

REPAIR MANUAL AND PARTS LIST

INTERCHANGEABLE LENSE FOR ST701, ST801, ST901

EBC FUJINON—W 1.9/35mm



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I DISASSEMBLY

1. Mount ring

- a. Remove the rear lens assembly (87).
- b. Remove the mount ring assembly (43).
- c. Remove the component parts.

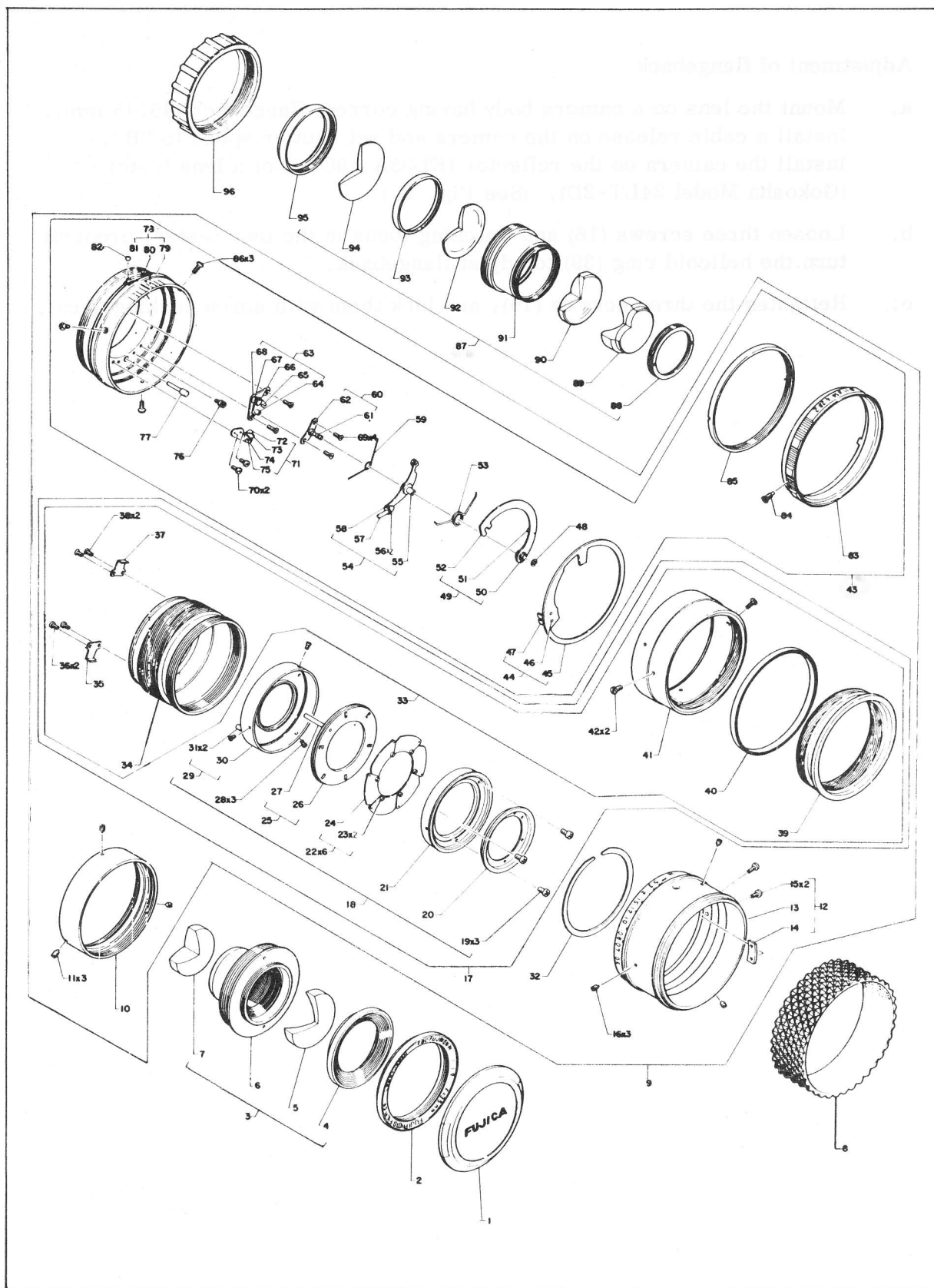
2. Aperture

- a. Remove the rubber ring (8) and remove the focusing ring assembly (12).
- b. Remove the filter ring (10).
- c. Remove the front lens assembly (3).
- d. Remove the stop ring (32) and remove the aperture assembly (18).
- e. Remove the component parts.

3. Helicoid

- a. Remove the mount ring assembly (43) as described in 1-a and 1-b above.
- b. Remove the aperture assembly (18) as described in 2-a through 2-d.
- c. Remove the helicoid guides (35) and (37), and remove the component parts.

Fig. 1

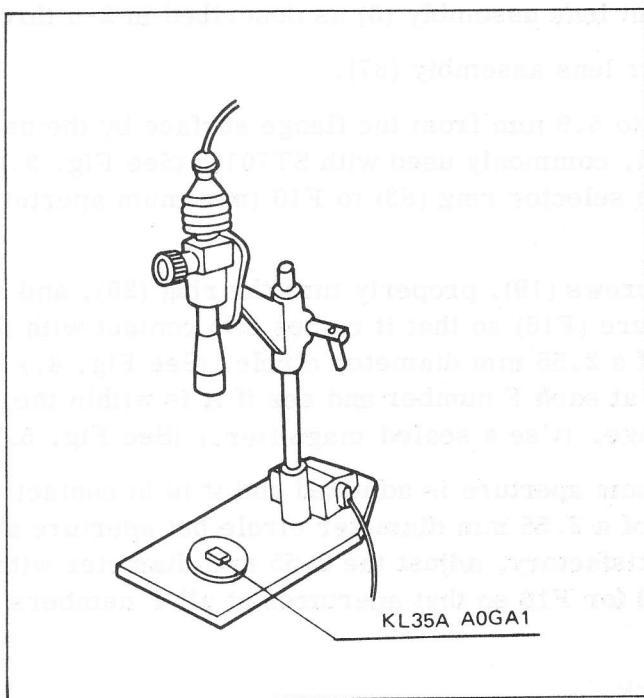


II REPAIR AND ADJUSTMENT

1. Adjustment of flangeback

- a. Mount the lens on a camera body having correct flangeback (45.45 mm). Install a cable release on the camera and set shutter speed to "B". Install the camera on the reflector (KL35A A0GA1) of a lens tester (Gokosha Model 24LT-2D). (See Fig. 2.)
- b. Loosen three screws (16) and watching focus in the lens tester, properly turn the helicoid ring (39) to adjust flangeback.
- c. Retighten the three screws (16), and lock them with screw locking agent.

