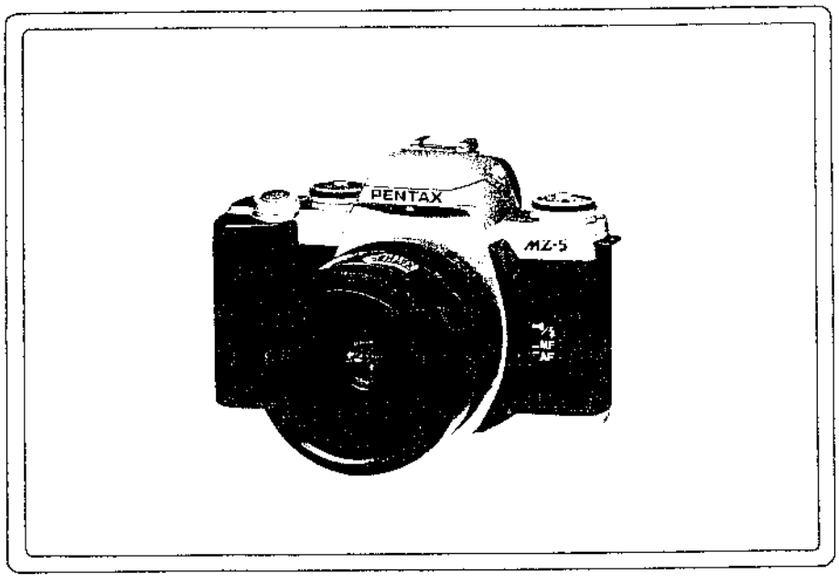
PENTAX®

Service Manual

ENGLISH

PENTAX MZ-5 QUARTZ DATE



PRODUCT No. 27250	MZ-5 QUARTZ DATE	(Silver)
PRODUCT No. 27251	MZ-5 QUARTZ DATE	(Black)
PRODUCT No. 27254	ZX-5	(Silver)
PRODUCT No. 27255	ZX-5 QUARTZ DATE	(Silver)
PRODUCT No. 27256	MZ-5	(Silver)

01'96 H.Y.

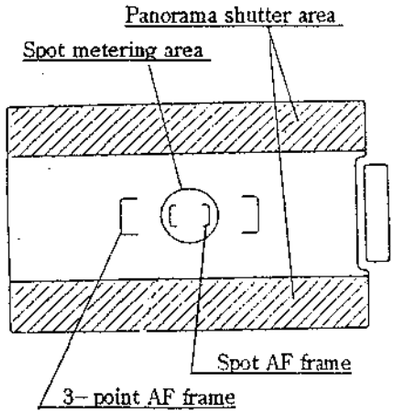
【 TABLE OF CONTENTS 】

[SPECIFICATIONS]

Type:	TTL autofocus, auto-exposure 35mm SLR with built-in TTL auto flash (RTF)
Format:	24x36mm (Approx. 13x36 in panoramic format)
Usable Film:	35mm perforated cartridge film, DX-coded film with ISO 25-5000; non-DX coded films with ISO 6-6400
Exposure Mode:	Programmed AE Mode, Shutter-Priority AE Mode, Aperture-Priority AE Mode, Metered Manual Mode, Bulb Mode
Shutter:	Electronically controlled vertical-run focal-plane shutter, Electromagnetic release, Speed range:(1)Auto 1/2000-30 sec.(stepless),(2)Manual 1/2000-2 sec.(3)Bulb, Shutter lock by setting Drive mode switch at L.
Lens Mount:	Pentax K_{AF} bayonet mount(K-mount with AF coupler, lens information contacts and power contacts)
Compatible Lens:	Pentax K_{AF}, K_{AF}, K_A, and K-mount lenses are usable. Autofocus is possible using AF Adapter with K-K_A mount lenses.
Autofocus System:	TTL phase-matching 3 point autofocus system switchable to Spot focusing, AF operational brightness range: EV-1 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]
Power Zoom:	3-Speed Intelligent Power Zoom lens with built-in motor with FA zoom lens
Viewfinder:	Pentaprism finder, Natural-Bright-Matte focusing screen, Field of view:92%, Magnification:0.80X(with 50mm lens at ∞), Diopter: -2.5 to +1.5 diopters, Panorama format 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 Manual Exposure Mode, [▨] exposure compensation indication
External LCD panel Indication:	[P] = Programmed-AE Mode, [Tv] = Shutter-Priority AE Mode, [Av] = Aperture-Priority AE Mode, [M] = Metered Manual Mode, [bu] = Bulb-Mode, Film speed = 6 - 6400, ISO indication, [⊙—] = Film status information, [▭] = Battery exhaustion warning, Film counter = 0-99 [ϟ] = Built-in flash ready indication [ϟ] = blinking slowly flash recommendad warning [ϟ] = blinks rapidly Inappropriate lens warning, [👁] = Red-eye reduction flash mode [▣] = Automaic flash function, [▪≋] = PCV signal indication
Self-timer :	Electronically-controlled type with delay time of 12 sec. Start by depressing of shutter release button, Operation confirmation: By audible PCV signals, 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.2.0 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(6)-segment metering, Metering range from EV0 to EV21 at ISO100 with 50mm f/1.4 lens, Center-weighted and Spot metering mode can be set
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 to a slower speed, Day-light-sync flash, Slow-speed-sync flash, Contrast-control-synch flash (ISO range = 25-400), Automatic flash function, Red-eye reduction flash
Flash sync :	Hot shoe with X-contact with coupled with Pentax dedicated auto flashes, ISO range = 25-800
Power Source:	Two 3V lithium battery (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)x90.0mm(H)x61.5mm(D) (5.3"x3.5"x2.4") 400g(14.1 oz) body only without batteries
Supplied Accessories:	Hot Shoe Cover F_C, Release Socket Cap F, Camera Strap F_S, Eye Cup F_E, Finder Cap
Back cover :	Interchangeable for replacing with Data Back F_D

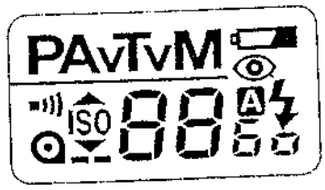
[LCD AND FINDER INDICATIONS]

■ Finder indications

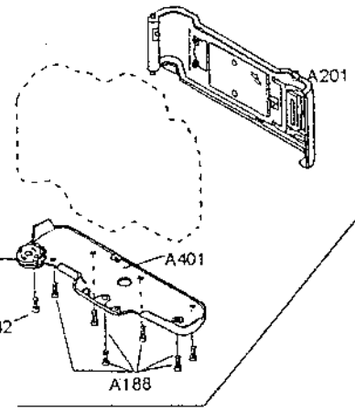


Finder LCD

■ LCD panel indications

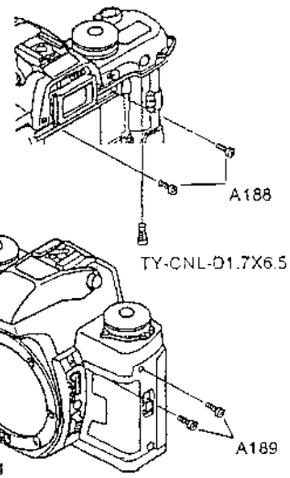


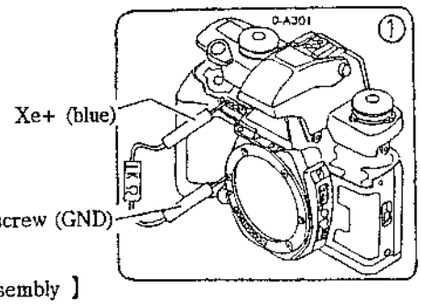
1. External parts

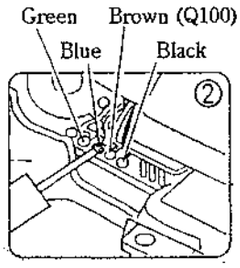


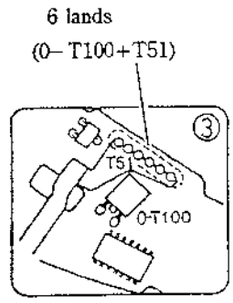
1-1. Back cover and Bottom cover assy.
- A201 (Back cover)
- 7 screws
- Open the battery cover
- A401 (Bottom cover)
- 0-A412 (Battery cover assy.)

1-2. Top cover assy.
- 8 screws
- Lift the top cover from the body, and then discharge electricity of the main capacitor with a 100-1k ohm resistor. ··· fig. ①
- Unsoldering
  (0-Q201 + Q100) 4 lead wires ··· fig. ②
  (0-T100 + T51) 6 lands ··· fig. ③
  (A330) 1 black lead wire ··· fig. ④
- 0-A301 (Top cover assy.)

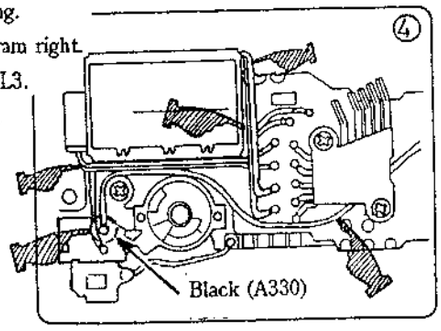




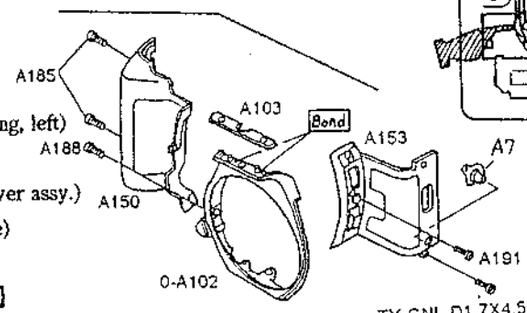




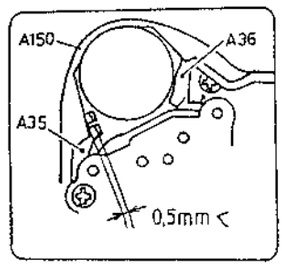
【 Note of assembly 】
- 【 Adj/Confirmation 】 Photo sensor position (p.15)
- Clean every connecting lands (0-T100, 0-A301) before installing.
- Arrange the lead wires and flexible boards as shown in the diagram right.
- Arrange T51 and the black lead wire from A330 on the slope of L3.
- Arrange the 4 lead wires (Q100) between 0-Q201 and 0-T100.
- Make sure that the contact brushes (Tv, Av) are not damaged, and make sure that the height of the brushes should be 4.3 mm.



1-3. Front covers
- 5 screws
- A153 (Body covering, left)
- A7 (Rewind SW)
- 0-A102 (Front cover assy.)
- A103 (Cover frame)
- A150 (Grip)



【 Note of assembly 】
- Set both Body and 0-A102 with the AF-position.
- A35 (Batt. contact piece) and A36 (Batt. cover SW...) should not project over the battery chamber as shown in the diagram right.



【 Adj/Confirmation 】 Function check (p.13) → Adjustment with computer program (p.14) →
→ Exposure value and DX switching confirmation (p.16) → AF-PZ check (p.16)

【 Note of Disassembly and Assembly 】

- Turn the Panorama lever to normal frame.

2-1. • Unsolder the lead wires and lands as shown in the fig.(① , ② , ③ , ④)
• Remove the flexible boards from the positionning studs.

