SAL75300

(4.5-5.6/75-300) (75-300mm F4.5-5.6)

SERVICE MANUAL

Ver 1.1 2007.02

Revision History

How to use Acrobat Reader

US Model
Canadian Model
AEP Model
Chinese Model

Link

SPECIFICATIONS	DISASSEMBLY	ADJUSTMENTS
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- About the Lens Test Projector

LENS FOR DSLR CAMERA

SONY

Sony EMCS Co.

2007B0800-1

Published by Kohda TEC

SPECIFICATIONS

- This lens is equipped with a distance encoder. The distance encoder allows more accurate measurement (ADI) by using a flash for ADI.
- Depending on the lens mechanism, the focal length may change with any change of the shooting distance. The focal length assumes the lens is focused at infinity.

Equivalent 35mm-format focal length *1 (mm)

112.5-450

*1 The value for equivalent 35mm-format focal length is based on Digital Single Lens Reflex Cameras equipped with an APS-C sized image sensor.

Lens groups elements

10-13

Angle of view 1 *1

32°-8°10'

Angle of view 2 *1

21°-5°20'

*2 The value of angle of view 1 is based on 35mm-format cameras, and that of angle of view 2 is based on Digital Single Lens Reflex Cameras equipped with an APS-C sized image sensor.

Minimum focus (m (feet)) *3

1.5 (4.9)

*3 Minimum focus is the shortest distance from the image sensor to the subject.

Maximum magnification (×)

0.25

Minimum f-stop

f/32-38

Filter diameter (mm)

55

Dimensions (maximum diameter × height) (mm (in.))

Approx. 71 × 122 (2 13/16 × 4 13/16)

Mass (g (oz.))

Approx. 460 (16 1/4)

Included items

Lens (1), Front lens cap (1), Rear lens cap (1), Lens hood (1), Set of printed documentation

Designs and specifications are subject to change without notice.

TABLE OF CONTENTS

1. SERVICE NOTE

1-1. Chemicals

Some chemicals used for servicing are highly volatile.
Their evaporation caused by improper management affects your health and environment, and wastes resources.
Manage the chemicals carefully as follows.

- Store chemicals sealed in a specific place to prevent from exposure to high temperature or direct sunlight.
- Avoid dividing chemicals into excessive numbers of small containers to reduce natural evaporation.
- Keep containers sealed to avoid natural evaporation when chemicals are not in use.
- Avoid using chemicals as much as possible. When using chemicals, divide only required amount to a small plate from the container and use up it.

1-2. Exterior Parts

Be careful to the following points for exterior parts used in this unit.

- Use a piece of cleaning paper or cleaning cloth for cleaning exterior parts. Avoid using chemicals.
  Even if you have to use chemicals to clean heavy dirt, don't use paint thinner, ketone, nor alcohol.
- Insert the specific screws vertically to the part when installing a exterior part.
  Be careful not to tighten screws too much.

1-3. Unleaded Solder

This unit uses unleaded solder.
Boards requiring use of unleaded solder are printed with the lead free mark (LF) indicating the solder contains no lead.
(**Caution:** Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

 : LEAD FREE MARK
Be careful to the following points to solder or unsolder.

- Set the soldering iron tip temperature to 350 °C approximately.
  If cannot control temperature, solder/unsolder at high temperature for a short time.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.

- Be sure to control soldering iron tips used for unleaded solder and those for leaded solder so they are managed separately. Mixing unleaded solder and leaded solder will cause detachment phenomenon.

1-4. SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are “pinched” or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270 °C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

CAUTION
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

SAFETY-RELATED COMPONENT WARNING!!

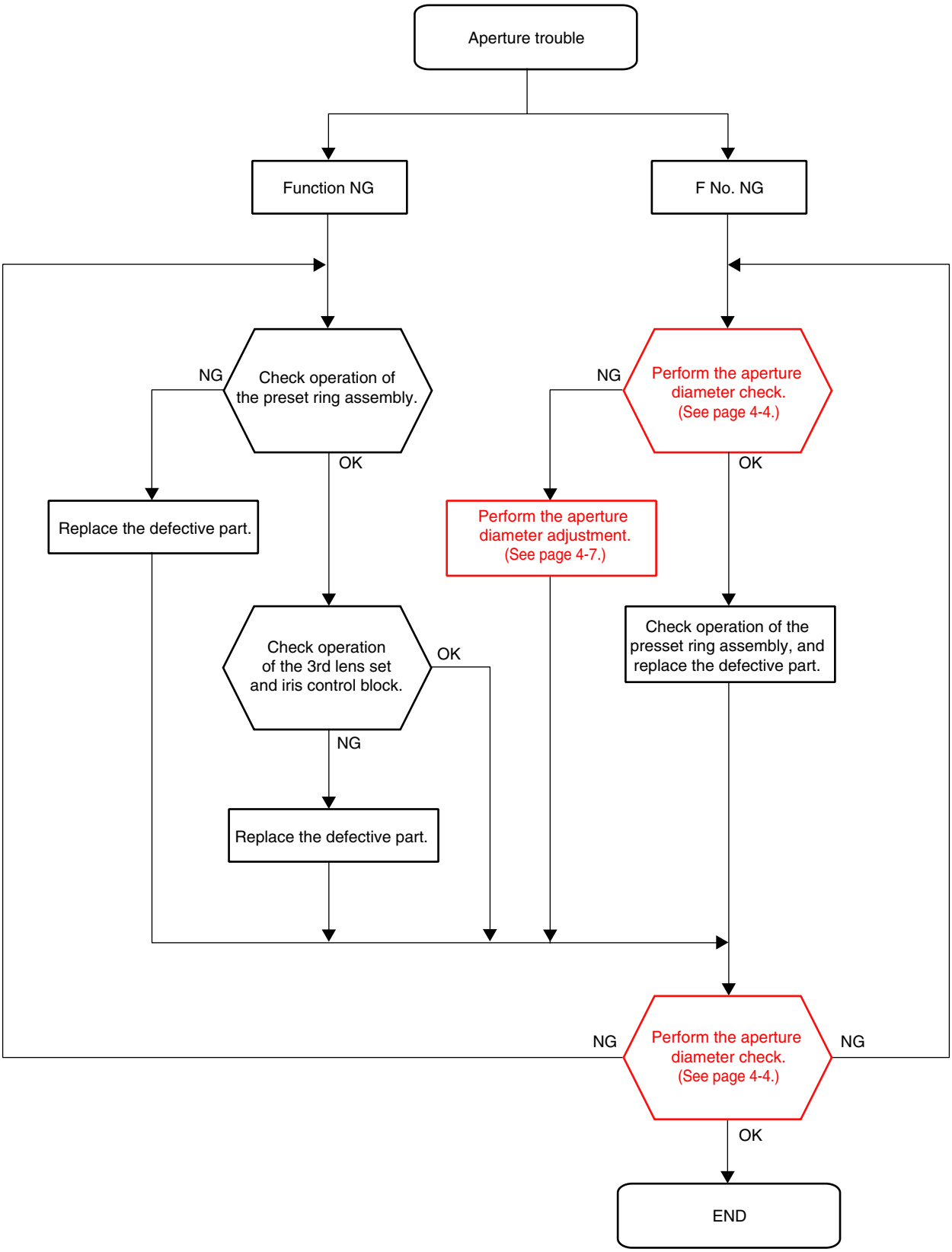
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

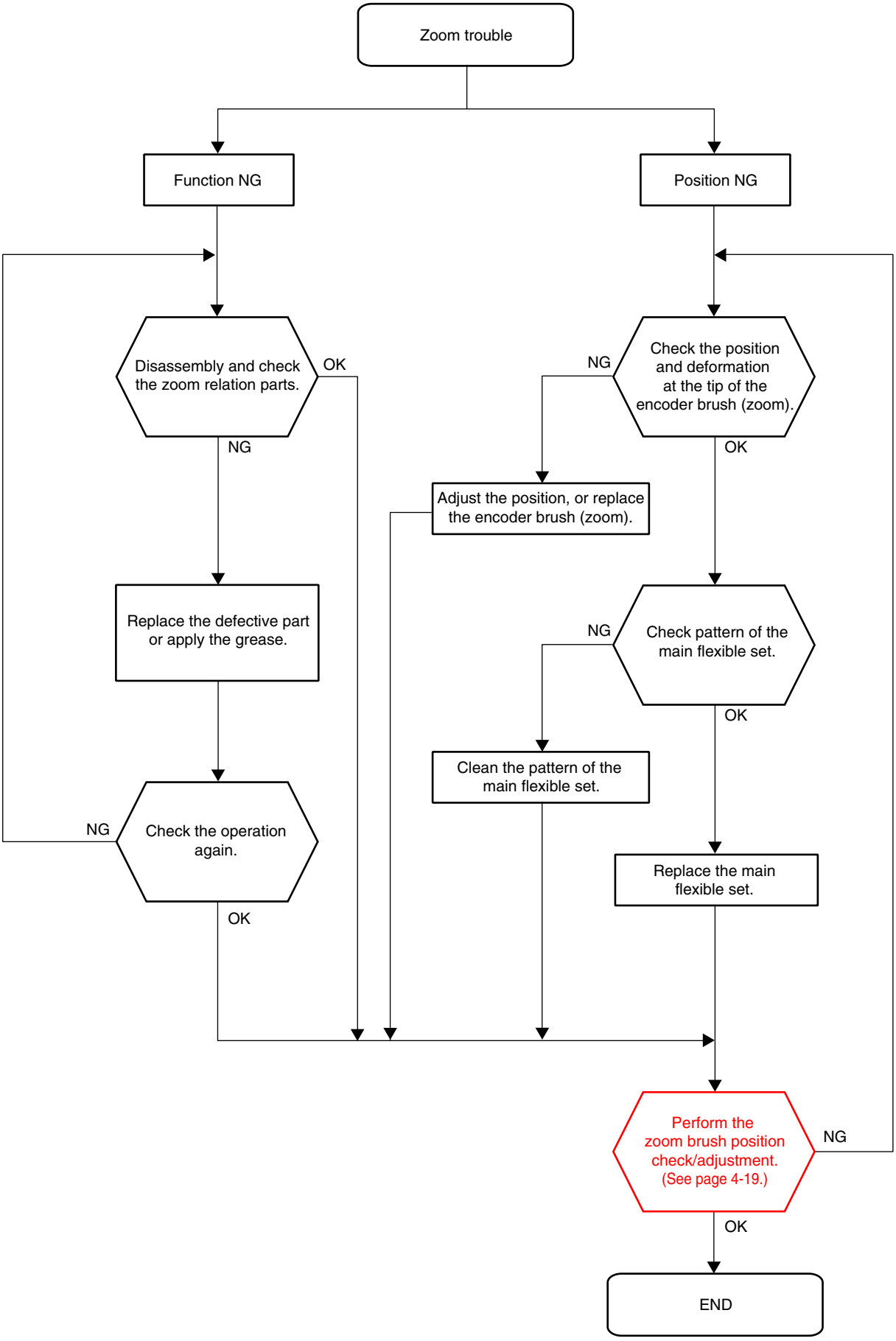
LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

1-5. TROUBLESHOOTING

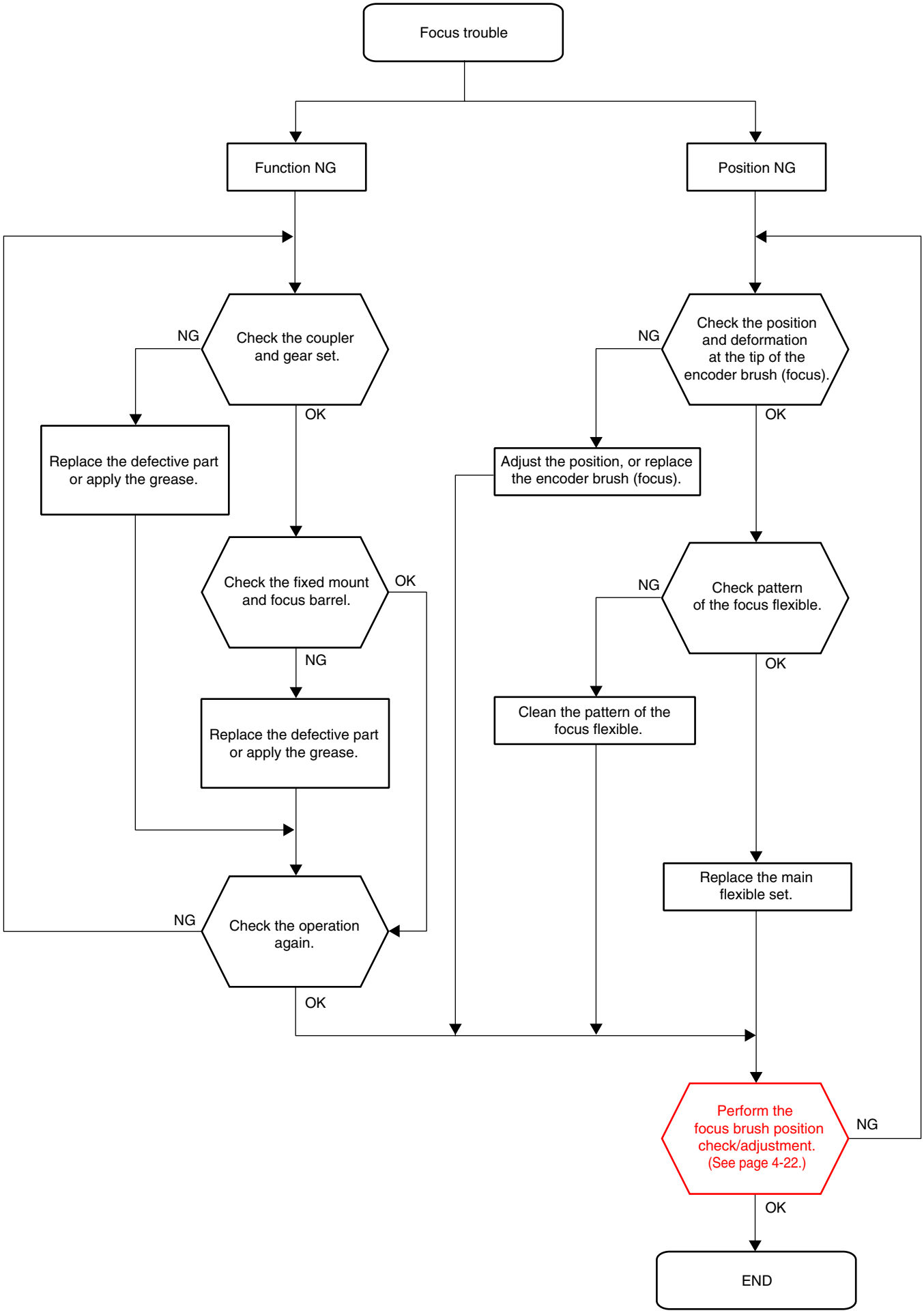
1-5-1. Aperture Trouble



1-5-2. Zoom Trouble



1-5-3. Focus Trouble

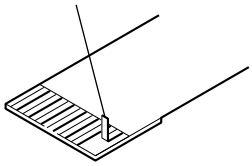


2. DISASSEMBLY

NOTE FOR REPAIR

- Make sure that the flat cable and flexible board are not cracked of bent at the terminal. Do not insert the cable insufficiently nor crookedly.
- When remove a connector, dont' pull at wire of connector. It is possible that a wire is snapped.
- When installing a connector, dont' press down at wire of connector. It is possible that a wire is snapped.
- Do not apply excessive load to the gilded flexible board.

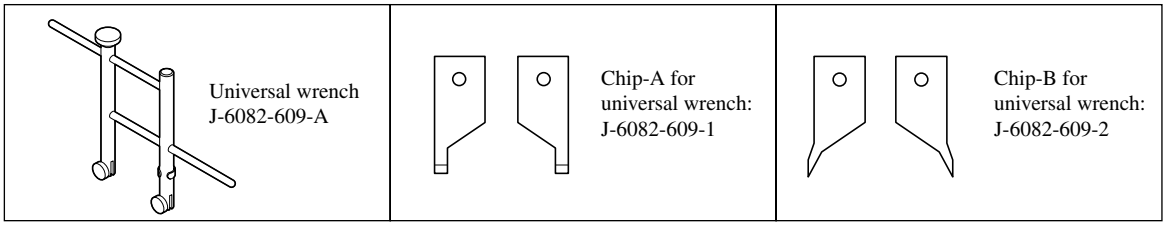
Cut and remove the part of gilt which comes off at the point. (Be careful or some pieces of gilt may be left inside)



UNIVERSAL WRENCH

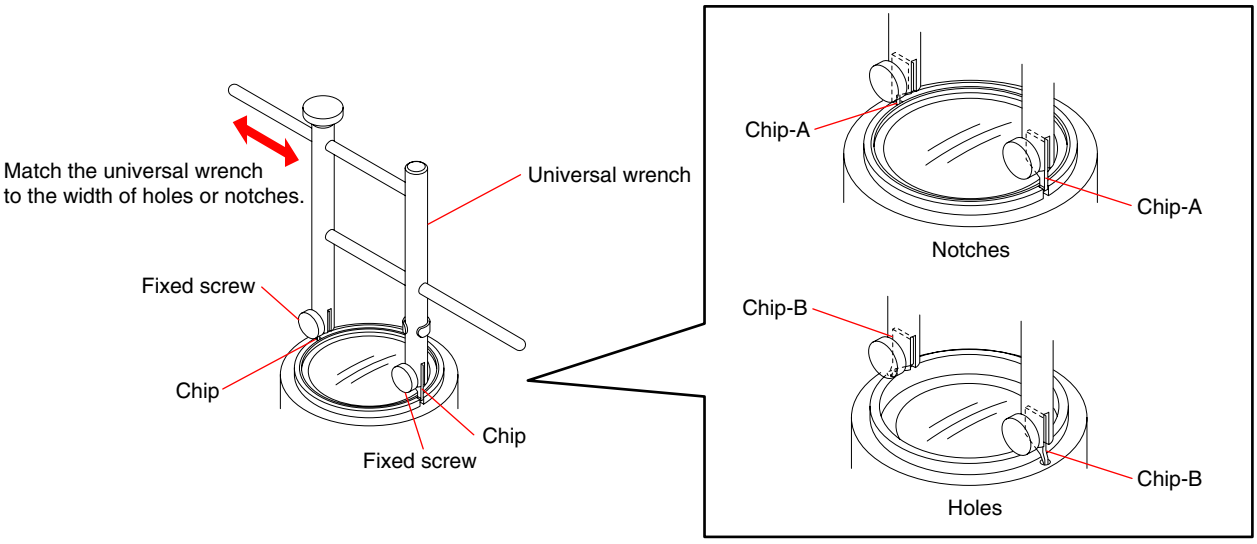
In case of the following notches or holes are located in the lens block, etc during disassembling/ assembling the lens, Use the universal wrench.

