作成承認印	配布許可印
ニコン 映像事業 CS推進部 GM	

AF Zoom-Nikkor 28-80mm f/3.5-5.6 D (New)

REPAIR MANUAL

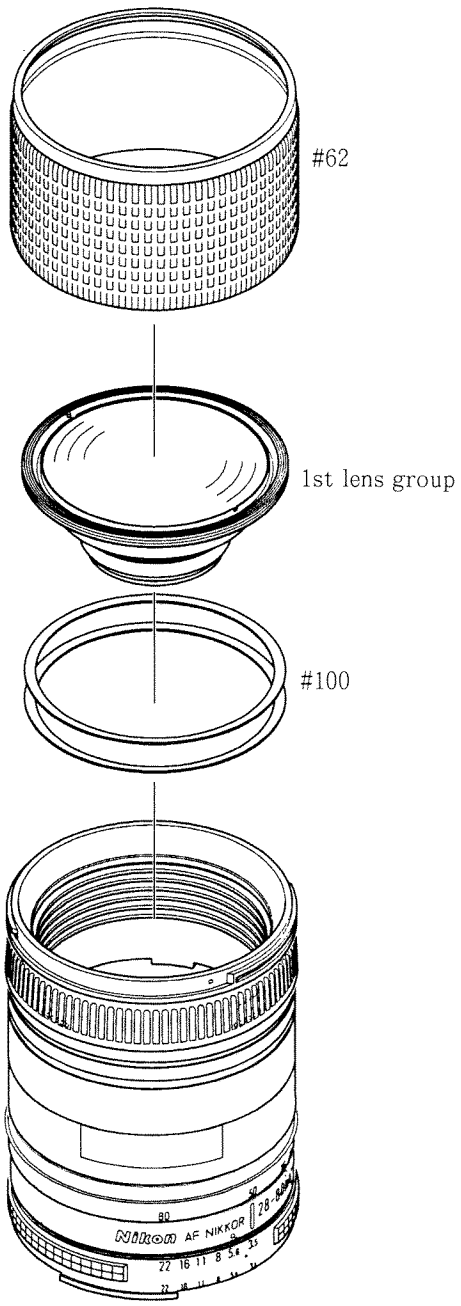
Nikon | NIKON CORPORATION
Tokyo, Japan

Printed in Japan April 1999

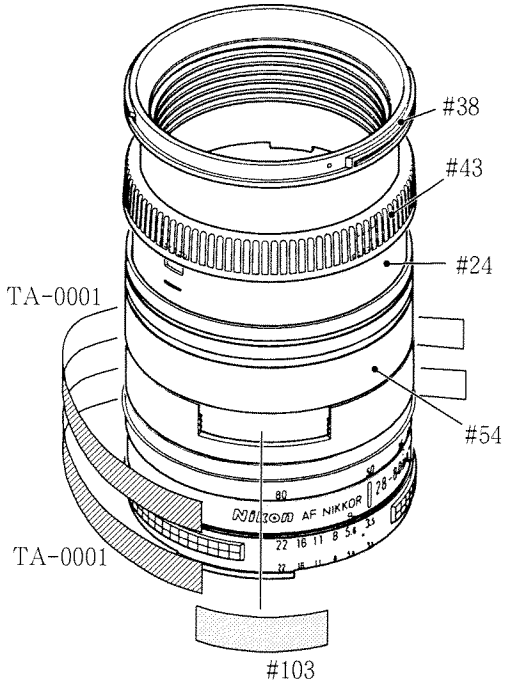
DISASSEMBLING／ASSEMBLING／ADJUSTMENT

1. DISASSEMBLING

RUBBER RING #62, 1st LENS GROUP



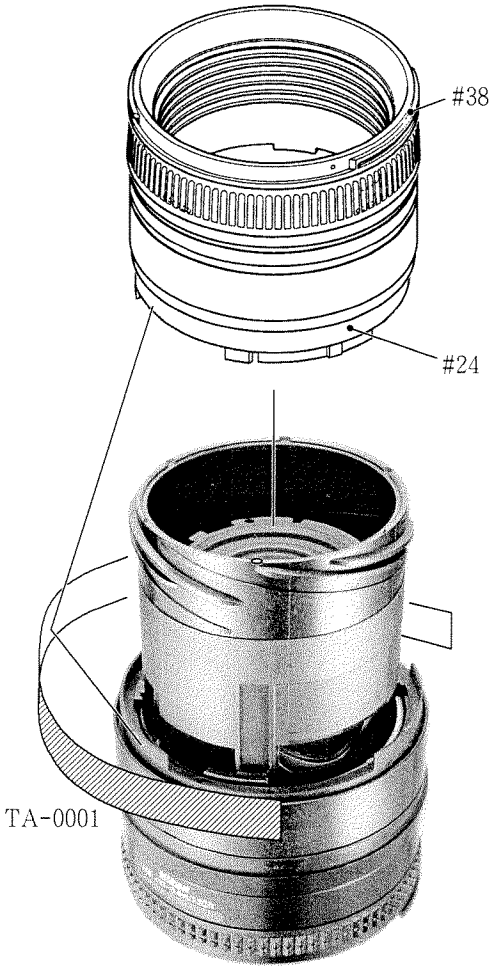
HELICOID RING #38, MF RING GROUP



① Peel off the tape TA-0001 attached around the body and #103.

② Set the zoom ring to 80mm.

③ Separate #43 from #24 by unhooking the four points.

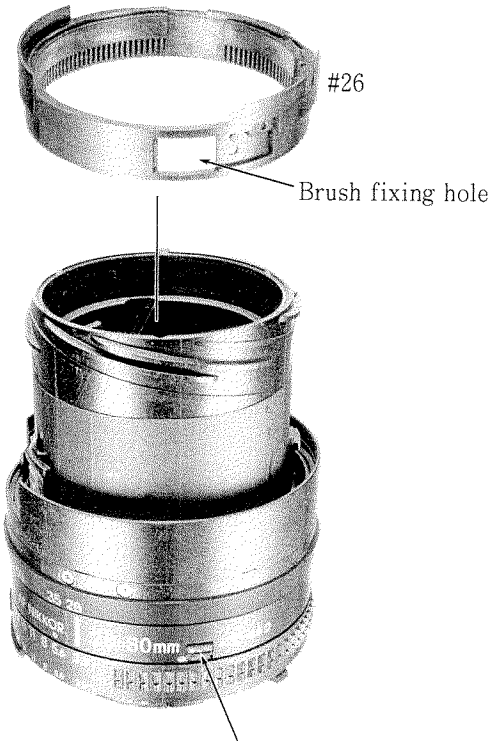


④ Peel off the tape TA-0001, and then remove the helicoid ring and the MF ring unit.

