

**PENTAX®**

# Service Manual

ENGLISH

**PENTAX** *\*ist*



PRODUCT No.27830    *\*ist*

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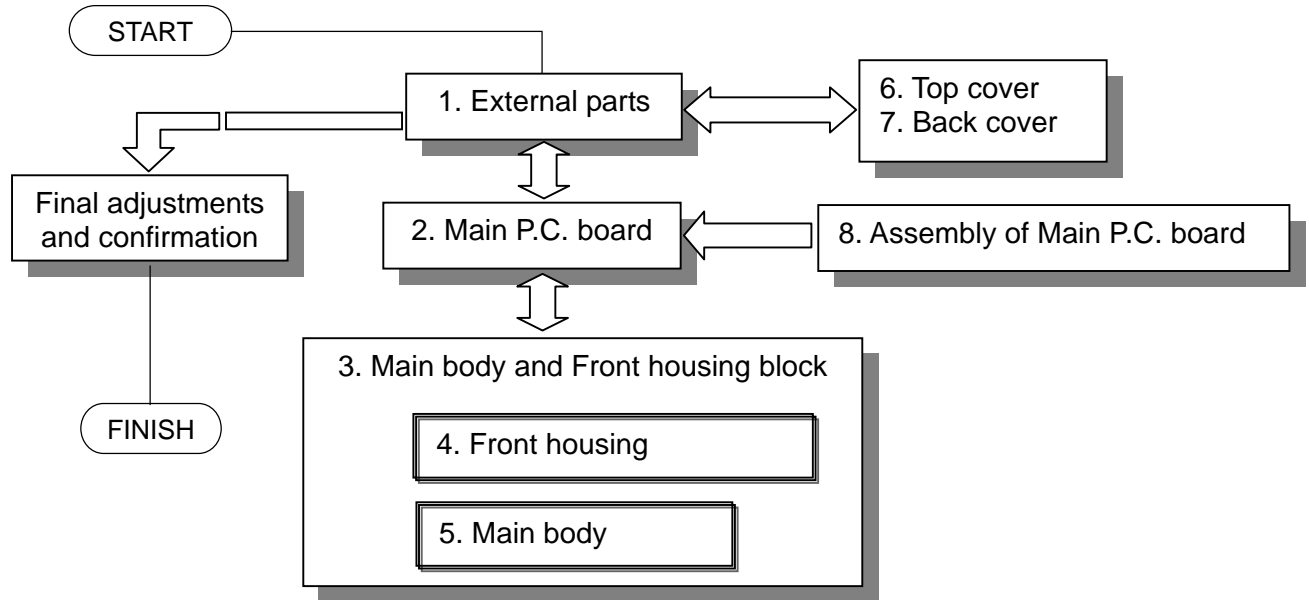
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## OUTLINE OF DISASSEMBLY AND ASSEMBLY

Outline: Follow the procedures of disassembly and assembly concerning the notice in the section described.

### ◆ Chart for disassembly and assembly



## DISASSEMBLY AND ASSEMBLY PROCEDURES

### 1. EXTERNAL PARTS

[CAUTION] Use an anti-static working mat and the wrist strap.

[NOTE] Assemble the external parts in reverse order of disassembly procedures in accordance with “Note of assembly”.

[Preparation] Remove the Eye cap FM (for \*ist) and Hot shoe cover Fk (for MZ-7, MZ-30).

#### [Disassembly Procedures]

##### 1-1. Bottom Cover (A401)

1) 7 screws

[CAUTION] Do not attempt to remove the bottom cover at this stage to prevent damage for the hook of bottom cover.

2) A185 (Refer to Fig.2)

3) Open the battery cover, and lift the front cover up 1mm forward as shown in Fig.2.

4) Remove A401 and 0-A412 with care to prevent damage to hook portion of A401 while lifting up the front cover.

[CAUTION]

-1. Do not touch at the flash P.C. board.

-2. Do not apply the pressure on the AF module.

5) Temporarily install A133 and W13 with TY-CNL-F1.4x4.0.

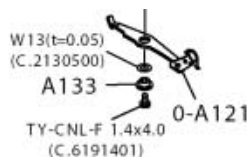


Fig.3

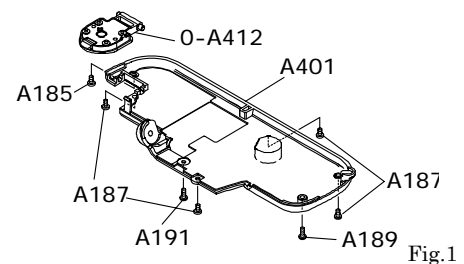


Fig.1

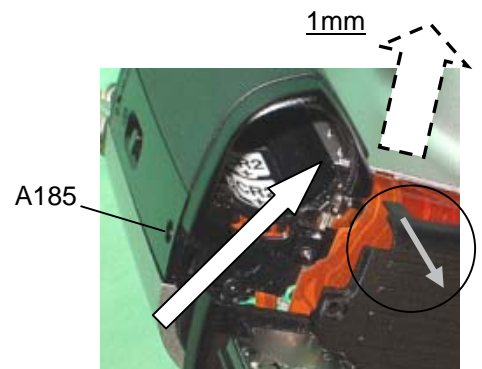


Fig.2

6) Discharge electricity of the main capacitor.

- 1. Peel off the BT (10x30) from the flash PCB.
- 2. Discharge electricity of the main capacitor with a resistor of 100  $\Omega$  -1k .  
 (Land of the blue lead wire (29 Xe+) on 0-Q2000  
 Hot shoe (A322) or Battery contact: Minus side (A34)

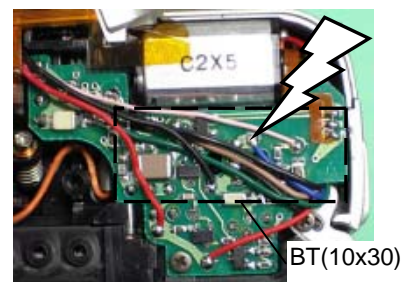


Fig.4

[Note of Assembly]

- Remove the TY-CNL-F1.4x4.0 that has been installed temporarily, and then install the temporary bottom cover and battery cover.
- Step to final adjustments and confirmation (p.27).

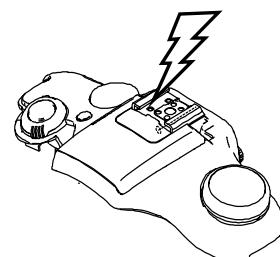


Fig.5

**1-2. Side Cover (A161)**

TY-CNL-D1.7x3.0Ni (x2)

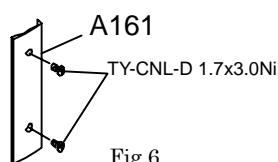


Fig.6

**1-3. Grip (A150)**

1) A151

2) 2 screws (TY-CNL-E 2.0x7.0, TY-CNS 1.7x4.5)

[NOTE] A185 has already been removed at step 1-1-(2)).

3) A150, A8, A7

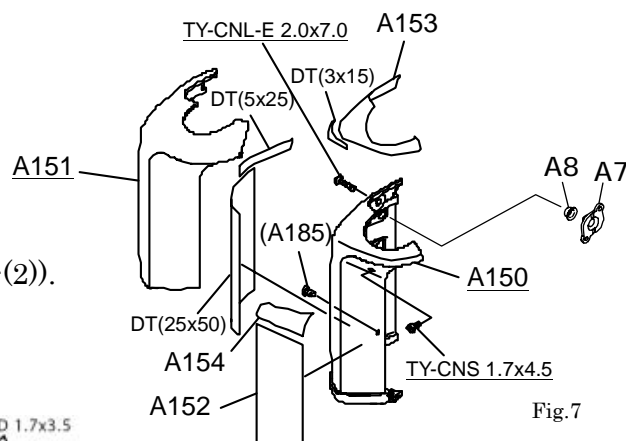


Fig.7

**1-4. Front Cover (A160)**

1) Set the Focus mode switch at [AF.S].

2) TY-CNL-D1.7x3.5Ni (x5)

W3 (t=0.15, x2)

3) Remove A160 while lifting up the release socket side of front cover.



Fig.8

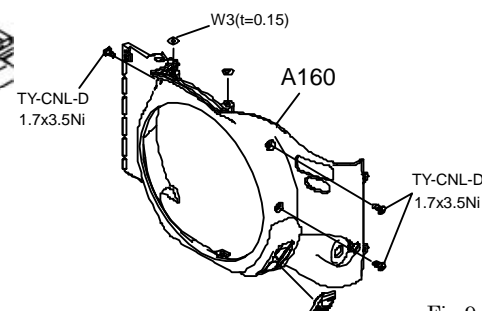


Fig.9

**1-5. Top Cover (0-A301)**

1) 4 lead wires (0-Q200)

[Note of Assembly]

- The lead wires on the flash PCB should be arranged in good order to prevent pinch by the motor or electronic parts as shown in Fig.10.
- Stick T94 (10x13) and BT (10x30) as shown in Fig.11.

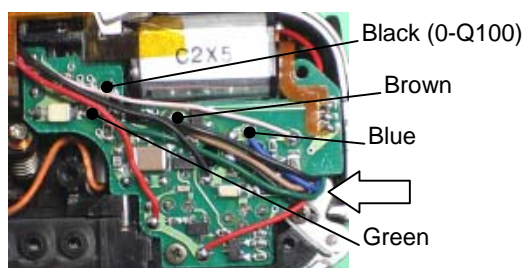


Fig.10

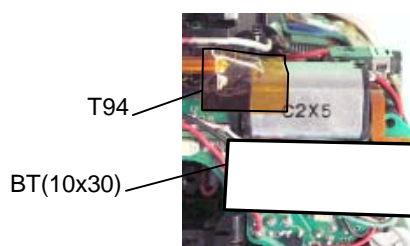


Fig.11

- 2) Disconnect a connector of 0-T200.
- 3) BT (6x10) x2

[Note of Assembly]

- The 4 lead wires of 0-A301 should be arranged as shown in Fig.12.
- The slack of lead wires should be arranged between 0-Q200 and Main body.

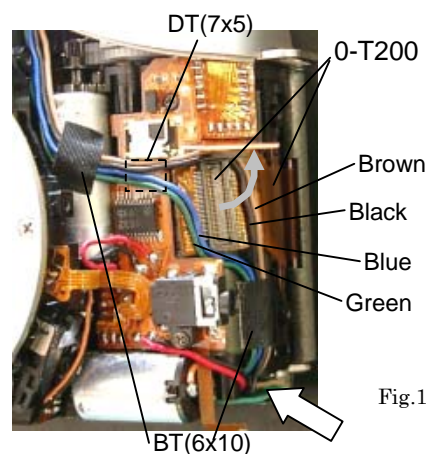


Fig.12

- 4) 5 Screws (Refer to Fig.13 and 15)
- 5) Lift up the rear side of 0-A301 with care to prevent damage to flexible board is inside cover.

[Note of Assembly]

Preparation of installing 0-A301:

- Set 0-C17 (Cam gear assy) at the position where the cam portion of 0-C17 cannot be seen as shown in Fig.14.
- Set the diopter adjustment dial as shown in Fig.15, and then install 0-A301 to the body.

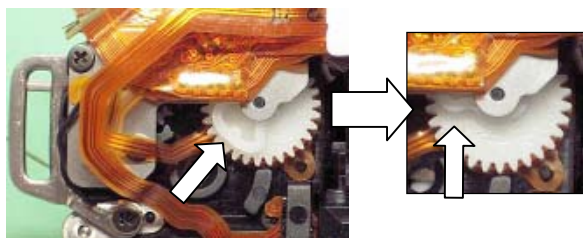


Fig.14



TY-CNL-D1.7x4.0Ni

Fig.13

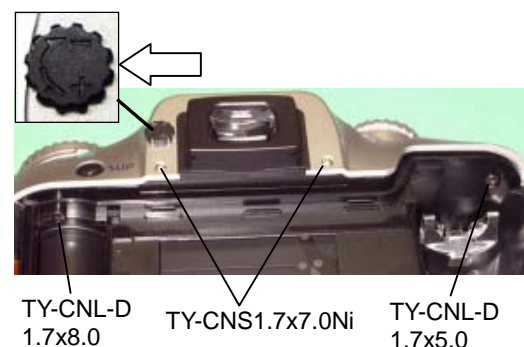


Fig.15

- 6) M311, M312

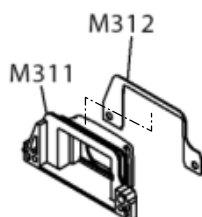


Fig.16

- 7) 14 lands on T51

[Note of Assembly]

- Unsolder on the Main SW lands of 0-T100 (\* Unsolder) as shown Fig.17.

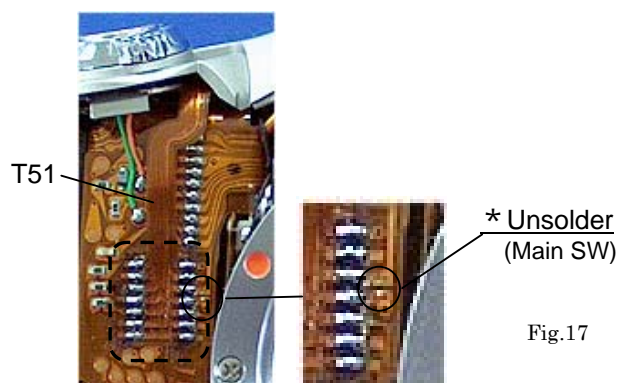


Fig.17

- 8) TY-CNL-B1.4x2.0

- 9) T94

- 10) 10 lands on T57

- 11) 7 lands on T21 of 0-A332

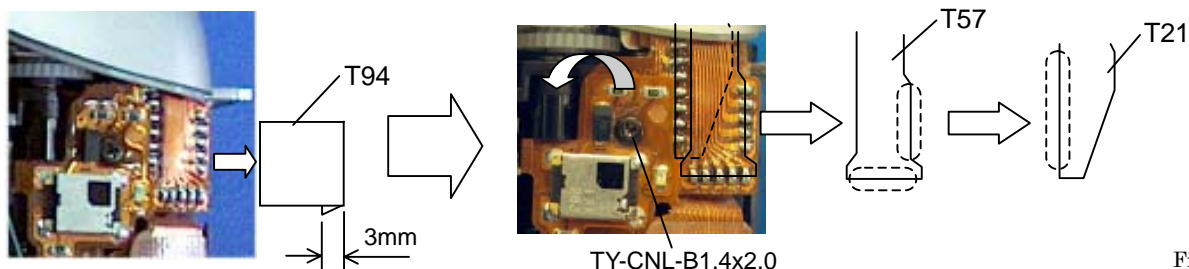


Fig.18



- 12) Black lead wire (A330)
- 13) 0-A301

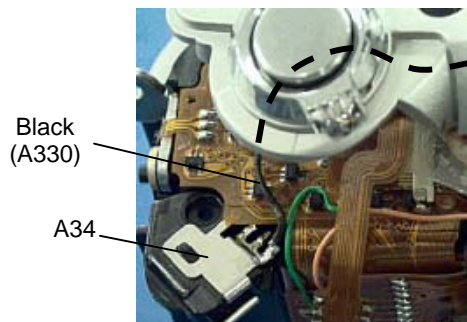


Fig.19

[Note of Assembly]

### [CONF.] Function Check

[NOTE] This confirmation should be done before installing the external parts.

[Required equipment] Regulated DC power supply, Circuit tester, Cable switch CS-205, Power adaptor (Refer to the table of Jigs, Tools and Testers)

1. Short-circuit the Main SW lands of 0-T100 by soldering as shown in Fig.17.
2. Temporarily install the bottom cover.
3. [CONF.] Set the power source to DC5.5V/3A, and connect the Power adaptor with the camera. Make sure not exist any shortage or leakage in the circuit.
4. [CONF.] Connect the Cable switch CS-205 with the camera, and then confirm the operating and displaying for the shutter release, shutter and mirror.
5. After confirmation is done, remove the solder and bottom cover.

Current consumption:

Main SW/on (Light metering: off) ... Less than 380  $\mu$  A

While light metering ... Less than 150mA,

While exposure ... Less than 350mA

## 2. MAIN P.C. BOARD

[NOTE]

Assemble the Main P.C. board in reverse order of disassembly procedures in accordance with "Note of assembly".

### [Disassembly Procedures]

#### 2-1. 0-J100

- 1) PT (17x20) x2 (PT: Polyester tape)
- 2) BT (10x30)
- 3) 7 lands on 0-J100

- 4) TY-CNL-G1.7x4.0, M5

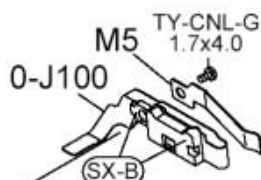


Fig.21

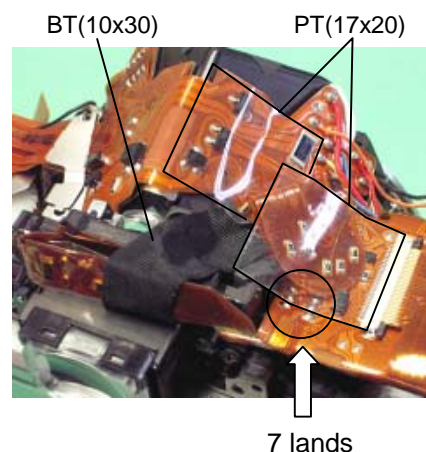


Fig.20

- 5) Remove the adhesive applied 0-J100.

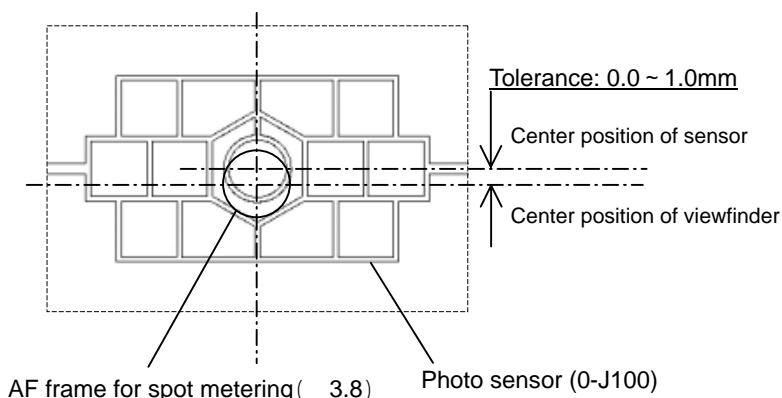
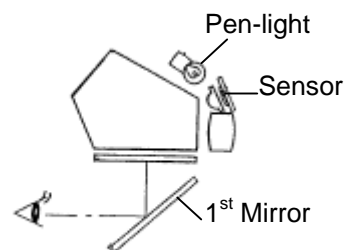
[Note of Assembly]

- When replacing 0-J100, stick PT (12x20) on the flexible board.
- After installation is done, the following confirmation and adjustments should be required.

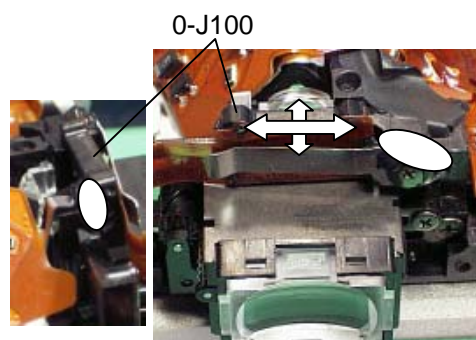
## [ADJ./CONF.] Photo Sensor Position

[Required equipment] Penlight or equivalent

- 1) Make sure that the mirror is positioned at down condition.
- 2) Cover the eyepiece with a black tape.
- 3) Strike light by a penlight to the photo sensor as shown in the diagram right, and search the position where the pattern of the photo sensor can be seen on the mirror from the mount ring side.
- 4) [CONF.] The photo sensor should position at the center of AF frame as shown in the diagram below.



