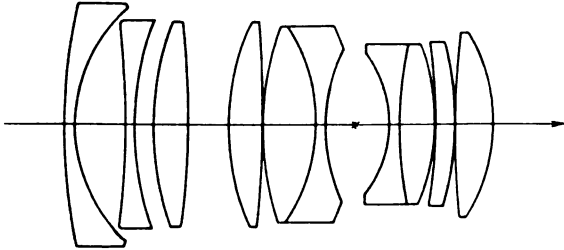


MINOLTA AF 35mm F1.4 (2591-100)
MINOLTA MAXXUM AF 35mm F1.4 (2591-600)

LENS



Construction : 10 elements in 8 groups
 Type : Retrofocus
 Coating : Minolta Achromatic
 Angle of view : 63°
 Lens mount : Minolta A mount
 Lens signal contact : 5 contacts
 Diaphragm : Automatic preset diaphragm
 f No. : Maximum1.4
 Minimum22
 Full-stop setting.....8 stops
 Diaphragm blade : 9 blades

FOCUSING

Focusing : AF, FA, M
 Type : Rear focusing
 Minimum focusing distance : 0.3m

Distance scale : $\frac{1 \quad 1.25 \quad 1.5 \quad 2 \quad 3 \quad 5 \quad 10 \text{ ft}}{0.3 \quad 0.35 \quad 0.4 \quad 0.5 \quad 0.7 \quad 1 \quad 3 \text{ m}}$

