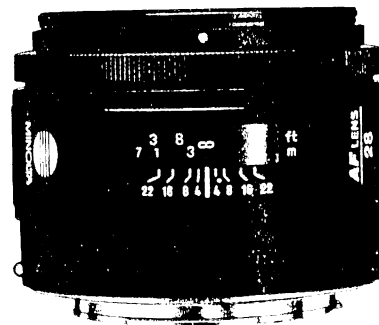
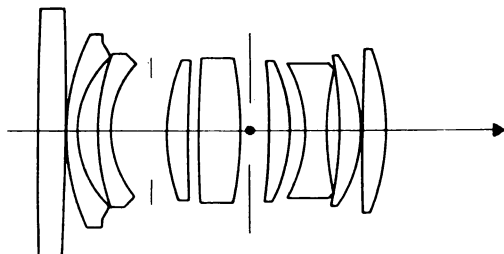


MINOLTA AF 28mm/F2 (2596-100)
MINOLTA MAXXUM AF 28mm/F2 (2596-600)

LENS



Construction : 9 elements in 9 groups
 Type : Retrofocus
 Coating : Minolta Achromatic
 Angle of view : 75°
 Lens mount : Minolta A mount
 Lens signal contact : 5 contacts
 Diaphragm : Automatic preset diaphragm
 F No. : Maximum 2
 Minimum 22
 Full-stop setting 7 stops
 Diaphragm blade : 7 blades

DIMENSIONS & WEIGHT

Dimensions : ϕ 66.5 (max. diameter) ×
 49.5mm (max. length)
 Weight : 285 g
 Filter-thread diameter : ϕ 55mm (P=0.75)
 Lens hood : Exclusive (Bayonet type)

ACCESSORIES

Lens case : (LH-1031)
 Lens hood : (6596-810)

FOCUSING

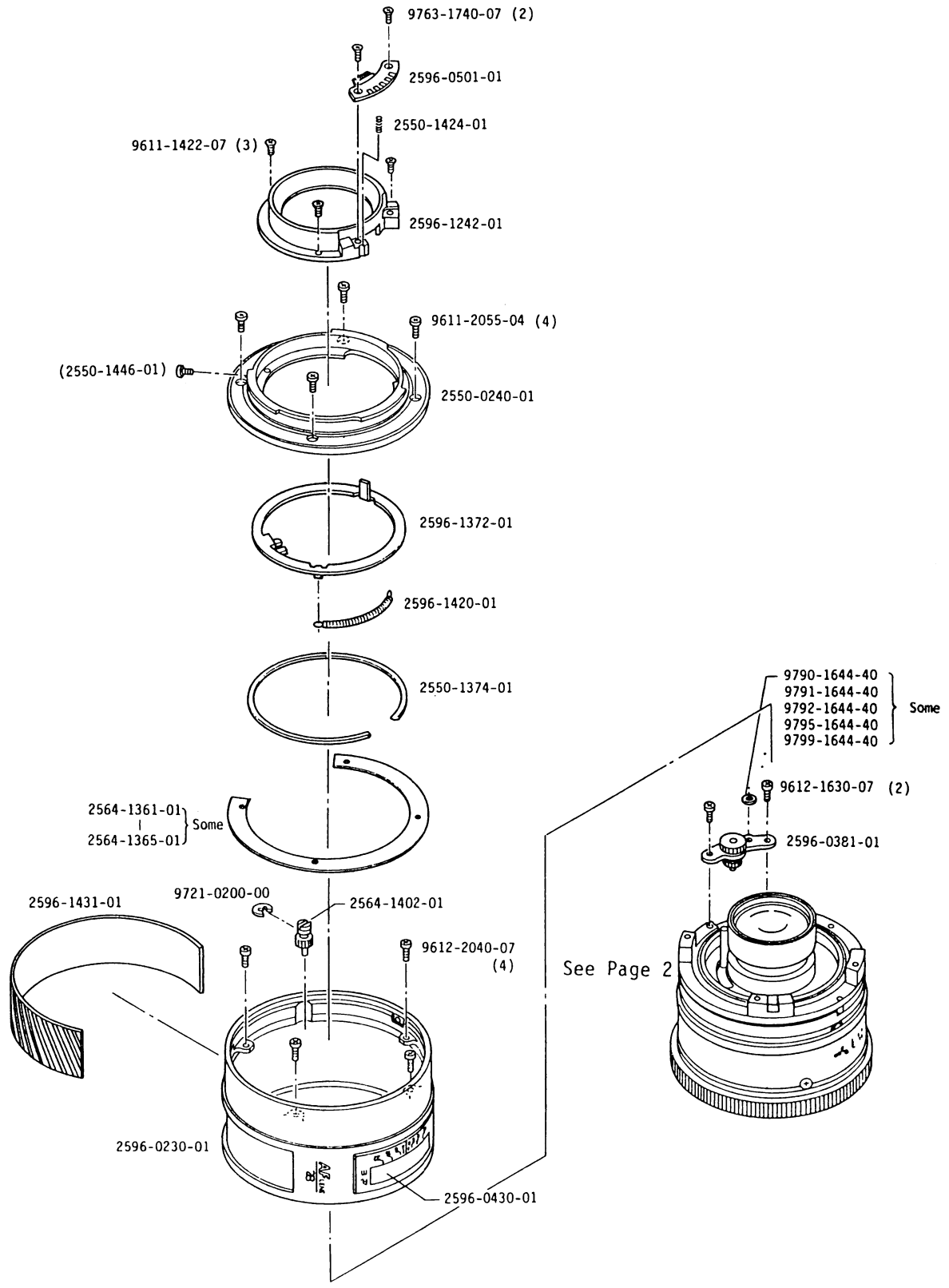
Focusing : AF, FA, M
 Type : Floating system
 Minimum focusing distance : 0.3m
 Distance scale : $\frac{1 \quad 1.25 \quad 1.5 \quad 2 \quad 3 \quad 8}{0.3 \quad 0.35 \quad 0.4 \quad 0.5 \quad 0.7 \quad 1 \quad 3} \frac{\text{(ft)}}{\text{(m)}} \infty$
 Infrared correction scale : Yes
 Depth-of-field scale : 4 8 16 22