● : Bonding



- 5) [ADJ.] Loosen the screw, and then adjust the position of sensor. Tighten screw and ensure position is not changed. If required, repeat adjustment procedures.
  - 6) After adjustment is completed, apply the screw lock agent or Super-X to 0-J200 (2 places) as shown in the figure above right.
- [Ref.] Attaching brighter lens is advisable to assist better visibility. (Ex.: FA 50mm f/1.4 Lens)

### 2-2. 0-M301

TY-CNL-D1.7x5.0, 1.7x3.5

### 2-3. I400 (Release socket side)

- 1) 4 lead wires (S200, 0-Q200)

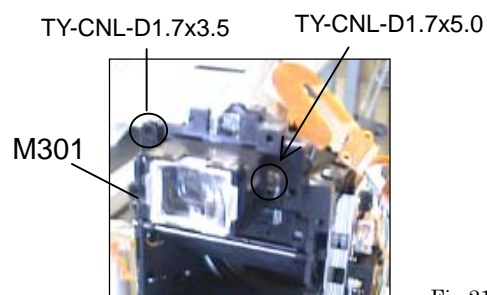
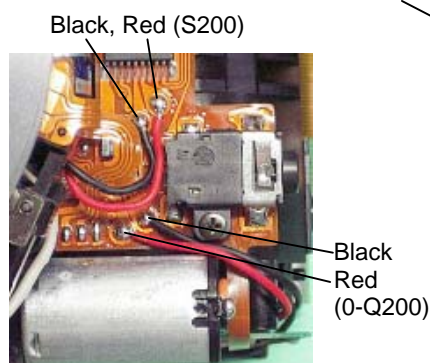


Fig.21

- 2) 7 lands (T27, T65)

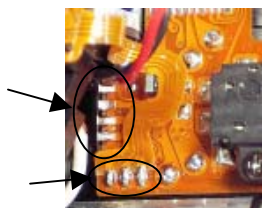


Fig.23

### 2-4. Lug Plate (A17)

- 1) Black lead wire (A34, 135mm)



Fig.24

- 2) Peel off T94.
- 3) Loosen a screw, and then remove A17 with a black lead wire. After removing them, tighten the screw temporarily.

## 2-5. Upper Left Side

- 1) M11

[NOTE] Unhook the hooking part of M11 while moving in the direction of blue arrows in Fig.25.

- 2) 8 lands on T601
- 3) 3 lands on T29

## 2-6. Upper Right Side (1)

- 1) 7 lands on 0-O170
- 2) 5 lead wires
- 3) 2 enameled wires (B112)

[CAUTION]

Do not damage wires to prevent short circuit.

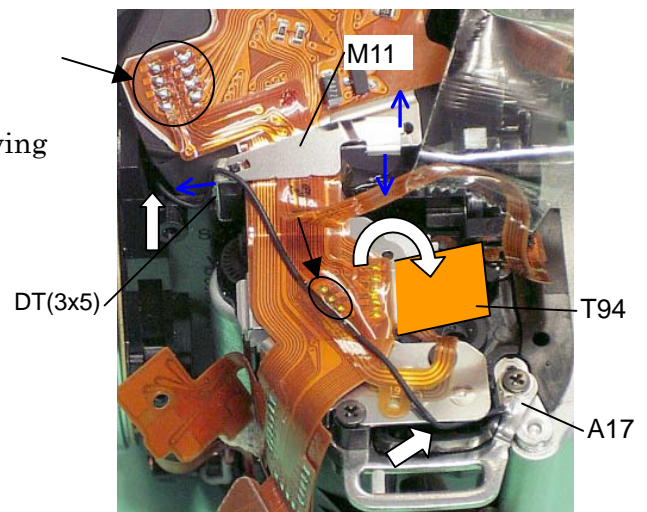


Fig.25

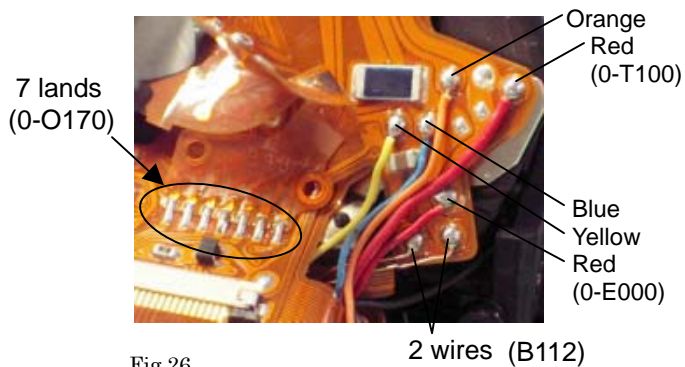


Fig.26

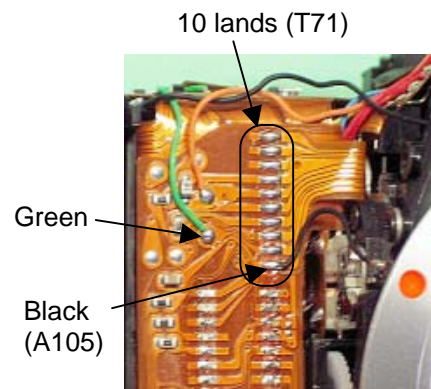


Fig.27

## 2-7. Battery Chamber Side

- 1) Black lead wire (A105)
- 2) Green lead wire (0-T100)
- 3) 10 lands on T71

## 2-8. Bottom Side of Main Body

[CAUTION] Do not melt the positioning studs by soldering.

- 1) 4 lands on T31
- 2) 7 lands on T301
- 3) 12 lands on 0-M100
- 4) TY-CNL-D1.4x4.0, A41
- 5) Unsolder at A35

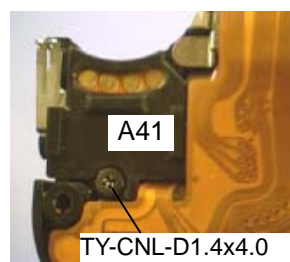


Fig.29

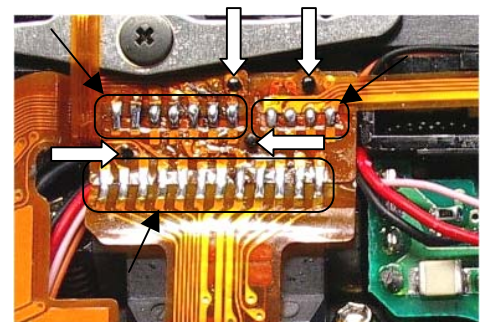


Fig.28

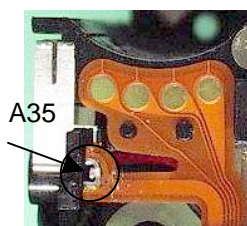


Fig.30

- 6) 2 lead wires (0-S300), S364

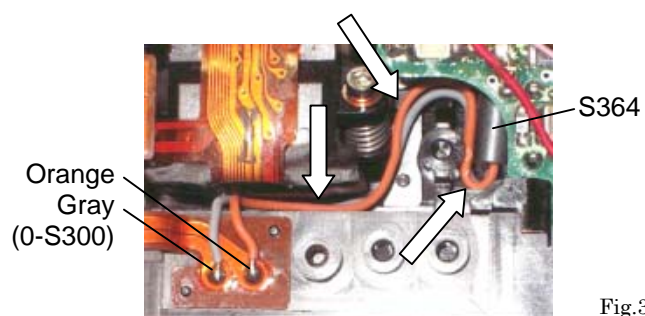


Fig.31



- 7) Peel off T94, and then pull out flexible board.  
Unsolder 3 lead wires (0-J201, 0-Q200).

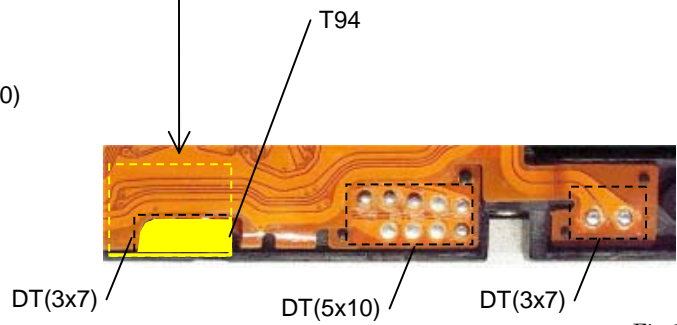
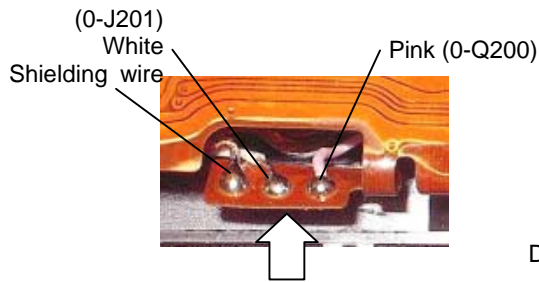


Fig.32

- 8) Remove 0-T100 from DT (3 places) as shown in Fig.32.  
9) Lift up 0-T100, and then unsolder 4 lead wires (0-S250, B116, B118).



Fig.33

[Note of Assembly] Bottom of body

- Arrange the lead wires securely with care that 0-T100 is not projected from the Main body as shown in Fig.34.

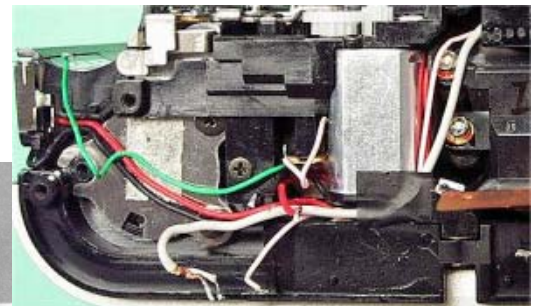
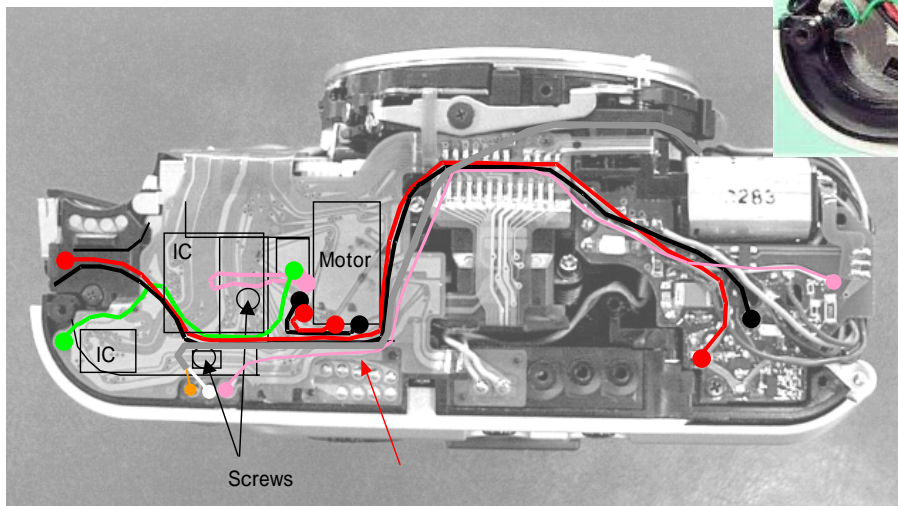


Fig.34

**2-9. Upper Right Side (2)**

- 1) 3 lands on T64.
- 2) Disconnect the flexible board of 0-O100 from connector terminal.

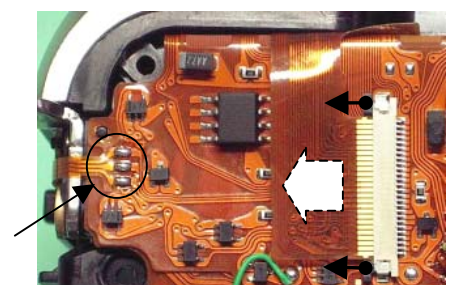


Fig.35

## 2-10. Main P.C. Board (0-T100)

1) 3 lands on 0-Q200

2) TY-CNL-D1.4x4.0 (I400)

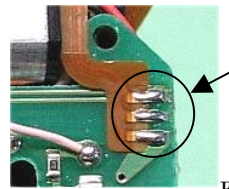


Fig.36



3) Peel off 0-T100 where is fixed on the penta-mirror from DT as shown in Fig.38. Fig.37

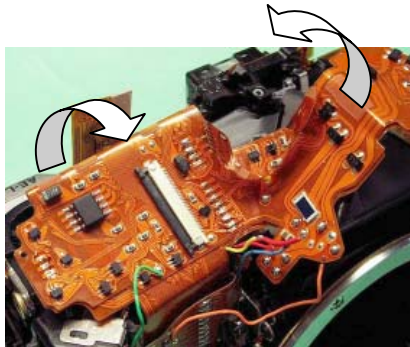


Fig.38

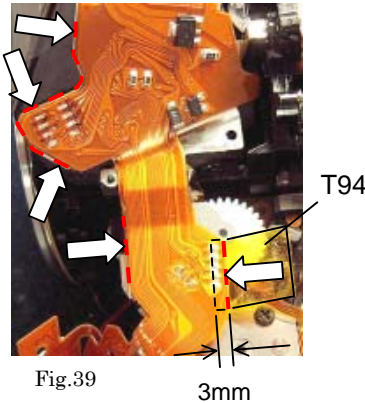


Fig.39

3mm

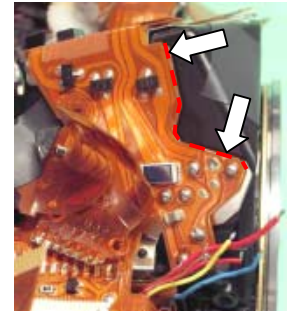


Fig.40

### [Note of Assembly]

- When installing 0-T100, stick 0-T100 on the Main body with care taken to the position indicated by arrow in Fig.39 and 40.

4) Right side

- 1. Unfold 0-T100 as shown in Fig.41.
- 2. 2 black lead wires (A34, A37)
- 3. 2 lead wires (N300)
- 4. BT (10x30)

Fig.41

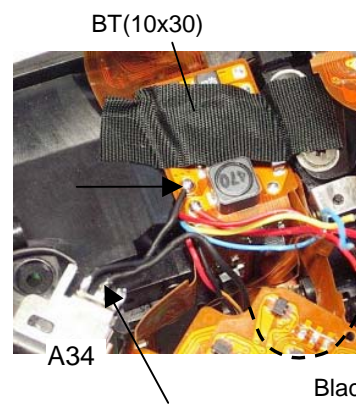
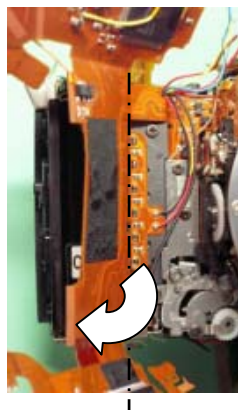
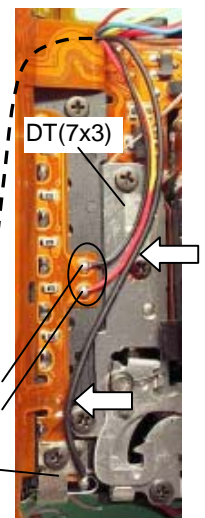


Fig.42



-5. Remove N300, while lifting up 0-T100 as shown in Fig.43.

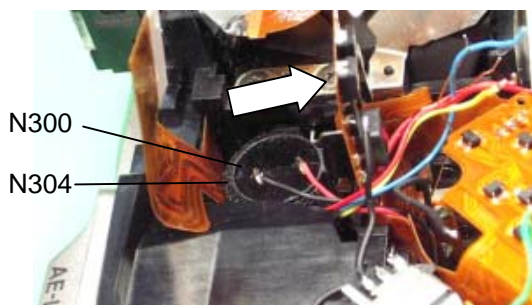


Fig.43

-6. 7 lands on DX contact and A36

-7. Peel off 0-T100 from DT (5x7)

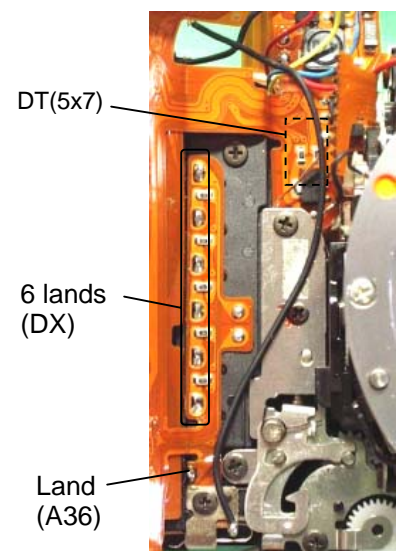


Fig.44

### [Note of Assembly] Assembly procedures of N300

1. Cut off 2 terminals of N300 to 7 ~ 10mm.
2. Bent the terminals squarely while holding root of them.
3. Solder 2 lead wires (Red and Black: 50mm) to either terminal.
4. Stick on N304 to periphery of N300.



### 3. MAIN BODY AND FRONT HOUSING BLOCK

#### [Disassembly Procedures]

##### 3-1. A141

- 1) TY-CNL-D1.7x3.0 (x2)
- 2) A141
- 3) M12

##### 3-2. 0-Q200

- 1) 2 lead wires (Red, Black)
- 2) TY-CNL-D1.7x3.0

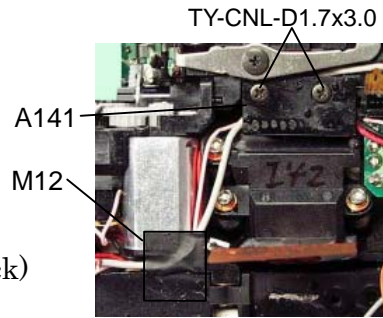


Fig.45

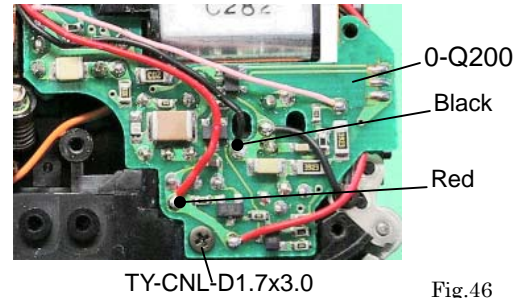


Fig.46

##### 3-3. Main Body and Front Housing Block

- 1) TY-CNL-D1.4x3.0, Battery cover SW (A36·A37·A38)

- 2) Set the mirror sheet to mirror-up condition.

[NOTE] Set the mirror sheet and sliding plate at top end position and stroke while rotating B103 anticlockwise by using finger.

[CAUTION] Do not rotate B103 reverse-wise to prevent damage.