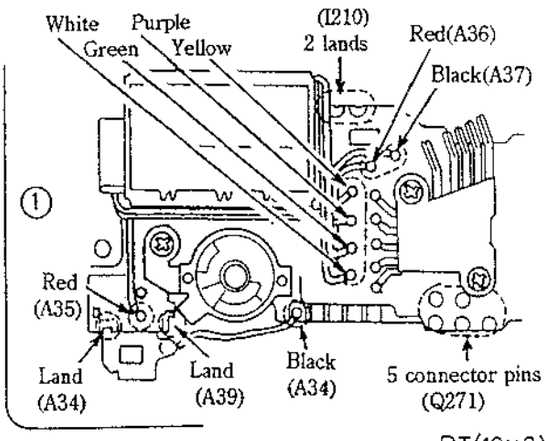
【 Note of assembly 】

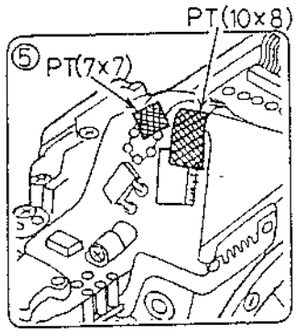
- Set the LCD frame plate underneath the LCD to the positionning hole of the Front housing.
- Arrange lead wires. ··· fig. ①
- Put on PT(7x7) and PT(10x8). ··· fig. ⑤

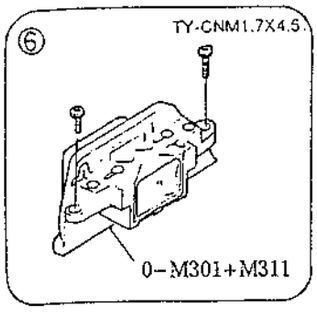
2-2. • 2 screws ··· fig. ⑥
• 0-M301 (Eyepiece assy.), M311

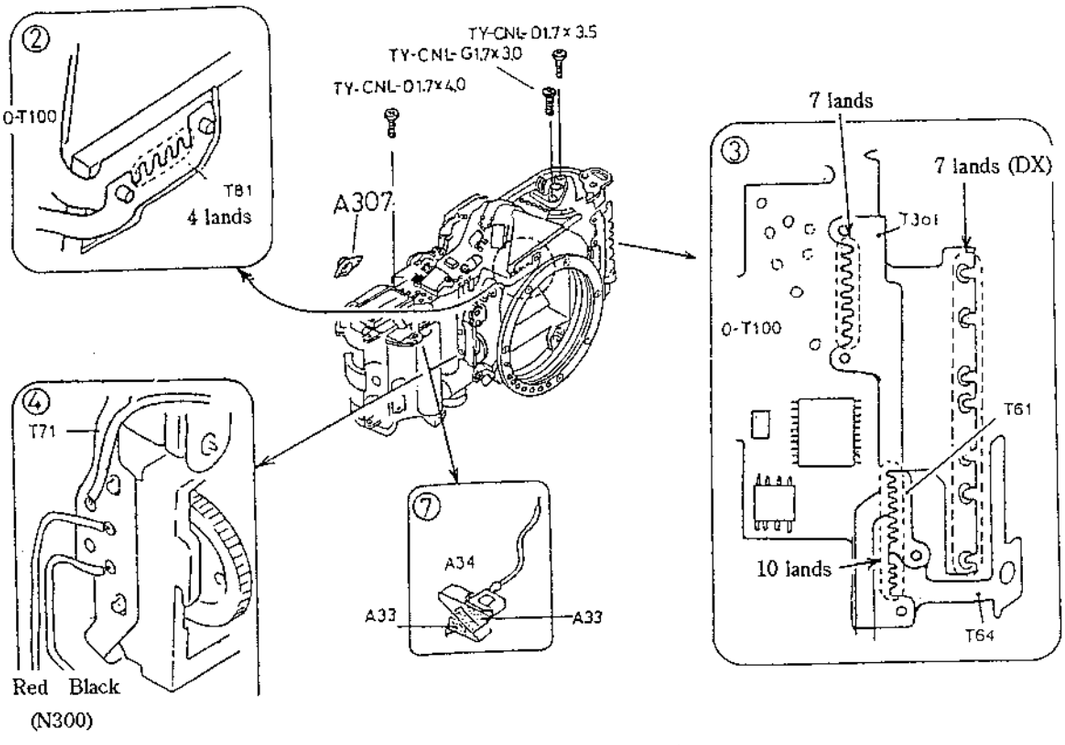
2-3. • A307 (Spot AF switch)
• A34,(Cusion) x2 ··· fig. ⑦

- TY-CNL-G1.7x3.0
- TY-CNL-D1.7x3.5(Ni)
- TY-CNL-D1.7x4.0





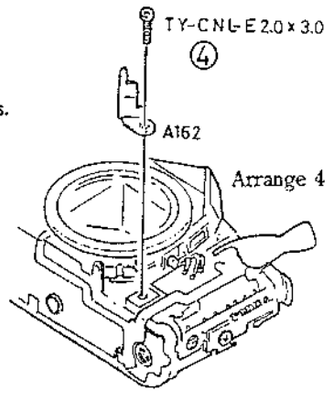




3. Main unit and Front housing block

3–1. ・ Remove 6 screws.
- A162 (Reinforced plate)
- Peel off two PT(7x15)s on the bottom.

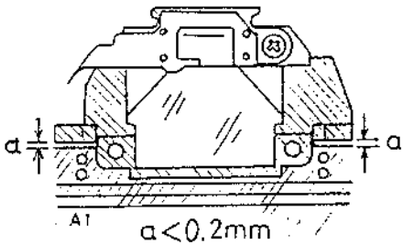
3–2. ・ Remove the Front housing from the main unit with paying attention of the flexible boards.

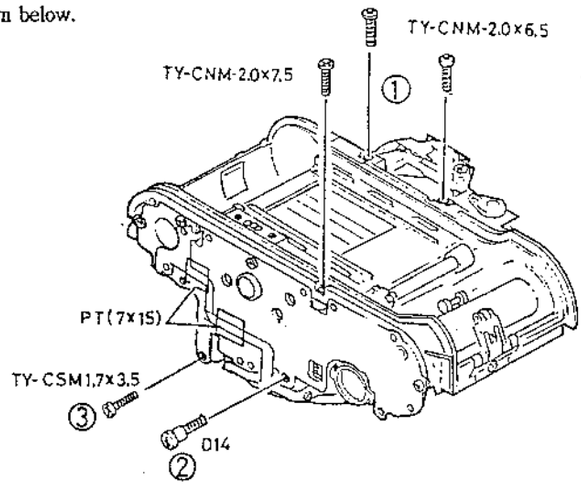


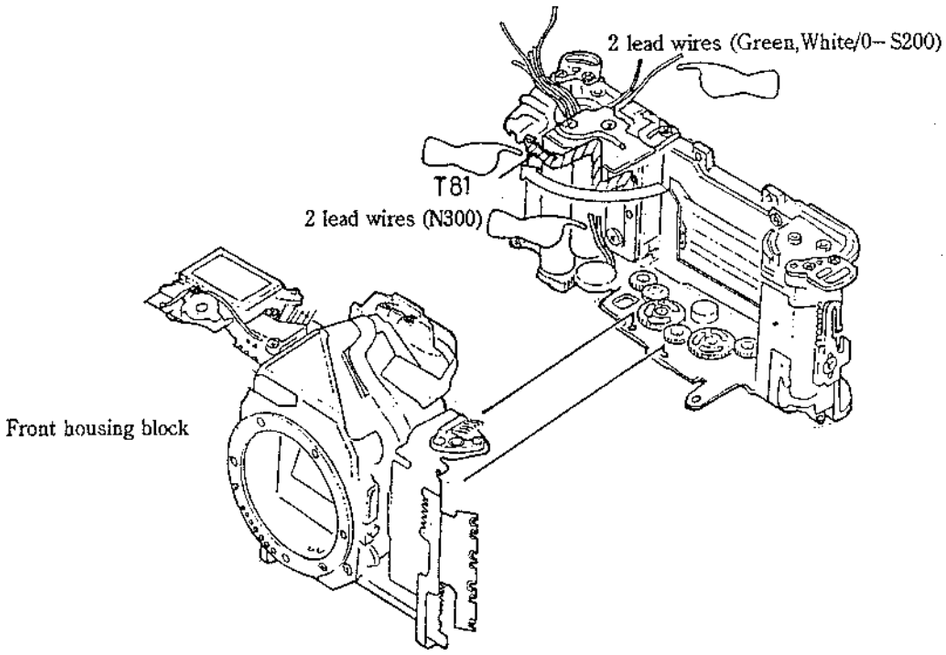
【 Note of assembly 】

- Arrange the lead wires and T81 as shown in the diagrams right and below.
- Set both Shutter block and the viewfinder with the normal frame.
- Set both Shutter block and Front housing at the charge condition.
- Make sure that the gap "a" should be as shown below.
- Tighten screws in numerical order (①, ②, ③, ④) as shown in diagrams.
- 【 Adj/Confirmation 】 Mechanical back

Standard: 45.46 ± 0.02 mm





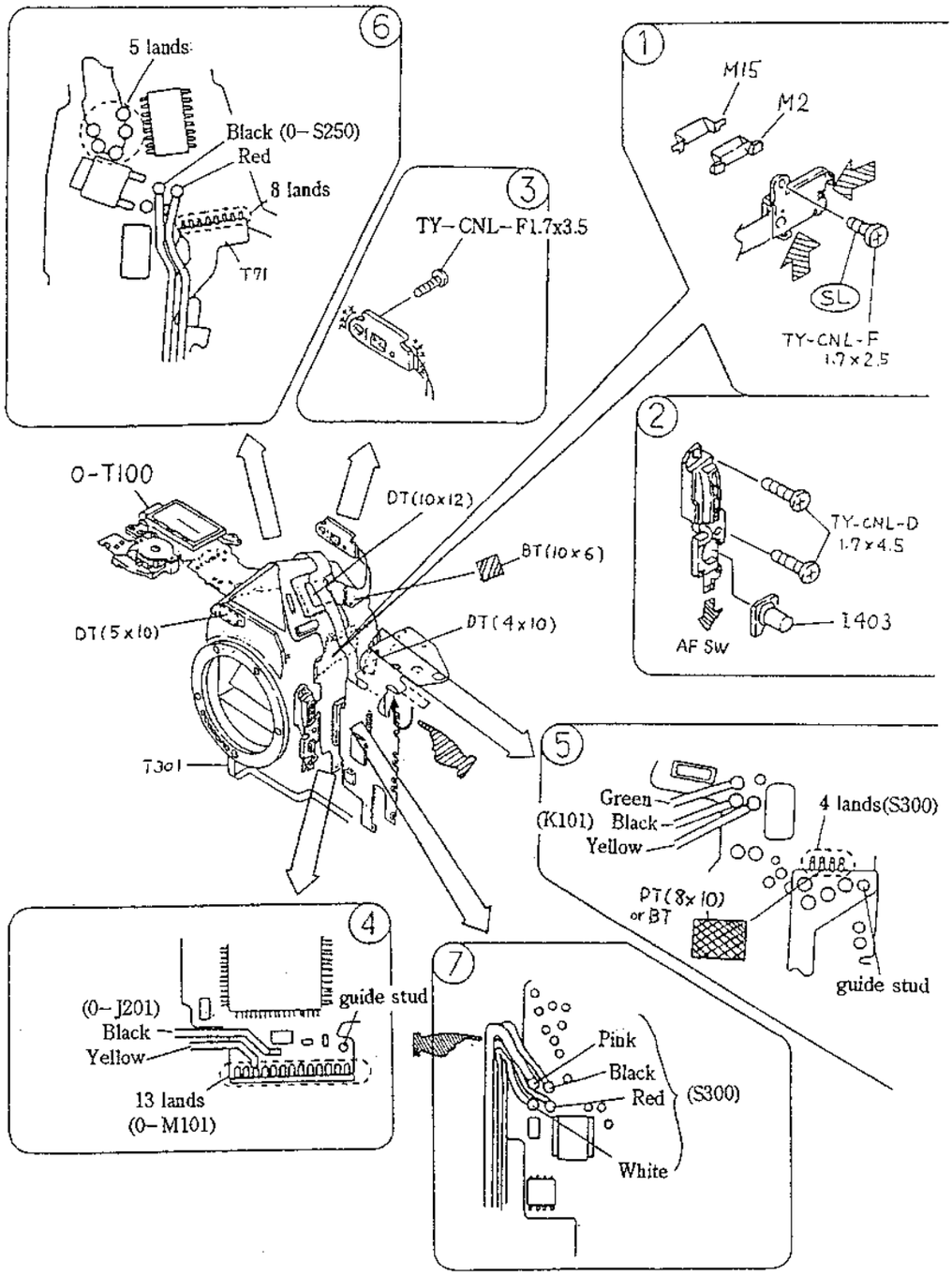


4. Main P. C. board (0-T100)

4-1. Unsolder lead wires and lands.
··· fig. ⑤ , ⑥ , ⑦ , ④

4-2. · Photo sensor part ··· fig. ③
· Release socket part ··· fig. ②
· Finder LCD part ··· fig. ①

【 Note of assembly 】
· Install 0-T100 in numerical order of diagrams.
· Install the Finder LCD as shown in the fig. ① .



