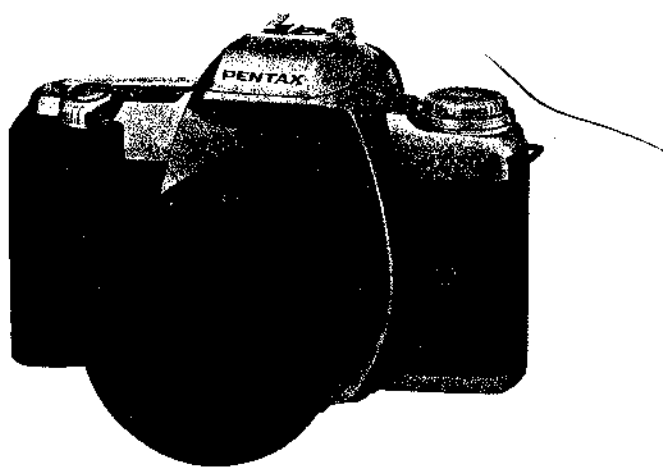
PENTAX®

Service Manual

ENGLISH

MZ-50 QUARTZ DATE



PRODUCT No. 27330 MZ-50 QUARTZ DATE
PRODUCT No. 27332 MZ-50 QUARTZ DATE
PRODUCT No. 27334 ZX-50
PRODUCT No. 27336 MZ-50
PRODUCT No. 27338 ZX-50 QUARTZ DATE

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CAMERA SERVICE MANUAL

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【 TABLE OF CONTENTS 】

[SPECIFICATIONS]

Type — TTL autofocus, auto-exposure 35mm SLR with built-in TTL auto flash (RTF)

Format — 24x36mm

Usable Film — 35mm perforated cartridge film, DX-coded film with ISO 25-5000; non-DX coded films with ISO 6-6400

Exposure Modes — Picture Mode (Green Operation Mode, Portrait Program Mode, Landscape Program Mode, Close-up Program mode, Action Program Mode), Aperture-Priority AE Mode, Shutter-Priority AE Mode, Metered Manual Mode, Bulb Mode, TTL Flash Mode

Shutter — Electronically controlled vertical-run focal-plane shutter, Electromagnetic release, Speed range (1)Auto 1/2000-30 sec.(stepless),(2)Manual 1/2000-30 sec.(3)Bulb, Shutter lock by setting Main switch in OFF position.

Lens Mount — Pentax K_{AF} bayonet mount (K-mount with AF coupler, lens information contacts)

Compatible Lens — Pentax K_{AF2}, K_{AF}, and K_A lenses are usable. Autofocus is possible using AF Adapter with K_A-mount lenses. With the K-mount lens attached, only the maximum aperture can be used.

Autofocus System — TTL phase-matching autofocus system, AF operational brightness range: EV0 to 18(at ISO 100 with f/1.4 lens), Focus lock available using shutter release button, Focus Mode: AF (predictive AF provided), Manual [MF]

Viewfinder — Pentamirror finder, Natural-Bright-Matte focusing screen, Field of view:92%, Magnification 0.77(with 50mm lens at ∞), Diopter: -1 diopter, Autofocus frame

Viewfinder Indication — Focus Information: in-focus (Green lamp [○] is lit), front or back focus signals and unable-to-focus indicator (Green lamp blinks), Shutter speed indication, Aperture indication, Flash ready indication [ϟ] is lit, Bar graph(exposure compensation),Over or Under exposure indication in Metered Manual Mode, [▨] exposure compensation indication,

External LCD panel Indication — [M] = Metered Manual Mode, [ ] = Green Operation Mode, [ ] = Portrait Program Mode, [ ] = Landscape Program Mode, [ ] = Close-up Program Mode, [ ] = Action Program Mode, Shutter speed indication, Aperture indication, [ϟ] = Built-in flash ready indication, [ϟ] = blinking slowly flash recommended warning, [ϟ] = blinks rapidly Inappropriate lens warning, [ ] = Red-eye reduction flash mode, [ ] = Automatic flash function, ISO indication, [⊙____] = Film status information, [ ] = Battery exhaustion warning, Exposure counter, [ ] = PCV signal indication, [▨] = Exposure compensation, Exposure compensation value

Self-timer — Electronically-controlled type with delay time of 12 sec. Start by depressing of shutter release button, Operation confirmation : By PCV beep tone Cancelable after operation

Mirror — Instant-return mirror with AF secondary mirror

Film Loading — Film advances automatically to 1st frame after back cover is closed, Film information window is provided

Film Wind & Rewind — Auto wind/rewind by built-in motor, Consecutive or Single advance mode, Approx.2 frames/sec.(consecutive mode), Auto rewinding starts at end of roll, Film rewind/completion of rewinding is displayed on the LCD panel, Mid-roll rewind button will rewind film in mid-roll

Exposure Meter — TTL multi(2)-segment metering, Metering range from EV1 to EV17.5 at ISO100 with 50mm f/1.4 lens

Exposure Compensation: ± 3EV in 0.5EV step increments

Flash — Series-control, Retractable TTL Auto Flash (RTF), Guide number:11 (ISO100/m), Illumination angle covers 28mm lens angle of view, Flash-sync-speed in the range from 1/100 sec. to a slower speed, Day-light-sync flash, Slow-speed-sync flash, Contrast-control-sync flash (ISO range = 25 - 400), Automatic flash function, Red-eye reduction flash function

Flash sync — Hot shoe with X-contact with couples with Pentax dedicated auto flashes, ISO range = 25-800

Power Source — Two 3V lithium batteries (CR2 or equivalent)

Battery Exhaustion Warning — Battery exhaustion symbol [ ] is lit (blinking when the shutter is locked; no indication on the right-hand edge of the viewfinder)

Dimension and Weight 135.0mm(W)x90.5mm(H)x62.5mm(D) (5.3"x3.6"x2.5") 345g(12.2 oz) body only without batteries

Date model : Crystal quartz controlled LCD with digital clock, auto calendar up to 2019, 7 segment, 6-digit LCD display

Power source — 3V lithium battery (CR2025 or equivalent)

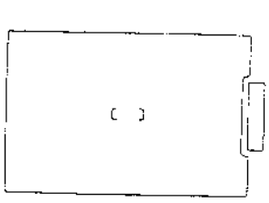
Number of prints — Approx. 5000

Dimension and Weight 135. 00mm (W) x 90.5mm (H) x 62.5mm (D) (5.3" x 3.6" x 2.5") 360g (12.6oz) body only without batteries

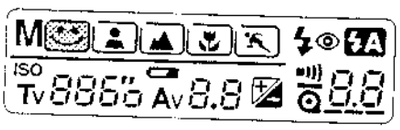
Supplied Accessories — Hot Shoe Cover F_C, Release Socket Cap F, Camera Strap F_G, Eye Cup F_H, Finder Cap

[LCD AND FINDER INDICATIONS]

■ Finder indications



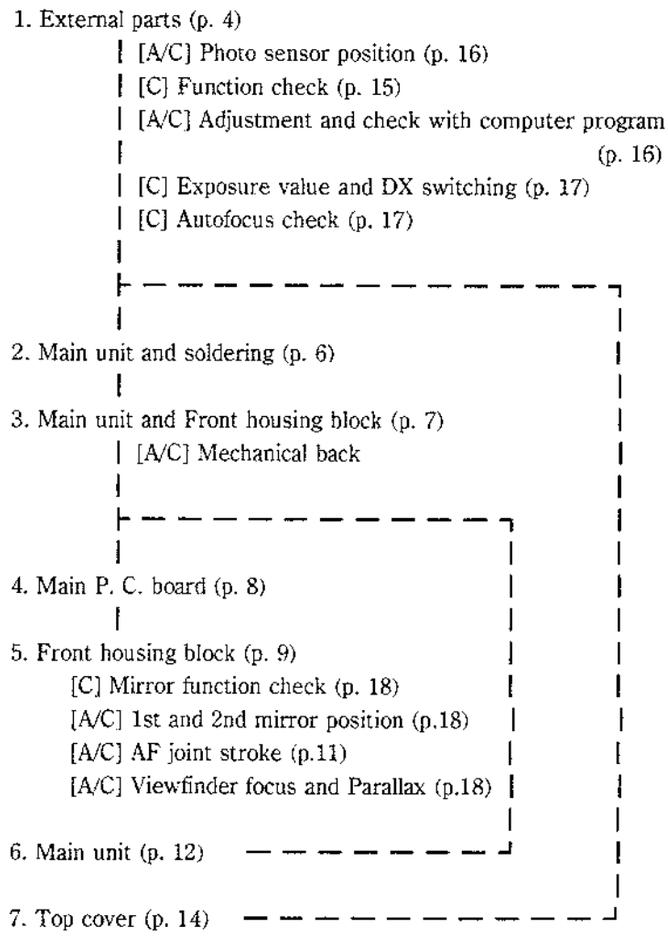
■ LCD panel indications



【 OUTLINE OF DISASSEMBLY AND ASSEMBLY 】

Outline:
Disassembly and assembly procedures for MZ-50 are almost the same as MZ-10 (Prod. No. 27260). And AF adjustment with the computer program is the same manner as Z-70P (Prod. No. 27230). Follow the procedures of disassembly and assembly concerning the notice in the section described. When 【 Adj/Confirmation 】 or 【 Confirmation 】 with "page ..." is presented in the procedure of assembly, refer to the subsection of "Adjustment and Confirmation" (page 15 to 18).

Disassembly and assembly outline chart is as follows:
(Symbols ··· [A/C]: Adjustment and confirmation, [C]: Confirmation)



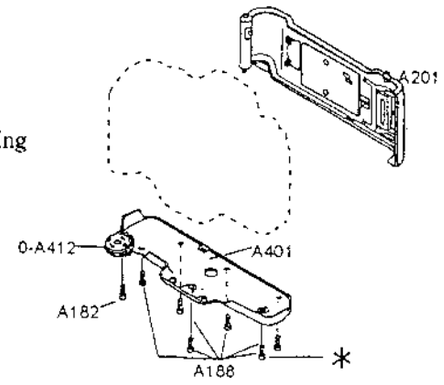
1. EXTERNAL PARTS

【 Note 】 Use an anti-static working mat and the wrist strap.
Remove Hot shoe cover Fc, Eye cap FH and Release socket cap F.

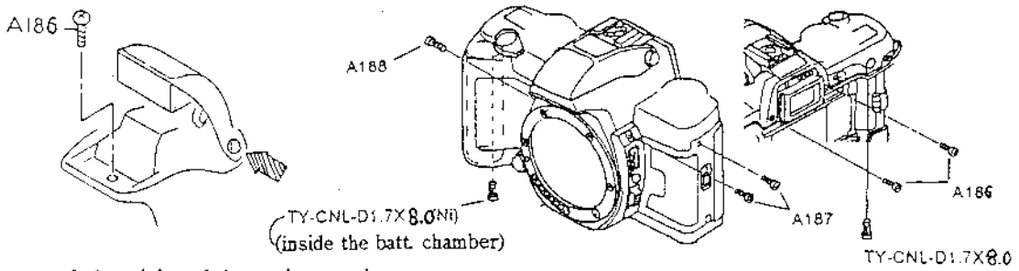
【 Disassembly procedure 】

1) Bottom cover (A401)
Open the Battery cover.
【 Note 】 If this screw (*) is black , refer to "Concerning MZ-50 Japan model (Prod. No.27332)" on page 19.

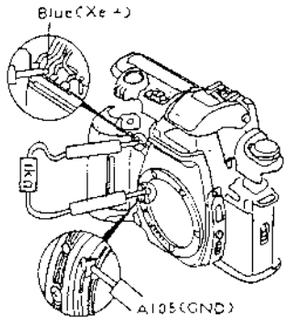
2) Back cover (A201)



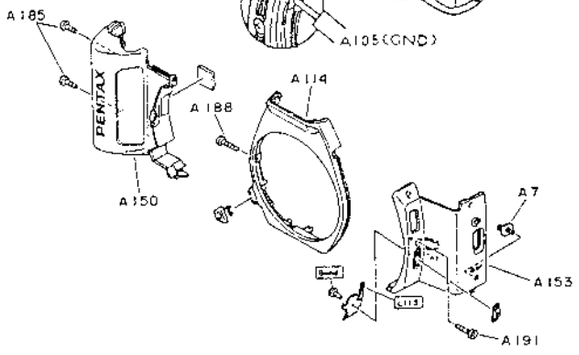
3) 8 retainer screws for Top cover



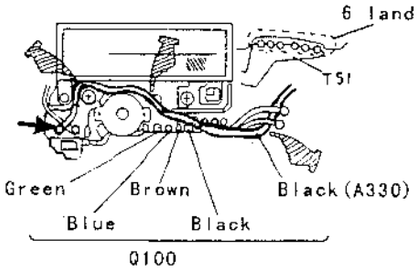
4) Discharge of electricity of the main capacitor
Lift the top cover from the body, and then discharge electricity of the main capacitor with a 100-1 k ohm resistor.
- Land of the blue wire (Xe+) on the flash P.C. board
- A105 (Mount spring) ··· GND



5) Front covering, left (A153) ··· A191 (...screw)
6) Front cover (A114) ··· A188
7) Grip (A150) ··· A185 x2



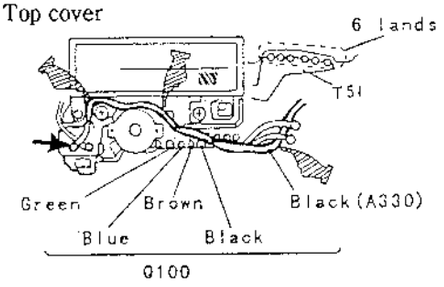
8) Unsoldering 5 lead wires and 6 lands from Top cover
9) Top cover assy. (0-A301)



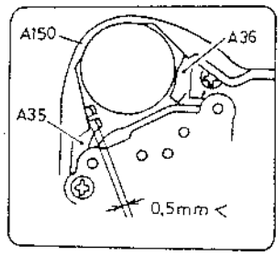
【 Assembly procedure 】

1) 【 Adj/Confirmation 】 Photo sensor position (p. 16)

2) Soldering 5 lead wires and 6 lands from Top cover
Arrange the black lead wire (A330).