Infrared correction scale : Yes

Depth-of-field scale : 4 8 16 22

DIMENSIONS & WEIGHT

Dimensions : ϕ 65.5 max. diameter
 76.0mm max. length

Weight : 170g

Filter-thread diameter : ϕ 55mm P 0.75

Lens hood : Exclusive for 2591 Bayonet type

ACCESSORIES

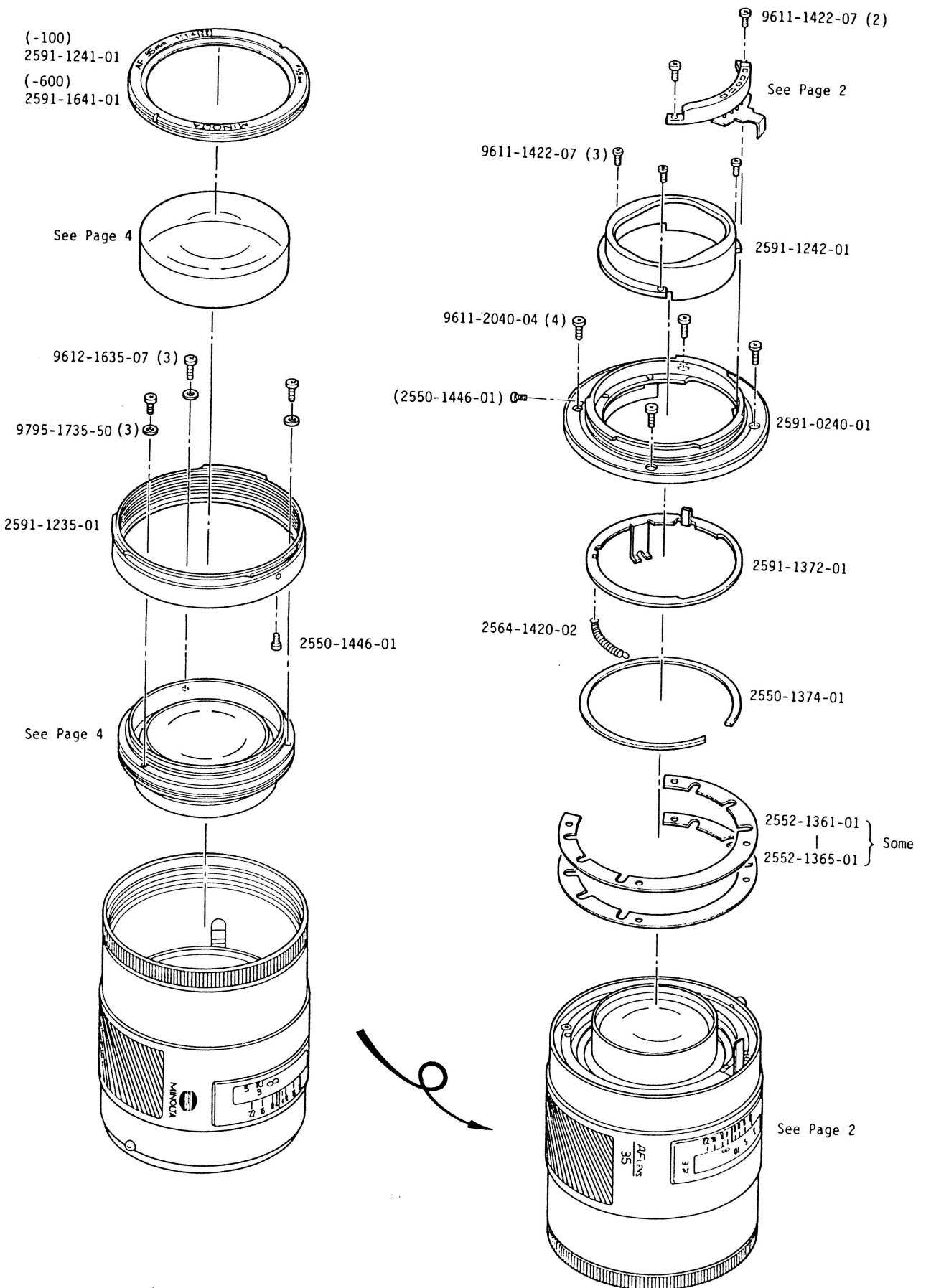
Lens case : 411-1033

Lens hood : 6591-810

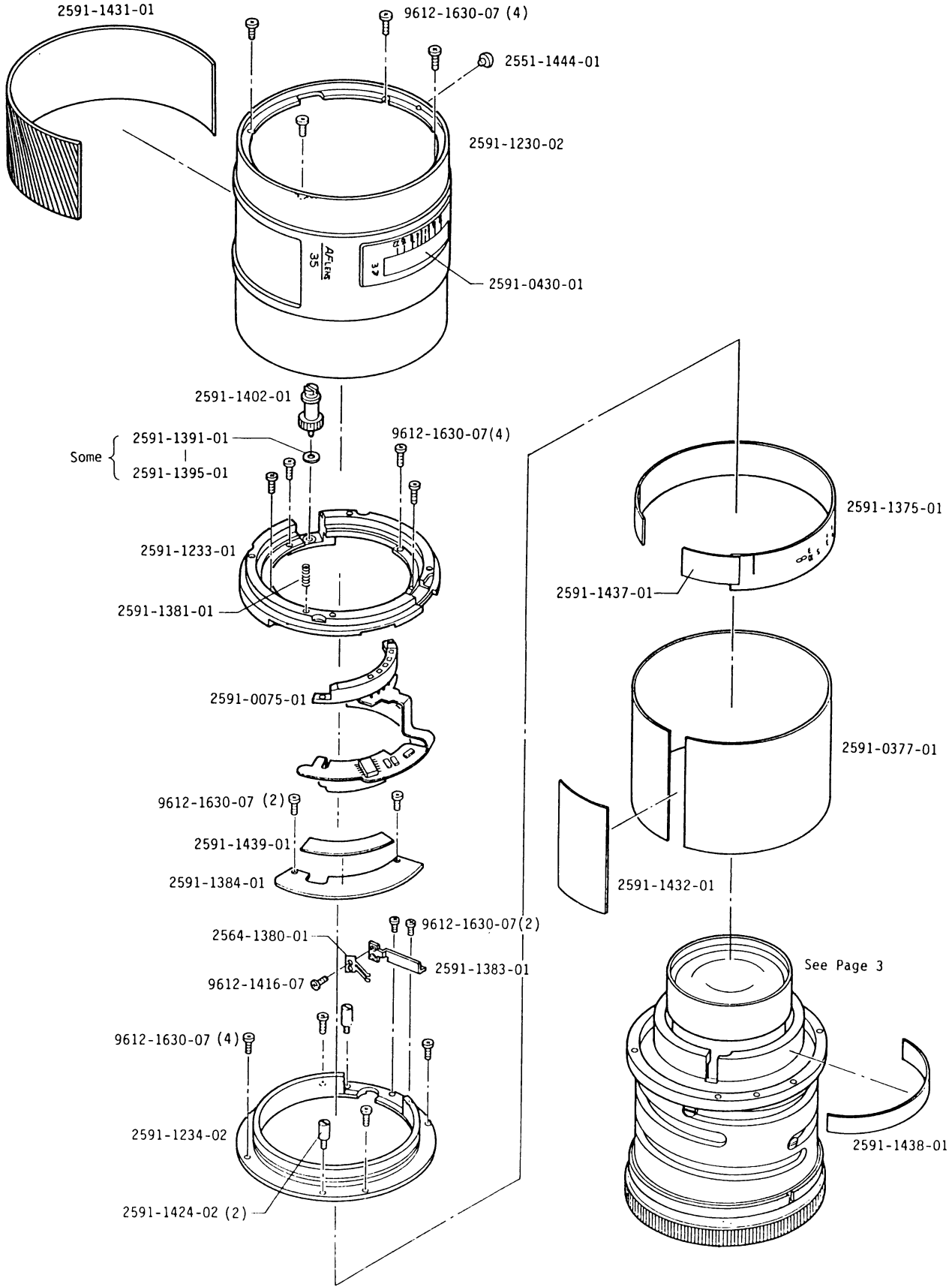
I n d e x

No. 2591

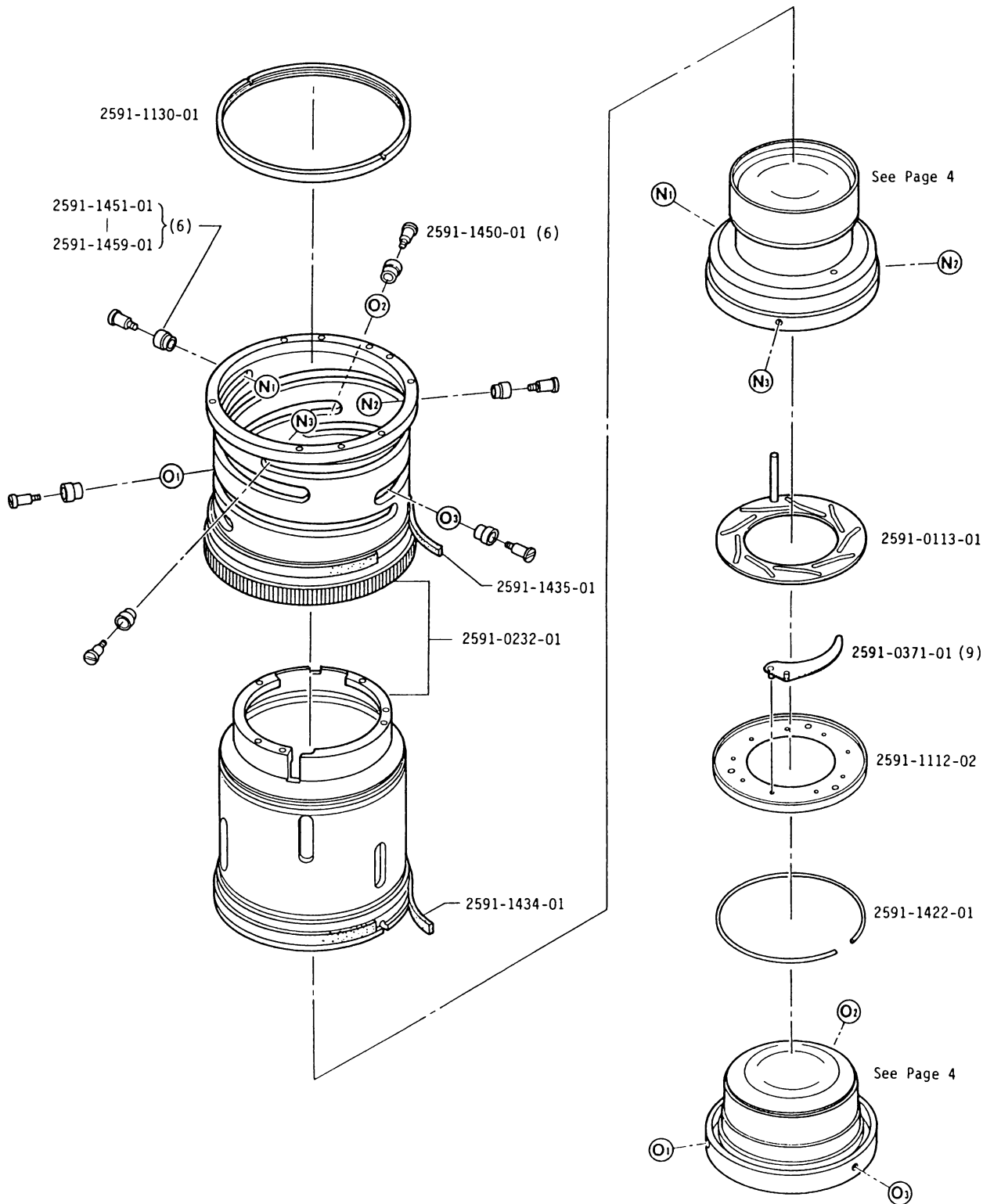
Part No.	Page	Part No.	Page	Part No.	Page
2591-0036.....	4	2552-1362.....	1	2591-1450.....	3
2591-0075.....	2	2552-1363.....	1	2591-1451.....	3
2591-0113.....	3	2552-1364.....	1	2591-1452.....	3
2591-0232.....	3	2552-1365.....	1	2591-1453.....	3
2591-0240.....	1	2591-1372.....	1	2591-1454.....	3
2591-0371.....	3	2550-1374.....	1	2591-1455.....	3
2591-0377.....	2	2591-1375.....	2	2591-1456.....	3
2591-0430.....	2	2564-1380.....	2	2591-1457.....	3
2591-0820.....	4	2591-1381.....	2	2591-1458.....	3
		2591-1383.....	2	2591-1459.....	3
2591-1101.....	4	2591-1384.....	2		
2591-1102.....	4	2591-1391.....	2	2591-1641.....	1
2591-1103.....	4	2591-1392.....	2		
2591-1105.....	4	2591-1393.....	2	2591-1801.....	4
2591-1106.....	4	2591-1394.....	2	2591-1802.....	4
2591-1107.....	4	2591-1395.....	2	2591-1803.....	4
2591-1108.....	4			2591-1804.....	4
2591-1109.....	4	2591-1402.....	2	2591-1809.....	4
2591-1110.....	4	2564-1420.....	1	2591-1810.....	4
2591-1112.....	3	2591-1422.....	3		
2591-1130.....	3	2591-1424.....	2	9611-1422-07.....	1
		2591-1431.....	2	9611-2040-04.....	1
2591-1230.....	2	2591-1432.....	2	9612-1416-07.....	2
2591-1233.....	2	2591-1434.....	3	9612-1630-07.....	2
2591-1234.....	2	2591-1435.....	3	9612-1635-07.....	1
2591-1235.....	1	2591-1437.....	2		
2591-1241.....	1	2591-1438.....	2	9795-1735-50.....	1
2591-1242.....	1	2591-1439.....	2		
		2551-1444.....	2		
2552-1361.....	1	2550-1446.....	1		