DISTANCE ENCODER BRUSH

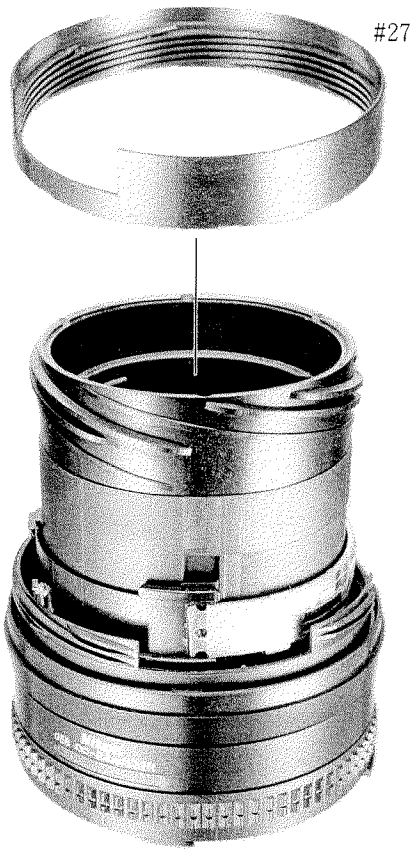
STOPPER B24

SEGMENT GEAR #26

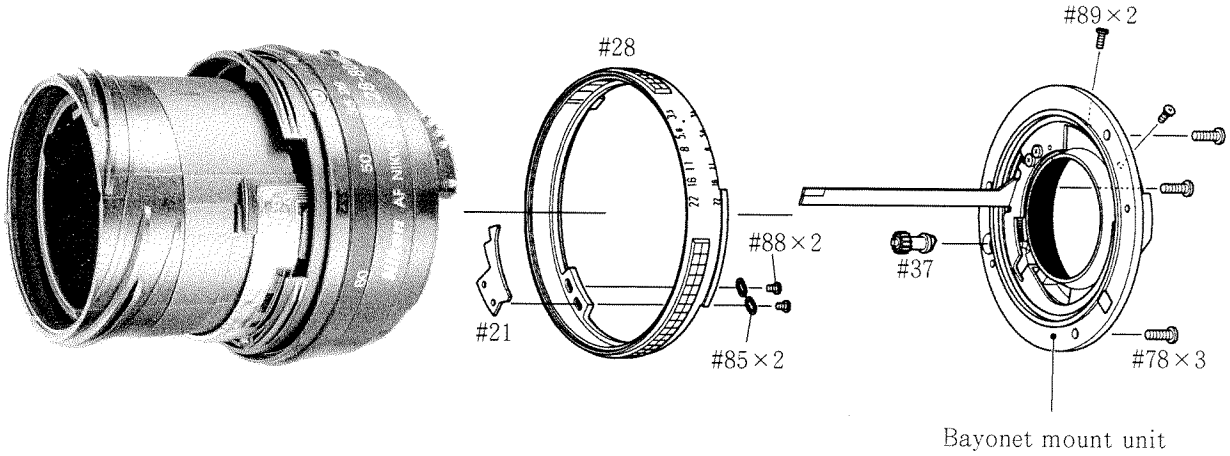


- Drive #26 and then set the brush fixing hole to meet the position of minimum aperture lock lever.

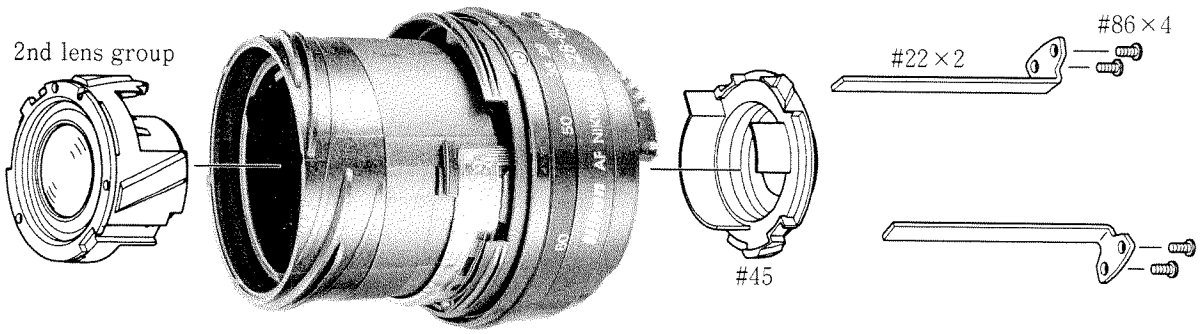
HELICOID RING #27



APERTURE RING, BAYONET MOUNT UNIT

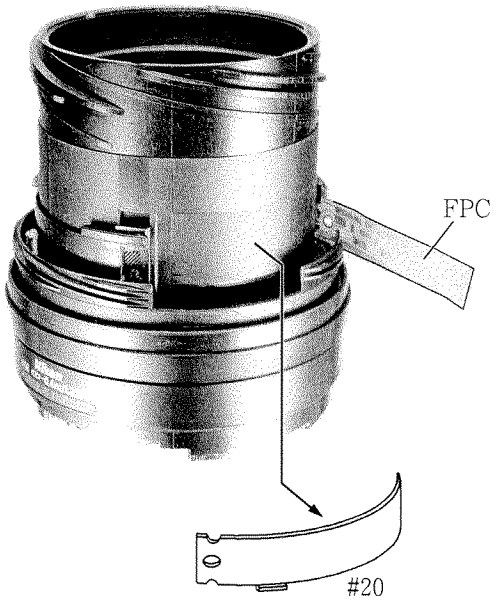


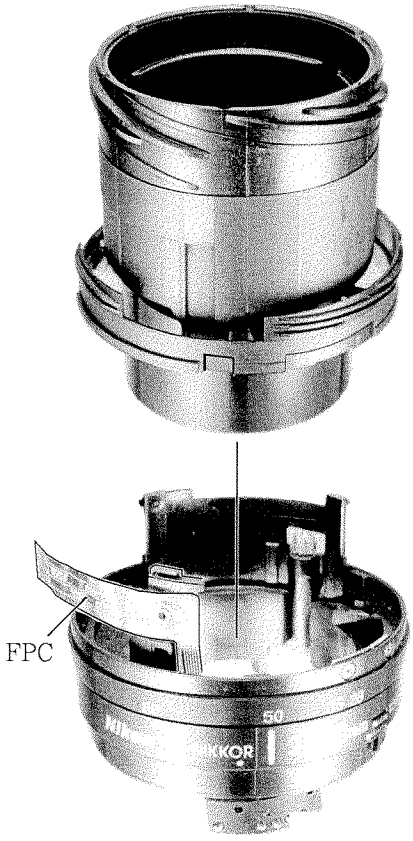
2nd LENS GROUP



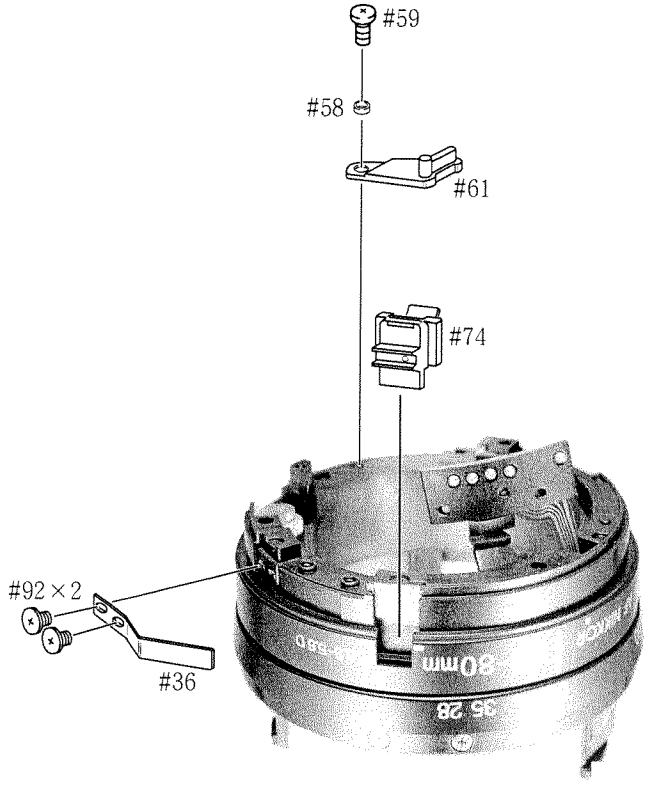
Caution : Due to already aligned 2nd lens group including G5 to G8 and the aperture blade housing, the 2nd lens group is set as a combined unit.
In this accord, be sure to avoid disassembling the 2nd lens group.

HELICOID RING GROUP

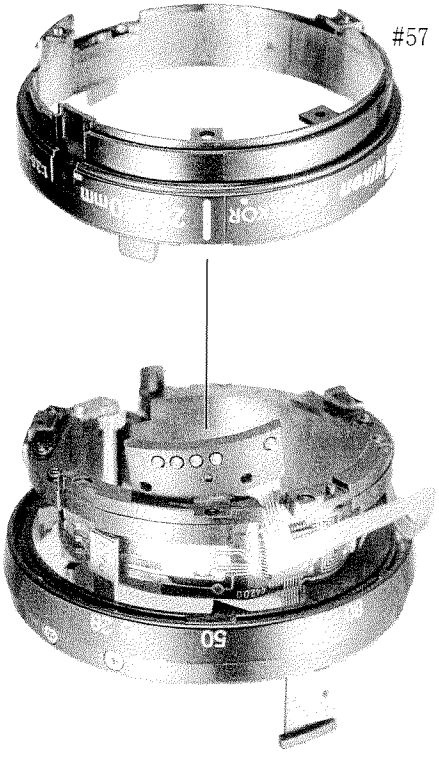




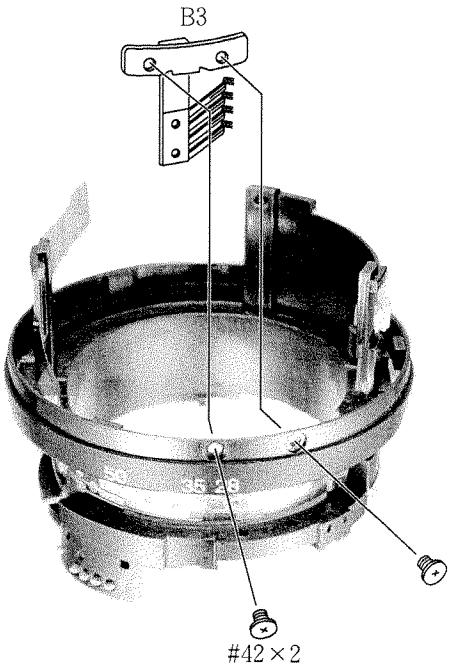
MINIMUM APERTURE LOCK LEVER, CLICK SPRING