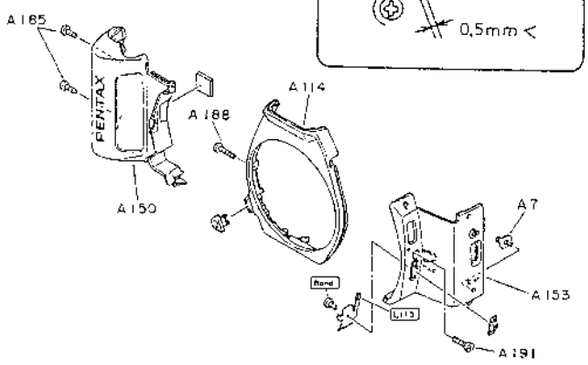


2) Grip (A150)
A185 (size: 1.7x3.5) x2
【 Note 】 A35 (Batt. contact piece) and A36 (Batt. cover SW...) should not project over the battery chamber as shown in the diagram right.

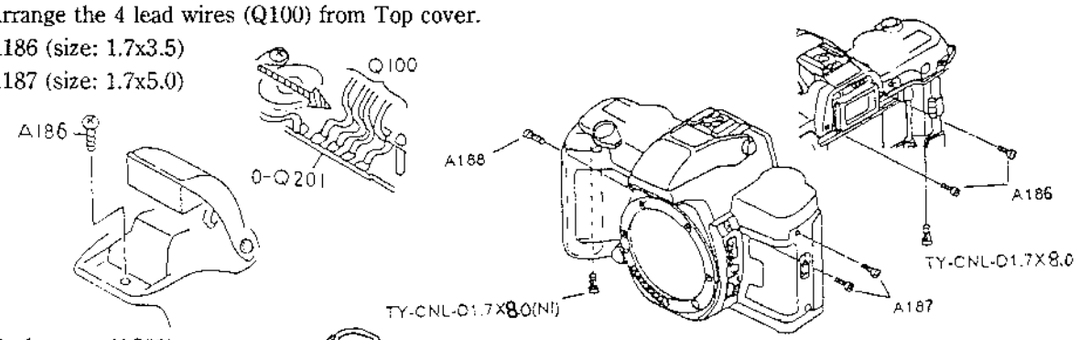


3) Front cover (A114)
A188 (size: 1.7x5.0)

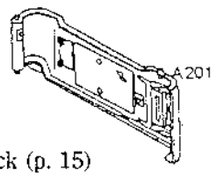
4) Front covering, left (A153)
Set both the body and Focus mode switch with the AF- position.
A191 (size: 1.7x7.0), A7 (Rewind SW)



5) Top cover assy. (0- A301)
Arrange the 4 lead wires (Q100) from Top cover.
A186 (size: 1.7x3.5)
A187 (size: 1.7x5.0)



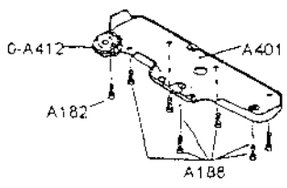
6) Back cover (A201)



7) 【 Confirmation 】 Function check (p. 15)

8) 【 Adj/Confirmation 】 Adjustment and check with the computer program (p. 16)

9) Bottom cover (A401), Battery cover (0- A412)
A182 (size: CNL- D1.7x3.0)



10) 【 Confirmation 】 Exposure value and DX switching (p. 17)

11) 【 Confirmation 】 Autofocus check (p. 17)

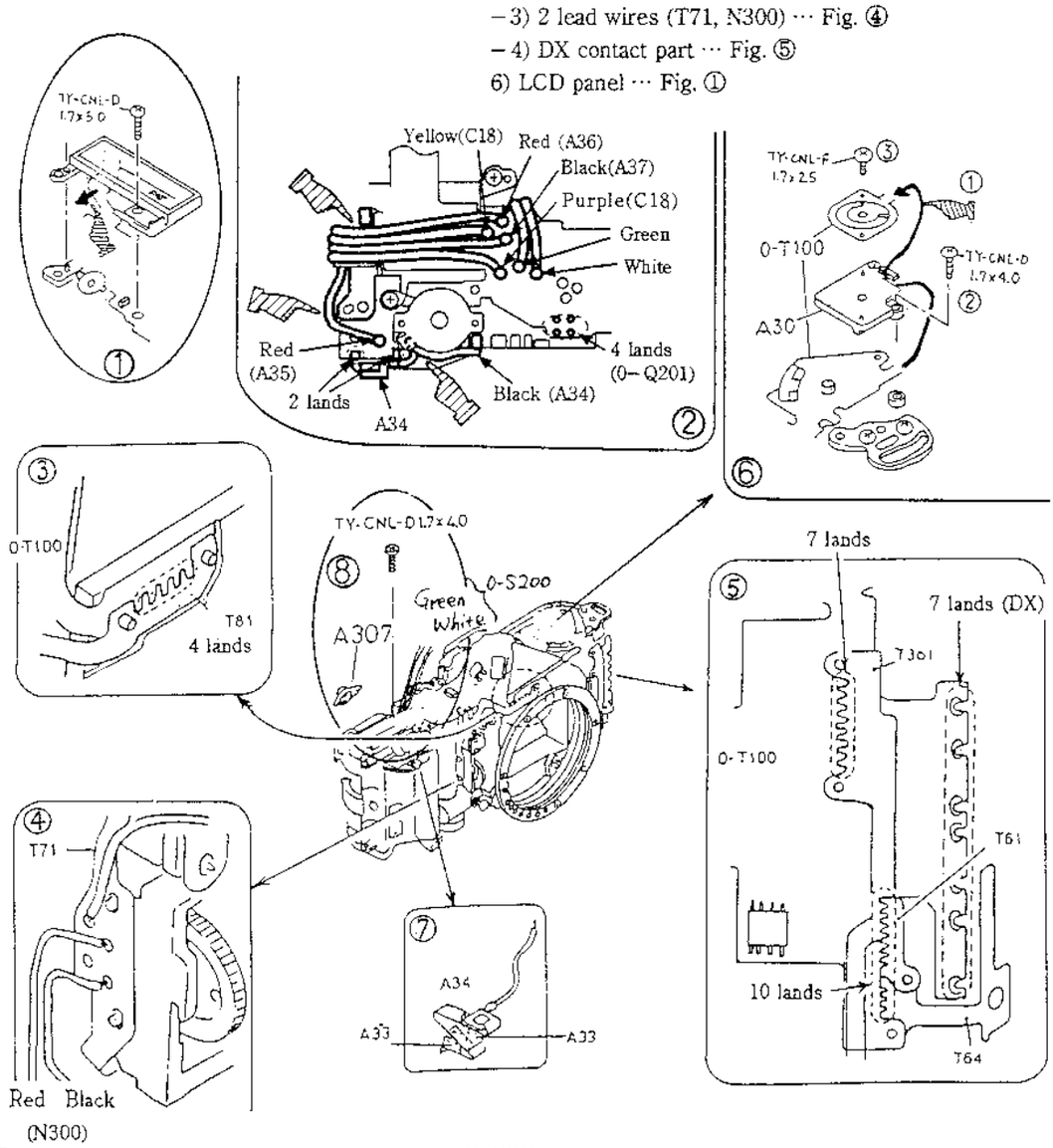
Refer to the diagrams below.

【 Disassembly procedure 】

1) Removing LCD panel ··· Fig. ①
2) Unsoldering on Main P. C. board
－1) Around Release SW ··· Fig. ②
－2) 4 lands (T81) ··· Fig. ③
－3) 2 lead wires (T71－N300) ··· Fig. ④
－4) DX contact part (24 lands) ··· Fig. ⑤
3) Mode SW base plate (A30) ··· Fig. ⑥
4) Battery contact piece (A34), A33 x2 ··· Fig. ⑦
5) Release SW base plate (O205) ··· Fig. ⑧
Remove TY－CNL－D1.7x4.0, lift up O205.
Exposure compensation SW (A307)
6) Eyepiece frame (M301) ··· 2 screws

【 Assembly procedure 】

1) Eyepiece frame (M301) ··· TY－CNM1.7x4.5 x2
2) Release SW base plate (O205) ··· Fig. ⑧
－1) Arrange 2 lead wires (White, Green).
－2) Exposure compensation SW (A307)
－3) TY－CNL－D1.7x4.0
3) Battery contact piece (A34), A33 x2 ··· Fig. ⑦
4) Mode SW base plate (A30) ··· Fig. ⑥
Install the mode SW land part in numerical order of the diagram.
5) Soldering on Main P. C. board
－1) Around Release SW ··· Fig. ②
－2) 4 lands (T81) ··· Fig. ③
－3) 2 lead wires (T71, N300) ··· Fig. ④
－4) DX contact part ··· Fig. ⑤
6) LCD panel ··· Fig. ①



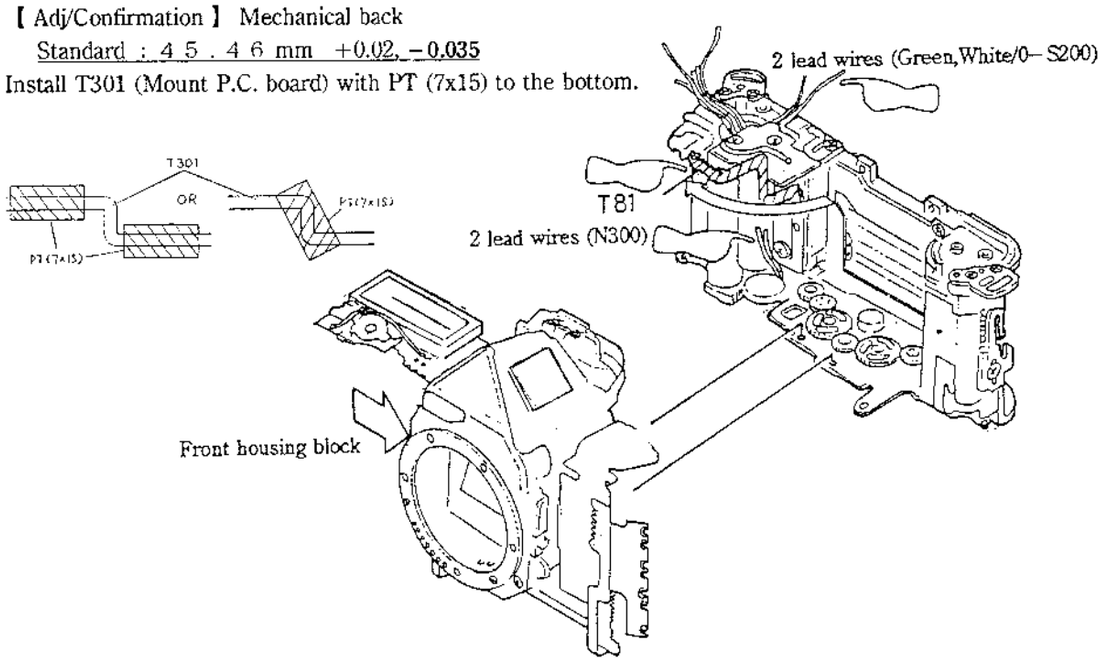
3. MAIN UNIT AND FRONT HOUSING BLOCK

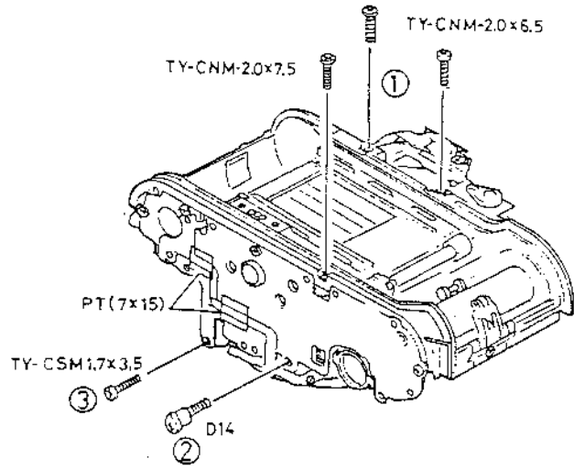
【 Disassembly procedure 】

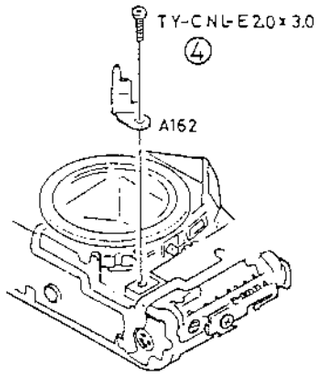
1) Peel off PT(7x15) on the bottom.
   (PT: polyester tape)
2) Remove 6 screws.
   A162 (Reinforced plate)
3) Remove the Front housing block the main unit with
   paying attention of the flexible boards.