I n d e x

No. 2596

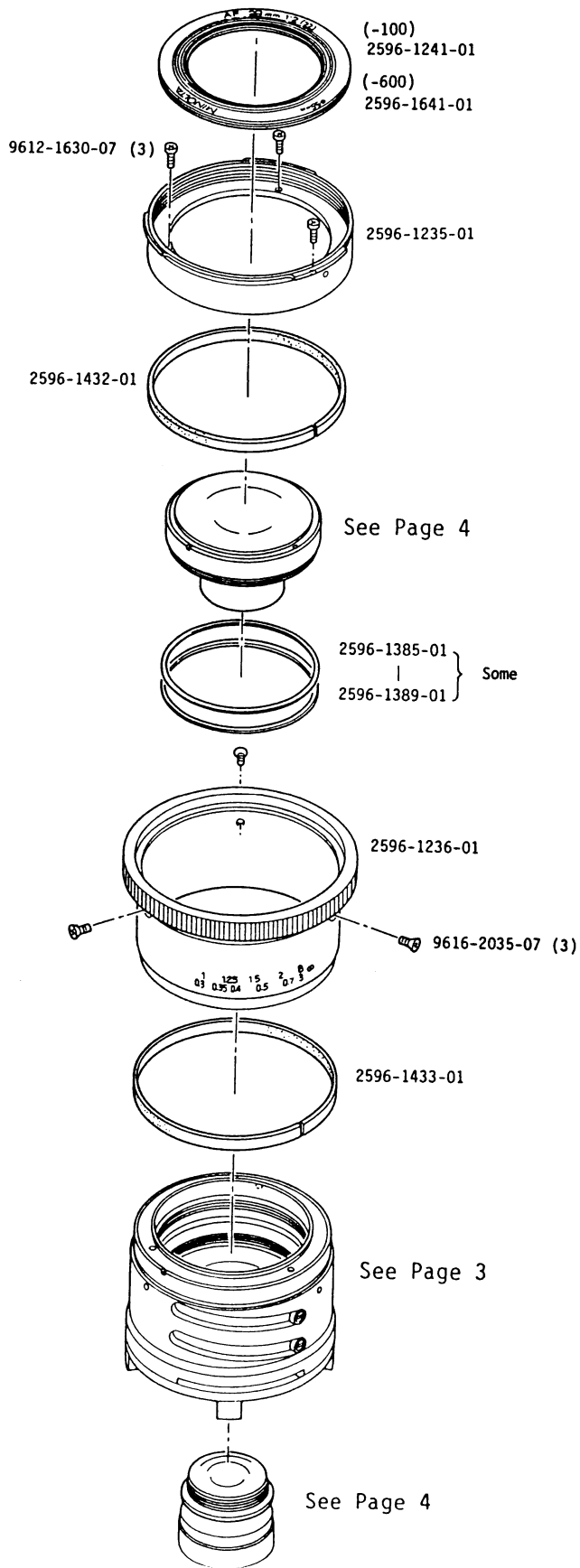
| Part No. | Page | Part No. | Page | Part No. | Page |
|----------------|------|----------------|------|-------------------|------|
| 2596-0101..... | 4 | 2564-1365..... | 1 | 2596-1473..... | 3 |
| 2596-0102..... | 4 | 2596-1372..... | 1 | 2596-1474..... | 3 |
| 2596-0104..... | 4 | 2550-1374..... | 1 | 2596-1475..... | 3 |
| 2596-0105..... | 4 | 2596-1385..... | 2 | 2596-1476..... | 3 |
| 2596-0113..... | 3 | 2596-1386..... | 2 | 2596-1477..... | 3 |
| 2596-0230..... | 1 | 2596-1387..... | 2 | 2596-1478..... | 3 |
| 2596-0231..... | 3 | 2596-1388..... | 2 | 2596-1479..... | 3 |
| 2555-0240..... | 1 | 2596-1389..... | 2 | | |
| 2596-0371..... | 3 | | | 2596-1641..... | 2 |
| 2596-0381..... | 1 | 2564-1402..... | 1 | 2596-1802..... | 4 |
| 2596-0430..... | 1 | 2596-1404..... | 3 | 2596-1808..... | 4 |
| 2596-0501..... | 1 | 2596-1405..... | 3 | 2596-1809..... | 4 |
| | | 2596-1420..... | 1 | | |
| 2596-1103..... | 4 | 2550-1424..... | 1 | 9611-1422-07..... | 1 |
| 2596-1106..... | 4 | 2596-1431..... | 1 | 9611-2055-04..... | 1 |
| 2596-1107..... | 4 | 2596-1432..... | 2 | 9612-1630-07..... | 1,2 |
| 2596-1110..... | 3 | 2596-1433..... | 2 | 9612-2040-07..... | 1 |
| 2596-1112..... | 3 | 2550-1446..... | 1 | 9616-2035-07..... | 2 |
| 2596-1115..... | 3 | 2596-1450..... | 3 | | |
| | | 2596-1451..... | 3 | 9721-0200-00..... | 1 |
| 2596-1234..... | 3 | 2596-1452..... | 3 | 9763-1740-07..... | 1 |
| 2596-1235..... | 2 | 2596-1453..... | 3 | 9790-1644-40..... | 1 |
| 2596-1236..... | 2 | 2596-1454..... | 3 | 9791-1644-40..... | 1 |
| 2596-1241..... | 2 | 2596-1455..... | 3 | 9792-1644-40..... | 1 |
| 2596-1242..... | 1 | 2596-1456..... | 3 | 9795-1644-40..... | 1 |
| | | 2596-1457..... | 3 | 9799-1644-40..... | 1 |
| 2564-1361..... | 1 | 2596-1458..... | 3 | | |
| 2564-1362..... | 1 | 2596-1459..... | 3 | | |
| 2564-1363..... | 1 | 2596-1470..... | 3 | | |
| 2564-1364..... | 1 | 2596-1471..... | 3 | | |
| | | 2596-1472..... | 3 | | |