How to Use



Attach the chip-A or chip-B to the universal wrench.
For the notches: chip-A
For the holes: chip-B

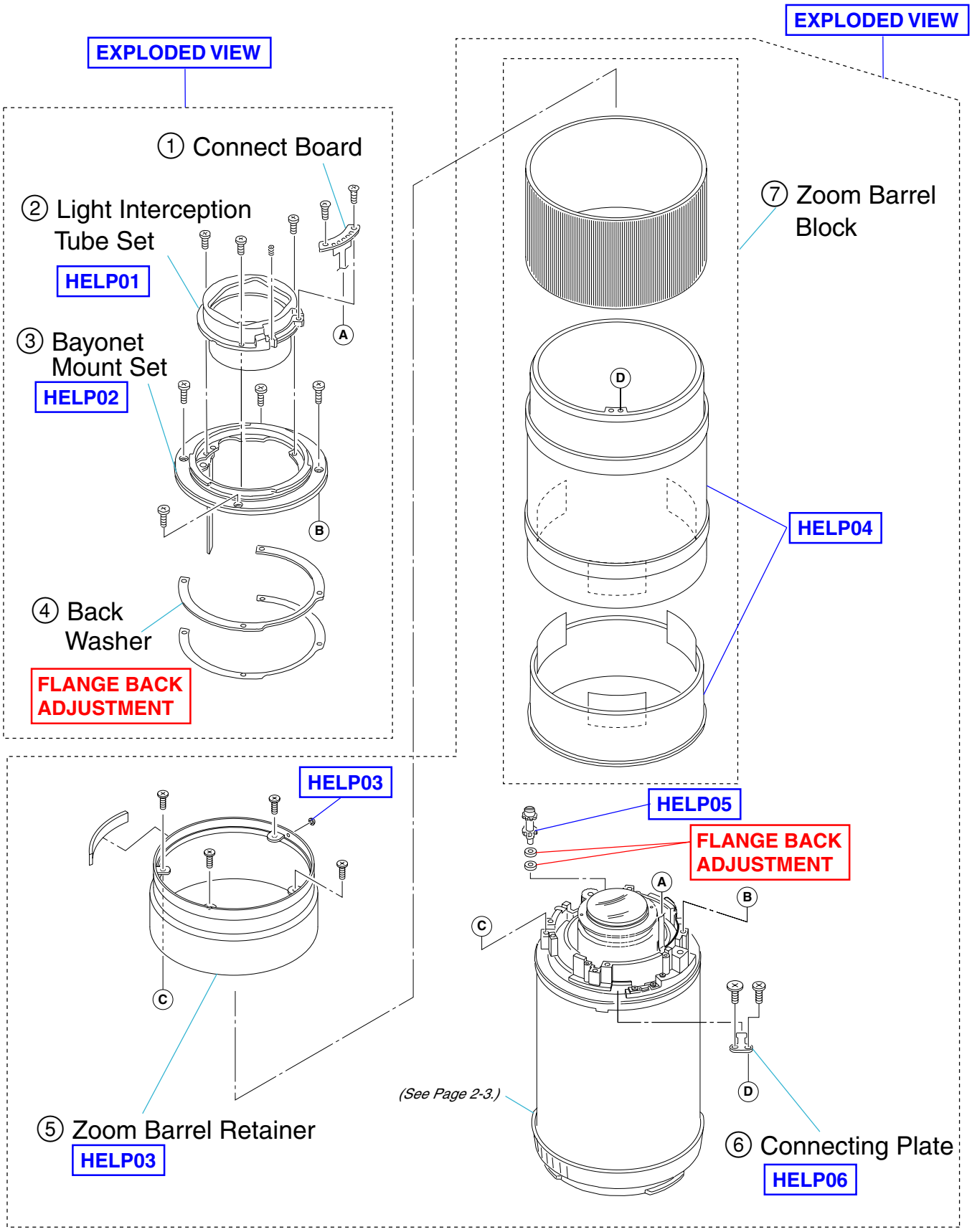
Match the universal wrench to the holes or notches of the lens block, etc.



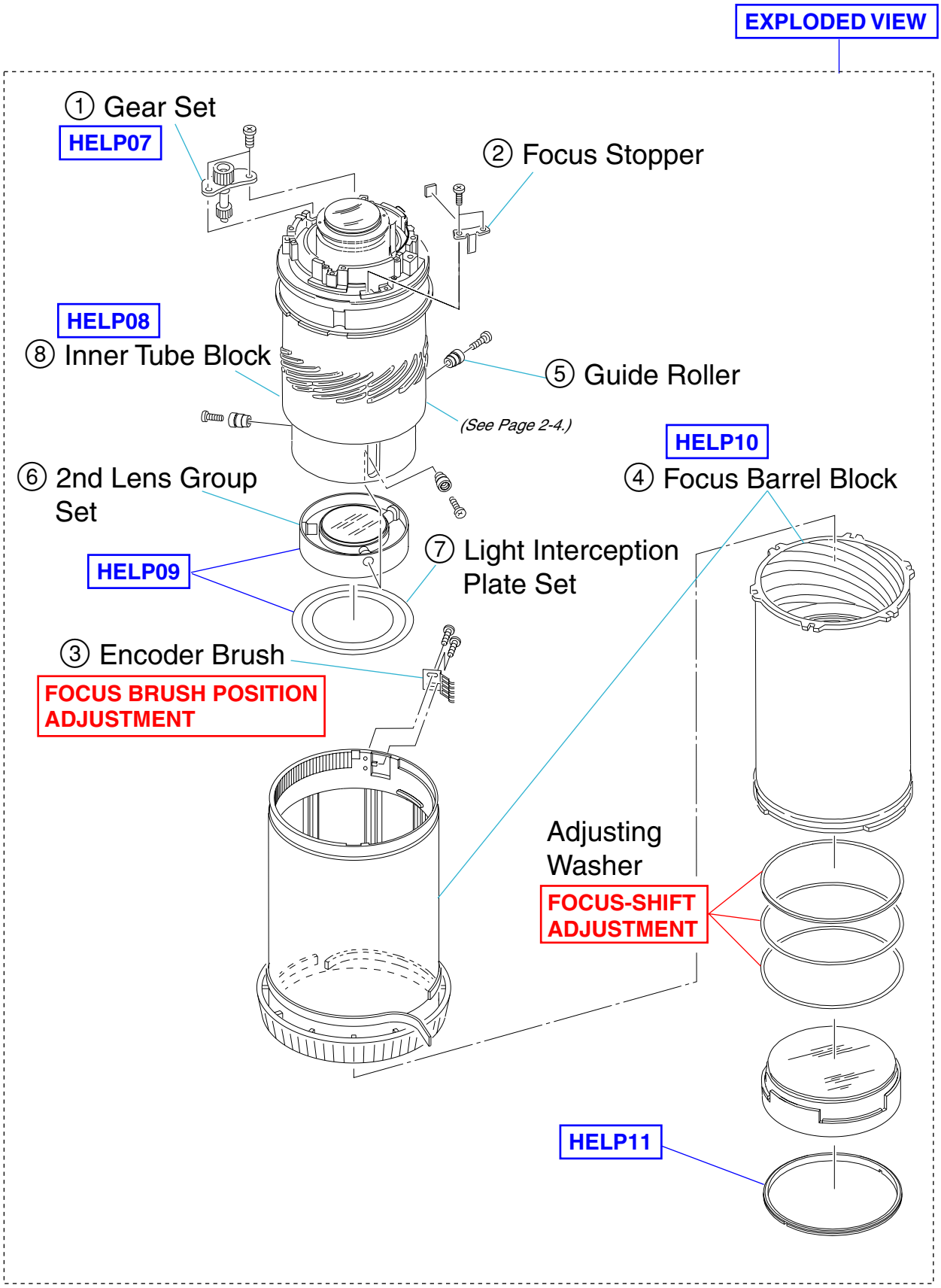
When top of tip does not reach holes or notches because the fixed screw becomes obstructive, replace the fixed screw to below.
+B 3X5 7-682-546-09

2-1. DISASSEMBLY

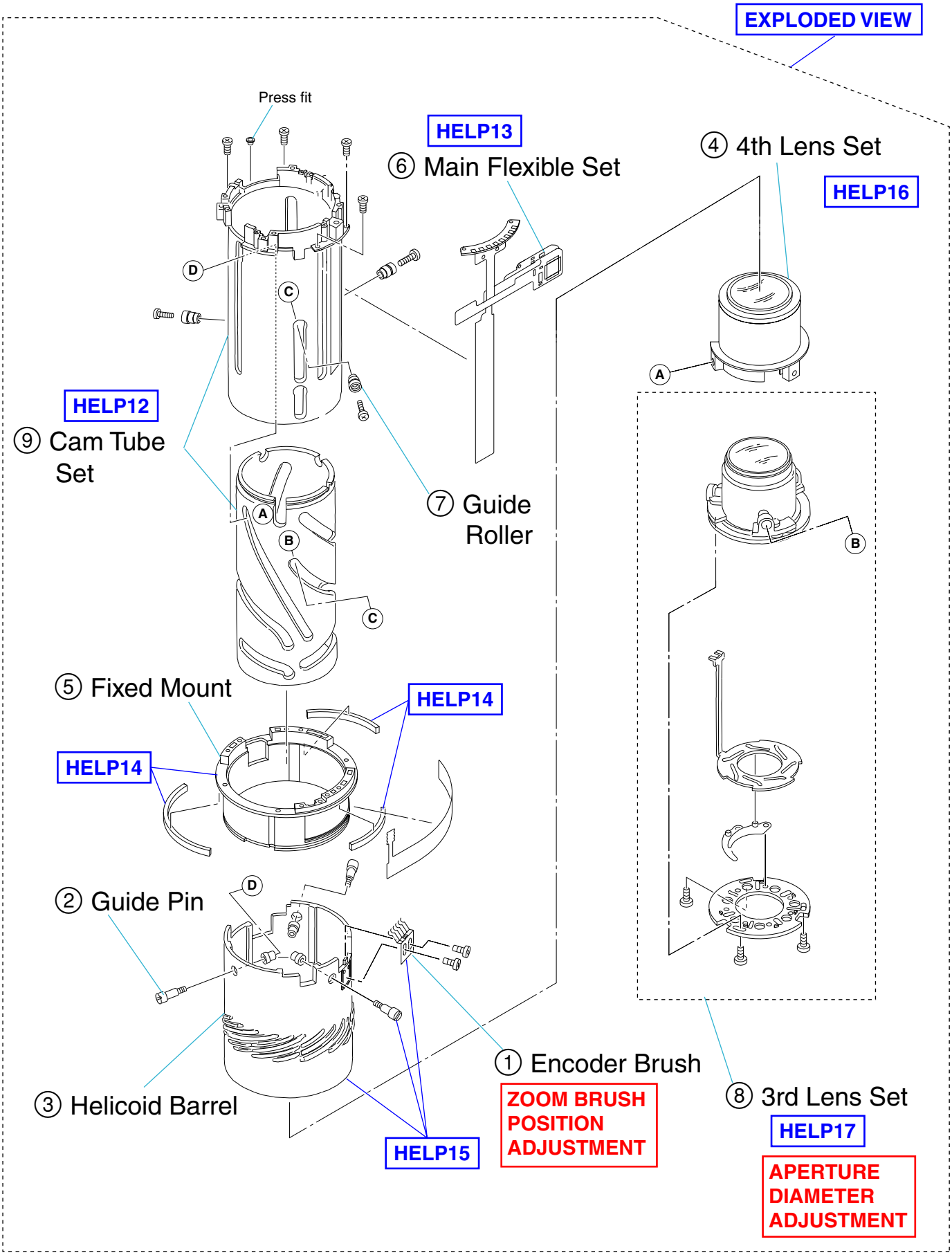
2-1-1. BAYONET MOUNT SET AND ZOOM BARREL BLOCK



2-1-2. 2ND LENS SET AND FOCUS BARREL BLOCK



2-1-3. INNER TUBE BLOCK



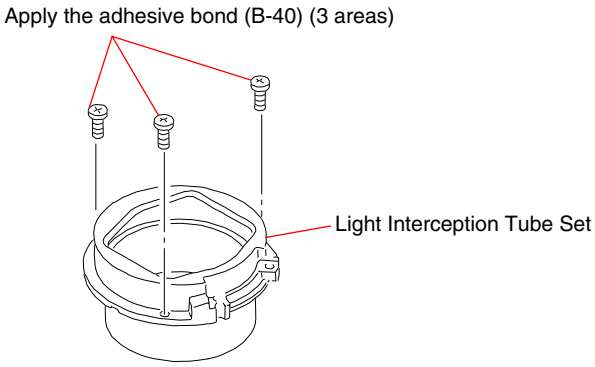
HELP

Note for assembling and grease applying positions are shown.

HELP01

Adhesive bond (B-40): J-6082-614-A

Apply the adhesive bond (B-40) to the three screws fixing the light interception tube set.

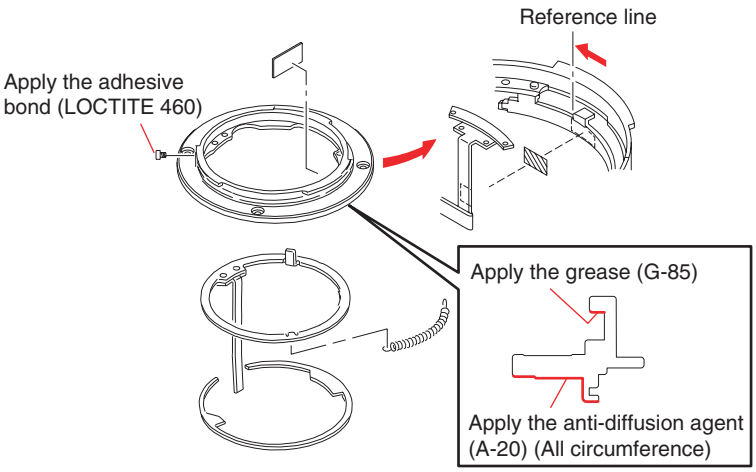


HELP02

Grease (G-85): J-6082-626-A
Anti-diffusion agent (A-20): J-6082-611-A
Adhesive bond (LOCTITE 460) (Note)

Note: Use adhesive bond (LOCTITE 460) or an equivalent article.
Don't use what becomes white after drying like a quick-drying glue.

1. Apply the grease (G-85) and anti-diffusion agent (A-20) to the instruction part of the bayonet mount set.
2. Attach and fix the flexible board to the bayonet mount set as shown in the figure.
3. Apply the adhesive bond (LOCTITE 460) to the screw fixing the bayonet mount set.

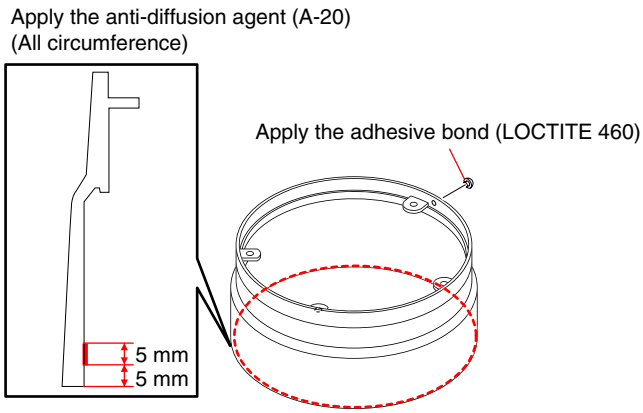


HELP03

Anti-diffusion agent (A-20): J-6082-611-A
Adhesive bond (LOCTITE 460) (Note)

Note: Use adhesive bond (LOCTITE 460) or an equivalent article.
Don't use what becomes white after drying like a quick-drying glue.

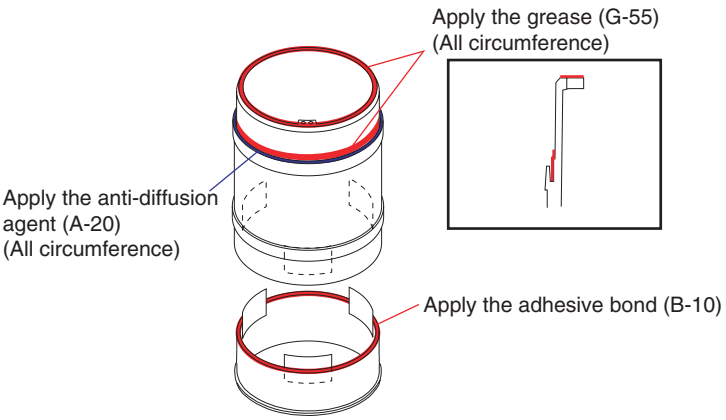
1. Apply the anti-diffusion agent (A-20) to the instruction part of the zoom barrel retainer.
2. Apply the adhesive bond (LOCTITE 460) to the mount index.



HELP04

Grease (G-55): J-6082-623-A
Anti-diffusion agent (A-20): J-6082-611-A
Adhesive bond (B-10): J-6082-612-A

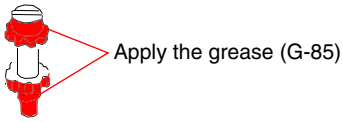
1. Apply the grease (G-55) and anti-diffusion agent (A-20) to the instruction part of the zoom barrel.
2. Apply the adhesive bond (B-10) to the instruction part of the support ring, and attach it to the zoom barrel.



HELP05

Grease (G-85): J-6082-626-A

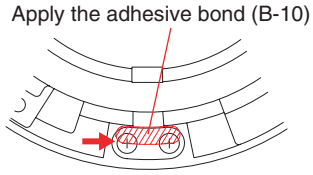
Apply the grease (G-85) to the instruction part of the coupler.



HELP06

Adhesive bond (B-10): J-6082-612-A

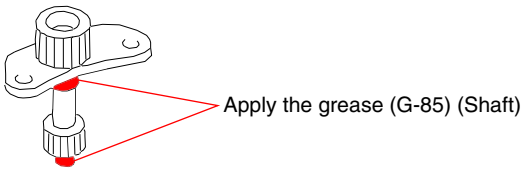
1. Insert the connecting plate to the groove (longest groove) of the cam tube set.
2. Fill in the gap in the direction of the arrow, and fix the connecting plate with the two screws.
3. Apply the adhesive bond (B-10) to the two screws fixed the connecting plate.



HELP07

Grease (G-85): J-6082-626-A

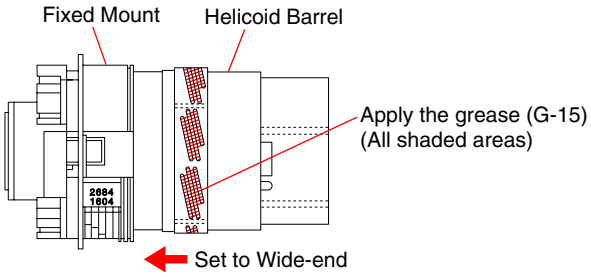
Apply the grease (G-85) to the shaft of the gear set.



HELP08

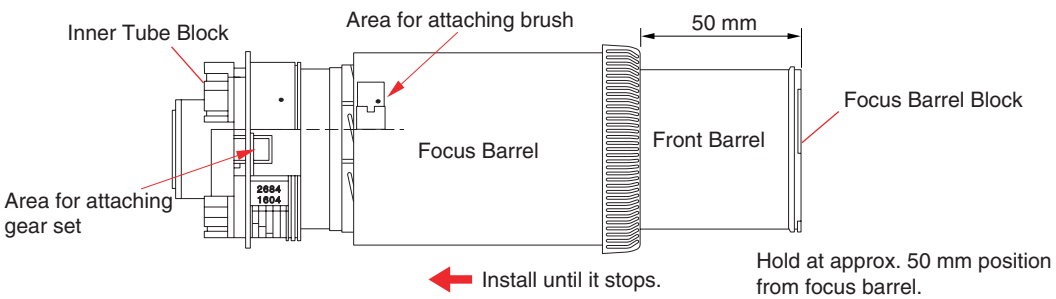
Grease (G-15): J-6082-619-A

1. Apply the grease (G-15) to the instruction part of the helicoid barrel.
2. Set the helicoid barrel to the Wide-end position as shown in the figure.