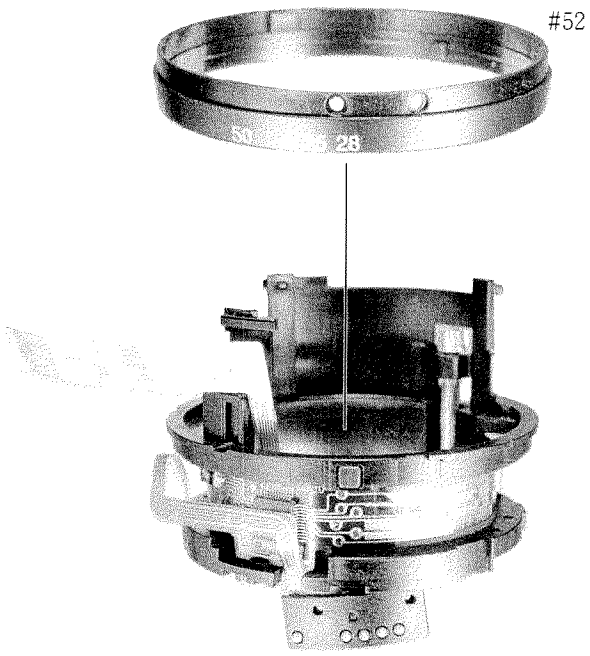
INDEX RING #57



ZOOM ENCODER BRUSH

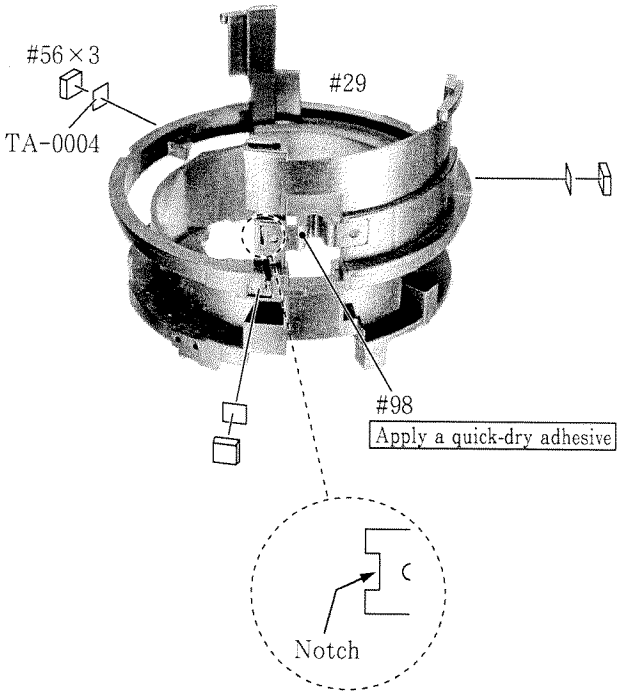


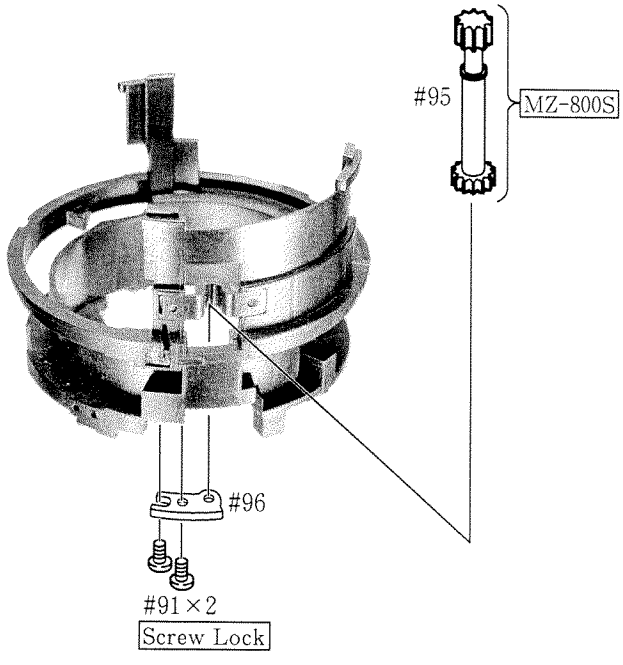
ZOOM RING #52



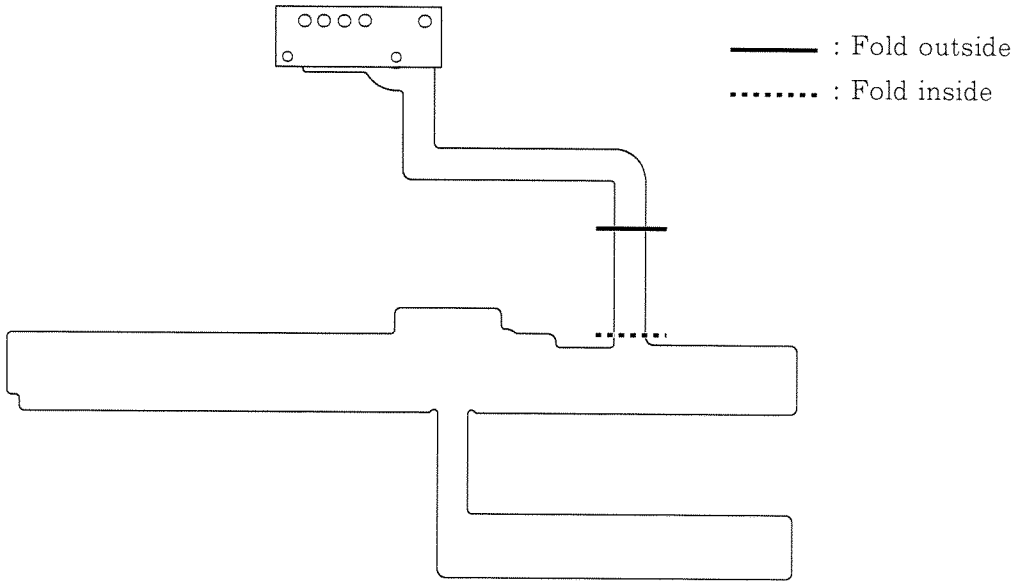
2. ASSEMBLING／ADJUSTMENT

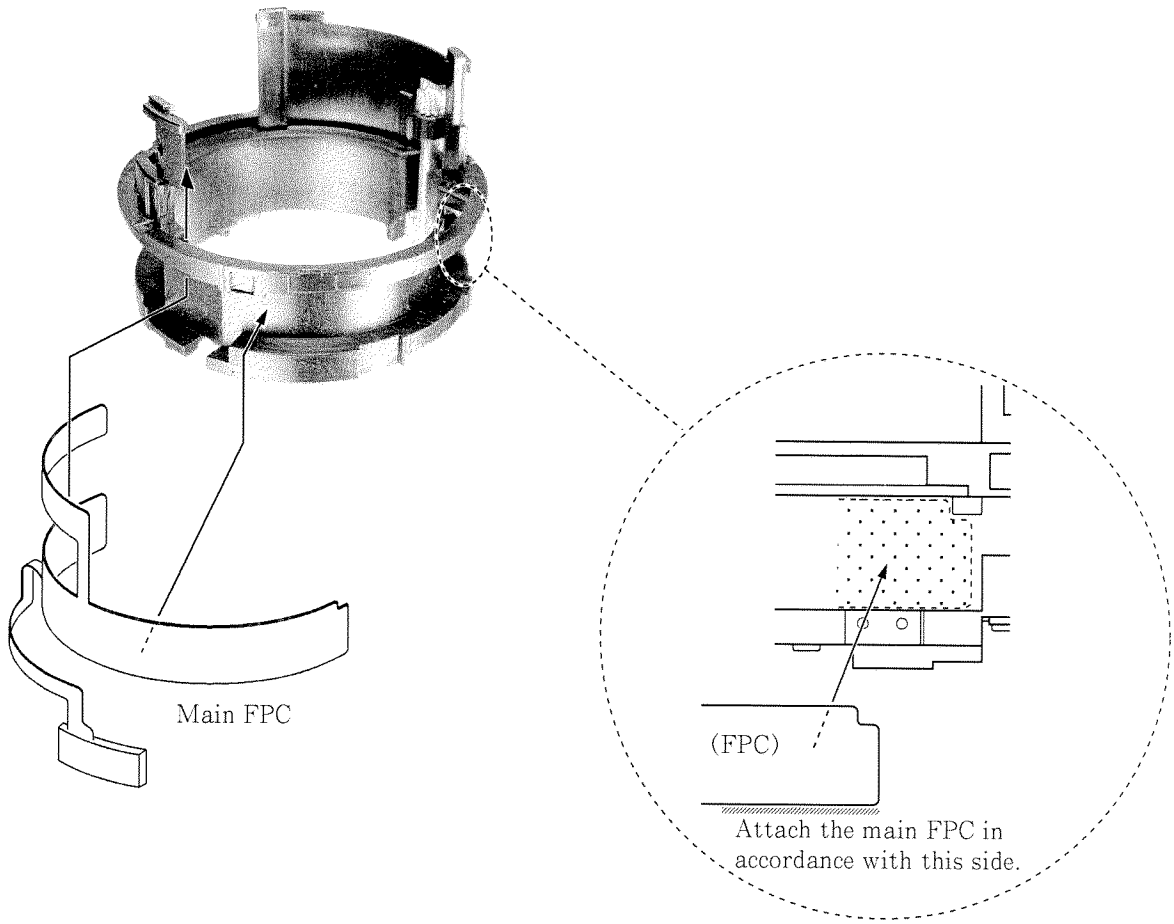
AF GEAR



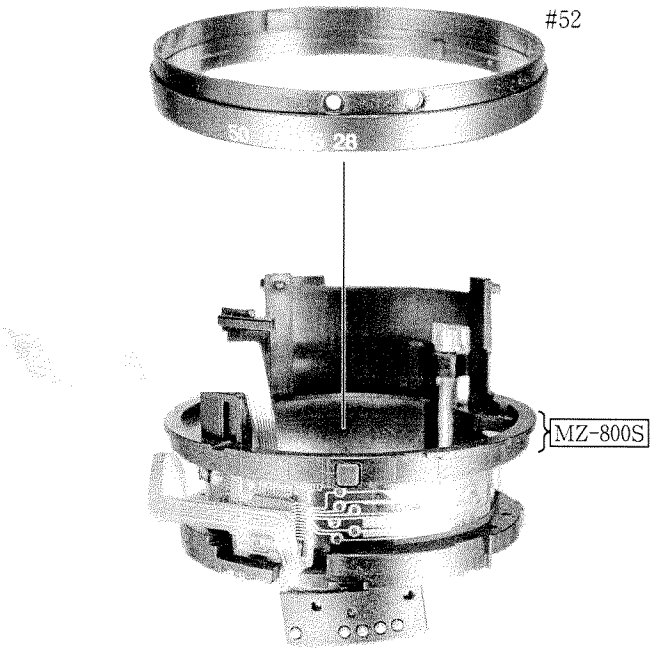