AF 28mm F2 (22) Code No. 2596-100
MAXXUM AF 28mm F2 (22) Code No. 2596-600



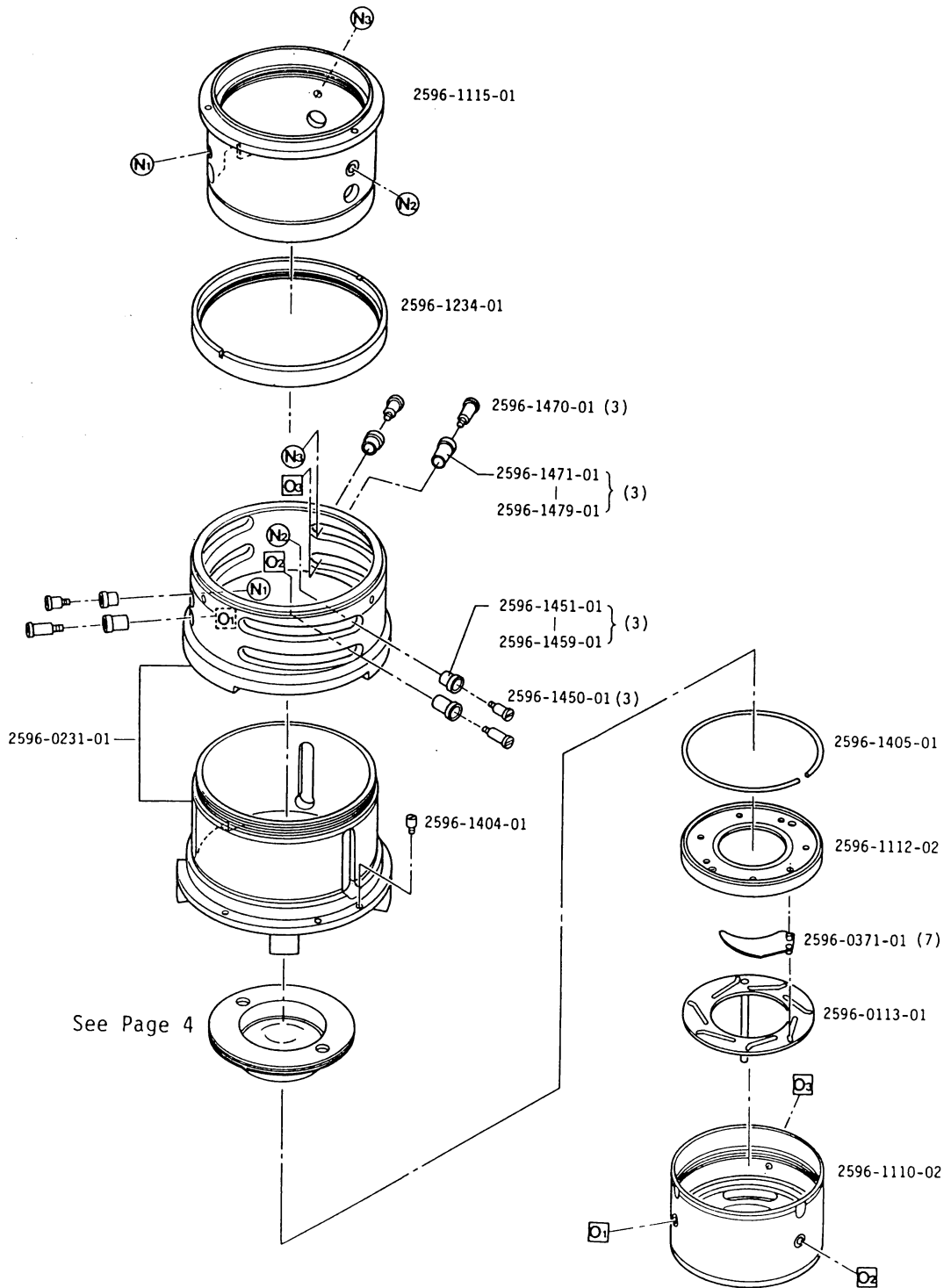
| Part No | Part Name | | Qty. |
|----------------|------------------------------|--------------|--------|
| 2596-0230-01 | Outer ring set | 固定保持環セット | 1 |
| 2555-0240-01 | Bayonet mount set | バヨネットマウントセット | 1 |
| (2550-1446-01) | Screw | ストッパービス | 1 |
| 2596-0381-01 | Gear set | ギヤーセット | 1 |
| 2596-0430-01 | Distance scale window set | 距離表示窓セット | |
| 2596-0501-01 | Lens contact board set | 信号基板セット | 1 |
| 2596-1242-01 | Light shield ring | 後遮光筒 | 1 |
| 2564-1361-01 | Back washer - A (t = 0.05) | バックワッシャー | } Some |
| 2564-1362-01 | Back washer - B (t = 0.07) | バックワッシャー | |
| 2564-1363-01 | Back washer - C (t = 0.1) | バックワッシャー | |
| 2564-1364-01 | Back washer - D (t = 0.2) | バックワッシャー | |
| 2564-1365-01 | Back washer - E (t = 0.5) | バックワッシャー | |
| 2596-1372-01 | Preset ring | プリセトルリング | 1 |
| 2550-1374-01 | Preset ring | プリセトルリング押え | 1 |
| 2564-1402-01 | Coupler | カプラー | 1 |
| 2596-1420-01 | Main spring | メインスプリング | 1 |
| 2550-1424-01 | Spring | アーススプリング | 1 |
| 2596-1431-01 | Leather | 貼皮 | 1 |
| 9611-1422-07 | Phillips type screw | 十字穴付なべ小ねじ | 3 |
| 9611-2055-04 | Phillips type screw | 十字穴付なべ小ねじ | 4 |
| 9612-1630-07 | Phillips type screw | 十字穴付なべ小ねじ | 2 |
| 9612-2040-07 | Phillips type screw | 十字穴付なべ小ねじ | 4 |
| 9721-0200-00 | E - ring | Eリング | 1 |
| 9763-1740-07 | Tap tite screw | 十字穴付タップタイトねじ | 2 |
| 9790-1644-40 | Washer | 薄ワッシャー | } Some |
| 9791-1644-40 | Washer | 薄ワッシャー | |
| 9792-1644-40 | Washer | 薄ワッシャー | |
| 9795-1644-40 | Washer | 薄ワッシャー | |
| 9799-1644-40 | Washer | 薄ワッシャー | |

AF 28mm F2 (22) Code No. 2596-100
MAXXUM AF 28mm F2 (22) Code No. 2596-600



| Part No | Part Name | | Qty. |
|--------------|------------------------------|--------------|--------|
| 2596-1235-01 | Front ring | 鏡頭環 | 1 |
| 2596-1236-01 | Focusing ring | 距離リング | 1 |
| 2596-1241-01 | Name ring (-100) | 飾り環 | 1 |
| 2596-1385-01 | Floating washer (t = 0.03) | フローティングワッシャー | } Some |
| 2596-1386-01 | Floating washer (t = 0.04) | フローティングワッシャー | |
| 2596-1387-01 | Floating washer (t = 0.05) | フローティングワッシャー | |
| 2596-1388-01 | Floating washer (t = 0.1) | フローティングワッシャー | |
| 2596-1389-01 | Floating washer (t = 0.2) | フローティングワッシャー | |
| 2596-1432-01 | Friction plate | 鏡頭環摩擦布 | |
| 2596-1433-01 | Friction plate | 距離リング摩擦布 | 1 |
| 2596-1641-01 | Name ring (-600) | 飾り環 | 1 |
| 9612-1630-07 | Phillips type screw | 十字穴付なべ小ねじ | 3 |
| 9616-2035-07 | Phillips type screw | 十字穴付半皿小ねじ | 3 |