【 Assembly procedure 】

1) Set both the Shutter block and Front housing block at
   the charge condition.
2) Arrange the lead wires and T81 as shown in the diagram below.
3) Set the Front housing block to the body.
4) Pushing the Front housing block toward the back cover key, tighten 6 screws
   in numerical order (① , ② , ③ , ④) as shown in the diagrams below.
5) 【 Adj/Confirmation 】 Mechanical back
   Standard : 4 5 . 4 6 mm +0.02, −0.035
6) Install T301 (Mount P.C. board) with PT (7x15) to the bottom.







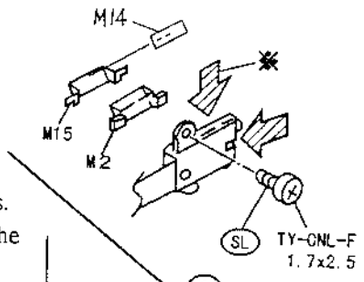
4. MAIN P. C. BOARD (0-T100)

【 Disassembly procedure 】

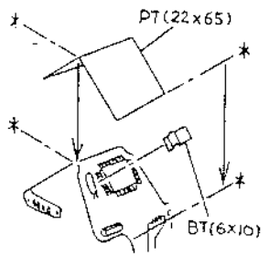
1) Peel off PT(22x65).
2) Unsolder lead wires and lands as shown in the diagrams (④ , ⑤ , ⑥) below.
3) Photo sensor part ··· fig. ③
4) Release socket part ··· fig. ②
5) Finder LCD part ··· fig. ①

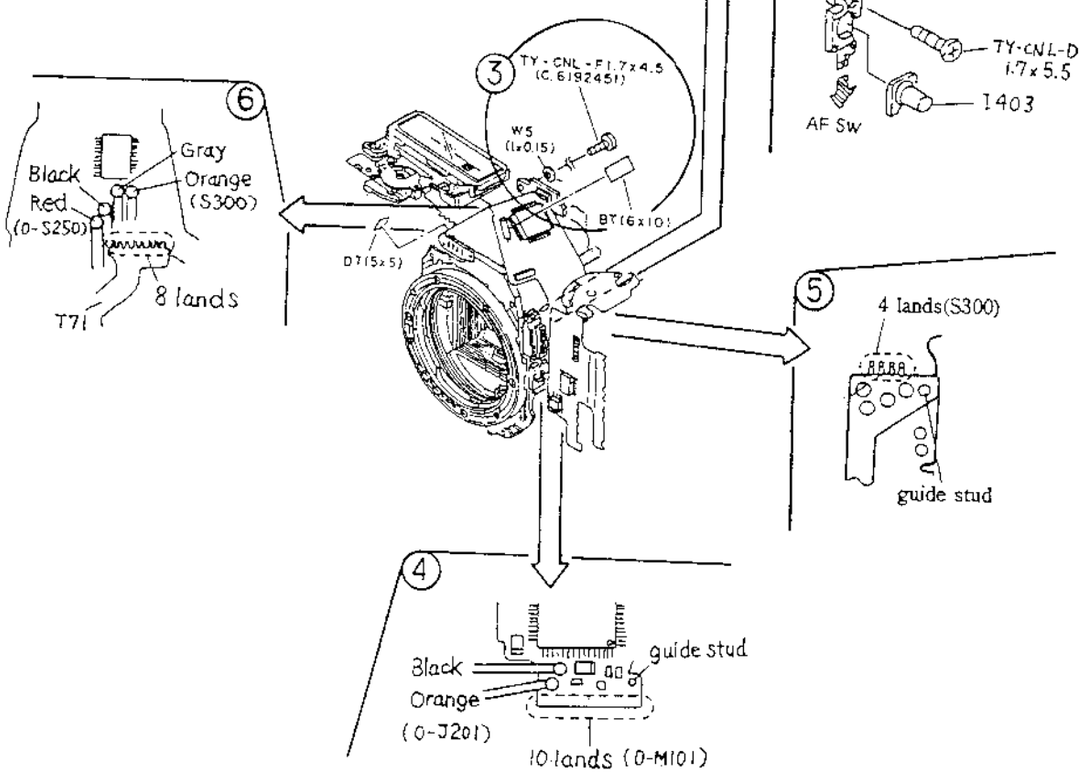
【 Assembly procedure 】

1) Install M14 (Light seal tape B) to M15.
2) Install the Finder LCD as shown in the diagram right. (※ : difference from MZ-5)



3) Install 0-T100 in numerical order of diagrams.
4) Install BT(6x10) and PT(22x65) as shown in the diagram below.
(BT: black tape)

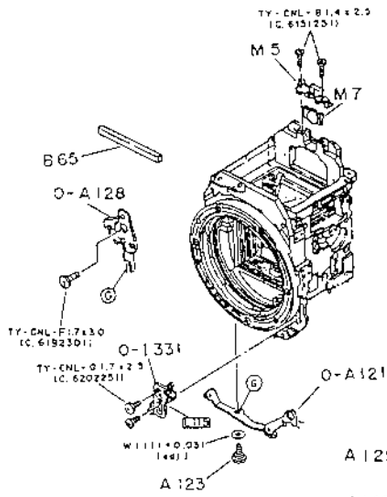




5. FRONT HOUSING BLOCK

【 Disassembly procedure 】

1) L2 (Fresnel lens), M22, M21, M4
2) Peel off M11 (Dust prevention seal). M9 ··· 2 screws
3) 0– L101 (Penta mirror assy.)
   Remove silicone by using a cutter.
4) 0– M101 (AF module)
   First remove the flexible board from two positioning studs.
5) S300 (AF motor block) ··· 2 screws
6) 0– J201 (TTL flash photo sensor assy.) ··· 1 screw
7) G100 (Diaphragm control block) ··· 4 screws
   Unsolder the black lead wire on the land.
8) M41 (Finder mask) ··· 1 screw
9) 0– B52 (Mirror seat assy.)
10) A104 (Mount ring)
11) Front housing assy. and related parts



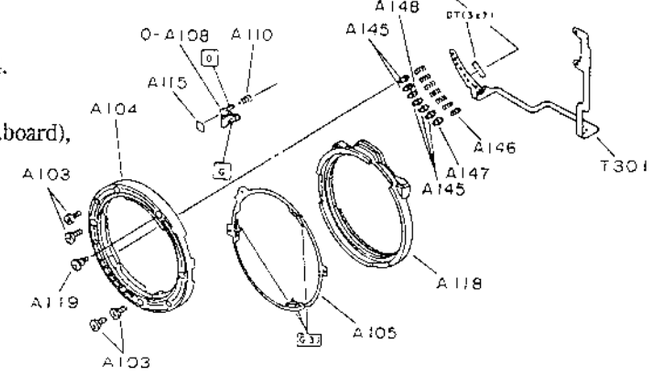
【 Assembly procedure 】

5– 1. Front housing assy. and related parts

1) B65 (Mirror shock absorber)
2) M5, M7 (Condenser lens)
3) 0– I331 (Focus mode SW assy.) ··· 2 screws
4) 0– A121 (Joint lever assy.),
   W11 (0.03 /adj.), A123 (...lever retainer screw)
5) 0– A128 ··· apply G126, TY– CNL– F1.7x3.0

5– 2. A104 (Mount ring)

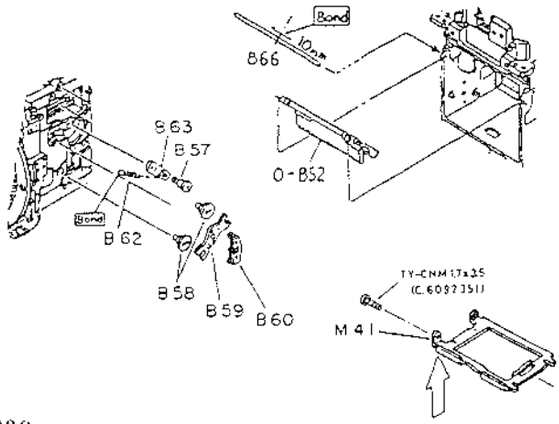
1) Install Connector pins and springs into A104.
   (A145 x5, A147, A148, A146 x7)
2) A129·T301 (Connector pin plate, Mount P.C.board),
   TY– CNL– F1.7x3.0
3) A118 (Light seal ring)
4) A105 (Mount spring) ··· apply G31
5) A110 (...guide plate spring),
   0– A108 (...guide plate assy.) ··· apply G134
6) A104, A119 (...retainer screw B), A103 x4



5– 3. 0– B52 (Mirror seat assy.)

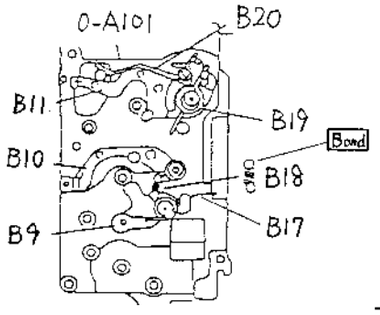
1) Install the 2nd mirror shaft of 0– B52 first,
   and then install 0– B52.
2) Install B66 in to the housing and 0– B52 with
   equalizing both sides of B66.
3) Apply a bond at the middle of B66 to fix 0– B52.
4) B58 x2 (Mirror seat receptacle)
5) B59 (...retainer plate), B60 (Plate retainer)
6) B63, B57 (...actuating lever, ...lever shaft)
7) B62 (2nd mirror actuating spring), apply a bond
   as shown in the diagram right.

5– 4. Install M41 (Finder mask) as
   shown in the diagram right.

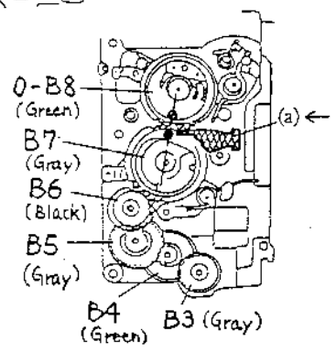


5– 5. G100 (Diaphragm control block)

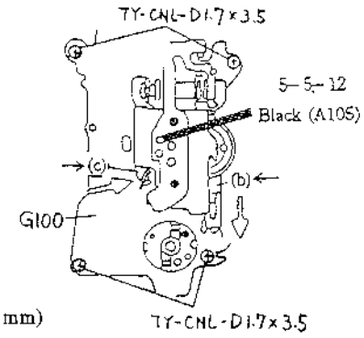
1) Apply G126 to 9 shafts of the housing.
2) Hold the shaft part of mirror seat assy. between B11 (Mirror drive lever) and B20 (...restitution spring).
3) B19 (Mirror drive spring)
B10 (Shutter charge lever),
B9, B17 (Diaphragm set lever, ...lever spring),
B18 (Lever restitution spring) ··· apply a bond
4) Moving B9 (...set lever) down, install B7 (Shutter charge cam).



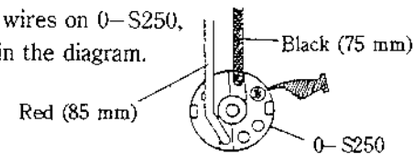
5) Aligning both positioning holes with B7 and 0– B8 (... drive cam assy.), install 0– B8. ··· (a)
6) B4, B3 (...reduction gear B, A)
7) B5 (...reduction gear C) ··· apply L115 to the whole of B5.
8) B6 (Mirror idle gear)



9) Clean the contact lands of T71 using with a contact cleaner.
10) Pushing down the sliding plate (b), push in latch lever (c) to hold the sliding plate.
11) G100 · 0– S250 (Mirror motor assy.), 4 screws
12) Solder 1 black lead wire (A105– T71).