Part No	Part Name		Qty.
2591-0240-01	Bayonet mount set	バヨネットマウントセット	1
(2550-1446-01)	Screw	ストッパービス	1
2591-1235-01	Front ring	鏡頭環	1
2591-1241-01	Name ring (-100)	飾り環	1
2591-1242-01	Light shield ring	遮光筒	1
2552-1361-01	Back washer-A (t=0.05)	バックワッシャー	} Some
2552-1362-01	Back washer-B (t=0.07)	バックワッシャー	
2552-1363-01	Back washer-C (t=0.1)	バックワッシャー	
2552-1364-01	Back washer-D (t=0.2)	バックワッシャー	
2552-1365-01	Back washer-E (t=0.5)	バックワッシャー	
2591-1372-01	Preset ring	プリセットリング	1
2550-1374-01	Preset ring pressure	プリセットリング押え	1
2564-1420-02	Main spring	メインスプリング	1
2550-1446-01	Screw	ストッパービス	1
2591-1641-01	Name ring (-600)	飾り環	1
9611-1422-07	Phillips type screw	十字穴付なべ小ねじ	5
9611-2040-04	Phillips type screw	十字穴付なべ小ねじ	4
9612-1635-07	Phillips type screw	十字穴付なべ小ねじ	3
9795-1735-50	Washer	薄ワッシャー	3



Part No	Part Name		Qty.
2591-0075-01	Flexible PCB set	フレキ基板セット	1
2591-0377-01	Cam barrel cover plate set	補強板セット	1
2591-0430-01	Distance scale window set	距離表示窓セット	1
2591-1230-02	Outer ring	固定保持環	1
2591-1233-01	Base ring	外筒	1
2591-1234-02	Connector ring	連結環	1
2591-1375-01	Distance scale plate	距離目盛板	1
2564-1380-01	Brush	ブラシ	1
2591-1381-01	Spring	アースSP	1
2591-1383-01	Brush base plate	ブラシ台板	1
2591-1384-01	Flexible board base plate	フレキ台板	1
2591-1391-01	Adjustment washer (t=0.05)	カプラー調整ワッシャー	} Some
2591-1392-01	Adjustment washer (t=0.07)	カプラー調整ワッシャー	
2591-1393-01	Adjustment washer (t=0.1)	カプラー調整ワッシャー	
2591-1394-01	Adjustment washer (t=0.2)	カプラー調整ワッシャー	
2591-1395-01	Adjustment washer (t=0.5)	カプラー調整ワッシャー	
2591-1402-01	Coupler	カプラー	1
2591-1424-02	Stopper pin	ストッパーピン	2
2591-1431-01	Leather	貼皮	1
2591-1432-01	Tape	補強テープ	1
2591-1437-01	Tape	テープ	1
2591-1438-01	Tape	テープ	1
2591-1439-01	Tape	テープ	1
2551-1444-01	Bayonet point	バヨネット標点	1
9612-1416-07	Phillips type screw	十字穴付なべ小ねじ	1
9612-1630-07	Phillips type screw	十字穴付なべ小ねじ	16



Part No	Part Name		Qty.
2591-0113-01	Diaphragm operation plate set	絞り操作板セット	1
2591-0232-01	Cam barrel set	カム環セット	1
2591-0371-01	Diaphragm blade set	絞り羽根セット	9
2591-1112-02	Diaphragm pressure ring	絞り押え環	1
2591-1130-01	Cam barrel pressure	カム環押え	1
2591-1422-01	Pressure spring	絞り押え環SP	1
2591-1434-01	Friction plate A	摩擦布 A	1
2591-1435-01	Friction plate B	摩擦布 B	1
2591-1450-01	Guide pin	案内ピン	6
2591-1451-01	Guide roller (D1 = ϕ 4.53, D2 = ϕ 4.03)	案内ローラー	} 6
2591-1452-01	Guide roller (D1 = ϕ 4.53, D2 = ϕ 4.02)	案内ローラー	
2591-1453-01	Guide roller (D1 = ϕ 4.53, D2 = ϕ 4.01)	案内ローラー	
2591-1454-01	Guide roller (D1 = ϕ 4.52, D2 = ϕ 4.03)	案内ローラー	
2591-1455-01	Guide roller (D1 = ϕ 4.52, D2 = ϕ 4.02)	案内ローラー	
2591-1456-01	Guide roller (D1 = ϕ 4.52, D2 = ϕ 4.01)	案内ローラー	
2591-1457-01	Guide roller (D1 = ϕ 4.51, D2 = ϕ 4.03)	案内ローラー	
2591-1458-01	Guide roller (D1 = ϕ 4.51, D2 = ϕ 4.02)	案内ローラー	
2591-1459-01	Guide roller (D1 = ϕ 4.51, D2 = ϕ 4.01)	案内ローラー	

AF 35mm F1.4(22) Code No.2591-100
 MAXXUM AF 35mm F1.4(22) Code No.2591-600

■ When repairing following parts, must be checked resolving power by projection.

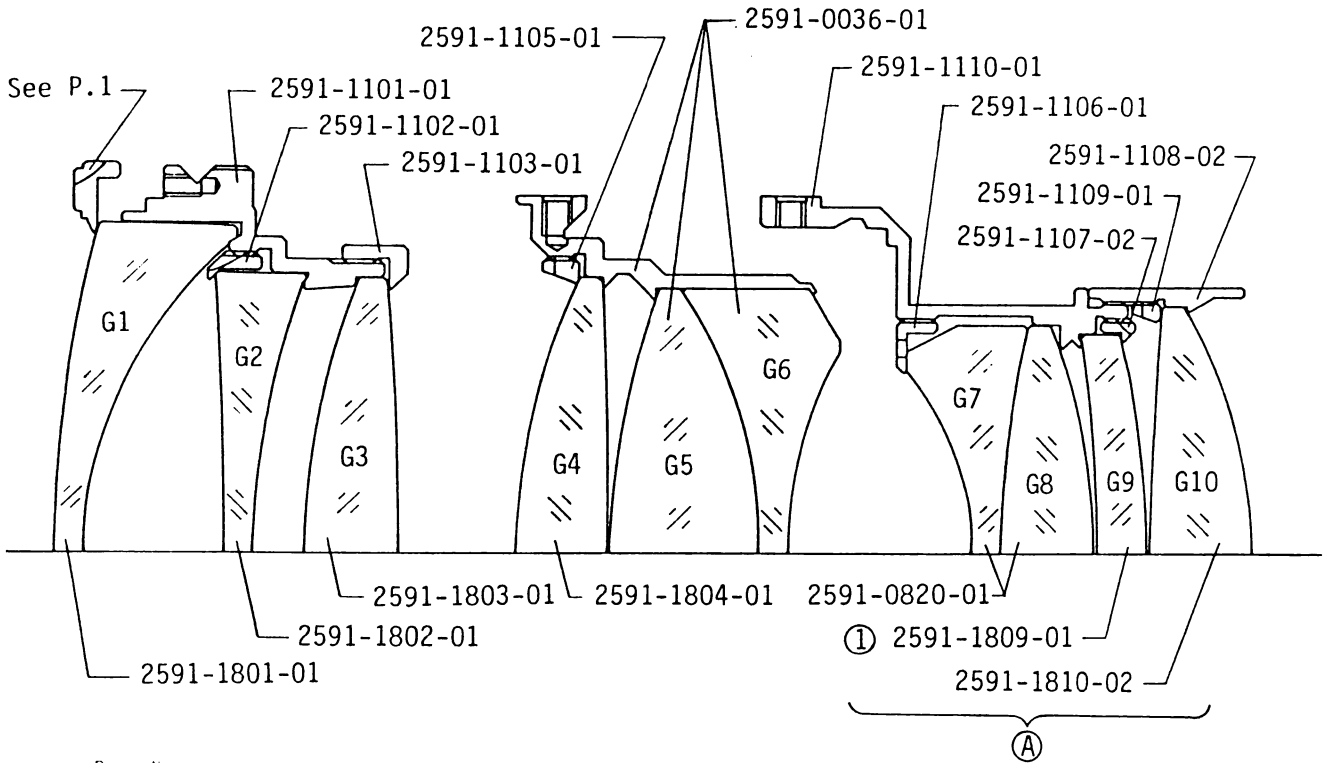
■ 下記部品を修理した場合は、必ず投影解像力を確認して下さい。

①: The influential lens element in the lens performance. (Number shows in order.)