Fig. 2



2. Aperture

2.1 Adjustment

- a. Remove the front lens assembly (3) as described in 2-a through 2-c.
- b. Remove the rear lens assembly (87).
- c. Set the pin (77) to 5.9 mm from the flange surface by the use of a gauge (L52-GA2, commonly used with ST701). (See Fig. 3.)
Set the aperture selector ring (83) to F16 (minimum aperture) in advance.
- d. Loosen three screws (19), properly turn the ring (20), and adjust the minimum aperture (F16) so that it comes into contact with the circumference of a 2.55 mm diameter circle. (See Fig. 4.)
Check aperture at each F number and see if it is within the permissible range. (Use a scaled magnifier.) (See Fig. 5.)
- e. When the minimum aperture is adjusted and it is in contact with the circumference of a 2.55 mm diameter circle but aperture at other F number is unsatisfactory, adjust the 2.55 mm diameter within the range permitted for F16 so that apertures at all F numbers are satisfactory.
- f. Adjust flangeback.

Fig. 3

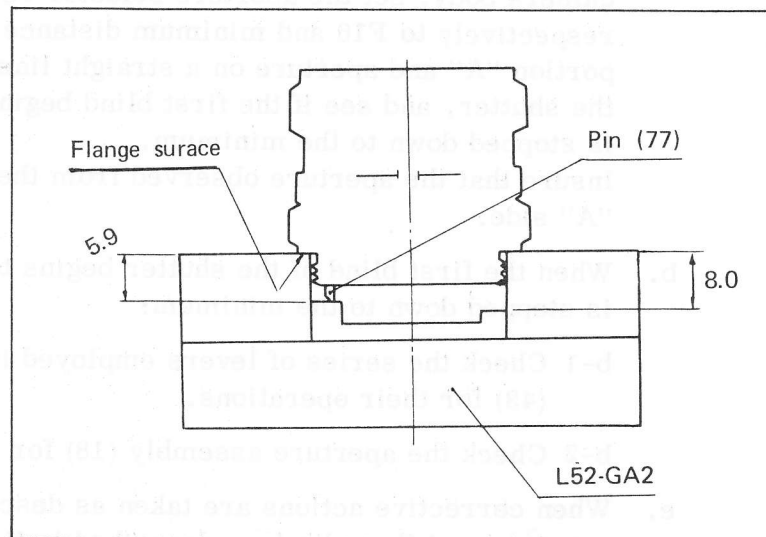


Fig. 4

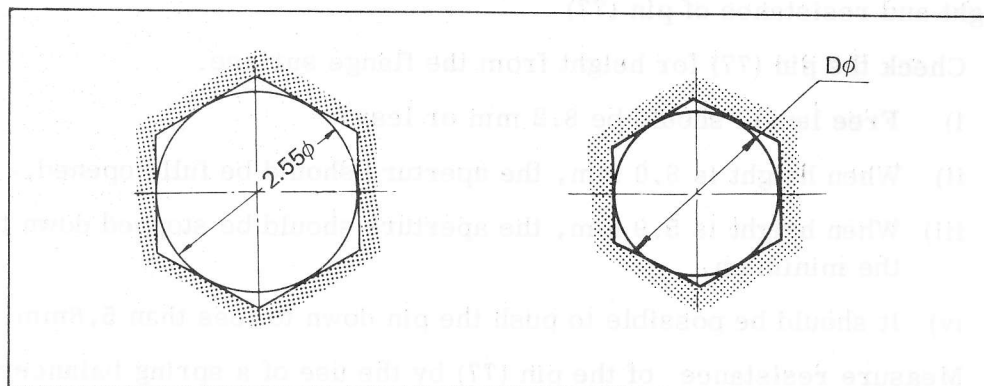


Fig. 5

F. No.	Permissible diameter range
2.8	12.87 ~ 16.22
4	9.10 ~ 11.47
5.6	6.44 ~ 8.11
8	4.55 ~ 5.73
11	3.22 ~ 4.06
16	2.15 ~ 3.04

When aperture is F1.9, the opening should be a true circle (circle of the lens barrel fitting), and no aperture blade should be seen in the circle.

2.2 Adjustment of time lag

- a. Mount the lens on a camera body, set shutter speed to 1/1000 at the camera body, set the aperture selector ring and focusing ring respectively to F16 and minimum distance at the lens, watch the portion "A" and aperture on a straight line as seen in Fig. 6, release the shutter, and see if the first blind begins to run after the aperture is stopped down to the minimum.
Insure that the aperture observed from the "B" side is the same as "A" side.
- b. When the first blind of the shutter begins to run before the aperture is stopped down to the minimum:
 - b-1 Check the series of levers employed in the mount ring assembly (43) for their operations.
 - b-2 Check the aperture assembly (18) for smoothness of operation.
- c. When corrective actions are taken as described in 2.2-b above, adjust aperture and flangeback as described in II-1 and II-2-2.1 above.

2.3 Height and resistance of pin (77)

- a. Check the pin (77) for height from the flange surface.
 - i) Free length should be 8.2 mm or less.
 - ii) When height is 8.0 mm, the aperture should be fully opened.
 - iii) When height is 5.9 mm, the aperture should be stopped down to the minimum.
 - iv) It should be possible to push the pin down to less than 5.8mm.
- b. Measure resistance of the pin (77) by the use of a spring balancer and insure that:
 - i) It is 300 grams or less when turning the aperture selector ring to F1.9.
 - ii) It is 100 grams or less when turning the aperture selector ring to F16. (See Fig. 3.)

