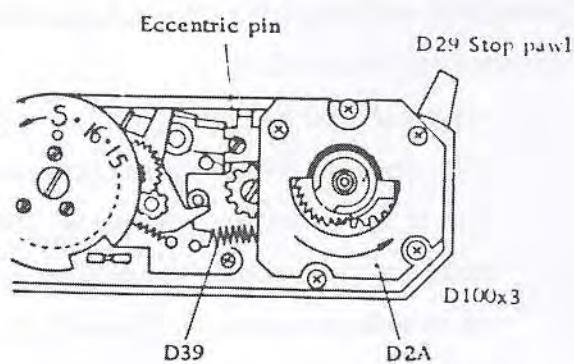


Fig. 31

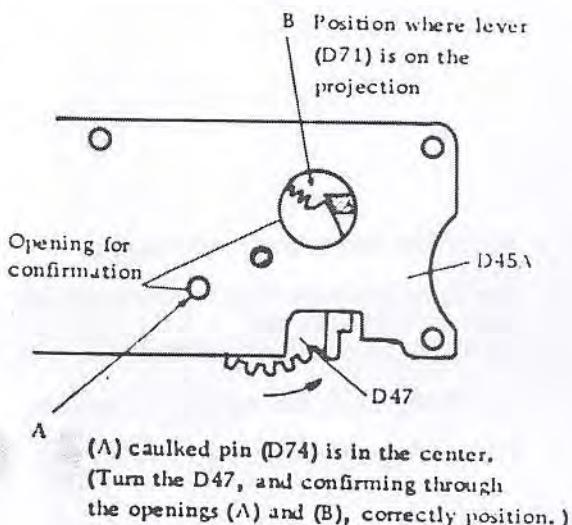


Fig. 32

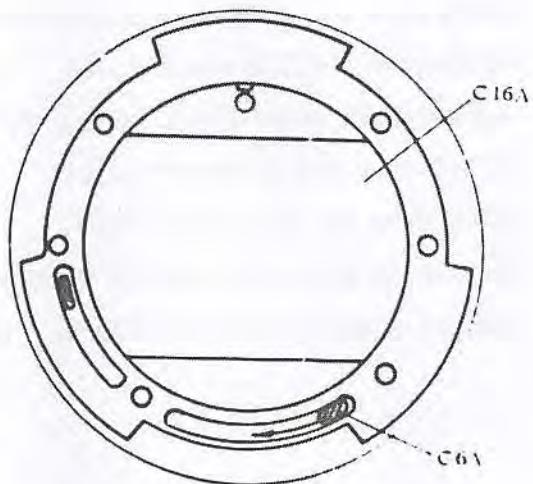


Fig. 33

7. Repairing and Adjusting Film Advance Mechanism Unit (D1A) and Shutter Set Mechanism Unit (D45A)

7.1 Improper film advancing

When the film advance lever is turned and film is not advanced, the springs (D27, 2 each) are unhooked or the ratchet pawl does not operate correctly. Correctly hook the springs or replace the ratchet wheel (D21A) with new one. (Fig. 34)

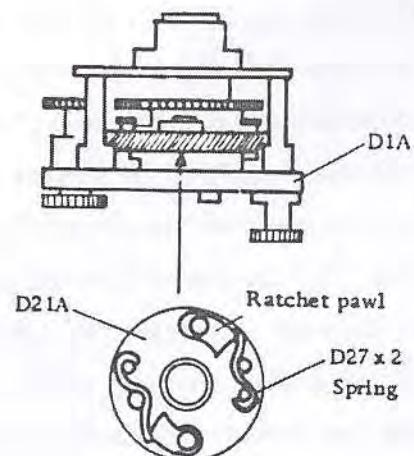
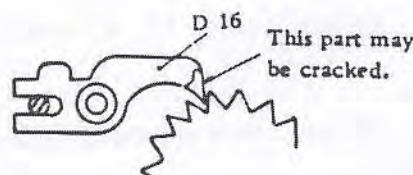


Fig. 34

7.2 Poor film advance lever return

The film advance lever return spring (D34) is unhooked or defective.

Correctly hook the spring or replace the spring with new one. (Fig. 35)



7.3 Defective film advance lever stop

The film advance lever stop pawl (D16) does not operate correctly, end of the pawl (D16) is cracked, the spring (M43) in the film counter unit is unhooked and/or the stop pawl (D16) does not operate correctly.

Repair the spring, or replace the film advance mechanism unit (D1A) and/or film indicator unit (M1A) with new one. (Fig. 35)

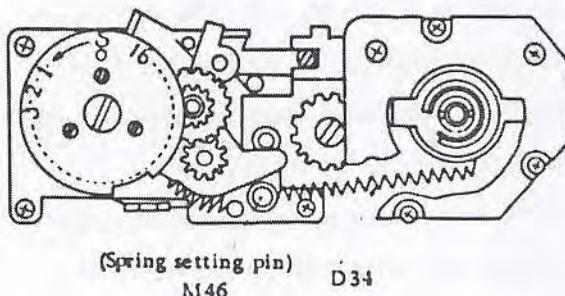


Fig. 35

7.4 The film advance lever returns during the initial one turn before the lever is turned completely.

Remove the shutter set mechanism (D45A) and check the spring and lever for the correct operations. When the spring (D65) is defective or the lever (D71) does not operate correctly, replace the shutter set mechanism (D45A) with new one. (Fig. 36)

For the shutter set mechanism (D45A) reassembly, see the para. 6-A and 6-B above.

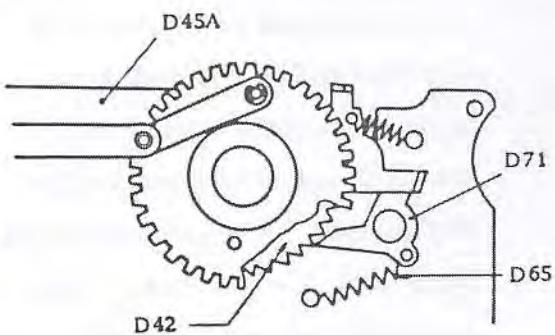


Fig. 36

7.5 The film advance lever cannot be turned smoothly.

Set screw (D6) is too loose, or dusts or metal particles are meshed between gears of the film advance mechanism (D1A) and shutter set mechanism (D45A). Retighten the set screw and remove dusts or metal particles from the gears.

8. Reassembling and Adjusting the Lens Barrel Installation Seat (C1A)

Reassemble and adjust those parts which have been disassembled based on the instructions described in the para. I-3A above, in accordance with the following instructions:

8.1 Reassembling the lens barrel installation seat (C1A)

Turn the lens barrel installation seat (C1A) set lever toward the direction indicated by the arrow mark in Fig. 37, and securely install the lens barrel installation seat (C1A) on the main body with screws (B102, 6 each) at a position where the set lever stops. (Fig. 37)

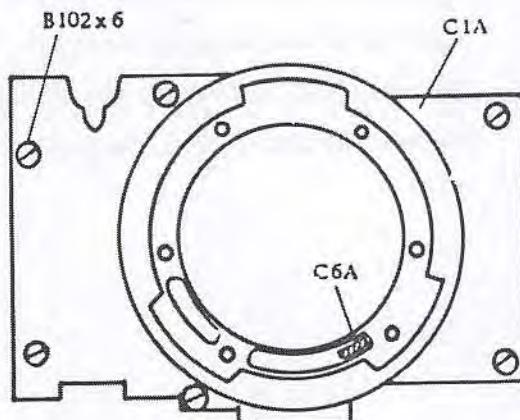


Fig. 37

8.2 Adjusting the flange focus

Set a zero-point gauge (A0-GA1) as shown in Fig. 38, and check parallelism of the bayonet ring (C16A) flange focus from the film rail surface. The standard flange focus is 64.5 ± 0.02 mm. When the measurement exceeds the standard value, dusts must have been accumulated between the main body (B1) and the lens barrel installation seat (C1A) or between the lens barrel installation seat (C1A) and bayonet ring (C16A).

Thoroughly clean, and reassemble. When the measurement is insufficient to the standard value, apply tin foil to the sections between the main body and the lens barrel installation seat and/or between the lens barrel installation seat and bayonet ring, and adjust the distance and parallelism. (Fig. 38 and 39)

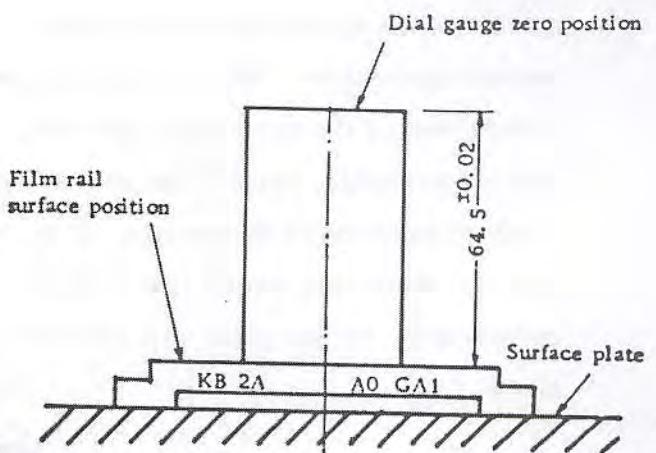


Fig. 38

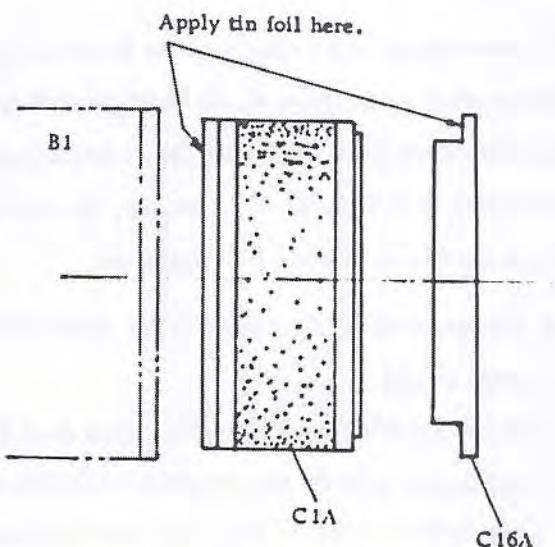


Fig. 39

8.3 Adjusting shutter set position

Install a shutter release position inspecting tool (A0-GA3) on the lens barrel installation seat (C1A). Next, turn the film advance lever, and make sure that the edge part of the shutter set lever (C7) is in between the "A" and "B" lines at the position where the film advance lever stops.

When the edge part is not in the "A" and "B" lines, remove the lens barrel installation seat (C1A), and retighten the shutter set lever installation screw (C50). (Fig. 40)

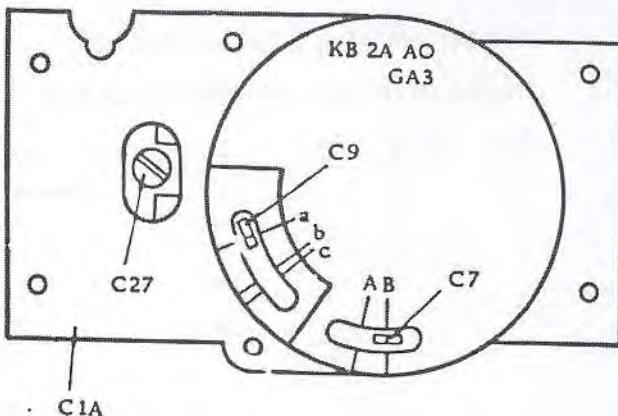


Fig. 40

8.4 Adjusting shutter release position

Install the shutter release position inspecting tool (A0-GA3) in the manner identical to the above. Adjust the adjust screw (C27) properly so that the release lever (C9) edge starts from the "a" line when the release button is depressed. Next, depress the shutter release button, and make sure that the ratchet pawl (C54) is released from the stopped condition when the release lever (C9) edge reaches the "b" line. When the ratchet pawl does not disengage, bend the ratchet lever (C54) and adjust the timing. Depress the shutter release button further, and make sure that the release lever (C9) edge reaches the line "c" completely. (Fig. 40)

9. Repairing the Lens Barrel Installation Seat (C1A)

9.1 Shutter setting is too heavy. - Faulty shutter set ring (C3A) operation.

Replace the set ring (C3A) with new one. (Fig. 41)

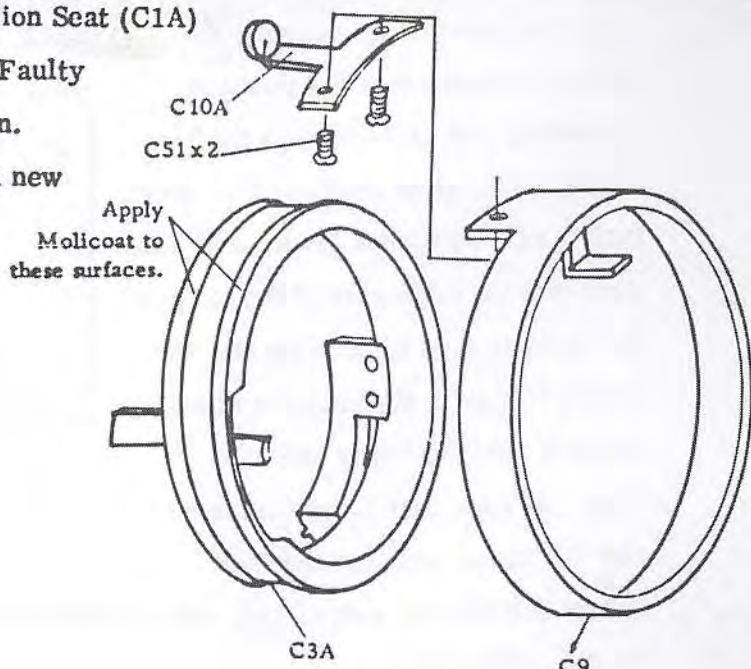


Fig. 41

9.2 Shutter release button does not operate lightly. -

Faulty release lever ring (C9) operation.

Apply Molicoat and smooth the operation. In addition, smooth the release guide lever (C24A) and screw (C33) slidings, and lubricate the sliding parts with grease (Keeston). (Fig. 41 and 42)

9.3 Poor shutter release button return

Check the shutter release guide lever (C24) return spring (C35) for unhooking or damage.

When unhooked, rehook, or when damaged, replace. (Fig. 42)

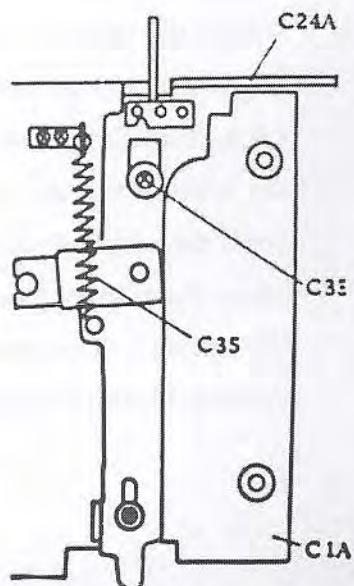


Fig. 42

10. Adjusting the Range /Viewfinder (S0)

10.1 Adjusting the direction and elevation

Disassemble the top cover (E1A) in accordance with the instructions described in the para. I-1 above.

Remove the lens barrel from the main body, and install a depth meter (A0-GA15) on the main body. Next, set the micrometer of the depth meter (A0-GA15) to "∞" (Standard position marked on the depth meter). (Fig 43)

Further, install them on a collimator, and see the image in the range/view-finder (S0) with an eyepiece.

(Fig. 44) When the direction is deviated, adjust the adjust screw (S9) correctly. When the elevation is deviated, adjust the adjust screw (S8), and coincide the image in the range/viewfinder. (Fig. 45) For all adjustments, the tolerance is zero.