5. Front housing block [disassembly and assembly]

【 Disassembly procedure 】

- L2, L3 (Fresnel lens, Pentaprism)
- S300 (AF motor block)
- 0−M101 (CCD block)
- 0−J201 (TTL flash photo sensor assy.)
- G100 (Diaphragm control block)
- 0−M41 (Finder mask assy.)
- 0−B52 (Mirror seat assy.)
- A104 (Mount ring)
- Front housing assy. and related parts

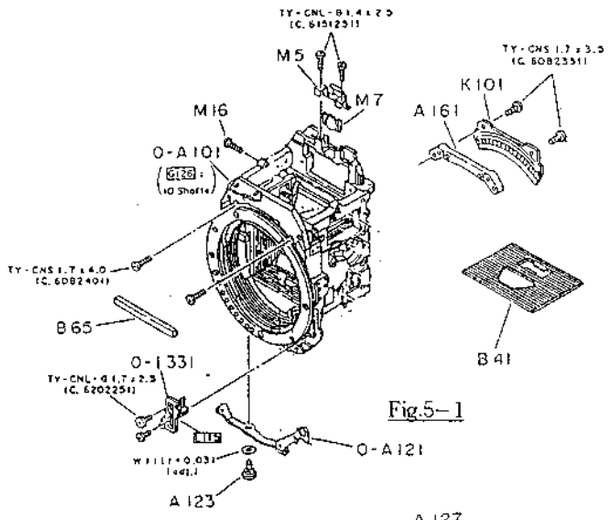


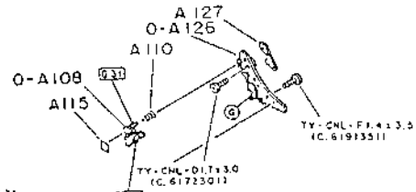
Fig.5−1

【 Assembly procedure 】

5−1. Front housing assy. and related parts

- 0−A121 (Joint lever assy.)

  W11 (0.03 /adj.), A123 (...lever retainer screw)
- B41 (Light seal plate, bottom)
- B65 (Mirror shock absorber)
- K101 (f−volume), A161 (Insulation spacer)
- M5, M7 (Condenser lens)



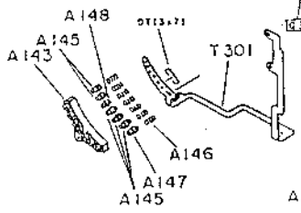


Fig.5−2−1, −2

5−2. A104 (Mount ring)

−1. A143 (Exterior tube)

- A145 x5, A147, A148 (Connector pin)
- A146 x7 (Connector pin spring)

−2. 0−A126 (Joint lever plate assy.)

- T301 (Mount P.C.board), DA(3x4)
- Install A143 on 0−A126 with a screw.
- 0−A128, A127, 1 screw

−3. 0−K102 (Diaphragm coupler ring assy.)

- A135 x2 (Restitution spring)

−4. A104 (Mount ring)

- A105 (Mount spring)
- A118 (Mount washer)
- A110 (...guide plate spring)
- 0−A108 (...guide plate assy.), A115

  A104, A119 (...retainer screw), 4 screws

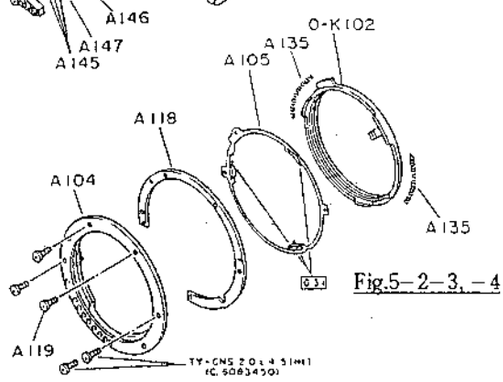


Fig.5−2−3, −4

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)

- B59 (...retainer plate), B60 (Plate retainer)
- B63, B57 (...actuating lever, ...lever shaft)
- B62 (2nd mirror actuating spring), apply a bond as shown in the diagram right.

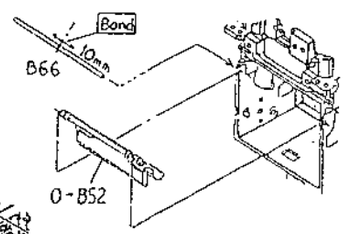
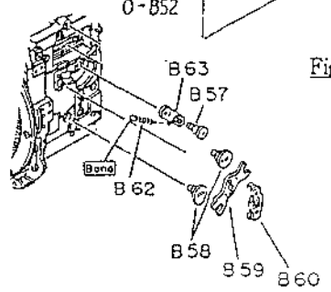


Fig.5−3

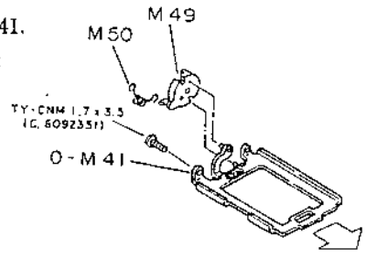


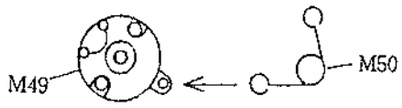
5−4. 0−M41 (Finder mask assy.)

−1. Set to the normal frame by moving the lever of 0−M41.

−2. When installing 0−M41 with a screw, make sure that the tips of panorama shutters should be positioned between the housing and the frame of 0−M41.

−3. M49, M50 (Finder select coupler, ...coupler spring)



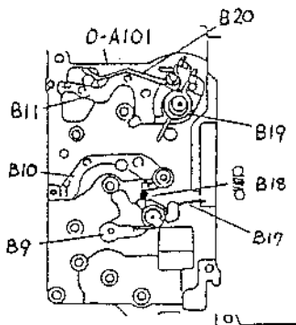


5−5. G100 (Diaphragm control block)

−1. Apply G126 to 10 shafts of the housing.

−2. Hold the shaft part of mirror seat assy. between B11 (Mirror drive lever) and B20 (...restitution spring). B19 (Mirror drive spring)

−3. B10 (Shutter charge lever), B9, B17 (Diaphragm set lever, ...lever spring), B18 (Lever restitution spring)



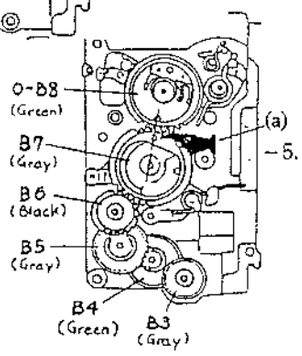
−4. Moving B9 (...set lever) down, install B7 (Shutter charge cam).

−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)

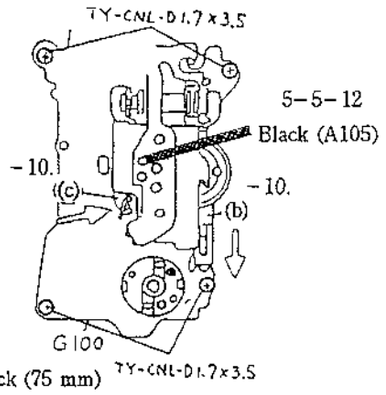


−9. Clean the contact lands of T71 using with contact cleaner.

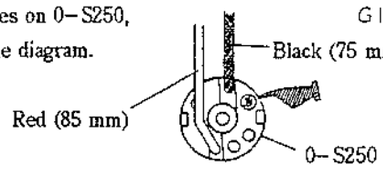
−10.Pushing down the sliding plate (b), push in latch lever (c) to hold the sliding plate.

−11.G100 · 0−S250 (Mirror motor assy.), 4 screws

−12.Solder one black lead wire (A105−T71).



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

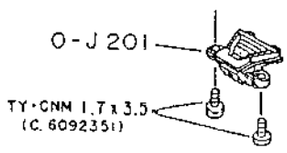


5−6 【 Confirmation 】 Mirror function check (p.17)

5−7 【 Adj/Confirmation 】 1st and 2nd mirror position (p.17)

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

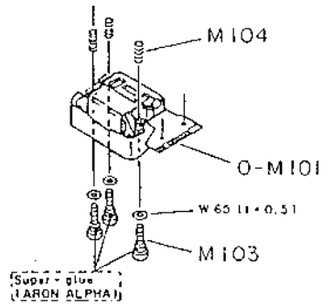
- 0−J201, 2 screws
- Make sure that the terminals of 0−J201 should not stand out.



5－9. 0－M101 (CCD block)

【 Required equipment 】 Hexagonal driver 1.5 mm

- Arranging the flexible board of 0－M101, install 0－M101.
- M104 x3 (CCD block spring), W65 (t=0.5) x3
- M103 x3 (CCD block adjusting screw)



【 Adjustment 】 CCD block temporary position

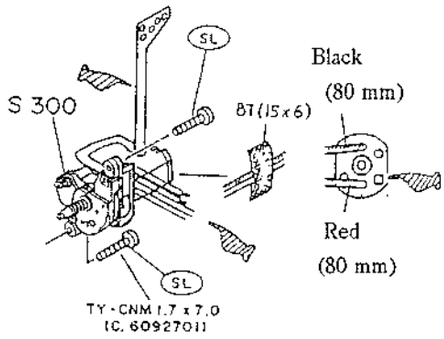
Screw in each M103 until it stops, then screw back 1 or 1.5 turns.

＊ Apply super－glue to between the head of M103 and W65 after adjusting the position by using a computer.

5－10. S300 (AF motor block)

－1. Install surely the power－zoom pins of S300 to the housing, and arrange the lead wires and flexible board as shown in the diagram right.

－2. S300, 2 screws (apply the screw－lock agent)



【 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 1.3 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.

5－11. L2, L3 (Fresnel lens, Pentaprism)

－1. L3, M8 x2, BT(24x30)

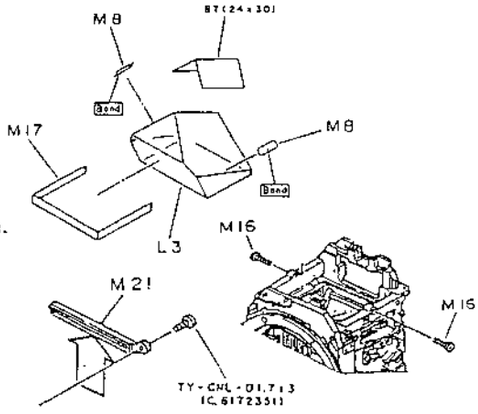
－2. Screw two M16s (...retainer screw) equally.