MAIN FPC


: Fold outside
: Fold inside

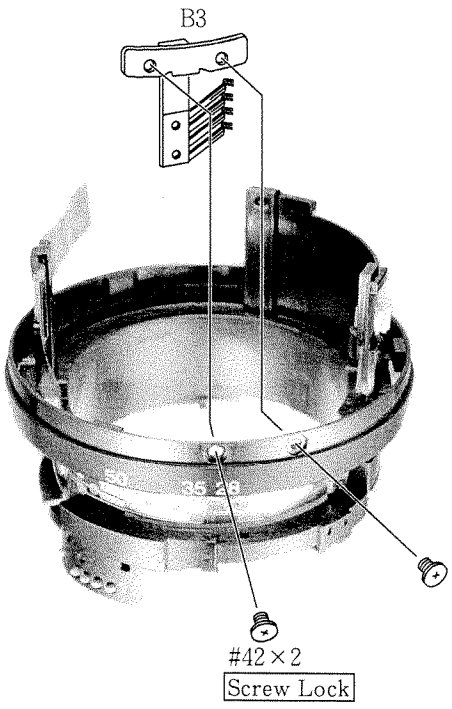

Main FPC
(FPC)
Attach the main FPC in
accordance with this side.

ZOOM RING #52

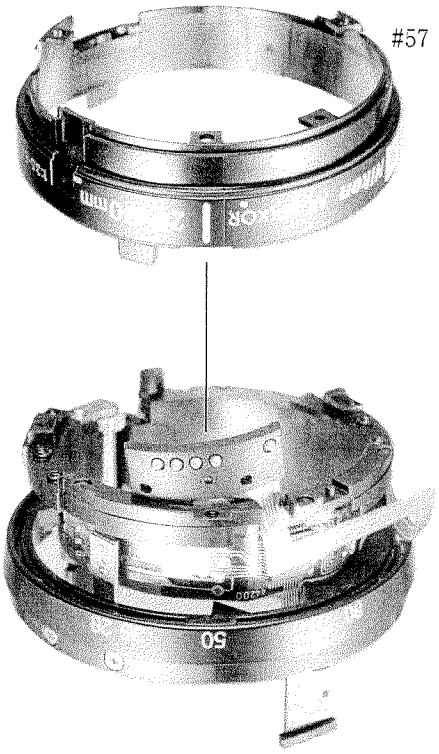


- Mount and fix #52 on the position as shown in the left figure. Then, drive it anticlockwise.