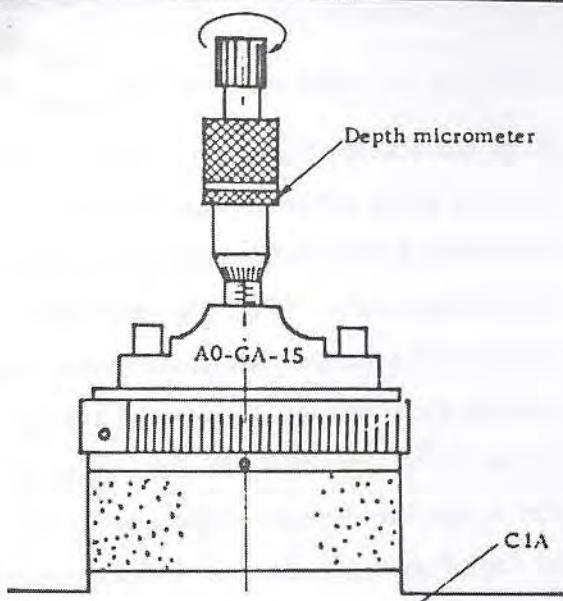


Fig. 43

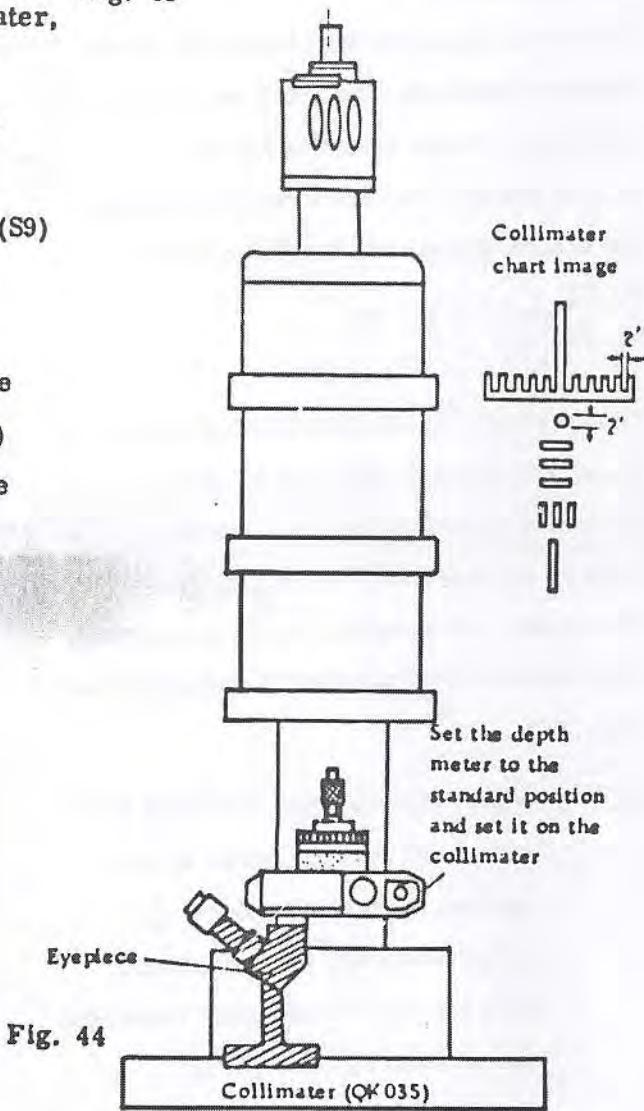


Fig. 44

10.2 2-meter adjustment

Draw out the depth meter 2.228 ± 0.02 mm from the standard position. Next, install the test chart accurately in a point distanced 2 meters from the film surface of the main body. (Fig. 46) When the image in the range/viewfinder is deviated, loosen the screw (S25), turn the adjust screw (S20), and coincide the images in the range/viewfinder. Upon completion of the adjustment, be sure to retighten the screw (S25).

Return the depth meter (A0-GA15) to the standard position, and make sure that the collimator range finder is set to " ∞ ". In this adjustment, the tolerance against the standard position should be within $+0.05$ mm. (-0.02) (Fig. 45)

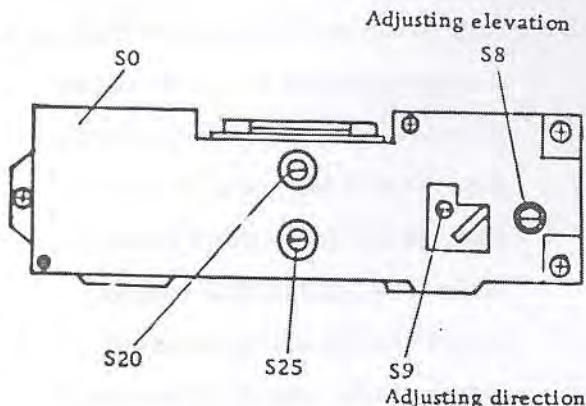


Fig. 45

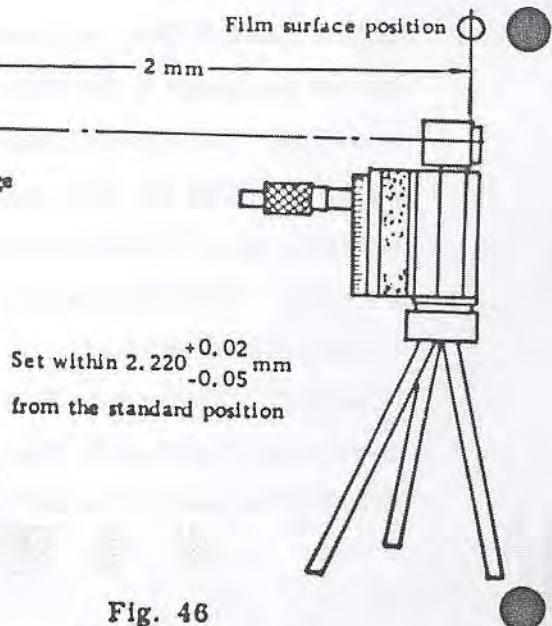


Fig. 46

10.3 Faulty range/viewfinder (S0) operation

Check the springs (S37 and 58) for weakness or unhooking, and repair or replace as required. When the field frame does not operate, check the spring (S47) for correct installation and operation. (Fig. 47)

Note 1) When adjusting the direction and elevation, the top cover is removed. When adjusting " ∞ " only, however, the adjustment may be carried out after removing the accessory shoe (E17).

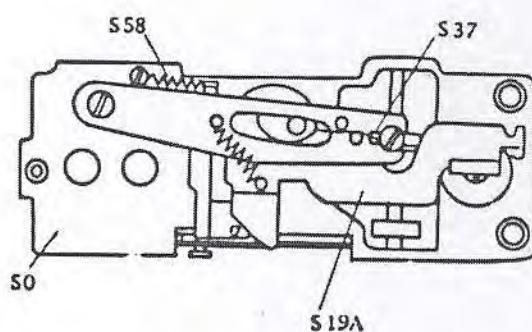


Fig. 47

Moreover, when the accessory shoe is removed once, readjust the parallax in accordance with the instructions described in the para. II-12.2 below without fail.

- 2) When adjusting the infinite distance (∞) without using collimator, select a liner item distanced 1000 meters or longer, and correctly adjust the range finder.

11. Reparing and Adjusting Knobs (B27A) and (B28A)

When the knobs (B27A) and (B28A) do not operate correctly, check the spring (B26) for weakness, and check the knob (B28A) also.

When the knobs do not click correctly, replace the knobs (B27A) and (B28A) with new ones. The click ball (B80) must have been disengaged from the caulked position.

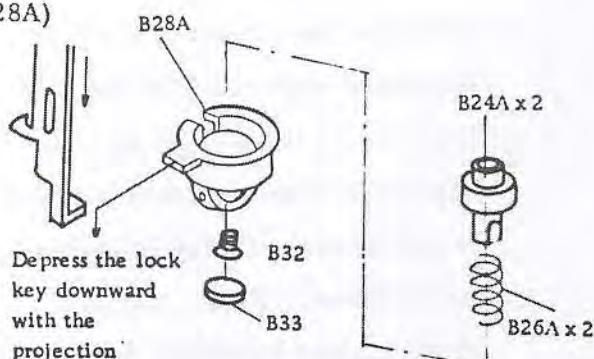


Fig. 48

12. Reassembling the Bottom Plate (E3)

Install the bottom plate (E3) on the main body with screws (E22, 3 each). Next, secure the light shielding curtain knob (B77A) with screw (B82), and make sure that the mark of the knob (B77A) is aligned correctly. The red "x" mark indicates that the light shielding curtain is open and green "O" mark indicates close. (Fig. 49)

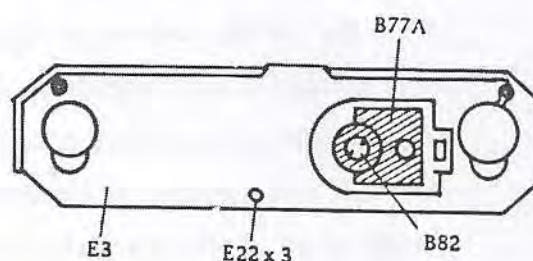


Fig. 49

13. Reassembling, Reparing, and Adjusting the Top Cover (E1A)

13.1 Assembling the top cover (E1A)

Fitting the pin of the R ↔ S changeover unit (E33) to the lever groove (M54), install the top cover (E1A) together with the finder frame (E2A) and secure them with screws (E20, 4 each). (Fig. 50)

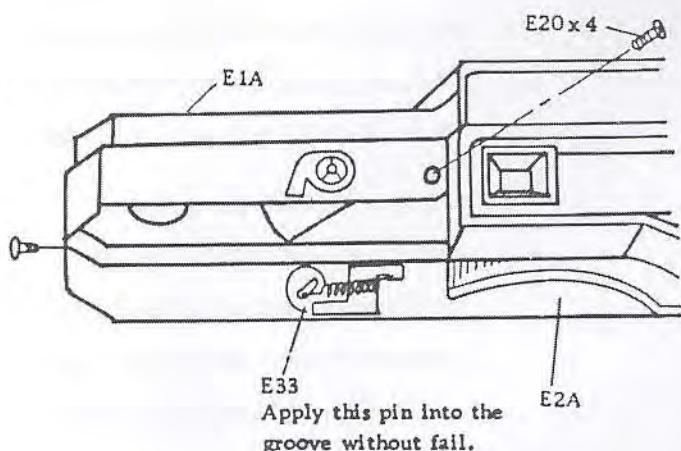


Fig. 50

13.2 Adjusting accessory shoe (E17)

Whenever the top cover (E1A) or accessory shoe (E17) is removed from the main body, be sure to adjust the accessory shoe position in accordance with the following instructions. First, install a standard lens barrel on the camera, place the camera in a point 3 meters from a test chart having a cross mark on it (to be more specifically, place the camera so that the film rail surface is distanced 3 meters from the chart), and set the shutter to open with a cable shutter release. Next, tightly attach a pint glass having a cross mark to the film rail surface, and coincide the cross mark on the pint glass to the cross mark on the chart.

New, install the depth meter on the

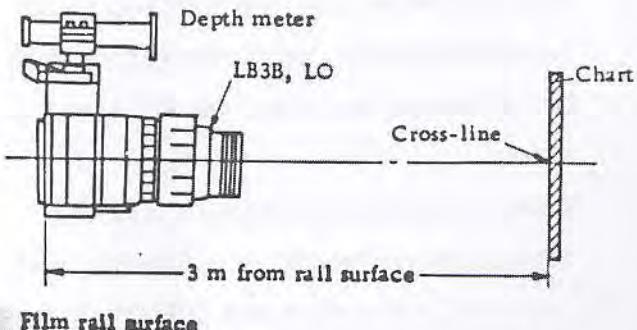


Fig. 51

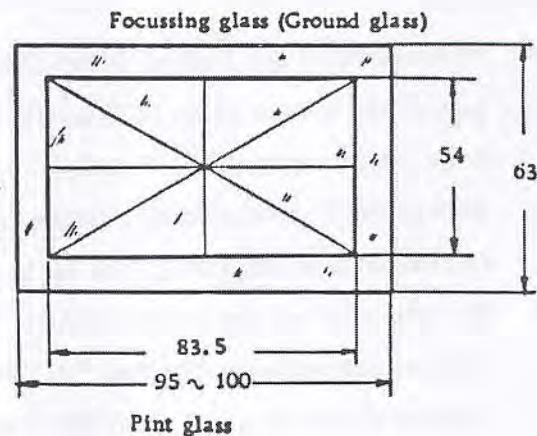


Fig. 52

accessory shoe carefully so that the camera is not moved from the above position. Looking through the depth meter, make sure that the cross mark in the field of view is correctly coincided with the cross mark on the chart. When the cross mark seen in the view of field is deviated from the corss mark on the chart, apply a washer beneath the accessory shoe (E17), and adjust the accessory shoe position correctly.

I. INSTRUCTIONS FOR DISASSEMBLY OF LENS BARREL (65 mm)

1. Disassembly of lens front group (L1A), rear group (L4A), and shutter (VD2A P1).

A. Remove lens plate (L3) with the Tool (L3-TA1) Fig. 1

B. Remove four screws (L47) and remove the lens barrel (L48). Next, remove the front lens group (L1A) with the Tool (L1-TA1) and rear lens group (L4A) with Tool (L4-TA1). Fig. 1

C. The back color lead wire connected to the synchronizer is provided with vinyl tube insulator. Move it to one side, and unsolder. Unsolder and disconnect the red color lead wire from the lag plate (L80). Next, disconnect the diaphragm lever (L15) and M-X changeover lever (L16) from the connecting pins (L55) and (L63). Fig. 2

D. Remove the shutter fastening ring (L11) with the Tool (L11-TA1), and remove the shutter from the lens barrel carefully so that the shutter speed lever (L18) is not damaged.

Fig. 1

2. Disassembling shutter installation seat (L6A)

A. Remove the ring installation screws (L89, 4 each), and remove the ring (L91), adjust washer (L12), and shutter installation seat (L48) from the lens barrel.

Fig. 1

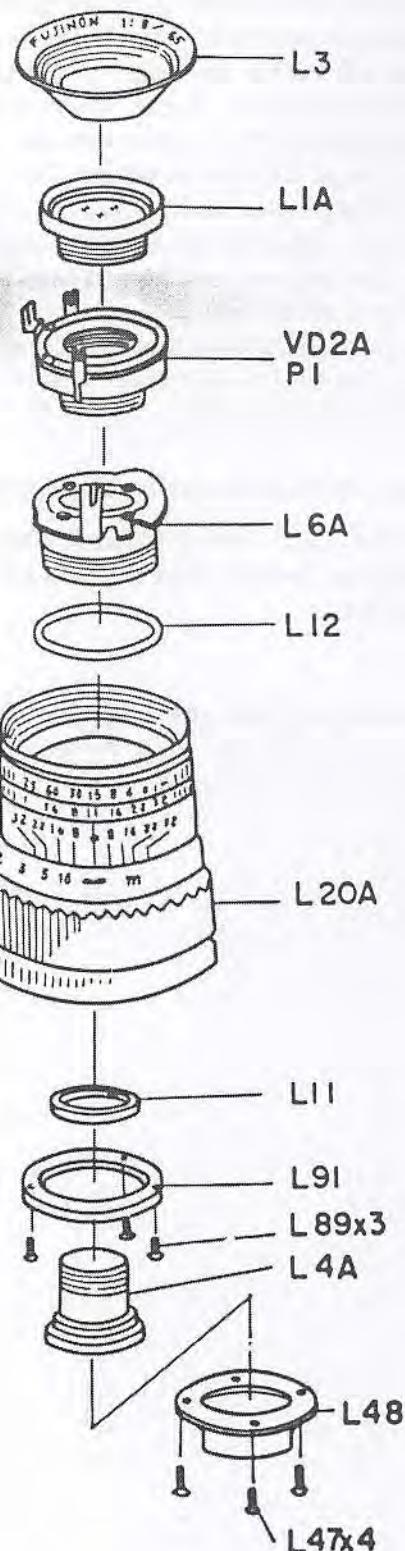


Fig. 1

B. Remove the screw (L10, 4 each), and remove the release ring (L9).

Fig. 3

II. INSTRUCTIONS FOR REPAIR, REASSEMBLY, AND ADJUSTMENT OF LENS BARREL UNIT

1. Reassembly, repair, and adjustment of the shutter installation seat (L7A).

A. Install the release ring (L9) on the shutter installation seat (L7A), and tighten the screw (L10, 4 each).

Fig. 3

B. When the shutter installation seat (L7A) does not operate effectively, check and correct the release ring (L9) for warping, or apply Molicoat grease and smooth the operation.

Fig. 3

2. Reassembly, repair, and adjustment of lens barrel and shutter installation seat (L7A)

A. Install the shutter installation seat (L7A) on the lens barrel with washer (L12), and secure it with ring (L91) and screws (L47, 4 each).

Fig. 4

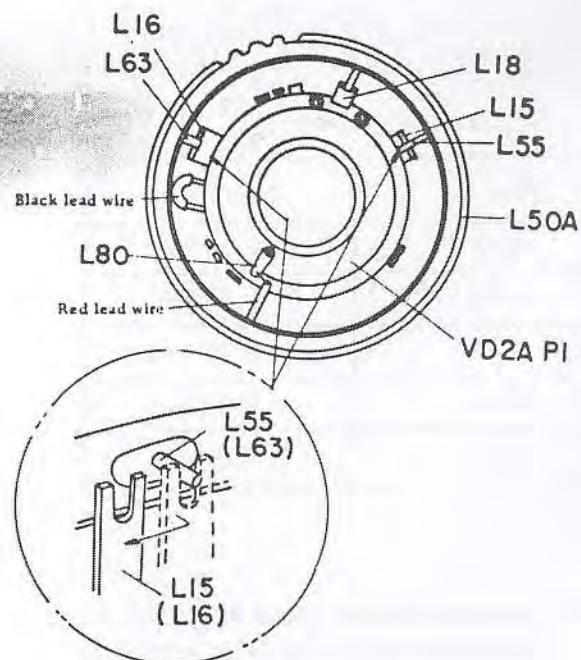


Fig. 2

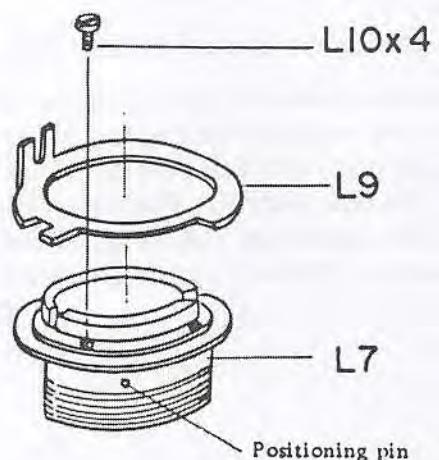


Fig. 3

B. For the focus adjustment, select proper washer from washer (L12) having various thicknesses. When the focus is unbalanced at one side, adjust the parallelism by using tin foil in lieu of the washer (L12).