－3. M17 (Dust prevention seal)

－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)



【 Adj/Confirmation 】 Viewfinder focus and Parallax

【 Required equipment 】 Collimator, Focus master lens

- Install the eyepiece (0－M301) temporarily.

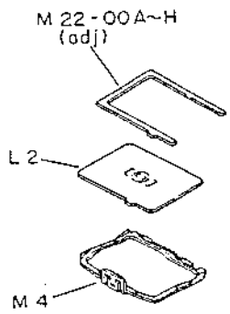
【 Adjustment 】 Adjust viewfinder focus by replacing Focus adjusting washer A－H (M22－00A to H) .

Standard: 0 ± 0.07 mm

【 Adjustment 】 Adjust parallax (right/left) by turning two retainer screws (M16), and apply the screw－lock agent to M16 after adjusting.

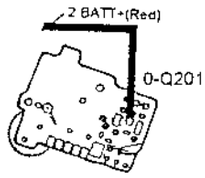
Standard: Right/Left 1° or less

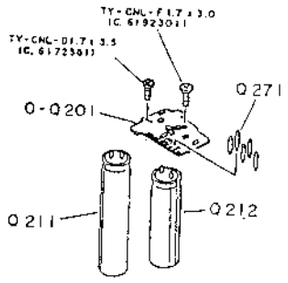
Top/Bottom 1° 50′ or less



6. Main unit (Disassembly and Assembly)

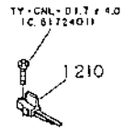
6–1. A39 (Battery select contact piece)
- N300 (Piezo–electric buzzer)
- Unsolder the red lead wire (No.2 BATT+).
- 2 screws, 0–Q201 (Flash P.C.board)

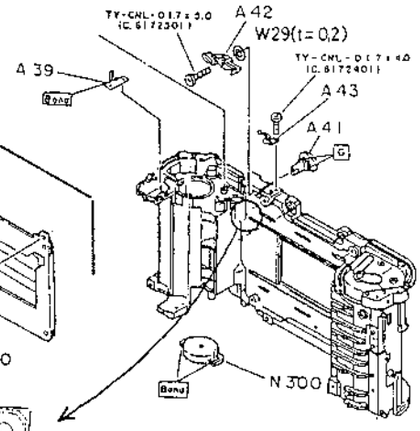




6–2. TY–CNL–D1.7X4.0, I210 (Panorama switch)
- TY–CNL–D1.7X4.0, A43 (panorama select spring)
- TY–CNL–D1.7X5.0
- A42, W29 (t=0.2), A41 (Panorama select lever B, A)

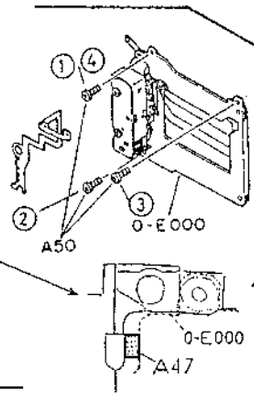
[Note of assembly]
- Check Panorama switch (I210) ON/OFF.





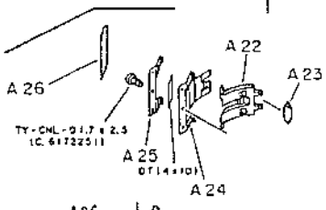
6–3. A50 x3 (Shutter block retainer screw)
- 0–E000 (Shutter block)

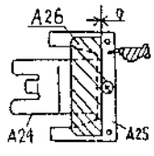
[Note of assembly]
- Set A47 (Light seal) to the side of 0–E000.
- Screw A50 (①) temporarily, and then screw completely ② , ③ and ④ in order.
- Check the function of Panorama lever.



6–4. TY–CNL–D1.7x2.5
- A26 (Light seal), DT(4x10), A25 (...guide retainer)
- A24, A22 (Film guide)

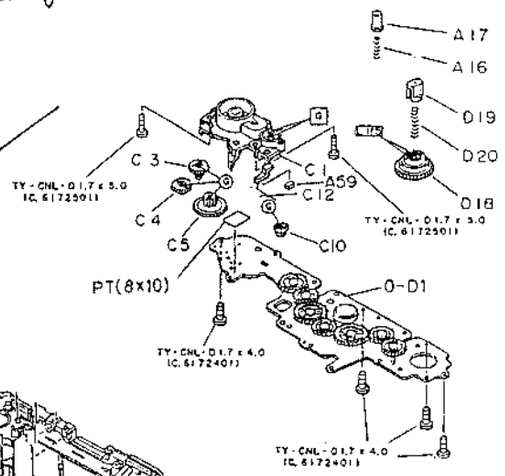
[Note of assembly]
- Install A26 on the Film guide as shown in the diagram.

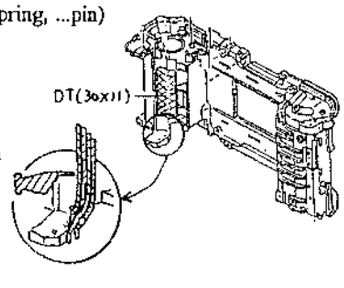


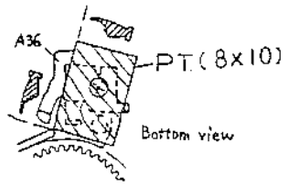


6–5. Remove 4 lead wires from the double–stick tape.
- 4 screws, 0–D1 (Rewind bottom mech. plate assy.)
- PT(8x10)
- D18 (Rewind fork gear)
- A16, A17 (Film cartridge retainer spring, ...pin)
- C3, C4, C5, C10 (Reduction gears)

[Note of assembly]
- Arrange the lead wires and position PT(8x10) as shown in the diagram.





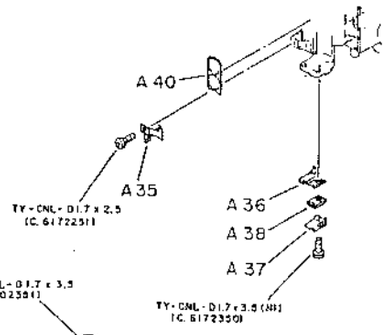


6–6. TY–CNL–D1.7x3.5

- A37, A38, A36 (Battery cover switch)
- A40 (Battery positioning seal)
- TY–CNL–D1.7x2.5
- A35 (Battery contact piece +)

【 Note of assembly 】

- Make sure that the Batt. cover switch (A36, A37) should be contacted completely.

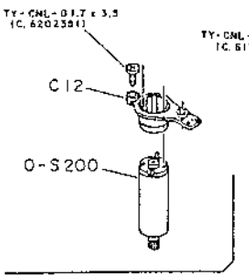


6–7. TY–CNL–G1.7x2.5

- 0–S200 (Film transport motor assy.), C12, 2 screws

【 Note of assembly 】

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

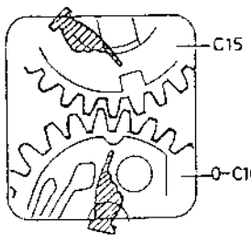


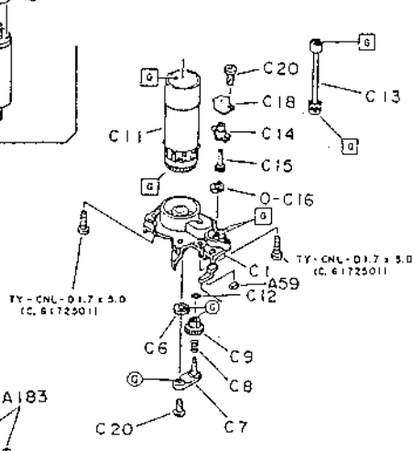
6–8. TY–CNL–D1.7x5.0 x2

- C1 (Bottom mech. plate), C11, C13 and related parts.

【 Note of assembly 】

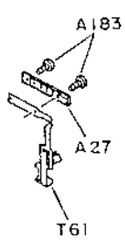
- Align C15 (Sprocket gear) and 0–C16 (...switch gear assy.) before installing as shown in the diagram right.



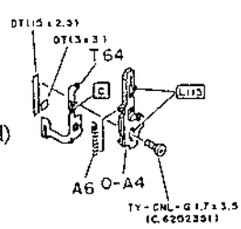


6–9. A183 x2 (Cover retainer screw C)

- A27 (Data contact cover)
- T61 (Data flexible P.C.board)

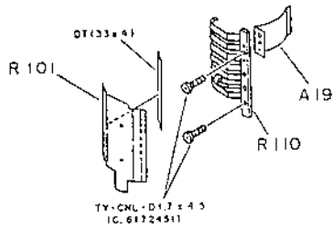


- TY–CNL–G1.7x3.5
- A6, 0–A4 (Back cover key assy.)
- T64 (Bock cover key SW P.C.board)



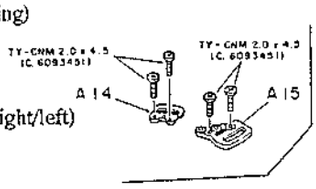
6–10. R101 (DX contact cover)

- TY–CNL–D1.7x4.5 x2
- R110 (DX contact piece assy.)
- A19 (Film cartridge spring)



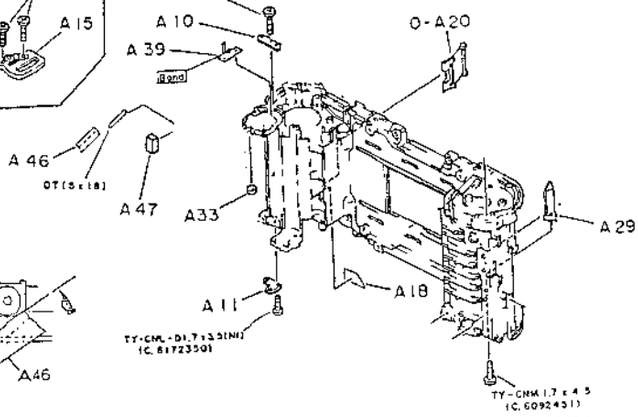
6–11. TY–CNM2.0x4.5 x4

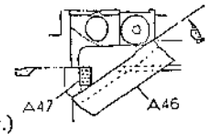
- A14, A15 (Strap hook, right/left)



【 Other parts 】

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



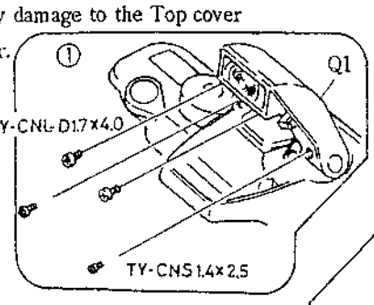


7. Top cover assy.

7-1. Disassembly of Q1 (Flash cover)

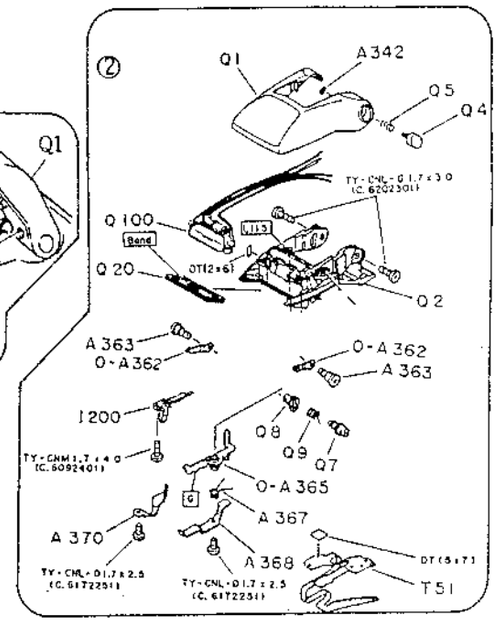
Set the flash at pop-up position, then remove 4 screws.

