

作成承認印

配布許可印



D100 VBA10201

REPAIR MANUAL

Nikon | NIKON CORPORATION
Tokyo, Japan

Recycled paper

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Specifications

ITEM	CONTENTS
Type	Single-lens reflex digital camera with interchangeable lenses
Effective pixels	6.1 million
CCD	23.7 x 15.6 mm, 12-bit RGB CCD Total pixels: 6.31 million
Image size (pixels)	• 3008 x 2000 (Large) • 1504 x 1000 (Small) • 2240 x 1488 (Medium)
Lens mount	Nikon F mount (with AF coupling and AF contacts)
COMPATIBLE LENSES	
Type G or D AF Nikkor	All functions supported
PC Micro Nikkor 85 mm F2.8D	All functions except autofocus supported
Other AF Nikkor	All functions except 3D multi-sensor balanced fill flash for digital SLR supported
AI-P Nikkor	All functions except autofocus, matrix metering, and 3D multi-sensor balanced fill flash for digital SLR supported
Other	Other lenses can be used in manual exposure mode; electronic range finder can be used if lens has a maximum aperture of f/5.6 or faster
Picture angle	Equivalent in 35-mm format is approximately 1.5 times lens focal length
Viewfinder	Optical fixed pentaprism
Diopter adjustment	-2.0 – +1.0 m ⁻¹
Eyepoint	20 mm (-1.0 m ⁻¹)
Focusing screen	Type B BriteView clear matte screen Mark II with superimposed focus brackets and On-Demand grid lines
Frame coverage	Approximately 95% of lens (vertical and horizontal)
Approximate magnification	0.8 x with 50-mm lens set to infinity and -1.0 m ⁻¹
Reflex mirror	Quick-return
Lens aperture	Instant return with depth-of-field preview
Focus-area selection	Can be selected from five focus areas
Lens servo	Instant single-servo AF (S), continuous servo AF (C), manual (M); focus tracking automatically activated according to subject status in single-servo and continuous-servo AF
Autofocus	TTL phase detection by means of Nikon Multi-CAM900 autofocus module with AF-assist illuminator (range approximately 0.5 – 3 m/1'8"–9'10")
Detection range	-1 – +19 EV (ISO 100, room temperature)
AF-area mode	Single-area AF, dynamic-area AF (supports closest-subject priority)
Focus lock	Focus can be locked by pressing shutter-release button halfway (single-servo AF) or pressing AE-L/AF-L button

EXPOSURE	
Metering	Three-mode through-the-lens (TTL) exposure metering
Matrix	3D matrix metering supported with type G and D lenses; matrix metering available with other lens types
Center-weighted	Weight of 75% given to 8-mm circle in center of frame
Spot	Meters 4-mm circle in center of frame; with CPU lens, metered area linked to selected focus area
Range	0 – 21 EV (3D matrix or center-weighted metering) 3 – 21 EV (spot metering) (ISO 100 equivalent, f/1.4 lens, 20°C/68°F)
Exposure meter coupling	Combined CPU and AI
Exposure control	Programmed auto with flexible program; shutter-priority auto; aperture-priority auto; manual; exposure compensation (–5 – +5 EV in increments of 1/3 EV); auto bracketing (2 or 3 exposures in steps of 1/3 or 1/2 EV)
Exposure lock	Locked at detected value with AE-L/AF-L button
Shutter	Combined electronic (CCD) and mechanical shutter
Speed	30 – 1/4000 in 1/3 EV steps, long time-exposure (bulb)
Sensitivity	200 – 1600 (ISO equivalent) in steps of 1/3 EV; auto gain to ISO 1600 equivalent
White balance	TTL white balance control with white balance bracketing
Built-in Speedlight	Pop-up Speedlight with button release
Guide number	Guide number 12/39 (ISO 100, m/ft)
Illuminating angle	Same as 20-mm lens
FLASH	
Sync contact	X-contact only; flash synchronization at up to 1/180 s
Flash control	- Automatic balanced fill flash controlled by five-segment TTL multi sensor with single-component IC. Supports 3D multi-sensor balanced fill flash for digital SLR (built in Speedlight or SB series 80DX/50DX/28DX with type G or D lens) and multi-sensor balanced fill flash for digital SLR (built in Speedlight or SB series 80DX/50DX/28DX with other CPU Nikkor lens) - Non-TTL auto
Flash sync modes	Front-curtain sync (normal), red-eye reduction, red-eye reduction with slow sync, slow sync, rear curtain
Flash-ready light	Lights when built-in Speedlight or SB-series 80DX, 50DX, 28DX, 28, 27, or 22s is fully charged; blinks for three seconds after flash is fired at full output
Accessory shoe	Standard ISO hot-shoe contact with safety lock