①: レンズ性能によく影響するレンズ。(数字は順位を示す)

Ⓐ: The influential lens group in the lens performance. (Influence: In alphabetical order)

Ⓐ: レンズ性能によく影響するレンズ群。(影響度：アルファベット順)



Part No	Part Name		Qty.
2591-0036-01	2nd. lens barrel set	第2群玉棒セット	1
2591 0820-01	Lens G7, G8 set	レンズG7, G8 セット	1
2591 1101-01	1st. lens barrel	第1群玉棒	1
2591 1102-01	G 2 Pressure ring	G 2 押え	1
2591 1103 01	G 3 Pressure ring	G 3 押え	1
2591 1105 01	G 4 Pressure ring	G 4 押え	1
2591 1106 01	G 7 Pressure ring	G 7 押え	1
2591 1107 02	G 9 Pressure ring	G 9 押え	1
2591 1108 02	G10 barrel	G10 玉棒	1
2591 1109 01	G10 Pressure ring	G10 押え	1
2591 1110 01	Inner barrel	内筒	1
2591 1801 01	Lens G 1	レンズG 1	1
2591 1802 01	Lens G 2	レンズG 2	1
2591 1803 01	Lens G 3	レンズG 3	1
2591 1804 01	Lens G 4	レンズG 4	1
2591 1809 01	Lens G 7	レンズG 7	1
2591 1810 02	Lens G 8	レンズG 8	1

REPAIR GUIDE

- The contents of this manual are in accordance with the assembling procedure.
Therefore, follow the reverse procedure when disassembling.

—Description of marks used—

- **B** : Adhesive
- **S** : Solvent
- **A** : Anti-diffusion agent
- **G** : Grease
- : Point of assembling and general caution

■ Assembly and adjustment procedure

	Page
1 Cam barrel set, Inner barrel, Diaphragm blade set	1
2 Base ring, Connector ring, Flexible base plate set	2
■ Temporary assembly for aperture diameter adjusting	3
■ Aperture diameter adjusting, Aperture diameter pre-checking	3
3 Distance scale plate, Outer ring, Bayonet mount set, Light shield ring	4
4 Name ring, Front ring, 1st lens barrel set	5
■ Flange back (f'F) adjusting	5
■ Aperture diameter checking	5
■ Projection resolving power checking	5
■ General function checking	5
■ Flange back (f'F) adjusting procedure	6
■ Lens ROM signal selecting procedure	7
■ Description of focusing	9
■ Schematic circuit diagram, Printed wiring diagram	10

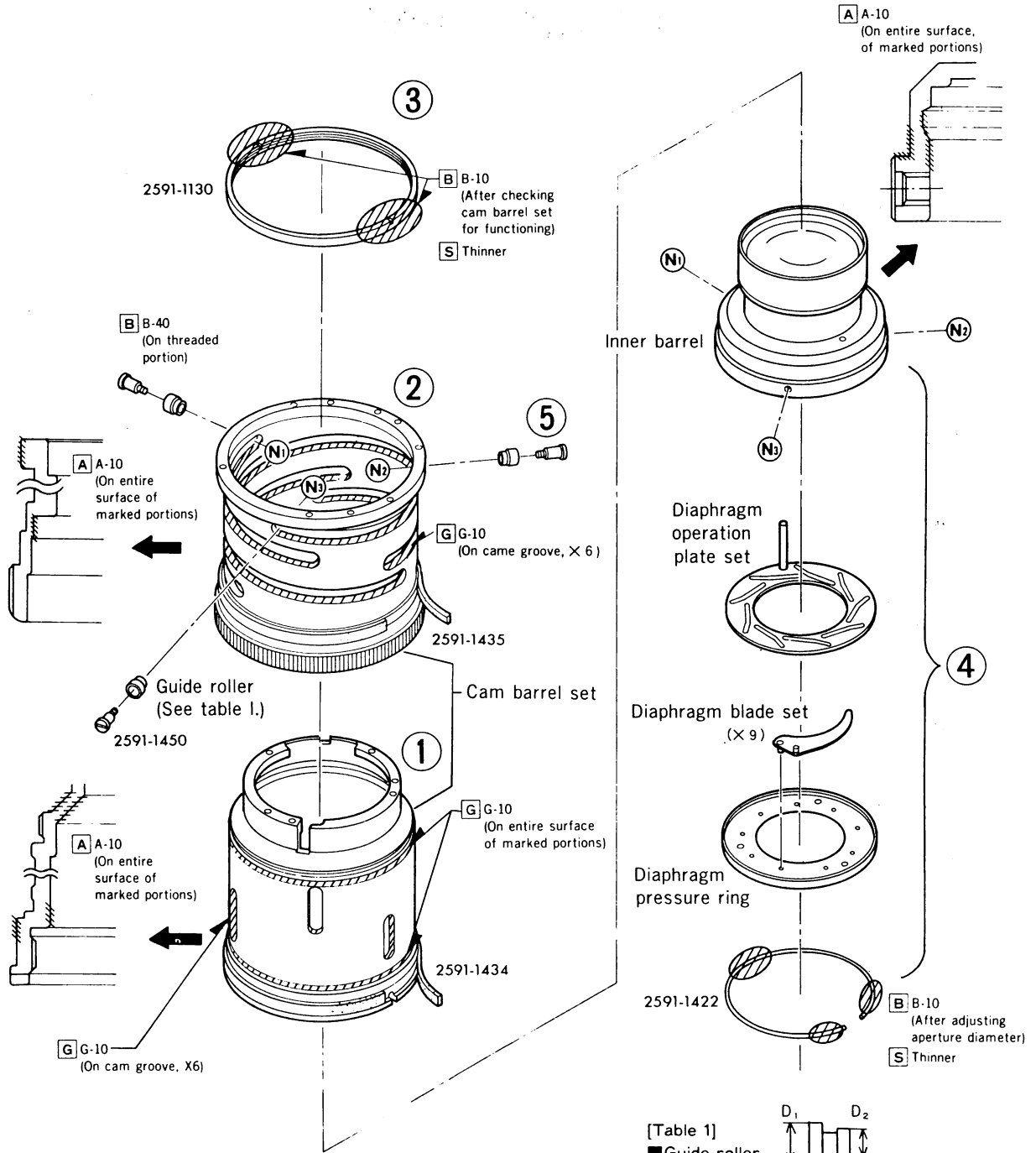
■ Precautions

- Since this lens uses many resin parts, keep the following in mind when assembling and adjusting.
Use Fronsolve or alcohol when cleaning.
Never use thinner, ketone or ether.
- Since this lens uses MOS-IC, it is necessary to take special precautions about static electricity.
When performing repair, use the conductive mat as shown.



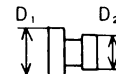
1 Cam barrel set, Inner barrel, Diaphragm blade

■ Assemble the parts in order of ① - ⑤.



[Table 1]