Fig. 4

Types of Washers

Part No.	Thickness
S-1	0.5 mm
S-2	0.1 mm
S-3	0.05 mm
S-4	0.04 mm
S-5	0.3 mm

Note: Instructions for focus inspection are described in the forthcoming paragraph. When adjusting focus actually, adjust the washer thickness with the shutter (VD2A-P1) installed on the shutter installation seat (L7A).

3. Installation, repair, and adjustment of shutter (VD2A-P1)

3-1 Installing the shutter (VD2A-P1)

Fit the connecting pin (L55) into the groove on the shutter speed lever (L18) and install the shutter (VD2A-P1) on the lens barrel. Further, tightly fit the tightening ring (L11) to the shutter (VD2A-P1) with Tool (L11-TA1).

Fig. 1

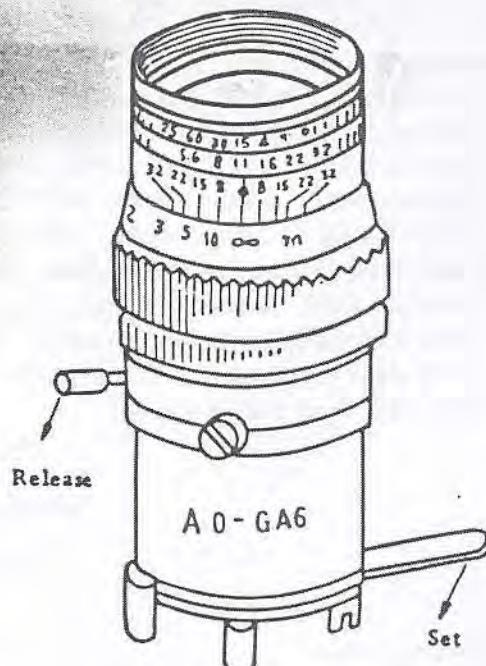


Fig. 4

3-2 Adjusting shutter set and release

Install the lens barrel on which the shutter has been installed on the inspection Tool (A0-GA6) by coinciding the position with the positioning pin. Set the shutter speed to "B" (Bulb), and set it with the set lever of the inspection Tool (A0-GA6). Further, release the shutter with the release lever, and adjust the release ring (L9) and set ring (L35) gaps (spread or contract) properly so that the shutter operates correctly. Set the shutter speed to 1/500 sec., release the shutter, and make sure that the shutter operates correctly.

Fig. 5 and 7



3-3 Connection with the synchronizer and checking

Connect the synchronizer lead wire (black) by means of solder and cover it with vinyl tube insulator. Connect the red lead wire to the lag plate (L80) also by means of solder. Next, connect a tester to the synchronizer terminal to check the synchronizer. Check the synchronizer for insulation at range of Rx1000 of the tester. Operate the synchronizer at shutter speed of 1/15 sec. or less, and check the M-X contact for the continuity. Now, reconnect the diaphragm lever (L15) and M-X changeover lever (L16) to the individual connecting pins (L55) and (L63).

Fig. 6

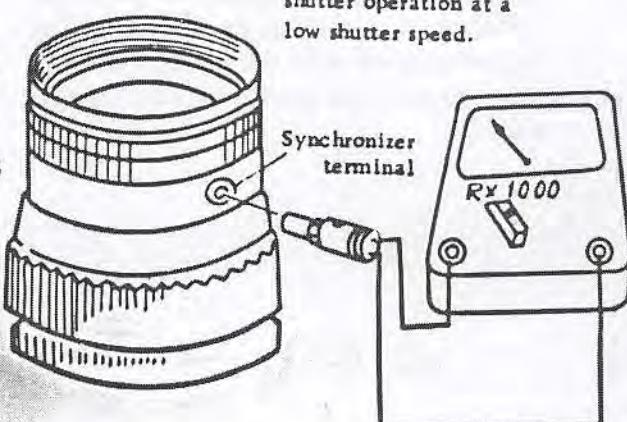
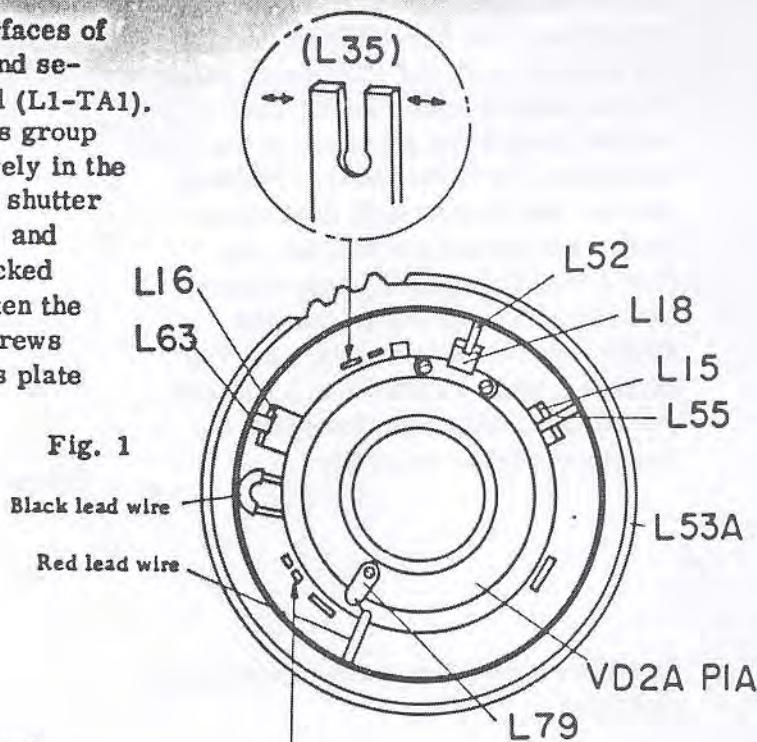


Fig. 6

3-4 Installing the front and rear lens groups (L1A) and (L4A)

Clean both front and rear surfaces of the front lens group (L1A), and securely tighten it with the Tool (L1-TA1). Further, tighten the rear lens group with the Tool (L4-TA1) securely in the same manner. Next, set the shutter to "B" (Bulb) to keep it open, and make sure that no dust is stuck thereto. Now, securely tighten the cover ring (L48) with four screws (L47) after tightening the lens plate (L3) with Tool (L3-TA1).



4. Inspecting focus

4-1 Testing focus by means of chart image and collimator

Install the lens barrel on the main body, and set the test chart and camera (film surface) in two positions accurately distanced 1.6 meters. Apply a focus glass to the film rail surface, check sharpness of the chart image with a magnifying glass, and check the infinitude (∞) with the collimator. When the chart image is blurred at the center or circumference, or focus is unbalanced, readjust the lens position in accordance with the instructions described in the para. "II-2-A and B" above.

Fig. 8

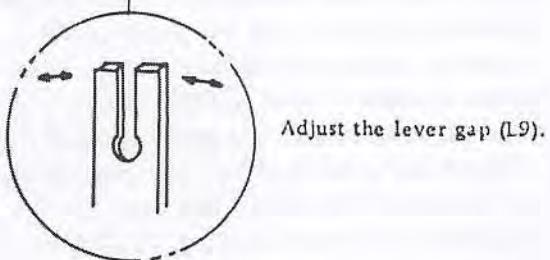


Fig. 7

4-2 Close distance photographing test

Position the camera (film surface) in a position accurately distance 2.5 meters from the test chart, and take picture for trial. First, operate the helicoid from "1M" side and take two pictures at a distance where the interlocking range finder is coincided. Further, operate the helicoid from the infinite distance side (∞), and take two pictures (total four pictures are taken) at a distance where the interlocking range finder is coincided.

4-3 Long distance photographing test

Select a linear item distanced 1000 meters or longer from the camera, and take three pictures.

Long distance photographing test judgment standard: - All three pictures must be clearly appeared.

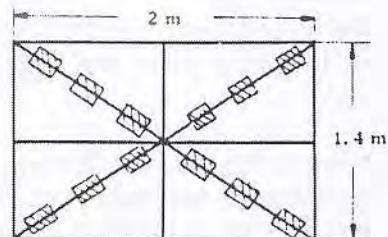
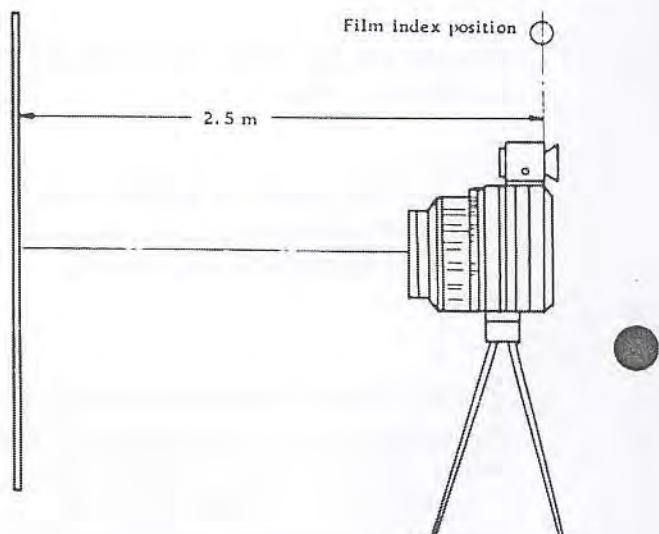


Fig. 8

I. INSTRUCTIONS FOR DISASSEMBLY OF LENS BARREL (100 mm)

1. Disassembling lens front group (L1A), rear group (L4A), and shutter.
 - A. Remove the lens plate (L3) with the Tool (L3-TA1).
 - B. Remove the front lens group (L1A) with the Tool (L1-TA1) and rear lens group (L4A) with jig (L4-TA1).
 - C. The black color lead wire connected to the synchronizer is provided with vinyl tube insulator. Move it to one side, and unsolder. Unsolder and disconnect the red color lead wire from the lag plate (L79). Next, disconnect the diaphragm lever (L17) and M-X changeover lever (L18) from the connecting pins (L58) and (L52).
 - D. Remove the shutter fastening ring (L-11) with the Tool (L11-TA1), and remove the shutter from the lens barrel carefully so that the shutter speed lever (L20) is not damaged.

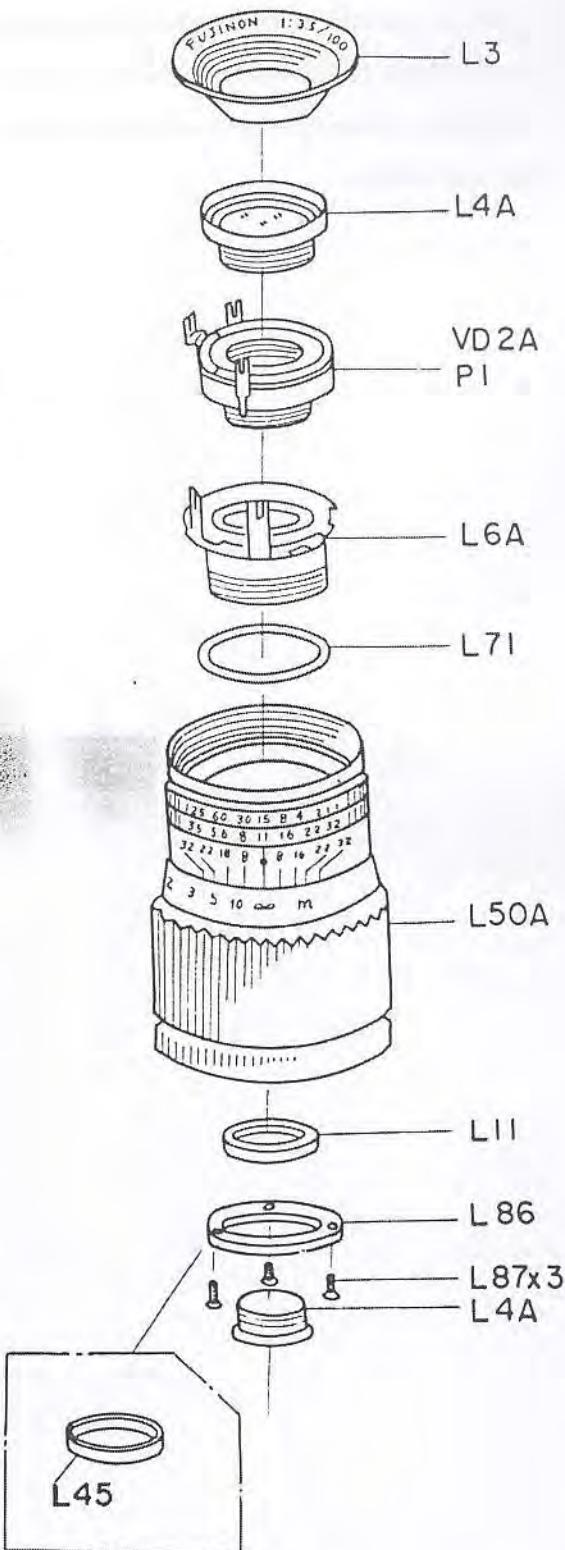


Fig. 1

B. Remove the tightening ring (L10) with the jig (L10-TA1), and remove the shutter set ring (L9), ring washer (L8), and release ring (L7).

II. INSTRUCTIONS FOR REPAIR, REASSEMBLY, AND ADJUSTMENT OF LENS BARREL UNIT

1. Reassembly, repair, and adjustment of the shutter installation seat (L6A).

A. Install the set ring (L9), washer (L8), and release ring (L7) on the shutter installation seat (L6A), and tighten the tightening ring (L10) with the Tool (L10-TA1).

B. When the shutter installation seat (L6A) does not operate effectively, check and correct each ring for warping, or apply Molicoat grease and smooth the operation.

2. Reassembly, repair, and adjustment of lens barrel and shutter installation seat (L6A)

A. Install the shutter installation seat (L6A) on the lens barrel with washer (L71), and secure it with the tightening ring (L45).

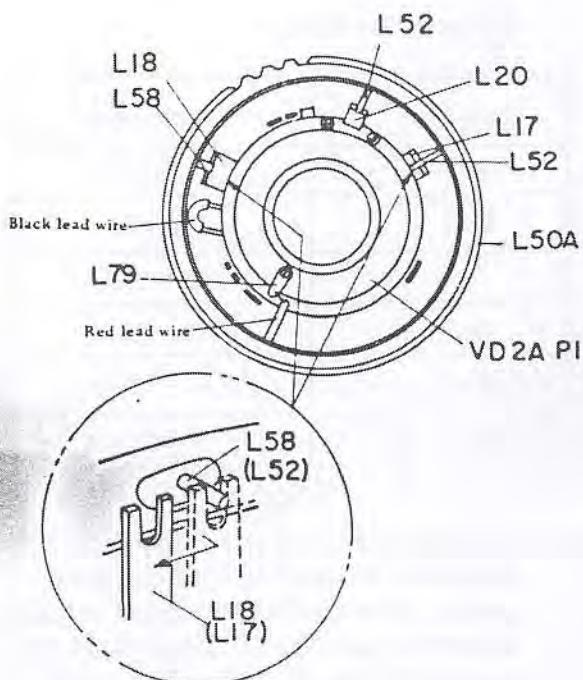


Fig. 2

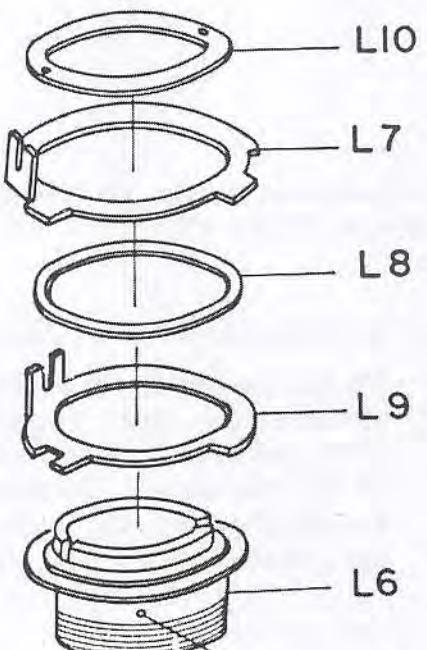


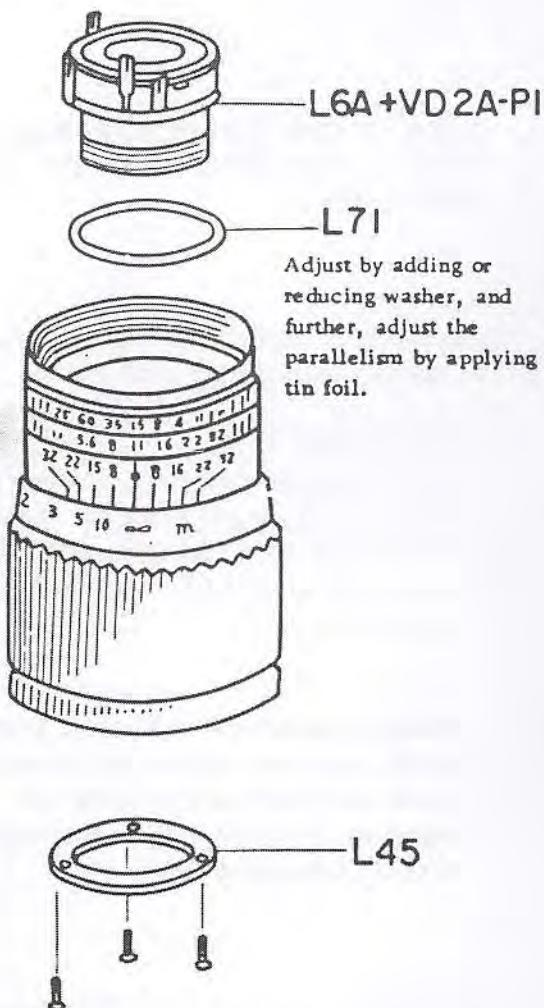
Fig. 3

B. For the focus adjustment, select proper washer from washers (L71) having various thicknesses. When the focus is unbalanced at one side, adjust the parallelism by using tin foil in lieu of the washer (L71).