STORAGE	
Media	Type I and II CompactFlash™ cards; Microdrives®
File system	Compliant with Design Rule for Camera File Systems (DCF) and Digital Print Order Format (DPOF)
Compression	• Compressed NEF (raw): 12-bit lossless compression • JPEG: JPEG baseline compliant
Self-timer	Electronically controlled; duration 2– 20 s
Depth-of-field preview button	Lens aperture stopped down when button is pressed
Monitor	1.8", 120,000-dot, low temperature polysilicon TFT LCD with adjustable white LED backlight and brightness adjustment
Video output	Can be selected from NTSC and PAL
External interface	USB
Tripod socket	1/4" (JIS)
Power source	• One rechargeable Nikon EN-EL3 lithium-ion battery • MB-D100 multi-function battery pack (available separately) with two rechargeable Nikon EN-EL3 lithiumion batteries or six LR6 (AA) lithium or alkaline batteries • EH-5 AC adapter (available separately)
Approximate dimensions (W x H x D)	144 x 116 x 80.5 mm (5.7" x 4.6" x 3.2")
Approximate weight	700 g (25 oz) without battery or memory card
OPERATING ENVIRONMENT	
Temperature	0 – 40°C (32– 104°F)
Humidity	Less than 85% (no condensation)

* Unless otherwise stated, all figures are for a camera with a fully-charged battery operating at an ambient temperature of 20 °C(68°F)

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Disassembling

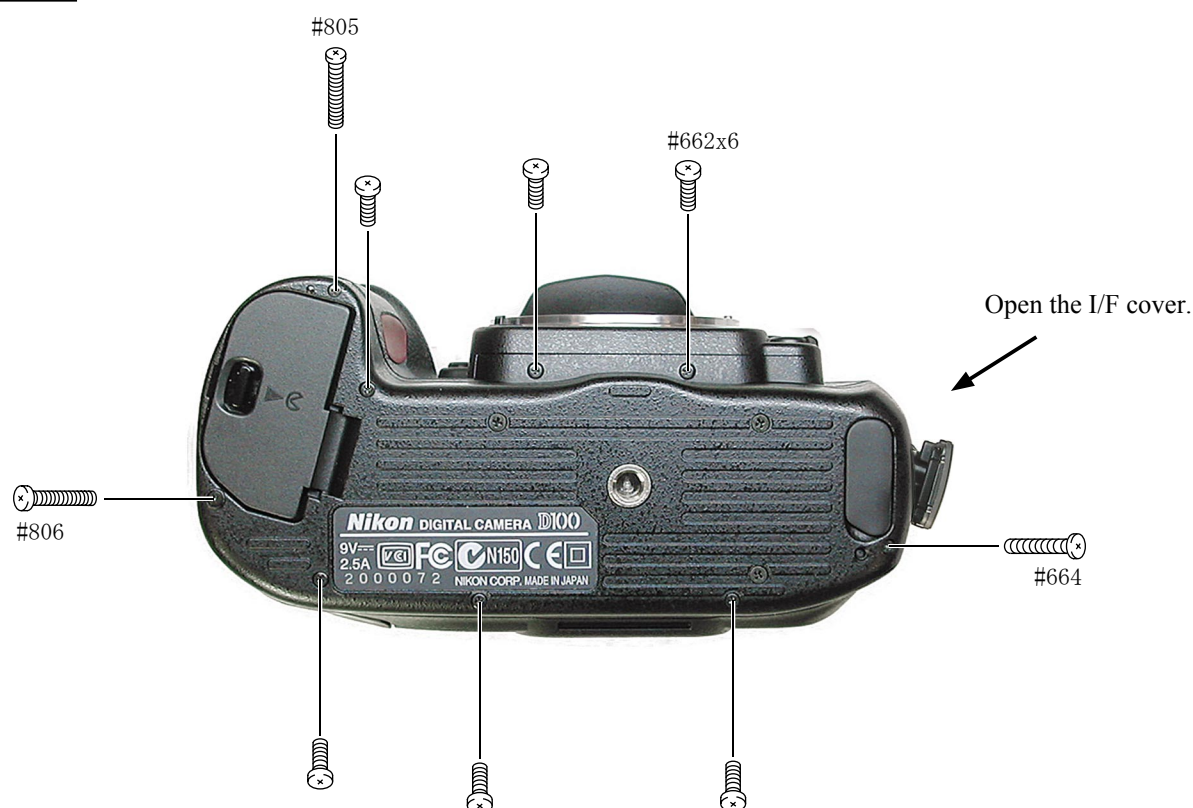
 WARNING	
	● There are high voltage parts inside. Be careful of this electric shock, when you remove the cover. ● You must discharge the main condenser according to the instruction of this repair manual before you remove the cover.