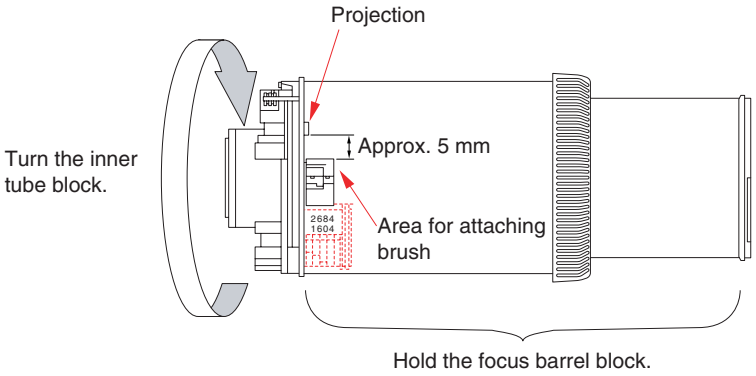


3. Fit the focus barrel to the inner tube block, and install the focus barrel to the inner tube block until it stops at the inner tube block.

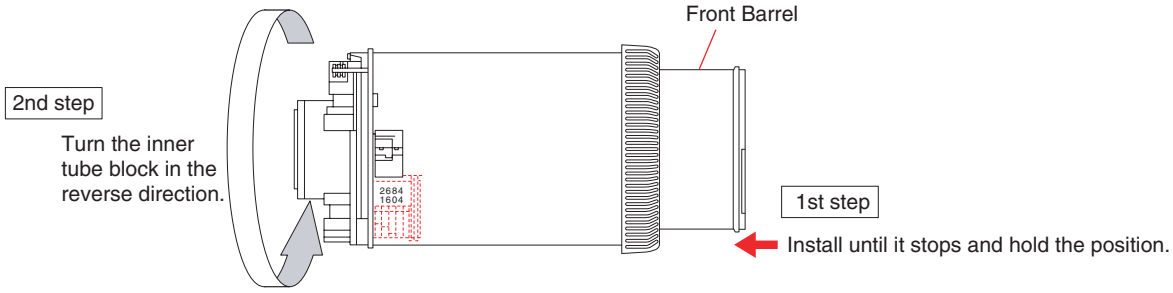
Note: Do not set the front barrel to the Tele-end position.
It comes off from the focus barrel.



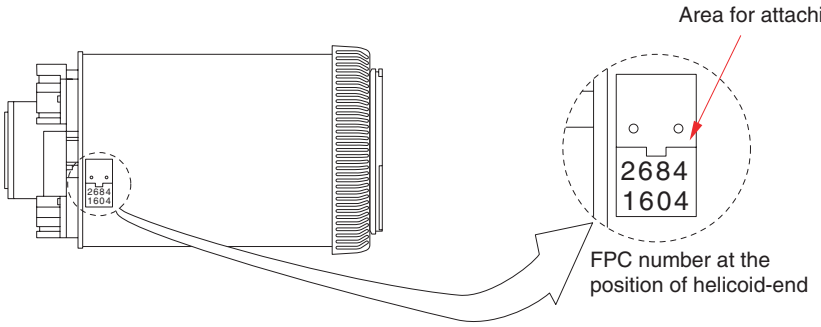
4. Hold the focus barrel block and turn the inner tube block to the position of figure in the direction of the arrow. (The turning is approx. 260 degree, so that the projection goes over about 5 mm from the area for attaching brush.)
   Note: It may stop halfway around the flexible, focus, but keep turning.



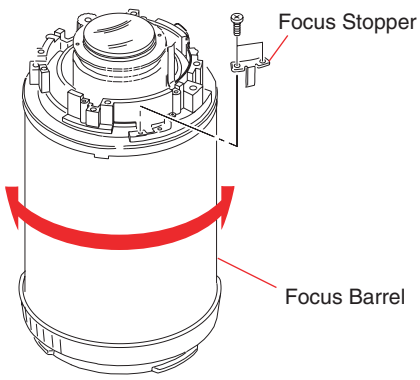
5. Insert the front barrel to the inner tube block until it stops.
6. With front barrel fitted, turn the inner tube block in the direction of the arrow to engage to helicoid.



7. When the helicoid stops turning, check that the FPC number is seen from the area for attaching brush.
   If you cannot see the number, reassemble again from the step 3.



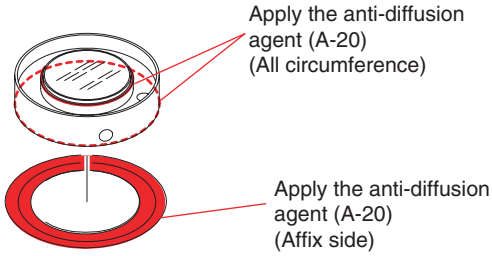
8. Attach the focus stopper.
9. Turn the focus barrel to the both directions (infinity ↔ close), and check that the helicoid moves smoothly.



HELP09

Anti-diffusion agent (A-20): J-6082-611-A

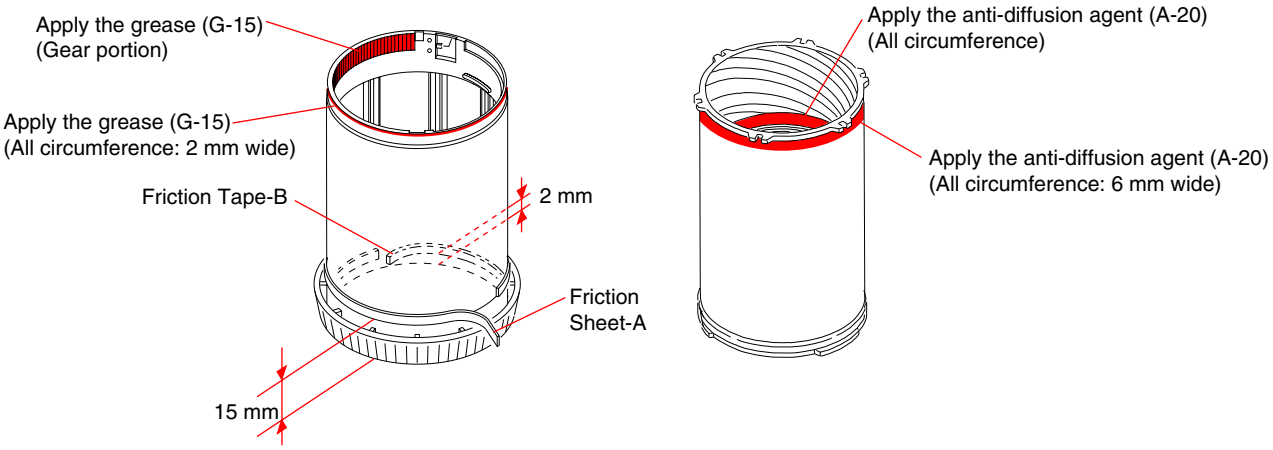
Apply the anti-diffusion agent (A-20) to the instruction part of the 2nd lens lens set and light shield plate assembly.



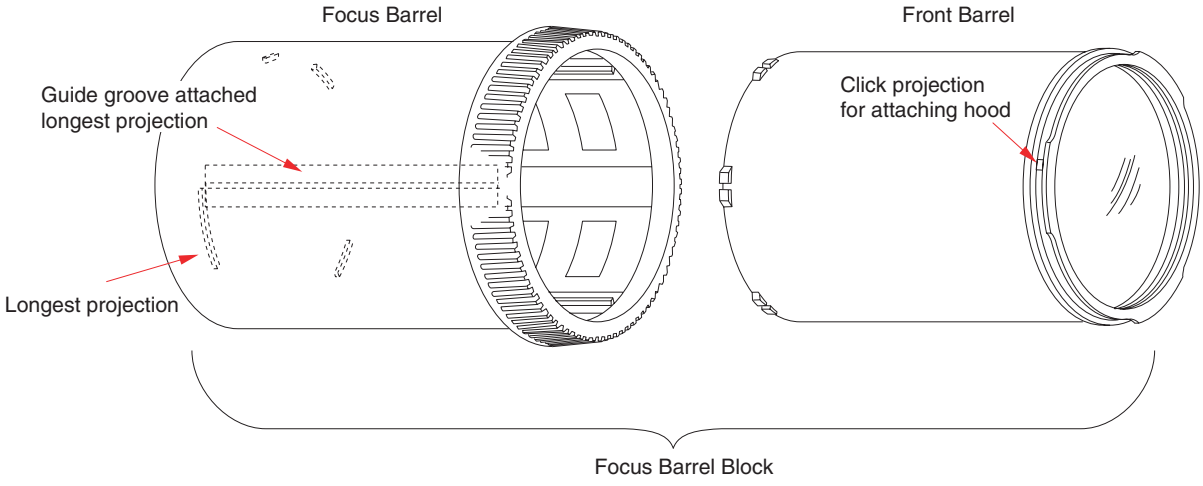
HELP10

Grease (G-15): J-6082-619-A
Anti-diffusion agent (A-20): J-6082-611-A

1. Attach the friction sheet-A and friction tape-B as shown in the figure.
2. Apply the grease (G-15) to the instruction part of the focus barrel.
3. Apply the anti-diffusion agent (A-20) to the instruction part of the front barrel



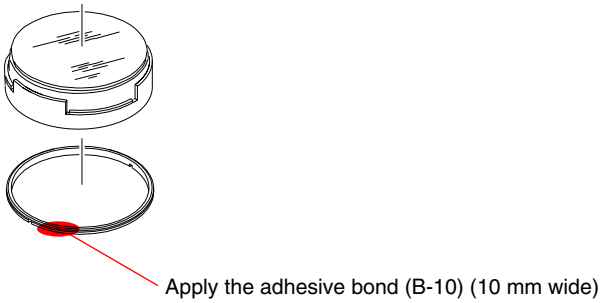
4. Insert the front barrel to the focus barrel as shown in the figure.



HELP11

Adhesive bond (B-10): J-6082-612A
Universal Wrench: J-6082-609-A
Chip-A for Universal Wrench: J-6082-609-1
Chip-B for Universal Wrench: J-6082-609-2

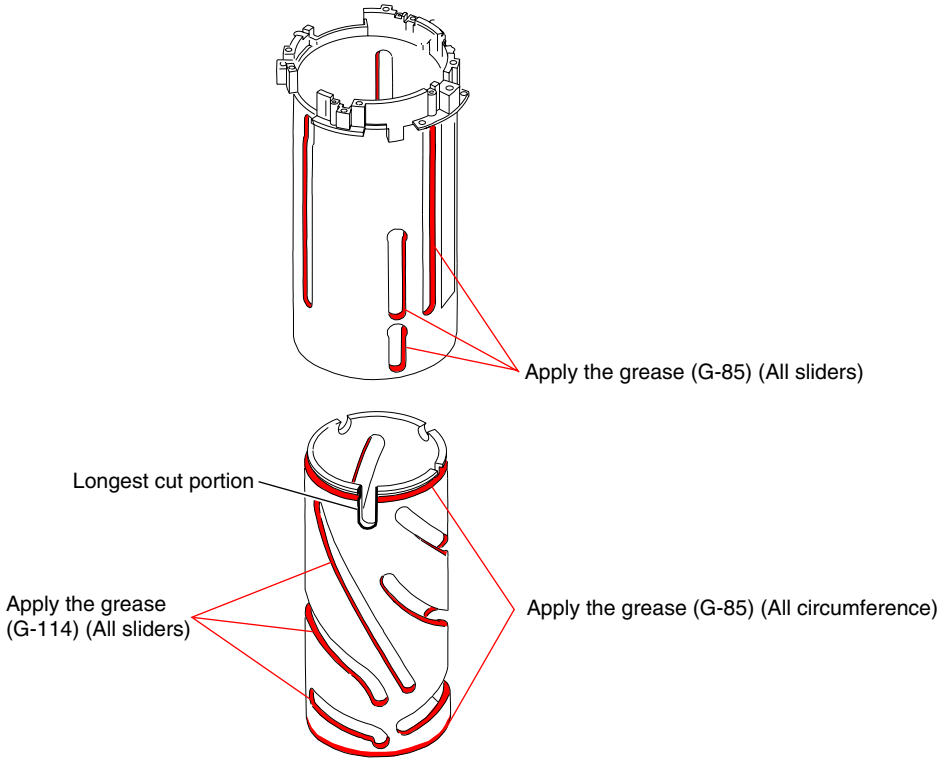
After the focus-shift adjustment is completed, apply the adhesive bond (B-10) as shown in the figure, it tightens with a universal wrench.



HELP12

Grease (G-85): J-6082-626-A
Grease (G-114): J-6082-630-A

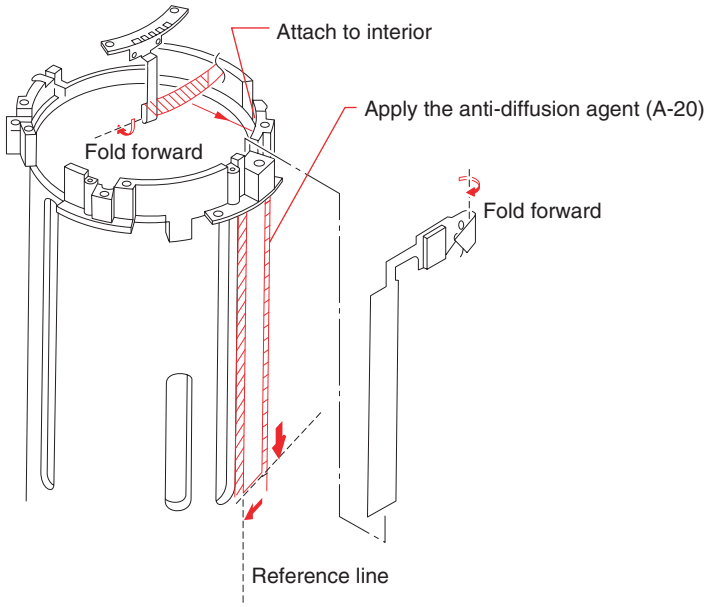
1. Apply the grease (G-85, G-114) to the instruction part of the cam tube set.
2. Assemble the cam tube set as shown in the figure.



HELP13

Anti-diffusion agent (A-20): J-6082-611-A

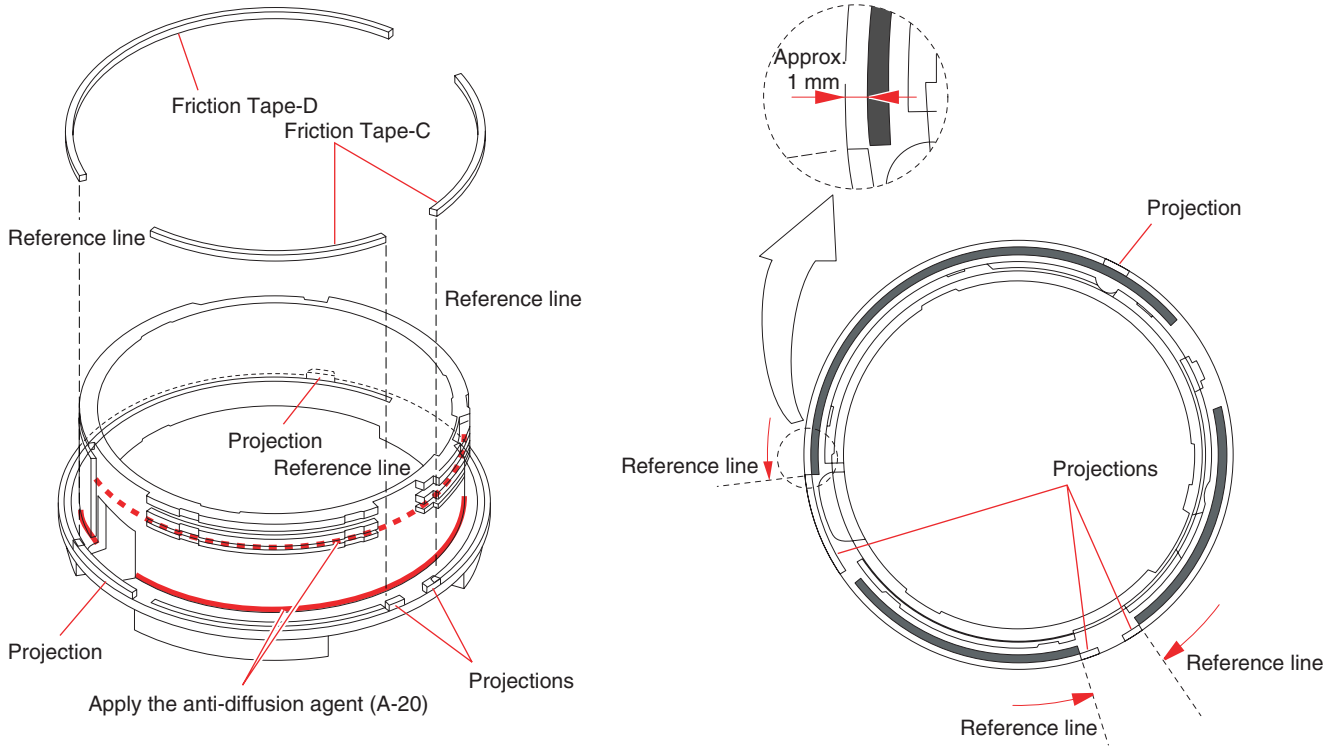
1. Insert the main flexible set to the slot of the cam tube set, and attach it as shown in the figure.
2. Apply the anti-diffusion agent (A-20) to the instruction part of the cam tube set.



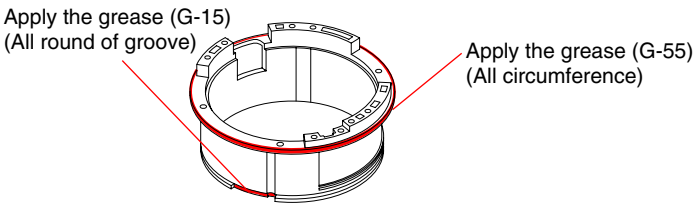
HELP14

Anti-diffusion agent (A-20): J-6082-611-A
Grease (G-15): J-6082-619-A
Grease (G-55): J-6082-623-A

1. Apply the anti-diffusion agent (A-20) to the instruction part of the fixed mount.
2. Attach the friction tape-C and D with reference to projection of the fixed mount as shown in the figure.



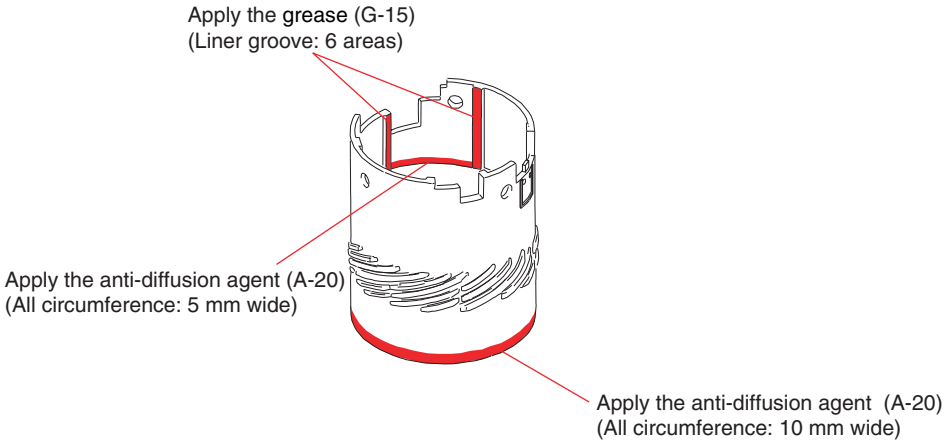
3. Apply the grease (G-15, G-55) to the instruction part of the fixed mount.