2.4 Aperture blades jammed with oil

- a. Remove the aperture blade assembly (22). (Refer to I-2 above.)
- b. Thoroughly clean all the disassembled parts of the aperture assembly (18) with perchloroethylene. In addition, wipe inner wall of the male helicoid (34) to which the ring (30) is fitted with a piece of cloth or paper impregnated with perchloroethylene.
- c. Adjust aperture and flangeback as described in II-1 and II-2-2.1 above. (See Fig. 7.)

Fig. 6

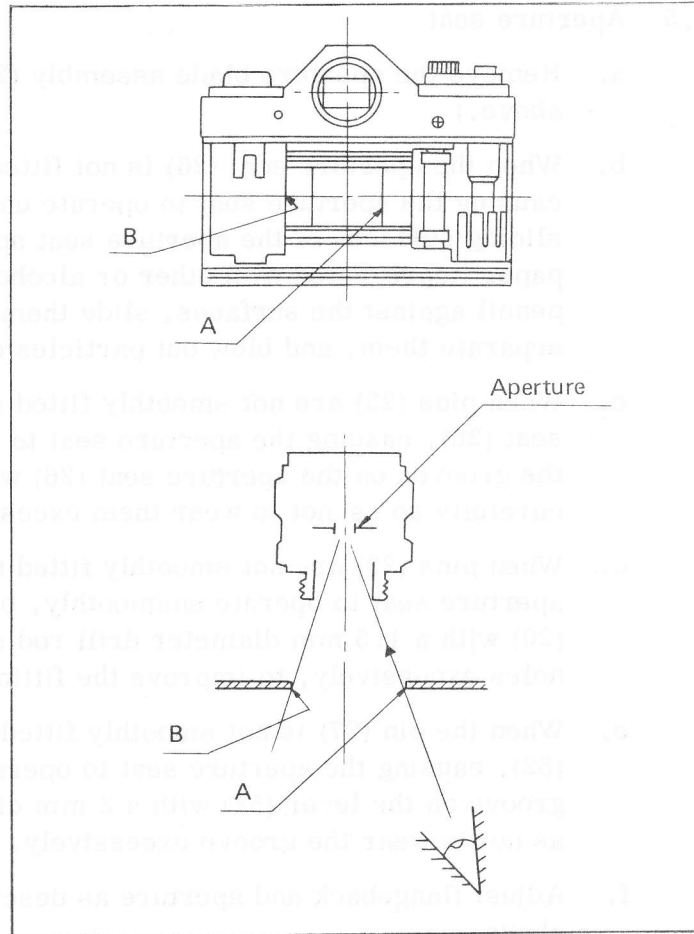
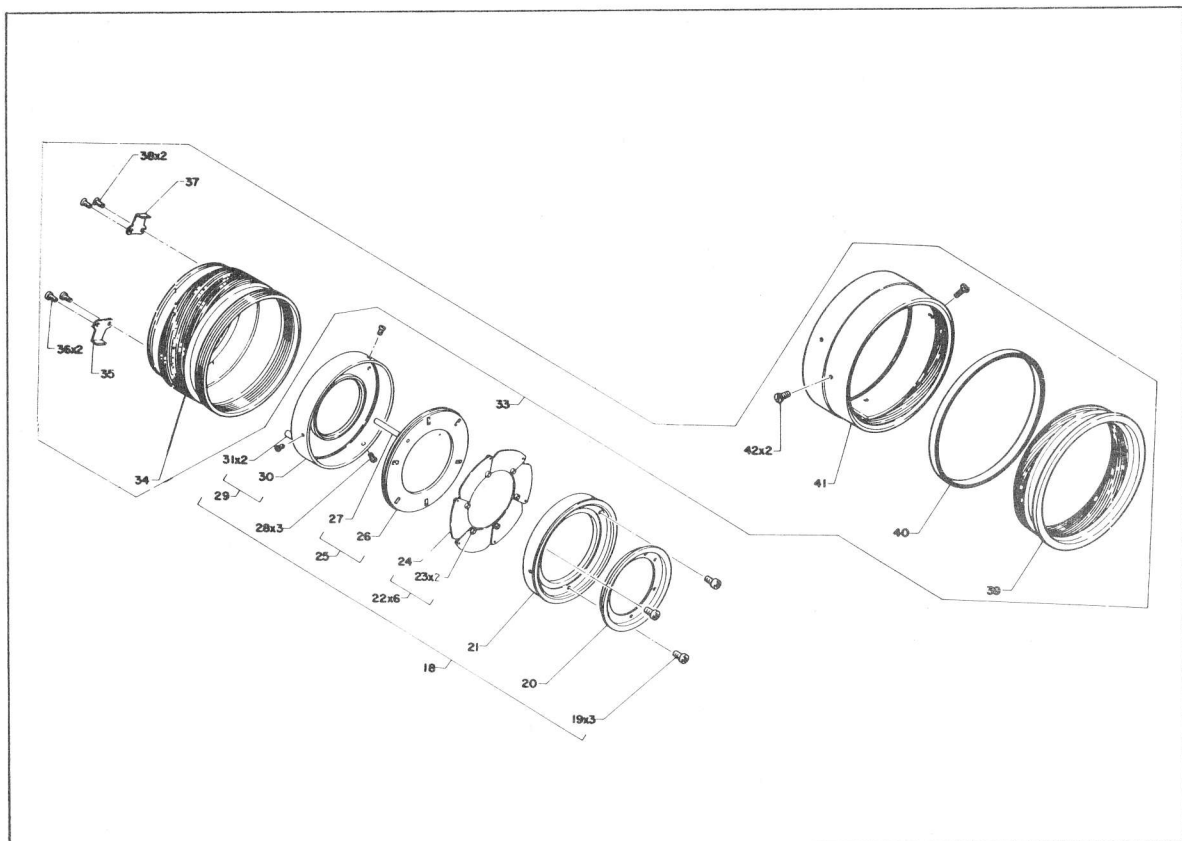