- 3) TY-CNL-D1.7x4.0 (Bottom of the film chamber)
- 4) TY-CNL-D1.7x4.0, TY-CNL-D1.7x5.5 (0-B102)
- 5) TY-CNL-E2.0x5.5 (x4)



Fig.47

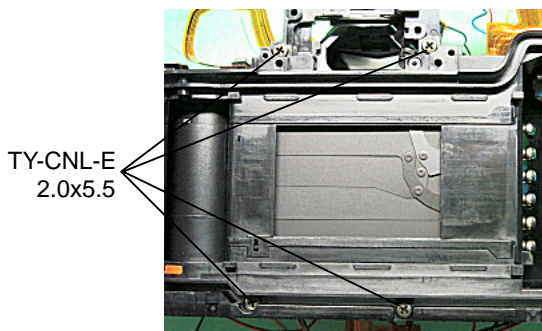


Fig.48

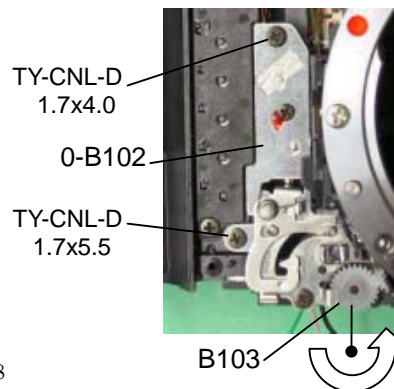


Fig.49

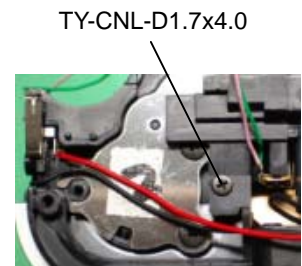


Fig.50

#### [Assembly Procedures]

##### 3-1. Main Body and Front Housing Block

- 1) [CONF.] Make sure that four W14's (0.05, 0.1) are bonded on the Main body.
- 2) Set the Front housing block to mirror-up condition. (The mirror sheet, sliding plate and shutter charge lever should be placed at top end position and stroke as shown in Fig.52.)
- 3) Distribute 2 solenoid wires upward, and lower lead wires to downward as shown in Fig.51.
- 4) Install the Front housing block to the Main body, using care that the flexible boards and lead wires are not pinched in between them.
- 5) Tighten 4 screws in the numerical order ( , , , ) as shown in Fig48.
- 6) Tighten 3 screws as shown in Fig.49, 50.
- 7) Battery cover SW (A36, A37, A38), TY-CNL-D1.4x3.0

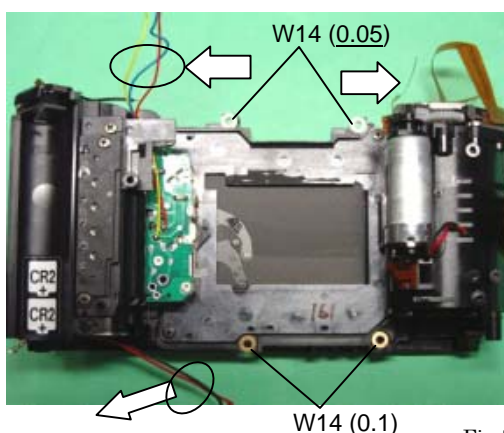


Fig.51

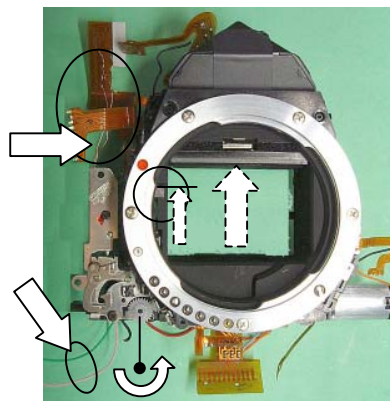


Fig.52

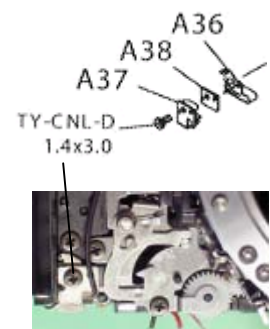


Fig.53

### 3-2. [CONF.] Function Check of Mirror Charging and Rewinding

- 1) [CONF.] Make sure that the planet gear arm assy should be placed at charge side as shown in Fig.54.
- 2) [CONF.] Apply DC4V to 0-S250 with care taken to polarity of motor, and then confirm the function of mirror sheet and charging.
- 3) Set the planet gear arm assy at rewind side.
- 4) [CONF.] Apply DC4V to 0-S250 as reverse polarity, and then confirm the function of rewinding.
- 5) Set the planet gear arm assy at charge side, and then set the mirror sheet to mirror-down condition while rotating B103 anticlockwise.

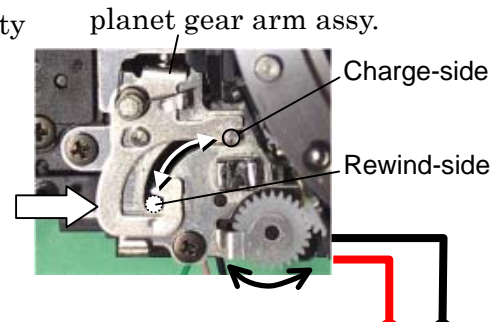


Fig.54

**DC4V** : Charge···( + ) ( - )  
: Rewind···( - ) ( + )

### 3-3. [ADJ./CONF.] Mechanical Back

- 1) [CONF.] Confirm the mechanical back.

Standard: 45.46 mm

Tolerance: ±0.04

- 2) [ADJ.] Remove A104 and A118, and then adjust the mechanical back by replacing W98 (x5).
- 3) Tighten A119 (x5) in the numerical order ( , , ·· , ) as shown in Fig.55, and then confirm the mechanical back again.

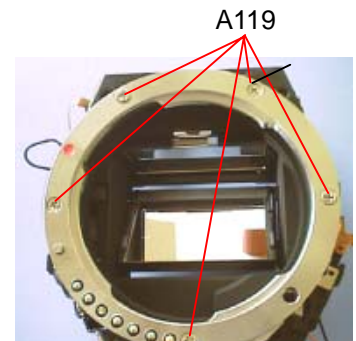


Fig.55

### 3-4. [ADJ./CONF.] AF Joint Stroke

[Required equipment] Vernier calipers

- 1) Set the AF mode SW at AF.S. (Down position)
- 2) [CONF.-1] AF coupler of 0-S300 should project from the mount surface by 1.2 mm or more.
- 3) [CONF.-2] When the mount lock lever is depressed and the mount lock pin comes to mount surface, the AF coupler should not project out of mount surface.
- 4) [ADJ.] Turn an eccentric screw on the mount lock lever to adjust, and apply the screw-lock agent to the screw.

### 3-5. 0-Q200

- 1) Arrange the lead wires of 0-S300 as shown in Fig.56.
- 2) 0-Q200, 1 screw
- 3) 2 lead wires (Red, Black)

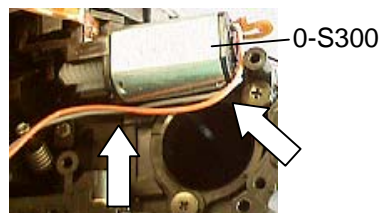
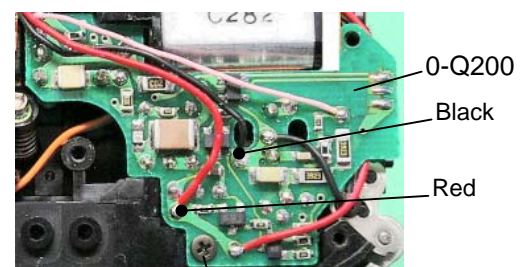


Fig.56



TY-CNL-D1.7x8.0

Fig.57

### 3-6. A141

- 1) Install A141 with arranging the lead wires.
- 2) M12

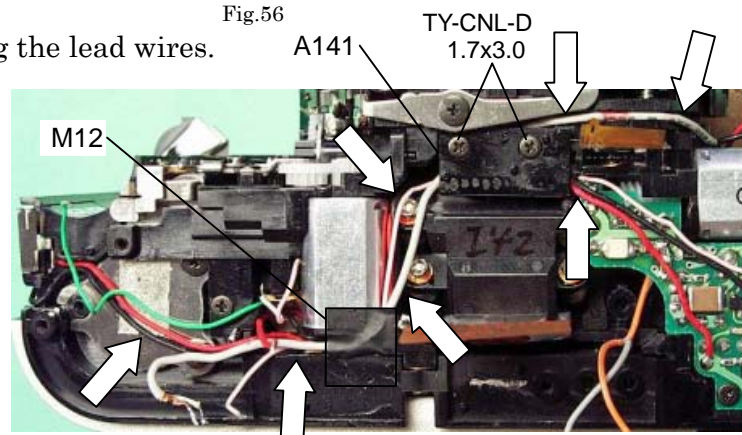


Fig.58



## 4. FRONT HOUSING BLOCK

### [Disassembly Procedures]

#### 4-1. 0-O100

- 1) TY-CNL-D1.7x3.0 (x2), 0-O100
- 2) M2 (Bonded)

#### [Note of Assembly]

- When replacing 0-O100, peel off the scratch protection seal, and then stick O113 (Light seal tape) on 0-O100 as shown in Fig.60.
- After 0-O100 is assembled, carry out the [ADJ.] and [CONF.] of [Assembly procedure] (p.17).

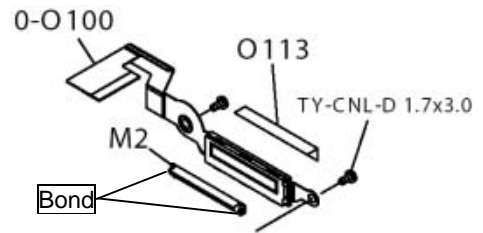


Fig.59



Fig.60

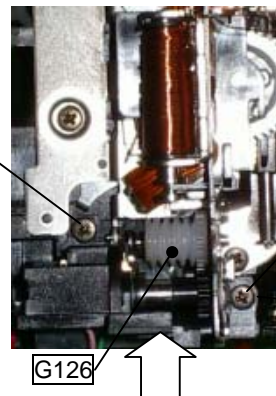
#### 4-2. Planet Gear Arm assy.

- 1) TY-CNL-D1.7x4.0 (Upper side)
- 2) TY-CNL-D1.7x5.0
- 3) W3 (t=0.07)

#### [Note of Assembly]

- Apply G126 to the both worm gears of the planet gear arm assy and 0-G100.
- Tighten two screws while pressing the planet gear arm assy upward.

TY-CNL-D  
1.7x4.0



TY-CNL-D  
1.7x5.0



Fig.61

#### 4-3. 0-M100

TY-CNL-D1.7x3.5 (x3)

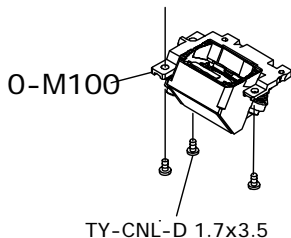


Fig.62

#### [Note of Assembly]

[ADJ.] Temporary adjustment of AF block

[Required equipment] Hexagonal screwdriver 1.5mm

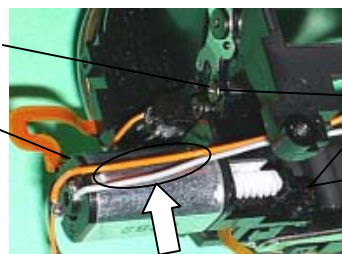
- Screw in 3 adjustment screws until they stop, then screw back two turns.
- After the CCD position adjustment with programmed software is done, Apply screw-lock agent to between the head of adjustment screws and washers.
- If the adjustment of second mirror position is necessary, it should be done before installing of 0-M100.

#### 4-4. 0-S300

- 1) TY-CNL-D1.7x3.5
- 2) TY-CNL-D1.7x5.5

TY-CNL-D  
1.7x3.5

0-S300



TY-CNL-D  
1.7x5.5

Fig.63

#### [Note of Assembly]

[CONF.] Installation of 0-S300

1. Make sure that 0-A121 should be installed temporarily by section 1-1-5.
2. Set the AF mode SW to AF.S. (Down position)
3. [CONF.] When the mount lock pin is depressed directly until it comes to mount surface, the AF coupler should not project out of mount surface.
4. [ADJ.] Adjust the position of 0-S300, and apply the screw-lock agent to screw thread.

#### 4-5. 0-G100

[NOTE] Make sure that the mirror sheet should be placed at top end position.

- 1) Latch the lever (B) while pushing down the sliding plate (A) as shown in Fig.64.
- 2) 4 screws, 0-G100
- 3) Remove B7 while pushing down the spring (0-B9).
- 4) Remove 0-B8 while moving the lever (B11) to upward.
- 5) Remove other levers and springs.

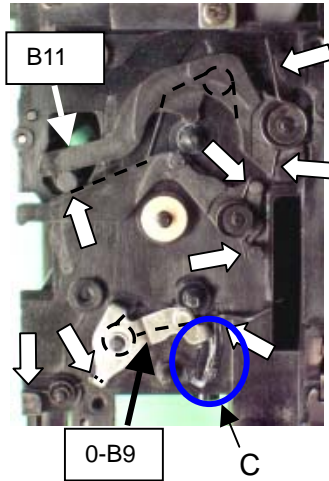


Fig.65

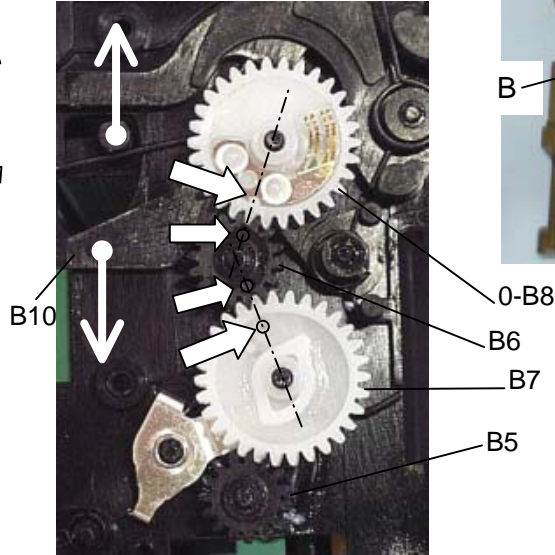


Fig.66

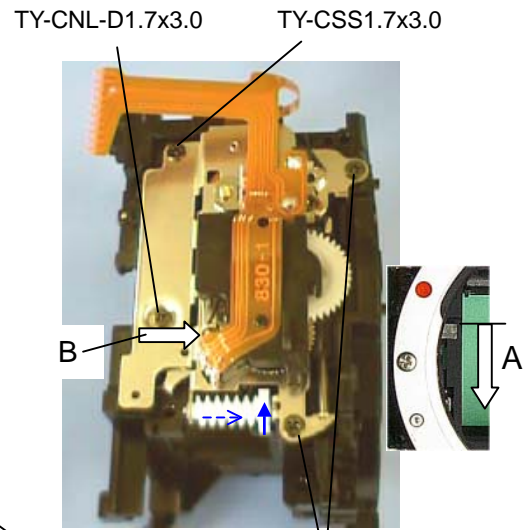


Fig.64

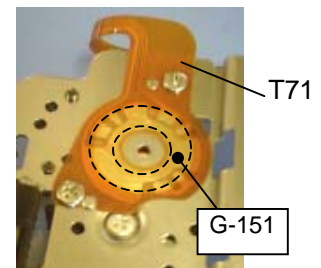


Fig.67

#### [Note of Assembly]

1. Apply G126 to each shafts (7 places) and the place indicated by (C) in Fig.65.
2. Hold 1<sup>st</sup> mirror sheet at top end position by finger, and then install B7, B6 and 0-B8 while positioning as shown in Fig.66.
3. Apply G151 to the code plate of T71.
4. Install 0-G100 to the Front housing block while keeping latched condition.

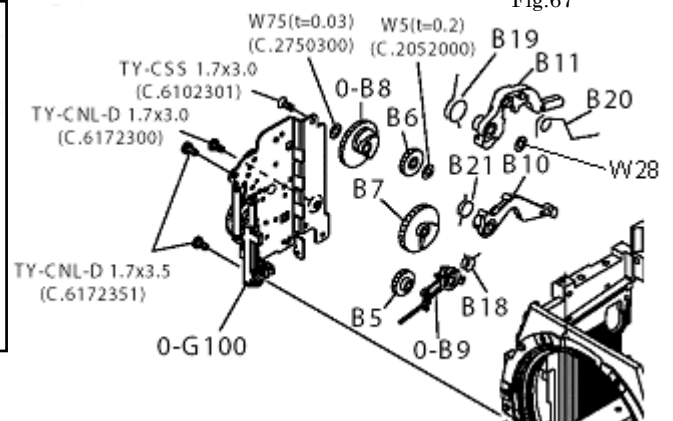


Fig.68

#### 4-6. L2

- 1) Move the hooking part of M10 front upward while holding M4 gently, so that M4 drops down.
- 2) L2
- 3) Remove M22 and L23 while moving the hooking plate to frontward as shown in Fig.69.

[NOTE] When handling the L23, hold it by the place indicated by the arrow in Fig.69 to prevent a scratch.

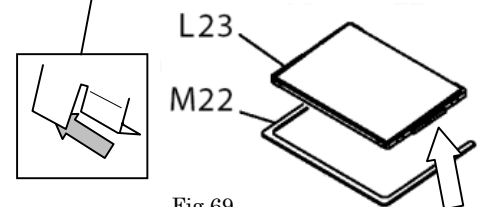
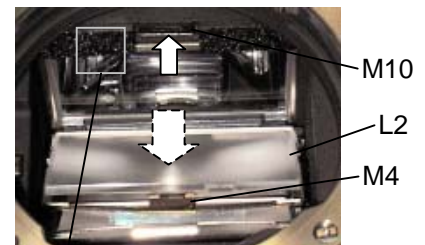


Fig.69

#### 4-7. 0-O170

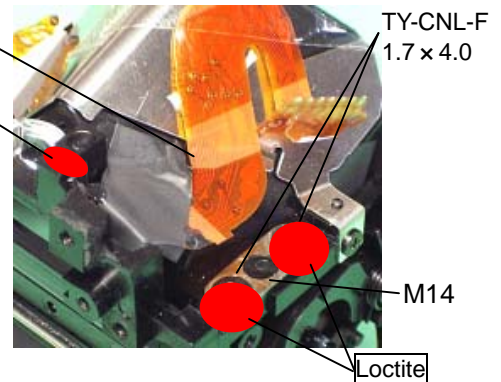
- 1) TY-CNL-F1.7x4.0 (x2)
- 2) M14, 0-O170 (Remove adhesive)

##### [Note of Assembly]

- Temporarily installation and position adjustment are required.



Fig.70



#### 4-8. 0-L101

- 1) Remove M7 upward.
- 2) Peel off M19 (SI black mat tape) and other light seal tapes.  
[CAUTION] Carefully peel off M19, because the SI prism is adhered behind M19.
- 3) T94, TY-CNL-D1.7x3.5 (x2), M9
- 4) Remove the silicone (2 places).
- 5) Remove 0-L101 gently, using care that SI prism is not touched to the Front housing assy.
- 6) M3

##### [Note of Assembly]

- Apply silicone to the place as shown in Fig.71, and leave them until they become hard.
- Stick M19 on 0-A101 as shown in Fig.72, using care that do not apply a stress to the SI prism.

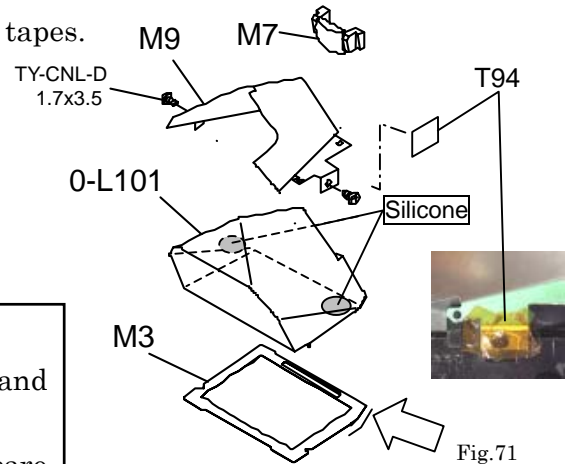


Fig.71

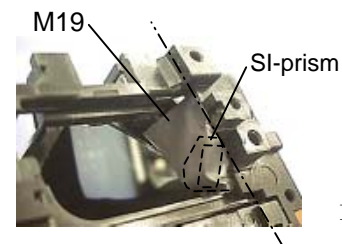


Fig.72

#### 4-9. 0-J201

TY-CNL-D1.7x4.0

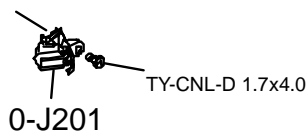


Fig.73

#### 4-10. 0-B52 and Related Parts

For disassembly, refer to Fig.74.

##### [Note of Assembly]

- Temporarily installation of 0-B52 and the position adjustment of 1<sup>st</sup> and 2<sup>nd</sup> mirror are required.

#### 4-11. A104 and Related Parts

For disassembly, refer to Fig.74.

##### [Note of Assembly]

- Five W98 (t=0.2) are fixed by a small amount of Super- X (Black).