【 Note 】 Do not make any damage to the Top cover by using a driver.



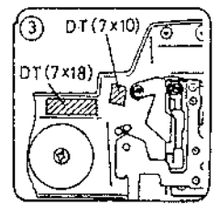
7-2. Unsolder the T51 (...flexible P.C.board).

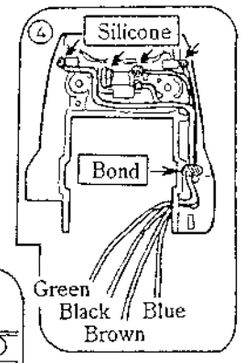
- TY-CNM1.7x4.0
- I200 (Pop-up switch)
- TY-CNL-D1.7x2.5
- A370 (Lead wire holder)
- TY-CNL-D1.7x3.0
- A368, A367, 0-A365 (flash hook lever assy.)
- TY-CNL-G1.7x3.0 x2
- Q7, Q8, Q9 (Flash pop-up spring)
- A363 x2, 0-A362 (Arm assy.) x2
- Peel 4 lead wires from the Top cover, then remove Q2 (Flash frame).

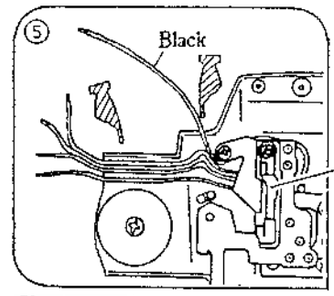


【 Note of assembly 】

- Stick on DT(7x18) and DT(7x10). ··· fig. ③
- Arrange the lead wires. ··· fig. ④ and ⑤
- When replacing Q100, apply silicone to the place as shown in the fig. ④ .
- Check the flash pop-up switch ON/OFF.





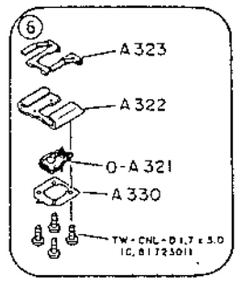


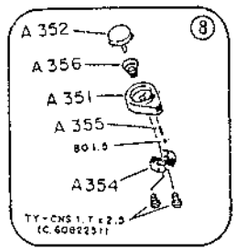
7-4. Accessory shoe ··· fig. ⑥

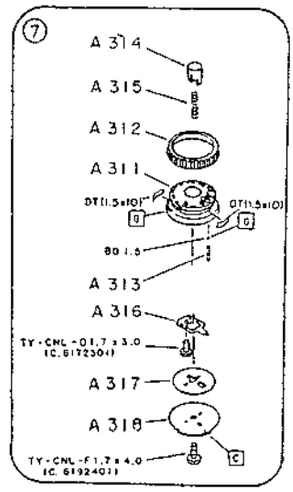
7-5. Shutter speed dial ··· fig. ⑦

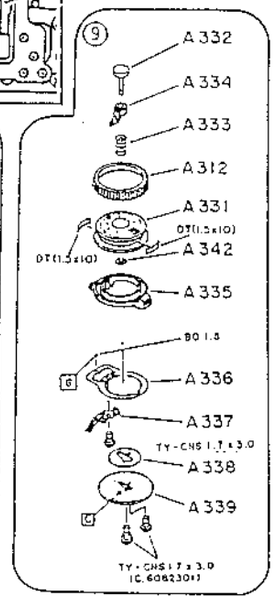
7-6. Main SW lever and Release button ··· fig. ⑧

7-7. Exposure-compensation dial ··· fig. ⑨









【 Note of assembly 】

Aligning A312 (Dial-rubber ring) and the dial (A311, A331), install A312 on the dial.

【 Other parts 】

- A302 (LCD window)
- A303 (Light seal frame)

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.

② Drive mode SW (Main SW) and Release SW

1. Set the Drive mode SW from "L" to " □ ". (→ Main SW/ON)
   Then confirm the LCD display showing exposure mode "P", "Av", "Tv" or "M".
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

Set the shutter speed dial to "A".
And set the diaphragm ring to "A", then confirm the LCD showing exposure mode "P".
Change the diaphragm ring to manual stop, then confirm the LCD showing exposure mode "Av".

④ Shutter speed dial

Turning the shutter speed dial, make sure that the finder LCD will be displayed the same shutter speed as setting the shutter speed dial.

⑤ Exposure compensation dial

Set the exposure mode "P", "Av" or "Tv".
Turning the exposure compensation dial from "+3" to "−3" except "0", make sure that the finder LCD will be displayed ◪ −mark and the compensation value in bar graph at the each stop of the dial.

⑥ Film speed setting (manual)

Set the exposure compensation dial to "ISO".
By depressing the Spot AF button, the film speed will be increased.
By depressing the Spot AF button while holding down the dial lock button, the film speed will be decreased.

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 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. By depressing the Multi−function button, the flash function will change accordingly as shown below.
   " ◌ " → " ■ " → " ◪ ◌ " → " "
3. Set the exposure mode "P", check the Automatic flash function (Ⓐ) 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.

(Continued)

⑩ Panorama mechanism

When set the Panorama lever to " ▣ ", make sure that the shutter and the viewfinder will change to the condition of panorama format.

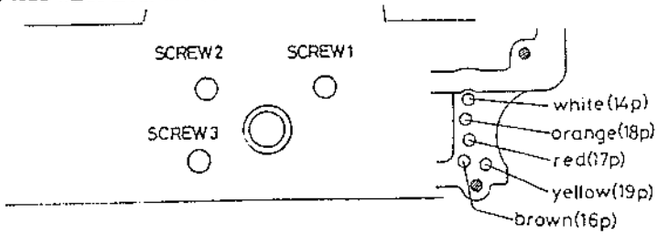
8–2. ADJUSTMENT AND CHECK WITH COMPUTER PROGRAM (AE and AF)

【 Required equipment 】 (* : Exclusive equipment for 27250)

☐ Personal computer, ☐ Color display, ☐ *Programmed software for 27250, ☐ Serial interface,
☐ Interface buffer, ☐ *I/F buffer cable for 27250, ☐ Regulated DC power supply, ☐ Battery (CR2),
☐ Power SW adapter, ☐ Shutter tester (7PE–25A3, EF–5000/8000 type),
☐ Light measuring master lens for LX, ☐ Diaphragm F8 setting ring K, ☐ Focus master lens for MEF,
☐ Optical regulator for MEF or *AF chart (2 m) for 27250, ☐ Hexagonal screw driver 1.5 mm,
☐ *AF positioning jig (Square and Cross) for 27250, ☐ *TTL adjusting back cover for 27250 (hand made),
☐ *Power adapter (hand made), ☐ *Temporary bottom cover (hand made) and Battery cover,
☐ *F zoom lens 35–80mm f/4–5.6 (Pro.No. 41280)

※ Before adjusting, the optical regulator should be adjusted the position of AF chart.
Refer to "Additional information" on the last page.

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



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

③ Using the programmed software for 27250, check and adjust by following the flow chart (p.18 to p.21). And the following confirmation and adjustment are different from the usual models.

CCD POSITION (p.19)

☆ By turning the adjusting screws (SCREW1, 2, 3), all check and adjustment ([1], [2], [3], [4]) should be satisfied.

***** CCD POSITION SQUARE/CROSS ADJUSTMENT ***** ([1], [2])

Using the AF positioning jigs (Square, Cross) for 27250, adjust the 3 positions of CCD sensor (R: right, C: center, L: light) in the tolerance by turning "SCREW 1" and "SCREW 3".

***** CCD POSITION CHECK ***** ([3])

Attach the F zoom lens 35–80mm f/4–5.6 (Pro.No. 41280) to the body and check.

AF ADJUSTMENT (p.20)

***** AF ADJUSTMENT *****

Adjust the 3 AF sensors by following the flow chart.

When adjusting the left and right AF sensors, set the chart of optical regulator (or AF chart) to horizontal (⛀). When adjusting the center AF sensor, set the chart of optical regulator to vertical (⛁).

FOCUS INDICATION CHECKING (p.21)

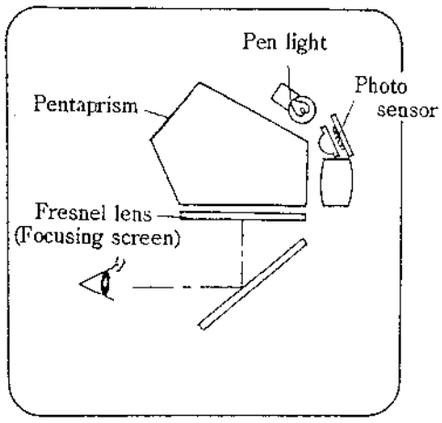
While attaching the focus master lens to MZ–5 body with not connected the computer, only center AF sensor (as Spot AF) is operated. (Also using K and KA–mounted lens)
However, when select "Focus Indication Checking", right and left AF sensors will be also operated in order to check the focus indication. (Refer to "8–5. Autofocus and Power zoom Check" on page 16.)

8-3. PHOTO SENSOR POSITION

【 Required equipment 】 Pen light (with stronger light) or equivalent

① Cover the eyepiece with a black tape.

② Strike light by a pen light 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 th mount ring side.



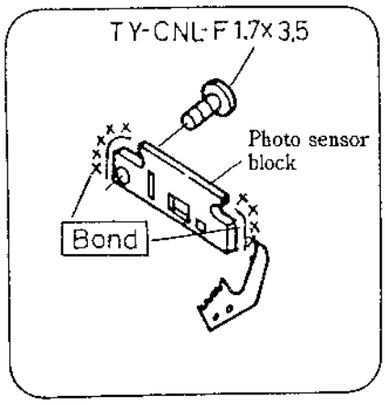
③ 【 Confirmation 】

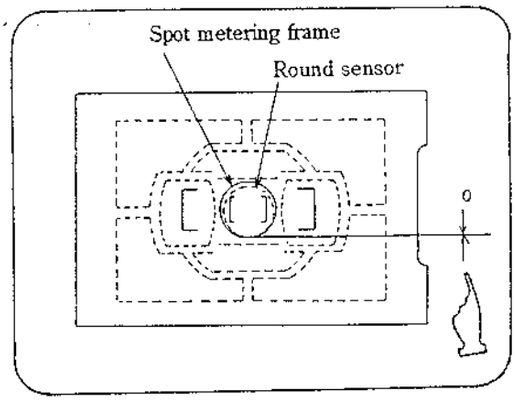
Confirm the round sensor in which should be positioned in the tolerance as shown in the diagram below.

④ 【 Adjustment 】

Remove M311 (Eyepiece frame cover) and loosen TY-CNL-F1.7x3.5, then move the entire photo sensor for the positioning adjustment.

⑤ After 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 below.





8-4. EXPOSURE VALUE AND DX SWITCHING

[Required equipment] Shutter tester (7PE-25A3, EF-8000, EF-5000 type)
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 Shutter speed dial to "A".
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.