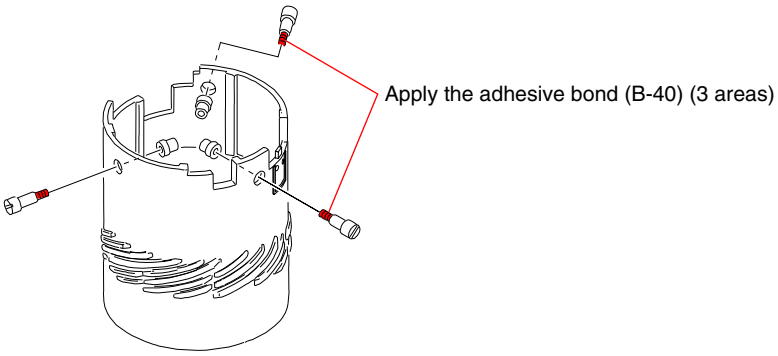
HELP15

Grease (G-15): J-6082-619-A
Anti-diffusion agent (A-20): J-6082-611-A
Adhesive bond (B-10): J-6082-612-A
Adhesive bond (B-40): J-6082-614-A

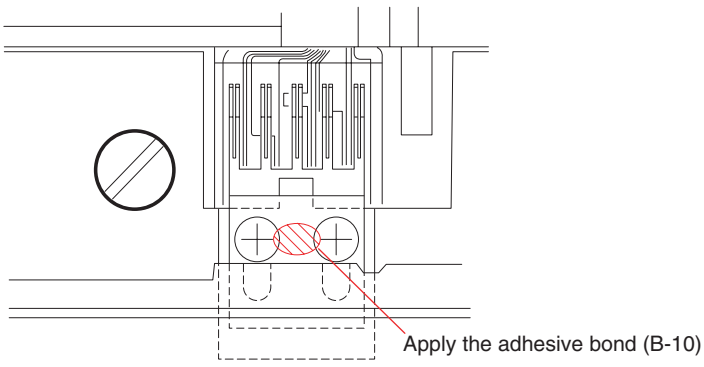
1. Apply the grease (G-15) and anti-diffusion agent (A-20) to the instruction part of the helicoid barrel.



2. Apply the adhesive bond (B-40) to the three guide pins fixing the helicoid barrel.



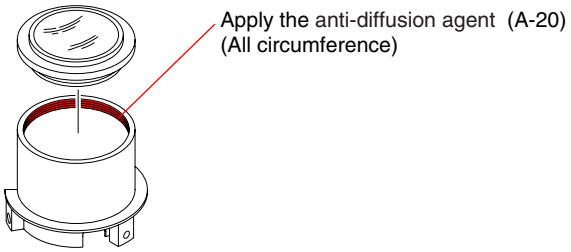
3. After the zoom brush position adjustment is completed, apply the adhesive bond (B-10) to the two screws as shown in the figure.



HELP16

Anti-diffusion agent (A-20): J-6082-611-A

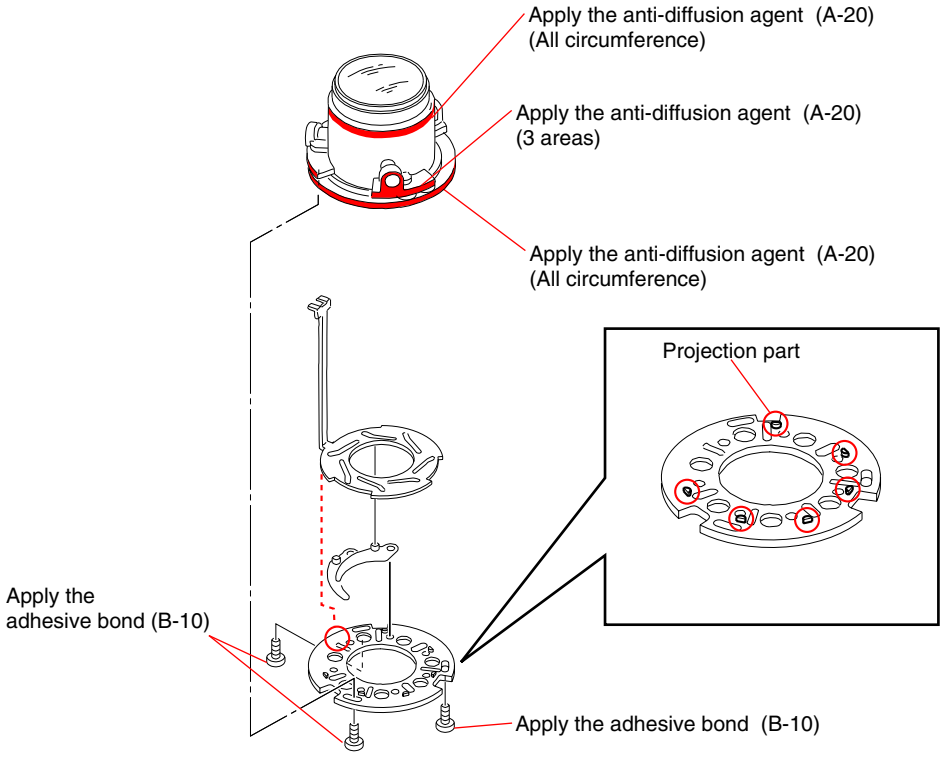
Apply the anti-diffusion agent (A-20) to the instruction part of the 4th moving barrel.



HELP17

Anti-diffusion agent (A-20): J-6082-611-A
Adhesive bond (B-10): J-6082-612-A

1. Apply the anti-diffusion agent (A-20) to the instruction part of the 3rd lens set.
2. Match the lever of the diaphragm operation plate to the position without projection part of the pressure plate.
3. After the aperture diameter adjustment is completed, apply the adhesive bond (B-10) to the three screws as shown in the figure.



3. REPAIR PARTS LIST

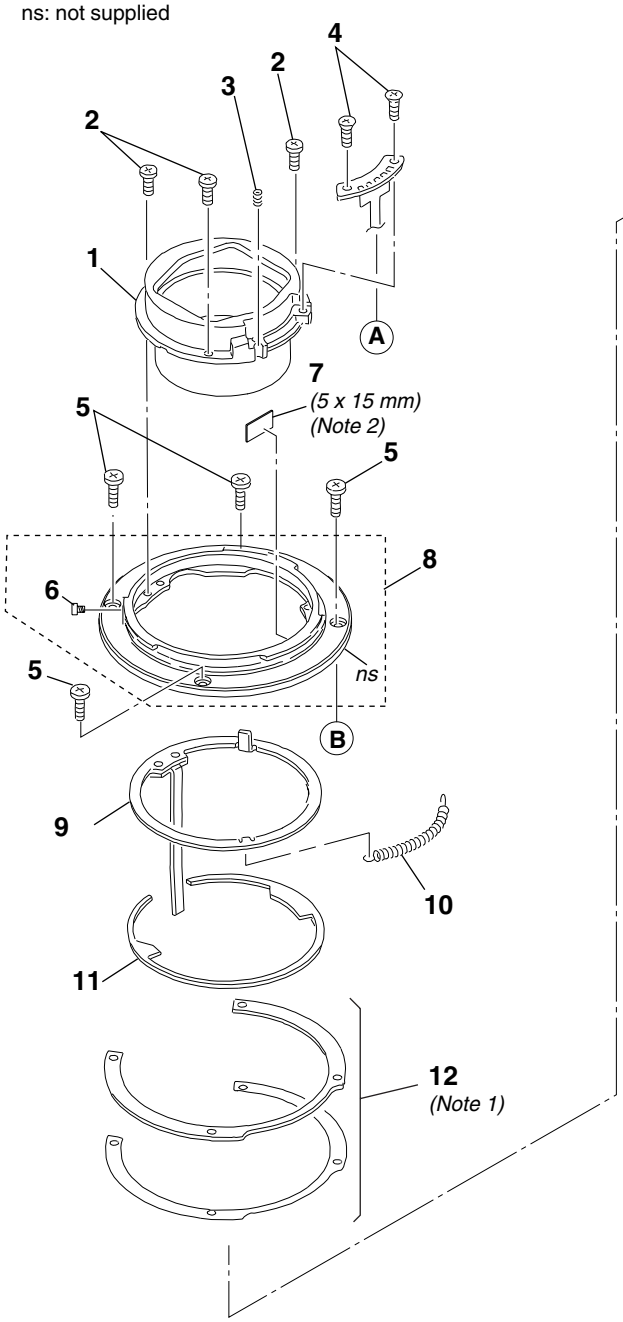
DISASSEMBLY

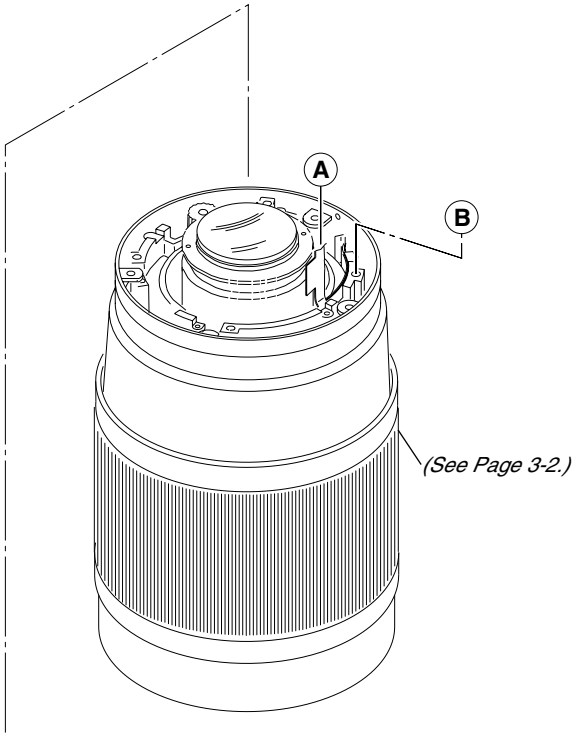
NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

3-1. EXPLODED VIEWS

3-1-1. BAYONET MOUNT SET

ns: not supplied





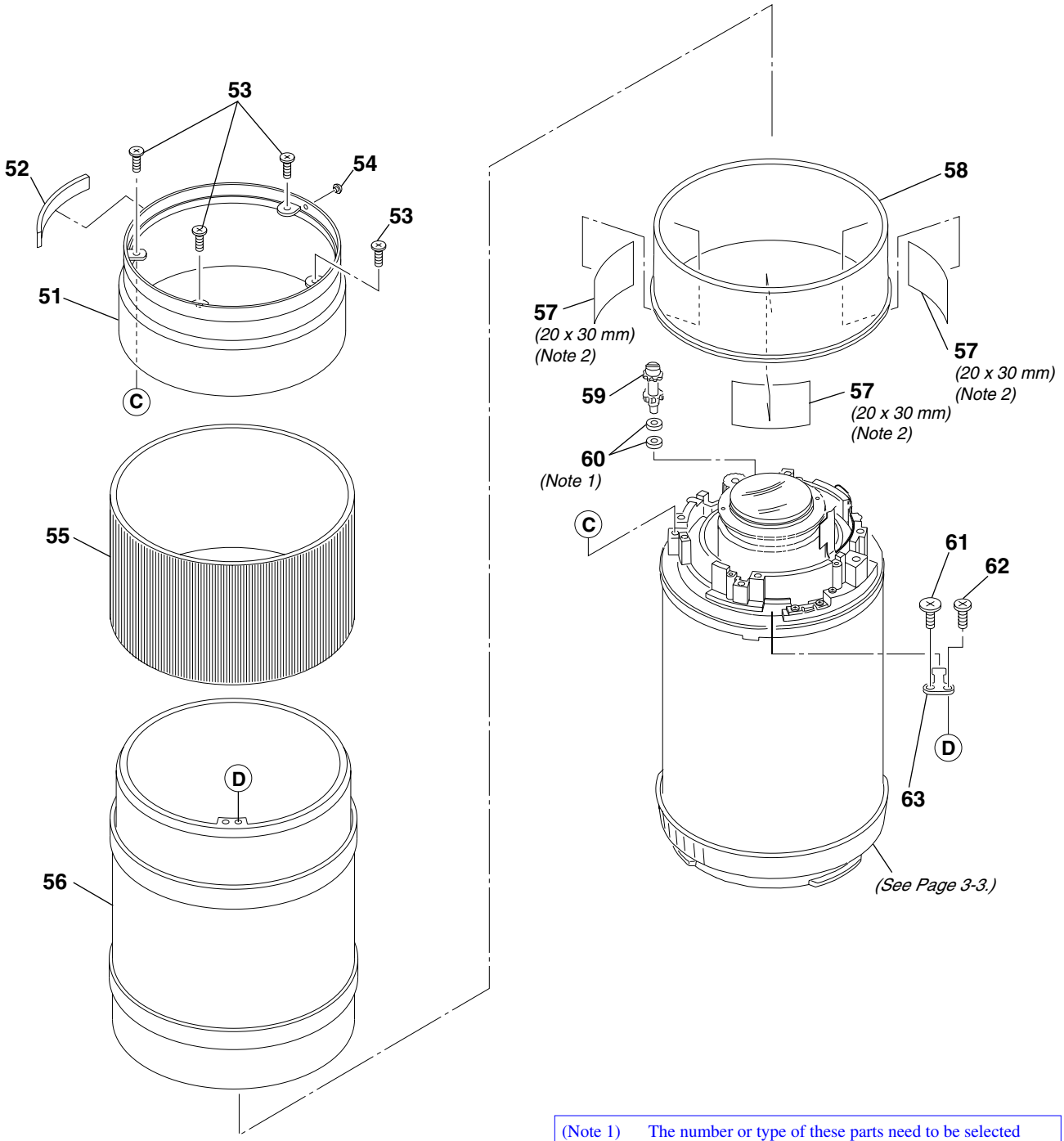
(Note 1)	The number or type of these parts need to be selected according to adjustment etc.. Select the part referring to page 3-6.

(Note 2)	Cut the adhesive sheet (210x297 mm) (Ref. No. 7) for 5×15 mm.

Ref. No.	Part No.	Description
1	A-1203-894-A	TUBE SET, LIGHT INTERCEPTION
2	2-684-064-01	SCREW M1.4X2.2
3	2-684-065-01	GROUND SPRING
4	2-684-066-01	TAPPING SCREW 1.7 M1.7X4.0
5	2-698-464-01	TAPPING SCREW PHI 2 M2X5.5
6	2-684-244-01	STOPPER SCREW

Ref. No.	Part No.	Description
7	2-649-300-01	SHEET,ADHESIVE (Note 2)
8	A-1203-916-A	MOUNT SET, BAYONET
9	A-1203-917-A	PRESET RING ASSY
10	2-693-468-01	MAIN SPRING
11	2-698-541-01	PRESET RING PRESSURE
12	Selection part	BACK WASHER-A to E (Note 1)

3-1-2. ZOOM BARREL BLOCK



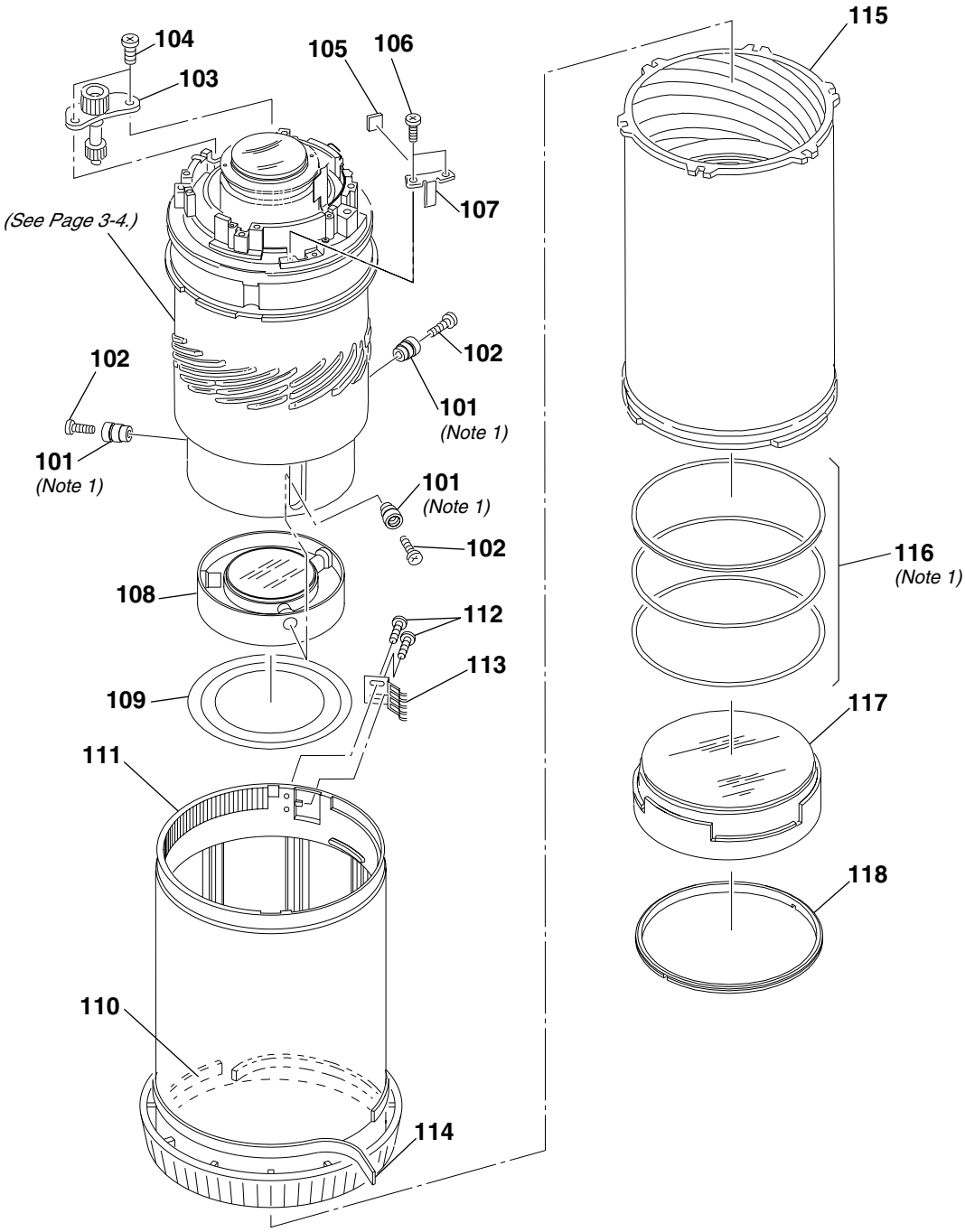
(Note 1) The number or type of these parts need to be selected according to adjustment etc..
Select the part referring to page 3-6.

(Note 2) Polyester tape (black) 10mm (Ref. No. 57) for 20×30 mm.