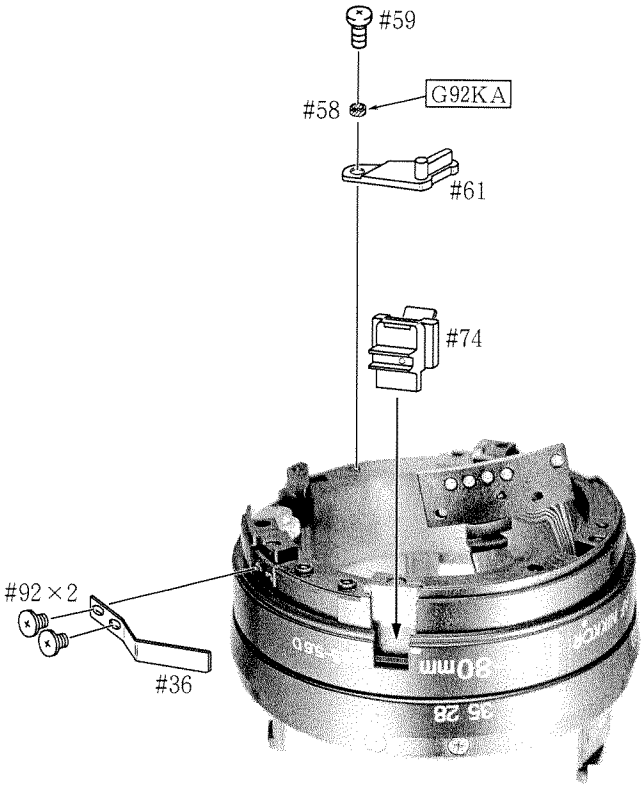
ZOOM ENCODER BRUSH

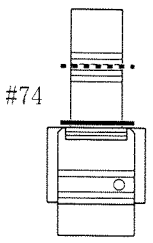


INDEX RING #57



MINIMUM APERTURE LOCK LEVER, CLICL SPRING

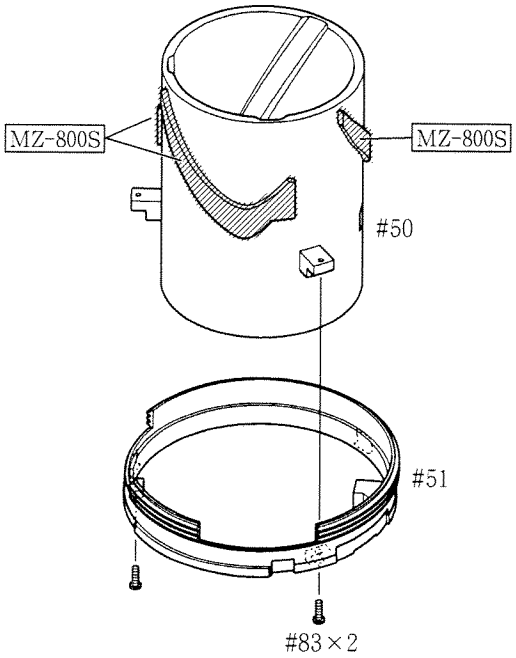




——— : Fold outside

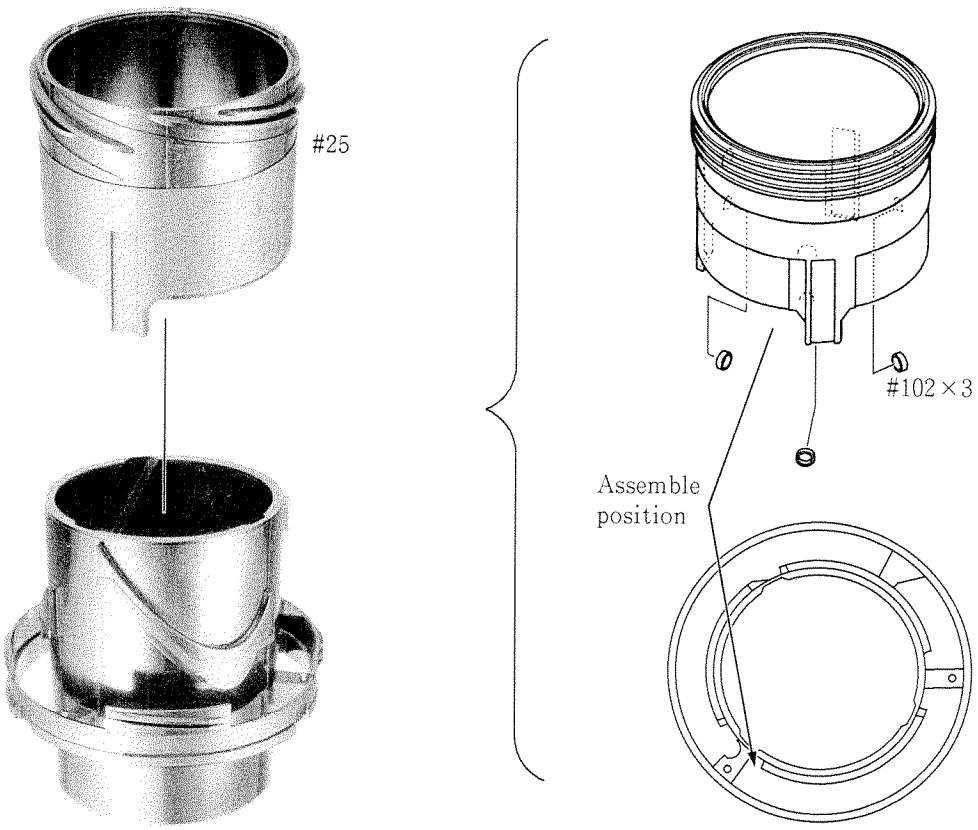
- - - - - - - - : Fold inside

CAM RING #50, HELICOID RING #51

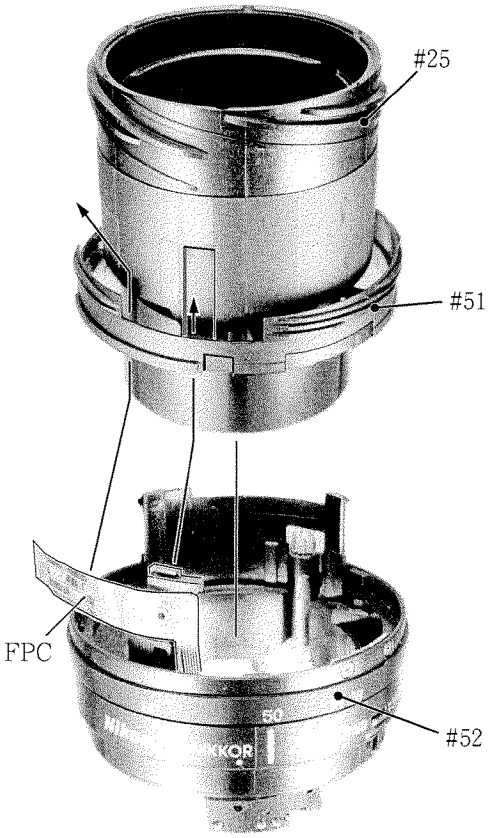


- Apply MZ-800S to 6 internal grooves inside the cam ring #50.

HELICOID RING #25



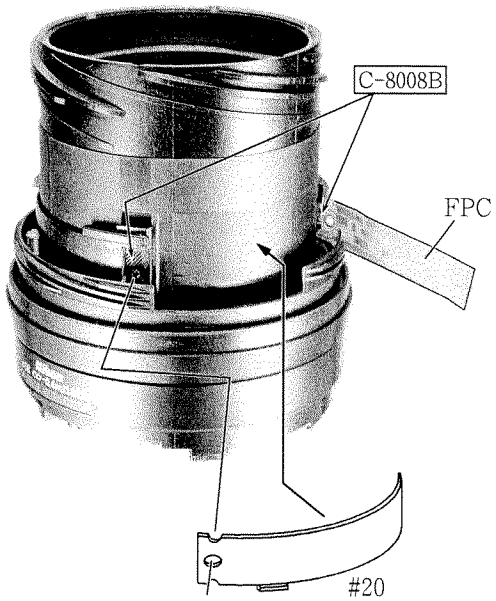
HOW TO MOUNT THE HELICOID UNIT



① Mount and fix the helicoid ring unit as shown in the left figure.

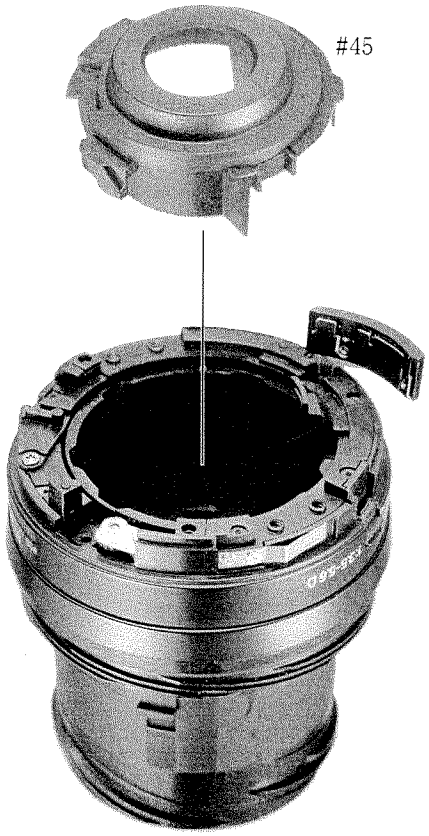
② Drive the zoom ring #52 and then fit #52's internal three projections to #51's external three dents.

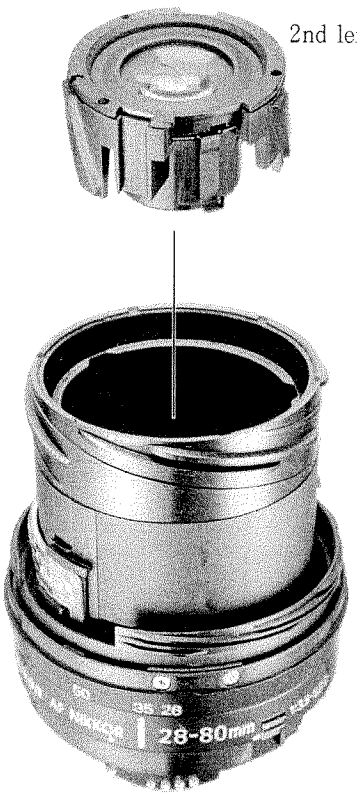
③ Drive the zoom ring #52 and check that #25 is able to interlock with it.