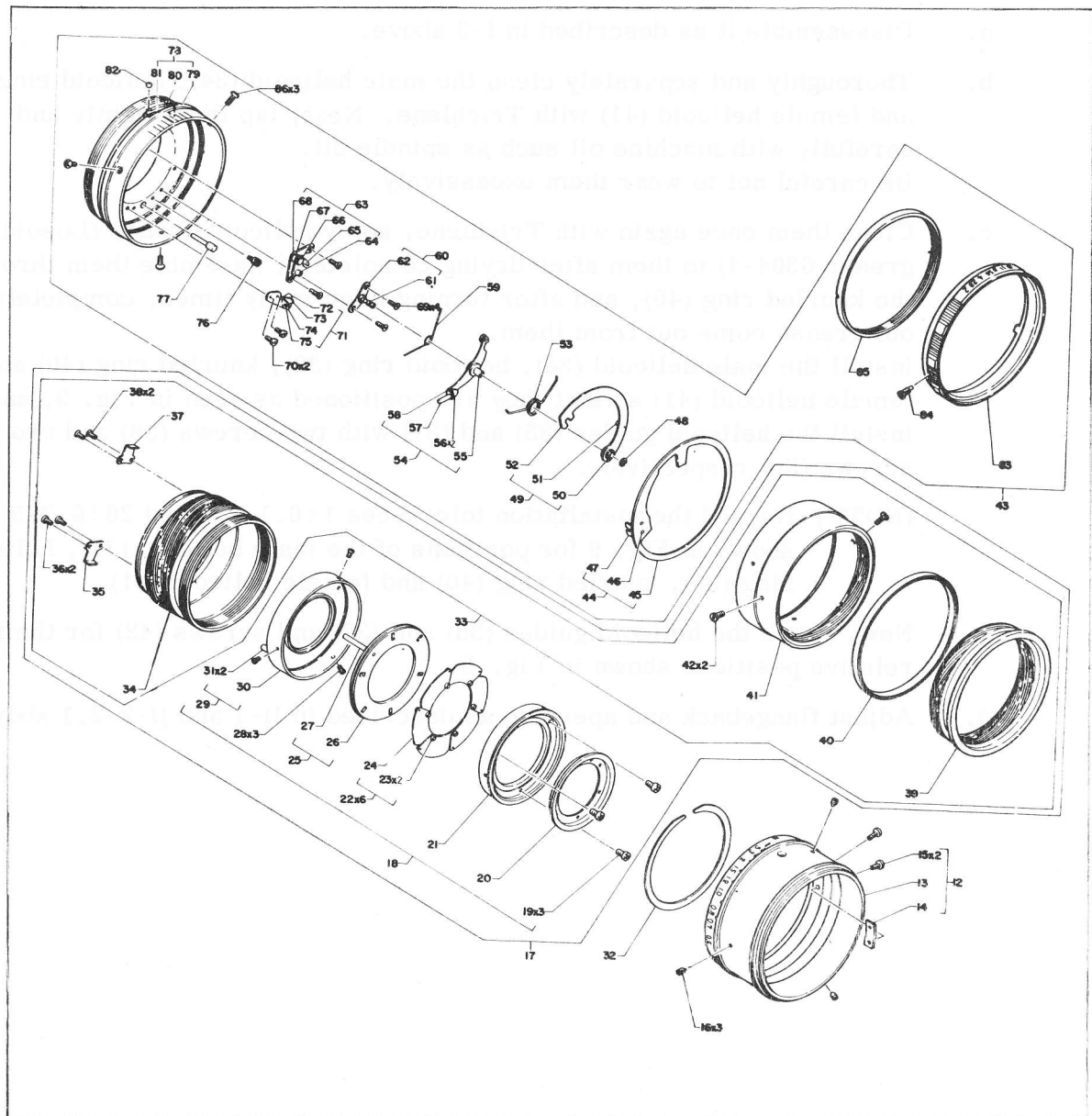
Fig. 7



2.5 Aperture seat

- a. Remove the aperture blade assembly (22) and check it. (Refer to I-2 above.)
- b. When the aperture seat (26) is not fitted smoothly to the ring (30), causing the aperture seat to operate unsmoothly, thoroughly clean the sliding surfaces of the aperture seat and ring with a piece of cloth or paper impregnated with ether or alcohol, rub core (graphite) of a pencil against the surfaces, slide them each other many times, separate them, and blow out particles of the pencil core with a blower.
- c. When pins (23) are not smoothly fitted into the grooves on the aperture seat (26), causing the aperture seat to operate unsmoothly, break-in the grooves on the aperture seat (26) with a 1.5 mm diameter drill rod carefully so as not to wear them excessively, to improve the fitting.
- d. When pins (23) are not smoothly fitted to the ring (20), causing the aperture seat to operate unsmoothly, break-in the holes on the ring (20) with a 1.5 mm diameter drill rod carefully so as not to wear the holes excessively, to improve the fitting.
- e. When the pin (27) is not smoothly fitted into the groove on the lever (52), causing the aperture seat to operate unsmoothly, break-in the groove on the lever (52) with a 2 mm diameter drill rod carefully so as not to wear the groove excessively, to improve the fitting.
- f. Adjust flangeback and aperture as described in II-1 and II-2-2.1 above.

Fig. 8



3. Helicoid

The helicoid should turn lightly, equally and smoothly. If not;

- a. Disassemble it as described in I-3 above.
- b. Thoroughly and separately clean the male helicoid (34), helicoid ring (39) and female helicoid (41) with Trichlene. Next, lap them lightly and carefully with machine oil such as spindle oil.
Be careful not to wear them excessively.
- c. Clean them once again with Trichlene, apply helicoid grease (Losoid grease 6304-4) to them after drying completely, assemble them through the knurled ring (40), and after turning them many times, completely wipe out grease come out from them.
Install the male helicoid (34), helicoid ring (39), knurled ring (40) and female helicoid (41) so that they are positioned as seen in Fig. 9, and install the helicoid guides (35) and (37) with two screws (36) and two screws (38) respectively.

(NOTE) Regard the installation tolerances 1 ± 0.1 mm and 26 ± 0.375 mm shown in Fig. 9 for positions of the male helicoid (34), helicoid ring (39), knurled ring (40) and female helicoid (41).