Ref. No.	Part No.	Description
51	2-698-452-01	ZOOM BARREL RETAINER (-900)(BLACK)
52	2-698-460-01	NAME PLATE (CHINA)
53	2-691-784-01	DIA3 HEAD TAPPING SCREW DIA1.7 M1.7X4.0
54	2-683-692-01	CHIP (MOUNT INDEX)
55	2-698-461-01	ZOOM RUBBER RING
56	2-698-449-01	ZOOM BARREL (-900) (BLACK)
57	9-913-210-03	POLYESTER TAPE (BLACK) 10mm (Note 2)

Ref. No.	Part No.	Description
58	2-698-451-01	SUPPORT RING
59	2-684-056-01	COUPLER
60	Selection part	COUPLER ADJUSTMENT WASHER A to E (Note 1)
61	2-698-463-01	SCREW M1.7X3.0
62	2-691-584-01	DIA3 HEAD TAPPING SCREW DIA1.7 M1.7X3.0
63	2-698-454-01	CONNECTING PLATE

3-1-3. 2ND LENS SET AND FOCUS BARREL BLOCK

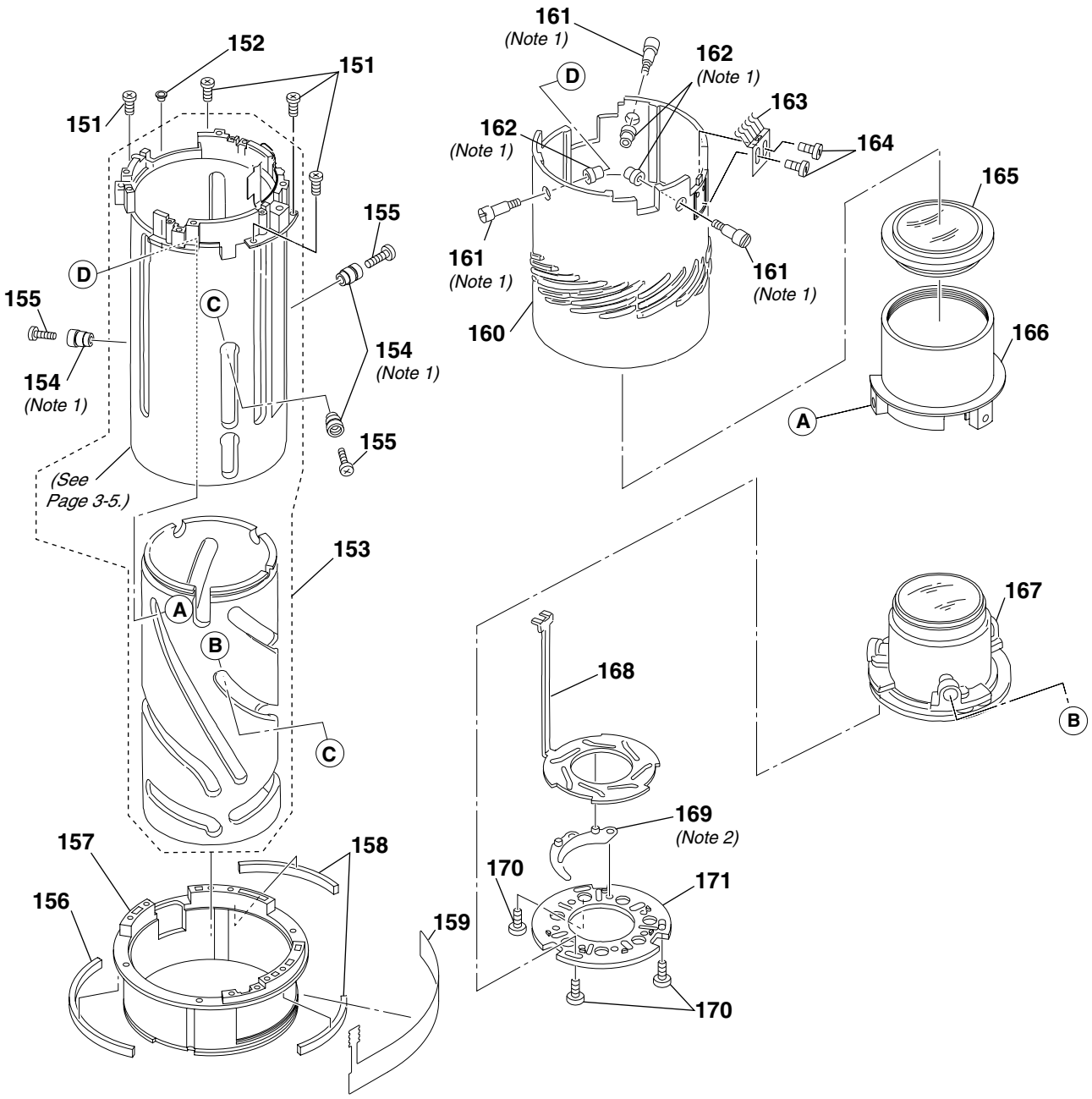


(Note 1) The number or type of these parts need to be selected according to adjustment etc..
Select the part referring to page 3-6.

Ref. No.	Part No.	Description
101	Selection part	GUIDE ROLLER1-A to 1-L (Note 1)
102	2-683-631-01	SCREW,TAPPING M2.0X8.0
103	A-1203-899-A	GEAR SET
104	2-698-498-01	TAPPING SCREW 1.7 M1.7X5.0
105	2-698-494-01	SPACER
106	2-698-496-01	SCREW M1.7X4.0
107	2-698-478-01	FOCUS STOPPER
108	A-1203-896-A	LENS SET, 2ND
109	A-1203-897-A	PLATE SET, LIGHT INTERCEPTION

Ref. No.	Part No.	Description
110	2-698-480-01	FRICTION TAPE-B
111	2-698-470-01	FOCUS BARREL
112	2-683-629-01	SCREW,TAPPING M1.4X2.0
113	2-698-477-01	ENCODER BRUSH
114	2-698-479-01	FRICTION SHEET-A
115	2-698-469-01	FRONT BARREL
116	Selection part	ADJUSTING WASHER-A to F (Note 1)
117	A-1203-895-A	LENS SET, 1ST
118	2-698-468-01	G1 HOLDER

3-1-4. INNER TUBE BLOCK



(Note 1) The number or type of these parts need to be selected according to adjustment etc..
Select the part referring to page 3-6.

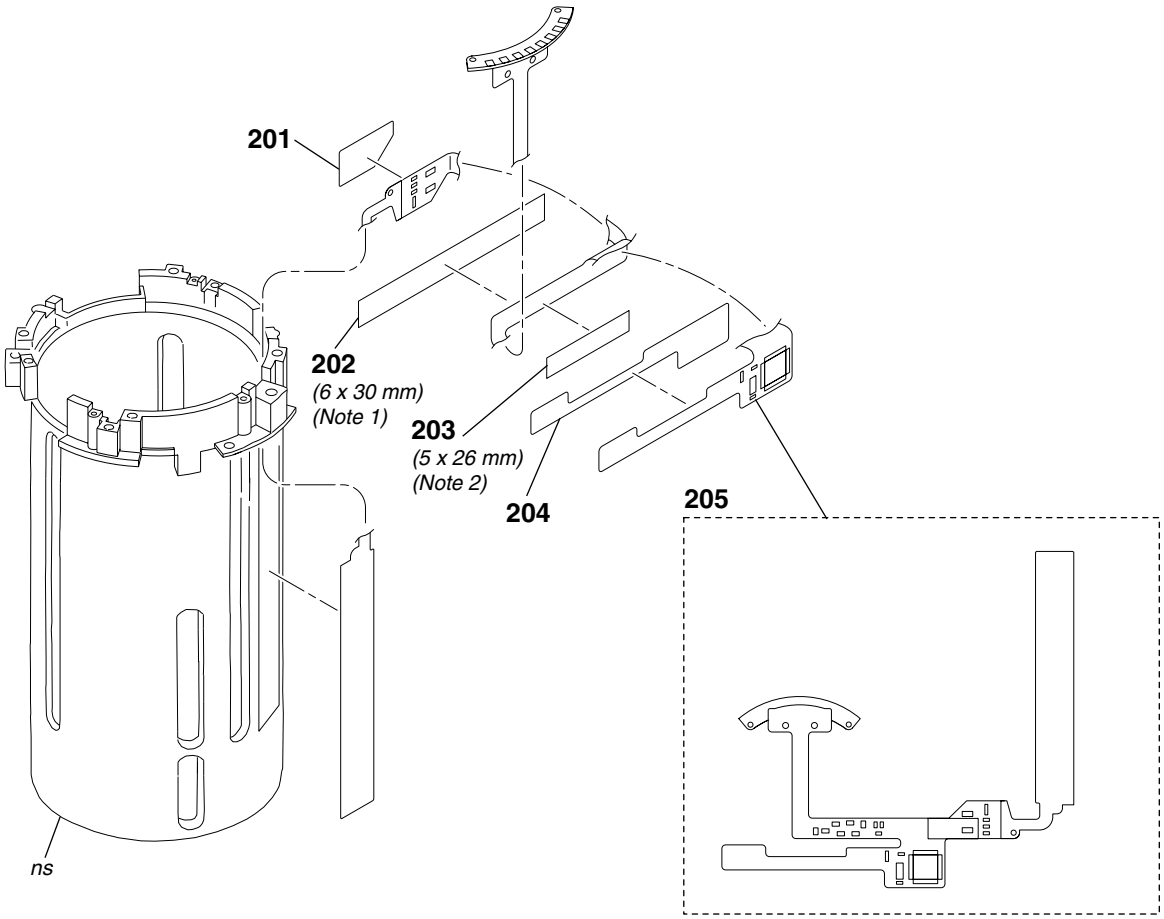
(Note 2) Only one diaphragm blade assy (Ref. No.169) is supplied. Confirm a necessary number when you order.

Ref. No.	Part No.	Description
151	2-698-539-01	SCREW M1.7X6.0
152	2-698-513-01	AXIS RECEIVER
153	A-1203-904-A	TUBE SET, CAM
154	Selection part	GUIDE ROLLER1-A to 1-L (Note 1)
155	2-683-631-01	SCREW,TAPPING M2.0X8.0
156	2-698-515-01	FRICTION TAPE-D
157	2-698-512-01	FIXED MOUNT
158	2-698-514-01	FRICTION TAPE-C
159	2-698-537-01	FLEXIBLE, FOCUS
160	2-698-511-01	HELICOID BARREL
161	Selection part	GUIDE PIN-A to D (Note 1)

Ref. No.	Part No.	Description
162	Selection part	GUIDE ROLLER2-A to 2-P (Note 1)
163	2-698-477-01	ENCODER BRUSH
164	2-683-629-01	SCREW,TAPPING M1.4X2.0
165	A-1203-903-A	LENS SET, 4TH
166	2-698-502-01	4TH MOVING BARREL
167	A-1203-901-A	LENS SET, 3RD
168	2-698-501-01	DIAPHRAGM OPERATION PLATE
169	A-1203-905-A	DIAPHRAGM BLADE ASSY (Note 2)
170	2-698-538-01	SCREW M1.6X3.5
171	2-698-500-01	PRESSURE PLATE

3-1-5. MAIN FLEXIBLE SET

ns: not supplied



(Note 1)	Polyester tape (black) 10mm (Ref. No. 202) for ×30 mm.

(Note 2)	Cut the adhesive sheet (210x297 mm) (Ref. No. 203) for 5×26 mm.

Ref. No.	Part No.	Description
201	2-698-542-01	TAPE-C
202	9-913-210-03	POLYESTER TAPE (BLACK) 10mm (Note 1)
203	2-649-300-01	SHEET,ADHESIVE (Note 2)
204	2-698-543-01	TAPE-E
205	A-1203-918-A	FLEXIBLE SET, MAIN

3-1-6. SELECTION PARTS

Ref. No.12

These washers are provided for flange back adjustment.
Change the thickness (t) according to result of adjustment.

Part No.	Description
2-698-455-01	BACK WASHER-A (T=0.05 mm)
2-698-456-01	BACK WASHER-B (T=0.07 mm)
2-698-457-01	BACK WASHER-C (T=0.1 mm)
2-698-458-01	BACK WASHER-D (T=0.2 mm)
2-698-459-01	BACK WASHER-E (T=0.5 mm)

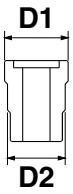
Ref. No.60

These washers are provided for flange back adjustment.
Change the thickness (t) according to result of adjustment.

Part No.	Description
2-684-057-01	COUPLER ADJUSTMENT WASHER-A (T=0.05 mm)
2-684-058-01	COUPLER ADJUSTMENT WASHER-B (T=0.07 mm)
2-684-059-01	COUPLER ADJUSTMENT WASHER-C (T=0.1 mm)
2-684-060-01	COUPLER ADJUSTMENT WASHER-D (T=0.2 mm)
2-684-061-01	COUPLER ADJUSTMENT WASHER-E (T=0.5 mm)

Ref. No.101
Ref. No.154

Select the type of part according to the operation load of the associated parts.



Part No.	Description
2-698-481-01	GUIDE ROLLER 1-A (D1=4.89 mm, D2=4.42 mm)
2-698-482-01	GUIDE ROLLER 1-B (D1=4.89 mm, D2=4.41 mm)
2-698-483-01	GUIDE ROLLER 1-C (D1=4.89 mm, D2=4.40 mm)
2-698-484-01	GUIDE ROLLER 1-D (D1=4.88 mm, D2=4.42 mm)
2-698-485-01	GUIDE ROLLER 1-E (D1=4.88 mm, D2=4.41 mm)
2-698-486-01	GUIDE ROLLER 1-F (D1=4.88 mm, D2=4.40 mm)
2-698-488-01	GUIDE ROLLER 1-G (D1=4.87 mm, D2=4.42 mm)
2-698-489-01	GUIDE ROLLER 1-H (D1=4.87 mm, D2=4.41 mm)
2-698-490-01	GUIDE ROLLER 1-I (D1=4.87 mm, D2=4.40 mm)
2-698-491-01	GUIDE ROLLER 1-J (D1=4.89 mm, D2=4.39 mm)
2-698-492-01	GUIDE ROLLER 1-K (D1=4.88 mm, D2=4.39 mm)
2-698-493-01	GUIDE ROLLER 1-L (D1=4.87 mm, D2=4.39 mm)

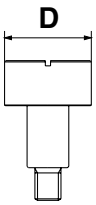
Ref. No.116

These washers are provided for focus-shift adjustment.
Change the thickness (t) according to result of adjustment.

Part No.	Description
2-698-471-01	ADJUSTING WASHER-A (T=0.05 mm)
2-698-472-01	ADJUSTING WASHER-B (T=0.06 mm)
2-698-473-01	ADJUSTING WASHER-C (T=0.07 mm)
2-698-474-01	ADJUSTING WASHER-D (T=0.1 mm)
2-698-475-01	ADJUSTING WASHER-E (T=0.2 mm)
2-698-476-01	ADJUSTING WASHER-F (T=0.5 mm)

Ref. No.161

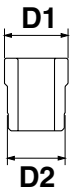
Select the type of part according to the operation load of the associated parts.



Part No.	Description
2-698-516-01	GUIDE PIN-A (D=5.02 mm)
2-698-517-01	GUIDE PIN-B (D=5.01 mm)
2-698-518-01	GUIDE PIN-C (D=5.00 mm)
2-698-519-01	GUIDE PIN-D (D=5.03 mm)

Ref. No.162

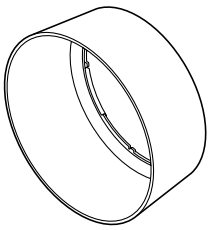
Select the type of part according to the operation load of the associated parts.



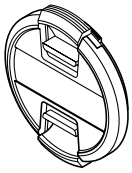
Part No.	Description
2-698-520-01	GUIDE ROLLER 2-A (D1=4.78 mm, D2=4.42 mm)
2-698-521-01	GUIDE ROLLER 2-B (D1=4.78 mm, D2=4.41 mm)
2-698-522-01	GUIDE ROLLER 2-C (D1=4.78 mm, D2=4.40 mm)
2-698-523-01	GUIDE ROLLER 2-D (D1=4.77 mm, D2=4.42 mm)
2-698-524-01	GUIDE ROLLER 2-E (D1=4.77 mm, D2=4.41 mm)
2-698-525-01	GUIDE ROLLER 2-F (D1=4.77 mm, D2=4.40 mm)
2-698-526-01	GUIDE ROLLER 2-G (D1=4.76 mm, D2=4.42 mm)
2-698-527-01	GUIDE ROLLER 2-H (D1=4.76 mm, D2=4.41 mm)
2-698-528-01	GUIDE ROLLER 2-I (D1=4.76 mm, D2=4.40 mm)
2-698-529-01	GUIDE ROLLER 2-J (D1=4.6 mm, D2=4.42 mm)
2-698-530-01	GUIDE ROLLER 2-K (D1=4.65 mm, D2=4.41 mm)
2-698-532-01	GUIDE ROLLER 2-L (D1=4.65 mm, D2=4.40 mm)
2-698-533-01	GUIDE ROLLER 2-M (D1=4.65 mm, D2=4.39 mm)
2-698-534-01	GUIDE ROLLER 2-N (D1=4.78 mm, D2=4.39 mm)
2-698-535-01	GUIDE ROLLER 2-O (D1=4.77 mm, D2=4.39 mm)
2-698-536-01	GUIDE ROLLER 2-P (D1=4.76 mm, D2=4.39 mm)

3-2. SUPPLIED ACCESSORIES

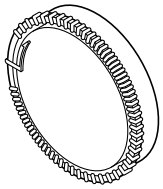
Checking supplied accessories.



Lens Hood (SH0007)
2-687-046-01



Front Lens Cap
2-683-616-01



Rear Lens Cap
2-683-615-01

Other accessories

2-686-120-01 MANUAL, INSTRUCTION
(JAPANESE, ENGLISH, FRENCH, SPANISH, SIMPLIFIED CHINESE)
2-686-120-11 MANUAL, INSTRUCTION
(GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)
2-686-120-21 MANUAL, INSTRUCTION (PORTUGUESE, RUSSIAN,
TRADITIONAL CHINESE, KOREAN, ARABIC) (AEP)

4. ADJUSTMENTS

Note: After the service repair, perform the adjustments referring to this section.

4-1. PREPARATIONS

4-1-1. List of Service Tools and Equipments

- Variable Transformer (Output voltage: AC 100 V) (Note 3)
- Camera DSLR-A100
- Compact Flash (CF) Card (For image saving)
- Screen (Art paper)
- Tape Measure
- Plane Mirror (For SLRs)
- Adhesive bond (B-10): J-6082-612-A
- Color Calculator 2

  Note: Color Calculator 2 is downloadable from the ESI homepage.

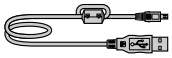
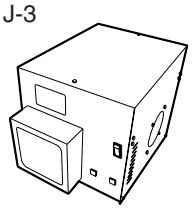
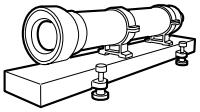
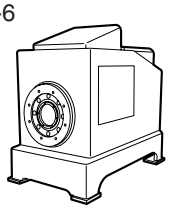
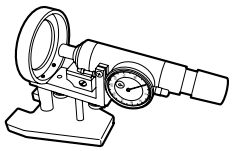
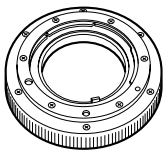
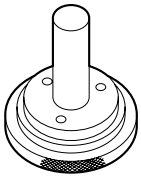
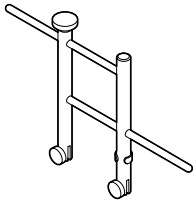
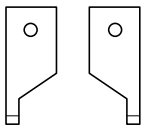
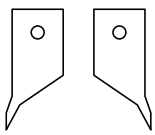
J-1  Personal computer (Note 1)	J-2  USB cord with connector 1-833-062-11	J-3  Luminance box J-6082-581-A
J-4  AE master lens J-6082-597-A	J-5  1000 mm Collimator 110V: J-6082-604-A 240V: J-6082-604-B (Note 2)	J-6  Lens test projector J-6082-605-A (Note 3)
J-7  Flange back tester J-6082-606-A	J-8  A-mount attachment J-6082-607-A	J-9  Flange back gauge (43.50mm) J-6082-608-A
J-10  Universal wrench J-6082-609-A	J-11  Chip-A for universal wrench J-6082-609-1	J-12  Chip-B for universal wrench J-6082-609-2

Fig. 4-1-1

Note 1: Personal Computer (PC)
(Color Calculator 2 installed)

OS:	Windows2000 Professional/XP
MEMORY:	40 M Byte or more recommended
Hard disk free area:	15 M Byte or more recommended
USB terminal:	Standard equipment
Graphics:	32,000 colors or more recommended VGA monitor

Note 2: Attach the chart to the 1000 mm collimator as shown in Fig. 4-1-2.