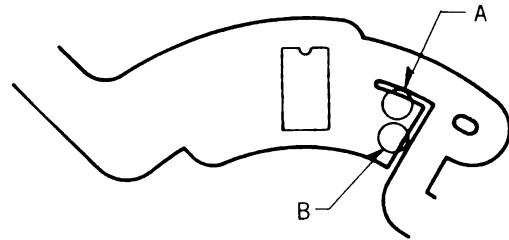
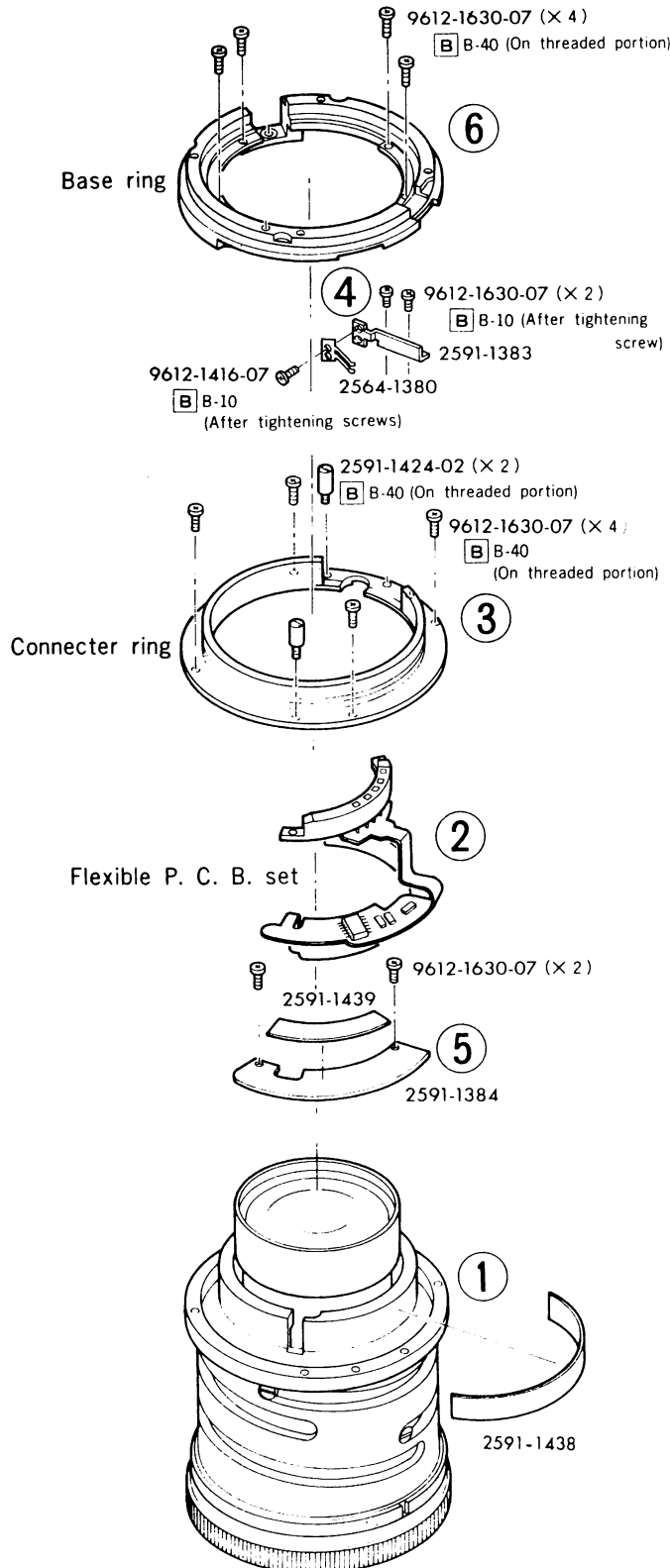
■ Guide roller



2591-1451-01	$D_1 = \phi 4.53, D_2 = \phi 4.03$
2591-1452-01	$D_1 = \phi 4.53, D_2 = \phi 4.02$
2591-1453-01	$D_1 = \phi 4.53, D_2 = \phi 4.01$
2591-1454-01	$D_1 = \phi 4.52, D_2 = \phi 4.03$
2591-1455-01	$D_1 = \phi 4.52, D_2 = \phi 4.02$
2591-1456-01	$D_1 = \phi 4.52, D_2 = \phi 4.01$
2591-1457-01	$D_1 = \phi 4.51, D_2 = \phi 4.03$
2591-1458-01	$D_1 = \phi 4.51, D_2 = \phi 4.02$
2591-1459-01	$D_1 = \phi 4.51, D_2 = \phi 4.01$

2 Base ring, Connector ring, Flexible base plate set

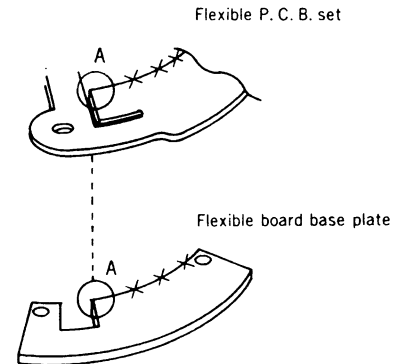
■ Assemble the parts in order of ①—⑥.



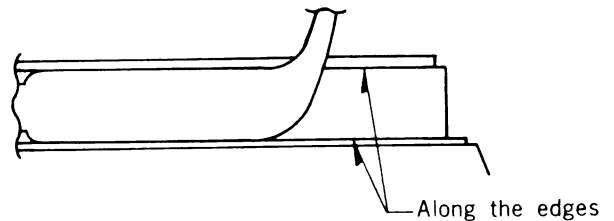
■ When replacing flexible base plate set, pay attention to the condition of "A" and "B"

- Cut "A" and/or "B" if necessary for same condition as previous ones.

■ When replacing the lens element, see "Lens ROM signal selecting procedure" on P.7-8.



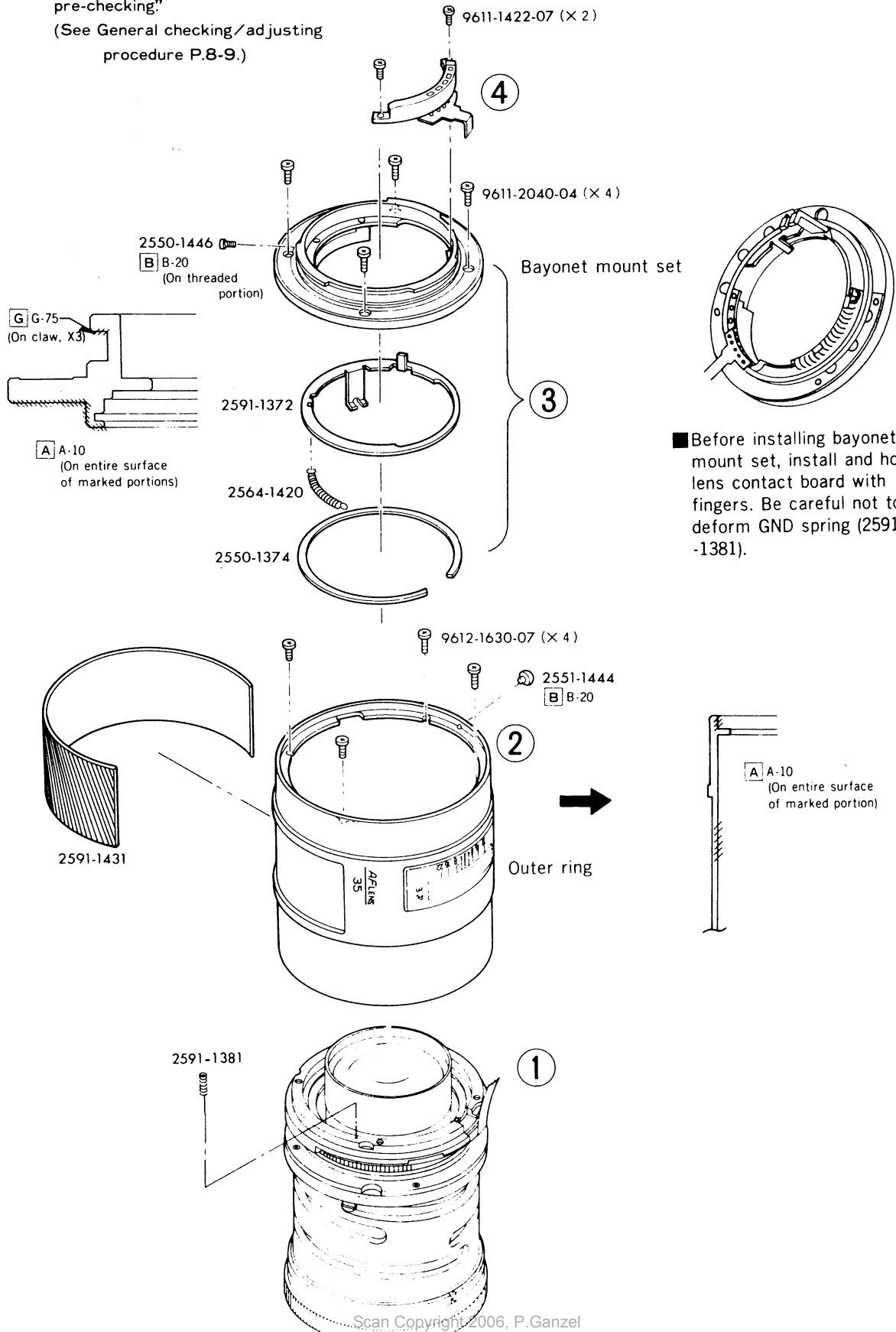
■ Attach flexible base plate set (2591-0440) to flexible board base plate (2591-1384), aligning "A" s and marked portions (xxx),



■ Attach flexible base plate set along the edges, not to slant it.