Types of Washers

Part No.	Thickness
S-1	0.7 mm
S-2	0.5 mm
S-3	0.3 mm
S-4	0.1 mm
S-5	0.05 mm
S-6	0.03 mm

Note: Instructions for focus inspection are described in the forthcoming paragraph. When adjusting focus actually, adjust the washer thickness with the shutter (VD2A-P1) installed on the shutter installation seat (L6A).



3. Installation, repair, and adjustment of shutter (VD2A-P1)

3-1 Installing the shutter (VD2A-P1)

Fit the connecting pin (L52) into the groove on the shutter speed lever (L20) and install the shutter (VD2A-P1) on the lens barrel. Further, tightly fit the tightening ring (L11) to the shutter (VD2A-P1) with the Tool (L1-TA1).

Fig. 4

3-2 Adjusting shutter set and release

Install the lens barrel on which the shutter has been installed on the inspection jig (A0-GA6) by coinciding the position with the positioning pin. Set the shutter speed to "B" (Bulb), and set it with the set lever of the inspection jig (A0-GA6). Further, release the shutter with the release lever, and adjust the release ring (L7) and set ring (L9) gaps (spread or contract) properly so that the shutter operates correctly. Set the shutter speed to 1/500 sec., release the shutter, and make sure that the shutter operates correctly.



Fig. 5

3-3 Connection with the synchronizer and checking

Connect the synchronizer lead wire (Black) by means of solder and cover it with vinyl tube insulator. Connect the red lead wire to the lag plate (L79) also by means of solder. Next, connect a tester to the synchronizer terminal to check the synchronizer. Check the synchronizer for insulation at range of Rx1000 of the tester. Operate the synchronizer at shutter speed of 1/15 sec. or less, and check the M-X contact for the continuity. Now, reconnect the diaphragm lever (L17) and M-X changeover lever (L18) to the individual connecting pins (L52) and (L58).

The pointer does not deflect easily at a high shutter speed, and therefore, check the shutter operation at a low shutter speed.

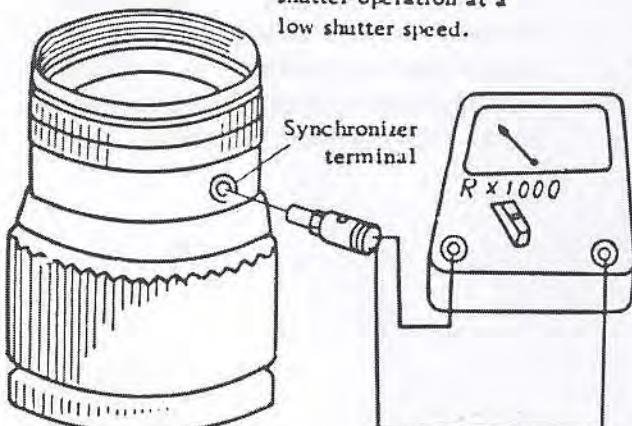


Fig. 6

3-4 Installing the front and rear lens groups (L1A) and (L4A)

Clean both front and rear surfaces of the front lens group (L1A), and securely tighten it with the Tool (L1-TA1). Further, tighten the rear lens group with the jig (L4-TA1) in the same manner. Next, set the shutter to "B" (Bulb) to keep it open, and make sure that no dust is stuck thereto. Tighten the lens plate (L3) with the Tool (L3-TA1).

4. Inspecting focus

4-1 Testing focus by means of chart image and collimator

Install the lens barrel on the main body, and set the test chart and camera (film surface) in two positions accurately distanced 2.5 meters. Apply a focus glass to the film rail surface, check sharpness of the chart image with a magnifying glass, and check the infinitude (∞) with the collimator. When the chart image is blurred at the center or circumference, or focus is unbalanced, re-adjust the lens position in accordance with the instructions described in the para. "II-2-A and B" above.

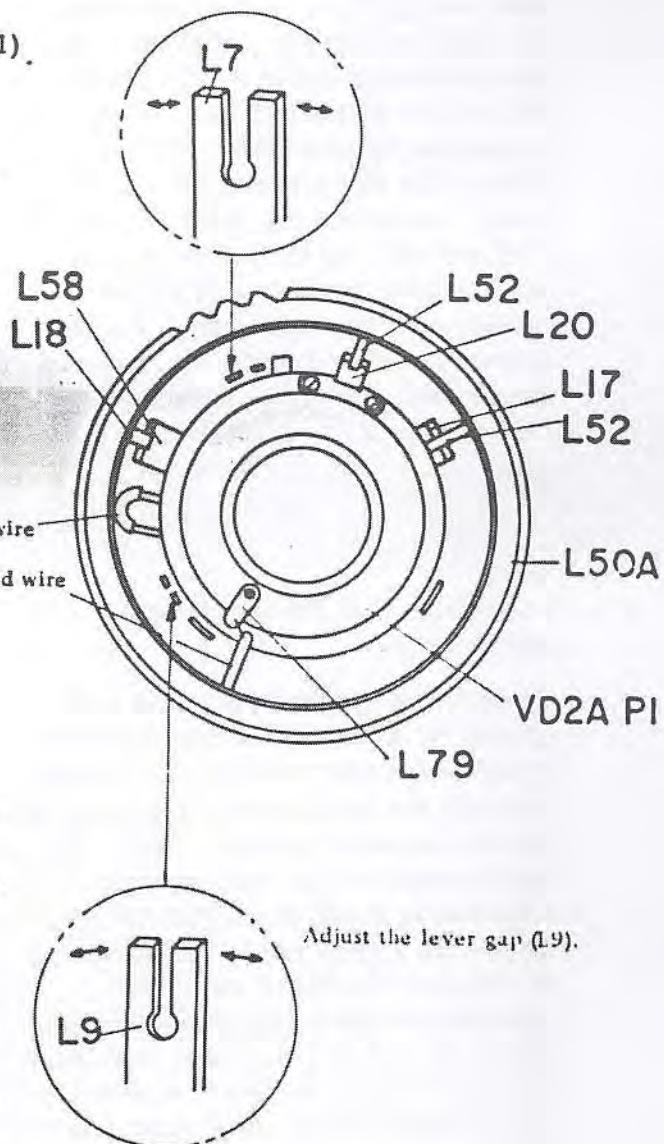


Fig. 7

4-2 Close distance photographing test

Position the camera (film surface) in a position accurately distanced 1.6 meters from the test chart, and take picture for trial. First, operate the helicoid from "1M" side and take two pictures at a distance where the interlocking range finder is coincided. Further, operate the helicoid from the infinite (∞) side, and take two pictures (total four pictures are taken) at a distance where the interlocking range finder is coincided.

4-3 Long Distance Photographing Test

Select a liner item distanced 1000 meters or longer, and take three pictures.

Long Distance Photographing Test
Judgement Standard: - All three pictures must be clearly appeared.

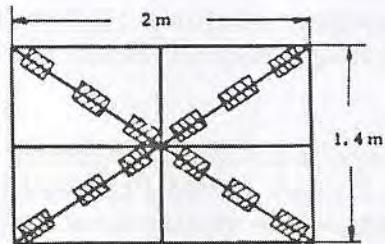
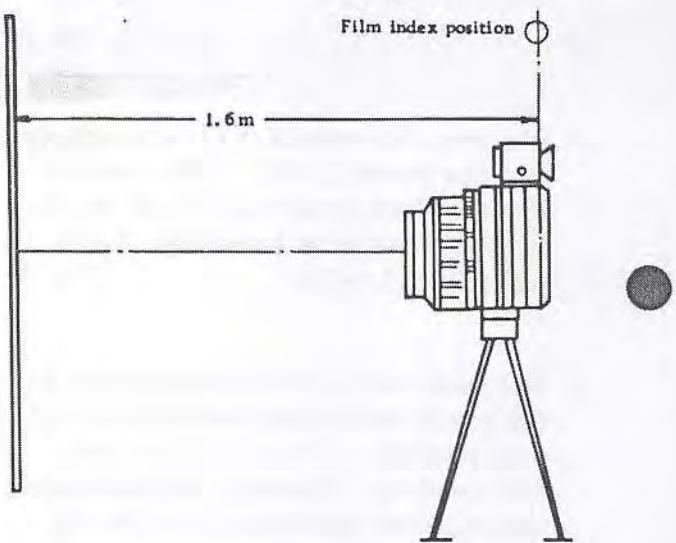


Fig. 8

I. INSTRUCTIONS FOR DISASSEMBLY OF LENS BARREL (150 mm)

1. Disassembling lens front group (L1A), rear group (L4A), and shutter
 - A. Remove the lens plate (L8) with the Tool (L3-TA1). Fig. 1
 - B. Remove the front lens group (L1A) with the Tool (L1-TA1) and rear lens group (L4A) with Tool (L4-TA1). Fig. 1
 - C. The black color lead wire connected to the synchronizer is provided with vinyl tube insulator. Move it to one side, and unsolder. Unsolder and disconnect the red color lead wire from the lag plate (L71). Next, disconnect the diaphragm lever (L16) and M-X changeover lever (L17) from the connecting pins (L51) and (L57). Fig. 2
 - D. Remove the shutter fastening ring (L-15) with the Tool (L11-TA1), and remove the shutter from the lens barrel carefully so that the shutter speed lever (L19) is not damaged. Fig. 1
2. Disassembling shutter installation seat (L9A)
 - A. Remove the ring installation screws (L81, 3 each), and remove the ring (L80), adjust washer (L74), and shutter installation seat (L6A) from the lens barrel. Fig. 1

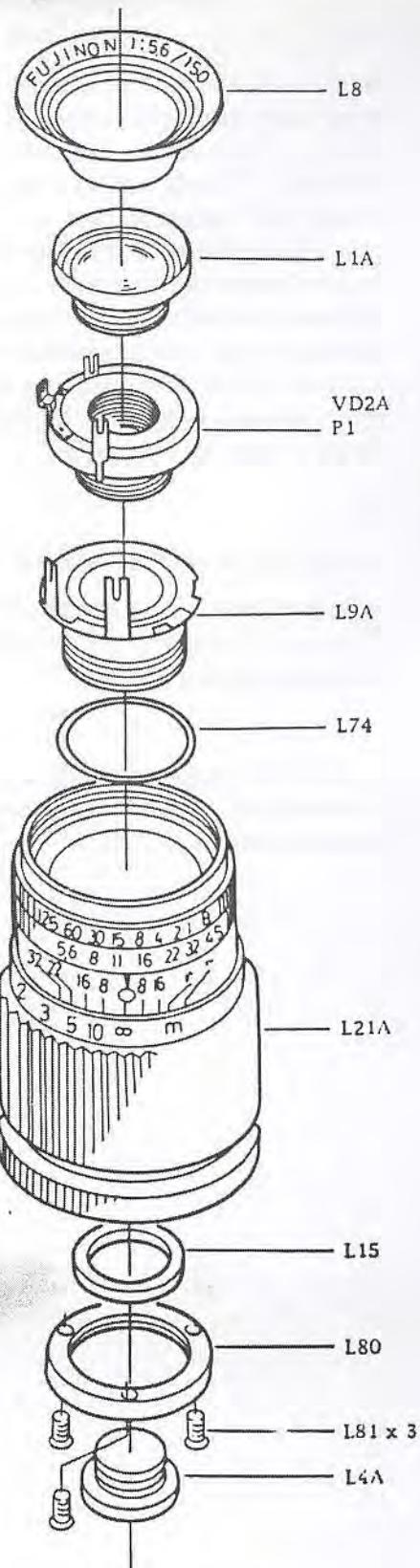


Fig. 1

- B. Remove the tightening ring (L14) with the Tool (L10-TA1), and remove the shutter set ring (L13), ring washer (L12), and release ring (L11).

Fig. 3

II. INSTRUCTIONS FOR REASSEMBLY, REPAIR, AND ADJUSTMENT OF LENS BARREL UNIT

1. Reassembly, repair, and adjustment of the shutter installation seat (L9A).

- A. Install the set ring (L13), washer (L12), and release ring (L11) on the shutter installation seat (L9A), and tighten the tightening ring (L14) with the Tool (L10-TA1). Fig. 3

- B. When the shutter installation seat (L6A) does not operate effectively, check and correct each ring for warping, or apply Molicoat grease and smooth the operation. Fig. 3

2. Reassembly, repair, and adjustment of the lens barrel and shutter installation seat (L9A)

- A. Install the shutter installation seat (L9A) on the lens barrel with washer (L74), and tighten the ring (L79) with screws (L80, 3 each). Fig. 4

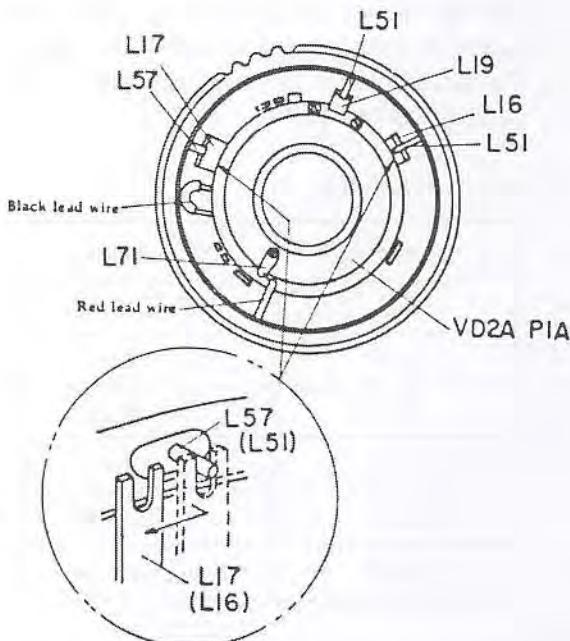


Fig. 2

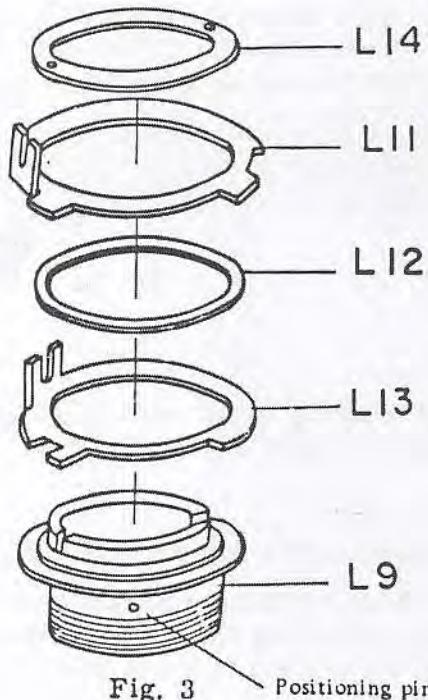


Fig. 3 Positioning pin

A. Install the shutter installation seat (L9A) on the lens barrel with washer (L71), and tighten the ring (L80) with screws (81, 3 each). Fig. 4

B. For the focus adjustment, select proper washer from washers (L74) having various thicknesses. When the focus is unbalanced at one side, adjust the parallelism by using tin foil in lieu of the washer (L74). Fig. 4

Types of Washers.

Part No.	Thickness
S-1	0.7 mm
S-2	0.5 mm
S-3	0.3 mm
S-4	0.1 mm
S-5	0.05 mm
S-6	0.03 mm

Note: Instructions for focus inspection are described in the forthcoming paragraph. When adjusting focus actually, adjust the washer thickness with the shutter (VD2A-P1) installed on the shutter installation seat (L9A).



Fig. 4

3. Installation, repair, and adjustment of shutter (VD2A-P1)

3.1 Installing the shutter (VD2A-P1)

Fit the connecting pin (L51) into the groove on the shutter speed lever (L19) and install the shutter (VD2A-P1)

on the lens barrel. Further, tightly fit the tightening ring (L11) to the shutter (VD2A-P1) with the tool (L11-TA1).
Fig. 2.3.

3.2 Adjusting shutter set and release

Install the lens barrel on which the shutter has been installed on the inspection tool (AO-GA6) by coinciding the position with the positioning pin. Set the shutter speed to "B" (Bulb), and set it with the set lever of the inspection tool (AO-GA6). Further, release the shutter with the release lever, and adjust the release ring (L13) and set ring (L11) gaps (open or close) properly so that the shutter operates correctly. Set the shutter speed to 1/500 sec., release the shutter, and make sure that the shutter operates correctly. Fig. 5 and 7.