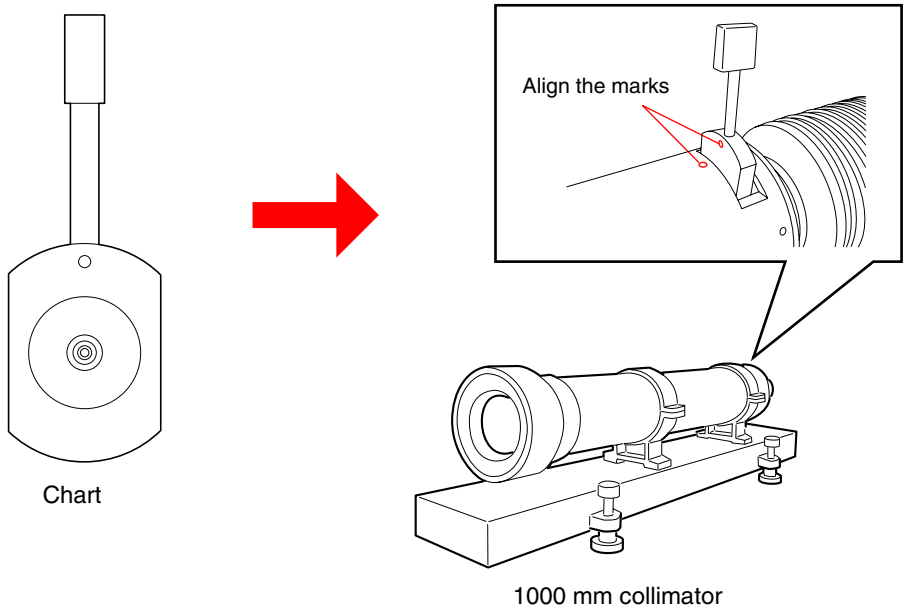


Fig. 4-1-2

Note 3: Connect the variable transformer (Output voltage: **AC 100 V**) to the lens test projector.

4-1-2. Lens Adjustment Program

The lens adjustment program is required for the following check/adjustment.
4-6. LENS ROM CHECK
4-7. ZOOM BRUSH POSITION CHECK/ADJUSTMENT AND PATTERN CHECK
4-8. FOCUS BRUSH POSITION CHECK/ADJUSTMENT AND PATTERN CHECK

Prepare/start the Lens adjustment program with the following steps.

Equipment

- Personal Computer (PC)
- Camera DSLR-A100
- USB Cord With Connector
- Lens Adjustment Program

  Note: Lens Adjustment Program is downloadable from the ESI homepage.

1. Installation of the Lens Adjustment Program

For installation of the lens adjustment program, refer to the link "• Preparing the DSLR-A100 adjustment program" described on the top cover of the camera DSLR-A100 service manual "9-852-130-5□".

Note: Store the lens adjustment program "LensAdjustment.exe" and related file "AlphaLensAdjust.txt" in the folder that contains the DSLR-A100 adjustment program "DSLRadj_cs.exe".

2. Start the Lens Adjustment Program

1) Connect the camera and PC with the USB cord with connector.
2) Set the mode dial of camera to "M".
3) Turn the POWER switch of the camera to OFF, then turn the POWER switch to ON while pressing the shutter button halfway down with pressed the ▲ button of controller keys and MENU buttons.
4) Check that the remaining number of recordable images on the LCD monitor is "BBBB".

   Note: When "BBBB" is displayed, the camera activates in the adjustment mode.

5) Start the lens adjustment program "LensAdjustment.exe".

4-2. APERTURE DIAMETER CHECK/ADJUSTMENT

4-2-1. Aperture Diameter Check

Equipment

- Luminance Box
- Camera DSLR-A100
- AE Master Lens
- Compact Flash (CF) Card (For image saving)
- Personal Computer (PC)
  (Color Calculator 2 installed)

1. Preparations

1) Install the CF card to the camera.
2) Set the equipments, camera and master lens as shown in Fig.4-2-1.

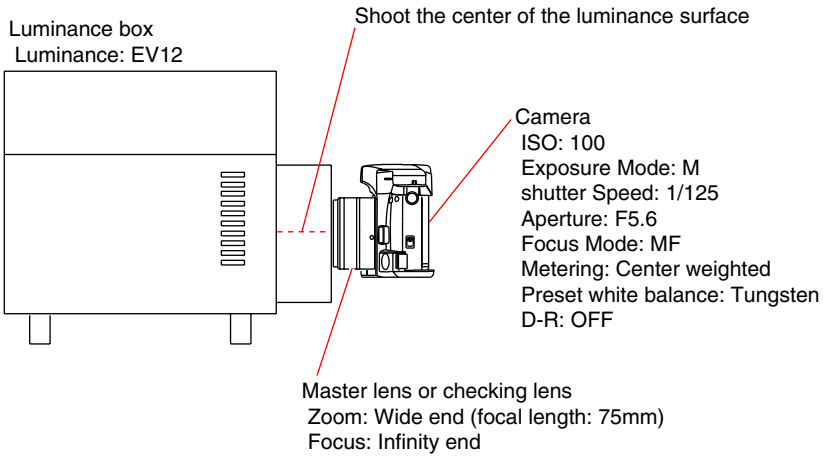


Fig.4-2-1

3) Shoot the images under the following conditions and save them.

Note: Shoot the center of the luminance surface three times with the master lens and checking lens.

Setting of Luminance box:

Luminance:	EV12

Setting of Lens:

Zoom:	Wide end (focal length: 75mm)
Focus:	Infinity end

Setting of Camera:

ISO:	100
Exposure Mode:	M
shutter Speed:	1/125
Aperture:	F5.6
Focus Mode:	MF
Metering:	Center weighted
Preset white balance:	Tungsten
D-R:	OFF

2. Checking of Image

Note: Check the image of both master lens and checking lens.

1) Start the Color Calculator 2.

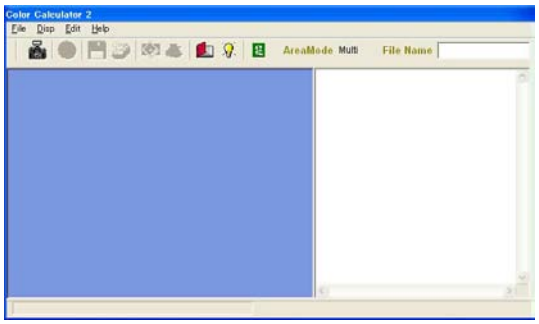


Fig.4-2-2

2) Read the image from the file menu.

Fig.4-2-3

3) Set the Color Calculator 2 as follows.
Measured value display (Display menu): RGB+L*a*b*
Measuring method (Display menu): Center Single Area

Fig.4-2-4

Color space (Edit menu): sRGB

Fig.4-2-5

Area size for calculate (Edit menu →Option): 256×256 Pixels

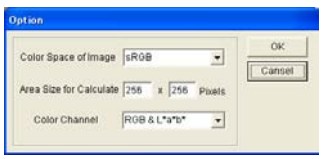


Fig.4-2-6

4) Click the calculate button to measure the image.

5) After measuring, check the “G” values.

Average “G” value of the three images shoot with master lens: (a)

Average “G” value of the three images shoot with checking lens: (b)

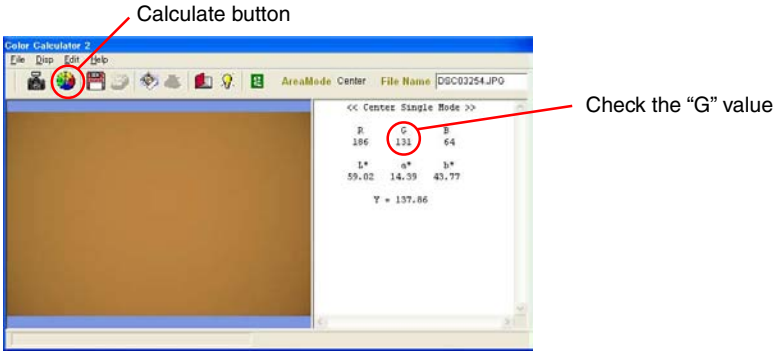


Fig.4-2-7

3. Checking Method

1) Calculate aperture error using the following formula, and check that the aperture error is within the specification.

Aperture error = Average “G” value of master lens (a) - Average “G” value of checking lens (b)

Specification

Aperture error = 0 ±12

2) When the aperture error is out of specification, perform “4-2-2. Aperture Diameter Adjustment”.

4-2-2. Aperture Diameter Adjustment

Equipment

Equipment

- Luminance Box
- Camera DSLR-A100
- AE Master Lens
- Compact Flash (CF) Card (For image saving)
- Personal Computer (PC)
  (Color Calculator 2 installed)
- Adhesive bond (B-10)

Adjusting Method

1) Set the checking lens into the state of Fig.4-2-8 (all exterior parts and 2nd lens set were removed).

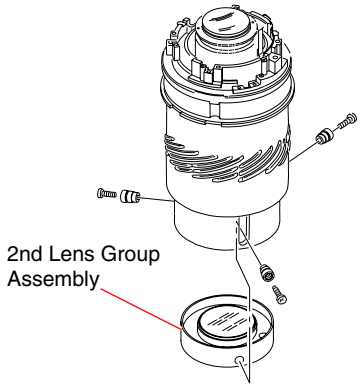


Fig.4-2-8

2) Temporarily attach the bayonet mount set, and set the aperture diameter to smallest opening.
3) Set the zoom to the Wide end position (focal length: 75 mm).
4) Loosen the three screws fixing the pressure plate.
5) Turn the pressure plate so that the inner diameter of the diaphragm blades is 2.6 mm, and tighten the three screws.

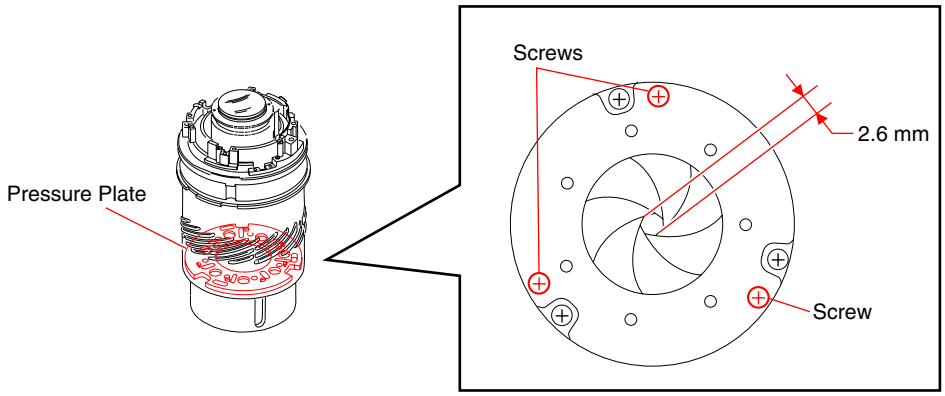


Fig.4-2-9

6) Apply the adhesive bond (B-10) to the three screws tightened in step 5).

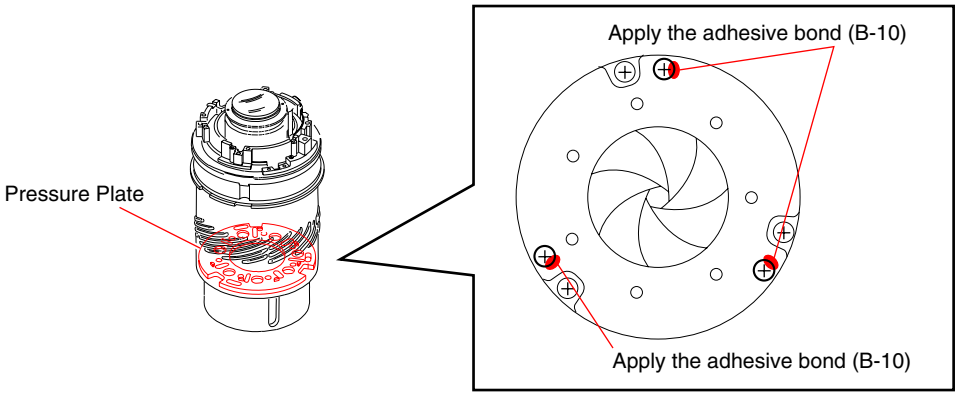


Fig.4-2-10

7) Assemble the lens completely.
8) Perform “4-2-1. Aperture Diameter Check”, and repeat steps 1) to 8) until the aperture error is within the specification.

4-3. PROJECTIVE RESOLVING POWER CHECK

Equipment

- Lens Test Projector and Variable Transformer (Output voltage: AC 100 V)
  Note: Connect the variable transformer (Output voltage: AC 100 V) to the lens test projector.

- A-mount Attachment
- Screen (Art paper)
- Tape Measure
- Plane Mirror (For SLRs)

1. Preparations

Note: Check the projective resolving power of the checking lens at the following focal-length and distance.

Focal-length f (mm)	distance (m)
75	3.3
200	8.4
300	11.6

Table 4-3-1

1) Perform the following steps (1) to (3), and incorporate the internal lenses of the lens test projector according to the checking focal-length.
   (1) Open the lid of the lens test projector.
   (2) Pull up and turn the fixed levers on the right and left sides of the lens test projector.
   (3) Remove or insert the lens.
   Note: Be sure to have the right position and direction of the lens.

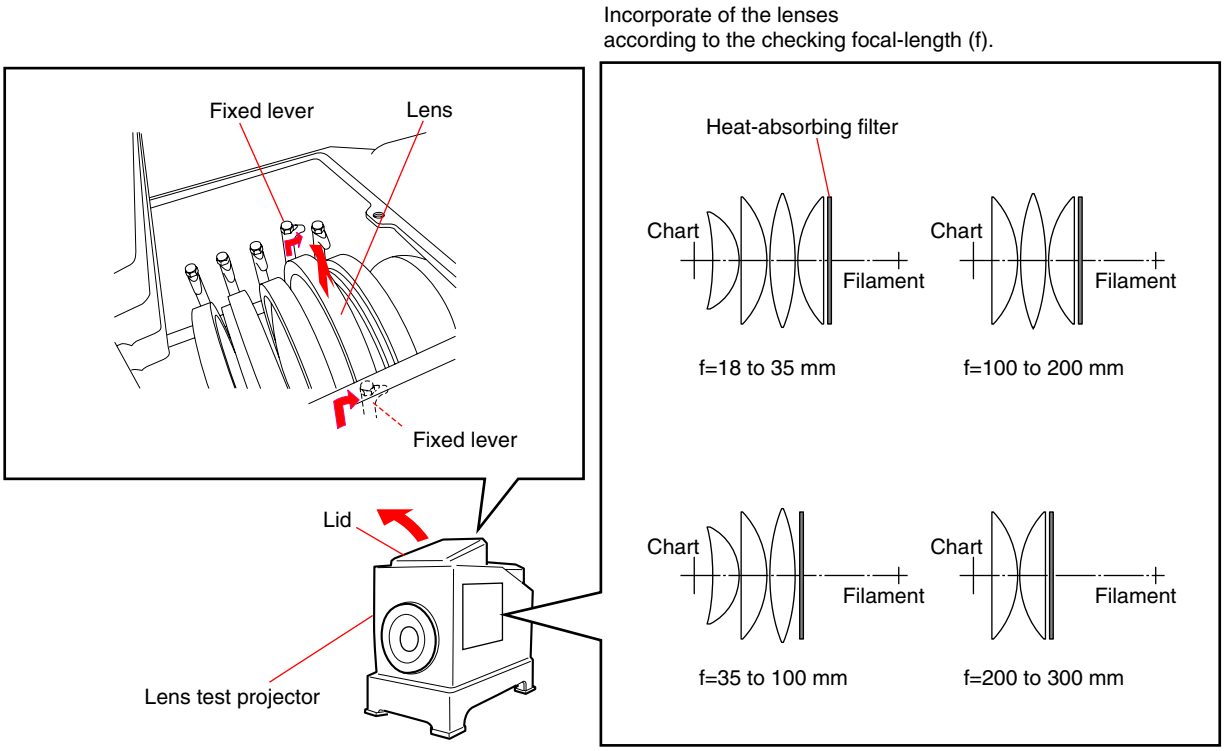


Fig.4-3-1

2) Attach the checking lens to the lens test projector, and set the equipments as shown in Fig.4-3-2.
3) Turn the fan switch of the lens test projector to ON, then turn the lamp switch to ON.

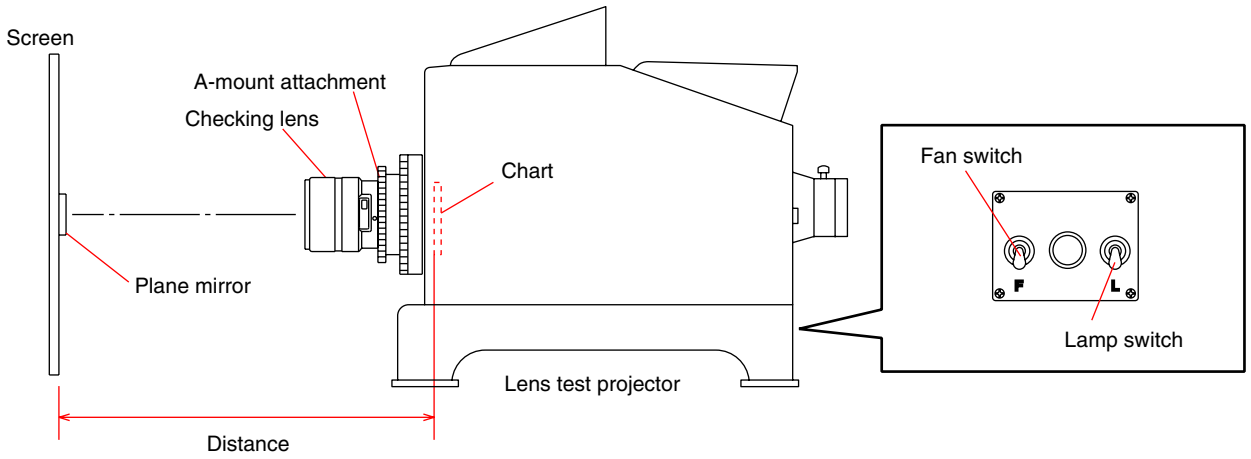


Fig.4-3-2

4) Turn the focus ring of the checking lens until the chart image projected on the screen is the sharpest at the center (y'=0).
5) Set the plane mirror to the center of the projected image (y'= 0), and adjust the projector position so that the mirror reflects the light to the center of the lens.

2. Checking Method

1) Turn the focus ring of the checking lens until the chart image projected on the screen is the sharpest at the center (y'=0).
2) Read the number of the smallest pitched lines at the center (y'= 0).