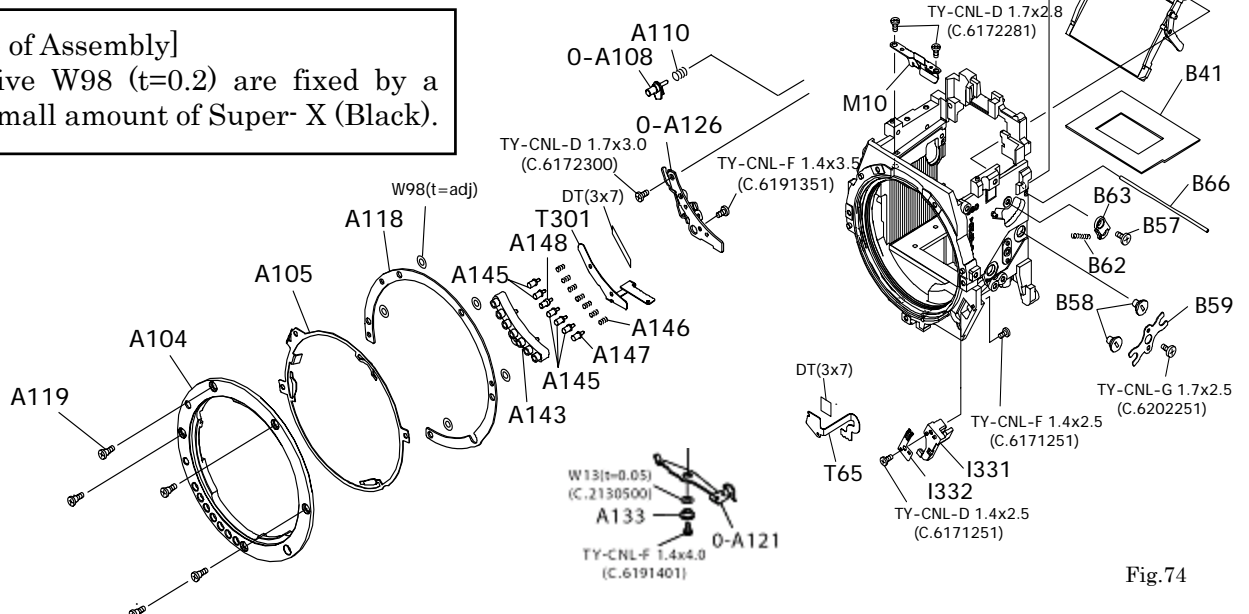


Fig.74



## [Assembly Procedures of Front Housing Block]

[NOTE] Assemble the Front housing block in reverse order of disassembly procedures in accordance with “Note of assembly”. Carry out the following adjustments and confirmations after assembled until 0-O100 (section 4-1).

### [ADJ./CONF.] Front Housing Block

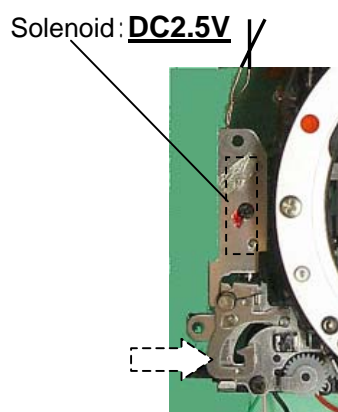
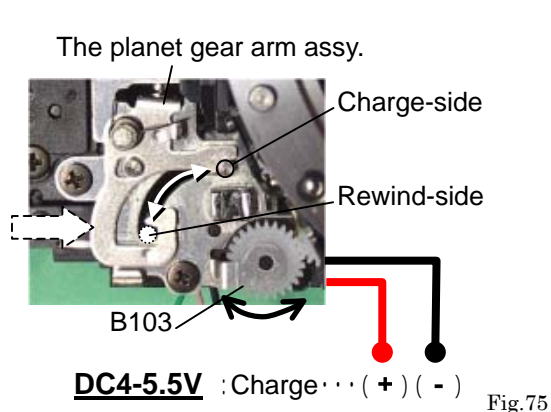
#### 4-1. [CONF.] Mirror Function Check

[Required equipment] Regulated DC power supply

- 1) [CONF.] Make sure that the planet gear arm assy should be placed at charge side.
- 2) [CONF.] Apply DC4~5.5V to 0-S250 (+: Red, -: Black), and then confirm function and noise of mirror sheet.

[CAUTION] Do not apply the power to reverse polarity of motor to prevent damage for 0-G100.

- 1) [CONF.] When applying DC2.5V to the solenoid (No polarity), the switching lever should be moved to the release direction.
- 2) While applying the power to the solenoid, and when B103 is rotated both direction normal and reverse by finger, the planet gear arm should be switched smoothly (Mirror charge side Winding side).
- 3) After confirmation is done, set the planet gear arm to mirror charge side.
- 4) Set the mirror sheet to mirror-down condition. (Set the mirror sheet and sliding plate at bottom end position and stroke with rotating B103 anticlockwise by using finger.)



#### 4-2. [ADJ./CONF.] 1st and 2nd Mirror Position

[Required equipment] 1<sup>st</sup> Mirror angle (47.5°) adjusting jig for 27830, Mirror angle adjusting jig for 27830, Mirror positioning scope

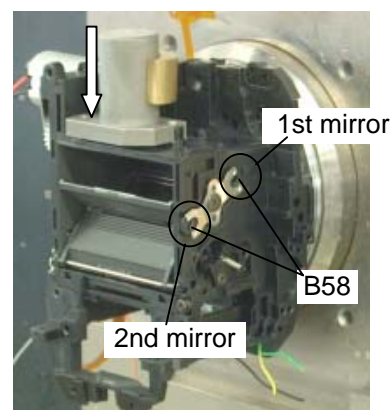
The method of adjustment is the same as other MZ-cameras by turning two B58's. Adjust the Y-axis to zero target.

- 1) Check and adjust the 1st mirror position.

Tolerance···	X-axis : $\pm 15$
	Y-axis : $\pm 10$

- 2) Check and adjust the 2nd mirror position.

Tolerance···	X-axis : $\pm 0.3\text{mm}$
	Y-axis : $\pm 0.1\text{mm}$



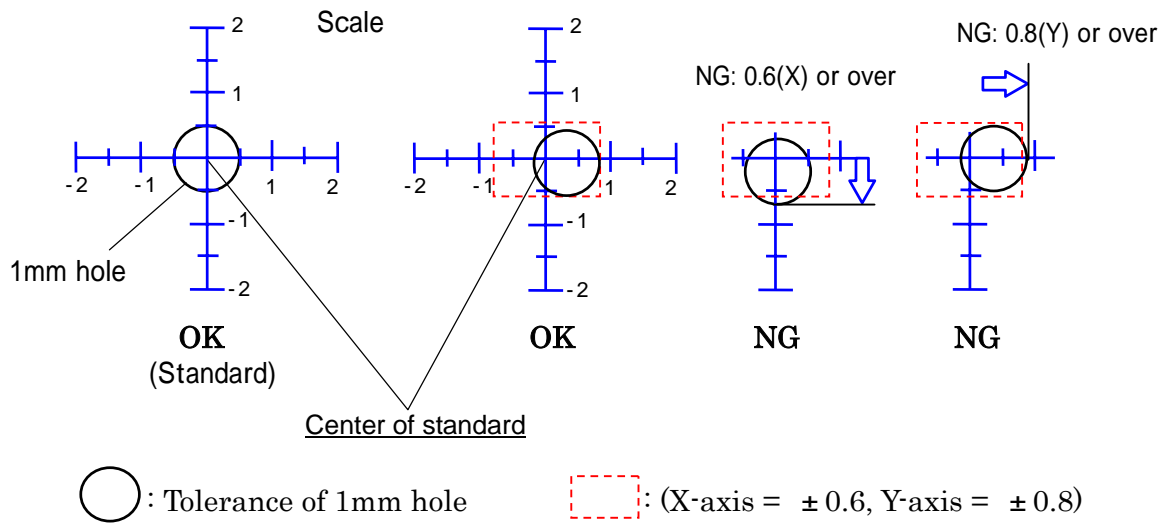
(For the standard and tolerance, see the next page.)

- 3) After adjustment is done, apply the super-glue to two B58's.



## 2nd Mirror Position (standard and tolerance)

(When using the Mirror positioning-scope: Refer to the Technical information No.T-128)



### 4-3. [ADJ./CONF.] Viewfinder Focus and Parallax

[Required equipment] Collimator, Focus master lens  
Temporarily install the eyepiece as shown in Fig.78.

1) Check parallax.

Standard: Right/Left  $1^\circ$  or less  
Top/Bottom  $1^\circ 50'$  or less

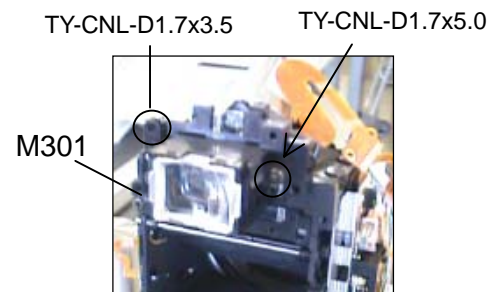


Fig.78

2) Check and adjust viewfinder focus.

NOTE: When checking the focus, the diopter should be adjusted at matte part of L2.

(Adjusting by replacing M22-00A ~ -00I)

Standard:  $0 \pm 0.04$  mm

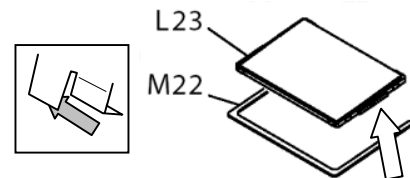


Fig.79

### 4-4. [ADJ./CONF.] 0-O170 Position

1) Distribute lead wires as shown in Fig.81.

[NOTE] Do not apply a stress to the lands of 0-O170.

2) [CONF.] Apply DC4V to 0-O170, and then check position and lighting of 11 points of SI-LED.

3) [ADJ.] Loosen two screws, and then adjust position of 0-O170.

4) After adjustment is done, apply Super-X and Loctite to the place indicated in Fig.82.

5) Remove the lead wires for adjustment.

□: AF frame, ●: SI-LED

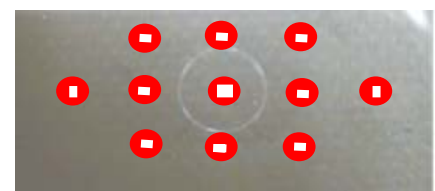


Fig.80

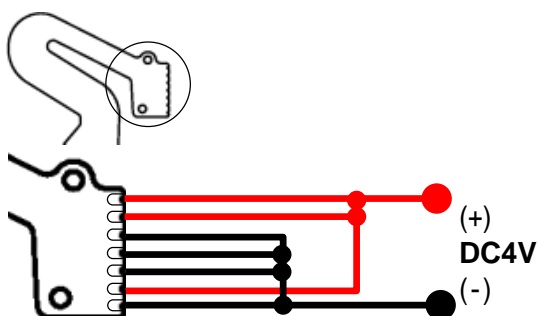


Fig.81

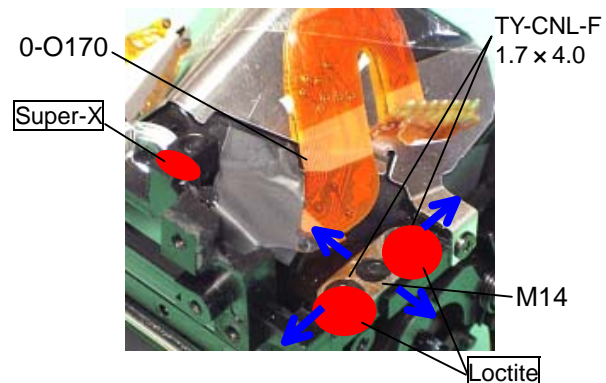


Fig.82

#### 4-5. [ADJ./CONF.] 0-O100 Position

[CAUTION] Note miss wiring, wrong polarity and short circuit, because the following 5 lead wires are soldered to 0-T100 directly.

- 1) Solder 5 lead wires to 0-T100.  
[60mm or more (x1), 160mm or more (x2), for power supply (x2)]
- 2) Short the main switch lands on 0-T100 by soldering.
- 3) Solder 1k resistance to the place instructed in Fig.85.
- 4) Connect the flexible board of 0-O100 with 0-T100.
- 5) [CONF.] When applying DC5.5V, all indications will be lighted as shown in Fig.84, and check the position and inclination of display.

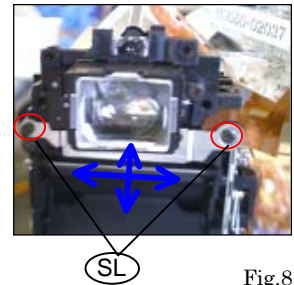


Fig.83



Fig.84

- 6) [ADJ.] Adjust the position of 0-O100 by loosening two screws as shown in Fig.83.
- 7) After adjustment is done, apply screw-lock agent to screw thread, and then remove the lead wires from 0-T100.

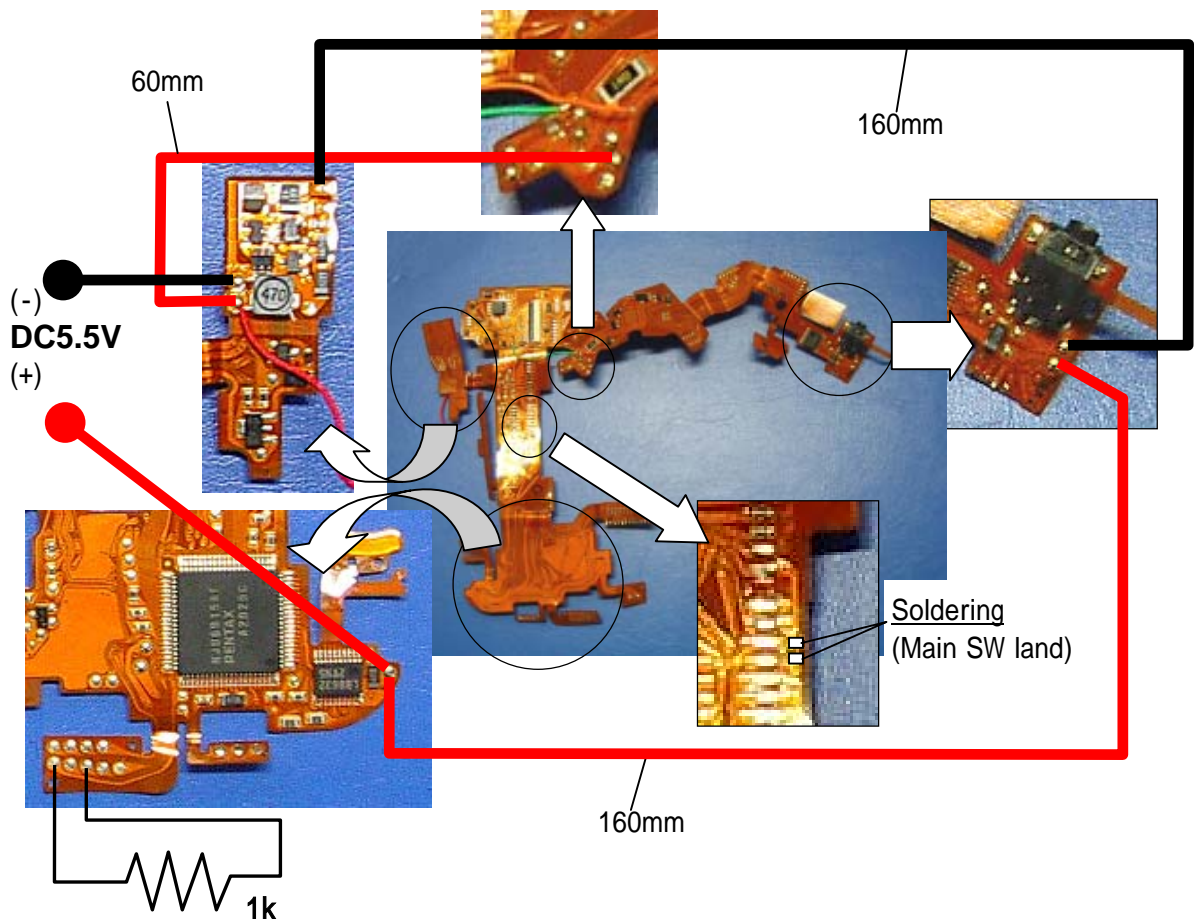


Fig.85

## 5. MAIN BODY

### [Disassembly Procedures]

[NOTE] Disassemble the Main body in reverse order of assembly procedures in accordance with “Note of disassembly”.

### [Assembly Procedures]

#### 5-1. Other Parts

A40, A34 • A33(x3) • Black lead wires (x2)

Right side: T64, A35• Red lead wire,

A16 • A9 ( Bonded together by Super-X)

Rear side: A11, A18, A19

#### 5-2. 0-A4

1 ) 0-A4、 A6

2 ) TY-CNL-G1.7x2.5

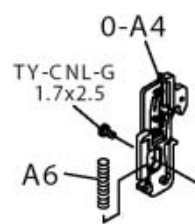


Fig.88

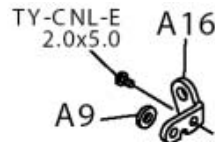
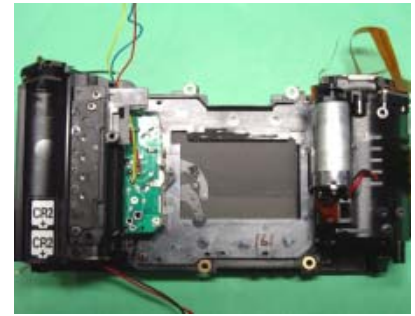


Fig.87



#### 5-3. A2, A3, 0-A20

1 ) 0-A20, TY-CNL-D1.7x2.5

2 ) A3 (Apply Super-X)

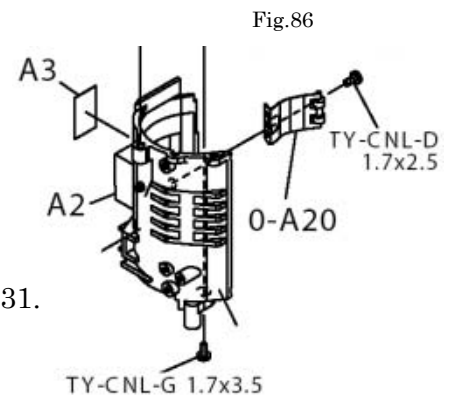


Fig.86

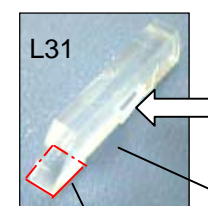
Fig.89

#### 5-4. A2 assy.

1 ) L31

[CAUTION] Do not scratch to the mirror part at inferior surface of L31.

2 ) DT (1.5x3).



Mirror part

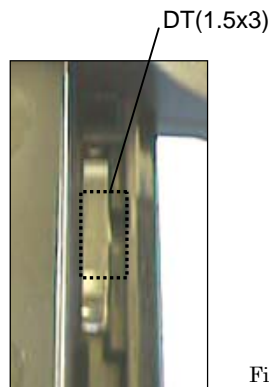
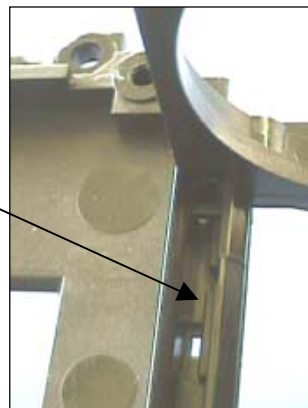


Fig.90

3 ) A2, TY-CNL-G1.7x3.5 (lower outside)

#### [Note of Disassembly]

Remove A2 while lifting up the outside of it frontward angle with care to prevent damage to lower hooking part of it.

#### 5-5. C1, S200, T29

1 ) Fix T29 to C1 by T73 (DT).

2 ) S200, CNL-B1.4x2.2 (x2)

3 ) C2

[CAUTION]

C2 should be installed 6.8mm from end of C1.

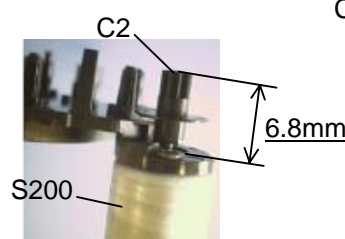


Fig.92



Fig.91

### 5-6. C1 (assy.)

- 1) DT (4x10)
- 2) C11 (Apply G134 to 2 places inside of C11.)  
[CONF.] Make sure that C11 should be dropped by self-weight. (NG: replace C12)

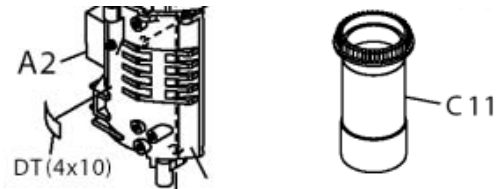


Fig.93

- 3) C1, TY-CNS1.7x4.0, TY-CNL-D1.7x5.5
- [NOTE] Fix the lower side of motor to A2 by DT (4x10).
- 4) [CONF.] Make sure that C11 rotates smoothly, and having vertical play.
- 5) A14, A10, TY-CNL-D1.7x5.5 (rear side), ...1.7x4.0

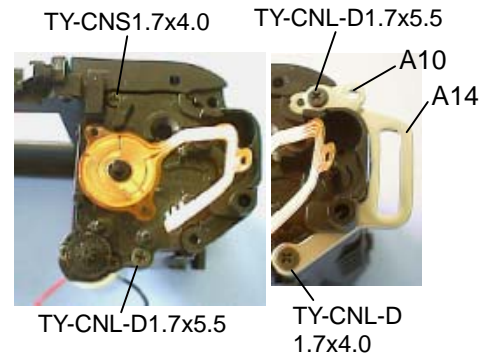


Fig.94

#### [Note of Disassembly]

Peel off the lower side of motor from DT.