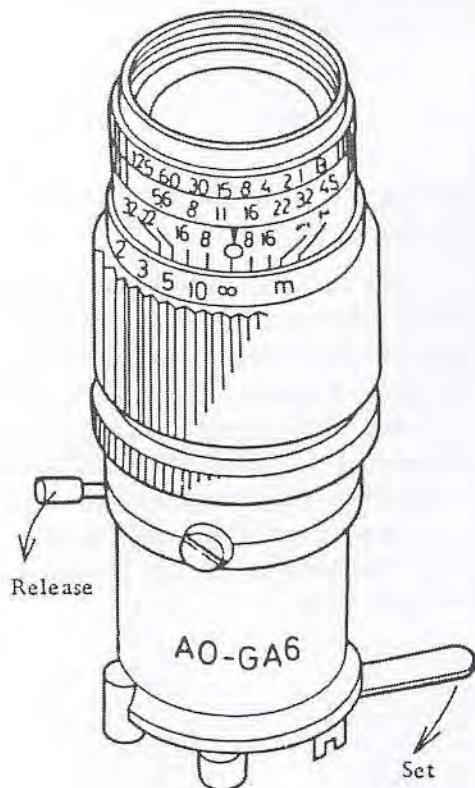


Fig. 5

3.3 Connection with the synchronizer and checking

Connect the synchronizer lead wire (black) by means of solder and cover it with vinyl tube insulator. Connect the red lead wire to the lag plate (L71) also by means of solder. Next, connect a tester to the synchronizer terminal to check the synchronizer. Check the synchronizer for insulation at range of RX1000 of the tester. Operate the synchronizer at shutter speed of 1/15 sec. or less, and check the M-X contact for the continuity.

Now, reconnect the diaphragm lever (L16) and M-X changeover lever (L17)

The pointer does not deflect easily at a high shutter speed, and therefore, check the shutter operation at a low shutter speed.

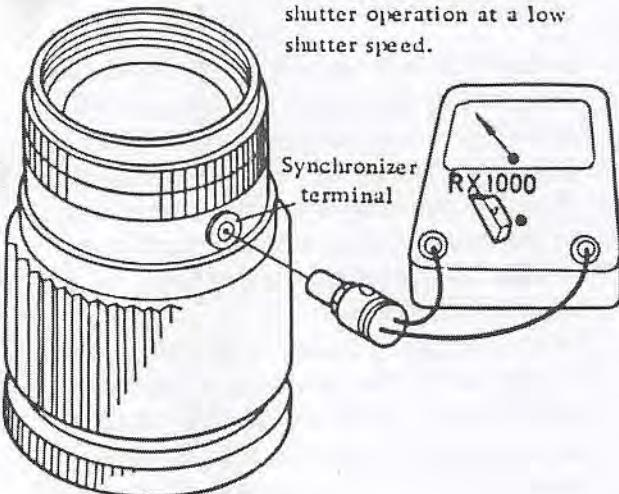
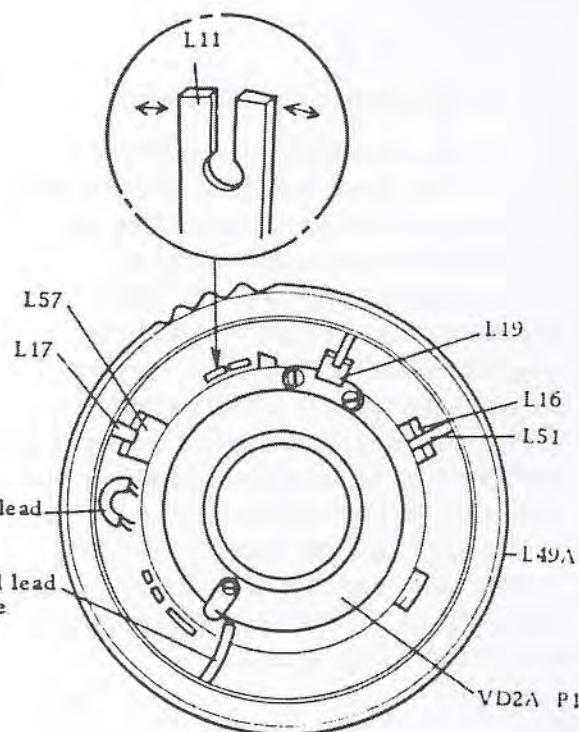


Fig. 6

to the individual connecting pins (L51) and (L57). Fig. 6

3.4 Installing the front and rear lens groups (L1A) and (L4A)

Clean both front and rear surfaces of the front lens group (L1A), and securely tighten the front lens group with the Tool (L1-TA1). Further, tighten the rear lens group with the Tool (L4-TA1) in the same manner. Next, set the shutter to "B" (Bulb) to keep it open, and make sure that no dust is stuck thereto. Tighten the lens plate (L8) with the Tool (L3-TA1). Fig. 1



4. Inspecting focus

4-1 Testing focus by means of chart image and collimator

Install the lens barrel on the main body, and set the test chart and camera (film surface) in two positions accurately distanced 3.5 meters. Apply a focus glass to the film rail surface, check sharpness of the chart image with a magnifying glass, and check the infinitude (∞) with the collimator.

When the chart image is blurred at the center or circumference, or focus is unbalanced, readjust the lens position in accordance with the instructions described in the paragraph "II-2-A and B" above. Fig. 8

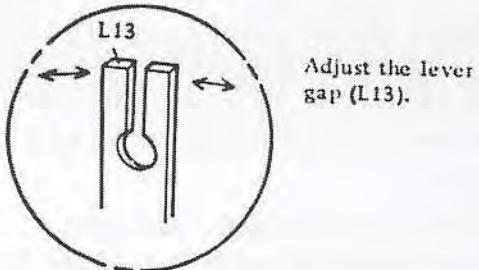
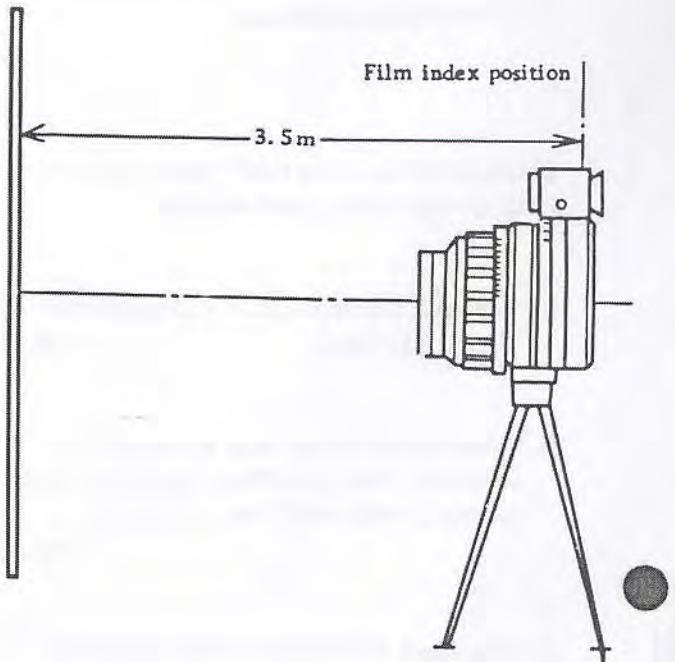


Fig. 7

4.2 Close distance photographing test

Position the camera (film surface) in a position accurately distanced 3.5 meters from the test chart, and take picture for trial. First, operate the helicoid from "1M" side and take two pictures at a distance where the interlocking range finder is coincided. Further, operate the helicoid from the infinite distance side (∞), and take two pictures (total four pictures are taken) at a distance where the interlocking range finder is coincided.



4.3 Long distance photographing test

Select a linear item distanced 1000 meters or longer from the camera, and take three pictures.

Long distance photographing test
judgement standard: All three pictures
should be clearly appeared.

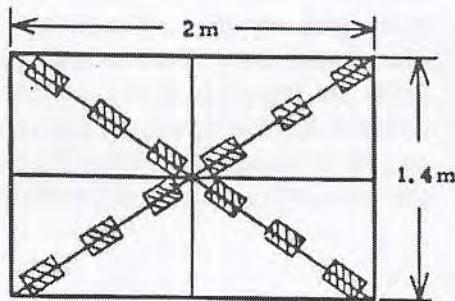


Fig. 8

I. INSTRUCTIONS FOR DISASSEMBLY OF LENS BARREL (180 mm)

1. Disassembling lens front group (L1A), rear group (L5A), and shutter.

A. Remove the lens plate (L3) with the Tool (L3-TA1). Fig. 1

B. Remove the front lens group (L1A) with the Tool (L1-TA1) and rear lens group (L5A) with Tool (L5-TA1). Fig. 1

C. The back color lead wire connected to the synchronizer is provided with vinyl tube insulator. Move it to one side, and unsolder. Unsolder and disconnect the red color lead wire from the lag plate (L71). Next, disconnect the diaphragm lever (L16) and M-X changeover lever (L17) from the connecting pins (L51) and (L57). Fig. 2

D. Remove the shutter fastening ring (L15) with the Tool (L11-TA1), and remove the shutter from the lens barrel carefully so that the shutter speed lever (L19) is not damaged. Fig. 2

2. Disassembling shutter installation seat (L6A)

A. Remove the ring installation screws (L87, 3 each), and remove the ring (L86), adjust washer (L74) and shutter installation seat (L9A) from the lens barrel (L21A) Fig. 1

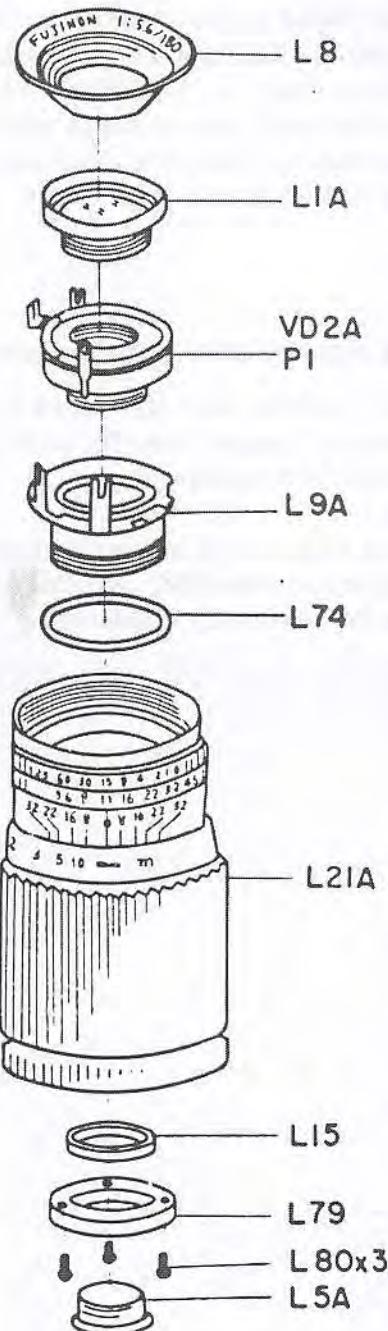


Fig. 1

B. Remove the tightening ring (L14) with the Tool (L10-TA1), and remove the shutter set ring (L11), ring washer (L12), and release ring (L13). Fig. 3

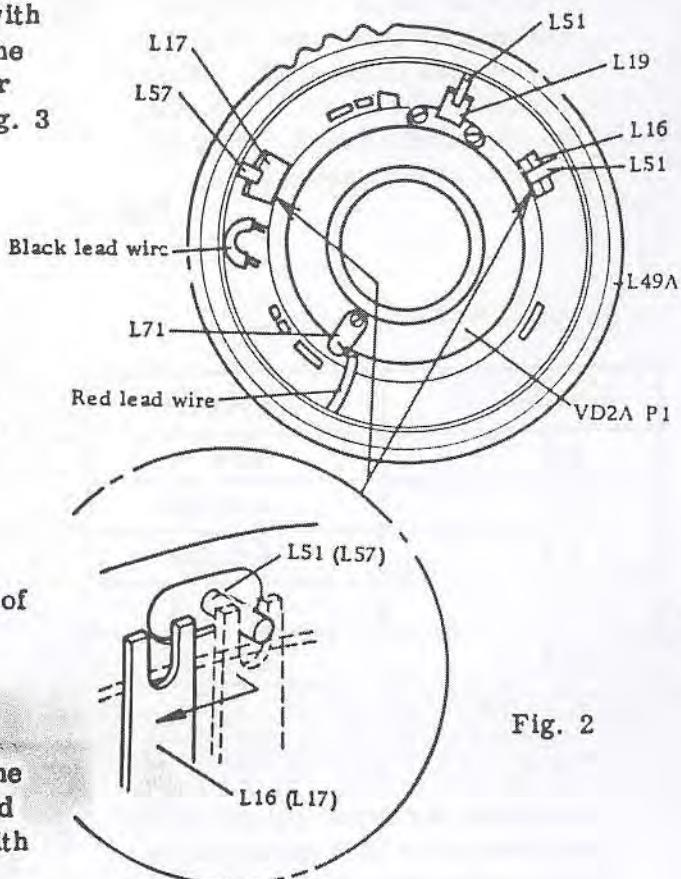


Fig. 2

II. INSTRUCTIONS FOR REASSEMBLY, REPAIR, AND ADJUSTMENT OF LENS BARREL UNIT

1. Reassembly, repair, and adjustment of the shutter installation seat (L9A)

A. Install the set ring (L11), washer (L12), and release ring (L13) on the shutter installation seat (L9A), and tighten the tightening ring (L14) with the Tool (L10-TA1). Fig. 3

B. When the shutter installation seat (L9A) does not operate effectively, check and correct each ring for warping, or apply Molicoat grease and smooth the operation. Fig. 3

2. Reassembly, repair, and adjustment of the lens barrel and shutter installation seat (L6A)

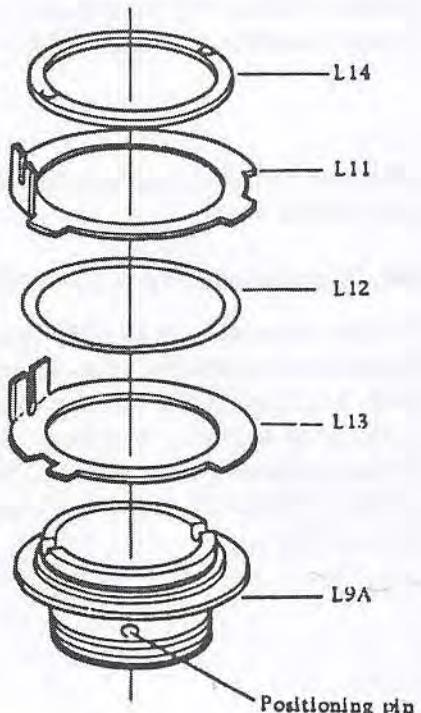


Fig. 3

B. For the focus adjustment, select proper washer from washers (L74) having various thicknesses. When the focus is unbalanced at one side, adjust the parallelism by using tin foil in lieu of the washer (L74).

Fig. 4

Types of Washers

Part No.	Thickness
S-1	0.7 mm
S-2	0.5 mm
S-3	0.3 mm
S-2	0.1 mm
S-1	0.05 mm
S-6	0.03 mm

Note: Instructions for focus inspection are described in the forthcoming paragraph. When adjusting focus actually, adjust the washer thickness with the shutter (VD2A-P1) installed on the shutter installation seat (L6A).

3. Installation, repair, and adjustment of shutter (VD2A-P1)

3-1 Installing the shutter (VD2A-P1)

Fit the connecting pin (L51) into the groove on the shutter speed lever (L19) and install the shutter (VD2A-P1) on the lens barrel. Further, tightly fit the tightening ring (L15) to the shutter (VD2A-P1) with the Tool (L11-TA1).

Fig. 1



Fig. 4

3-2 Adjusting shutter set and release

Install the lens barrel on which the shutter has been installed on the inspection Tool (A0-GA6) by coinciding the position with the positioning pin. Set the shutter speed to "B" (Bulb), and set it with the set lever of the inspection Tool (A0-GA6). Further, release the shutter with the release lever, and adjust the release ring (L11) and set ring (L13) gaps (open or close) properly so that the shutter operates correctly. Set the shutter speed to 1/500 sec., release the shutter, and make sure that the shutter operates correctly.

Fig. 5 and 7

3-3 Connection with the synchronizer and checking

Connect the synchronizer lead wire (black) by means of solder and cover it with vinyl tube insulator. Connect the red lead wire to the lag plate (L79) also by means of solder. Next, connect a tester to the synchronizer terminal to check the synchronizer. Check the synchronizer for insulation at range of RX1000 of the tester. Operate the synchronizer at shutter speed of 1/15 second or faster, and check the M-X contact for the continuity. Now, re-connect the diaphragm lever (L16) and M-X changeover lever (L17) to the individual connecting pins (L52) and (L58).