Now, check the helicoid guides (35) and (37) and screws (42) for their relative positions shown in Fig. 9.

- d. Adjust flangeback and aperture as described in II-1 and II-2-2.1 above.

Fig. 9

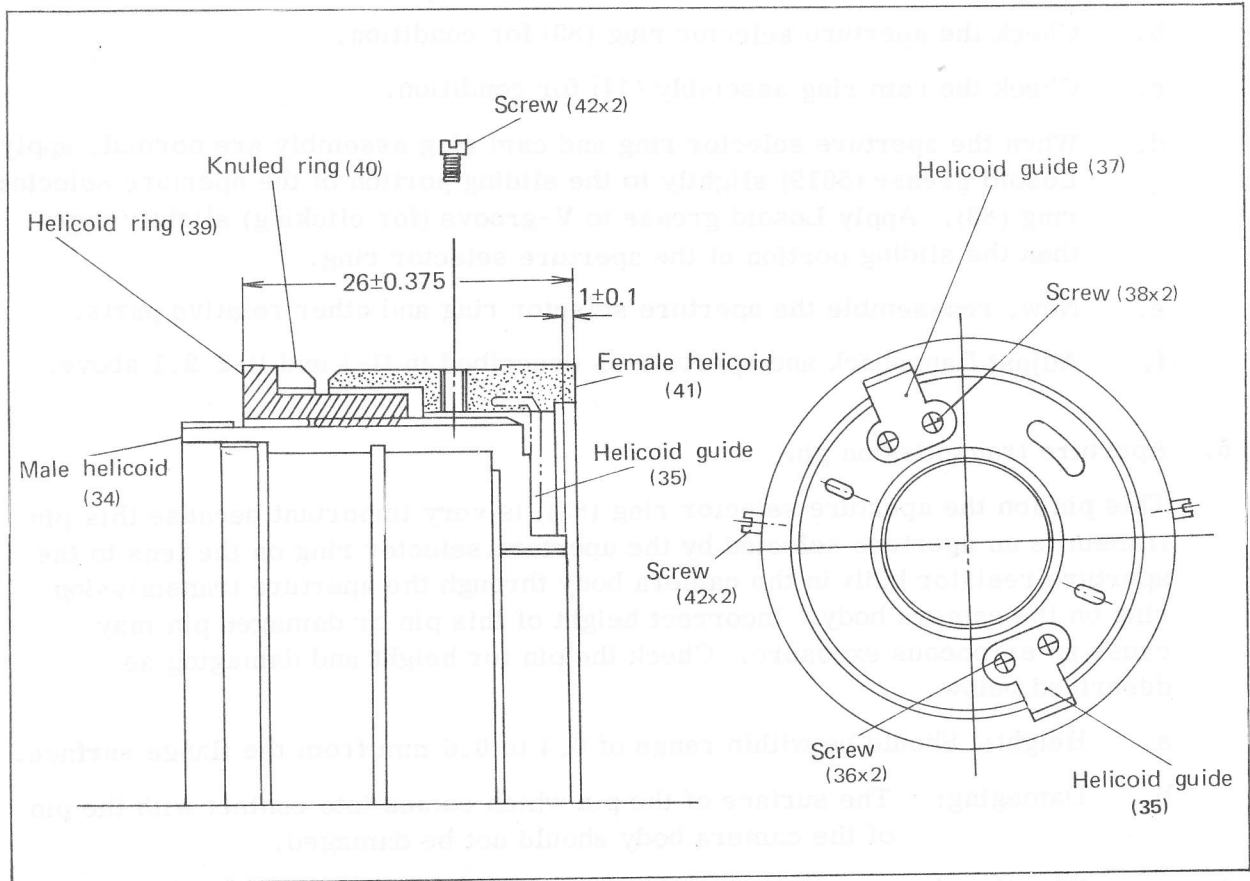
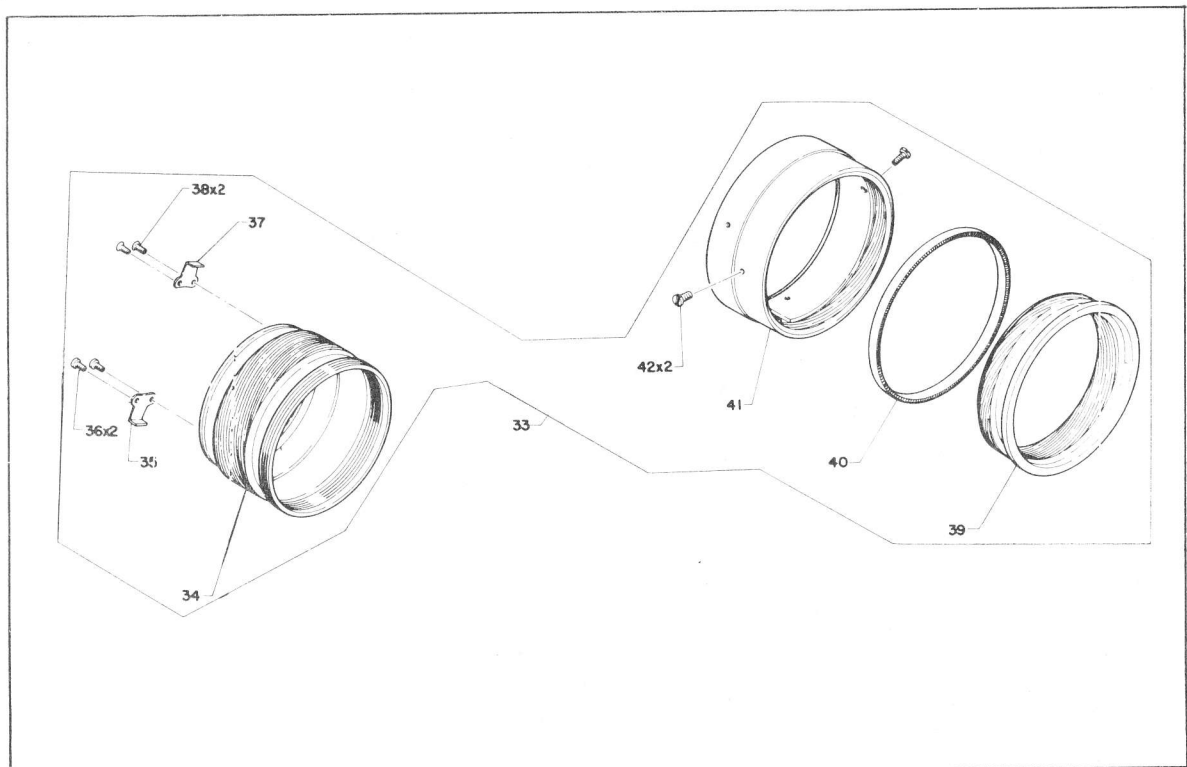