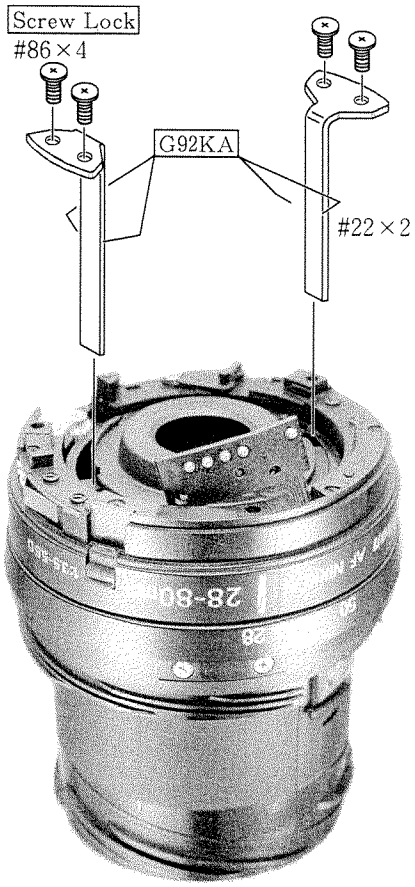


④ Attach #20 on where as shown in the left figure and then attach FPC on it.

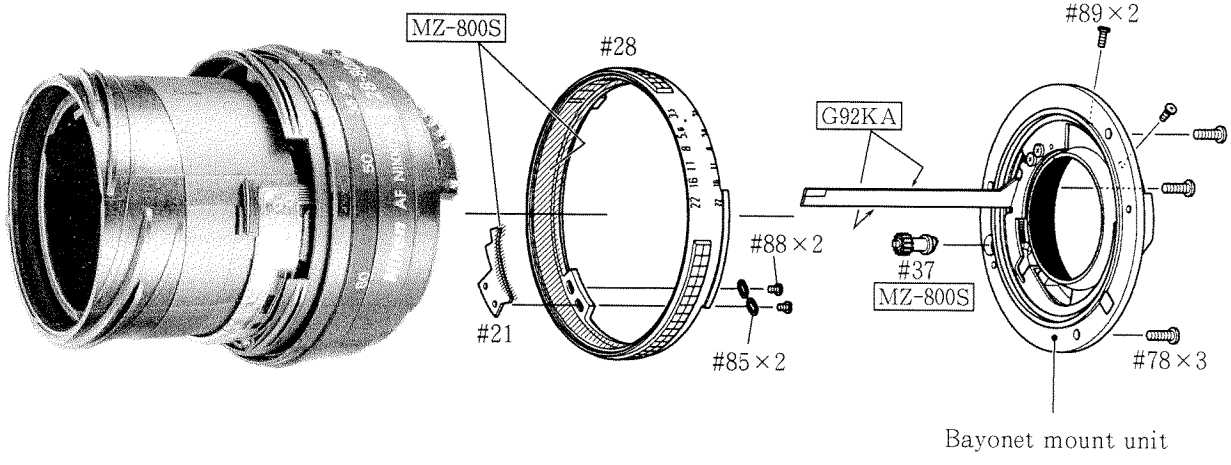
2nd LENS GROUP



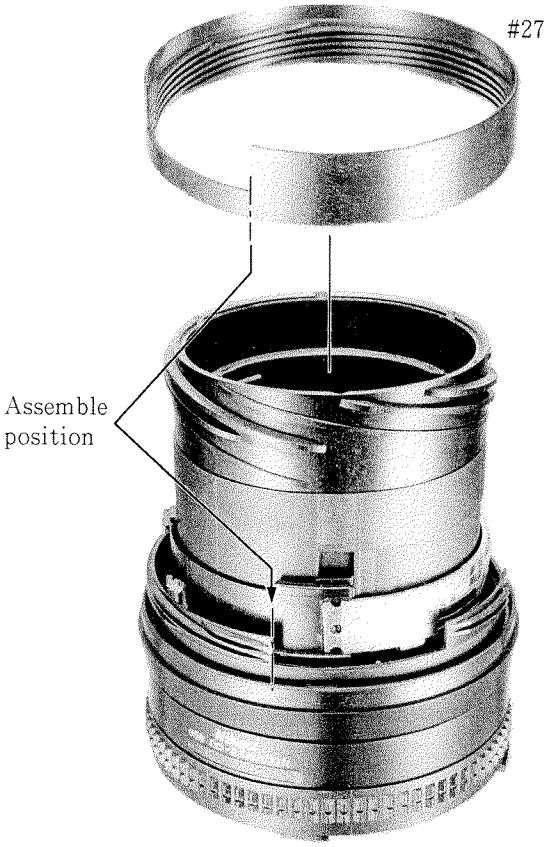




APERTURE RING, BAYONET MOUNT UNIT



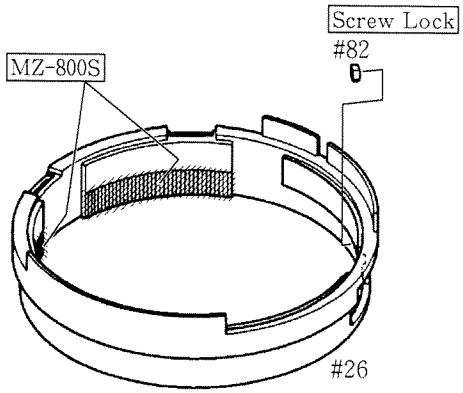
HELICOID RING #27

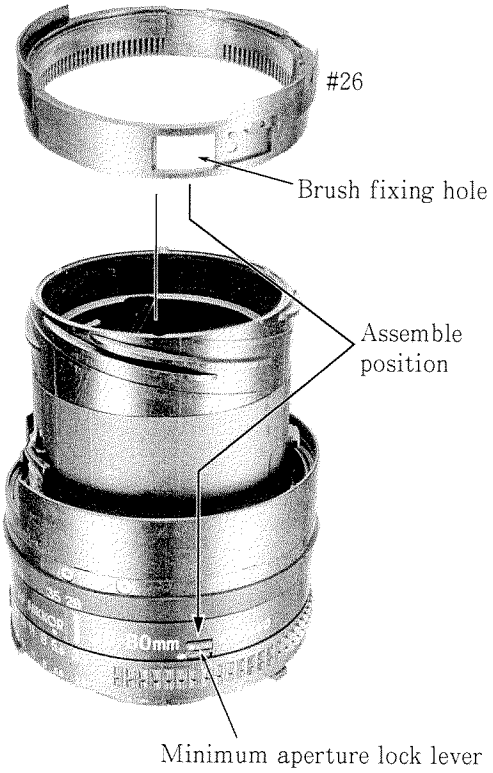


① Apply MZ-800S inside the helicoid ring #27 all over.

② Set the zoom ring to 28 mm.
Then, align the fixing positions with each other as shown in the left figure, and fix #27.

SEGMENT GEAR #26

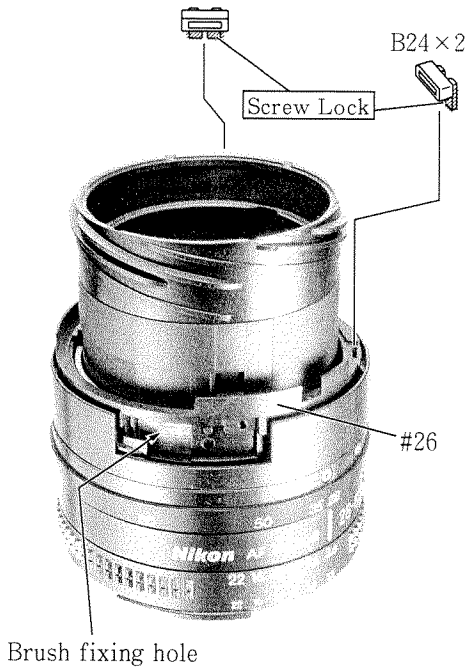




● Mount and set #26's brush fixing hole to meet the minimum aperture lock lever position.
Then, fix them together.

《Reference》
Because it is a bit difficult to mount and to fix #26, incline the internal gear side downward to facilitate mounting and fixing it.

STOPPER B24

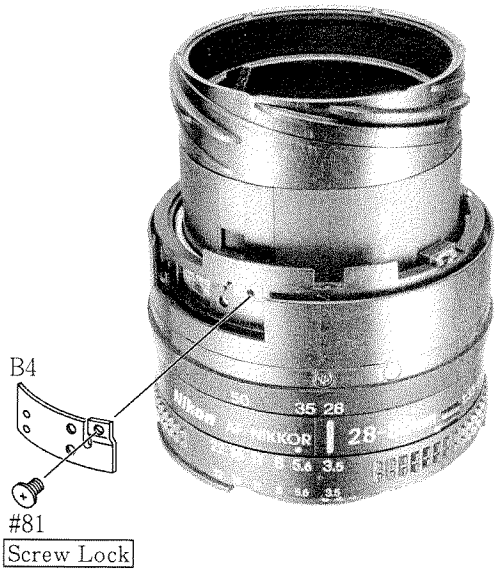


① Set the zoom ring to 28 mm.