Fig. 6

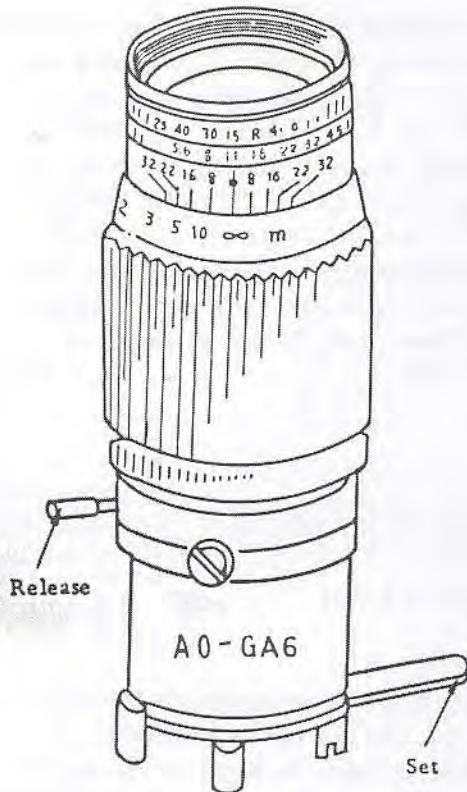


Fig. 5

The pointer does not deflect easily at a high shutter speed, and therefore, check the shutter operation at a low shutter speed.

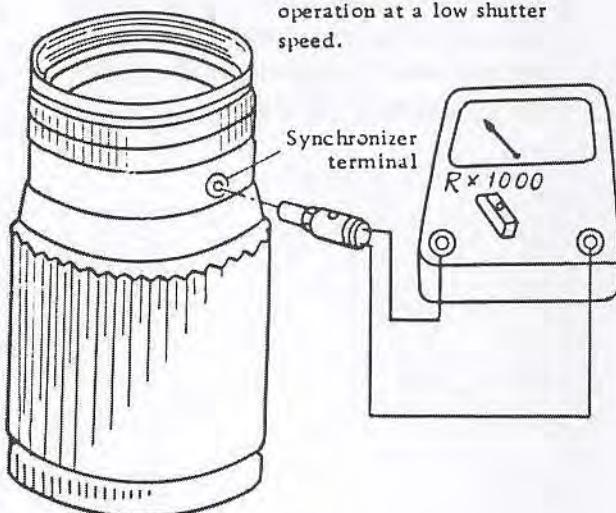
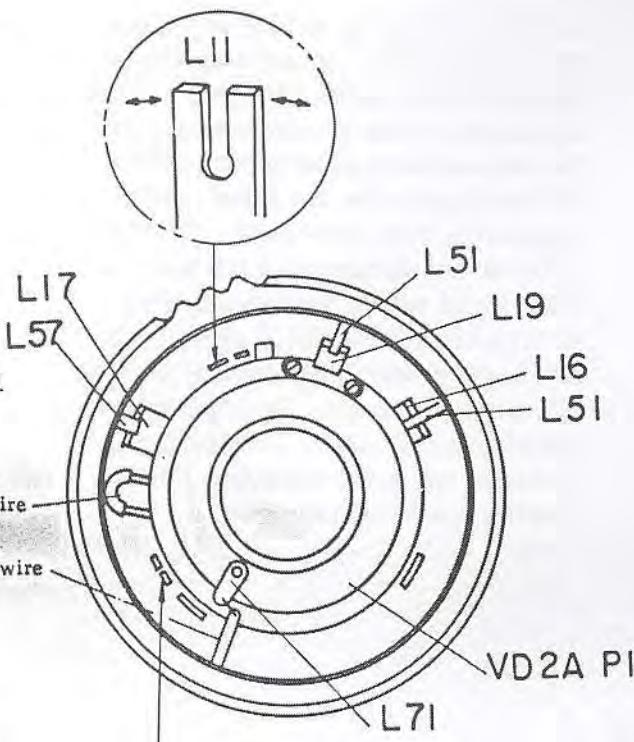


Fig. 6

3-4 Installing the front and rear lens groups (L1A) and (L4A)

Clean both front and rear surfaces of the front lens group (L1A), and securely tighten the front lens group with the Tool (L1-TA1). Further, tighten the rear lens group with the Tool (L4-TA1) in the same manner. Next, set the shutter to "B" (Bulb) to keep it open, and make sure that no dust is stuck thereto. Tighten the lens plate (L8) with the Tool (L3-TA1).

Fig. 1

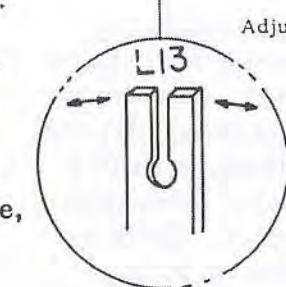


4. Inspecting focus

- 4-1 Install the lens barrel on the main body, and set the test chart and camera (film surface) in two positions accurately distanced 4.4 meters. Apply a focus glass to the film rail surface, check sharpness of the chart image with a magnifying glass, and check the infinitude (∞) with the collimator. When the chart image is blurred at the center or circumference, or focus is unbalanced, readjust the lens position in accordance with the instructions described in the para. "II-2-A and B" above.

Fig. 8

Fig. 7



Adjust the lever gap (L13).

4-2 Close distance photographing test

Position the camera (film surface) in a position accurately distanced 4.4 meters from the test chart, and take picture for trial. First, operate the helicoid from "1M" side and take two pictures at a distance where the interlocking range finder is coincided. Further, operate the helicoid from the infinite distance side (∞), and take two pictures (total four pictures are taken) at a distance where the interlocking range finder is coincided.

4-3 Long distance photographing test

Select a linear item distanced 1000 meters or longer from the camera, and take three pictures.

Long Distance Photographing Test
Judgement Standard: All three pictures should be clearly appeared.

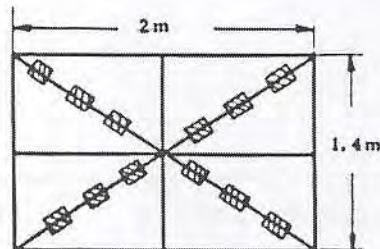
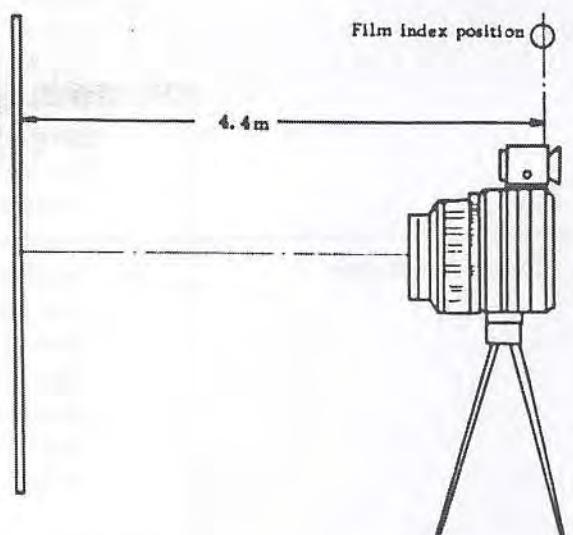


Fig. 8

FUJICA G690

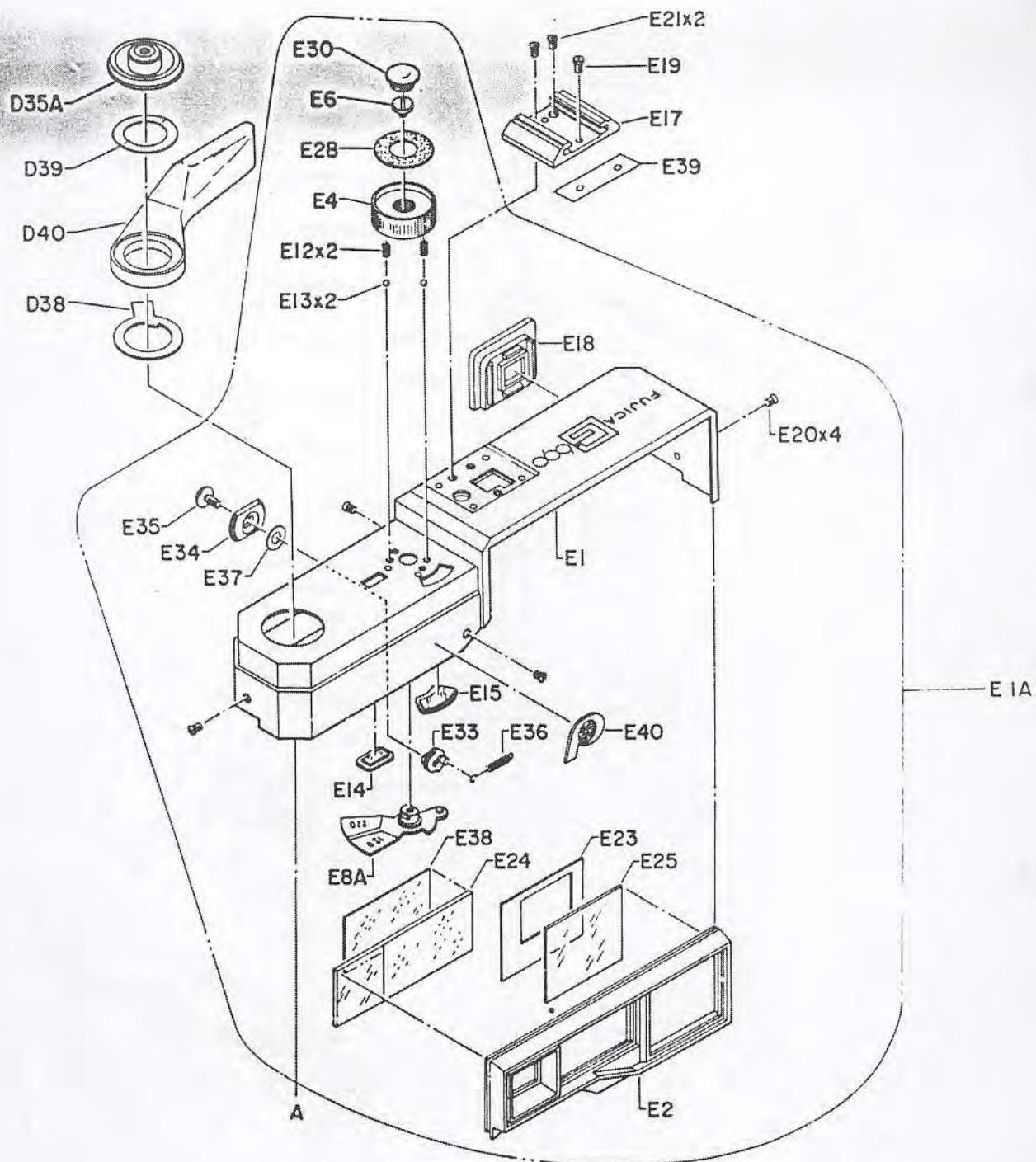
POINTS OF INSPECTION

INSPECTION POINTS	INSPECTION METHODS
1. Film Feeding	<p>(1) Use test film and repeat the winding operations several times. Check that two windings advance one frame of film. At the first winding, see that taking off the finger while halfway through does not make the lever return, also at whichever winding if the lever is wound fully it should always return smoothly by itself. During the winding, the finger should feel conspicuous grating.</p>
2. Counter Advance	<p>(1) Load test film, wind lever twice and check that counter indicates "1". Next, if film is Size 120, match film indicator to "120". Check that every two windings of lever advances one frame number of counter and that it counts up to 8 frames and goes no further.</p> <p>(2) Next, if film is Size 220, set film indicator of counter to "220" and check in the same way that it counts up to 16 frames.</p> <p>In either case, open back cover gently and check that this action makes counter return to "S" (start) position.</p>
3. Rangefinder Coupling	<p>(1) Attach standard lens to camera. While viewing an infinity subject, gently turn distance ring and check that at its infinity position the two images coincide.</p> <p>(2) Turn distance ring and check that viewfinder's field of view frame works smoothly from close distance to infinity.</p>
4. Shutter Release	<p>(1) Mount standard lens on camera, load film and set sheet-roll switch-lever to "R". Wind film advance lever and press shutter button. In this case shutter button should work smoothly and require pressure of under 1 kg.</p>

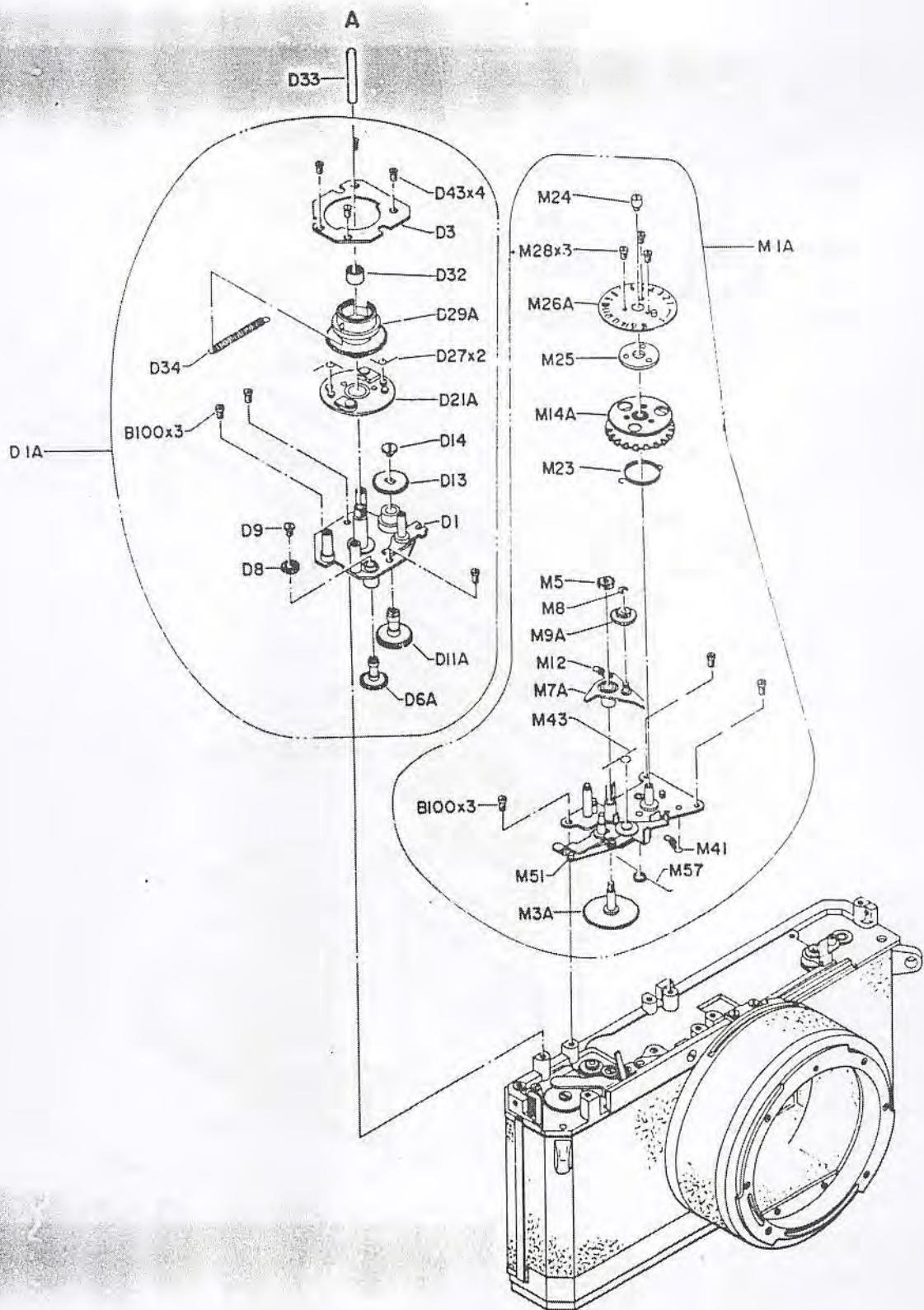
INSPECTION POINTS	INSPECTION METHODS
	<p>(2) Check that during the winding the shutter button becomes locked and unworkable.</p> <p>(3) When pressing the shutter button, if the hand leaves the button before the shutter is released, it should make the next lever winding impossible.</p> <p>(4) When sheet-roll lever is set to "S". the shutter should be workable all the time.</p> <p>(5) When the lightproof curtain for lens interchanging is closed, the shutter button should become locked and the shutter unworkable.</p>
5. Lightproof Curtain Operation	<p>(1) Check that when the winding knob is wound up and held by hook the lightproof curtain completely covers the film mask surface.</p> <p>(2) When rewind button is pushed in the direction of arrow, the curatin should open out by itself and completely leave the film mask surface.</p>
6. Back Cover	<p>(1) Pull down knob and open back cover, Next close it and check that it locks firmly.</p>
7. Sheet-Roll Switching Check	<p>(1) When set to "R", the shutter should be workable only by regular operation. When set to "S" the shutter should be workable all the time.</p>
8. Excessive and Insufficient Number of Parts	Not to be permitted.
9. Outward Appearance	It should have no conspicuous scratches, dust or stains and no unsightly dust or dirt on the inside of taking lens and viewfinder.
10. Condition of various parts of camera after checking.	<p>(1) Film selector: "120" position (2) Shutter speed: "B" position (3) Diaphragm: "3.5" position (4) R-S changeover knob "R" position (5) Synchro-contact changeover knob: "X" position</p>

INSPECTION POINTS	INSPECTION METHODS
	(6) Helicoid: "∞" position (7) Light shielding curtain: "Open" position (8) Pressure plate: "120" side (9) Film spool "Winding" side