LV6 to 14	-0.50 to +0.70 EV
LV15	-0.25 to +0.95 EV
LV16	±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 AND POWER ZOOM CHECK

[Required equipment] Optical regulator for MEF
Focus master lens for MEF
FA power zoom lens

While attaching the focus master lens to MZ-5 body, only center AF sensor (as Spot AF) is operated. However, connect the body to the computer and select "Focus Indication Checking" at the main menu, right and left AF sensors will be also operated in order to check the focus indication.

[Confirmation] Autofocus (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 When checking the center AF sensor, set the chart to vertical " ◍ ".
When checking the right and left AF sensor, set the chart to horizontal" ⊜ ".
③ Check the center, right and left AF sensor as following.
④ 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.
⑤ Center point of A and B - (A+B)/2 - should be within a range of -0.05 to +0.06 mm.

[Confirmation] Focus mode

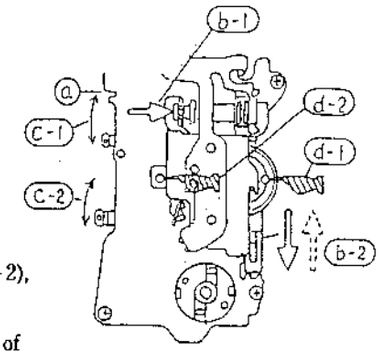
⑥ Attach the FA power zoom to the body, set the focus mode SW to "AF", and confirm the AF functions and switching of AF and MF.

[Confirmation] Power zoom

⑦ Confirm the power zoom functions.

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).

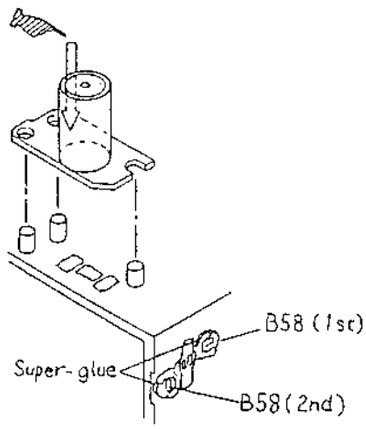
④ Apply DC to the mirror motor, set the hole of white gear as shown in the diagram in (d-1)
and set the position of the gear's hole as shown in the diagram in (d-2).
→ Wind completed condition

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 27250

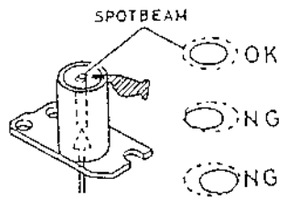


① Set the mirror housing block to the optical regulator.
☆ Make sure that the finder and related parts should be removed
from the housing block to check the 1st mirror position.

② 【 Adj/Confirmation 】 Make sure that a laser beam should be
seen on the screen of optical regulator within the tolerance below.
Toferance ··· X-axis: ± 15 ′
Y-axis: ± 5 ′
Adjust Y-axis of 1st and 2nd mirror positions to "0" by
moving the mirror seat receptacles (B58).

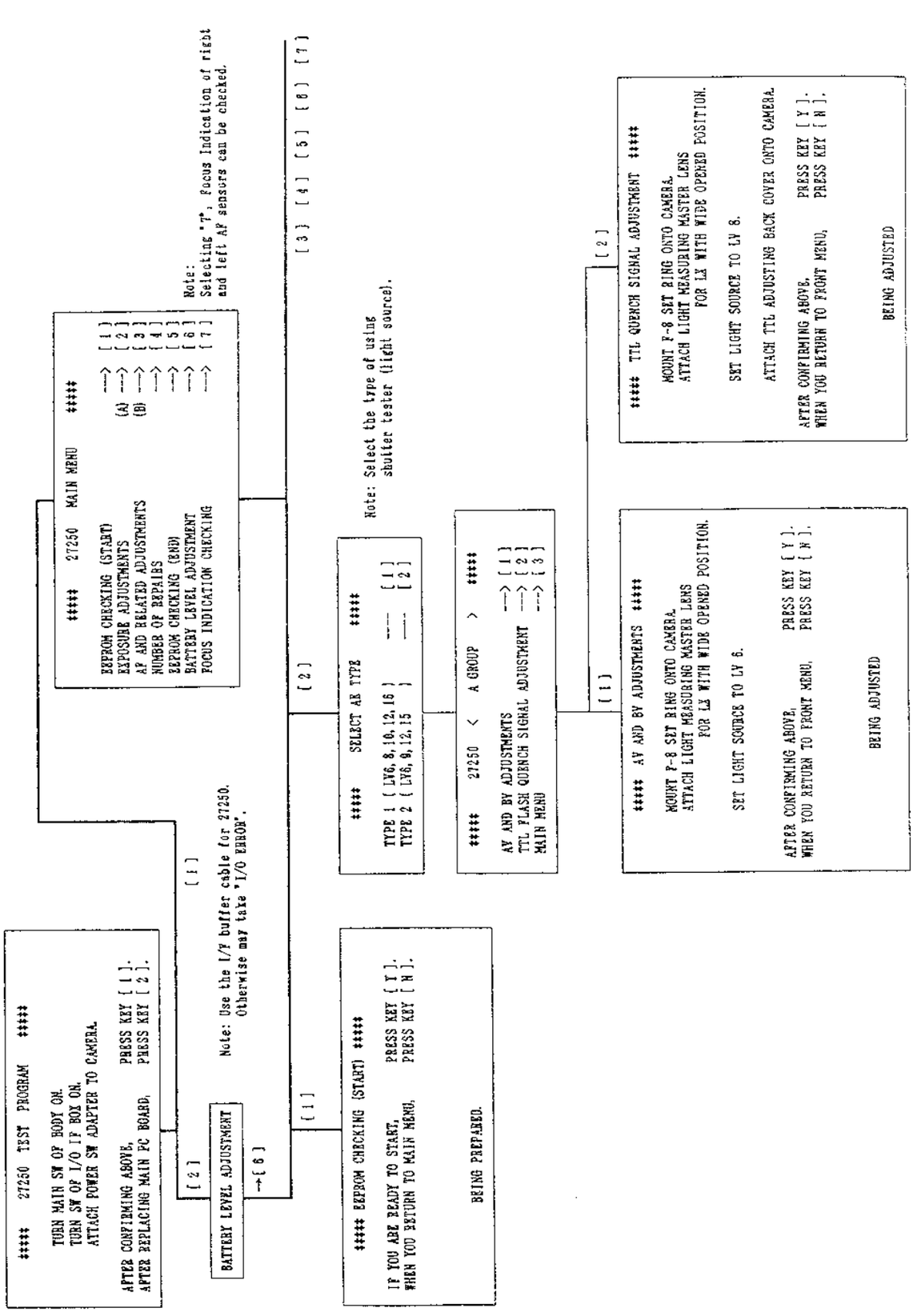
③ As shown in the diagram, when the Mirror angle adjusting jig is set on
the Front housing, a laser beam can be seen near the 1 mm hole of the jig.
【 Attention!!! 】 Be careful not to look laser beam directly to prevent your eyes from being trouble.
☆ This jig has a small amount of play forward and backward. 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.

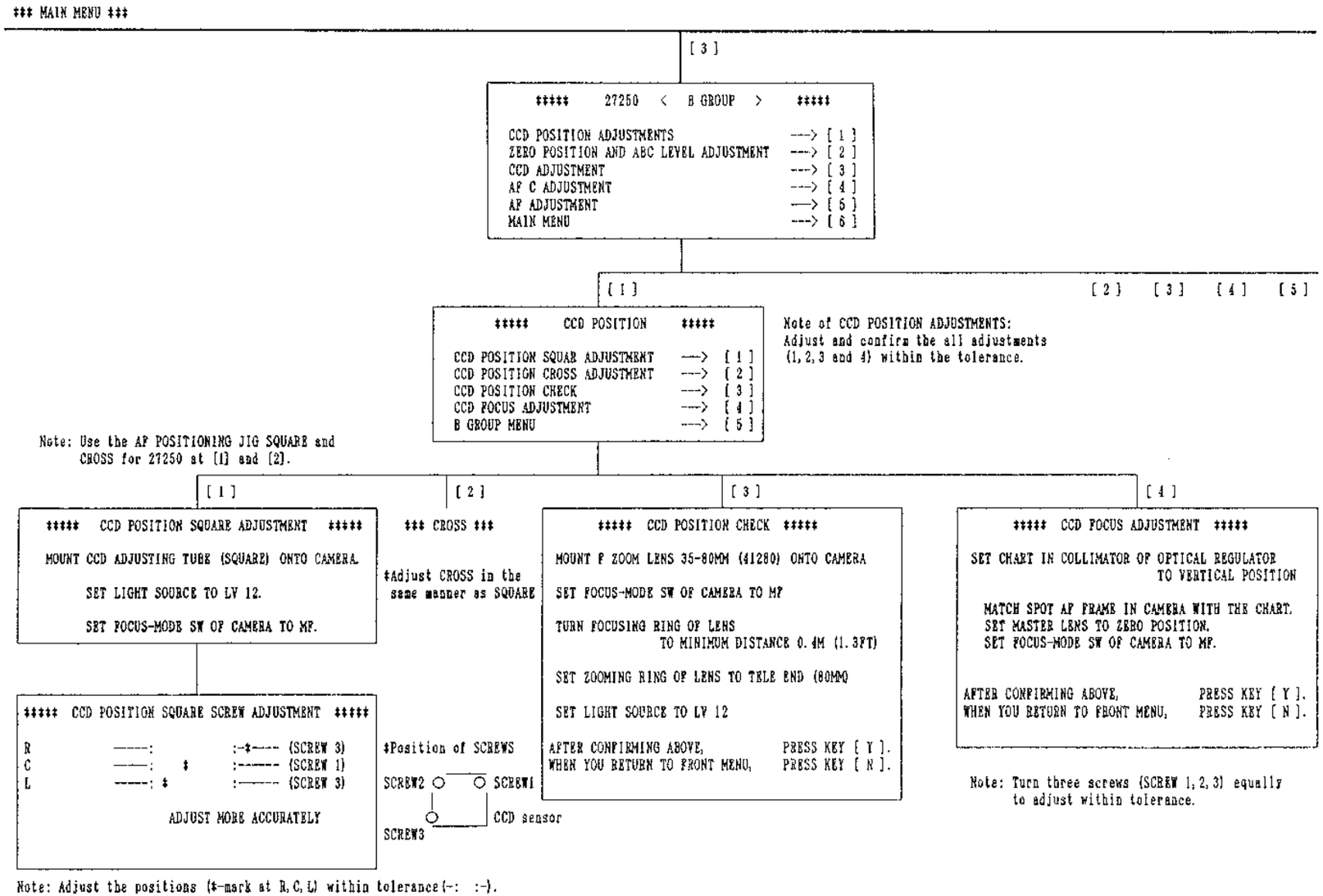
④ 【 Adjustment 】 2nd mirror position (fin adj.)
Move B58 (for 2nd mirror) to adjust the laser beam to
to the located at the center of the hole as shown in the diagram right.