Fig.10



4. Aperture selector ring

- a. Disassemble and remove the component parts as described in I-1 above.
- b. Check the aperture selector ring (83) for condition.
- c. Check the cam ring assembly (44) for condition.
- d. When the aperture selector ring and cam ring assembly are normal, apply Losoid grease (5019) slightly to the sliding portion of the aperture selector ring (83). Apply Losoid grease to V-groove (for clicking) slightly more than the sliding portion of the aperture selector ring.
- e. Now, reassemble the aperture selector ring and other relative parts.
- f. Adjust flangeback and aperture as described in II-1 and II-2-2.1 above.

5. Aperture transmission pin

This pin (on the aperture selector ring (83)) is very important because this pin transmits an aperture selected by the aperture selector ring on the lens to the aperture resistor built in the camera body through the aperture transmission ring on the camera body. Incorrect height of this pin or damaged pin may cause an erroneous exposure. Check the pin for height and damaging as described below.

- a. Height: Should be within range of 0.4 to 0.6 mm from the flange surface.
- b. Damaging: The surface of the pin which comes into contact with the pin of the camera body should not be damaged.

When height is incorrect or the pin is damaged, replace the aperture selector ring (83) with a new one.

Fig.11

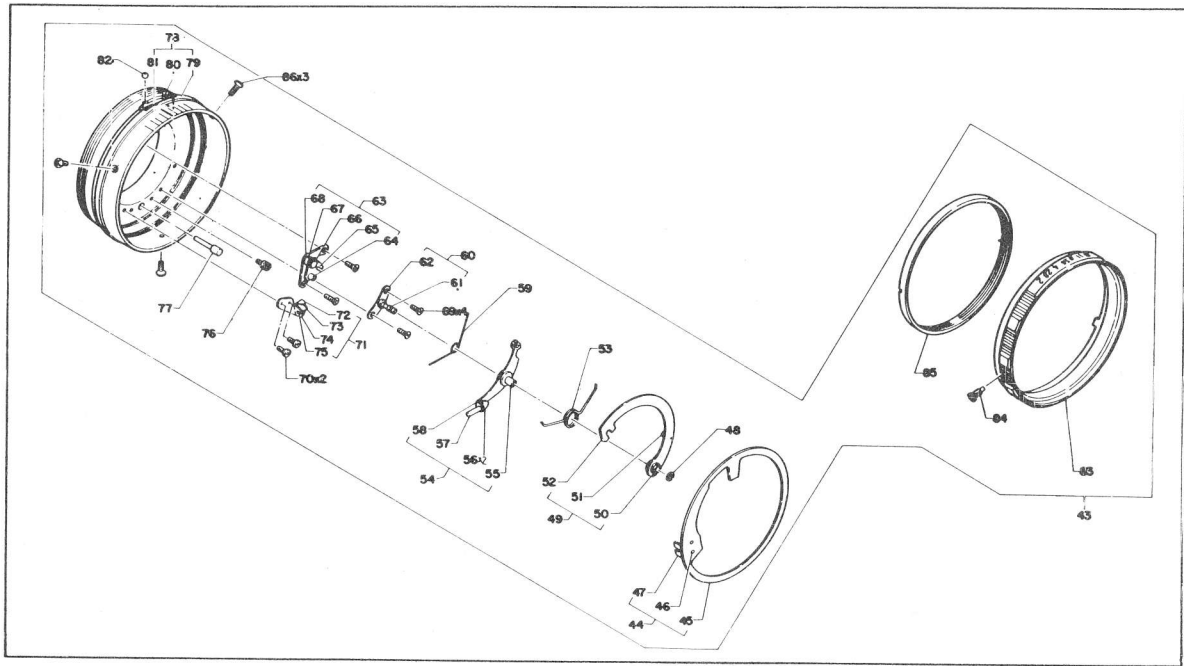


Fig.12

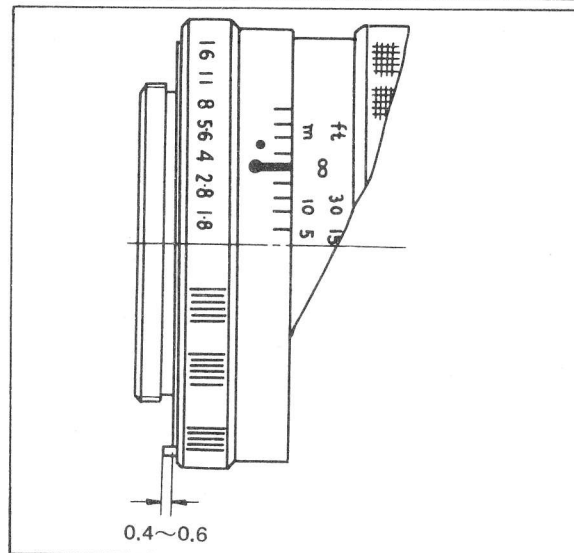
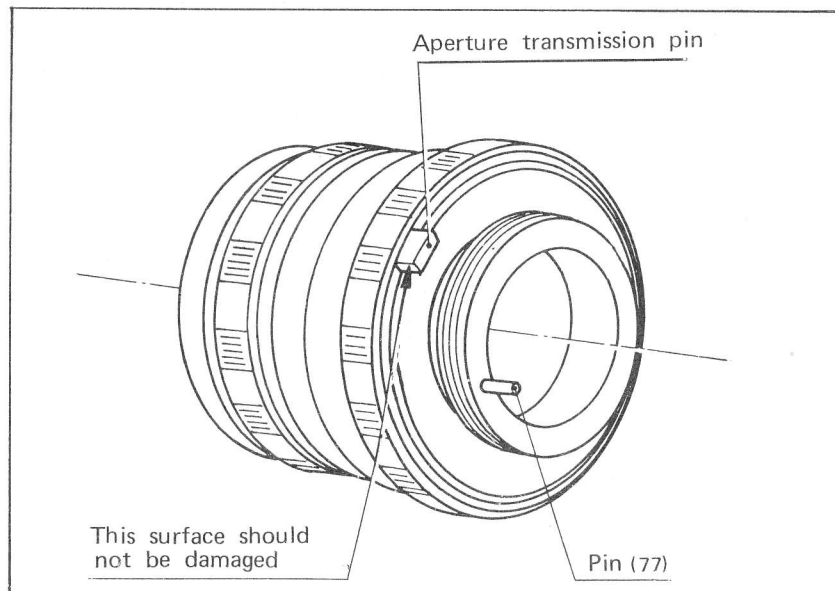
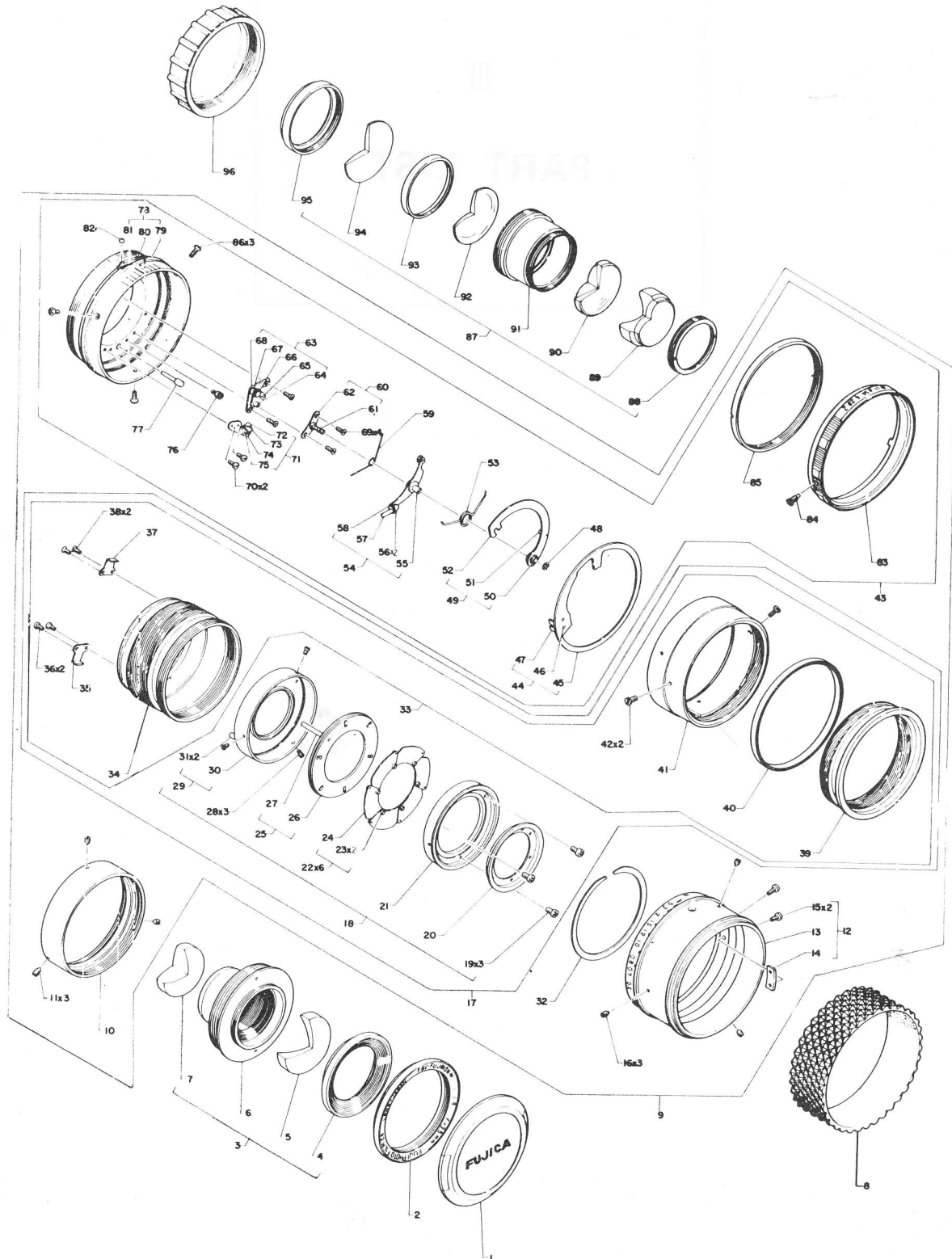