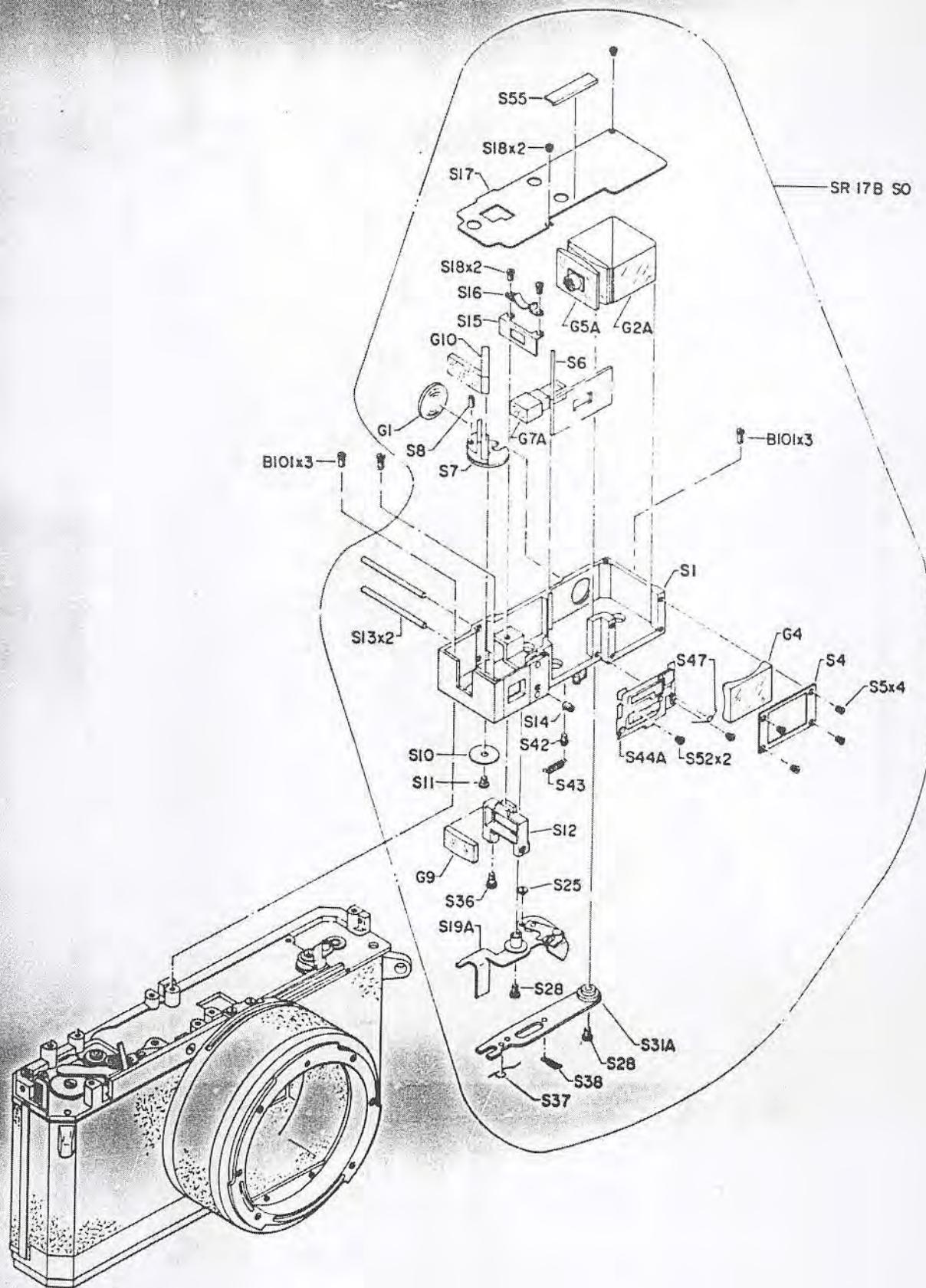
TOP COVER, FILM ADVANCE



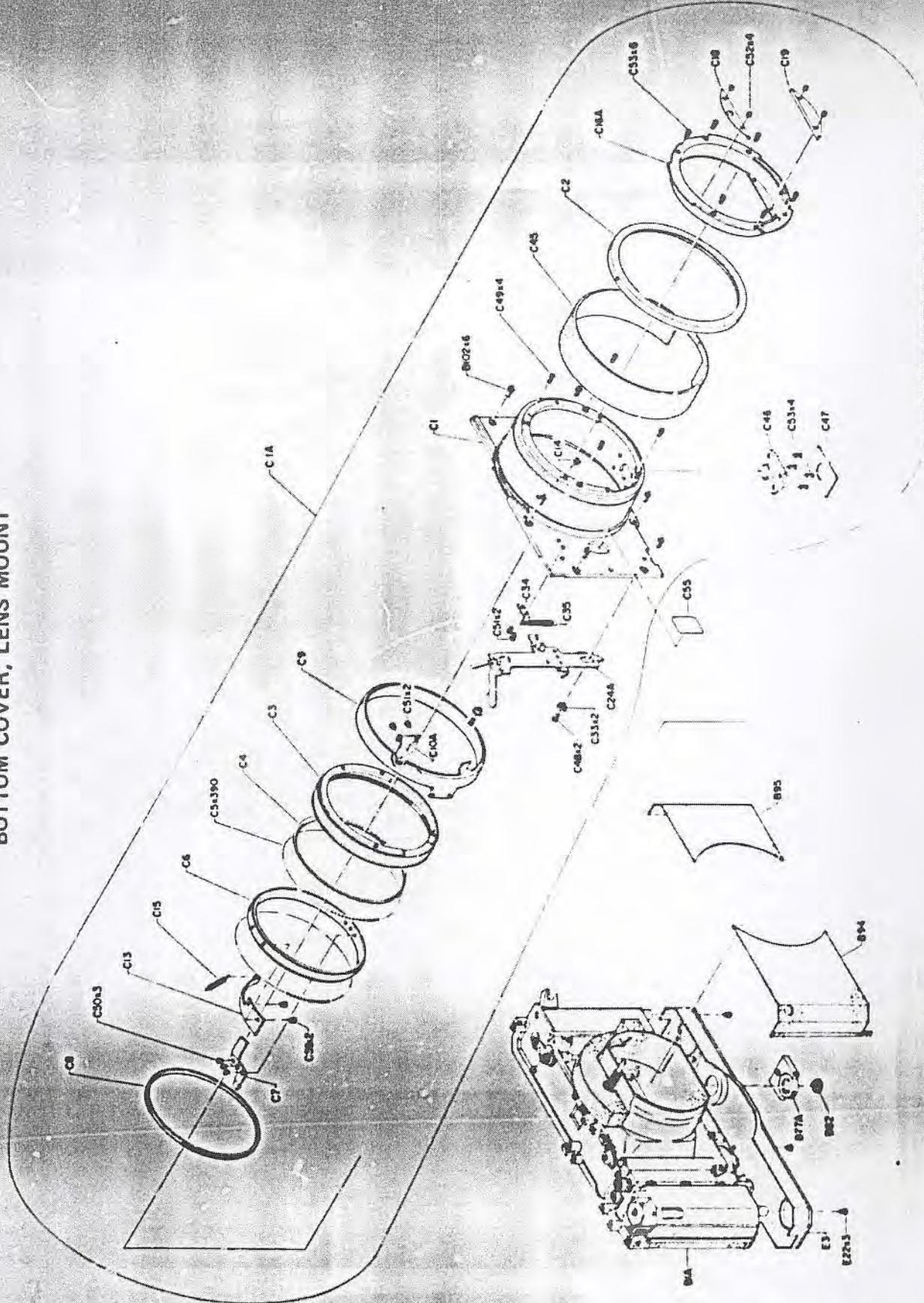
COUNTER, FILM ADVANCE MECHANISM



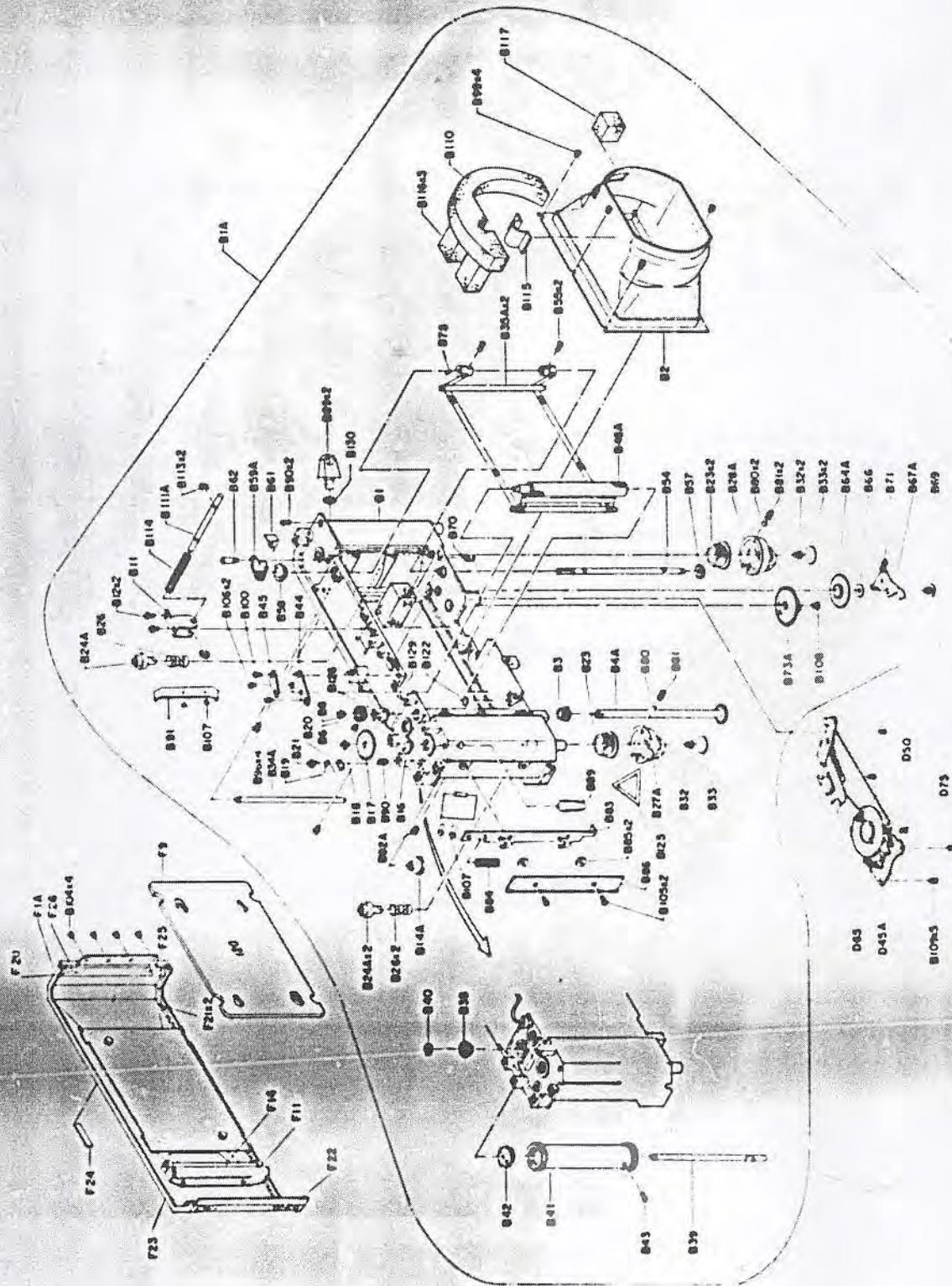
RANGE FINDER



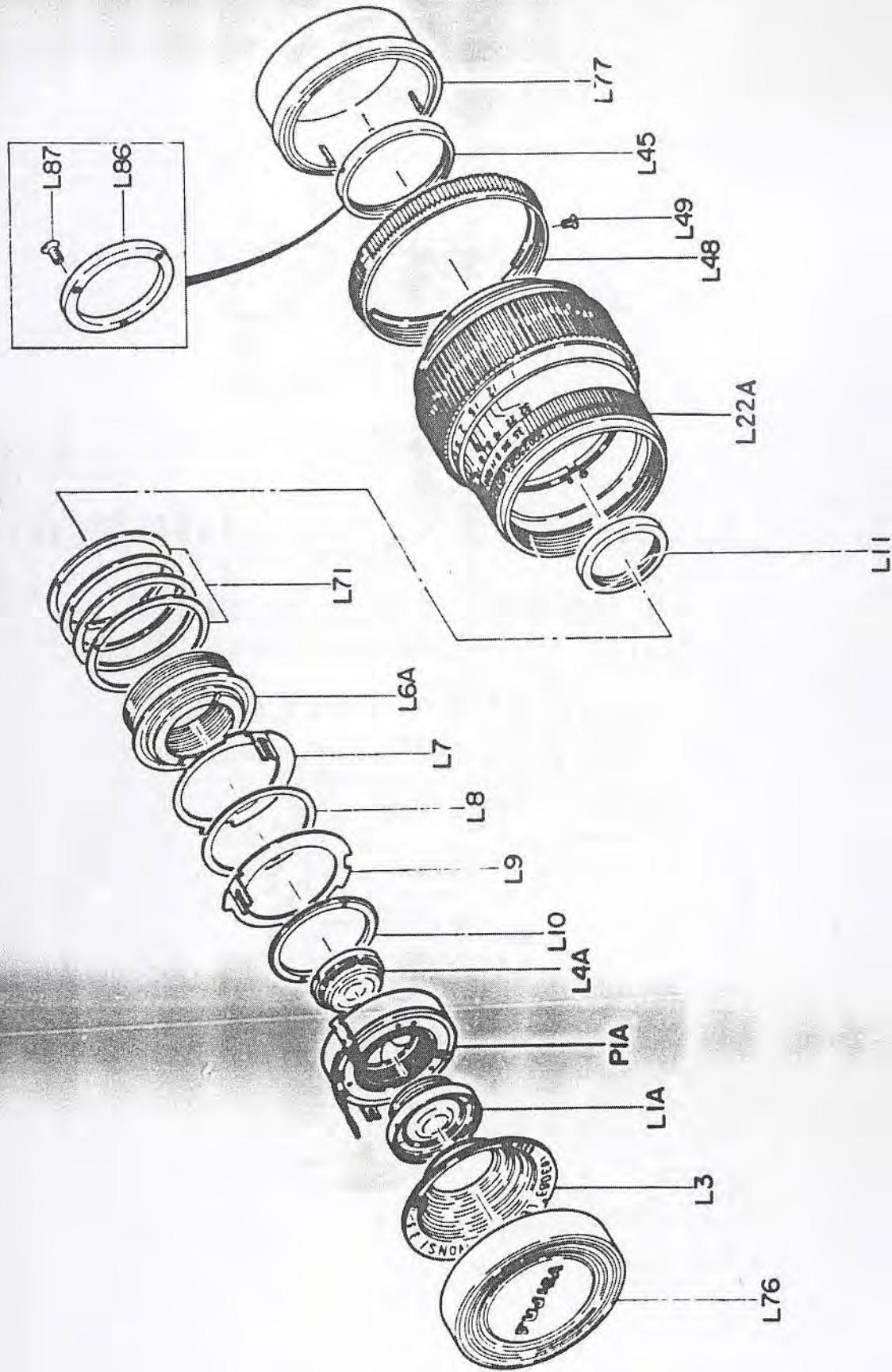
BOTTOM COVER, LENS MOUNT



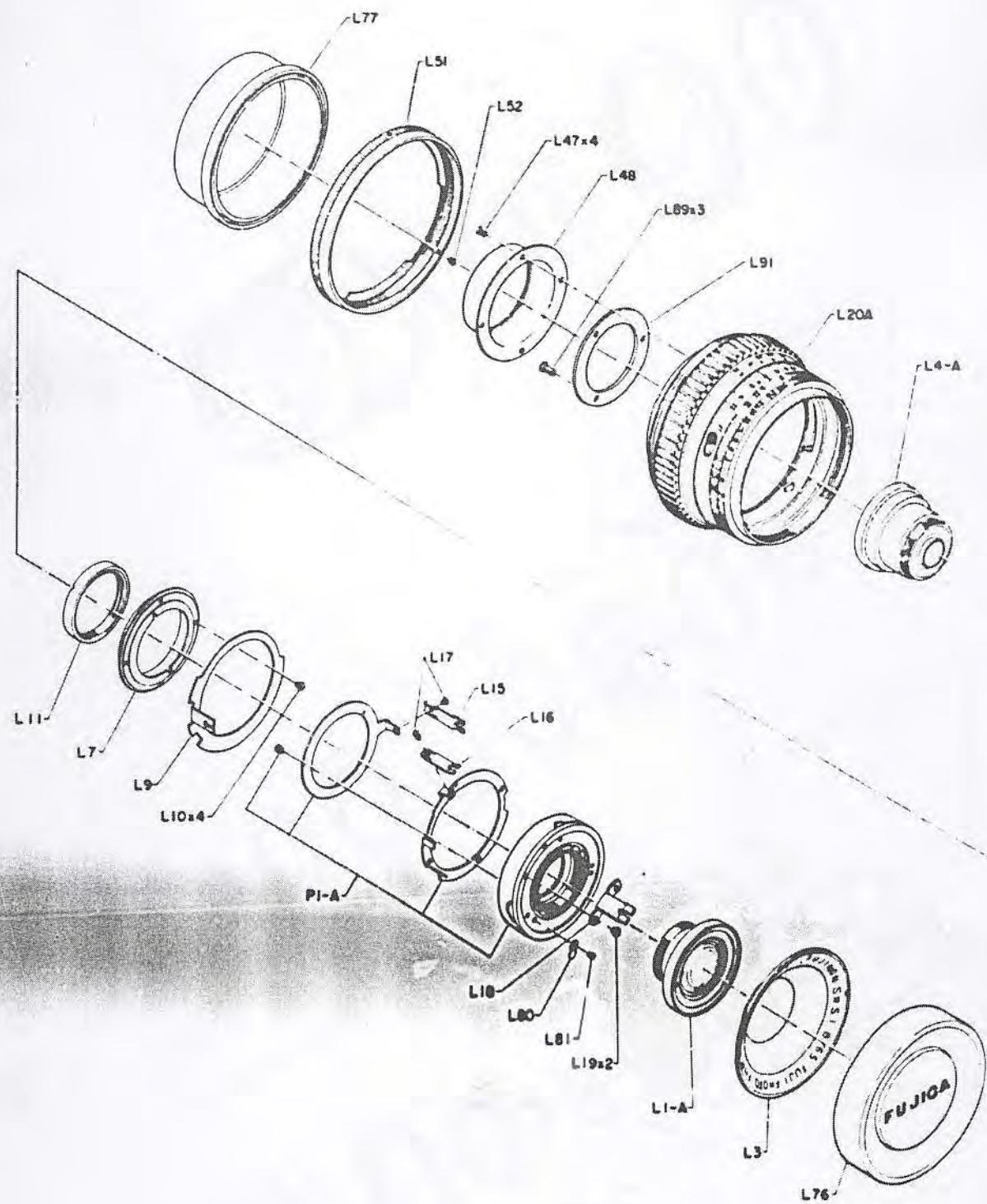
BODY, BACK COVER



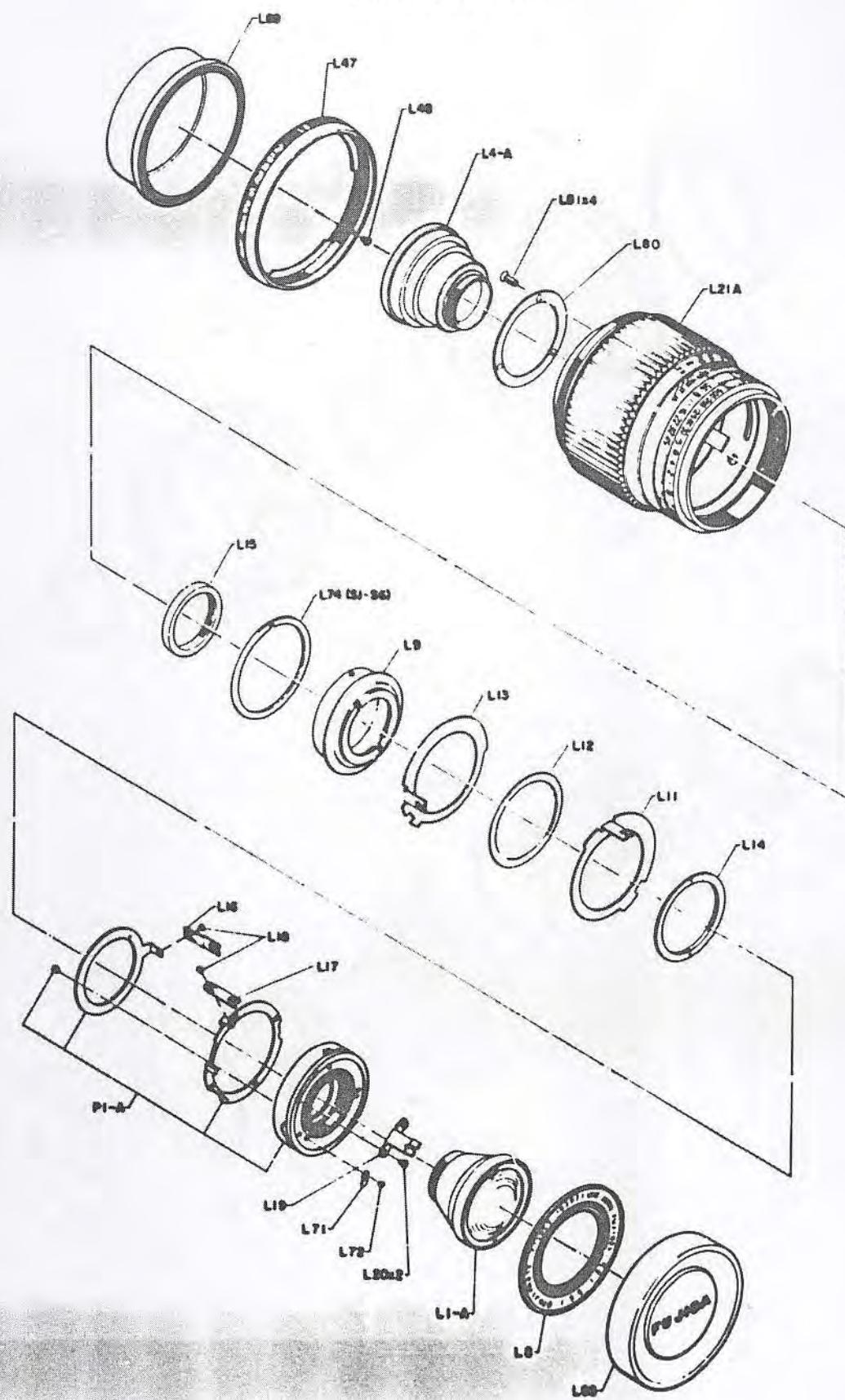
3.5/100 mm LENS



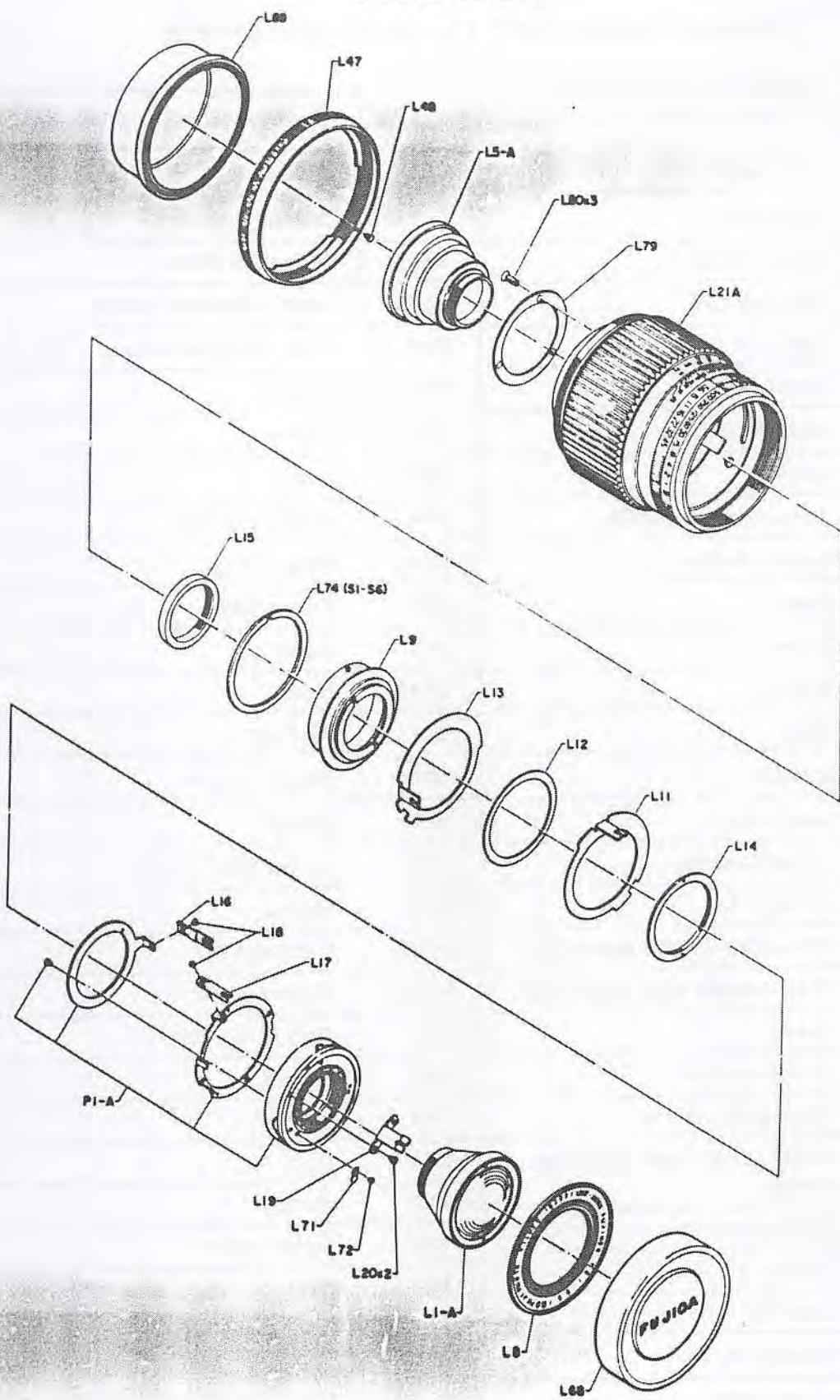
8/65 mm LENS



5.6/150 mm LENS



5.6/180 mm LENS



STANDARD REPAIR PARTS FOR FUJICA G690 CAMERA

Parts No.	Parts Name	Parts No.	Parts Name
B1A	Body unit	B43	Screw
B2	Lens barrel	B44	Spindle holder
B3	Spindle holder	B45	Adjusting plate
B4A	Gear spindle	B48A	Light shielding curtain
B6	Gear	B48	Film take up drum
B8	Screw	B54	Spindle
B11	Spindle holder	B55	Screw
B12	Screw	B57	Gear
B14A	Film take up spindle	B58	Spindle holder
B16	Spindle holder	B59A	Signal lever
B17	Gear	B61	Signal plate
B18	Screw	B62	Guide pin
B19	Spring	B64A	Gear
B20	Pawl	B66	Washer
B21	Spindle	B67A	Stopper plate
B23	Guide ring	B69	Screw
B24A	Spindle holder	B70	Spring hook screw
B26	Spring	B71	Spring
B27A	Film take up side lever base	B73A	Gear spindle
B28A	Film rewind side lever base	B77A	Rotary plate
B32	Screw	B80	Ball (2 mm dia.)
B33	Cover leather	B81	Spring
B34A	Film guide roller	B82	Screw
B35A	Guide roller light shielding curtain	B83	Pawl
		B84	Spring
B38	Spindle holder	B85	Guide roller
B39	Spindle	B86	Leather base plate
B40	Gear	B89	Neck strap eyelet
B41	Counter drum	B90	Set screw
B42	Film guide	B94	Body left side leather

Parts No.	Parts Name	Parts No.	Parts Name
B95	Body right side leather	C16A	Bayonet ring
B96	Film positioning pin	C18	Light shielding plate
B99	Screw 1.7 mm dia.	C19	Light shielding plate
B100	Screw 2 mm dia.	C24A	Release guide lever
B101	Screw 2 mm dia.	C33	Collar
B102	Screw 2.6 mm dia.	C34	Spring hook plate
B104	Screw 1.7 mm dia.	C35	Spring
B105	Screw 1.7 mm dia.	C45	Leather
B106	Screw 2 mm dia.	C46	Tripod socket
B108	Screw	C47	Leather
B109	Screw 2 mm dia.	C48	Screw 2 mm dia.
B110	Mortprene	C49	Screw 2 mm dia.
B111A	Range counter interlock rod	C50	Screw 1.7 mm dia.
B113	E-washer	C51	Screw 1.7 mm dia.
B114	Spring	C53	Screw 2 mm dia.
B115	Holding plate	C55	Sheet plate
B116	Mortprene	D1A	Film take up mechanism unit
B117	Mortprene	D3	Plate
B122	Spring	D6A	Spindle
B129	Spindle holder	D8	Gear
C1A	Lens installation plate	D9	Screw
C2	Ring	D11A	Gear
C3A	Set ring	D13	Gear
C4	Washer	D14	Screw
C5	Ball, 1.2 mm dia.	D21A	Stop ratchet wheel
C6	Set ring	D27	Spring
C7	Set lever	D29A	Sleeve
C8	Holder ring	D30	Screw
C9	Release ring	D32	Round head nut
C10A	Release lever	D33	Release spindle
C13	Spring plate	D34	Spring
C15	Spring	D35A	Release button

Parts No.	Parts Name	Parts No.	Parts Name
D37	Washer	E36	Spring
D38	Clutch plate	E37	Washer
D39	Spring washer	E38	Filter