Temporary assembly for aperture diameter adjusting(Outer ring, Bayonet mount)

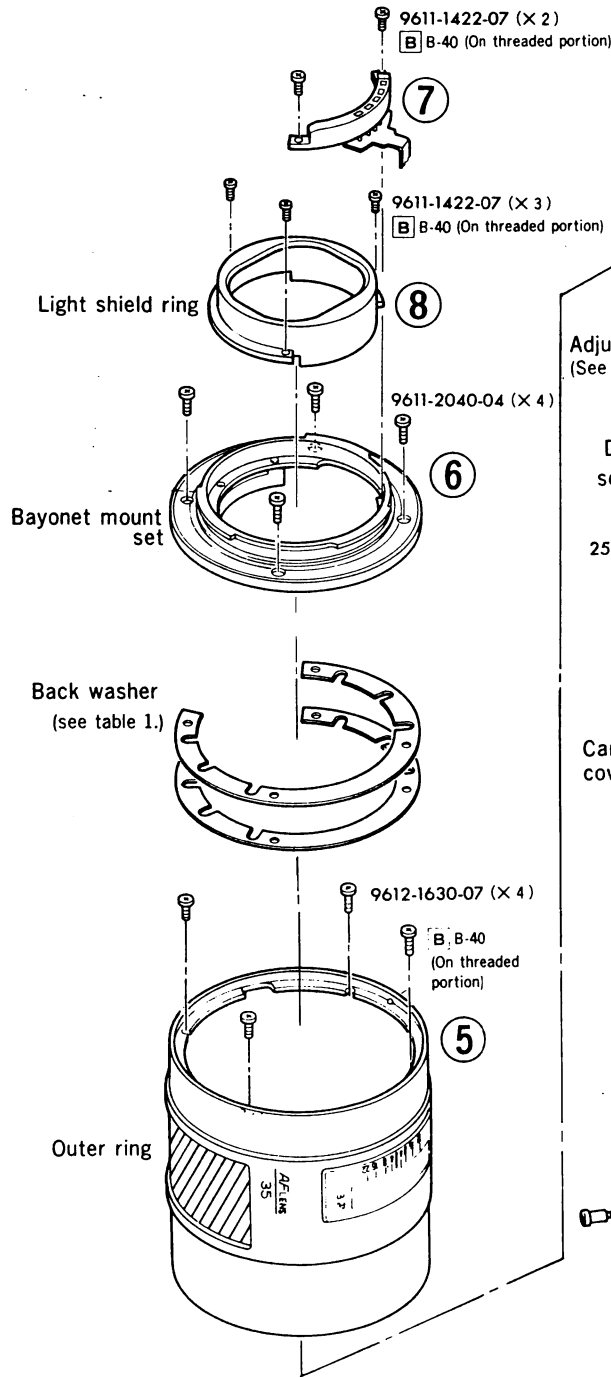
- Assemble the parts in order of ①—④.
- After assembling, perform "Aperture diameter adjusting" and "Aperture diameter pre-checking"
(See General checking/adjusting procedure P.8-9.)



■ Before installing bayonet mount set, install and hold lens contact board with fingers. Be careful not to deform GND spring (2591-1381).

3 Distance scale plate, Outer ring, Bayonet mount set, Light shield ring

■ Assemble the parts in order of ①—⑧.

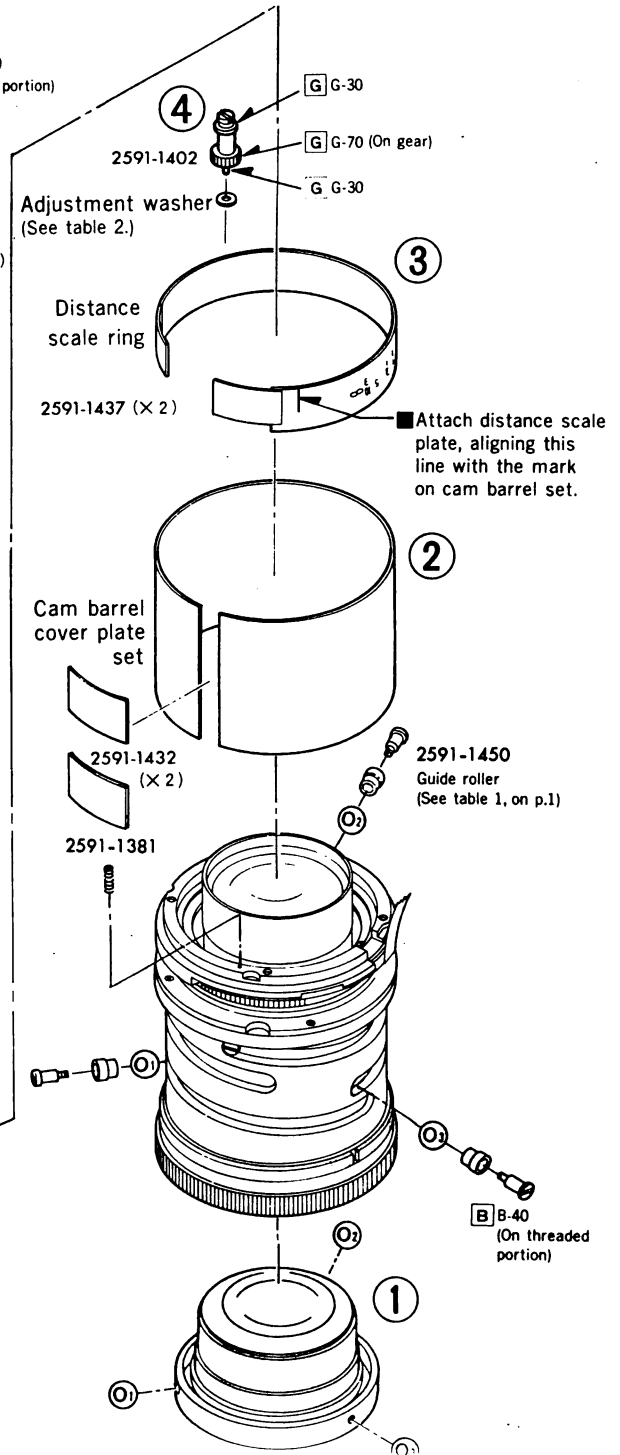


[Table 1]
Back washer

2552-1361-01	t=0.05
2552-1362-01	t=0.07
2552-1363-01	t=0.1
2552-1364-01	t=0.2
2552-1365-01	t=0.5