AF 28mm F2 (22) Code No. 2596-100
MAXXUM AF 28mm F2 (22) Code No. 2596-600



| Part No | Part Name | | Qty. | |
|--------------|---|------------|------|---|
| 2596-0113-01 | Diaphragm operation plate set | 絞り操作板セット | 1 | |
| 2596-0231-01 | Cam barrel set | カム環セット | 1 | |
| 2596-0371-01 | Diaphragm blade set | 絞り羽根セット | 7 | |
| 2596-1110-02 | Inner barrel | 内筒 | 1 | |
| 2596-1112-02 | Diaphragm pressure ring | 絞り押え環 | 1 | |
| 2596-1115-01 | Moving barrel | 前移動枠 | 1 | |
| 2596-1234-01 | Cam barrel pressure ring | フォーカスカム環押え | 1 | |
| 2596-1404-01 | Focusing ring stopper | 距離環ストッパー | 1 | |
| 2596-1405-01 | Pressure spring | 絞り押え環SP | 1 | |
| 2596-1450-01 | Front guide pin | 前群案内ピン | 3 | |
| 2596-1451-01 | Front guide roller (D ₁ = 5.03, D ₂ = 4.53) | 前群案内ローラー | 3 | |
| 2596-1452-01 | Front guide roller (D ₁ = 5.03, D ₂ = 4.52) | 前群案内ローラー | | |
| 2596-1453-01 | Front guide roller (D ₁ = 5.03, D ₂ = 4.51) | 前群案内ローラー | | |
| 2596-1454-01 | Front guide roller (D ₁ = 5.02, D ₂ = 4.53) | 前群案内ローラー | | |
| 2596-1455-01 | Front guide roller (D ₁ = 5.02, D ₂ = 4.52) | 前群案内ローラー | | |
| 2596-1456-01 | Front guide roller (D ₁ = 5.02, D ₂ = 4.51) | 前群案内ローラー | | |
| 2596-1457-01 | Front guide roller (D ₁ = 5.01, D ₂ = 4.53) | 前群案内ローラー | | |
| 2596-1458-01 | Front guide roller (D ₁ = 5.01, D ₂ = 4.52) | 前群案内ローラー | 3 | |
| 2596-1459-01 | Front guide roller (D ₁ = 5.01, D ₂ = 4.51) | 前群案内ローラー | | |
| 2596-1470-01 | Rear guide pin | 後群案内ピン | | 3 |
| 2596-1471-01 | Rear guide roller (D ₁ = 5.03, D ₂ = 4.53) | 後群案内ローラー | | 3 |
| 2596-1472-01 | Rear guide roller (D ₁ = 5.03, D ₂ = 4.52) | 後群案内ローラー | | |
| 2596-1473-01 | Rear guide roller (D ₁ = 5.03, D ₂ = 4.51) | 後群案内ローラー | | |
| 2596-1474-01 | Rear guide roller (D ₁ = 5.02, D ₂ = 4.53) | 後群案内ローラー | | |
| 2596-1475-01 | Rear guide roller (D ₁ = 5.02, D ₂ = 4.52) | 後群案内ローラー | | |
| 2596-1476-01 | Rear guide roller (D ₁ = 5.02, D ₂ = 4.51) | 後群案内ローラー | | |
| 2596-1477-01 | Rear guide roller (D ₁ = 5.01, D ₂ = 4.53) | 後群案内ローラー | | |
| 2596-1478-01 | Rear guide roller (D ₁ = 5.01, D ₂ = 4.52) | 後群案内ローラー | 3 | |
| 2596-1479-01 | Rear guide roller (D ₁ = 5.01, D ₂ = 4.51) | 後群案内ローラー | | |

AF 28mm F2 (22) Code No. 2596-100
 MAXXUM AF 28mm F2 (22) Code No. 2596-600

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

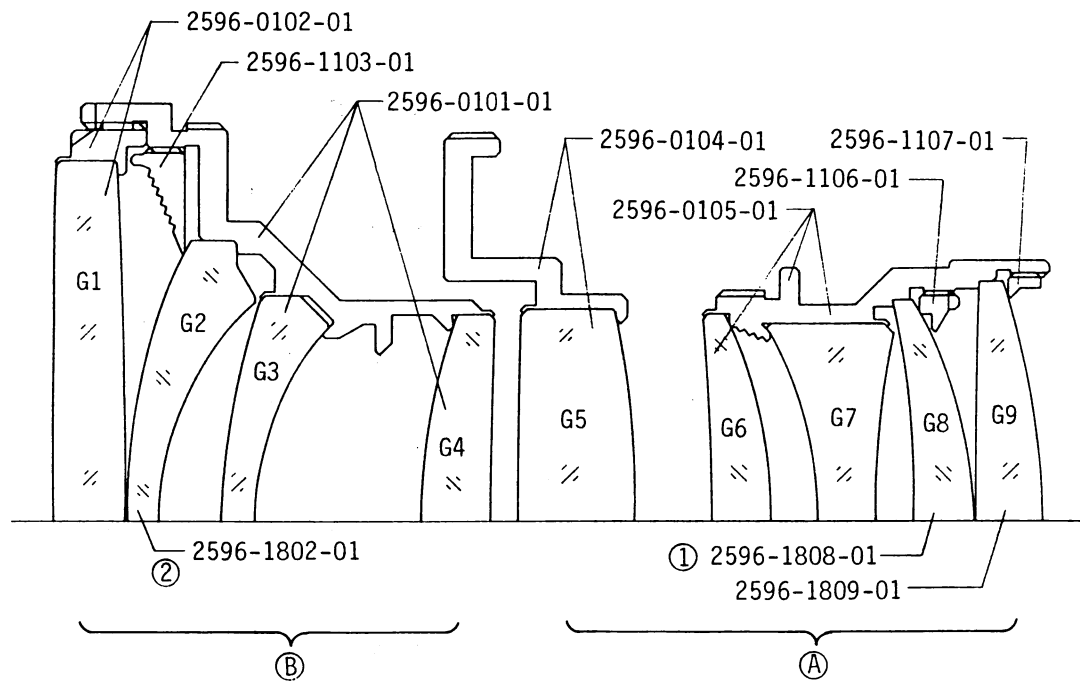
■ 下記部品を修理した場合は、必ず投影解像力を確認して下さい。

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. |
|--------------|-----------------------|---------|------|
| 2596-0101-01 | Front lens barrel set | 前玉枠セット | 1 |
| 2596-0102-01 | G1 barrel set | G1玉枠セット | 1 |
| 2596-0104-01 | G5 barrel set | G5玉枠セット | 1 |
| 2596-0105-01 | Rear lens barrel set | 後玉枠セット | |
| 2596-1103-01 | G2 pressure ring | G2押え | 1 |
| 2596-1106-01 | G8 pressure ring | G8押え | 1 |
| 2596-1107-02 | G9 pressure ring | G9押え | 1 |
| 2596-1802-01 | Lens G2 | レンズG2 | 1 |
| 2596-1808-01 | Lens G8 | レンズG8 | 1 |
| 2596-1809-01 | Lens G9 | レンズG9 | 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—

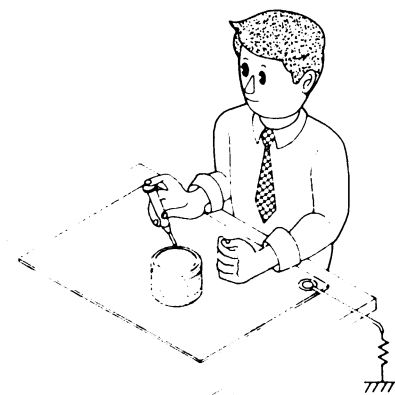
- B : Adhesive
- S : Solvent
- A : Anti-diffusion agent
- G : Grease
- T : Tool
- : Point of assembling and general caution