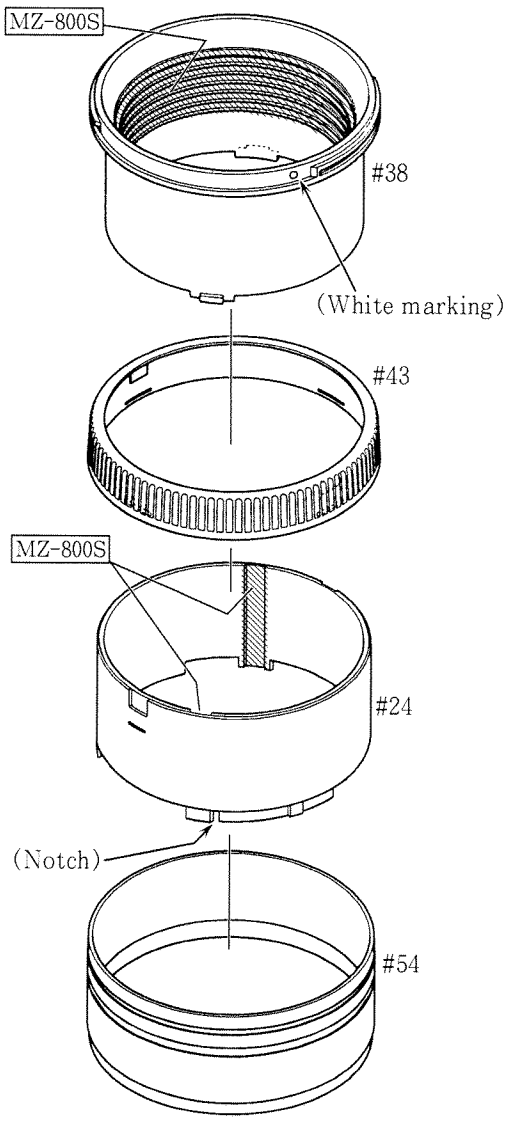
② Drive #26 and then set the brush fixing hole position to meet '80' on the index of zoom ring.

③ Mount and fix 2 pieces of B24.

DISTANCE ENCODER BRUSH

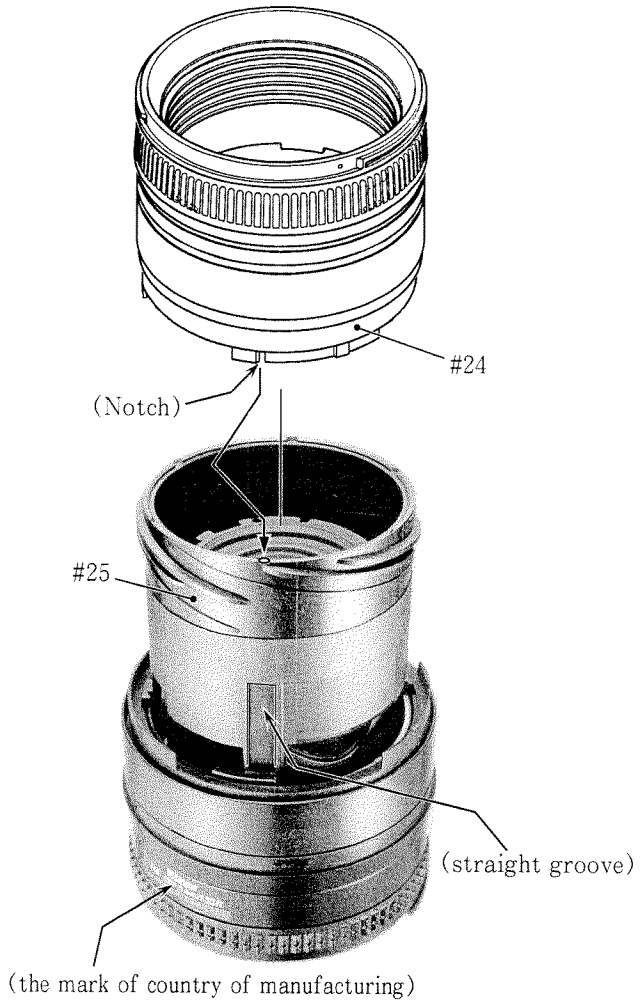


HELICOID RING #38, MF RING GROUP



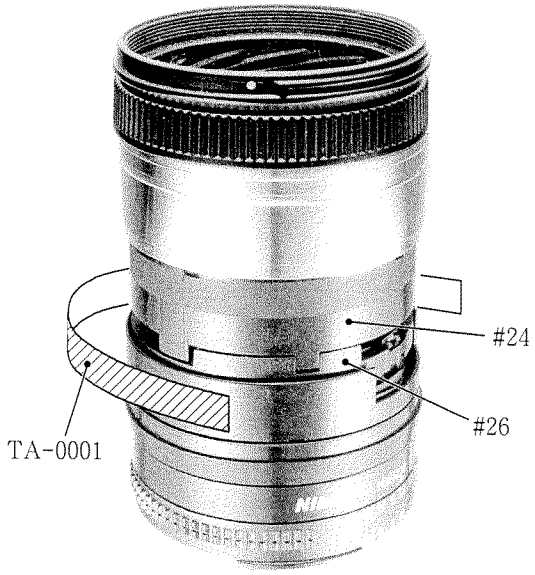
- Set to mount #38's white marking position and #24's notch position as shown in the left figure.
  Then, fix them together.

Caution : For the following processes, avoid to fit #43's internal four dents to #24 at this time.

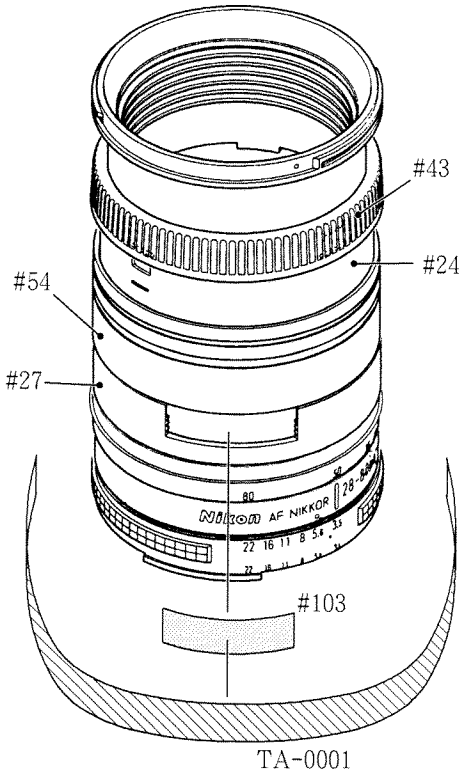


① Set the zoom ring to 80 mm.

② As shown in the left figure, align #24's notch and #25's ● position situated just above the straight groove. Then, fix them together.

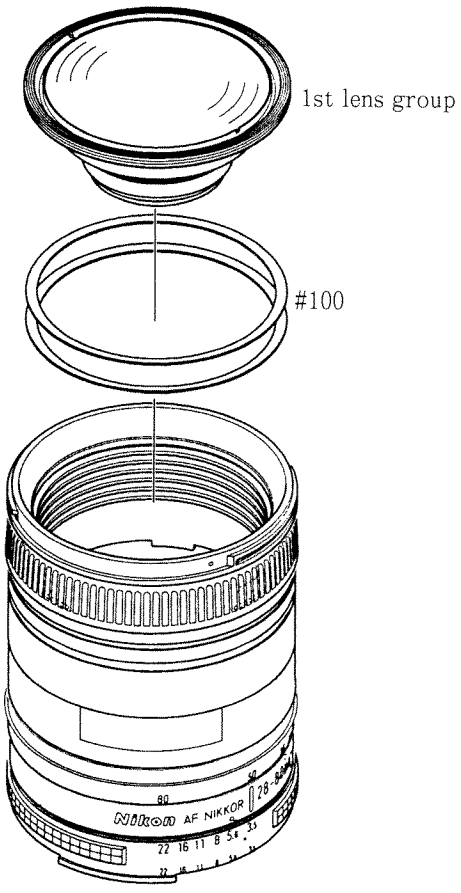


③ Fix #24 and #26 together by applying a tape TA-0001.



- Fix #54 and #27 together by attaching a tape TA-0001.
  Then, mount #43 on #24 and fix them together.