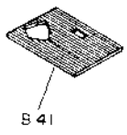
13) When installing 2 lead wires on 0– S250, solder them as shown in the diagram.



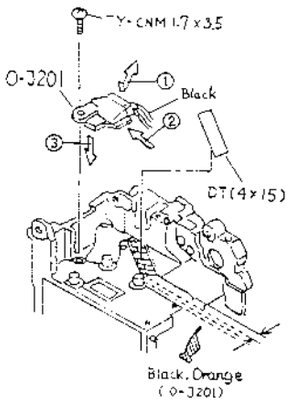
5– 6. 【 Confirmation 】 Mirror function check (p. 18)
5– 7. 【 Adj/Confirmation 】 1st and 2nd mirror position (p. 18)

5– 8. 0– J201 (TTL flash photo sensor assy.)

1) Install 0– J201 in numerical order as shown in the diagram.
2) Install B41 (Light seal plate, bottom).

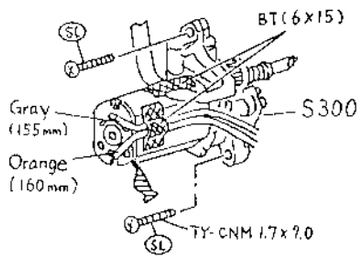


3) Arrange 2 lead wires (Black, Orange) with DT(4x15) as shown in the diagram right.



5－9. S300 (AF motor block)

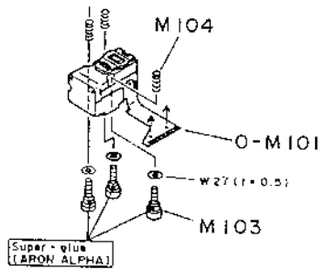
1) Arrange the lead wires and the flexible board as shown in the diagram right.
2) S300, 2 screws ··· apply the screw－lock agent
3) Arrange the lead wires with a double－stick tape on the housing bottom.



3) 【 Adj/Confirmation 】 AF joint stroke
【 Required equipment 】 Vernier calipers
－1) Set the focus mode switch to "AF".
－2) 【 Confirmation 】 When the mount lock button is not pressed, the AF coupler of AF motor (S300) should project from the mount surface by 1.2 mm or more.
－3) 【 Confirmation 】 When the mount lock button is pressed and released the mount lock pin comes to mount surface, the AF coupler should not project out of mount surface.
【 Adjustment 】 Turn an eccentric screw on 0－A121 (Joint lever assy.), and apply the screw－lock agent to the screw after adjusting.
－4) 【 Confirmation 】 When the mount lock button is pressed and released, the Joint lever (0－A121) should be moved smoothly.

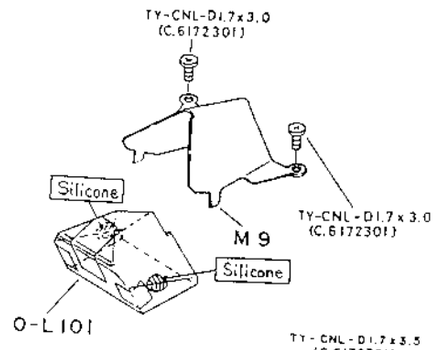
5－10. 0－M101 (AF module)

【 Required equipment 】 Hexagonal driver 1.5 mm
1) Arranging the flexible board of 0－M101, install 0－M101.
2) M104 x3 (Spring ...), W27 (t=0.5) x3
3) M103 x3 (Adjusting screw)
4) 【 Adjustment 】 AF module temporary position
Screw in each M103 until it stops, then screw back 1.5 turns.
＊ Apply super－glue to between the head of M103 and W65 after adjusting the position by using a computer.

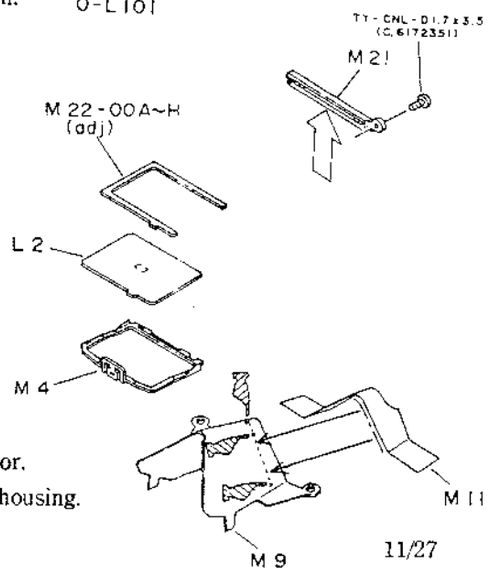


5－11. L2, 0－L101 (Fresnel lens, Penta mirror assy.)

1) Install 0－L101 correctly.
2) Apply silicone to the place as shown in the diagram right, and leave them until they become hard.
3) M9 (Penta mirror cover) ··· 2 screws



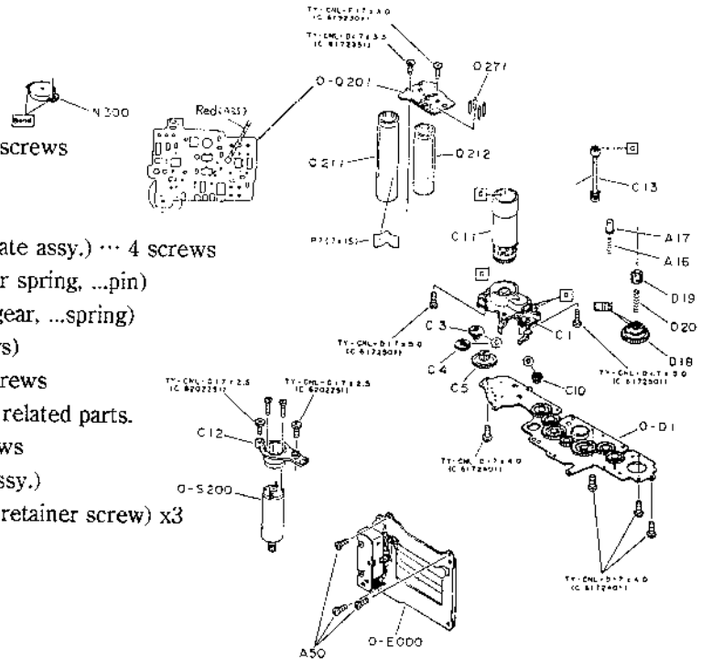
4) Install M21 (...retainer plate holder) as shown in the diagram.
5) Hook M4 (Fresnel lens retainer plate) into M21, and then put L2 on M4.
6) M22－00A －H (Focus adjusting washer)
7) Install M4 to the Front housing.
8) 【 Adj/Confirmation 】 Viewfinder focus and Parallax
【 Required equipment 】 Collimator, Focus master lens
－1) Install the eyepiece (L4-M301) temporarily.
－2) 【 Adjustment 】 Adjust viewfinder focus by replacing Focus adjusting washer (M22－00A to ...－00H) .
Standard: 0 ± 0.07 mm
－3) 【 Confirmation 】 Parallax
Standard: Right/Left 1′ or less
Top/Bottom 1° 50′ or less
9) No dust, fluff, etc. are found on Fresnel lens and Penta mirror.
10) Install M11(Dust prevention seal) on to M9 and the Front housing.



6. MAIN UNIT

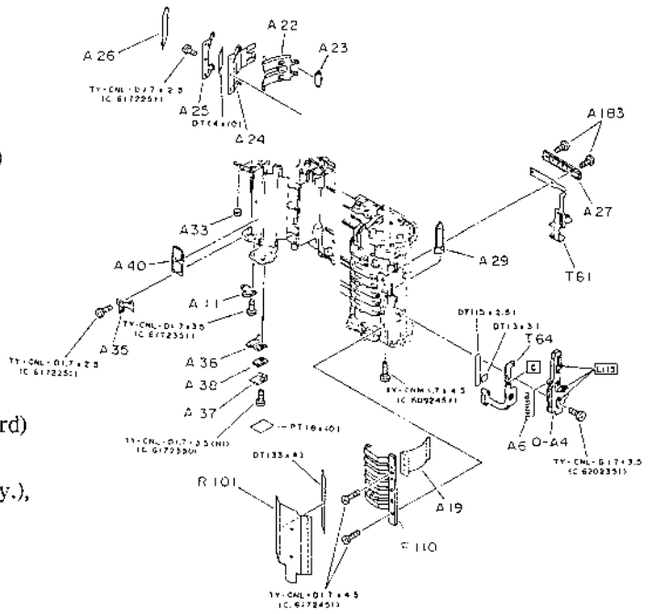
【 Disassembly procedure 】

1) N300 (Piezo-electric buzzer)
2) 0-Q201 (Flash P.C.board) ··· 2 screws
   Unsolder the red lead wire.

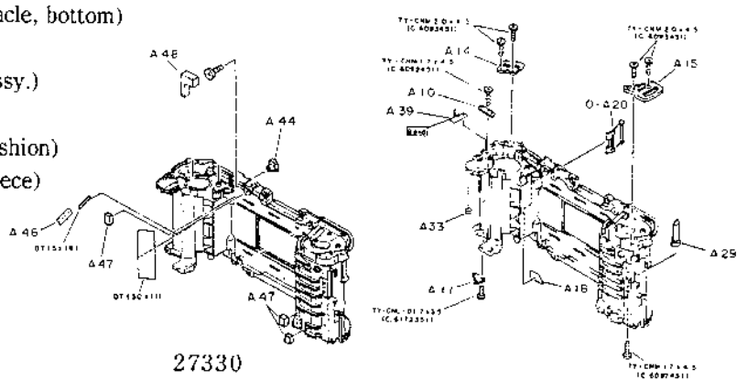


3) 0-D1 (Rewind bottom mech. plate assy.) ··· 4 screws
   A16, A17 (Film cartridge retainer spring, ...pin)
   D19, D18, D20 (Rewind fork, ...gear, ...spring)
   C3, C4, C5, C10 (Reduction gears)
4) C1 (Bottom mech. plate) ··· 2 screws
   C11 (Spool), C13 (Sprocket) and related parts.
5) C12 (Top mech. plate) ··· 2 screws
   0-S200 (Film transport motor assy.)
6) 0-E000 (Shutter block), A50 (...retainer screw) x3

7) Other parts
-1) Film guide
   TY-CNL-D1.7x2.5,
   A25 (...guide retainer),
   A26 (Light seal), DT(4x10),
   A24, A22 (Film guide), A23
-2) Battery cover SW
   PT(8x10), 1 screw,
   A37, A38, A36 (Battery cover switch)
-3) Battery contact piece +
   A40 (Battery positioning seal)
   TY-CNL-D1.7x2.5, A35
-4) A183 (Cover retainer screw C) x2,
   A27 (Data contact cover),
   T61 (Data flexible P.C.board)
-5) 0-A4 (Back cover key assy.),
   A6 (...spring), T64 (...key SW P.C.board)
-6) R101 (DX contact cover),
   2 screws, R110 (DX contact piece assy.),
   A19 (Film cartridge spring)
-7) A14, A15 (Strap hook, right / left)



   A10 (Back cover shaft receptacle, top)
   A11 (Back cover shaft receptacle, bottom)
   A18 (Film position marker)
   0-A20 (Film retainer plate assy.)
   A29 (Film cartridge guide)
   A33 (Battery contact piece cushion)
   A39 (Battery select contact piece)
   A44 (Cover piece)
   A46 (Shutter light seal)
   A47 (Light seal) x3
   A48 (Light seal B)



【 Assembly procedure 】

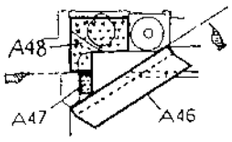
6－1. Other parts

Assemble other parts accordingly in the reverse procedure of disassembly with the following note.

【 Note of assembly 】

a) Light seal:

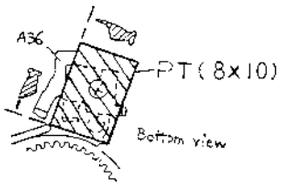
Install A46, A47 and A48 as shown in the diagram right.



b) Batt. cover SW:

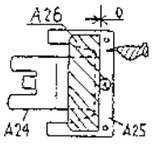
Make sure that A36 and A37 should be contacted completely.

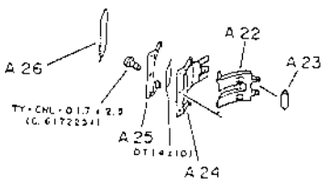
Position PT(8x10) as shown in the diagram right.



c) Film guide:

Install A26 on the Film guide as shown in the diagram.

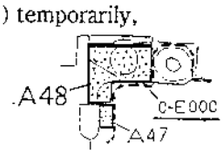


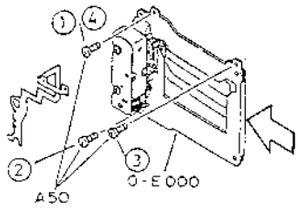


6－2. 0－E000 (Shutter block)

1) Set 0－E000 to the side of A47 and A48 (Light seal).