### 5-7. Winding and Pop-up mech.

- 1) Apply G126 to shafts (4 places) of C1.
- 2) Apply G151 slightly to T29 code plate and shaft.

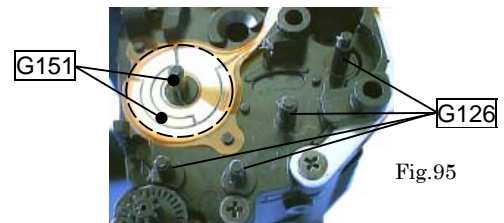


Fig.95

- 3) 0-C17 (Apply G126 to all around of cam.), C4, C3
- 4) 0-C6 (Apply G126 to outer around of shafts part of 0-C6.), C5
- 5) C13, C21, C14, C15

- 6) Install 0-C20 with hooking it to the place indicated by arrow in Fig.97.  
TY-CNL-D1.7x8.0, ...1.7x4.0

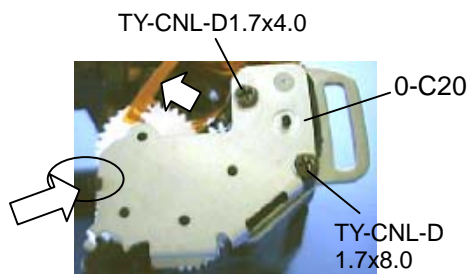


Fig.97

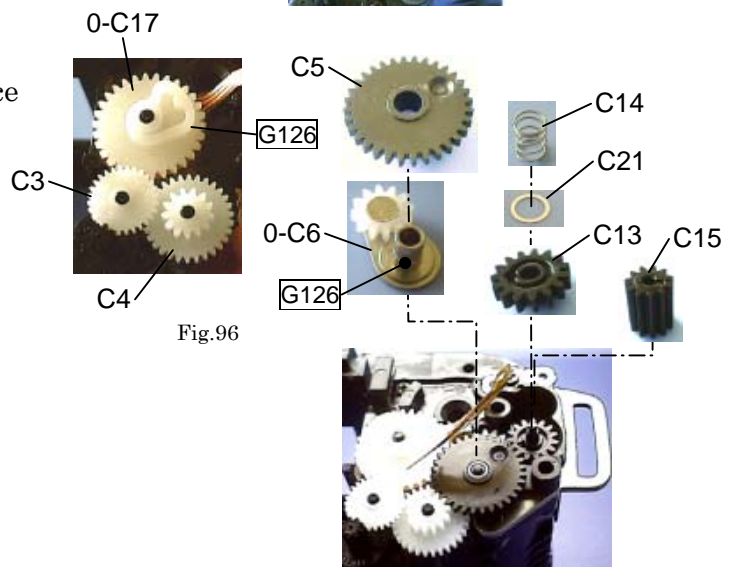


Fig.96

### 5-8. 0-T601 (T605)

- 1) Insert T607 into the square hole as shown in Fig.98.

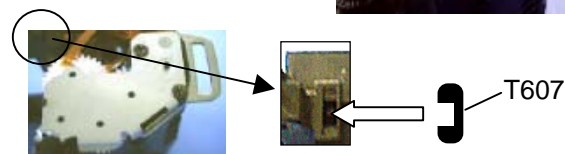
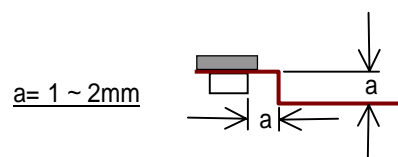


Fig.98

- 2) Fold down 0-T601.



- 3) Install 0-T601 while lifting up C1 slightly.  
[CAUTION] Before installing 0-T601, clean up dust on the LED.

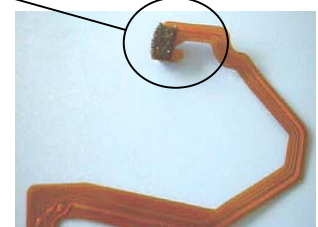


Fig.99



### 5-9. 0-T27

- 1) Stick on DT (4x4) to a hollow at the main body.
- 2) Stick on DT (3x7) to 0-T27, and then fix it to the main body.

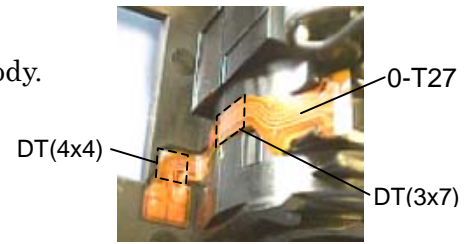


Fig.100

### 5-10. D1

- 1) Apply G126 to shafts (2 places) of the main body.

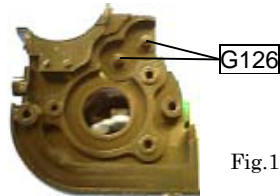


Fig.101

- 2) D4, D5, D6

[CONF.] Make sure that D4 should be dropped by self-weight when the main body is reversed.

- 3) D2, D3

- 4) D1, TY-CNL-F1.7x2.0 (x2), DT (7x10)

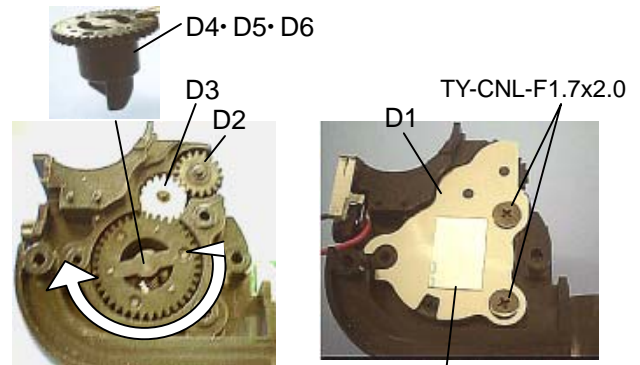


Fig.102

### 5-11. 0-E000

- 1) Install 0-E000 from access the motor side.

- 2) A50 (x3) (Screw with shoulder)

[NOTE]

0-E000 has a movement approx. 0.1mm to stabilize the shutter speed at 1/4000.

- 3) A25 (Light seal tape 13x10)

[CAUTION] A25 should be stuck between the main body and 0-E000 as no gap.

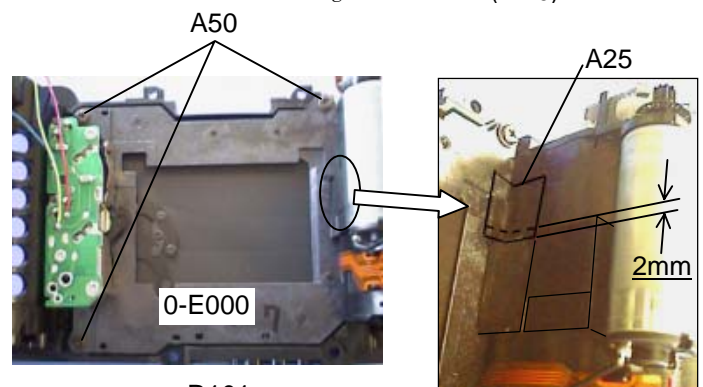


Fig.103

### 5-12. R101 (Assy.)

- 1) Install R101 from access the DX contact side.

- 2) TY-CNL-D1.7x5.0

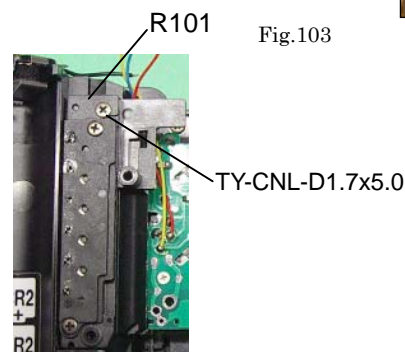


Fig.104

### 5-13. Back Cover

- 3) Set the back cover to the main body, and then install it by A207.

[CAUTION] A207 should come through on the flexible board of 0-T200.

- 4) Fix the flexible board to the main body by DT (7x14) during full opened cover condition.

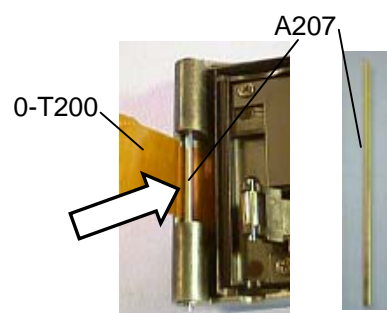


Fig.105

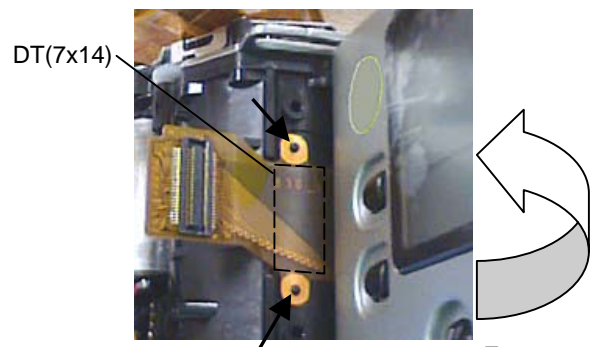


Fig.106

## 6. TOP COVER

### [Disassembly Procedures]

[NOTE] Disassemble the Top cover in reverse order of assembly procedures in accordance with "Note of disassembly".

### [Assembly Procedures]

#### 6-1. Other Parts

A306, A339 and related parts  
M316 and related parts

#### 6-2. A322

- 1) A321, A322
  - 2) A330, CNL-D1.7x2.5, A348 (x2)
- [CAUTION] Apply screw-lock agent to A348.
- 3) A323 (Hot shoe spring)

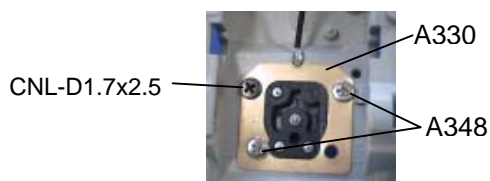


Fig.108

#### 6-3. A311

- 1) Apply G151 to the clicking part of A311 and installation hole of A301.
- 2) Hook A312 (Select dial click spring).
- 3) BO 2.0 (Apply G151)
- 4) Install A311 while aligning a BO with groove of inside A311.
- 5) A313, TY-CNL-G 1.7x3.5
- 6) [CONF.] Make sure that A311 rotates smoothly with clicking.

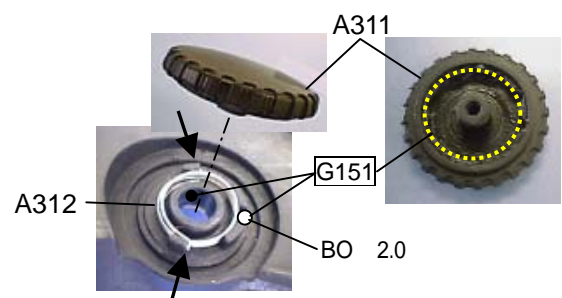


Fig.109

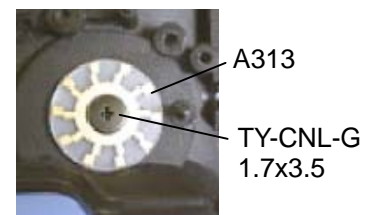


Fig.110

#### 6-4. A343

- 1) Apply G134 to A301 (5 places).
- 2) A343
- 3) BO 1.5 (Apply G134)
- 4) A344, A345, TY-CNL-D 1.4x2.5

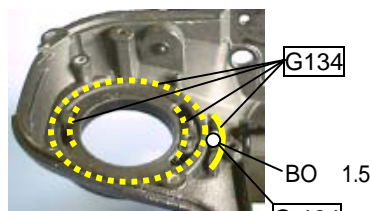
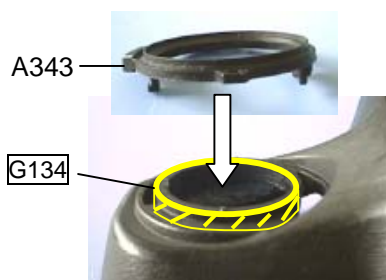


Fig.112

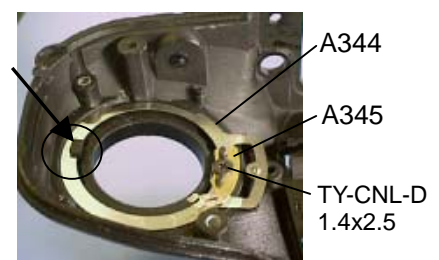


Fig.113

#### 6-5. A335

- 1) Apply G134 to A301.
- 2) A335
- 3) A337, A338, TY-CNL-D 1.4x3.0 (x3)
- 4) Apply screw-lock agent to 3 screws.

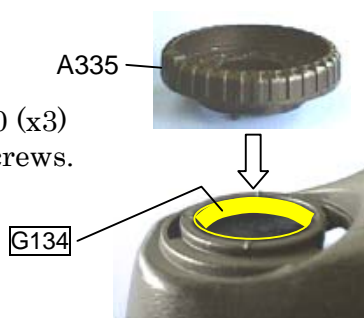


Fig.114

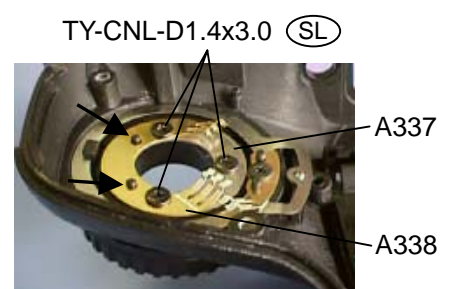


Fig.115

### 6-6. A334 (0-T57)

- 1) Apply G151 to land of T57.
- 2) TY-CNL-D1.7x3.5、...x4.0

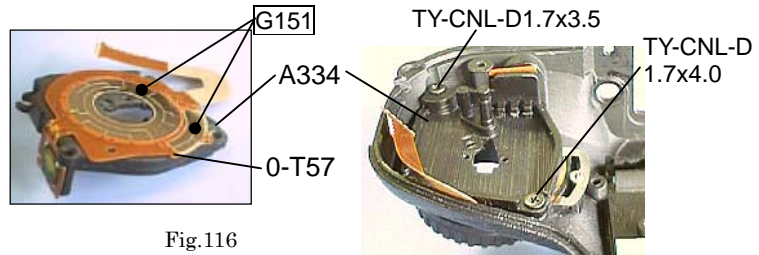


Fig.116

### 6-7. 0-A332

- 1) Apply G134 to clicking part of A335.
- 2) Pass the flexible board through the hole of A335 (Mode dial) and A334 as shown in the figures below, and then install 0-A332.
- 3) TY-CNL-D1.4x4.0 (from inside cover)

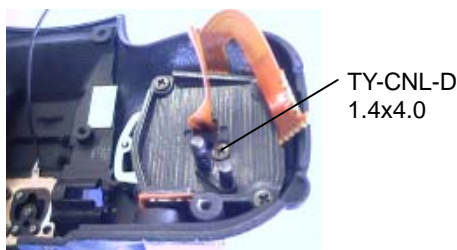


Fig.117

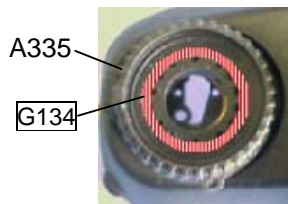


Fig.118

### 6-8. A331

- 1) BO 1.5 (Apply G134)
- 2) A333 (Rounded corner to be installed bottom side as shown in Fig.120.), TY-CNL-D1.4x4.0
- 3) A331, A326 (screw)

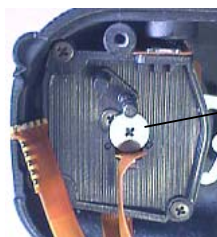


Fig.119

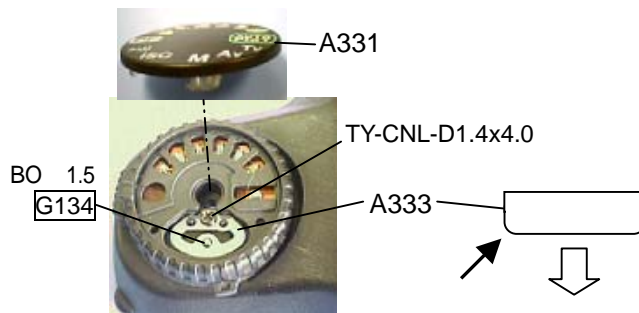


Fig.120

[CONF.] Make sure that the mode dial and mode lever rotate smoothly with clicking.

### 6-9. A351 (Assy.)

- 1) Apply G134 to A301 (3 places).
- 2) A351 (Main SW lever)
- 3) Hook A357 (Main SW spring)

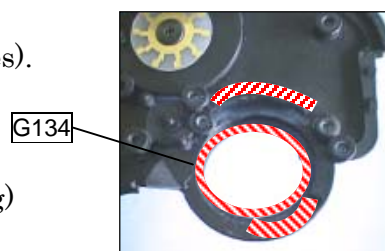


Fig.121

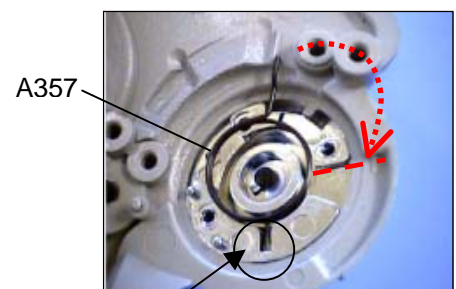


Fig.122

- 4) BO 1.5 (Apply G134)
- 5) A355, TY-CNL-D1.4x2.5
- 6) A354, TY-CNL-D1.4x2.5
- 7) Apply screw-lock agent to screw (2 places).
- 8) [CONF.] Confirm the operation of A351.

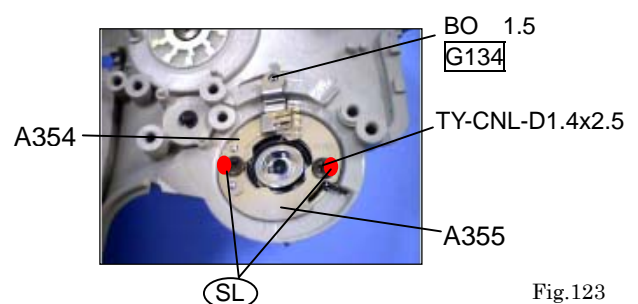


Fig.123



### 6-10. Assembly of A358 and 0-T51

- 1) Stick DT (7x8) on T51.
- 2) Fix 0-T51 to A358 while aligning the positioning holes with studs.
- 3) Apply the epoxy resin adhesives while clipping the switch and plate together, and leave them until they become hard.