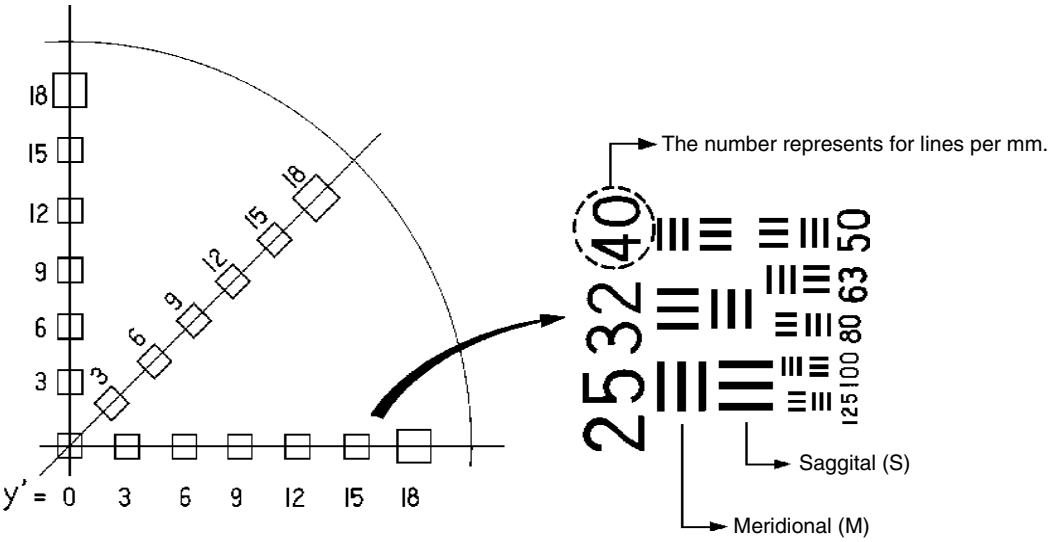


Fig.4-3-3

3) Turn the mount rotation ring of lens test projector until the projected image at a certain peripheral point (y'= 15 or 18) on the screen appears the most unsharp.
Read the number of the smallest pitched lines (both saggital and meridional: 3 lines) at the peripheral point.

Note: When reading the number of the smallest pitched lines, be careful of the spurious resolution.
Spurious resolution is the reversed image of 2 or 4 lines which appears on screen when focus is beyond maximum revolving power.
Do not confuse spurious resolution for the smallest pitched lines.

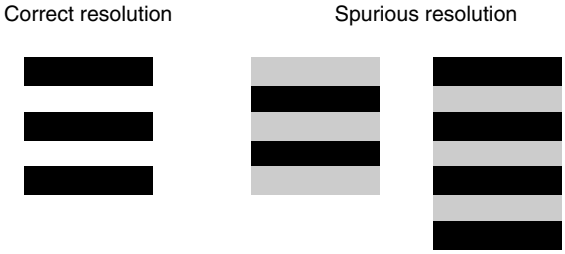


Fig.4-3-4

4) Change the focal-length (zoom) and distance of the checking lens, and check that the all readings (y'= 0, saggital (S) and meridional (M) at y'= 15 or 18) at each focal-length (zoom) and distance is within the specification of the Table 4-3-2.

Specification

Focal-length f (mm)	distance (m)	Number of the smallest pitched lines				
		Center (y'=0)	y'= 15		y'= 18	
		(Lines per mm)	S	M	S	M
75	3.3	125	40	32	32	25
200	8.4	100	40	32	40	25
300	11.6	80	40	32	40	25

Table 4-3-2

5) After the checking is completed, turn the lamp switch of the lens test projector to OFF and cool the inside of the lens test projector, then turn the fan switch to OFF.

4-4. FLANGE BACK (f'F) CHECK/ADJUSTMENT

4-4-1. Flange Back (f'F) Check

Equipment

- 1000 mm Collimator
- Flange Back Tester
- A-mount Attachment
- Flange Back Gauge (43.50mm)

1. Preparations

1) Set the equipments as shown in the Fig.4-4-1.

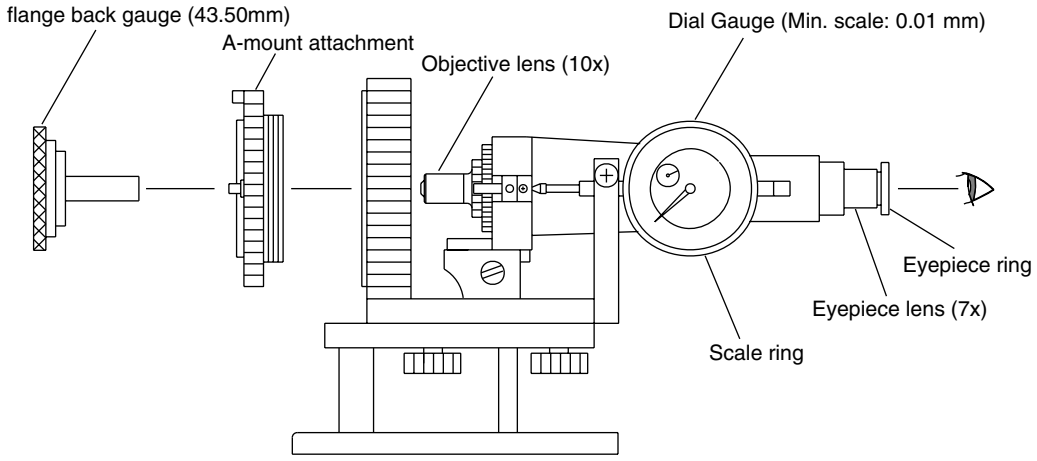


Fig.4-4-1

2) Looking through the eyepiece lens, turn the eyepiece ring of the flange back tester so that cross line or scale in the view is the sharpest.
3) Attach the flange back gauge (43.50mm) securely to the A-mount attachment and hold them together.
4) Turn the focusing knob of the flange back tester so that fine scratches on the flange back gauge (43.50mm) is the sharpest.
   Note: Turn the knob in the direction of the arrow of Fig.4-4-2 for correct reading.

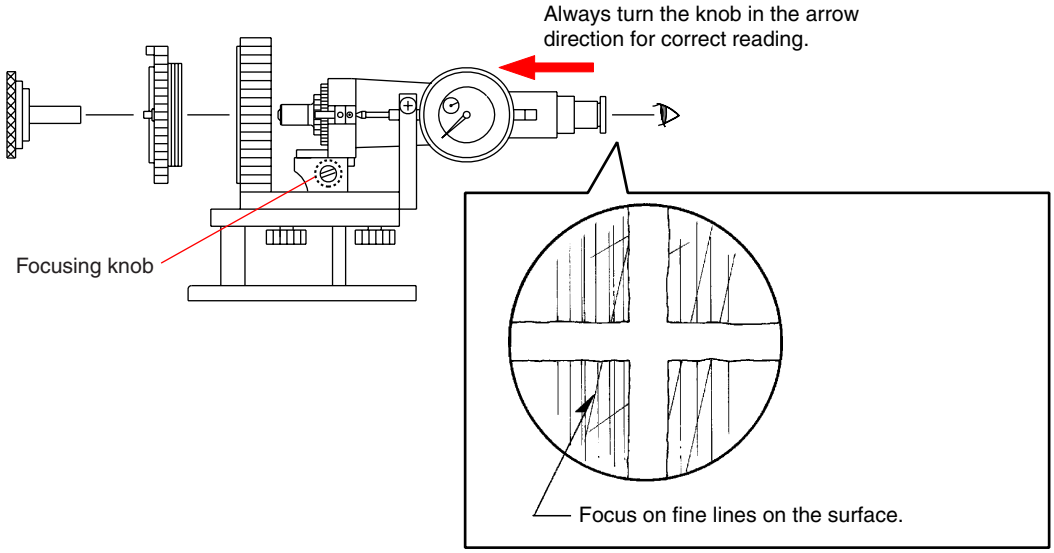


Fig.4-4-2

5) Turn the scale ring of the dial gauge until the long pointer indicates "0".
   Note: This position is the flange back (f'F) = 43.50 mm.
   Memorize the position of short-pointer.

2. Checking Method

1) Attach the checking lens to the flange back tester, and set the 1000 mm collimator.

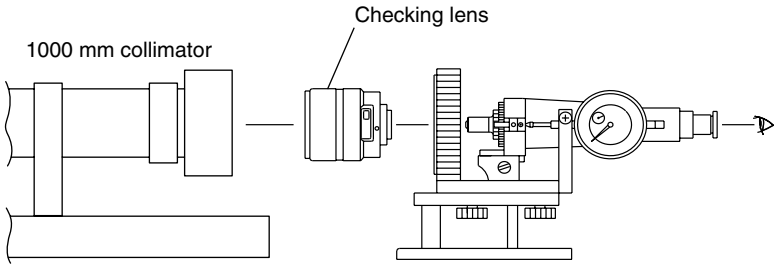


Fig.4-4-3

2) Set the focus ring of the checking lens to infinity end position while looking through the microscope, and align the optical axis to the center of the chart image accurately.

3) Turn the focusing knob of the tester until the chart image is the sharpest (red and green color areas are equal on the chart *).

*: Position in which the color of collimator chart changes from green into red and come into focus.

Also check the optical axis aligns with the chart center. (Refer to Fig.4-4-4.)

Note: Figure shows example. The cause depends on individual lens.

Optical Alignment
Best alignment

Incorrect aligned
e.g. As the focusing knob is turned, the chart may appear blurry as illustrated.
The cause depends on individual lens.

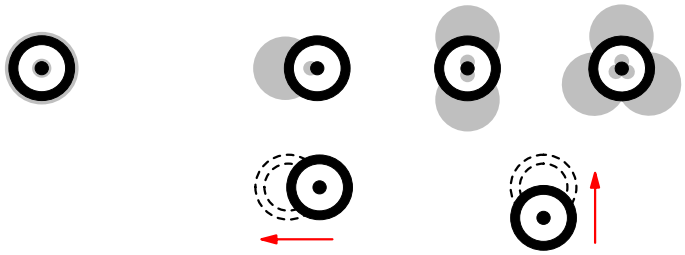


Fig.4-4-4

Appearance	Allowance	
	Wide end (f = 75 mm)	Tele end (f = 300 mm)
Off center	Within 0.08 mm	Within 0.20 mm
Astigmatism	Within 0.07 mm	Within 0.14 mm

4) Calculate the flange back (f'F) of the checking lens using the following formula, and check that the specification of the Table 4-4-1 is satisfied.

Flange back (f'F) of the checking lens = (Flange back gauge) + (Number of short-pointer revolution) + (Reading of long-pointer)

Specification

Focal-length f (mm)	f'F (mm) (Infinity position)
75	44.60 to 44.90
100 to 200	44.50 to 44.80
300	44.60 to 44.90

Table 4-4-1

5) When the flange back (f'F) of the checking lens is out of specification of the Table 4-4-1, perform "4-4-2. Flange Back (f'F) Adjustment".

4-4-2. Flange Back (f'F) Adjustment

Equipment

- 1000 mm Collimator
- Flange Back Tester
- A-mount Attachment
- Flange Back Gauge (43.50mm)

Note: Focus-shift adjustment must be completed before flange back (f'F) adjustment.

Adjusting Method

1) When the focus-shift adjustment is not completed, perform "4-5. FOCUS-SHIFT CHECK/ADJUSTMENT".
2) Perform "4-4-1. Flange Back (f'F) Check", and check that the flange back (f'F) of the checking lens is out of specification of the Table 4-4-1.
3) Calculate focus error amount using the following formula.

Focus error amount = Flange back (f'F) reading at focal length (75 mm) - 44.75 mm

Focus error amount: Amount that should be adjusted by the back washer thickness.
f'F: Flange back value (Reading value)

4) Adjust the back washer thickness according to the result of step 3). (Refer to Table 4-4-2 and Fig.4-4-5.)

Note: Use the micrometer gauge (or slide gauge) to measure the back washer thickness.

If focus error is a negative value: Decrease back washer thickness by error amount to increase flange back.
If focus error is a positive value: Increase back washer thickness by error amount to decrease flange back.

5) Calculate the adjustment washer thickness using the following formula, and replace the adjustment washer. (Refer to Table 4-4-2 and Fig.4-4-5.)

Coupler adjustment washer thickness = Back washer thickness - 0.25 mm

Back washer	Parts No.	T (mm)
A	2-698-455-01	0.05
B	2-698-456-01	0.07
C	2-698-457-01	0.1
D	2-698-458-01	0.2
E	2-698-459-01	0.5

Coupler adjustment washer	Parts No.	T (mm)
A	2-684-057-01	0.05
B	2-684-058-01	0.07
C	2-684-059-01	0.1
D	2-684-060-01	0.2
E	2-684-061-01	0.5

Table 4-4-2

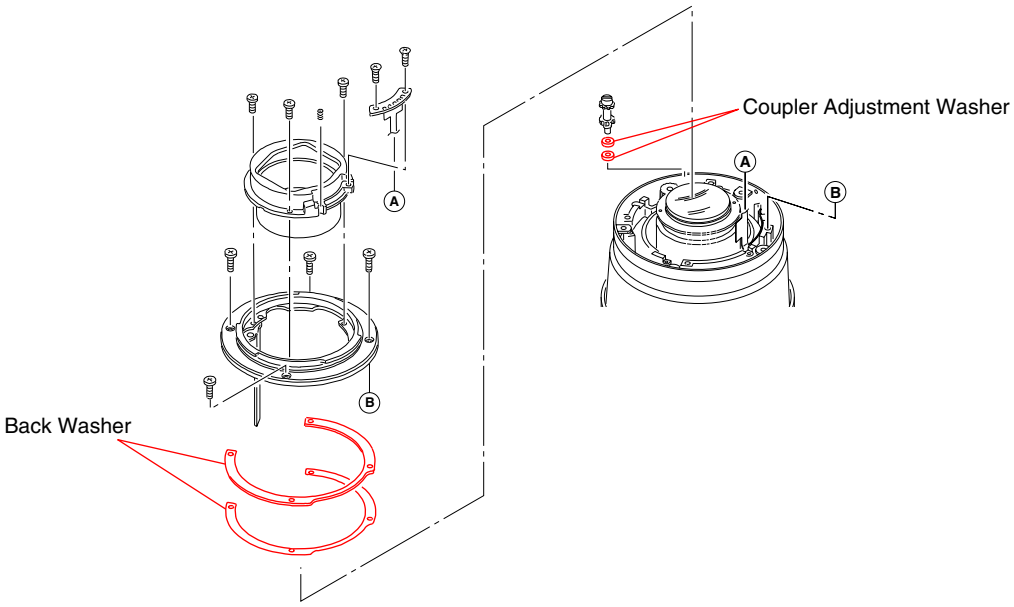


Fig.4-4-5

6) Install the back washer and coupler adjustment washer, and perform “4-4-1. Flange Back (f’F) Check” again.

4-5. FOCUS-SHIFT CHECK/ADJUSTMENT

This section describes the check/adjustment of focus-shift amount resulting change of focal-length by zooming.

4-5-1. Focus-shift Check

Equipment

- 1000 mm Collimator
- Flange Back Tester
- A-mount Attachment
- Flange Back Gauge (43.50mm)

1. Preparations

1) Perform “1. Preparations” of “4-4-1. Flange Back (f’F) Check”.

2. Checking Method

1) Check the flange back (f’F) at each focal length (75, 200 and 300 mm) by turning the zoom ring of the checking lens.

Note: The focus-shift amount of the checking lens is difference between the maximum flange back (f’F) and minimum flange back (f’F) at each focal length.

Focus-shift = Maximum flange back (f’F) reading - Minimum flange back (f’F) reading

Specification range: 0.1 mm

2) When the focus-shift amount is over the specification range, perform “4-5-2. Focus-shift Adjustment”.

4-5-2. Focus-shift Adjustment

Equipment

- 1000 mm Collimator
- Flange Back Tester
- A-mount Attachment
- Flange Back Gauge (43.50mm)
- Universal Wrench
- Chip-A for Universal Wrench
- Chip-B for Universal Wrench

Adjusting Method

1) Measure the flange back at focal length 300 mm (f't) and 75 mm (f'w) referring to "4-5-1. Focus-shift Check".
2) Calculate amount of focus-shift (T) using the following formula.

   T: Amount of focus-shift that should be adjusted by the adjusting washer thickness.

   f't: Flange back value (mm) at focal length (300 mm)

   f'w: Flange back value (mm) at focal length (75 mm)

   $T = (f't - f'w)/5.28$

3) Adjust the adjusting washer thickness according to the result of step 2). (Refer to Table 4-5-1 and Fig.4-5-1.)

   When the focus-shift (T) is a positive value: Increase adjusting washer thickness by the amount of T.

   When the focus-shift (T) is a negative value: Decrease adjusting washer thickness by the amount of T.

Adjusting washer	Parts No.	T (mm)
A	2-698-471-01	0.05
B	2-698-472-01	0.06
C	2-698-473-01	0.07
D	2-698-474-01	0.1
E	2-698-475-01	0.2
F	2-698-476-01	0.5

Table 4-5-1

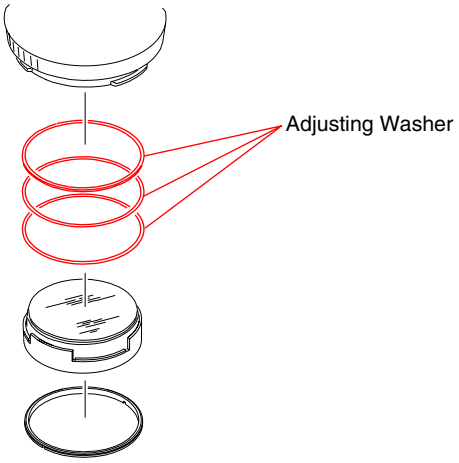


Fig.4-5-1

4) Perform "4-5-1. Focus-shift Check" again, and repeat steps 1) to 3) until the focus-shift amount is within the specification range.

4-6. LENS ROM CHECK

Note: If dialog box of error code appears during the checking, check the reason of error referring to page 4-25.

Equipment

- Personal Computer (PC)
- Camera DSLR-A100
- USB Cord With Connector
- Lens Adjustment Program

  Note: Lens Adjustment Program is downloadable from the ESI homepage.

1. Preparations

1) Connect the checking lens to the camera.
2) Start the lens adjustment program “LensAdjustment.exe” referring to “4-1-2. Lens Adjustment Program”.

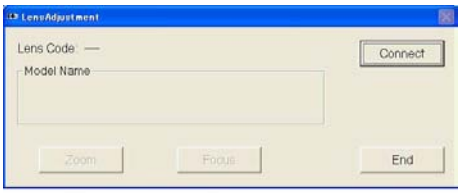


Fig. 4-6-1

2. Checking Method

1) Click the Connect button on the lens adjustment program.

   Note: Click the End button to disconnect the USB connection, then lens adjustment program will terminate.

2) Check that the display of “Lens Code” and “Model Name” is correct.

   Note: Zoom and focus position setting is not required.

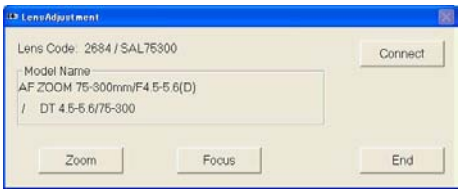


Fig. 4-6-2

3) Click the End button to terminate the lens adjustment program.
4) Turn the POWER switch of the camera to OFF.

4-7. ZOOM BRUSH POSITION CHECK/ADJUSTMENT AND PATTERN CHECK

Note: If dialog box of error code appears during the checking or adjustment, check the reason of error referring to page 4-25.