■ Assembly and adjustment procedure

| | |
|---|------|
| 1 Moving barrel, Cam barrel set, Inner barrel, Diaphragm blades | p. 1 |
| 2 Focusing ring, Outer ring, Bayonet mount, Light shield ring, Lens contact board | p. 2 |
| ■ Floating interval adjusting procedure | p. 3 |
| 3 Name ring, Front ring, Front lens group, Floating washer, G5 barrel set | p. 4 |
| ■ Flange back (f'F) adjusting | p. 4 |
| ■ Projection resolving power checking | p. 4 |
| ■ Aperture diameter checking | p. 4 |
| ■ General function checking | p. 4 |
| ■ Flange back (f'F) adjusting procedure | p. 5 |
| ■ Description of focusing | p. 6 |
| ■ Schematic circuit diagram, Printed wiring diagram | p. 7 |
| ■ Exclusive tools | p. 8 |

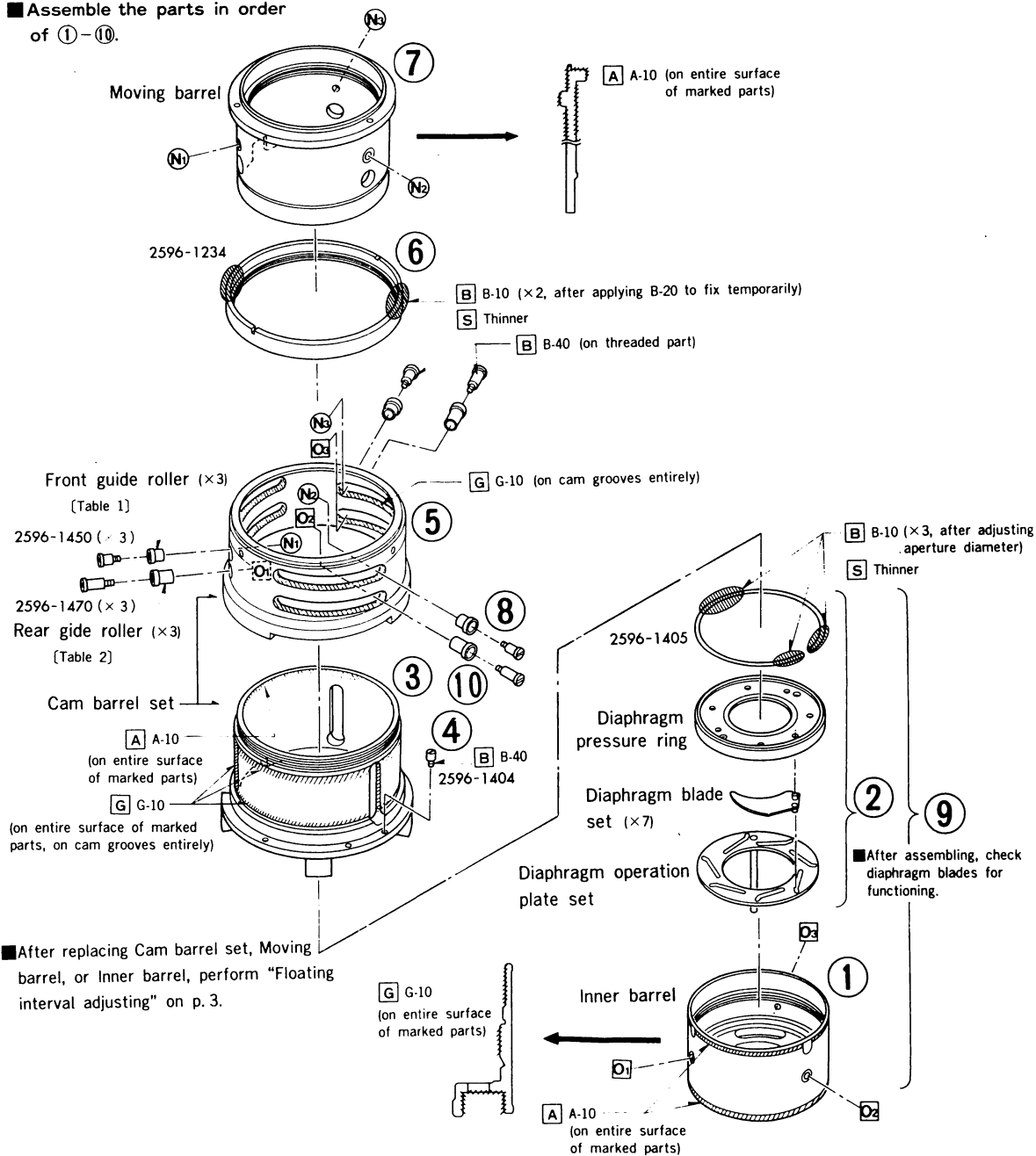
■ Precautions

- 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 Moving barrel, Cam barrel set, Inner barrel, Diaphragm blades

Assemble the parts in order of ①-⑩.



[Table 1]

Front guide roller



| | | |
|--------------|----------------------------|----------------------------|
| 2596-1451-01 | $D_1 = \phi 5.03\text{mm}$ | $D_2 = \phi 4.53\text{mm}$ |
| 2596-1452-01 | $D_1 = \phi 5.03\text{mm}$ | $D_2 = \phi 4.52\text{mm}$ |
| 2596-1453-01 | $D_1 = \phi 5.03\text{mm}$ | $D_2 = \phi 4.51\text{mm}$ |
| 2596-1454-01 | $D_1 = \phi 5.02\text{mm}$ | $D_2 = \phi 4.53\text{mm}$ |
| 2596-1455-01 | $D_1 = \phi 5.02\text{mm}$ | $D_2 = \phi 4.52\text{mm}$ |
| 2596-1456-01 | $D_1 = \phi 5.02\text{mm}$ | $D_2 = \phi 4.51\text{mm}$ |
| 2596-1457-01 | $D_1 = \phi 5.01\text{mm}$ | $D_2 = \phi 4.53\text{mm}$ |
| 2596-1458-01 | $D_1 = \phi 5.01\text{mm}$ | $D_2 = \phi 4.52\text{mm}$ |

[Table 2]

Rear guide roller

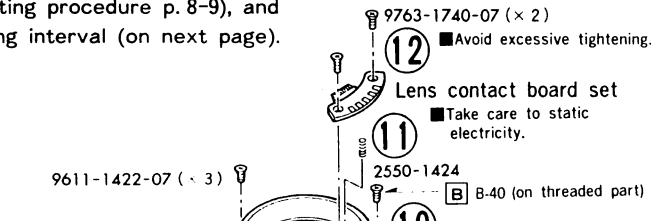


| | | |
|--------------|-----------------------|-----------------------|
| 2596-1471-01 | $D_1 = 5.03\text{mm}$ | $D_2 = 4.53\text{mm}$ |
| 2596-1472-01 | $D_1 = 5.03\text{mm}$ | $D_2 = 4.52\text{mm}$ |
| 2596-1473-01 | $D_1 = 5.03\text{mm}$ | $D_2 = 4.51\text{mm}$ |
| 2596-1474-01 | $D_1 = 5.02\text{mm}$ | $D_2 = 4.53\text{mm}$ |
| 2596-1475-01 | $D_1 = 5.02\text{mm}$ | $D_2 = 4.52\text{mm}$ |
| 2596-1476-01 | $D_1 = 5.02\text{mm}$ | $D_2 = 4.51\text{mm}$ |
| 2596-1477-01 | $D_1 = 5.01\text{mm}$ | $D_2 = 4.53\text{mm}$ |
| 2596-1478-01 | $D_1 = 5.01\text{mm}$ | $D_2 = 4.52\text{mm}$ |