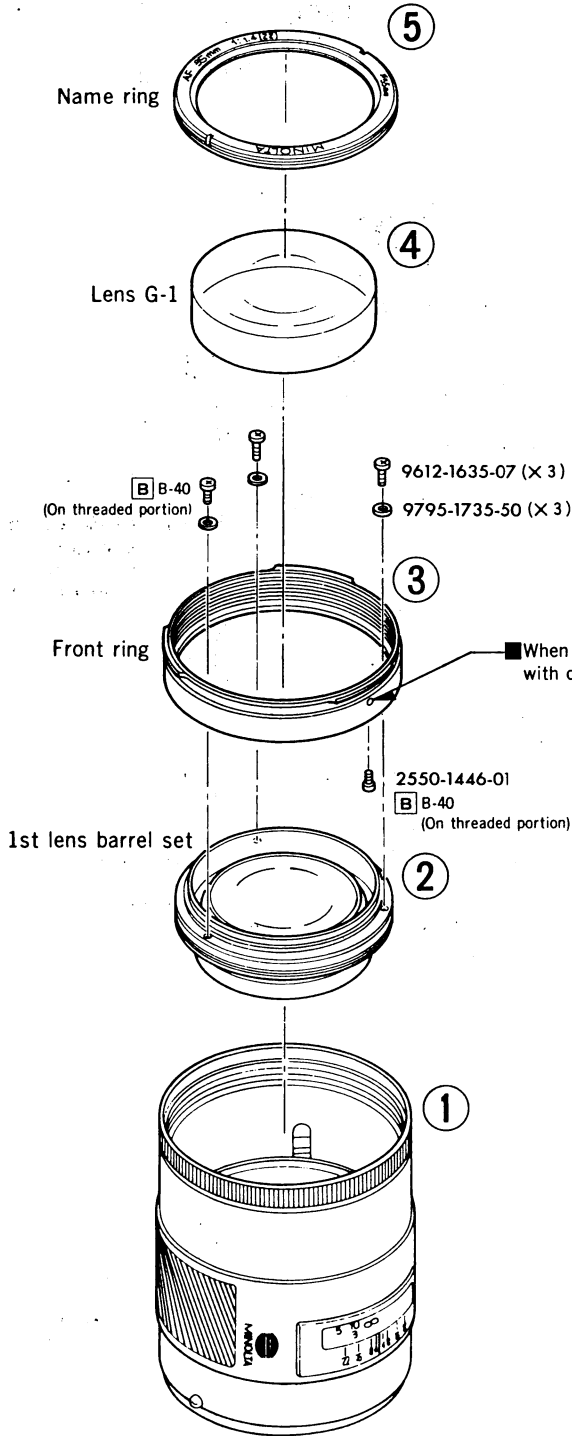
[Table 2]
Adjustment washer

2591-1391-01	t=0.05
2591-1392-01	t=0.07
2591-1393-01	t=0.1
2591-1394-01	t=0.2
2591-1395-01	t=0.5



4 Name ring, Front ring, 1st lens barrel set

■ Assemble the parts in order of ①—⑤.



1. Flange back adjusting (referring to Flange back adjusting procedure on p. 6).

Allowable range $f'F = 44.58^{+0.03}_0$

2. Projection resolving power checking (referring to General checking/adjusting procedure on p. 6).

Allowable range for Servicing (min).

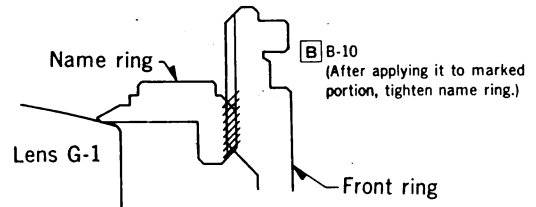
f (mm)	Distance D (m)	Center (y' = 0)	y' = 15	
			S	M
35	1.5	100	32	40

S : Sagital image

M : Meridinal image

3. Check aperture diameter (referring to General checking/adjusting procedure on p. 9).

4. Check General functioning (referring to General checking/adjusting procedure on p. 14).

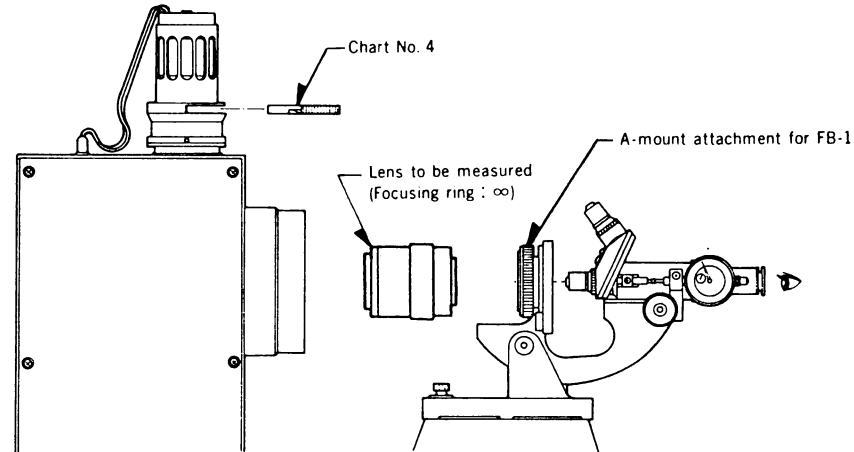


■ Flange back adjusting

- Measuring instruments : Collimator (Model RC-1000 I* II* III) ※Discontinued model
 : Flange back checking tester (FB-1)
 : A-mount attachment for FB-1
 : Flange back gauge (43.50mm)

■ Preparation

- Set lens and measuring instruments as Fig. below.



■ Adjusting procedure

(For preparation of measuring instruments and measurement of flange back, see "Flange back (f'F) measuring, adjusting procedure" of General checking/adjusting procedure on p. 1).

1. Check if flange back value meets allowable range ($44.58^{+0.03}$).

If out of allowable range, calculate correct value.

(Example) Measured flange back value : 44.50

Allowable range : 44.58~44.61

$44.58 - 44.50 = 0.08$ | Decrease back washer thickness (0.08→0.11mm)

$44.61 - 44.50 = 0.11$ | to meet allowable range.

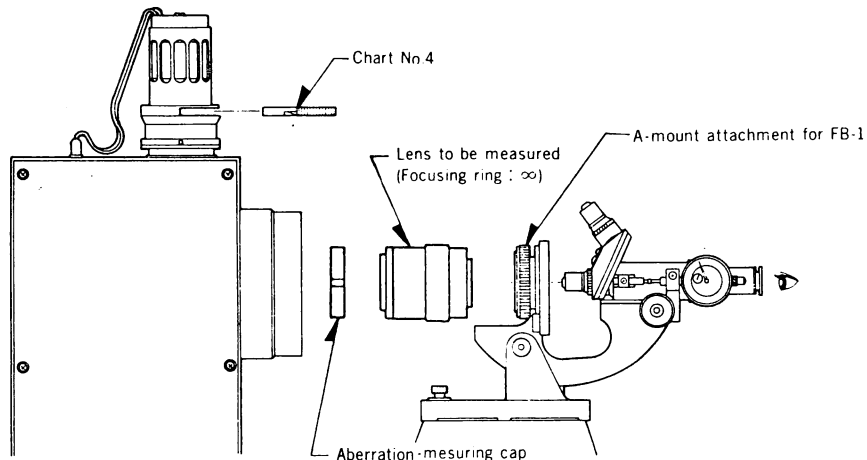
- If measured flange back value is shorter than allowable range...decrease back washer thickness
 - If measured flange back value is longer than allowable range...increase back washer thickness
2. Remove back washer from lens unit.
 3. Measure thickness of original back washer. Then select proper total thickness of back washer.
(Classified back washers are given on p. 4)
 4. After assembling, make sure that flange back meets allowable range.
(If out of allowable range, repeat above procedures 1-3.)

■ Lens ROM signal selecting procedure

- Measuring instruments :
- Collimator (Model RC-1000 I*, II*, III) *Discontinued model
 - Flange back checking tester (FB-1)
 - A-mount attachment for FB-1
 - Flange back gauge (43.50mm)
 - Aberration-measuring-cap (F8) 2591-0001-75

■ Preparation

Set lens and instruments as below.



■ Measuring of focus shift caused by stopping-down of aperture

1. Set the lens to be measured to A-mount attachment.
2. Measure $f'F$ value at full-opening aperture.
3. Attach aberration-measuring-cap(F8) and measure $f'F$ value.
Since chart-image becomes dark, be careful not make measuring-error.
4. Obtain focus shift value (spherical aberration) from difference of $f'F$ between F8 and full-opening.