2) Pushing 0－E000 toward a grip side, screw A50 (①) temporarily, and then screw completely ② , ③ and ④ in order.

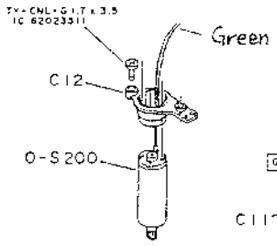




6－3. 0－S200 (Film transport motor assy.)

1) Green lead wire (FM+) of 0－S200 should be located at A14 (Strap hook, right) side.

2) C12 (Top mech. plate), 2 screws

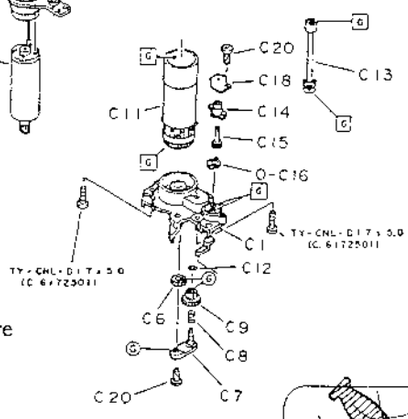


6－4. C1 (Bottom mech. plate)

1) C11 (Spool), C13 (Sprocket) ··· apply G134

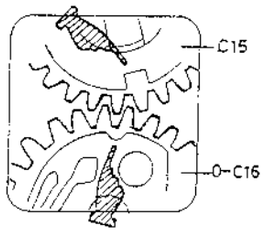
2) Clean switch contact lands on C18.

3) Make sure that the height of the contact brush of 0－C16 (...switch gear assy.) should be as shown in the diagram.



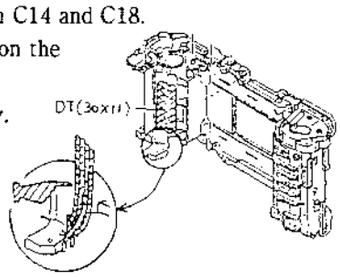
4) Align C15 (Sprocket gear) and 0－C16 as shown in the diagram right, and install them with C14 and C18.

【 Note 】 No dust, fluff, etc. are found on the switch gear and the lands.



5) Install C1 and related parts to the body.

6) Arrange 6 lead wires with DT(30x11).



8. ADJUSTMENT AND CONFIRMATION

8-1. FUNCTION CHECK

① **Preparation**

1. Apply the power to the body.
2. Attach the FA lens to the body. and set the diaphragm ring to "A" position.

② **Main SW and Release SW**

1. Set the main SW to "ON" and set the mode dial to "PICT".
   Then confirm the LCD display showing the Picture mode.
2. Depress the release button halfway. (→ Metering SW/ON)
   And make sure that the metering stays on for approx. 10 sec. and the finder LCD is displayed.
3. Turning the Drive mode SW to " □ ", " ▭ " and " ⏲ ", check the function at the each mode.

③ **Auto/Manual switching**

Change the diaphragm ring to manual stop, then confirm the LCD showing "Av".

④ **Mode dial**

Turning the mode dial to "Tv", "Av" and "M", confirm the LCD display showing exposure mode "Tv", "Av" and "M" at the each stop.

⑤ **Film speed setting** (manual)

Set the mode dial to "ISO SET".
By turning the select SW to the right, the film speed will be increased.
By turning the select SW to the left, the film speed will be decreased.

⑥ **Exposure compensation button**

Set the exposure mode to the Picture mode, "Av" or "Tv".
By turning the select SW while depressing the exposure compensation button, the exposure compensation value will be selected.

⑦ **AF function**

Set the Focus mode SW to "AF".

1. While aiming the AF frame at a subject and depressing the shutter button halfway, AF function will operate to in-focus, and then the focus indication in the viewfinder will light up with sounding an electronic beep.
2. Cover the front of lens with a hand. By depressing the shutter button halfway, AF function will operate to rotate the lens between " ∞ " and short distance end.
   Then the focus indication will blink and the shutter will not be able to release.

⑧ **Back cover SW, Film winding/rewinding**

1. Load a test film, close the back cover and turn the main SW on, then the film will advance to the first frame. At the same time, the film counter will change "0" to "1".
   Release shutter several times and confirm film advance and counter change.
2. Depress the rewind button, make sure that the rewinding of film will start.
   Confirm winding and rewinding will not make any strange noise.

⑨ **Flash check**

1. Set the flash to the pop-up condition, then confirm the flash ready mark (⚡) comes up.
2. Set the body to the Picture mode.
3. By depressing the Multi-function button, the flash function will change accordingly as shown below.

" 👁 " → " A " → " 👁A " → " "

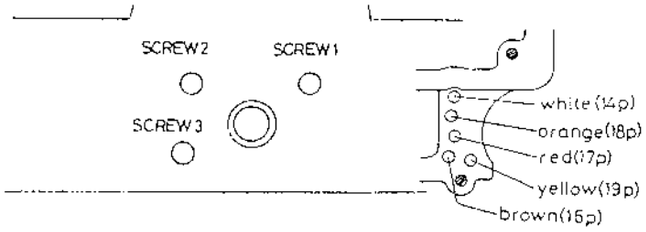
4. Check the Automatic flash function (A) as follows.
   When the subject is dark and release the shutter, the flash will fire.
   When the subject is bright and release the shutter, the flash will not fire.

8−2. ADJUSTMENT AND CHECK WITH COMPUTER PROGRAM (AE and AF)

【 Required equipment 】

☐ Programmed software for 27330 (exclusive equipment) ,
☐ Personal computer, ☐ Color display, ☐ Serial interface, ☐ Interface buffer,
☐ I/F buffer cable for 27250, ☐ Regulated DC power supply, ☐ Battery (CR2), ☐ Power SW adapter,
☐ Shutter tester (7PE−25A3, EC−5000/8000 type), ☐ Light measuring master lens for LX,
☐ Diaphragm F8 setting ring K, ☐ Focus master lens for MEF, ☐ Optical regulator for MEF,
☐ Hexagonal screw driver 1.5 mm, ☐ CCD positioning jig (Circle for 27230, Cross for 25900),
☐ TTL adjusting back cover for 27250 (hand made),
☐ DC power adapter (hand made, refer to the service manual for 27250 on page 24),
☐ Temporary bottom cover (hand made) and a battery cover,

① Solder 5 lead wires from the I/F buffer cable for 27250.



② Install a temporary bottom cover and a battery cover, set the battery to the body, and install the power SW adapter to the release socket.

③ Using the programmed software for 27330, check and adjust by following the flow chart (p. 20).

【 Note 】 When adjusting MZ−50 Japan model (Prod. No. 27332, refer to page 19), select "27332 MZ−50 JAPAN MODEL" on the select menu of the software.

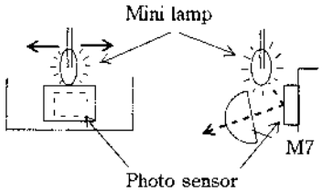
8−3. PHOTO SENSOR POSITION

【 Required equipment 】 Mini lamp or equivalent

If using a data printing lamp inside a data module as a mini lamp, refer to "Method of removing a data printing lamp from a data module" on page 27. And apply DC 2.0V to the lamp.

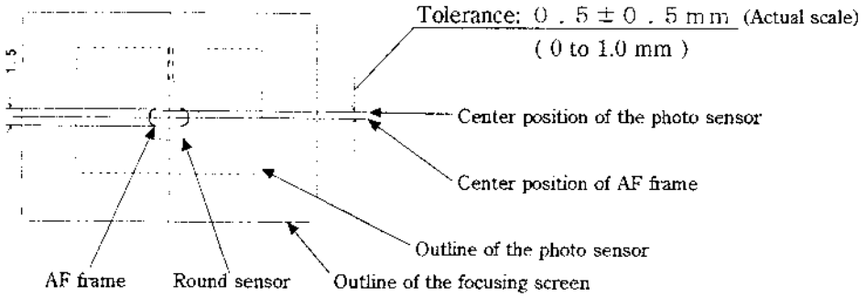
① Cover the eyepiece with a black tape.

② Strike light by a mini lamp 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.



③ 【 Confirmation 】

Confirm the photo sensor in which should be positioned in the tolerance as shown in the diagram below.

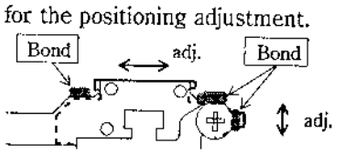


(Continued)

④ 【 Adjustment 】

Loosen TY−CNL−F1.7x4.5, then move the entire photo sensor for the positioning adjustment.

⑤ After the adjustment is done, tighten the screw and confirm the position again. Then apply a bond to fix the photo sensor as shown in the diagram right.



Rear view of photo sensor

【 Reference 】 If a lens with a large aperture (ex. FA 50mm f/1.4) is mounted on the body, the pattern of the photo sensor will be seen easily on the 1st mirror.

8−4. EXPOSURE VALUE AND DX SWITCHING

【 Required equipment 】 Shutter tester (EF−8000, EF−5000, 7PE−25A3 type or equivalent)
Master lens for 24500 (ML−245)

【 Confirmation 】 Exposure value

① Set the battery to the body.
② Attach the master lens to the body, and set the diaphragm ring to "A".
③ Set the main SW to "ON", Focus mode SW to "MF" and Mode dial to "PICT".
④ Open the back cover, and push the back cover key (0−A4) to set the switch on.
⑤ Set the body to the shutter tester and check the exposure value.

【 Standard 】 Using Master lens for 24500 (ML−245) at programmed AE mode (picture mode).

LV6 to 13	−0.50 to +0.70 EV
LV14	−0.25 to +0.95 EV
LV15	±0.00 to +1.20 EV

※ Check at other exposure modes if necessary.

【 Confirmation 】 DX switching

⑥ Load a DX coded film. (ISO400, 200, 100, etc.)
⑦ Check ISO setting (the film speed will appear on the LCD panel) by loading a different type of film.
※ Loading ISO 5000 DX film (handmade) can be checked conductivity of the all contacts.

8−5. AUTOFOCUS CHECK

【 Required equipment 】 Optical regulator for MEF or equivalent
Focus master lens for MEF or equivalent

1) 【 Confirmation 】 Autofocus (by using Focus indicator)

① Attach the focus master lens to the body, set the focus mode SW to "MF".
Set the body in front of the collimator of thr optical regulator.
② Turn the focusing ring to the right end, and then gradually return the focusing ring to the position where the in−focus mark appears, and read the scale of focus master lens; A.
Turn the focusing ring to the left end, and then return the focusing ring in the same manner, and read the scale; B.
③ Center point of A and B − (A+B)/2 − should be within a range of −0.05 to +0.06 mm.

【 Note 】 When checking MZ−50 Japan model (Prod. No. 27332), refer to "Concerning MZ−50 QD Japan model" on page 19.

2) 【 Confirmation 】 Focus mode

Attach the FA or F lens to the body, set the focus mode SW to "AF", and confirm the AF functions and switching of AF and MF.

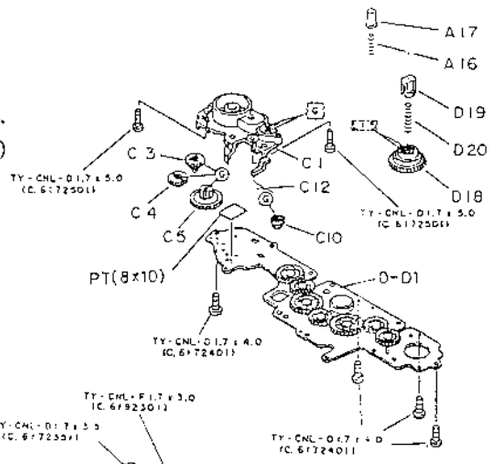
6-5. 0-D1 (Rewind bottom mech. plate assy.)

1) C3, C4, C5, C10 (Reduction gears)

2) D19, D18, D20 (Rewind fork, ...gear, ...spring)
   Apply L115 to the place between D19 and D18.

3) A17, A16 (Film cartridge retainer pin, ...spring)

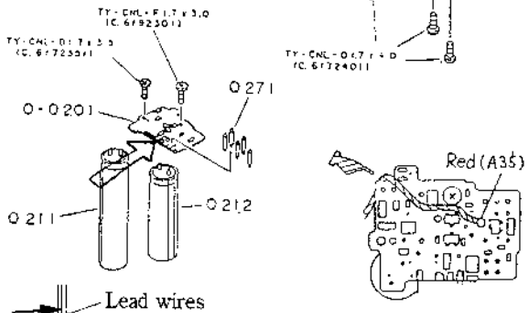
4) 0-D1, 4 screws



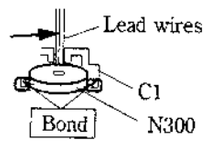
6-6. 0-Q201 (Flash P.C.board), Q211, Q212

1) Pushing 0-Q201 to the back side, install it.