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

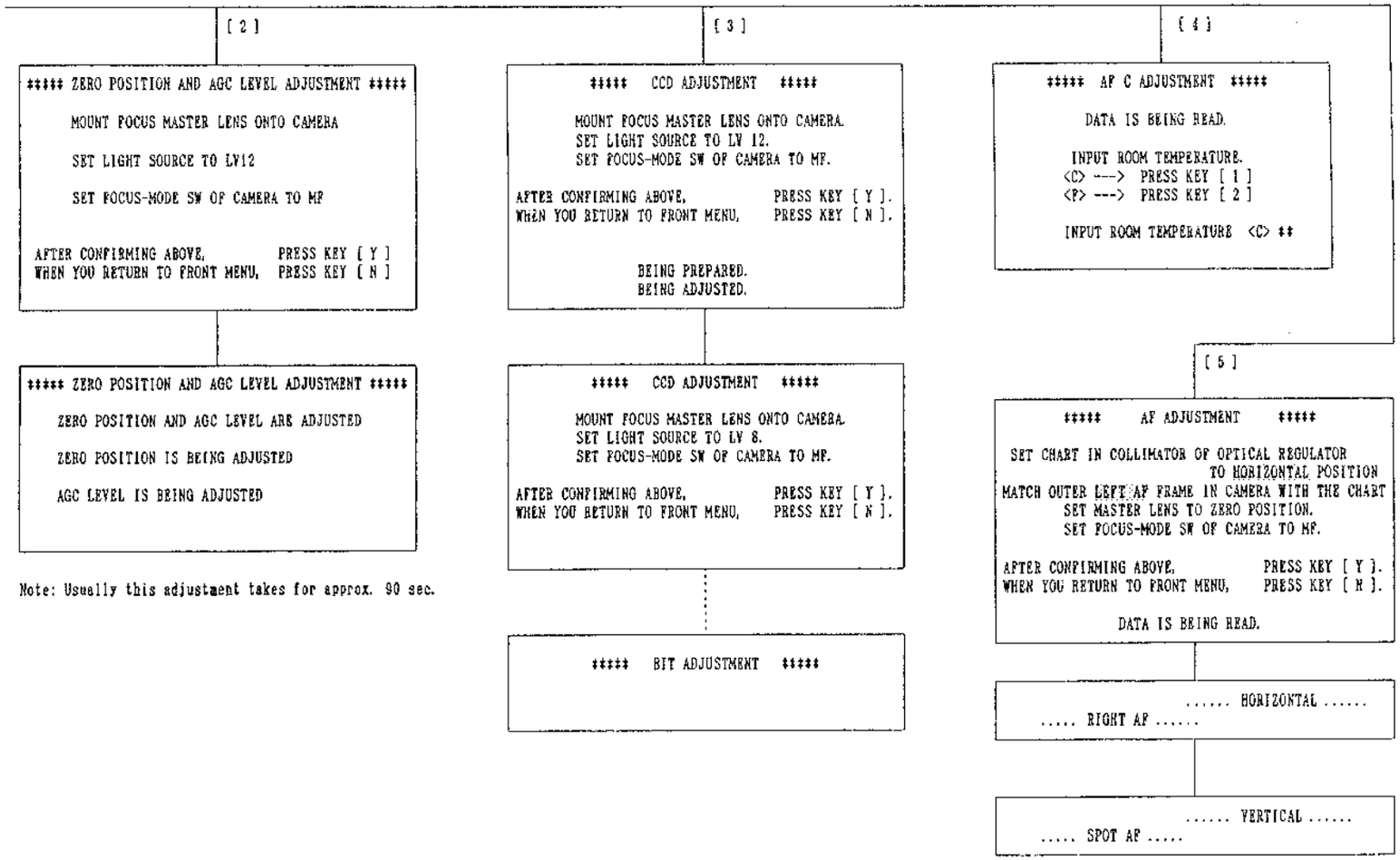
⑥ After confirmation is done, apply super-glue to two B58's.


***** 27250 TEST PROGRAM *****
TURN MAIN SW OF BODY ON.
TURN SW OF I/O IF BOX ON.
ATTACH POWER SW ADAPTER TO CAMERA.
AFTER CONFIRMING ABOVE, PRESS KEY [1].
AFTER REPLACING MAIN PC BOARD, PRESS KEY [2].
[2]
[1]
BATTERY LEVEL ADJUSTMENT
→[6]
Note: Use the I/F buffer cable for 27250.
Otherwise may take "I/O ERROR".
***** 27250 MAIN MENU *****
EEPROM CHECKING (START) ---> [1]
EXPOSURE ADJUSTMENTS (A) ---> [2]
AF AND RELATED ADJUSTMENTS (B) ---> [3]
NUMBER OF REPAIRS ---> [4]
EEPROM CHECKING (END) ---> [5]
BATTERY LEVEL ADJUSTMENT ---> [6]
FOCUS INDICATION CHECKING ---> [7]
Note:
Selecting "7", focus indication of right and left AF sensors can be checked.
[2]
[3] [4] [5] [6] [7]
[1]
***** EEPROM CHECKING (START) *****
IF YOU ARE READY TO START, PRESS KEY [Y].
WHEN YOU RETURN TO MAIN MENU, PRESS KEY [N].
BEING PREPARED.
***** SELECT AE TYPE *****
TYPE 1 (LV6, 8, 10, 12, 16) ---> [1]
TYPE 2 (LV6, 9, 12, 15) ---> [2]
Note: Select the type of using shutter tester (light source).
***** 27250 < A GROUP > *****
AV AND BV ADJUSTMENTS ---> [1]
TTL FLASH QUENCH SIGNAL ADJUSTMENT ---> [2]
MAIN MENU ---> [3]
[1]
***** AV AND 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 8.
AFTER CONFIRMING ABOVE, PRESS KEY [Y].
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [N].
BEING ADJUSTED
[2]
***** 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

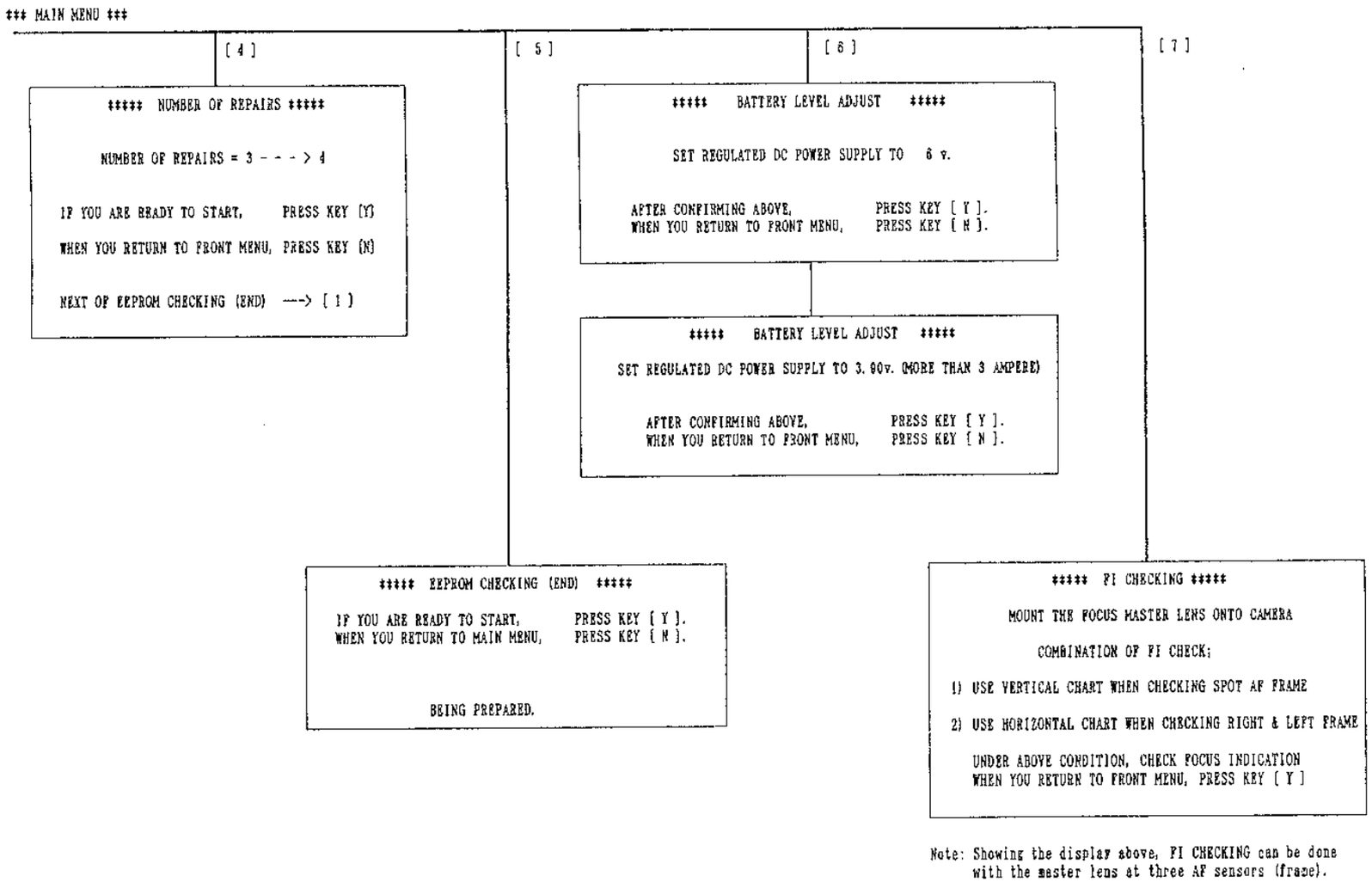

MAIN MENU
[3]
27250 < B GROUP >
CCD POSITION ADJUSTMENTS ---> [1]
ZERO POSITION AND ABC LEVEL ADJUSTMENT ---> [2]
CCD ADJUSTMENT ---> [3]
AF C ADJUSTMENT ---> [4]
AF ADJUSTMENT ---> [5]
MAIN MENU ---> [6]
[1]
[2]
[3]
[4]
[5]
CCD POSITION
CCD POSITION SQUAR ADJUSTMENT ---> [1]
CCD POSITION CROSS ADJUSTMENT ---> [2]
CCD POSITION CHECK ---> [3]
CCD FOCUS ADJUSTMENT ---> [4]
B GROUP MENU ---> [5]
Note of CCD POSITION ADJUSTMENTS:
Adjust and confirm the all adjustments
(1, 2, 3 and 4) within the tolerance.
Note: Use the AF POSITIONING JIG SQUARE and
CROSS for 27250 at [1] and [2].
[1]
[2]
[3]
[4]
CCD POSITION SQUARE ADJUSTMENT
MOUNT CCD ADJUSTING TUBE (SQUARE) ONTO CAMERA.
SET LIGHT SOURCE TO LV 12.
SET FOCUS-MODE SW OF CAMERA TO MF.
CROSS
‡Adjust CROSS in the
same manner as SQUARE
CCD POSITION CHECK
MOUNT F ZOOM LENS 35-80MM (41280) ONTO CAMERA
SET FOCUS-MODE SW OF CAMERA TO MF
TURN FOCUSING RING OF LENS
TO MINIMUM DISTANCE 0.4M (1.3FT)
SET ZOOMING RING OF LENS TO TELE END (80MM)
SET LIGHT SOURCE TO LV 12
AFTER CONFIRMING ABOVE, PRESS KEY [Y].
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [N].
CCD FOCUS ADJUSTMENT
SET CHART IN COLLIMATOR OF OPTICAL REGULATOR
TO VERTICAL POSITION
MATCH SPOT AF FRAME IN CAMERA WITH THE CHART.
SET MASTER LENS TO ZERO POSITION.
SET FOCUS-MODE SW OF CAMERA TO MF.
AFTER CONFIRMING ABOVE, PRESS KEY [Y].
WHEN YOU RETURN TO FRONT MENU, PRESS KEY [N].
Note: Turn three screws (SCREW 1, 2, 3) equally
to adjust within tolerance.
CCD POSITION SQUARE SCREW ADJUSTMENT
R ——: :-‡—— (SCREW 3)
C ——: ‡ :------ (SCREW 1)
L ——: ‡ :------ (SCREW 3)
ADJUST MORE ACCURATELY
‡Position of SCREWS
SCREW2
SCREW1
CCD sensor
SCREW3
Note: Adjust the positions (‡-mark at R, C, L) within tolerance(-: :-).