2 Focusing ring, Outer ring, Bayonet mount, Light shield ring, Lens contact board

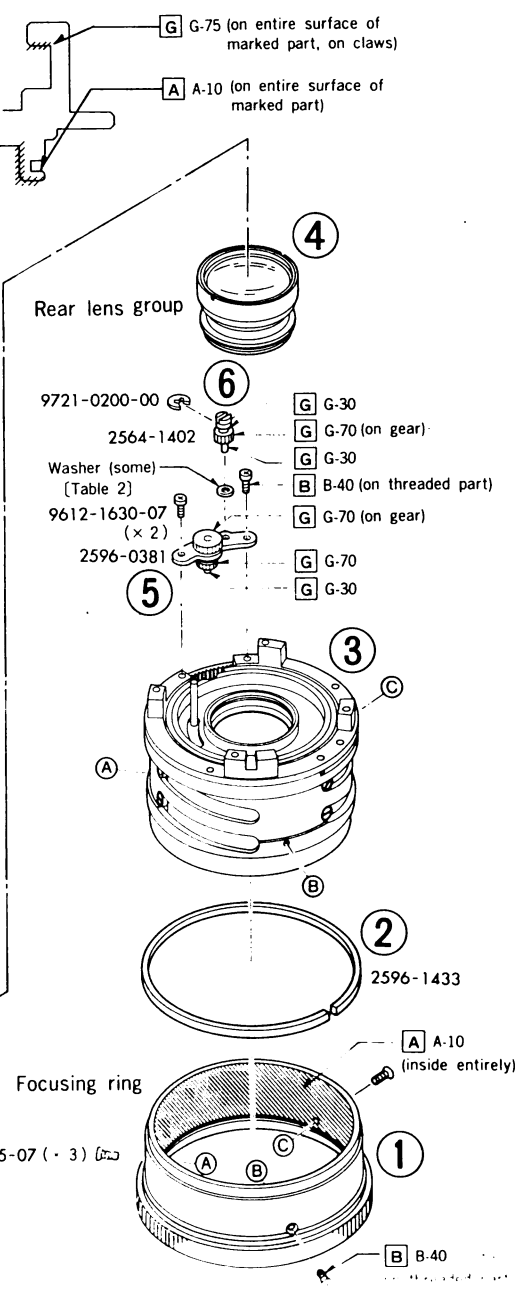
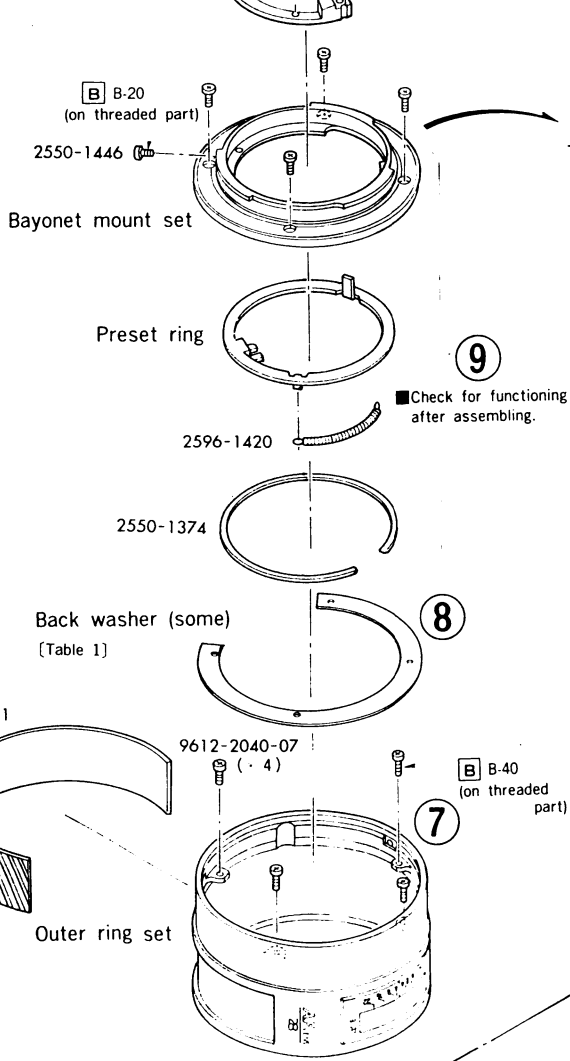
■ Assemble the parts in order of ①-⑫.

After assembling, check/adjust aperture diameter (General checking/adjusting procedure p.8-9), and floating interval (on next page).



[Table 2]

| Washer | |
|--------------|------------|
| 9790-1644-40 | t = 0.05mm |
| 9799-1644-40 | t = 0.07mm |
| 9791-1644-40 | t = 0.1 mm |
| 9792-1644-40 | t = 0.2 mm |
| 9795-1644-40 | t = 0.5 mm |



[Table 1]

| Back washer | |
|--------------|------------|
| 2564-1361-01 | t = 0.05mm |
| 2564-1362-01 | t = 0.07mm |
| 2564-1363-01 | t = 0.1 mm |
| 2564-1364-01 | t = 0.2 mm |
| 2564-1365-01 | t = 0.5 mm |

Floating interval adjusting procedure

■ Since this lens employs floating system for focusing, ADJUST floating-interval after replacing Cam barrel set, Moving barrel, or Inner barrel.

■ Instruments : Floating gauge (2596-0001-75)
: Anvil 120064 (7982-1011-11)
: Dial gauge 107F with lever (7982-1011-01)
: Dial comparator PH-2 (7982-1008-01)