D40	Take up lever	E34	Knob
D43	Screw 1.7 mm dia.	E40	Symbol mark
D45A	Shutter set mechanism unit	F1A	Rear cover
D50	E-washer	F9	Pressure plate
D65	Spring	F11	Roller
D75	Spring	F14	Roller
E1A	Top cover	F20	Mortplene (1)
E2A	Strip, front	F21	Mortplene (2)
E3	Bottom plate	F22	Mortplene (3)
E4	Knob	F23	Leather
E6	Screw	F24	B No. plate
E8A	Film changeover plate	F25	Hinge
E12	Spring	F28	Leather
E13	Ball, 1.6 mm dia.	M1A	Counter
E14	Window	M3A	Gear arbor
E15	Window	M5	Gear
E17	Accessory shoe	M7A	Idle gear
E18	Eye piece	M8	E-washer
E19	Stop pin	M9A	Gear
E20	Screw	M12	Spring
E21	Screw	M14A	Wheel
E22	Screw	M23	Spring
E23	Strip, front	M24	Screw
E24	Glass	M25	Spacer
E25	Glass	M26A	Dial
E28	Leather	M28	Screw
E30	Screw	M41	Spring
E33	R. S selector spindle	M43	Spring
E35	Screw	M51	Lock lever

Parts No.	Parts Name	Parts No.	Parts Name
M57	Spring	G5A	Finder lens
S1A	Range finder	G7A	Prism
S4	Frame	G9	Finder lens
S5	Screw 1.7 mm dia.	G10	Mirror
S6	Frame		
S7	Mirror sheat		
S8	Screw 1.7 mm dia.		
S10	Leaf spring		
S11	Screw		
S12	Frame		
S13	Spoke		
S14	Screw		
S15	Mask		
S16	Holding plate		
S17	Cover		
S18	Screw		
S19A	Interlock lever		
S25	Screw		
S28	Screw		
S31A	Interlock lever		
S36	Screw		
S37	Spring		
S38	Spring		
S42	Shaft		
S43	Spring		
S44A	Finder frame		
S47	Spring		
S52	Screw		
S55	Light shielding plate		
G1	Eye piece		
G2A	Prism		
G4	Lens		

STANDARD REPAIR PARTS FOR INTERCHANGEABLE LENSES

Parts No.	Parts Name	Parts No.	Parts Name
	3.5/100 mm Lens		8/65 mm Lens
L1A	Front lens	L1A	Front lens
L3	Ring	L3	Ring
L4A	Rear lens	L4A	Rear lens
L6A	Shutter frame	L7	Shutter frame
L7	Release ring	L9	Release ring
L8	Washer	L10	Screw
L9	Set ring	L11	Holding ring
L10	Holding ring	L12	Washer, S1
L11	Holding ring		Washer, S2
L22A	Hellicoid		Washer, S3
L45	Holding ring		Washer, S4
L48	Tightening ring		Washer, S5
L49	Stopper screw	L20A	Hellicoid
L76	Front cap	L47	Screw
L77	Rear cap	L48	Barrel
L86	Ring	L51	Tightening ring
L87	Screw	L52	Stopper screw
L71	Washer, S1	L76	Front cap
	Washer, S2	L77	Rear cap
	Washer, S3	L89	Screw
	Washer, S4	L91	Ring
	Washer, S5	P1A	Shutter
	Washer, S6		
P1A	Shutter		

Parts No.	Parts Name	Parts No.	Parts Name
	5.6/150 mm Lens		5.6/180 mm Lens
L1A	Front lens	L1A	Front lens
L4A	Rear lens	L5A	Rear lens
L8	Ring	L8	Ring
L9A	Shutter frame	L9A	Shutter frame
L11	Release ring	L11	Release ring
L12	Washer	L12	Washer
L13	Set ring	L13	Set ring
L14	Holding ring	L14	Holding ring
L15	Holding ring	L15	Holding ring
L47	Tightening ring	L21A	Hellicoid
L48	Stopper screw	L47	Tightening ring
L68	Front cap	L48	Stopper screw
L69	Rear cap	L68	Front cap
L74	Washer, S1	L69	Rear cap
	Washer, S2	L74	Washer, S1
	Washer, S3		Washer, S2
	Washer, S4		Washer, S3
	Washer, S5		Washer, S4
	Washer, S6		Washer, S5
L80	Ring		Washer, S6
L81	Screw	L79	Ring
L21A	Hellicoid	L80	Screw
P1A	Shutter	P1A	Shutter