*** MAIN MENU ***

*** B GROUP MENU ***



Note: Usually this adjustment takes for approx. 90 sec.



Note: Showing the display above, FI CHECKING can be done with the master lens at three AF sensors (frame).

☆ Exclusively used for MZ-5/ZX-5

Item No.	Description
1.	Program software for 27250
2.	AF positioning jig (SQUARE) for 27250 (CCD adjusting tube)
3.	AF positioning jig (CROSS) for 27250 (CCD adjusting tube)
4.	I/F buffer cable for 27250 ··· (used in common with other AF-SLR)
5.	Mirror angle adjusting jig for 27250 (MAAJ-27250 POSITIONING JIG)
☐	DC power adapter (handmade, refer to "Method of making ..." on page 24)
☐	Temporary bottom cover (handmade, for installing the battery cover at program adj.)
☐	TTL flash adjusting back cover for 27250 (handmade, new LX 1st curtain on pressure plate)
6.	AF chart (2m) ··· (exclusive jig with using the focus master lens for 2m)

☆ Others (PC-98: PC-286, PC-386. PC/AT: IBM Compatible computer)

Item No.	Description	
7.	Personal computer	(for PC-98 or PC/AT)
8.	Color display	(for PC-98 or PC/AT)
9-1.	PC module board (PIO-24/24T)	(for PC-98)
-2.	PC/AT module board (PIO-32/32 (PC))	(for PC/AT)
10-1.	DX interface cable (DXIC-P98)	(for PC-98)
-2.	Interface cable PC/AT (PCA96PS)	(for PC/AT)
11.	Serial interface (SIFI-269)	
12.	Interface buffer (IFB-269)	
13.	Power SW adapter for AF-SLR	
14.	Collimator chart 25900 for optical regulator (OCRC-259)	
15.	Hexagonal driver 1.5mm (HD-M1.5)	
16.	Shutter tester (7PE-25A3, EF-5000, EF-8000)	
17.	Optical regulator for 24300(MEF)	
18.	Exposure master lens for 24500(Super A) (ML-245)	
19.	Diaphragm F8 setting ring K (KA-0-1A)	
20.	Focus master lens for 25900(SFX) (ML-259, KML-01)	
21.	Light measuring master lens for 24000(LX) (LML-240)	
22.	Dial gauge comparator	(PH-2)
23.	Block gauge	(229N-A01-A2)
24.	Mount block	(23600N -A1,A104-A)
25.	Mount block spacer	(23600N-A01,A104-A-A)
26.	Mount block holder for 259	(23600N-A01,A104-A-B)
27.	1000mm collimator	
28.	Regulated DC power supply	(capable current at least 3A)
29.	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.

Date: Mar.'96

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

Item No.(see left page)	Description of order	Parts No.	Remark
1.	Program software for 27250 (PC-98)	—	lending only
	PROGRAMMED SOFT PC/AT 27250 (5INCH)	M242-00A	for PC/AT, 5 inch FD
	// (3.5INCH)	M242-00B	for PC/AT, 3.5 FD
	FLOPPY DISC 3.5 (EMPTY)	M201	3.5 inch
	FLOPPY DISC 5.0 (EMPTY)	M202	5 inch
2.	AF POSITIONING JIG (SQUARE) FOR 27250	M513	
3.	AF POSITIONING JIG (CROSS) FOR 27250	M514	
4.	I/F BUFFER CABLE FOR 27250	M515	
5.	MAAJ-27250 POSITIONING JIG	J120	
6.	27250 AF CHART (2M)	J121	
7.	Personal computer	NA	
8.	Color display	NA	
9-1.	MODULE BOARD PIO-24/24T	M102	for PC-98
-2.	PC/AT BOARD PIO-32/32 (PC)	M125	for PC/AT
10-1.	INTERFACE CABLE DXIC-P98	M114	for PC-98
-2.	I/F CABLE PC/AT PCA96PS	M126	for PC/AT
11.	SERIAL INTERFACE SIFI-269	M103	
12.	INTERFACE BUFFER IFB-269	M104	
13.	POWER SW ADAPTER	M123	
14.	COLLIMATOR CHART OCRC-259	M21	
15.	HEXAGON DRIVER HD-M1.5	K72	
16-1.	Shutter tester 7PE-25A3	N/A	(TI: Technical Information)
-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
17.	Optical regulator for 24300	N/A	
18.	MASTER LENS ML-245	N28	
19.	DIAPHRAGM SET RING KA-0-1A	N26	
20.	FOCUS MASTER LENS KML-01	N17	
21.	EXPOSURE MASTER LENS LML-240	N27	
22.	DIAL GAUGE COMPARATOR PH-2	N1	
23.	BLOCK GAUGE 229N-A01-A2	N4	
24.	MOUNT BLOCK 236N-A1,A104-A	N5	
25.	M/B SPACER 236N-A1,A104-A-A	N6	
26.	M/B HOLDER 236N-A1,A104-A-B	N7	
27.	Collimator 1000 mm	N/A	
28-1.	DC power supply PAB18-5.5	N/A	TI.No. T-99
-2.	DC POWER SUPPLY PR-18-3	M29	18V, 3A
-3.	DC POWER SUPPLY PR-18-5	M30	18V, 5A
29.	DIGITAL MULTI METER	M54	

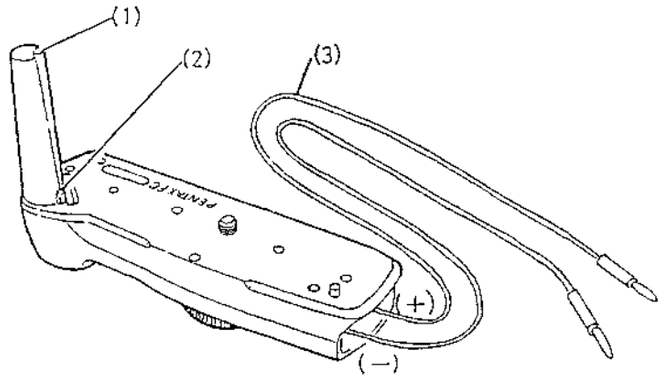
※ Use the AA-battery pack Fc (Pro.No. 70110) to make DC power adapter (handmade jig).

The points of making:

(1): Elimination of the switching function as using AA-battery. (Remove Y18 (Connecter pin))

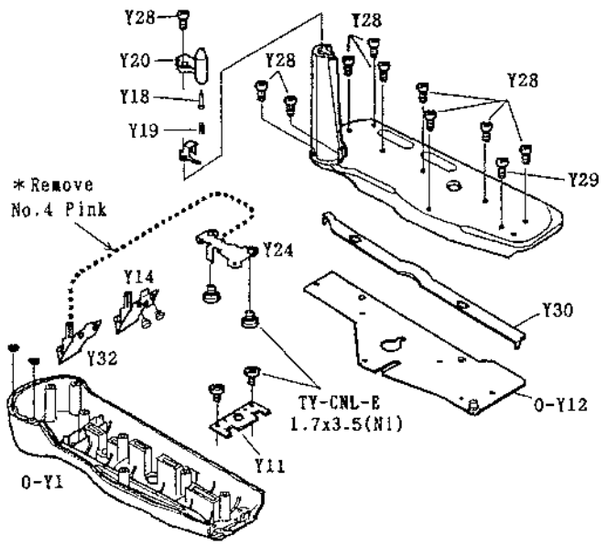
(2): Elimination of the battery SW function (as reset sw). (Remove the lead wire from the SW)

(3): Connection of two power cords (red and black, etc.).



Procedure of making

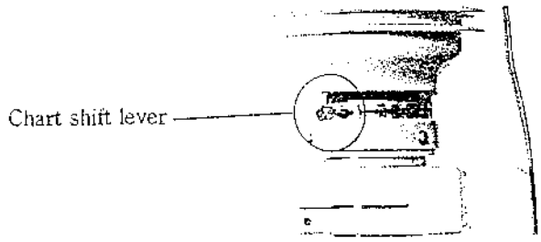
1. Remove nine Y28s (Cover retainer screw A) on the plane side of Y2 (Cover).
2. Remove Y29 (Cover retainer screw B).
3. Remove two retainer screws (TY-CNL-E1.7x3.5 Ni) and Y11 (Hinge retainer plate), and then remove the battery cover assy.
4. Remove 0-Y12 (Base plate) and Y30 (Coupling lever).
5. Unsolder the lead wire No.4 (pink), and remove the lead wire.
6. Solder a power cord (⊕ /red) on Y14 (Battery contact B), and solder a power cord (⊖ /black) on Y32 (Battery contact C).
7. Put on 0-Y12 (... plate) and Y2 (Cover). (It is not necessary to install Y30.)
8. Install the ten retainer screws (Y29 and nine Y28s).
9. Remove Y28 (... screw) and Y20 (Contact retainer) on the negative contact part. Then remove Y18 (Connector pin) and Y19 (Connector pin sparing) from the body.
10. Install back Y20 only, then screw Y28.



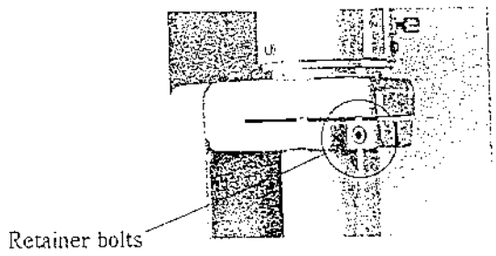
Subject: Preparation for using the optical regulator with MZ-5

Position AF chart of the optical regulator as follows:

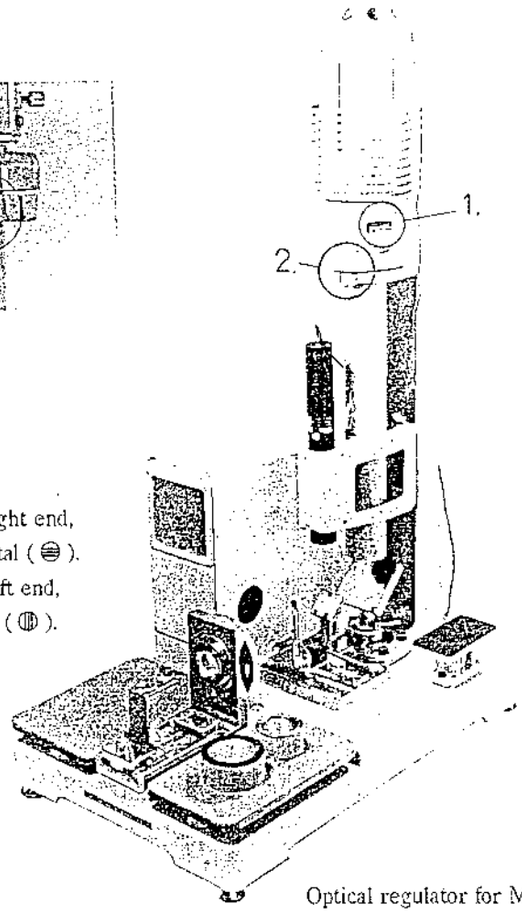
1. Loosen the chart shift lever and rotate it to the left end, and then fasten it as shown below.



2. Loosen the retainer bolts on the arm, turn the collimator so that AF chart is set to vertical (◍), and then fasten the bolts.



3. 【 Confirmation 】
   - 1. When rotate the chart shift lever to the right end, make sure that AF chart is set at horizontal (⊜).
   - 2. When rotate the chart shift lever to the left end, make sure that AF chart is set at vertical (◍).



Optical regulator for MEF