2) Solder the red lead wire, and arrange it as shown in the diagram right.



6-7. N300 (Piezo-electric buzzer)
Apply a bond to N300 to install it surely.

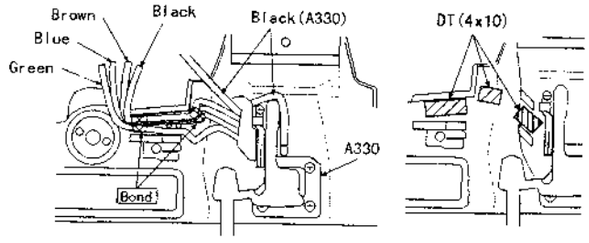


7. TOP COVER

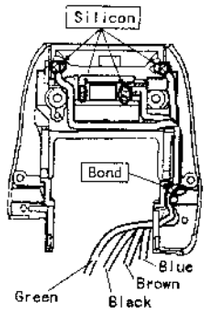
【 Note of assembly 】

1) Arrange the lead wires as shown in the diagram below.

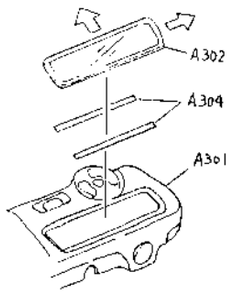
■ Top cover (A301)



■ Flash frame (Q2)

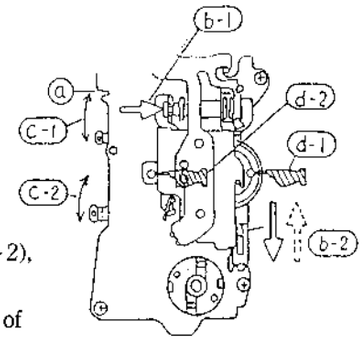


2) Install A302 (LCD window) to the Top cover as shown in the diagram below.



8－6. MIRROR FUNCTION CHECK

① Apply DC 1.5V to the mirror motor.
(The red wire should be connected a positive terminal (+).)
Set B11 (Mirror drive lever) at the top end stroke (ⓐ).
→ Mirror up condition
Check the function of the mirror sheet by using a finger.
Keeping away the mirror sheet at the bottom end of stroke,
make sure that the mirror sheet returns to the top end position.



② Push the lever of G100 (b－1) to release the latch lever.
And push down the sliding lever to the bottom end and let go (b－2),
it should return to the original top position by the spring tension.

③ Apply DC to the mirror motor, and check the movement strokes of
the mirror driving (c－1) and the shutter charge lever (c－2).

④ Apply DC to the mirror motor, set the hole of white gear as shown in the diagram in (d－1)
and set the position of the gear's hole as shown in the diagram in (d－2).
→ Wind completed condition

⑤ At the wind completed condition, when pushing up the 1st and 2nd mirror each to approx. 3 mm
and let go, each mirror should return to the original position.

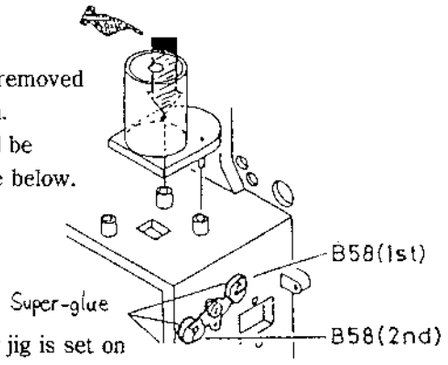
☆ Set the Front housing block to the wind completed condition when installing the block to the main unit.

8－7. 1ST AND 2ND MIRROR POSITION

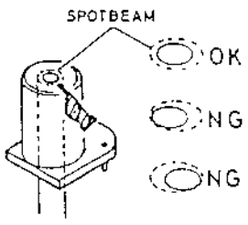
【 Required equipment 】 Optical regulator for MEF
Mirror angle adjusting jig for 26900

① Set the mirror housing block to the optical regulator.
☆ Make sure that the finder and related parts should be removed
from the housing block to check the 1st mirror position.

② 【 Adj/Confirmation 】 Make sure that a laser beam should be
seen on the screen of optical regulator within the tolerance below.
Tolerance … X－axis: ± 15′
Y－axis: ± 10′
Adjust Y－axis of 1st and 2nd mirror positions to "0" by
moving the mirror seat receptacles (B58).



③ As shown in the diagram, when the Mirror angle adjusting jig is set on
the Front housing, a laser beam can be seen near the 1 mm hole of the jig.
【 Attention!!! 】 Be careful not to look laser beam directly to
prevent your eyes from being trouble.
☆ This jig has a small amount of play forward and backward.
Make sure that the jig is held at the position indicated by
the arrow (⬇), by using tweezers or similar tool, when the
beam position is checked.



④ 【 Adjustment 】 2nd mirror position (fin adj.)
Move B58 (for 2nd mirror) to adjust the laser beam to
the located at the center of the hole as shown in the diagram right.

⑤ 【 Confirmation 】 Move the mirror seat up and down several times.
Make sure that the position of the laser beam stays the same.

⑥ After confirmation is done, apply super－glue to two B58's.

【 Table of data 】

1) Battery life and Possible length of bulb exposure time

Temperature	20 ℃ /68 ℉	−10 ℃ /14 ℉
General use	about 100 rolls	about 30 rolls
Flash use (using flash 50% of the times)	about 25 rolls	about 15 rolls
〃 (using flash 100% of the times)	about 12 rolls	about 7 rolls
Bulb exposure time	about 8 hours	about 2 hours

※ Using the new CR2 battery and 24−exposure roll of film

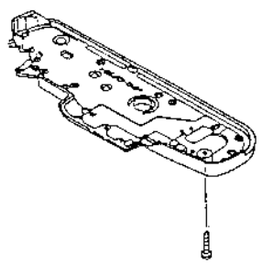
2) Consumption current

Power SW off (Back cover closed)	50 μ A or less
Power SW on (Metering off)	
with FA or F lens	250 μ A or less
with A or M lens	260 μ A or less
Metering	120 mA or less
Exposing at the bulb	150 mA or less
When AF motor is operating	700 mA or less
When film is rewinding	500 mA or less

※ Using a regulated DC power supply (5.5V, 3A or more)

【 Concerning MZ−50 QD Japan model (Prod. No.27332) 】

This camera is on sell in Japan market only. For marking, the one retainer screw for the bottom cover is black color as shown in the diagram right.
Refer to the Service parts list for Prod. No. 27332.
The exclusive points for MZ−50 QD Japan model are mentioned below.



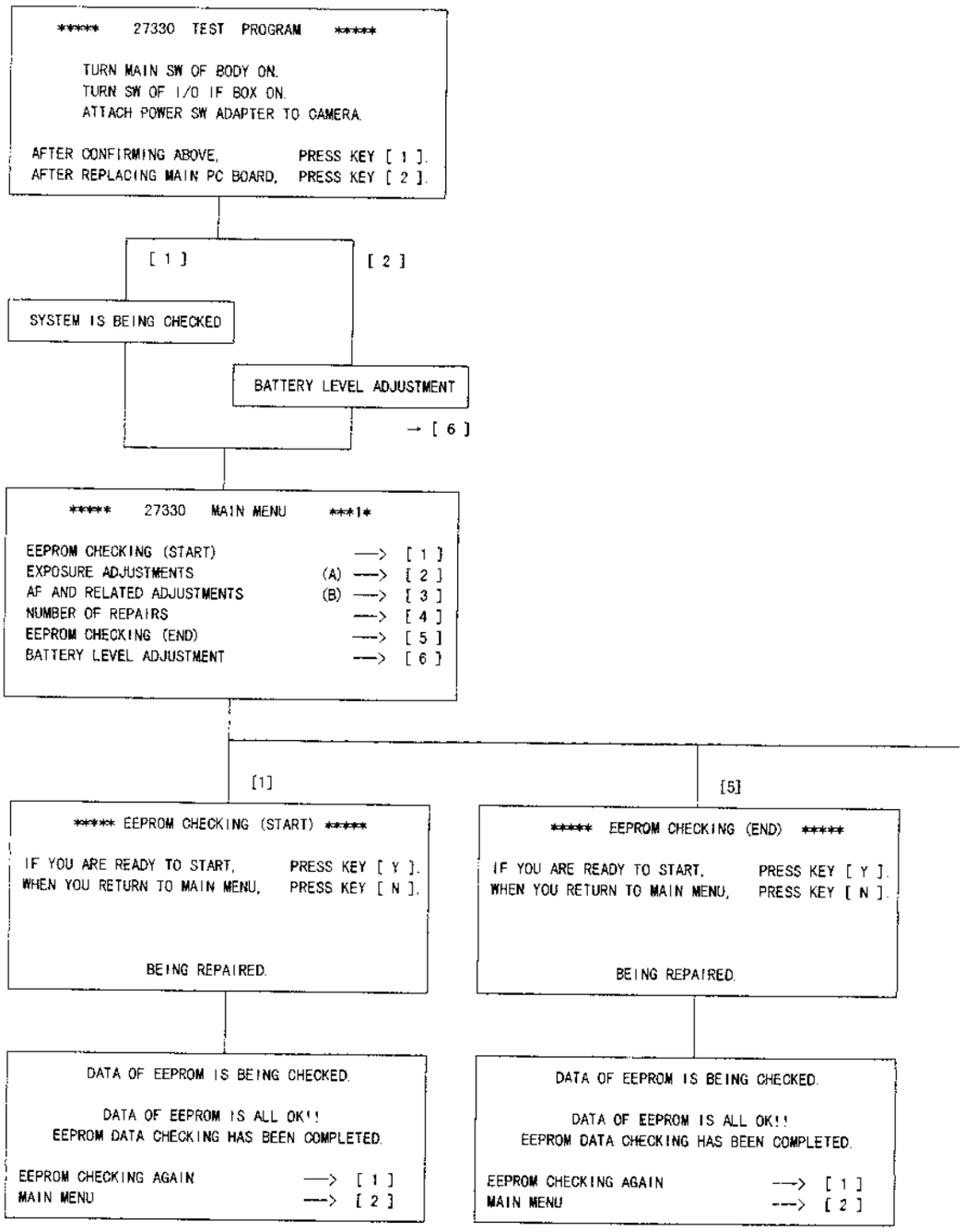
1) Exclusive operation
When a lens with setting the diaphragm ring to manual stop is attached to the body, the LCD display blinks "Av −−" and the shutter cannot be released.

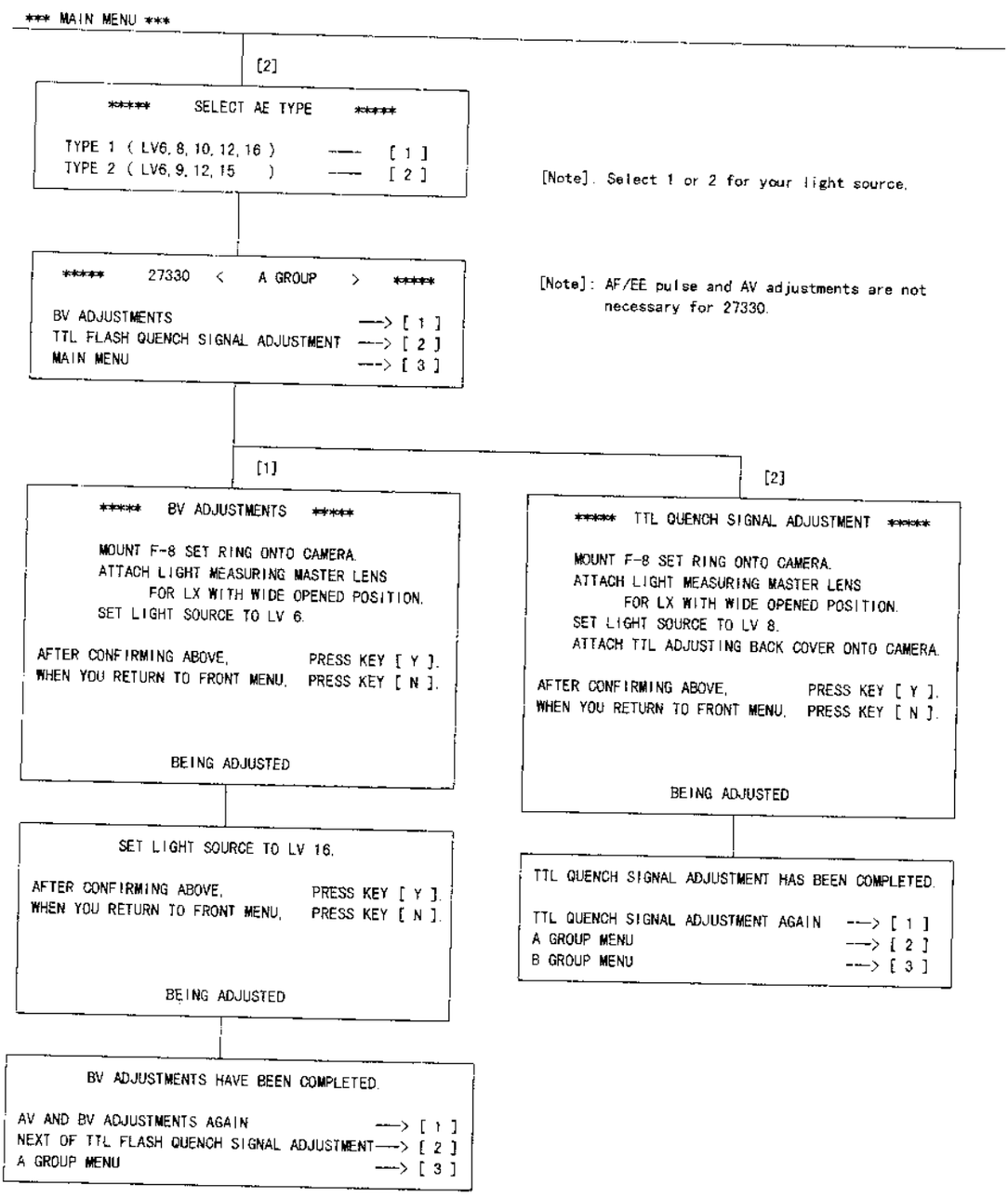
2) Adjustment and check with the computer program
Select "27332 MZ−50 JAPAN MODEL" on the select menu of the programmed software.