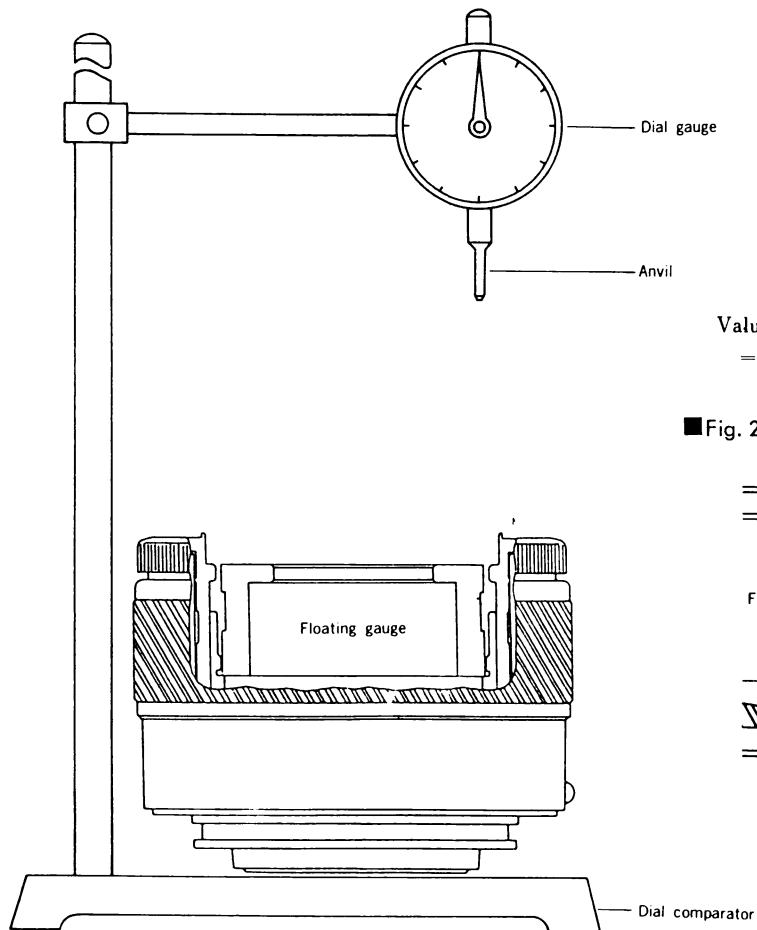
■ Checking

- (1) Remove Front ring, Front lens' group, and G5 barrel set.
Then, set the instruments and lens as fig. 1.
- (2) Rotate focusing ring to set to '∞' position.
- (3) Read the values at point **A** (on Floating gauge) and point **B** (on moving barrel 2596-1115).
Value at **B** - Value at **A** = Thickness of washer(s)

■ Adjusting

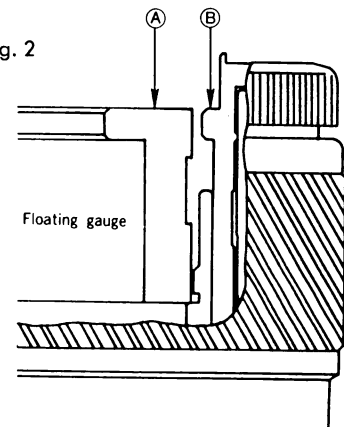
Referring to the table on next page, select proper washer(s) so that the level difference (Value at **B** - Value at **A**) is $0 \pm 0.02\text{mm}$.

■ Fig. 1



$$\text{Value at } \textcircled{B} - \text{Value at } \textcircled{A} = \text{Thickness of washer(s)} \pm 0.02\text{mm}$$

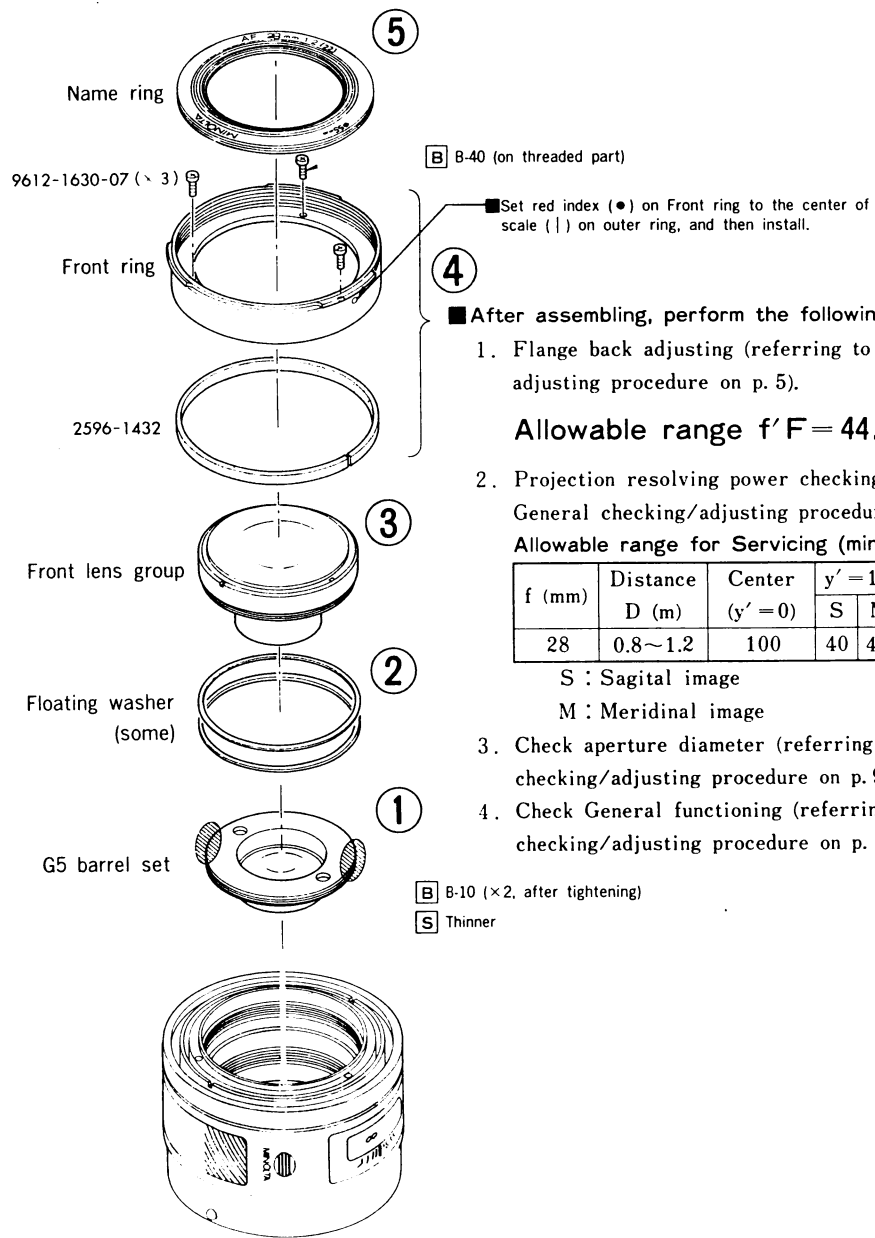
■ Fig. 2



■ Secure lens in position.

3 Name ring, Front ring, Front lens group, Floating washer, G5 barrel set

■ Assemble the parts in order of ①-⑤.