4-7-1. Zoom Brush Position Check

Equipment

- Personal Computer (PC)
- Camera DSLR-A100
- USB Cord With Connector
- Lens Adjustment Program

Note: Lens Adjustment Program is downloadable from the ESI homepage.

1. Preparations

1) Connect the checking lens to the camera.
2) Start the lens adjustment program "LensAdjustment.exe" referring to "4-1-2. Lens Adjustment Program".

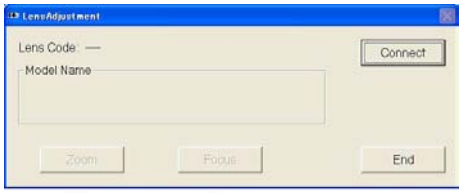


Fig. 4-7-1

2. Checking Method

1) Click the Connect button on the lens adjustment program.

Note: Click the End button to disconnect the USB connection, then lens adjustment program will terminate.

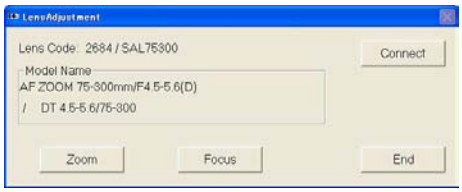


Fig. 4-7-2

2) Click the Zoom button on the lens adjustment program.
3) Set the zoom position to Wide end, and check that the OK (Green) indicator of "Position" lights as shown in Fig. 4-7-3.

Note: Lens focus position setting is not required.

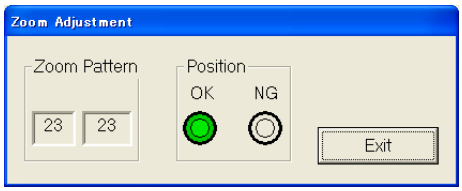


Fig. 4-7-3

If the NG (Red) indicator of "Position" lights, perform the "4-7-2. Zoom Brush Position Adjustment and Pattern Check".

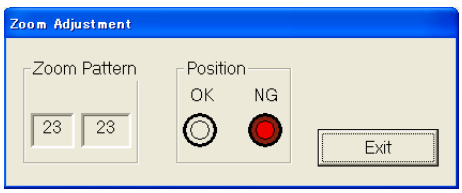


Fig. 4-7-4

4) Click the Exit button.
5) Click the End button to terminate the lens adjustment program.
6) Turn the POWER switch of the camera to OFF.

4-7-2. Zoom Brush Position Adjustment and Pattern Check

Equipment

- Personal Computer (PC)
- Camera DSLR-A100
- USB Cord With Connector
- Adhesive Bond (B-10)
- Lens Adjustment Program

Note: Lens Adjustment Program is downloadable from the ESI homepage.

1. Preparations

1) Perform the following steps (1) to (3) and set the checking lens into the state of Fig. 4-7-5.
   (1) Remove the front barrel and focus barrel.
   (2) Unsolder the focus flexible from the main flexible set.
   (3) Remove the four screws fixing the fixed mount, and set the checking lens into the state of Fig. 4-7-5.

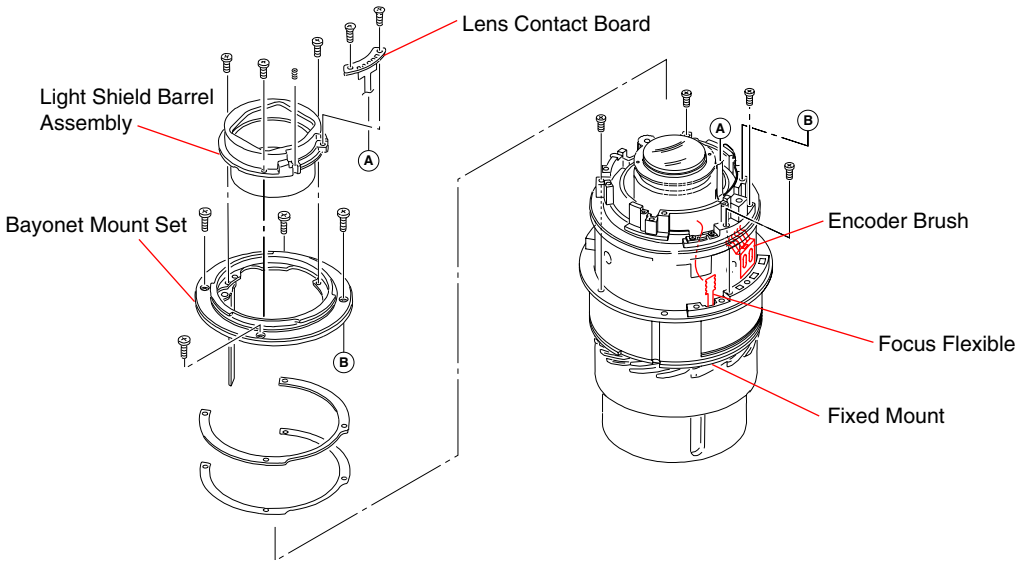


Fig.4-7-5

2) Reattach the bayonet mount set, light interception tube set and lens contact board.

2. Zoom Brush Position Adjustment

1) Set the zoom position to Wide end.
2) Loosen the two screws fixing the encoder brush.

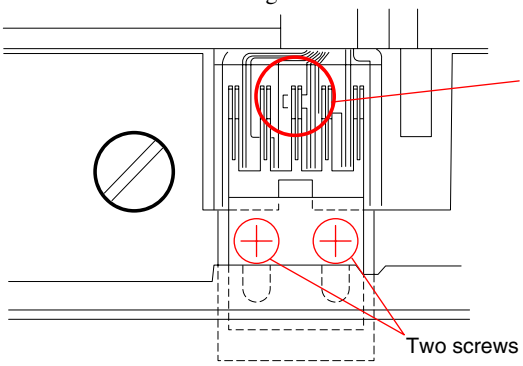


Fig. 4-7-6

3) Perform the "4-7-1. Zoom Brush Position Check", and adjust the encoder brush position until the OK (Green) indicator of "Position" lights.

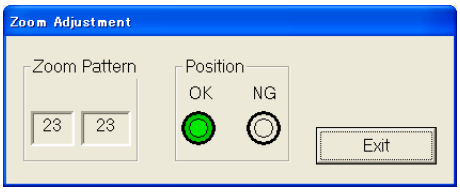


Fig. 4-7-7

4) Tighten the two screws loosened in step 2).

3. Pattern Check

Note: When the NG (Red) indicator of "Position" lights during checking, does not care about it (It is normal performance).

1) Turn the zoom ring slowly from the Tele end "Zoom Pattern : 1" to Wide end "Zoom Pattern : 23" and check that the value of "Zoom Pattern" change from 1 to 23 continuously.

2) Turn the zoom ring slowly from Wide end (Zoom Pattern : 23) to the Tele end (Zoom Pattern : 1) and check that the value of "Zoom Pattern" change from 23 to 1 continuously.

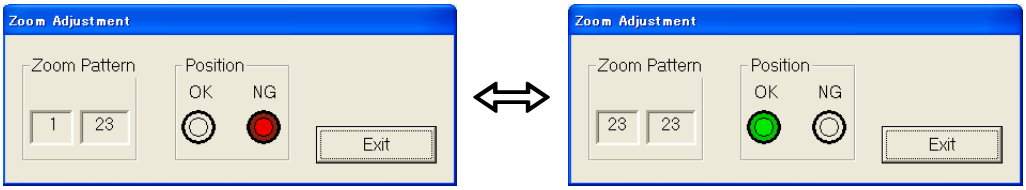


Fig. 4-7-8

3) Click the Exit button.
4) Click the End button to terminate the lens adjustment program.
5) Turn the POWER switch of the camera to OFF.
6) After the pattern check is completed, apply the adhesive bond (B-10) as shown in Fig. 4-7-9.

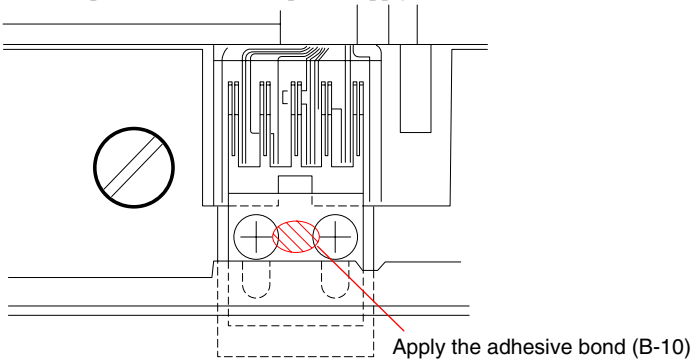


Fig. 4-7-9

4-8. FOCUS BRUSH POSITION CHECK/ADJUSTMENT AND PATTERN CHECK

Note: If dialog box of error code appears during the checking or adjustment, check the reason of error referring to page 4-25.

4-8-1. Focus Brush Position Check

Equipment

- Personal Computer (PC)
- Camera DSLR-A100
- USB Cord With Connector
- Lens Adjustment Program

  Note: Lens Adjustment Program is downloadable from the ESI homepage.

1. Preparations

1) Connect the checking lens to the camera.
2) Start the lens adjustment program "LensAdjustment.exe" referring to "4-1-2. Lens Adjustment Program".

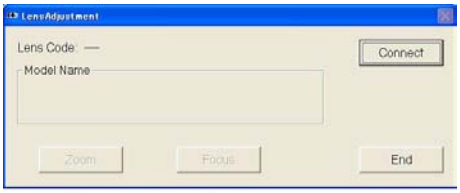


Fig. 4-8-1

2. Checking Method

1) Click the Connect button on the lens adjustment program.

   Note: Click the End button to disconnect the USB connection, then lens adjustment program will terminate.

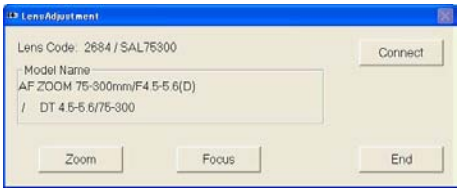


Fig. 4-8-2

2) Click the Focus button on the lens adjustment program.
3) Set the zoom position to Wide end and the focus position to infinity end, then check that the OK (Green) indicator of "Position" lights as shown in Fig. 4-8-3.

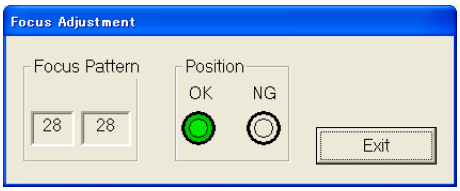


Fig. 4-8-3

If the NG (Red) indicator of "Position" lights, perform the "4-8-2. Focus Brush Position Adjustment and Pattern Check".

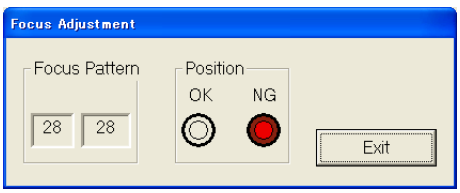


Fig. 4-8-4

4) Click the Exit button.
5) Click the End button to terminate the lens adjustment program.
6) Turn the POWER switch of the camera to OFF.

4-8-2. Focus Brush Position Adjustment and Pattern Check

Equipment

- Personal Computer (PC)
- Camera DSLR-A100
- USB Cord With Connector
- Adhesive bond (B-10)
- Lens Adjustment Program

Note: Lens Adjustment Program is downloadable from the ESI homepage.

1. Preparations

1) Set the checking lens into the state of Fig.4-8-5 (zoom barrel was removed).

Note: Check that the focus FPC is soldered to the main FPC assembly.

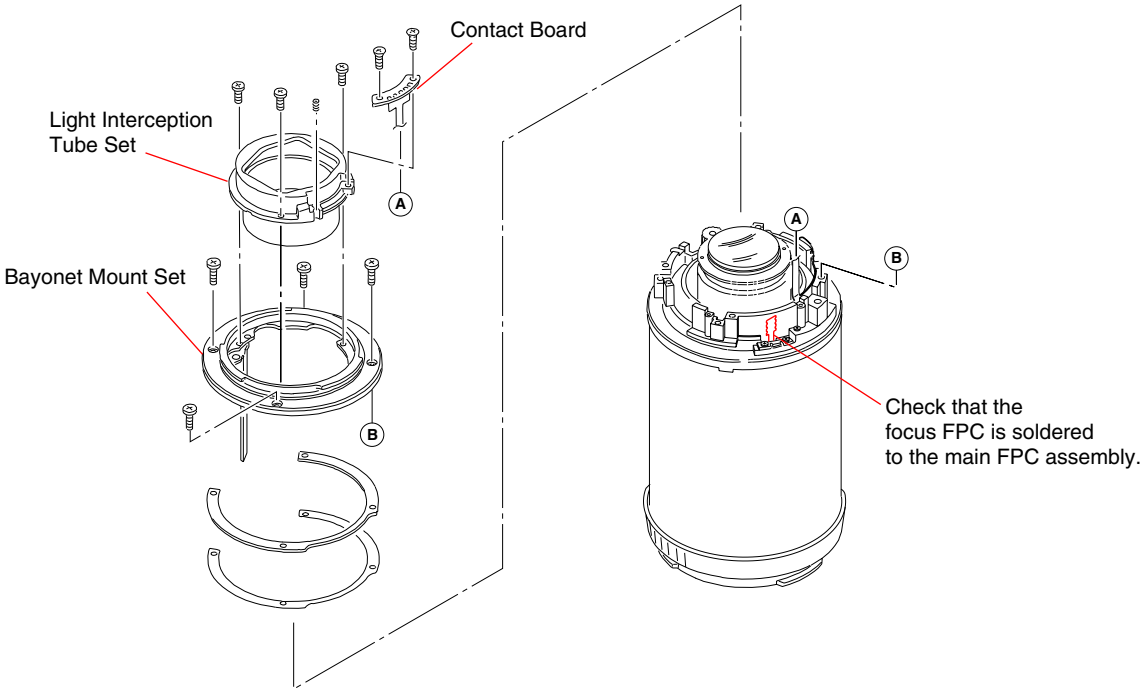


Fig. 4-8-5

2) Reattach the bayonet mount set, light interception tube set and contact board.

2. Focus Brush Position Adjustment

1) Set the focus position to infinity end.
2) Loosen the two screws fixing the encoder brush.

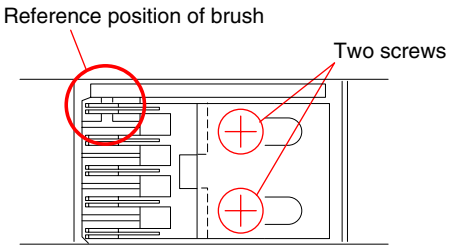


Fig. 4-8-6

3) Perform the “4-8-1. Focus Brush Position Check”, and adjust the encoder brush position until the OK (Green) indicator of “Position” lights.

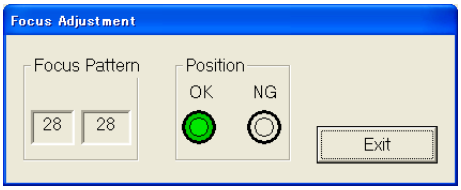


Fig. 4-8-7

4) Tighten the two screws loosened in step 2).

3. Pattern Check

Note: When the NG (Red) indicator of “Position” lights during checking, does not care about it (It is normal performance).

1) Turn the focus ring slowly from the near end “Focus Pattern : 1” to the infinity end “Focus Pattern : 28” and check that the value of “Focus Pattern” change from 1 to 28 continuously.

2) Turn the focus ring slowly from the infinity end “Focus Pattern : 28” to the near end “Focus Pattern : 1” and check that the value of “Focus Pattern” change from 28 to 1 continuously.

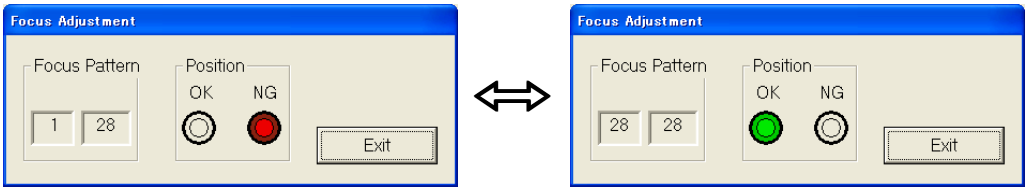


Fig. 4-8-8

3) Click the Exit button.
4) Click the End button to terminate the lens adjustment program.
5) Turn the POWER switch of the camera to OFF.
6) After the pattern check is completed, apply the adhesive bond (B-10) as shown in Fig. 4-8-9.

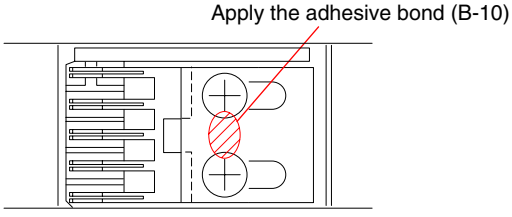
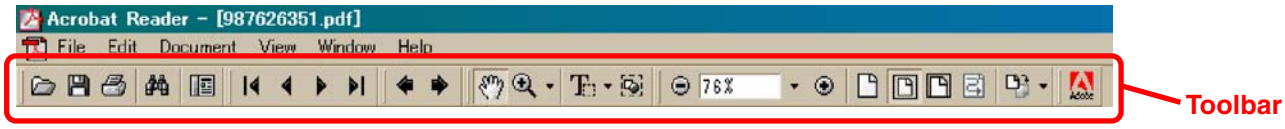


Fig. 4-8-9

4-9. ERROR CODE LIST

Error code		Description
Corrupt Data		Zoom/focus data of check pattern is out of sync with the number of check pattern.
Error, No Lens		Lens is not connected correctly.
Error, Unknown Lens		Unidentified lens is connected.
Communication Error,	Code#:E600	Communication error with the camera
	Code#:F000	Input data error to DLL file
	Code#:F100	Setting error of USB port
	Code#:2531	Communication error of main signal on the camera

[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]



Printing a text

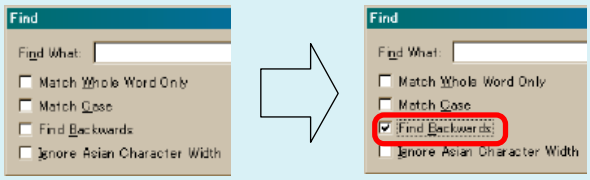
1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:
To set a range to be printed within a page, select the graphic selection tool and drag on the page to enclose a range to be printed, and then click the Print button.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:
To execute "find" from current page toward the previous pages, select the check box "Find Backward" and then click the "Find".



3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:
The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.
Note: The find function may not be applied to the Service Manual depending on the date of issue.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

Reversing the screens displayed once

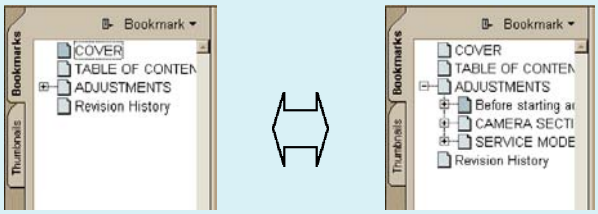
- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

Application to the Service Manual:
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

Moving with bookmark:
Click an item (text) on the bookmark pallet. and you can move to the link destination. Also, clicking can display the hidden items.
(To go back to original state, click)



Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click or for zooming in or out.

"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

Application to the Service Manual:
The printed circuit board diagram you see now can be changed to the same direction as the set.

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2006.06	Official Release	—	—
1.1	2007.02	Revised-1	• Change of Repair Parts (Section 1-5, Section 2, Section 3, Section 4) • Addition of guide of [About the Lens Test Projector] (Cover)	Yes