Fig.13



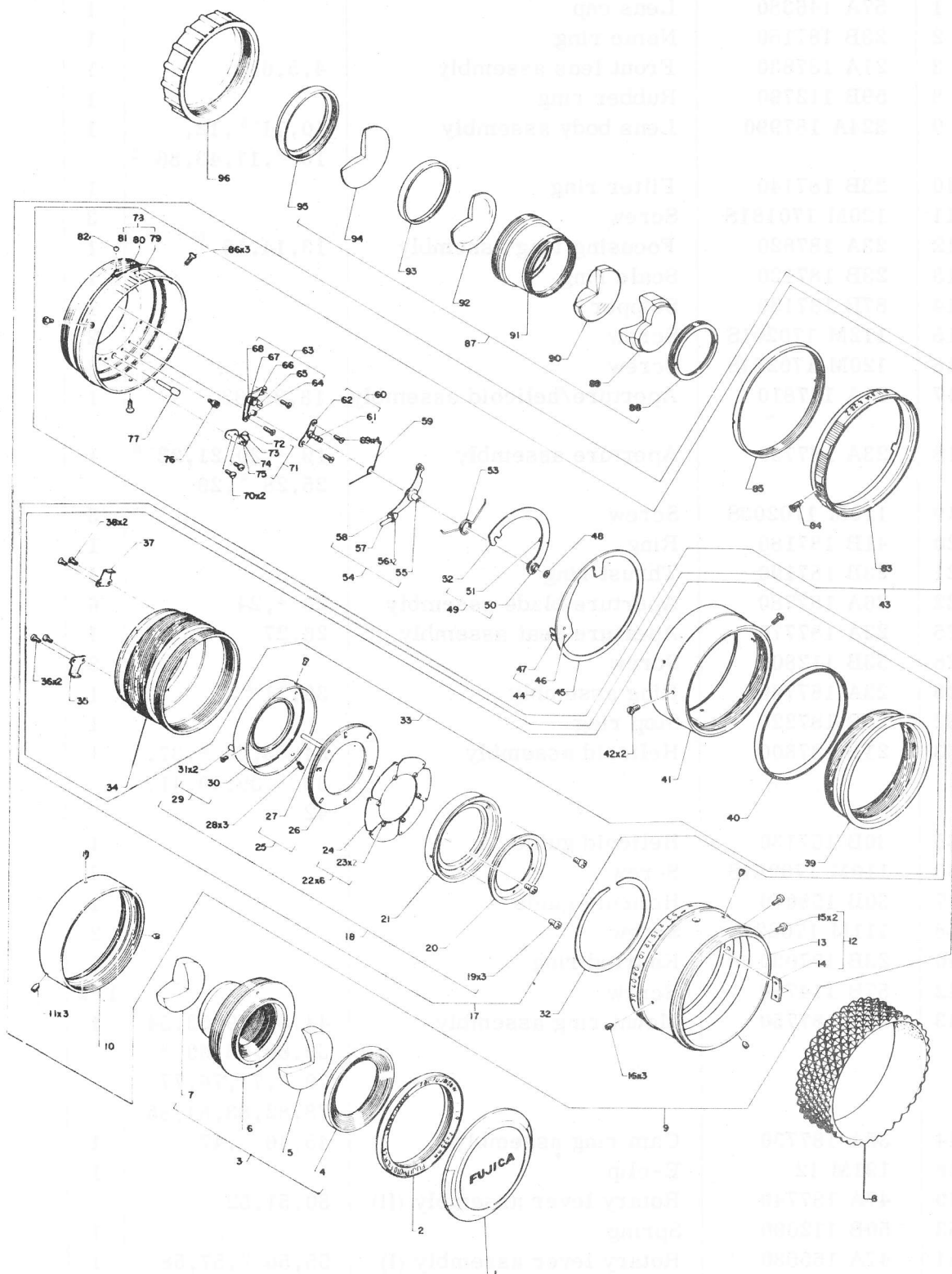
III
PART LIST

PARTS LIST
EBC FUJINON-W 1.9/35mm LENS ST701 • ST801 • ST901



REF. NO.	PART NO.	PART NAME	ASSEMBLED REF. NO.	O'TY	REMARKS
1	57A 146380	Lens cap		1	
2	23B 187150	Name ring		1	
3	21A 187830	Front lens assembly	4, 5, 6, 7	1	
8	59B 112790	Rubber ring		1	
9	324A 187990	Lens body assembly	10, 11 ^{×3} , 12, 16 ^{×3} , 17, 43, 86 ^{×3}	1	
10	23B 187140	Filter ring		1	
11	120M 170181S	Screw		3	
12	23A 187820	Focusing ring assembly	13, 14, 15 ^{×2}	1	
13	23B 187120	Scale ring		1	
14	87B 187130	Stopper		1	
15	112M 170201S	Screw		2	
16	120M 170251S	Screw		3	
17	21A 187810	Aperture/helicoid assembly	18, 32, 33	1	
18	23A 187790	Aperture assembly	19 ^{×3} , 20, 21, 22 ^{×6} 25, 28 ^{×3} , 29	1	
19	110M 170203S	Screw		3	
20	41B 187180	Ring		1	
21	23B 187190	Thrust ring		1	
22	26A 187780	Aperture blade assembly	23 ^{×2} , 24	6	
25	22A 187770	Aperture seat assembly	26, 27	1	
28	53B 112800	Screw		3	
29	23A 187760	Ring assembly	30, 31 ^{×2}	1	
32	25B 187220	Stop ring		1	
33	21B 187800	Helicoid assembly	34, 35, 36 ^{×2} , 37, 38 ^{×2} , 39, 40, 41, 42	1	
35	30B 157130	Helicoid guide		1	
36	110M 170251S	Screw		2	
37	30B 159070	Helicoid guide		1	
38	111M 170221S	Screw		2	
40	23B 187090	Knurled ring		1	
42	87B 114780	Screw		1~2	
43	23A 187750	Mount ring assembly	44, 48, 49, 53, 54 59, 60, 63, 69 ^{×4} 70 ^{×2} , 71, 76, 77 78, 82, 83, 84, 85 45, 46 ^{×2} , 47	1	
44	35A 187730	Cam ring assembly		1	
48	191M 12	E-clip		1	
49	47A 187740	Rotary lever assembly (II)	50, 51, 52		
53	50B 112690	Spring		1	
54	47A 155580	Rotary lever assembly (I)	55, 56 ^{×2} , 57, 58	1	
59	50B 112650	Spring		1	
60	85A 155570	Seat plate assembly	61, 62	1	
63	47A 187720	Bellcrank assembly	64, 65, 66, 67, 68	1	

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REF. NO.	PART NO.	PART NAME	ASSEMBLED REF. NO.	O'TY	REMARKS
69	111M 140301S	Screw		4	
70	110M 140303S	Screw		2	
71	48A 155600	Crank assembly	72,73,74,75	1	
76	17B 112570	Pin		1	
77	26B 187260	Pin		1	
78	23B 187710	Leaf spring assembly	79,80,81	1	
82	200M 20	Steel ball		1	
83	23B 187110	Aperture selector ring		1	
84	17B 187270	Screw		1	
85	23B 131530	Ring		1	
86	112M 170351S	Screw		3	
87	21A 187840	Rear lens assembly	88,89,90,91,92 93,94,95	1	
96	57B 112790	Rear cap		1	