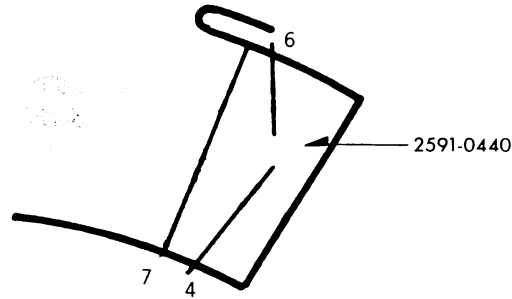
$$f'F \text{ at F8} - f'F \text{ at full-opening aperture} = \text{focus shift value} \\ \text{caused by stopping down}$$

5. Corresponding to the focus shift value, select lens ROM signal by cutting printed wire.

■ Type of flexible PCB based on focus shift value

Type of flex PCB	Display on I/O Tester	Cutting point of flex PCB	Focus shift value
4	Type4	At point 4	- 0.08 $\begin{matrix} -0.03 \\ -0.07 \end{matrix}$ (+0.01 to +0.05)
5	Type5	No cutting	- 0.08 ± 0.02 (+0.06 to +0.10)
6	Type6	At point 6	- 0.08 $\begin{matrix} -0.05 \\ -0.03 \end{matrix}$ (+0.11 to +0.13)
7	Type7	At point 7	Unsettled

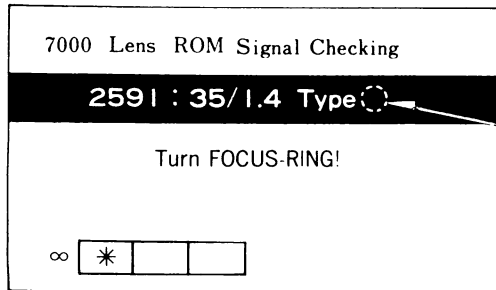
■Cutting point of flexible PCB



■Display on I/O Tester

Set the lens, referring to p. 14 of General checking/adjusting procedure.

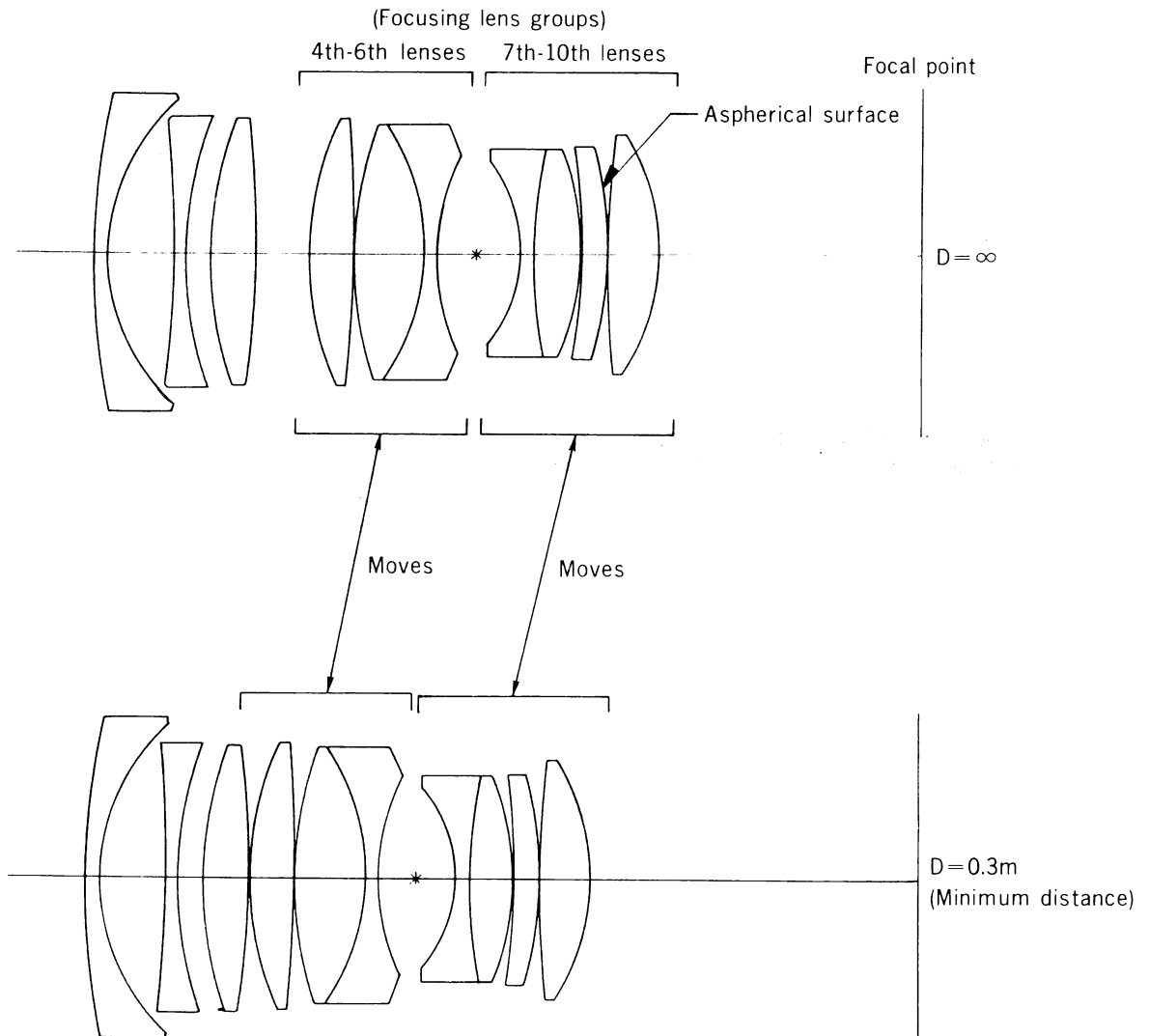
Check the type of flexible PCB is correct.



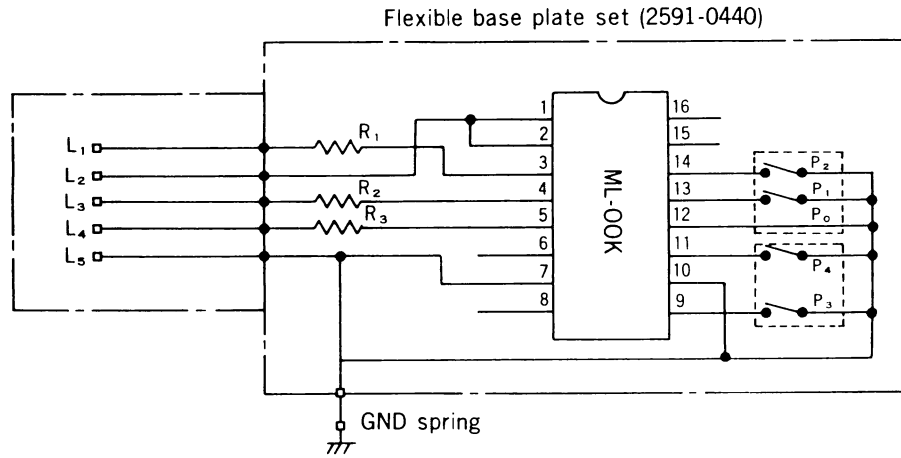
"4," "5," "6," or "7"
appears here corresponding
to type of flex PCB.
(See table on p. 7.)

Description of focusing

- Double-floating system (rear focusing system) is employed which changes the moving speed of each focusing lens group.
- Aspherical lens is used as 9th lens.

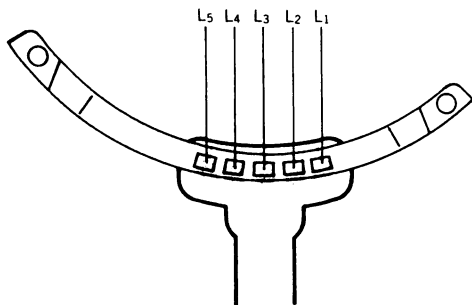


Schematic circuit diagram, Printed wiring diagram



L1-5 : Lens signal contacts
R1-3 : Fixed resistors

ML-00K : ROM-IC
P 0 - 2 : Rotary encoder pattern switch
(ON/OFF at certain point by rotating focusing-ring)
P3, 4 : Switches formed by cutting the lines
Pay attention to its formation when replacing flexible base plate.



Flexible base plate set (2591-0440)