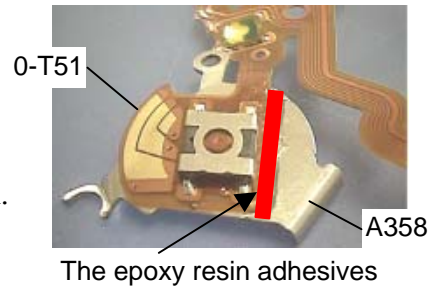


Fig.124

### 6-11. Installation of A358 (0-T51)

- 1) Apply G151 to code plate of A313.
- 2) 0-I280, TY-CNL-G1.7x5.0
- 3) Install A358 (Apply G151 to lands) to cover, using care that A358 (indicated by A) is set to proper position, and then tighten TY-CNL-D1.7x2.5 and A359.
- 4) [CONF.]  
Confirm the operation of shutter release and Preview.
- 5) A309, TY-CNL-D1.7x3.5 (x2)

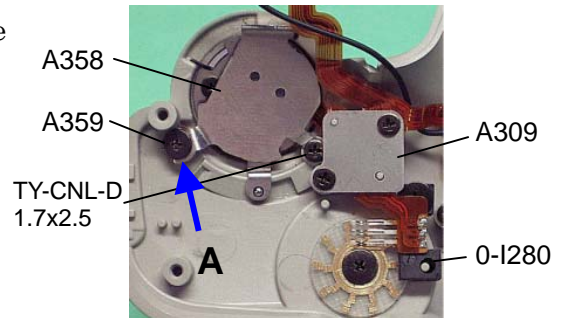


Fig.125

### 6-12. Assembly of Flash Unit

- 1) Install 0-Q100 to Q20 as shown in Fig.126, and then install it to Q2.
- 2) Arrange the lead wires and trigger coil.
- 3) Apply silicone as shown in Fig.128.



Fig.128

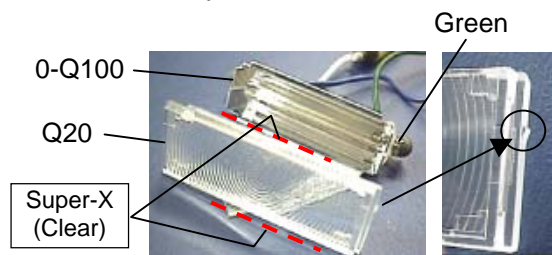


Fig.126

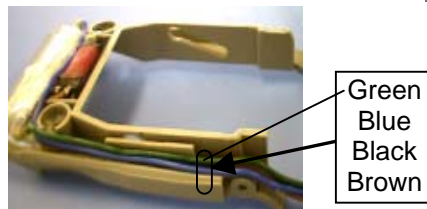


Fig.127

- 4) Q1, TY-CNL-D1.7x3.0Ni (x2), TY-CNL-B1.4x3.0Ni (x2)
- 5) Apply L115 to the groove of Q2 (2 places).

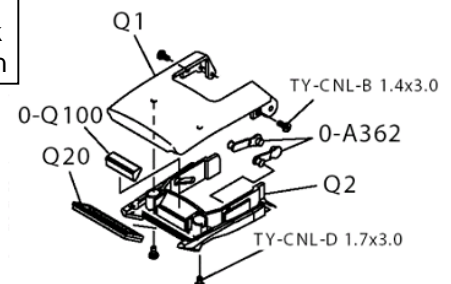


Fig.129

### 6-13. Installation of Flash Unit

- 1) Pass 4 lead wires of 0-Q100 through the square hole of A301.
- 2) Install black dowel of 0-A362 (x2) to A301, and opposite side of them to Q2.
- 3) Insert Q7 into A301 from no groove portion side of Q7 as shown in Fig.130.
- 4) Q3 (Retain the flexible board as shown in Fig.130.), TY-CNL-D1.7x3.5 (x2)

- 5) Solder 7 lands on 0-T51.

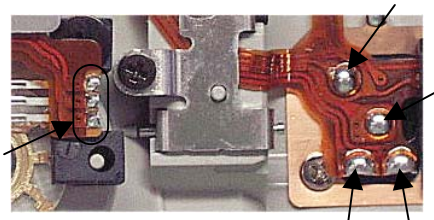


Fig.131

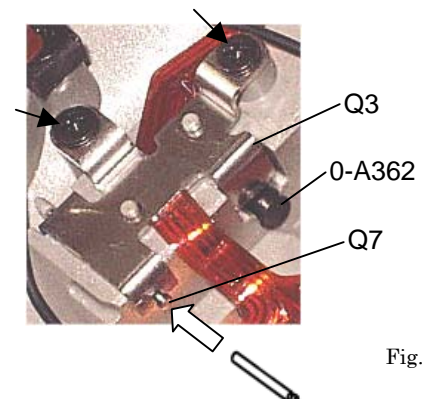


Fig.130



- 6) Arrange 4 lead wires of 0-Q100, using care that they do not overlap each other.  
(Brown, Black, Green, Blue from left side in Fig.131.)

- 7) Q4, A349 (Apply screw-lock agent)
- 8) 0-Q5, LW10

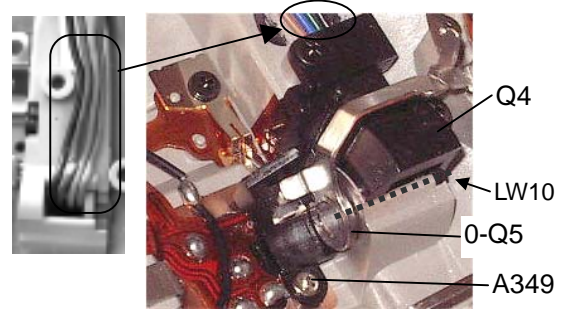


Fig.131

- 9) Set the flash unit pop-up condition, and insert 4 lead wires to under the Q4 approx.1mm to permit enough slack in wires, and then fix them by DT (5x10).

- 10) TY-CNL-D1.7x3.5 (x2, Q4)

- 11) Apply Super-X (black) as shown in Fig.132 to fasten the lead wires.

- 12) A328, A329 (SW), TY-CNL-D1.7x2.5

- 13) Solder 2 black lead wires, and arrange them.

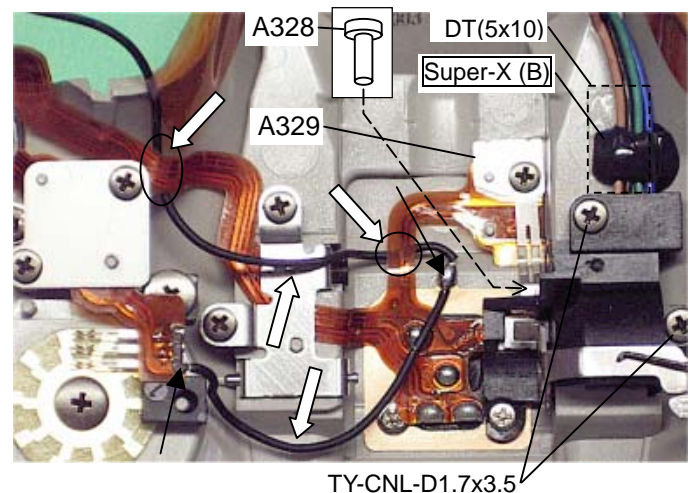


Fig.132

#### 6-14. 0-A364

- 1) Install A369 (Arm retainer spring) to 0-A364.
- 2) Apply G134 as shown in Fig.133. (4 places)
- 3) 0-A364, A370 (Retainer ring)
- 4) Hook A368 (Flash pop-up spring).



Fig.134

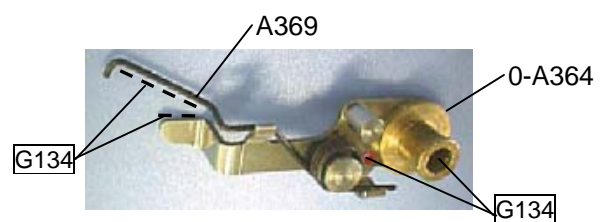


Fig.133

- 5) Stick on T83 (10x20) as shown in Fig.135.

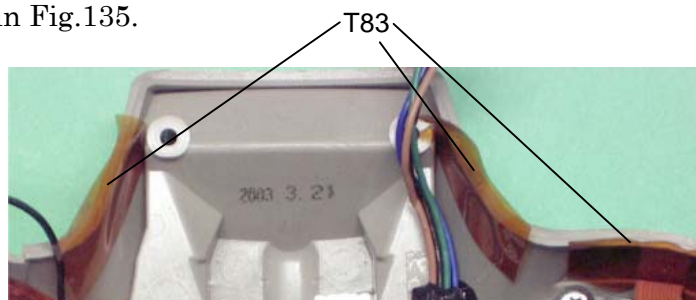


Fig.135

## 7. BACK COVER

### [Disassembly Procedures]

#### 7-1. 0-A202

Remove 0-A202 while lifting up it from the film information window side.

#### 7-2. A239

- 1) A187 (x4), A239
- 2) A215•A216, A217

#### 7-3. A223

2 screws

#### 7-4. A238 (0-T200)

- 1) 4 screws, A238
- 2) A201

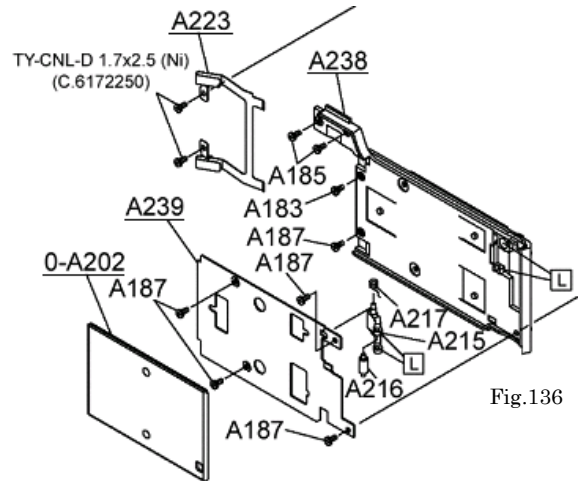


Fig.136

### [Assembly Procedures]

#### 7-1. 0-T200

- 1) Stick DT (x5) on 0-T200 as shown in Fig.137.
- 2) Fold up 6 places as shown in Fig.137.
- 3) O209
- 4) Install 0-T200 to A238.
- 5) O208 • O210
- 6) A225, A226 (x2)
- 7) Clean up dust from the lands part of 0-O200, and then connect it with 0-T200.

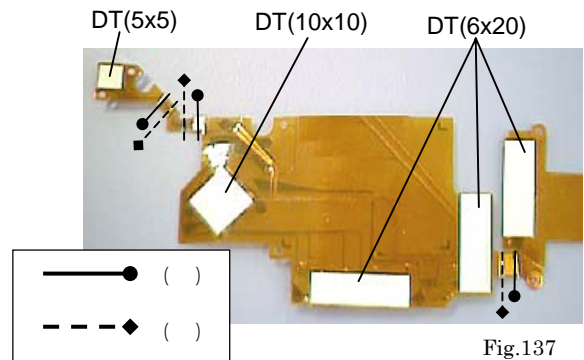
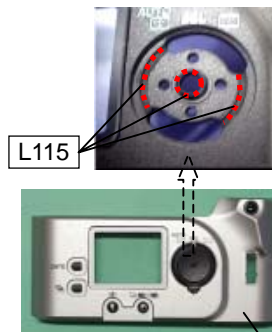


Fig.137

#### 7-2. A201

- 1) Apply L115 (3 places) and G134.
- 2) A251 and related parts
- 3) A255 and related parts
- 4) A224 (x4)
- 5) Other related parts



#### 7-3. A238 (0-T200)

- 1) Peel of the scratch protection seal from the LCD.
- 2) Apply G151 to the switch lands of 0-T200.
- 3) Install A238 to A201 by 4 screws.  
A183 (3mm), A185 (3.5mm x2), A187 (4mm)

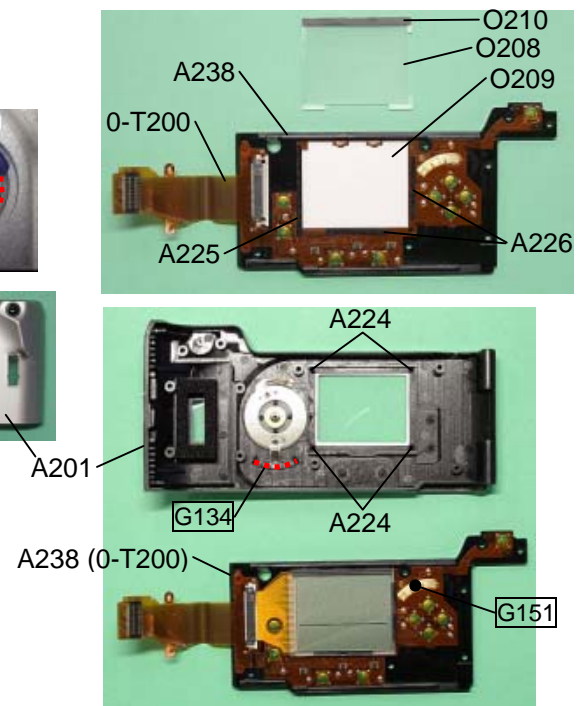


Fig.138

#### 7-4. A223

- 1) Install A223 on a parallel with the main body.
- 2) TY-CNL-D1.7x2.5Ni (x2)

#### 7-5. A239

- 1) Apply L115 to the place indicated in Fig.139.
- 2) A215•A216, A217
- 3) A239, A187 (x4)

#### 7-6. 0-A202

[CAUTION] When installing 0-A202, use caution to prevent a scratch to A239.

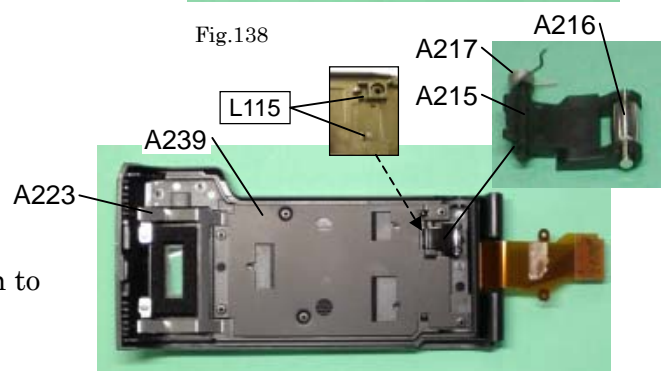


Fig.139

## 8. ASSEMBLY OF NAIN P.C. BOARD

- 1) Stick the following tapes.  
DT ... 2 places, 8 places (the reverse)  
PT ... 2 places, BT ... 2 places
  - 2) Solder 3 lead wires (Red, Orange, Green) as shown in Fig.140.
  - 3) Install I400 to 0-T100 by soldering 6 lands.
  - 4) Cut off 2 places. (Cut off: 0-T100, I400)
  - 5) Fold up 20 places.
- [CAUTION]
1. Do not apply a stress to parts.
  2. Do not fold up as acute angle or wrong directions.
- 6) Fold up 0-T100 while aligning the positioning holes indicated by allow in Fig.140, and then stick the flexible boards together by DT.
- [CAUTION] Do not press the folded parts to prevent damage of 0-T100.
- 7) Stick on together both flexible board portions of 0-T100 by T94 (10x13).

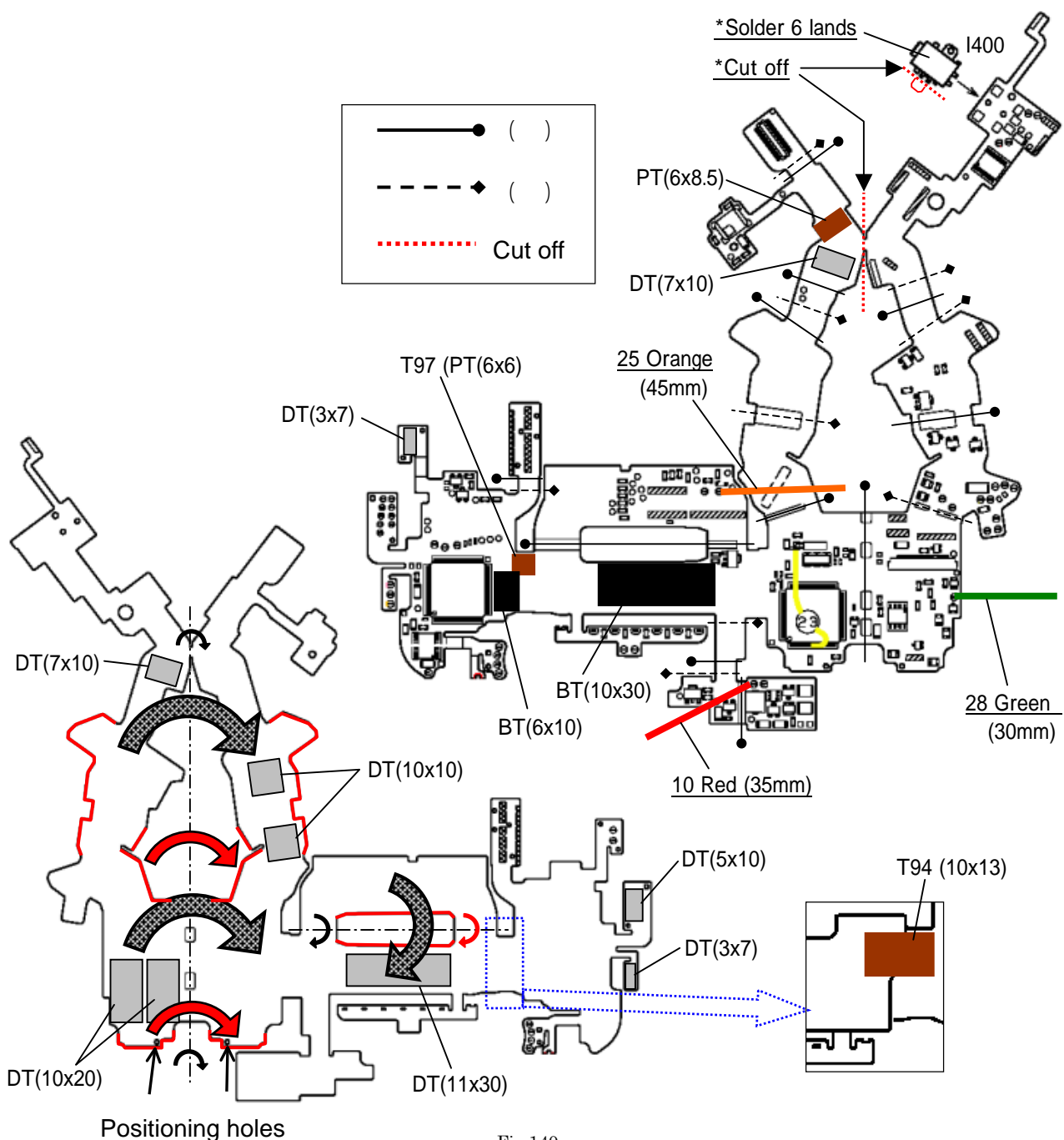


Fig.140

## FINAL ADJUSTMENT AND CONFIRMATION

### 1. [CONF.] Static Current

[Required equipment] Regulated power supply, Circuit tester, DC power adaptor (Hand made, refer to “Table of jig and tool” on p.40.)

[CONF.] Set regulated power supply to DC5.5V (over 3A). Make sure not exist any shortage or leakage in the circuit.

Static current : Main SW/off ∙ ∙ ∙ under 50  $\mu$  A.  
Main SW/on (Light metering off) ∙ ∙ ∙ under 380  $\mu$  A.

### 2. [CONF.] Function Check

[Preparation] Apply the power to the body.

[CF: Custom function, AEB: Auto bracketing, SI: Superimpose]

#### 1) Main SW, Release SW and Shutter

Turn the main SW ON, confirm the LCD display showing focus points and drive mode, etc.  
Turn the preview SW ON, make sure that the diaphragm actuate lever (0-G100) swings up completely.

After turning the main/preview switch to ON position, the LCD panel should be lighted up.  
(When setting the custom function to [CF15]- [3], illumination function is turned OFF.)

When depressing the release button halfway, confirm showing the Tv /Av information on the LCD panel and viewfinder indications should stay on for approx. 10 sec.

Set the mode dial at M position and slower (ex. 1sec) shutter speed. Make sure that the shutter curtain opens by releasing the shutter.

#### 2) Av SW ∙ AE-L SW ∙ Select dial

Set the mode dial at AUTO PICT position.

By depressing “Av” button, the bar graph indicates in the viewfinder and on the LCD panel.  
At the same time, the exposure compensation should be able to set by select dial.

By depressing “AE-L” button, AE lock mark “\*” indicates in viewfinder. When depressing “AE-L” button again, AE lock mark “\*” should be able to canceled.


#### 3) Mode dial

Set the mode dial at AUTO PICT position and FA (F) lens at “A” position. After turning the main switch from OFF to ON position, the illumination of mode dial (LED) lights up.