1st LENS GROUP



ADJUSTMENT AT BOTH ENDS OF FOCAL LENGTH

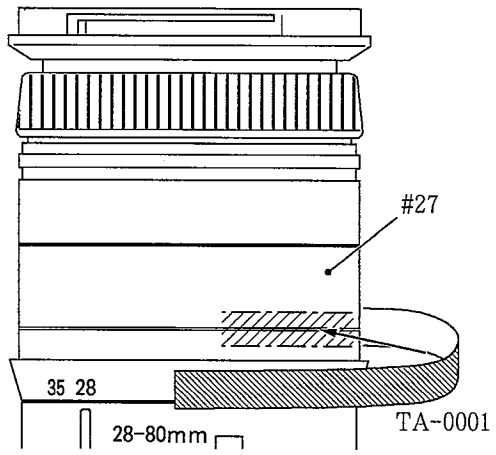
① Set focus ring at infinity (∞), and set aperture to full aperture.
② Read the value on both Wide and Tele sides respectively.
③ Calculate the following equation.

$(A-B) \div 3.0 = C$

A= Value of Tele side (mm)
B= Value of Wide side (mm)
C= Amount (mm) of adjustment of 1st lens group washer #100

④ Adjust the thickness of washer #100 by the value C calculated from the above equation.
If the value C is positive, thicken the washer by the value, and if negative, thin the washer.
Note : Insert thin washer between thick washers when mounting washer #100.
(Refer to page L21.)

ADJUSTMENT OF BACK FOCUS



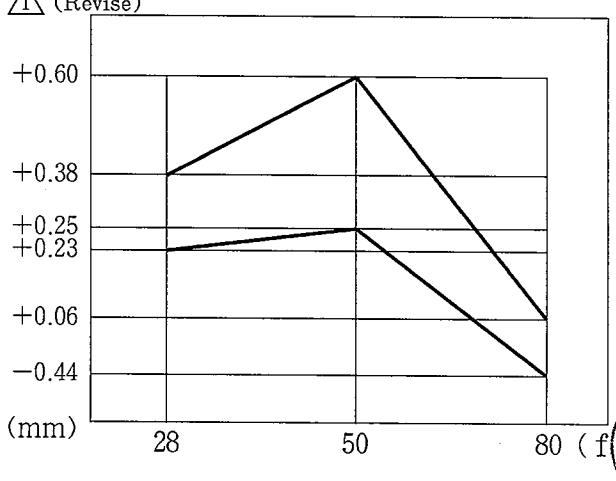
△1 (Revise)

(Standards for the vertical collimator)

Focal lenght (f)	Standard (mm)
28mm	+0.23 ～ +0.38
50mm	+0.25 ～ +0.60
80mm	−0.44 ～ +0.06

△1 (Revise)
① Set the focus ring at the "infinity (∞)" side.
Set the aperture at "full".
② Read the value at Wide side or Tele side.
③ Turn the helicoid ring #27 and make adjustment by moving the helicoid group back and forth.
④ Make sure that the value is within the standard.
Note : For steady confirmation, be sure to measure several times.
⑤ Fix the helicoid ring #27 with a tape (TA-0001).
⑥ After adjustment, conduct adjustment to focus at the infinity position.

△1 (Revise)



サービス計画課 M

APERTURE DIAMETER ADJUSTMENT

① Remove the bayonet mount group.

② Lccsen the screws #88×2, and move #21, or bend the Aperture Lever and adjustment of aperture opening. (Refer to page L16.)

Note : Make sure that the aperture diameter differs when the zoom ring is set to 28mm and to 80mm.

③ After adjustment, secure screws #88×2 using Screw Lock.

④ Mount the bayonet mount group.

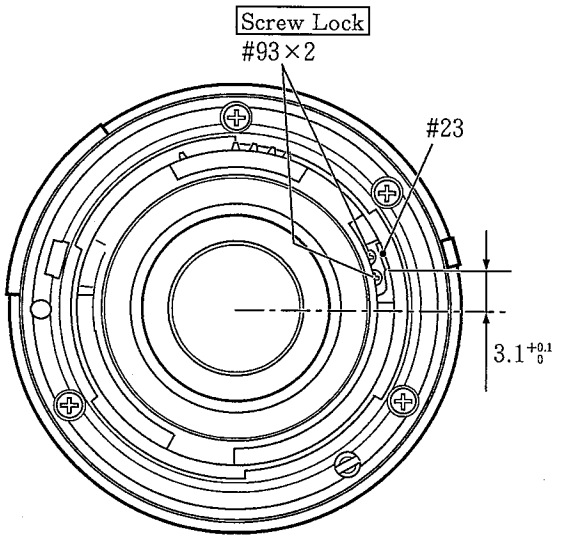
When the zoom ring is set to 28mm :

Aperture setting	Inscribed circle diameter (mm)	Toleance (mm)
3.5	17.54	19.66 ～ 16.58
4	15.14	17.51 ～ 13.93
5.6	10.29	13.08 ～ 9.25
8	7.20	9.17 ～ 6.48
11	5.10	7.06 ～ 4.47
16	3.61	4.75 ～ 3.01
22	2.52	3.33 ～ 2.11

When the zoom ring is set to 80mm :

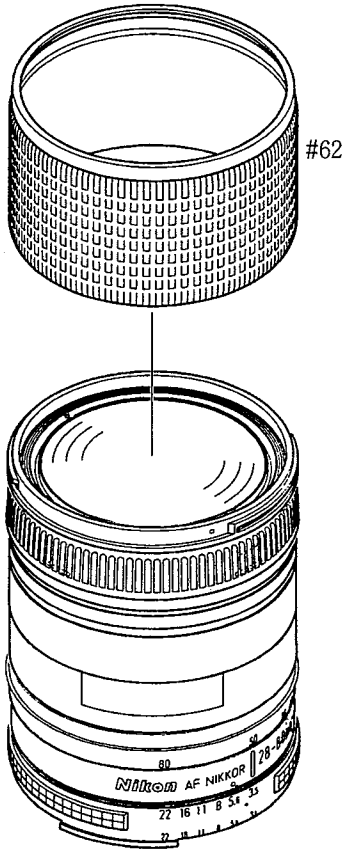
Aperture setting	Inscribed circle diameter (mm)	Toleance (mm)
3.5	19.50	22.27 ～ 17.98
4	17.60	20.93 ～ 14.80
5.6	13.01	15.26 ～ 9.66
8	9.08	10.65 ～ 6.74
11	6.37	7.47 ～ 4.73
16	4.57	5.27 ～ 3.34
22	3.21	3.71 ～ 2.35

APERTURE LEVER POSITION ADJUSTMENT

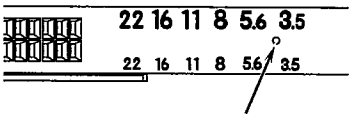


Unfasten screws #93×2 to adjust the position of the aperture lever #23 so that it comes into the rated value of $3.1^{+0.1}_{0}$ to bring the aperture diameter whitin rated value at full aperture.
After adjustment, fix screws #93×2 using Screw Lock.

RUBBER RING #62



ATTACHING METER COUPLING SHOE



Make hole on this concave portion

(1) Take out aperture ring #28.

(2) Make a hole (ϕ1.1) at the concave portion of aperture ring.
Mount meter coupling shoe on the aperture ring and make another hole (ϕ1.1) based on the hole of meter coupling shoe.

Meter coupling shoe	1K406 - 011	×1
Screw	1K010 - 002 - 1	×2

(3) Mount meter coupling shoe.

(4) Assembling.

INSPECTION OF ENCODER SIGNAL

※Use an F70 (N70) camera body and AF nikkor lens inspection program for F70／N70 to display encoder signal on the computer monitor when making an inspection.

Inspection method

- Start the AF nikkor lens inspection program for F70／N70 and select " 1. READING OF LENS ENCODER SIGNAL". Make inspection according to instructions as shown on the display.

- Encoder signals should be as described in the table below when the zoom and distance scale are set to specified positions.

Zoom ring / Distance scale position	f＝28mm			f＝35mm			f＝50mm			f＝80mm		
	Encoder signal											
	1	2	3	1	2	3	1	2	3	1	2	3
∞	C6h	C6h	4Eh	EEh	C6h	4Eh	C7h	C6h	4Eh	E5h	C6h	4Eh
Most close distance position										E5h	EFh	4Eh

◎If encoder signal values are different from those shown in the table, following causes moust be considered.

Encoder patterns on the FPC are contaminated, or the FPC is fixed in the wrong position.

組立図 Structure of the Lens