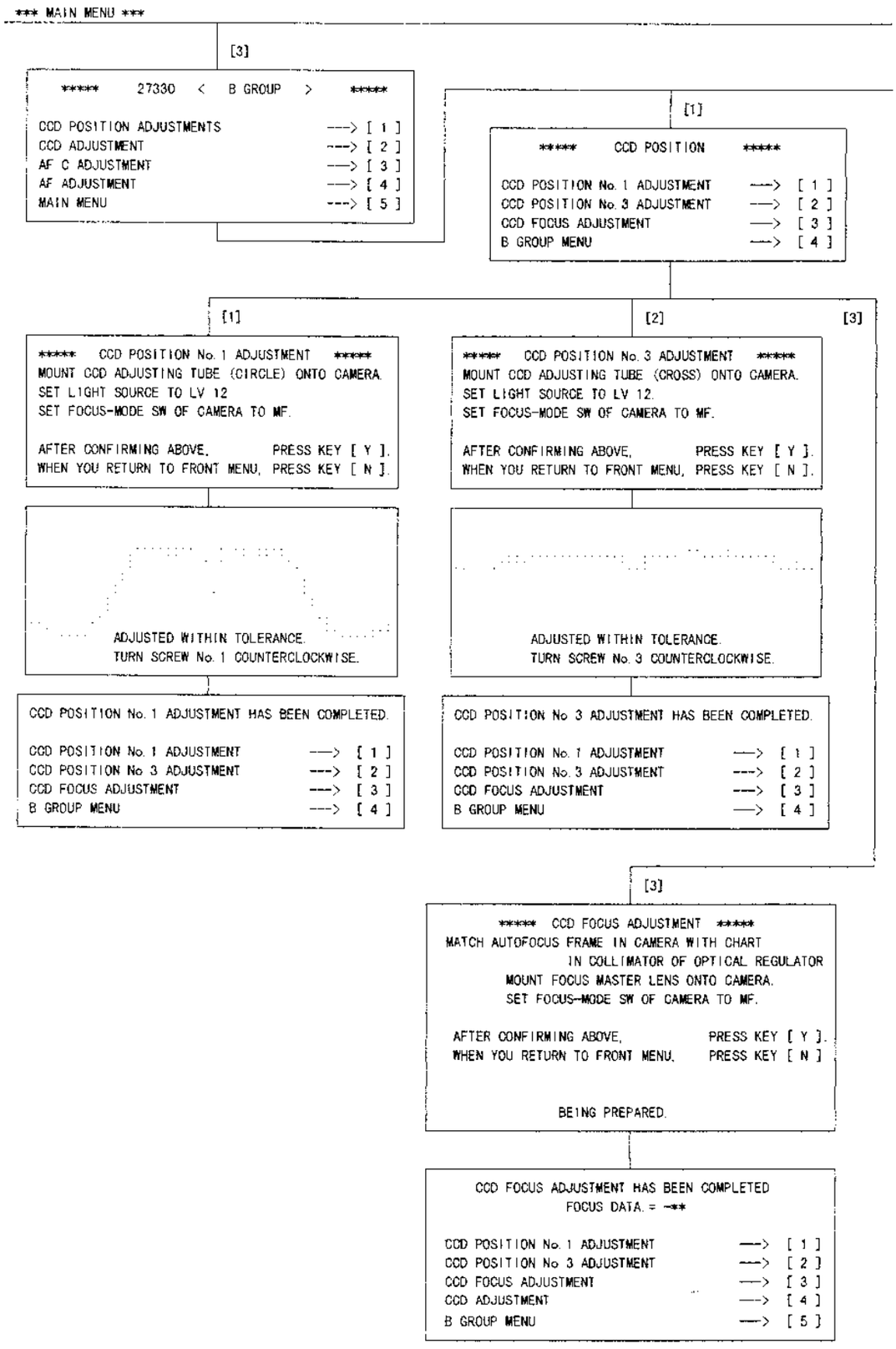
3) Checking autofocus by using Focus indicator:
When checking the autofocus by attaching the focus master lens to the body, set the body to operate the focus indicator as follows:
−1) Insert the battery to the body.
−2) Set the main SW to "ON" and set the focus mode SW to "MF".
−3) Open the back cover.
−4) Open the battery cover.
−5) Depress the exposure compensation button and the release button fully.
−6) While keeping above condition (−5), reinsert the battery to the body.

※ After checking the autofocus, reset the body as follows:
−1) Set the main SW on.
−2) Open the battery cover, and then reinsert the battery to the body.