By turning the mode dial, the LED for each picture mode lights up accordingly.

Set the mode dial at Tv/Av mode, Tv and Av display should be able to changed by select dial.

Set the mode dial at M mode, Tv display should be able to changed by select dial with indicating the bar graph.

Set the mode dial at ISO or , the ISO film speed and the audible PCV signal should be able to selected by the select dial.

Set the mode dial at CUSTOM position, CF should be able to set by four-way control key.

#### 4) Back cover SW and Film winding/rewinding

Load a test film (36 ex.), close the back cover and turn the main switch ON. Then confirm the operation of winding, exposure counter and rewinding.

Make sure that rewinding the film starts when the mid-roll rewind button is pressed.

#### 5) Flash check


By depressing the flash button, the flash pops up with indicating the flash ready mark.

Make sure that the flash fires by releasing the shutter.



The built-in flash should be retracted by finger. The built-in flash automatically retracts when the main switch is turned OFF.

By depressing the flash mode button, the flash mode should be changed.

Check the flash fired at the flash mode **⚡AUTO** and .

#### 6) AF function

Attach the FA lens, and set the focus mode switch to “AF.S”.

When depressing the shutter button halfway while the front of lens is covered with a hand, the distance ring should rotate between infinity ( $\infty$ ) and short distance end.

Check the switching of “AF.S”, “AF.C” and “MF”.

The focus point and each setting should be able to set by four-way control key. At the same time, make sure that the SI display in the viewfinder lights up. (CF6: 1)

#### 7) Other

Confirm the switching and operating of each drive mode by drive button.

When setting self-timer mode, the audible PCV signal should be heard with blinking the self-timer lamp at front of body.

DATE should be able to set by DATE button.

AEB should be able to set by AEB button.

### 3. [CONF.] Mechanical Back

- 1) Tighten 8 screws in the numerical order ( , , , ... ) as shown in Fig.141. (The first screw “ Temp.” is installed temporarily.)

- 2) [CONF.] Confirm the Mechanical back.

<u>Standard : 45.46 mm</u>
<u>Tolerance : <math>\pm 0.04</math></u>

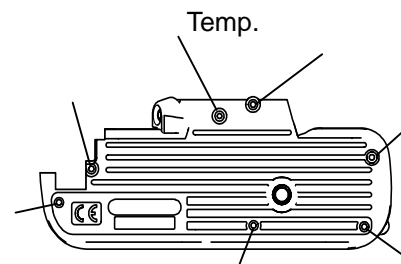


Fig.141

- 3) [ADJ.] Remove A104 and A118, and then replace W98 (x5). (Apply Super-X)  
After the adjustment is done, repeat the confirmation or adjustment of focus.

### 4. [ADJ./CONF] Adjustment and Check with Programmed Software

[Required equipment]

- ☐ Programmed software for 27830 (Exclusive item)
- ☐ AF positioning jig (Square) for 27830
- ☐ AF positioning jig (Cross) for 27250
- ☐ AF chart for 2m x2 (Exclusive item)
- ☐ AF master lens for 2m
- ☐ AE master lens
- ☐ Shutter tester for 1/4000 sec.
- ☐ Temporary bottom cover (Hand made/exclusive item)
- ☐ TTL adjusting plate (Hand made/exclusive item)

For the other items, refer to the table of “Jigs, Tools and Testers”.

#### [ADJ./CONF.]

- 1) Solder 5 lead wires from the I/F buffer cable for 27250 (MZ-5) as shown in Fig.142.
- 2) Install a temporary bottom cover and battery cover, and then insert the battery into the body.

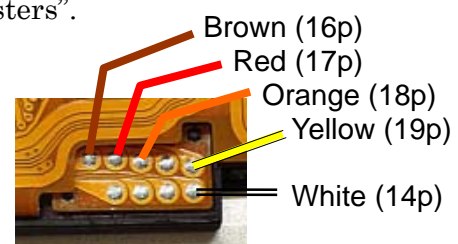


Fig.142

[NOTE]

Using the programmed software for 27830, check and adjust by following the flow chart.

Standard flow of adjustment and confirmation:

Product select menu (select \*ist)      27830 test program      Main menu  
 Eeprom checking ( START )      Exposure adjustments ( A )      AF adjustments ( B )  
 Eeprom checking ( END )      Main menu

## 5. [CONF.] Date LED Check

- 1) Solder 1k resistance to the place instructed in Fig.143.
- 2) [CONF.] Open the back cover and look at the square hole for date imprinting, make sure that 7 LED should light up in sequence.
- 3) All LED should light up at the same time.
- 4) After confirmation is done, remove 1k resistance.

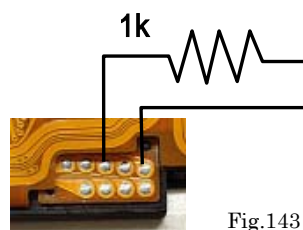


Fig.143

## 6. Installation of Bottom Cover (A401)

- 1) Remove temporary bottom cover.
- 2) W13 (t=0.05), A133
- 3) A401, 0-A412
- 4) Tighten 7 screws in the numerical order ( , , , ... ) as shown in Fig.144.

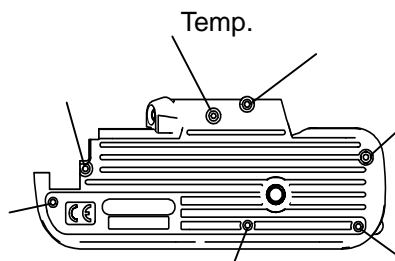
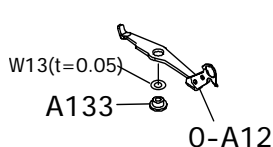
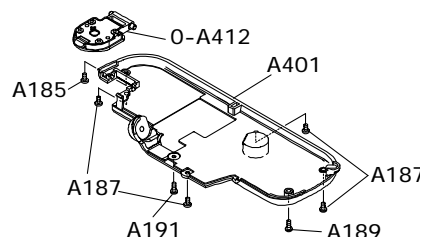


Fig.144



## 7. [CONF.] Exposure Value and DX Switching

[Required equipment] Shutter tester, AE master lens for 24500 (ML-245)

[CONF.] Exposure value

- 1) Set the camera at programmed AE mode with the master lens.
- 2) Open the back cover, and push in the top part of back cover key to release the shutter.
- 3) Check the exposure values.

[Standard]	Brightness (LV)	Tolerance (EV)
	LV6 ~ 8	+ 0.45 ~ - 0.75
	LV9 ~ 14	+ 0.70 ~ - 0.50
	LV15	+ 1.20 ~ ± 0.00

Using Master lens (ML-245) at programmed AE mode

[CONF.] DX switching

Load a DX coded film (ISO400, 200, 100, and others) and make sure that the LCD indication is matched with ISO on the film inside.

(Supplement: Conductivity of all contacts can be checked with ISO 5000 film.)

## 8. [CONF.] AF Check

[Required equipment] Collimator designed for auto focus, Focus master lens

[Preparation] Setting “Test mode”

When attached a master lens that has not A position, \*ist does not operate. Therefore, set the camera to operate with the master lens at “Test mode” as follows:

- 1) Insert the battery into the body, and then turn ON the main switch.
- 2) Set the mode dial **CUSTOM** and the focus mode switch to “MF”, and then open the back cover.
- 3) Reinsert the battery while depressing “AV” button and the release button at the same time with keeping above condition.
- 4) Set the mode dial at exposure mode, and then depress the flash mode button and Av button at the same time. “PF1-1” will be displayed on the LCD panel.
- 5) By four-way control key, change the display on the LCD panel from “PF1-1” to “PF1-2”.
- 6) Turn OFF the main switch once.

NOTE: When CF is set at “CF17-1”, the shutter cannot be released.

After the confirmation is done, reset the body as follows.

- 1) Reinsert the battery into the camera.
- 2) Turn the main switch ON, and make sure that the shutter cannot be released with blinking “Av - -” on LCD when attached lens is set the lens aperture ring at manual position. (CF17-1)

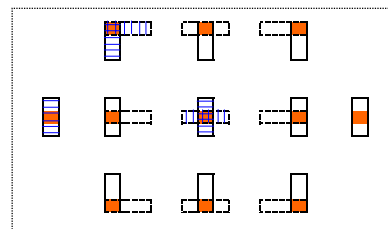
[CONF.] AF position (by using FI (Focus Indicator) in viewfinder)

- 1) Set the body at “Test mode”.
- 2) Set the focus mode switch to “MF” and attach the focus master lens onto the body.
- 3) Select the focus point in the viewfinder by four way control key and focus point mode switch (SEL), and then set the body at the collimator with aligning the selected focus point with the chart of Collimator.

[NOTE] The focus sensor and the line of chart should cross at right angles.

- 4) Turn the focus ring to the right end, and turn back it gradually until FI lights up and read the scale of focus master lens. (A) Follow the same procedures from left side. (B)
- 5) The center point of A and B =  $(A + B) / 2$  should be within a range of **- 0.07 to + 0.05 mm.**  
( - : Back focus, + : Front focus )
- 6) After the confirmation is done, reset the body.

Focus point and AF sensor position  
(Schematic diagram)



[Reference]

By changing the metering mode while setting the test mode, desired focus sensor can be selected as follows.

Multi-segment metering: Vertical sensor and Horizontal sensor

Center-weighted metering: Vertical sensor

Spot metering: Horizontal sensor

---

## TECHNICAL INFORMATION

### 1. BATTERY LIFE

Type of batteries (pcs.)	CR2 (2)		*LR6 (4)
Shooting condition \ Degree	20 /68 ° F	-10 /14 ° F	20 /68 ° F
Regular (No flash used)	Approx. 50 rolls	Approx. 30 rolls	Approx. 75 rolls
Flash photo (Flash 50%)	Approx. 17 rolls	Approx. 10 rolls	Approx. 30 rolls
Bulb exposure time	Approx. 5 hours	Approx. 1 hour	Approx. 12 hours

- \* 24-exposure film, with a brand new set of batteries.
- \* The numbers may change by shooting condition and quality of battery.
- \* \*: AA alkaline battery (LR6) is used with AA-Battery Pack BG-20.

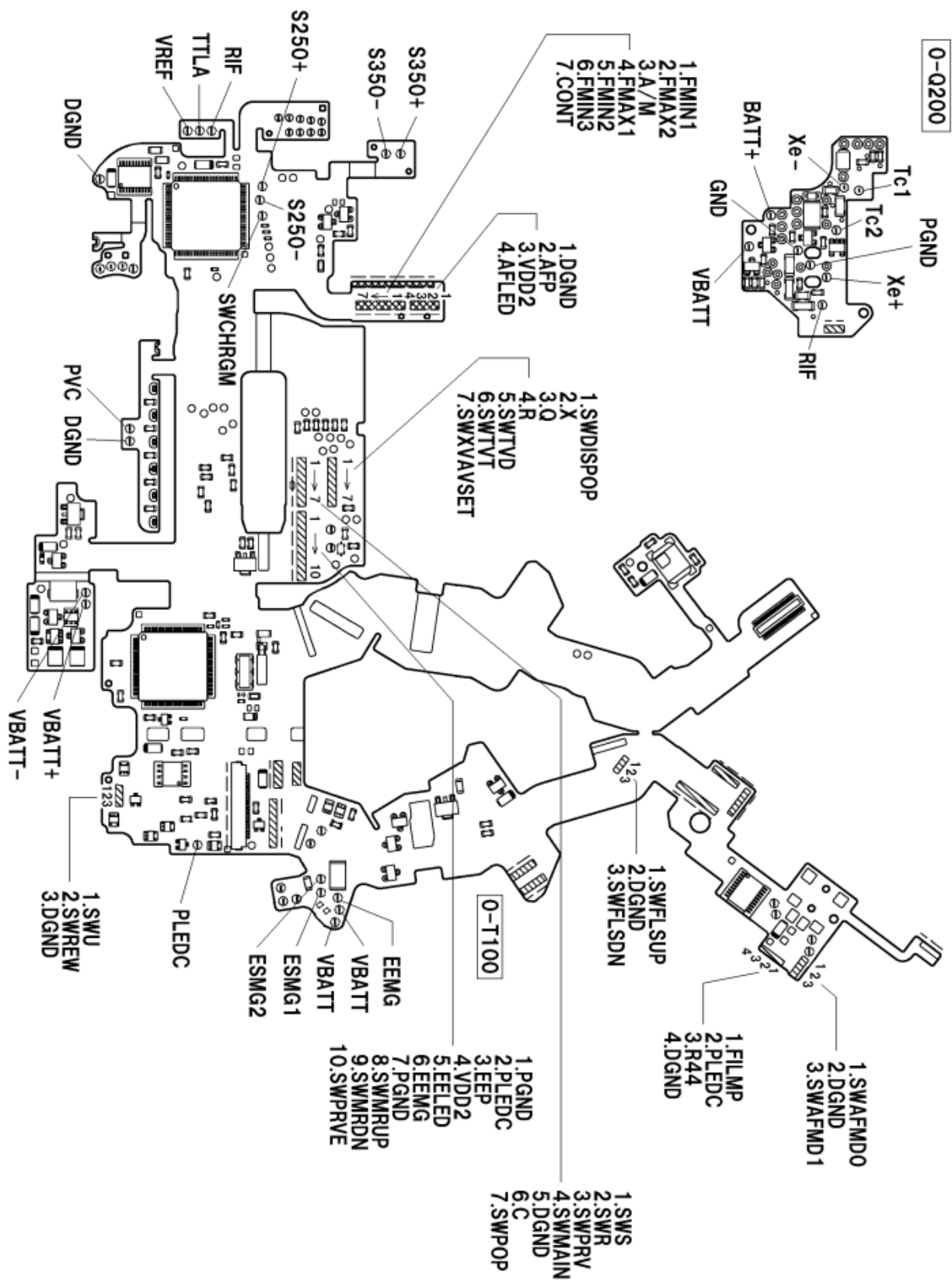
### 2. BATTERY CONSUMPTION CURRENT

Main SW/off (Back cover closed)	Less than 50 $\mu$ A
Main SW/on (light meter off) Lens mounted or not mounted.	Less than 380 $\mu$ A
Light Metering on.	Less than 150mA
Exposure (Bulb)	Less than 350mA
AF motor On (Average)	Less than 600mA
While rewinding	Less than 900mA

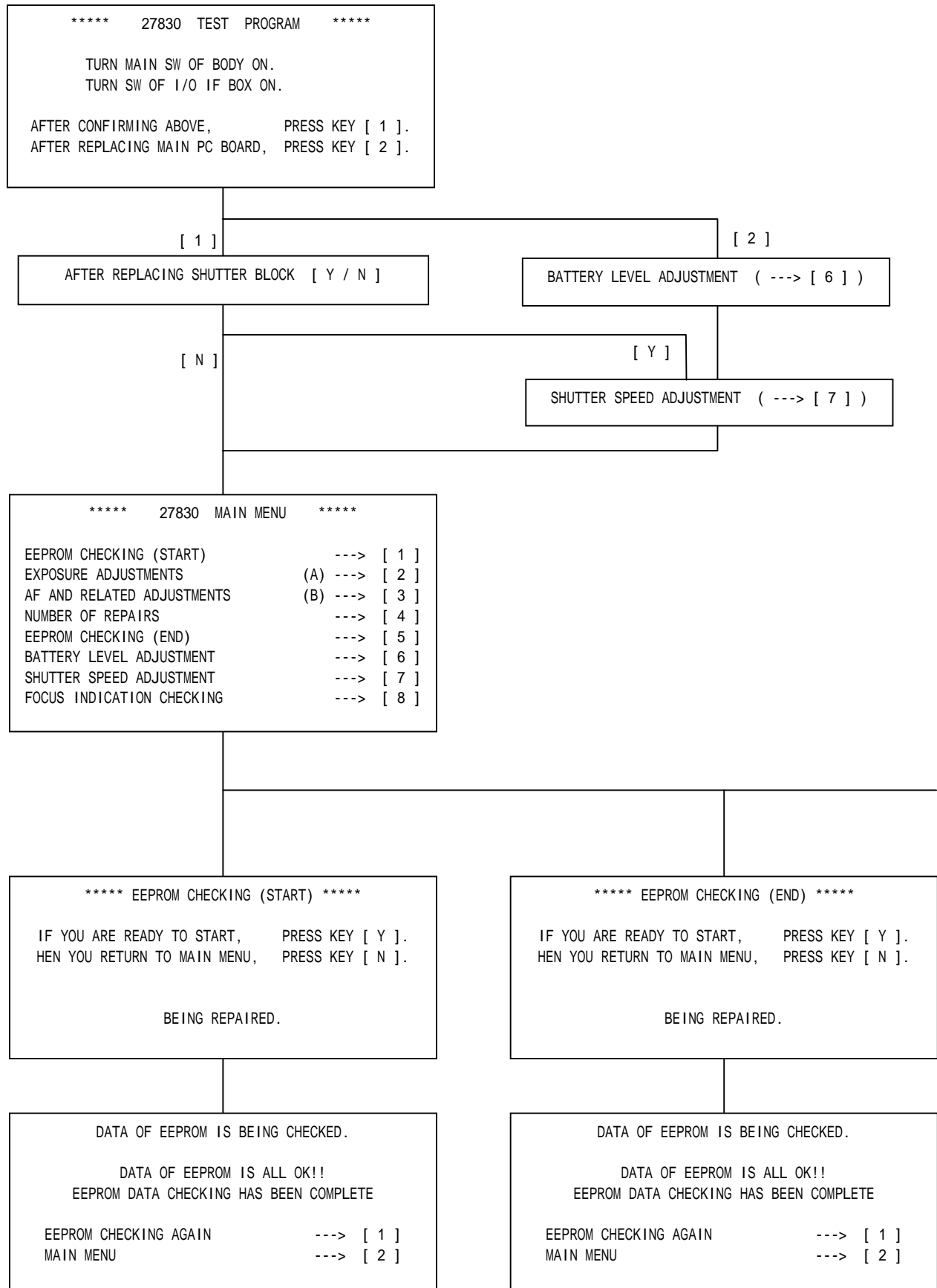
- \* Set regulated DC power supply (capable current at least 3A) at  $5.5 \pm 0.05V$ .



### 3. CIRCUIT DIAGRAM



## 27830 PROGRAM SOFTWARE FLOW CHART



[ 2 ] EXPOSURE ADJUSTMENTS

\*\*\*\*\* SELECT AE TYPE \*\*\*\*\*

TYPE 1 ( LV6,8,10,12,16 ) ---- [ 1 ]  
 TYPE 2 ( LV6,9,12,15 ) ---- [ 2 ]

\*\*\*\*\* 27830 < A GROUP > \*\*\*\*\*

BV ADJUSTMENTS ----> [ 1 ]  
 TTL FLASH QUENCH SIGNAL ADJUSTMENT ----> [ 2 ]  
 MAIN MENU ----> [ 3 ]

\*\*\*\*\* BV ADJUSTMENTS \*\*\*\*\*

MOUNT F-8 SET RING ONTO CAMERA.  
 ATTACH LIGHT MEASURING MASTER LENS  
 FOR LX WITH WIDE OPENED POSITION.  
 KEEP TURNING ON METERING SW OF CAMERA.

SET LIGHT SOURCE TO LV 6.

AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
 WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

KEEP TURNING ON METERING SW OF CAMERA.  
 SET LIGHT SOURCE TO LV 16 (or 15).

AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
 WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

BV ADJUSTMENTS HAVE BEEN COMPLETED.

BV ADJUSTMENTS AGAIN ----> [ 1 ]  
 NEXT OF TTL FLASH QUENCH SIGNAL ADJUSTMENT ----> [ 2 ]  
 A GROUP MENU ----> [ 3 ]

\*\*\*\*\* TTL QUENCH SIGNAL ADJUSTMENT \*\*\*\*\*

MOUNT F-8 SET RING ONTO CAMERA.  
 ATTACH LIGHT MEASURING MASTER LENS  
 FOR LX WITH WIDE OPENED POSITION.

SET LIGHT SOURCE TO LV 8 (or 9).

ATTACH TTL ADJUSTING BACK COVER ONTO CAMERA.

AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
 WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

TTL QUENCH SIGNAL ADJUSTMENT HAS BEEN COMPLETED.