■ Floating washer

| | |
|--------------|------------|
| 2596-1385-01 | t = 0.03mm |
| 2596-1386-01 | t = 0.04mm |
| 2596-1387-01 | t = 0.05mm |
| 2596-1388-01 | t = 0.1 mm |
| 2596-1389-01 | t = 0.2 mm |

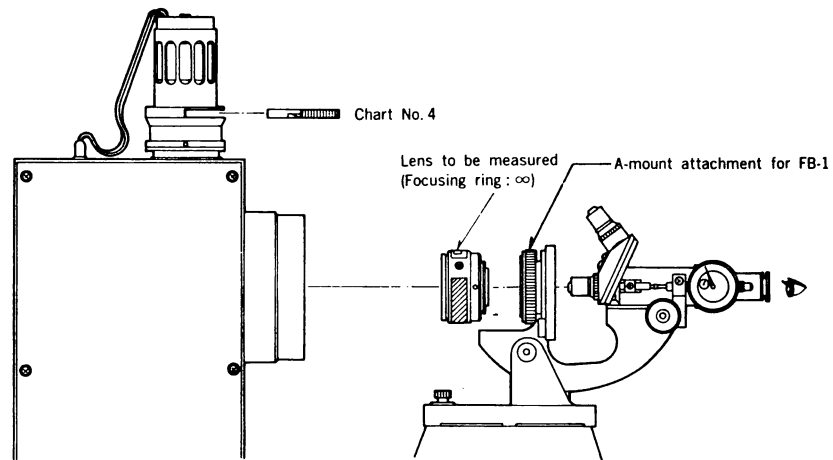
■ Select proper washer(s) according to the values got in floating interval adjusting (p. 3).

■ 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.



- Adjust flange back (f'F) after adjusting floating-interval on p. 3.

■ 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 ($44.56^{+0.03}_0$).

If out of allowable range, calculate correct value.

(Example) Measured flange back value : 44.50

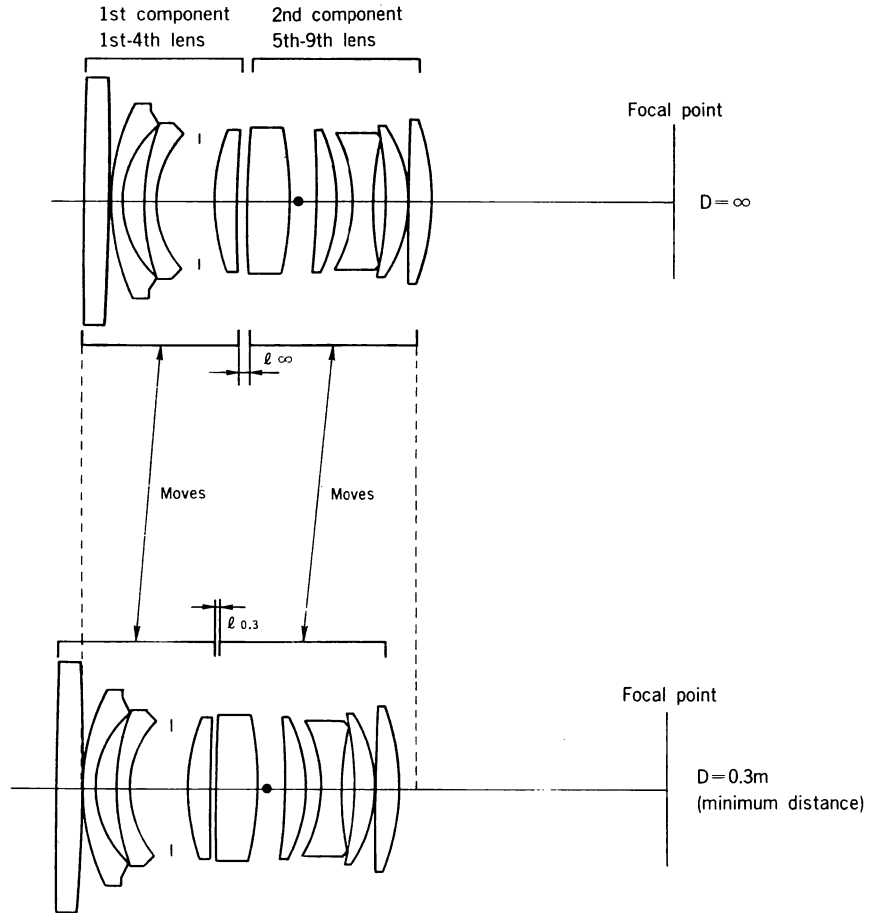
Allowable range :

$$\left. \begin{array}{l} 44.56 - 44.50 = 0.06 \\ 44.59 - 44.50 = 0.09 \end{array} \right\} \text{Decrease back washer thickness (0.06} \rightarrow \text{0.09mm) to meet allowable range.}$$

- 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. 2)
 4. After assembling, make sure that flange back meets allowable range. (If out of allowable range, repeat above procedures 1-3.)

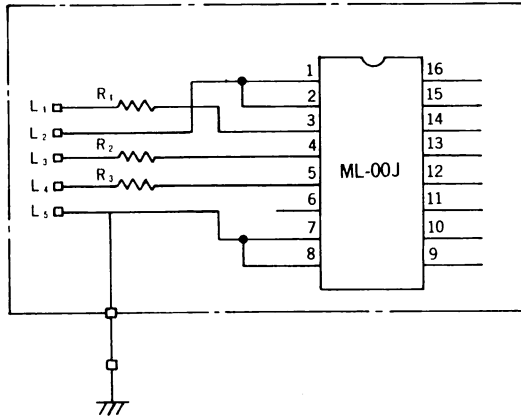
■ Description of focusing

■ Floating system (1st and 2nd components move independently.)



■ Schematic circuit diagram, Printed wiring diagram

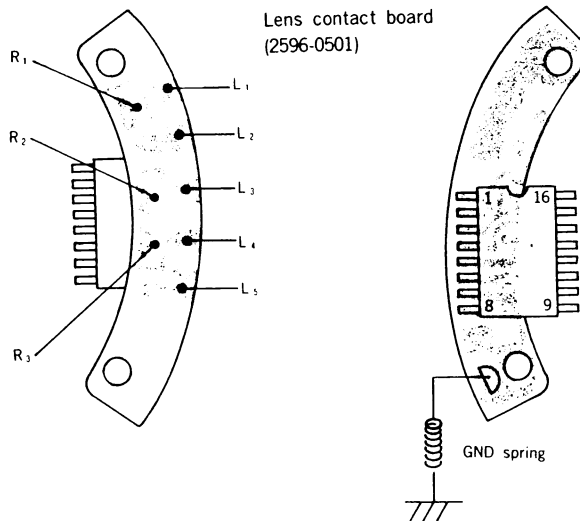
Lens contact board (2596-0501)



ML-00J : ROM-IC

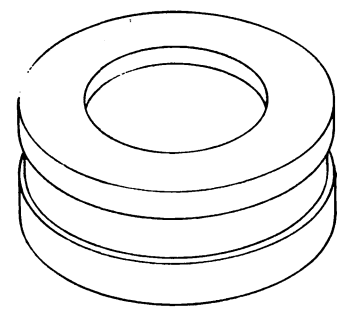
L₁₋₅ : Lens signal contacts

R₁₋₃ : Printed resistors



■ **Exclusive tools**

■ **Tool No. 2596-0001-75**
Floating gauge



■ **Tool No. 7982-1011-11**
Anvil 120064