【27330 PROGRAM SOFTWARE FLOW CHART】

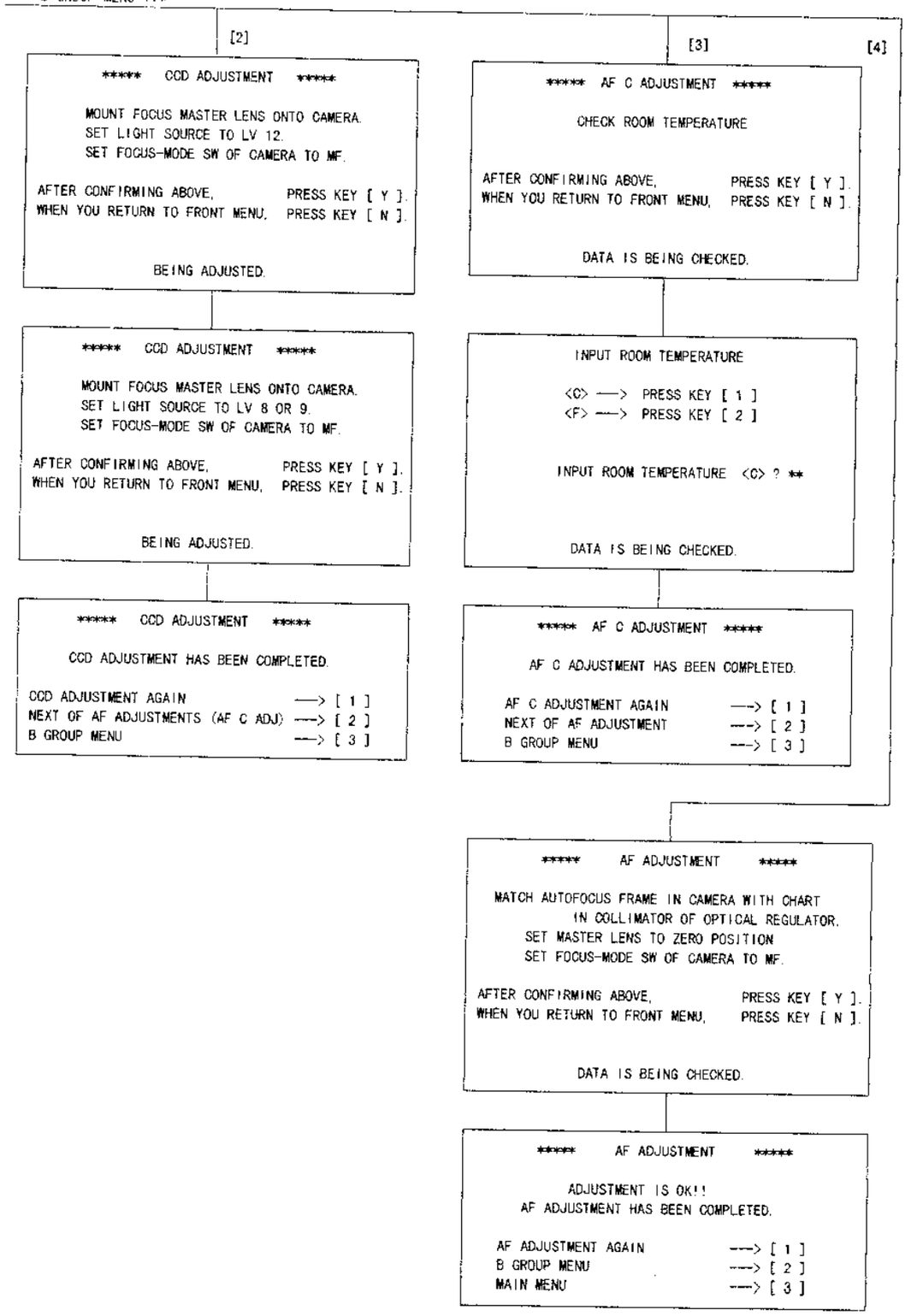


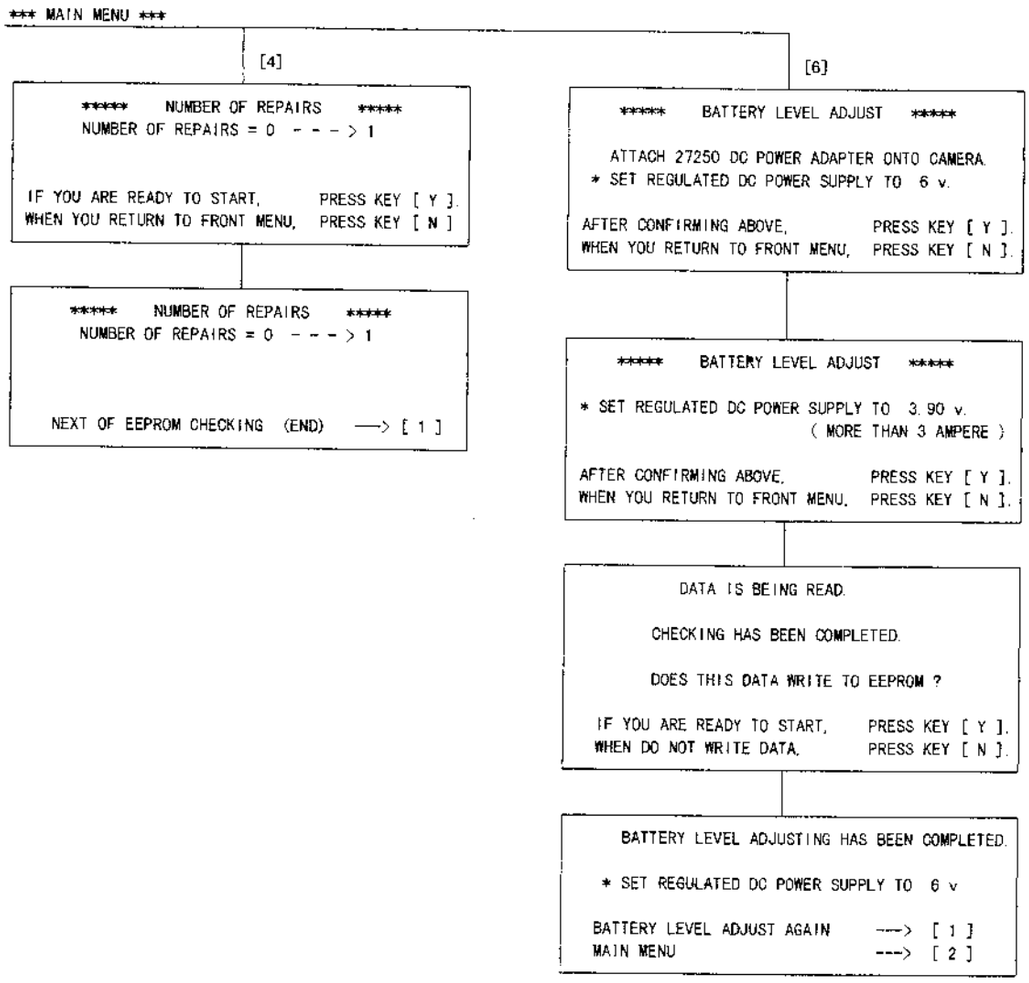

*** MAIN MENU ***
[2]
***** SELECT AE TYPE *****
TYPE 1 (LV6, 8, 10, 12, 16) ---- [1]
TYPE 2 (LV6, 9, 12, 15) ---- [2]
[Note]. Select 1 or 2 for your light source.
***** 27330 < A GROUP > *****
BV ADJUSTMENTS ---> [1]
TTL FLASH QUENCH SIGNAL ADJUSTMENT ---> [2]
MAIN MENU ---> [3]
[Note]: AF/EE pulse and AV adjustments are not necessary for 27330.
[1]
[2]
***** BV ADJUSTMENTS *****
MOUNT F-8 SET RING ONTO CAMERA.
ATTACH LIGHT MEASURING MASTER LENS FOR LX WITH WIDE OPENED POSITION.
SET LIGHT SOURCE TO LV 6.
AFTER CONFIRMING ABOVE, PRESS KEY [Y].
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [N].
BEING ADJUSTED
***** 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.
ATTACH TTL ADJUSTING BACK COVER ONTO CAMERA.
AFTER CONFIRMING ABOVE, PRESS KEY [Y].
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [N].
BEING ADJUSTED
SET LIGHT SOURCE TO LV 16.
AFTER CONFIRMING ABOVE, PRESS KEY [Y].
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [N].
BEING ADJUSTED
TTL QUENCH SIGNAL ADJUSTMENT HAS BEEN COMPLETED.
TTL QUENCH SIGNAL ADJUSTMENT AGAIN ---> [1]
A GROUP MENU ---> [2]
B GROUP MENU ---> [3]
BV ADJUSTMENTS HAVE BEEN COMPLETED.
AV AND BV ADJUSTMENTS AGAIN ---> [1]
NEXT OF TTL FLASH QUENCH SIGNAL ADJUSTMENT ---> [2]
A GROUP MENU ---> [3]


*** MAIN MENU ***
[3]
***** 27330 < B GROUP > *****
CCD POSITION ADJUSTMENTS ---> [1]
CCD ADJUSTMENT ---> [2]
AF C ADJUSTMENT ---> [3]
AF ADJUSTMENT ---> [4]
MAIN MENU ---> [5]
[1]
***** CCD POSITION *****
CCD POSITION No. 1 ADJUSTMENT ---> [1]
CCD POSITION No. 3 ADJUSTMENT ---> [2]
CCD FOCUS ADJUSTMENT ---> [3]
B GROUP MENU ---> [4]
[1]
[2]
[3]
***** CCD POSITION No. 1 ADJUSTMENT *****
MOUNT CCD ADJUSTING TUBE (CIRCLE) 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 No. 3 ADJUSTMENT *****
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].
ADJUSTED WITHIN TOLERANCE.
TURN SCREW No. 1 COUNTERCLOCKWISE.
ADJUSTED WITHIN TOLERANCE.
TURN SCREW No. 3 COUNTERCLOCKWISE.
CCD POSITION No. 1 ADJUSTMENT HAS BEEN COMPLETED.
CCD POSITION No. 1 ADJUSTMENT ---> [1]
CCD POSITION No. 3 ADJUSTMENT ---> [2]
CCD FOCUS ADJUSTMENT ---> [3]
B GROUP MENU ---> [4]
CCD POSITION No. 3 ADJUSTMENT HAS BEEN COMPLETED.
CCD POSITION No. 1 ADJUSTMENT ---> [1]
CCD POSITION No. 3 ADJUSTMENT ---> [2]
CCD FOCUS ADJUSTMENT ---> [3]
B GROUP MENU ---> [4]
[3]
***** CCD FOCUS ADJUSTMENT *****
MATCH AUTOFOCUS FRAME IN CAMERA WITH CHART
IN COLLIMATOR OF OPTICAL REGULATOR
MOUNT FOCUS MASTER LENS ONTO CAMERA.
SET FOCUS-MODE SW OF CAMERA TO MF.
AFTER CONFIRMING ABOVE, PRESS KEY [Y].
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [N]
BEING PREPARED.
CCD FOCUS ADJUSTMENT HAS BEEN COMPLETED
FOCUS DATA. = -**
CCD POSITION No. 1 ADJUSTMENT ---> [1]
CCD POSITION No. 3 ADJUSTMENT ---> [2]
CCD FOCUS ADJUSTMENT ---> [3]
CCD ADJUSTMENT ---> [4]
B GROUP MENU ---> [5]

*** MAIN MENU ***

*** B GROUP MENU ***




*** MAIN MENU ***
[4]
***** NUMBER OF REPAIRS *****
NUMBER OF REPAIRS = 0 - - - > 1
IF YOU ARE READY TO START, PRESS KEY [Y].
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [N]
***** NUMBER OF REPAIRS *****
NUMBER OF REPAIRS = 0 - - - > 1
NEXT OF EEPROM CHECKING (END) ---> [1]
[6]
***** BATTERY LEVEL ADJUST *****
ATTACH 27250 DC POWER ADAPTER ONTO CAMERA.
* SET REGULATED DC POWER SUPPLY TO 6 v.
AFTER CONFIRMING ABOVE, PRESS KEY [Y].
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [N].
***** BATTERY LEVEL ADJUST *****
* SET REGULATED DC POWER SUPPLY TO 3.90 v.
(MORE THAN 3 AMPERE)
AFTER CONFIRMING ABOVE, PRESS KEY [Y].
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [N].
DATA IS BEING READ.
CHECKING HAS BEEN COMPLETED.
DOES THIS DATA WRITE TO EEPROM ?
IF YOU ARE READY TO START, PRESS KEY [Y].
WHEN DO NOT WRITE DATA, PRESS KEY [N].
BATTERY LEVEL ADJUSTING HAS BEEN COMPLETED.
* SET REGULATED DC POWER SUPPLY TO 6 v
BATTERY LEVEL ADJUST AGAIN ---> [1]
MAIN MENU ---> [2]

[TABLE OF TESTERS, JIGS AND TOOLS]

☆ Exclusively used for MZ-50/ZX-50

Item No.	Description
1.	Program software for 27330

☆ Others (PC/AT: IBM compatible computer)

Item No.	Description
2.	AF positioning jig (CIRCLE) for 27230 (AF module adjusting tube)
3.	AF positioning jig (CROSS) for 25900 (AF module adjusting tube)
4.	Mirror angle adjusting jig for 26900 (MAAJ-269)
□	Mini lamp (see page 16 "8-3")

Used in common with MZ-5 as follows:

- □ DC power adapter (handmade, refer to Service manual for 27250 on page 24)
- □ Temporary bottom cover (handmade, for installing the battery cover at program adj.)
- □ TTL flash adjusting back cover for 27250
  (handmade, the back cover installed LX 1st curtain-new type- on the pressure plate)

5.	I/F buffer cable for 27250 ···	(used in common with other AF-SLR)
6.	Personal computer	(for PC-98 or PC/AT)
7.	Color display	(for PC-98 or PC/AT)
8.	Module board	(for PC-98 or PC/AT)
9.	Interface cable	(for PC-98 or PC/AT)
10.	Serial interface (SIFI-269)	
11.	Interface buffer (IFB-269)	
12.	Power SW adapter for AF-SLR	
13.	Collimator chart 25900 for optical regulator (OCRC-259)	
14.	Hexagonal driver 1.5mm (HD-M1.5)	
15.	Shutter tester (7PE-25A3, EF-5000, EF-8000)	
16.	Optical regulator for 24300(MEF)	
17.	Exposure master lens for 24500(Super A)	(ML-245)
18.	Diaphragm F8 setting ring K (KA-0-1A)	
19.	Focus master lens for 25900(SFX)	(ML-259, KML-01)
20.	Light measuring master lens for 24000(LX)	(LML-240)
21.	Dial gauge comparator	(PH-2)
22.	Block gauge	(229N-A01-A2)
23.	Mount block	(1620-A, 23600N -A1,A104-A)
24.	Mount block spacer	(23600N-A01,A104-A-A)
25.	Mount block holder for 259	(23600N-A01,A104-A-B)
26.	1000mm collimator	
27.	Regulated DC power supply	(capable current at least 3A)
28.	Circuit tester	

*Notice of order for testers, jigs and tools

When ordering the above items, the description on your order may be regulated by " STILL CAMERA SERVICE TOOLS MASTER PROOF LIST " (refer to the Technical-Information No. T-65) except goods such as the no mention on the list.
Therefore, use the product No.95901, parts No. and the description that are exactly the same as the list for your order; refer to the order list on next page.

[ORDER LIST OF TESTERS, JIGS AND TOOLS FOR 27330]

Date: Apr.'97

[Order No. : Product No.95901 and Parts No.]

Item No.	Description of order	Parts No.	Remark
1.	Program software for 27330 (PC-98)	—	Lending only
	PROGRAMMED SOFT PC/AT 27330 (5INCH)	M244-00A	for PC/AT, 5 inch FD
	〃 (3.5INCH)	M244-00B	for PC/AT, 3.5 FD
			(TI: Technical information)
2.	AF POSITIONING JIG CPJ-27230 (CIRCLE)	M214	TI. No.T-123
3.	AF POSITIONING JIG CPJ-259 (CROSS)	M213	TI. No. T-123
4.	POSITIONING JIG MAAJ-269	J95	
5.	I/F BUFFER CABLE FOR 27250	M515	
6.	Personal computer	N/A	
7.	Color display	N/A	
8-1.	MODULE BOARD PIO-24/24T	N/A	for PC-98, TI. No. T-123
-2.	PC/AT BOARD PIO-32/32 (PC)	N/A	for PC/AT, TI. No. T-123
9-1.	INTERFACE CABLE DXIC-P98	N/A	for PC-98, TI. No. T-123
-2.	I/F CABLE PC/AT PCA96PS	N/A	for PC/AT, TI. No. T-123
10.	SERIAL INTERFACE SIFI-269	N/A	TI. No. T-123
11.	INTERFACE BUFFER IFB-269	N/A	TI. No. T-123
12.	POWER SW ADAPTER	M123	
13.	COLLIMATOR CHART OCRC-259	M21	
14.	HEXAGON DRIVER HD-M1.5	K72	
15-1.	Shutter tester 7PE-25A3	N/A	
-2.	TESTER EF-5000 (WITH RW-3505)	M3-01	TI. No. T-99
-3.	TESTER EF-8000 (WITH RW-3508)	M49-01	TI. No. T-99
16.	Optical regulator for 24300	N/A	
17.	MASTER LENS ML-245	N28	
18.	DIAPHRAGM SET RING KA-0-1A	N26	
19.	FOCUS MASTER LENS KML-01	N17	
20.	EXPOSURE MASTER LENS LML-240	N27	
21.	DIAL GAUGE COMPARATOR PH-2	N1	
22.	BLOCK GAUGE 229N-A01-A2	N4	
23.	MOUNT BLOCK 1620-A	N47	in exchange for 236N-A1s
	MOUNT BLOCK 236N-A1,A104-A	N/A	
24.	M/B SPACER 236N-A1,A104-A-A	N/A	
25.	M/B HOLDER 236N-A1,A104-A-B	N7	for M/B spacer 236N-A1
26.	Collimator 1000 mm	N/A	
27-1.	DC POWER SUPPLY PR-18-3	M29	18V, 3A
-2.	DC POWER SUPPLY PR-18-5	M30	18V, 5A
28.	DIGITAL MULTI METER	M54	

【 Method of removing a data printing lamp from a data module 】

【 Required parts 】 A data module (ex. 26201– T500)

【 Procedure of removing 】

1) Remove the part of the data module at the position indicated by the arrow, by using a cutter, as shown in Fig. 1.
2) Set the data module as shown in Fig. 2, and remove the cover.
3) Unsolder the data printing lamp from the P.C. board as shown in Fig. 3.
4) Solder 2 lead wires to the lamp.

Fig. 1

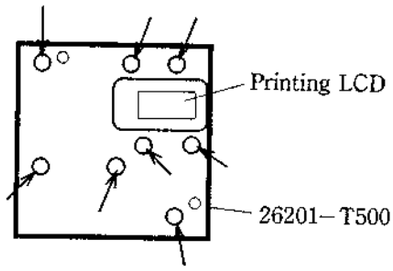


Fig. 2

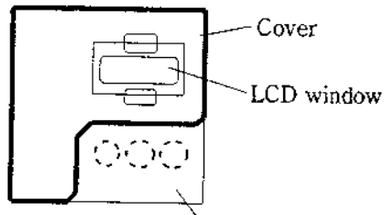


Fig. 3