TTL QUENCH SIGNAL ADJUSTMENT AGAIN ----> [ 1 ]  
 A GROUP MENU ----> [ 2 ]  
 B GROUP MENU ----> [ 3 ]



[ 3 ] AF AND RELATED ADJUSTMENTS

\*\*\*\*\* AF ADJUSTMENT MAIN MENU \*\*\*\*\*

CCD POSITION ADJUSTMENT ----> [ 1 ]  
 AGC LEVEL ADJUSTMENTS ----> [ 2 ]  
 MONITOR OFFSET ADJUSTMENT ----> [ 3 ]  
 UNIFORMITY ADJUSTMENT ----> [ 4 ]  
 SATURATED OUTPUT AND TEMP ADJUSTMENT ----> [ 5 ]  
 FOCUS ADJUSTMENT ----> [ 6 ]  
 MAIN MENU ----> [ 0 ]

\*\*\*\*\* CCD POSITION ADJUSTMENT MENU \*\*\*\*\*

CCD POSITION SQUARE ADJUSTMENTS ----> [ 1 ]  
 CCD POSITION CROSS ADJUSTMENTS ----> [ 2 ]  
 CCD POSITION CHECK ----> [ 3 ]  
 CCD FOCUS ADJUSTMENT ----> [ 4 ]  
 TO AF-MAIN-MENU ----> [ 0 ]

[ 1 ] CCD POSITION SQUARE ADJUSTMENTS

\*\*\*\*\* CCD POSITION SQUARE ADJUSTMENTS \*\*\*\*\*

MOUNT CCD ADJUSTING TUBE (SQUARE) ONTO CAMERA.  
 SET LIGHT SOURCE TO LV 12.  
 SET FOCUS-MODE SW OF CAMERA TO MF.

AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
 WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

[ 2 ] CCD POSITION CROSS ADJUSTMENTS

\*\*\*\*\* CCD POSITION CROSS ADJUSTMENTS \*\*\*\*\*

MOUNT CCD ADJUSTING TUBE (CROSS) ONTO CAMERA.  
 SET LIGHT SOURCE TO LV 12.  
 SET FOCUS-MODE SW OF CAMERA TO MF.

AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
 WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

\*\*\*\*\* CCD POSITION ADJUSTMENTS \*\*\*\*\*  
 \*\* SQUARE \*\*

HD	----	*	----	(SCREW 3)
HC	----	*	----	(SCREW 3)
HU	----	*	----	(SCREW 3)
VR1	----	*	----	(SCREW 1)
VC	----	*	----	(SCREW 1)
VR1	----	*	----	(SCREW 1)

ADJUST WITH TOLERANCE.

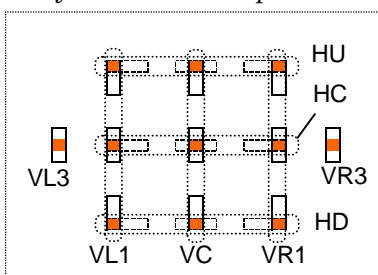
\*\*\*\*\* CCD POSITION ADJUSTMENTS \*\*\*\*\*  
 \*\* CROSS \*\*

HC	----	*	----	(SCREW 1)
VC	----	*	----	(SCREW 1)

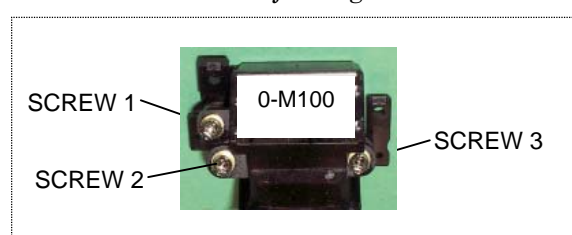
JUST A MOMENT

If you push Z,  
 this adjustment ends.

Symbols of CCD position



Position of Adjusting screws



\*\*\*\*\* MAIN MENU \*\*\*\*\*

\*\*\*\*\* < B GROUP > \*\*\*\*\*

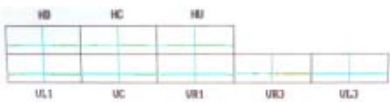
\*\*\*\*\* CCD POSITION \*\*\*\*\*

[ 3 ] CCD POSITION CHECK

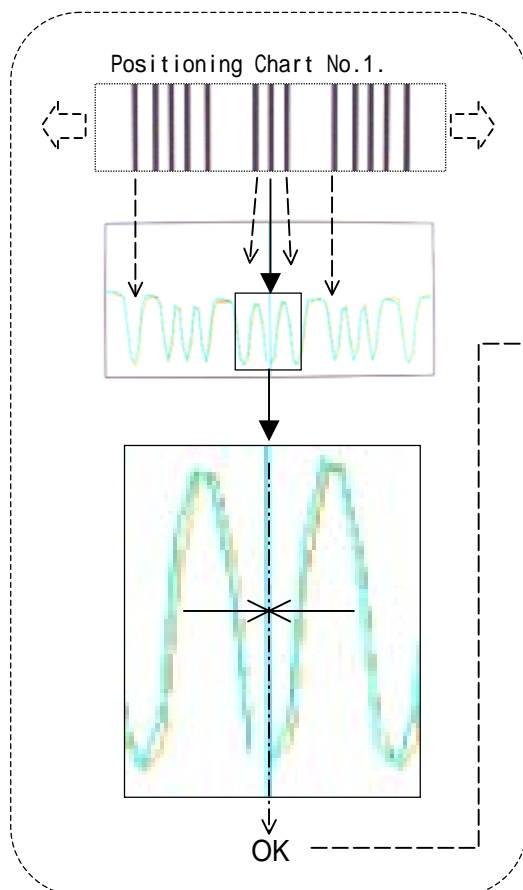
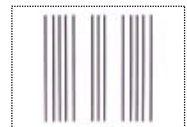
[ 4 ] CCD FOCUS ADJUSTMENT

\*\*\*\*\* CCD POSITION ADJUSTMENT \*\*\*\*\*  
\*\* POSITION CHECK \*\*  
MOUNT F ZOOM LENS 35-80 ONTO CAMERA.  
SET THE LENS TO MIN. DISTANCE (0.4M)  
AND TELE END (80MM).  
SET LIGHT SOURCE TO LV 12.  
SET FOCUS-MODE SW OF CAMERA TO MF.  
  
AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

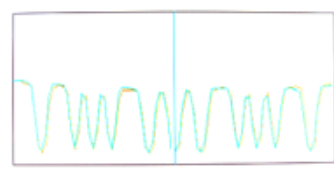
\*\*\*\*\* CCD POSITION ADJUSTMENT \*\*\*\*\*  
\*\* CCD FOCUS ADJUSTMENT \*\*  
  
SET 2M CHART NO1.\*  
SET 2M MASTER LENS.  
SET FOCUS-MODE SW OF CAMERA TO MF.  
SET FOCUS-POINT-MODE SW TO AUTO.  
  
AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

\*\*\*\*\* CCD POSITION ADJUSTMENT \*\*\*\*\*  
\*\* POSITION CHECK \*\*  
  


\*: AF CHART NO1



SET A WAVE-LINE CENTER TO A GREEN LINE.



POSITION ADJUSTMENT OK. -> [ 1 ]  
TO CCD POSITION MENU -> [ Z ]

\*\*\*\*\* CCD FOCUS ADJUSTMENTS \*\*\*\*\*  
  
ADJUSTED WITHIN TOLERANCE.  
FOCUS DATA= \*\*  
  
= \*  
=

[ 2 ] AGC LEVEL ADJUSTMENTS

[ 3 ] MONITOR OFFSET ADJUSTMENT

[ 4 ] UNIFORMITY ADJUSTMENT

\*\*\*\*\* AGC LEVEL ADJUSTMENT \*\*\*\*\*

MOUNT FOCUS MASTER LENS ONTO CAMERA.  
SET LIGHT SOURCE TO LV 12.  
SET FOCUS-MODE SW OF CAMERA TO MF.  
SET FOCUS-POINT-MODE SW TO AUTO.

AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

[ 5 ]  
SATURATED OUTPUT  
AND TEMP ADJUSTMENT

\*\*\*\*\* MONITOR OFFSET ADJUSTMENT \*\*\*\*\*

MOUNT FOCUS MASTER LENS ONTO CAMERA.  
SET LIGHT SOURCE TO LV 12.  
SET FOCUS-MODE SW OF CAMERA TO MF.  
SET FOCUS-POINT-MODE SW TO AUTO.

AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

\*\*\*\*\* UNIFORMITY ADJUSTMENTS \*\*\*\*\*

MOUNT FA MACRO 50mm F2.8 ONTO CAMERA.  
SET LIGHT SOURCE TO LV 12.  
SET FOCUS-MODE SW OF CAMERA TO MF.  
SET FOCUS-POINT-MODE SW TO AUTO.

AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

\*\*\*\*\* SATURATED OUTPUT AND TEMP ADJUSTMENT \*\*\*\*\*

SATURATED OUTPUTDJUSTMENT --- [ 1 ]  
TEMP ADJUSTMENT --- [ 2 ]  
TO AF-MAIN-MENU --- [ 0 ]

\*\*\*\*\* SATURATED OUTPUT ADJUSTMENTS \*\*\*\*\*

MOUNT FOCUS MASTER LENS ONTO CAMERA.  
SET LIGHT SOURCE TO LV 12.  
SET FOCUS-MODE SW OF CAMERA TO MF.  
SET FOCUS-POINT-MODE SW TO AUTO.

AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

\*\*\*\*\* TEMP ADJUSTMENT \*\*\*\*\*

CHECK ROOM TEMPERATURE  
SET FOCUS-MODE SW OF CAMERA TO MF.

AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

\*\*\*\*\* TEMP ADJUSTMENT \*\*\*\*\*

<C> ---> PRESS KEY [ 1 ]  
<F> ---> PRESS KEY [ 2 ]

1

INPUT ROOM TEMPERATURE <C> ? \*\*



[ 6 ] FOCUS ADJUSTMENT

\*\*\*\*\* FOCUS ADJUSTMENT \*\*\*\*\*

HORIZONTAL POSITION AND ADJUSTMENT --- [ 1 ]

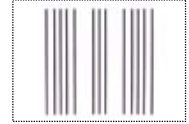
HORIZONTAL ADJUSTMENT --- [ 2 ]

VERTICAL POSITION AND ADJUSTMENT --- [ 3 ]

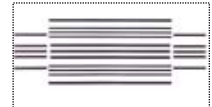
VERTICAL ADJUSTMENT --- [ 4 ]

AF-MAIN-MENU --- [ 0 ]

AF CHART NO1



AF CHART NO2



[ 1 ]  
[ 2 ]

[ 3 ]  
[ 4 ]

\*\*\*\*\* FOCUS ADJUSTMENT \*\*\*\*\*

SET 2M AF CHART NO1.  
SET 2M MASTER LENS.  
SET FOCUS-MODE SW OF CAMERA TO MF.  
SET FOCUS-POINT-MODE SW TO AUTO.

AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

\*\*\*\*\* FOCUS ADJUSTMENT \*\*\*\*\*

SET 2M AF CHART NO2.  
SET 2M MASTER LENS.  
SET FOCUS-MODE SW OF CAMERA TO MF.  
SET FOCUS-POINT-MODE SW TO AUTO.

AFTER CONFIRMING ABOVE, PRESS KEY [ Y ].  
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [ N ].

[ 1 ]

[ 3 ]

SET A WAVE-LINE CENTER TO A GREEN LINE.

Positioning Chart No.1.

POSITION ADJUSTMENT OK. -> [ 1 ]  
FOCUS ADJUSTMENT MENU -> [ Z ]

SET A WAVE-LINE CENTER TO A GREEN LINE.

Positioning Chart No.2.

POSITION ADJUSTMENT OK. -> [ 1 ]  
FOCUS ADJUSTMENT MENU -> [ Z ]

[ 1 ], [ 2 ]

[ 3 ], [ 4 ]

\*\*\*\*\* FOCUS ADJUSTMENT \*\*\*\*\*

JUST A MOMENT

COUNTER ->9

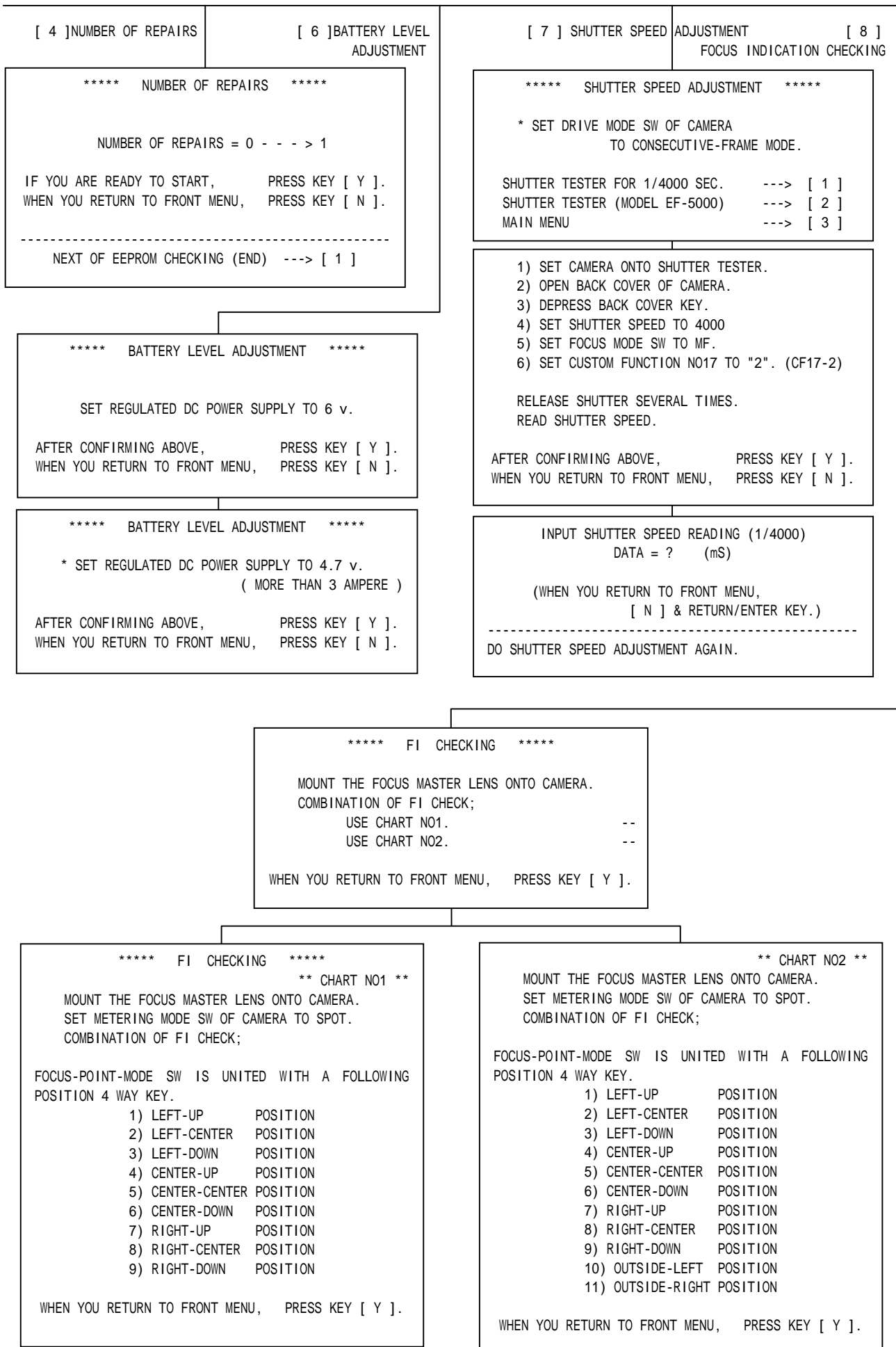
OK : FOCUS ADJUSTMENT

\*\*\*\*\* FOCUS ADJUSTMENT \*\*\*\*\*

JUST A MOMENT

COUNTER ->9

OK : FOCUS ADJUSTMENT



## JIGS, TOOLS AND TESTERS

Order No.

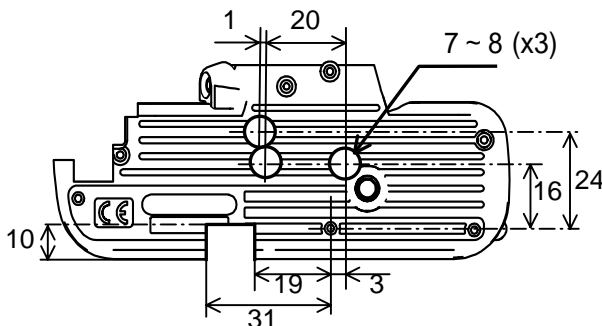
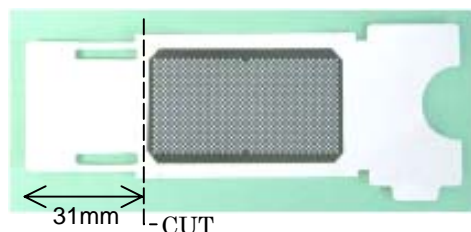
◆ Exclusive use for 27830

- |   |               |
|---|---------------|
| 1. Programmed software for 27830 SLR soft for PC/AT (SF)        | No.95901-P276 |
| 2. 1 <sup>st</sup> Mirror angle (47.5°) adjusting jig for 27830 | -J136         |
| 3. Mirror angle adjusting jig for 27830                         | -J137         |
| 4. AF positioning jig (Square) for 27830                        | -M521         |
| 5. 2m AF chart for 27830 (2 types: Vertical and Horizontal)     |               |
| 6. DC power adaptor for 27830 (Hand made jig / Use the BG-20)   |               |

[Procedure of making] Solder the power codes for the regulated DC power supply to the battery contacts (Y22, Y23) of BG-20. Unsolder a black lead wire (SW-GRIP).

7. Temporary bottom cover (Hand made: Refer to the following figure. The mount lock button should be assembled.)
8. TTL adjusting plate (Hand made / Use 26900-A221 (pressure plate cover))

[Procedure of making] Adhere LX newer 1<sup>st</sup> shutter curtain at the position of aperture on A221 and cut it 31mm as shown in the figure below.



◆ Others (1)

- |   |               |
|---|---------------|
| 1. AF positioning jig (Cross) for 27250                                     | No.95901-M514 |
| 2. I/F buffer cable for 27250   | -M515         |
| 3. Cable switch CS-205 (For release checking when removing cosmetic parts.) |               |

◆ Others (2) [Common in use for other 35mm AF SLR]

- |  |       |
|--|-------|
| 1. Personal computer (PC/AT)   |       |
| 2. Color display   |       |
| 3. Serial interface (SIFI-269) and Interface buffer (IFB-269)                    |       |
| Camera multi adapter A   | -M127 |
| I/F buffer cable for 27250   | -M515 |
| Camera multi adapter II  | -X100 |
| I/F buffer cable for 27250   | -X003 |
| 4. Hexagonal driver 1.5mm (HD-M1.5)  | -K072 |
| 5. Shutter tester (measurable 1/4000ms)  |       |
| 6. Collimator chart with 3 lines (OCRC-259, for AF checking)                     | -M021 |
| 7. AE master lens (ML-245)   | -N028 |
| 8. Diaphragm set ring F8 (KA-0-1A)   | -N026 |
| 9. Focus master lens for 35mm (KML-01)   | -N017 |
| 10. AE master lens for LX (LML-240)  | -N027 |
| 11. Dial gauge comparator (PH-2)   | -N001 |
| 12. Block gauge for 35mm (229N-A01-A2)   | -N004 |
| 13. Mount block (1620-A) (substitution of 23600N-A01 Mount block/ spacer)        | -N047 |
| 14. Mount block spacer (23600N-A01,A104-A-A)                                     |       |
| 15. Mount spacer holder (23600N-A01,A104-A-B)                                    | -N007 |
| 16. 1000mm Collimator  |       |
| 17. Mirror positioning scope   | -N049 |
| 18. Focus master lens for 2m(ML-259)   | -N024 |
| 19. Pen light (or similar one/ for adjusting position of light receiving sensor) |       |
| 20. Regulated DC power supply (capable current at least 3A)                      |       |
| 21. Circuit tester   |       |