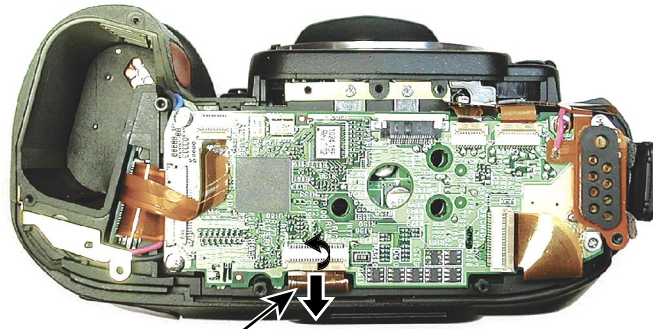
Cautions:

- ① In disassembly and assembly, carry out the work by using the conductive mat (J5033) and list straps (J5033-5) to protect the electric parts from static electricity.
- ② Before disassembling, remove the batteries or the AC power cord.
- ③ When disassembling, remember the processed condition of lead wires and FPC, the setting positions and kinds of screws, etc.
- ④ The low-pass filter of the image CCD PCB unit is liable to damage. Handle it very carefully.
- ⑤ In disassembly, a large assembly unit is sometimes removed. If such a large unit must be disassembled furthermore, refer to the exploded drawings.
- ⑥ The chapters of disassembling and assembly do not mention the water proof sponge. When the part is replaced, refer to the exploded drawings and set a waterproof sponge. For the setting position, refer to the original part to be replaced.
- ⑦ The battery for backup is mounted on the DC/DC PCB. For replacing the battery for backup, accordingly, disassemble the DC/DC PCB as well.

1. SEPARATION OF THE FRONT BODY FROM THE REAR BODY

Bottom Cover



Back Cover**1. Removal of Connection FPC**

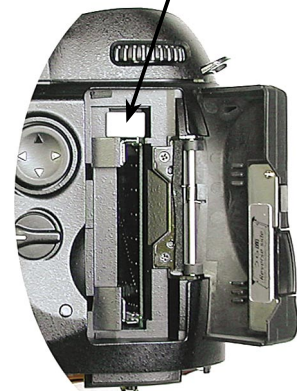
Disconnect the TFT PCB connection FPC from the slider.

2. Removal of Screws

- Remove 5 screws.
- Open the CF cover. Then remove the back cover as letting go the CF card eject button.

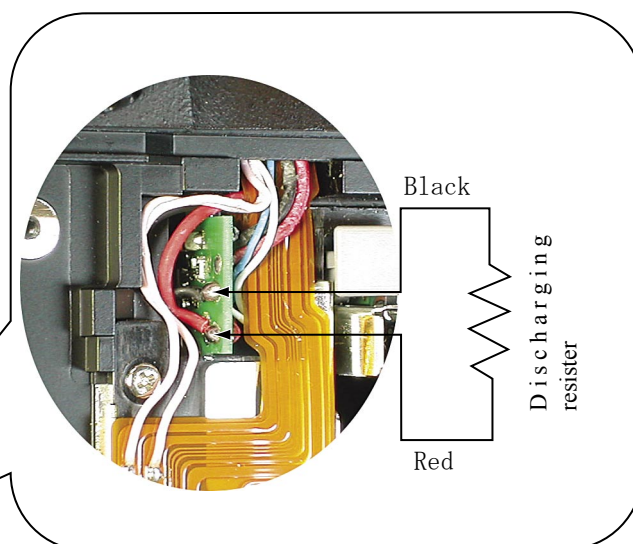
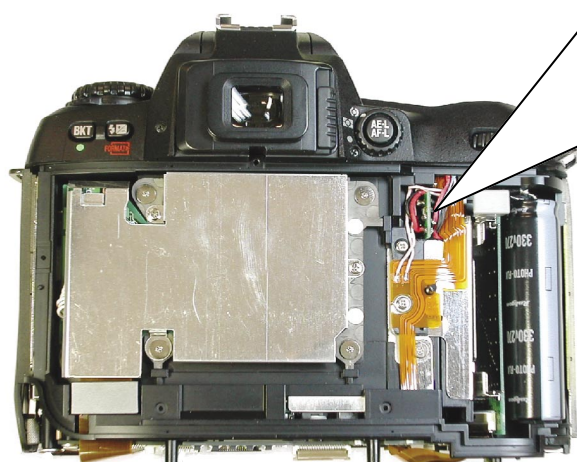
 WARNING	
	● There are high voltage parts inside. Be careful of this electric shock, when you remove the cover. ● You must discharge the main condenser according to the instruction of this repair manual before you remove the cover.

CF card eject button



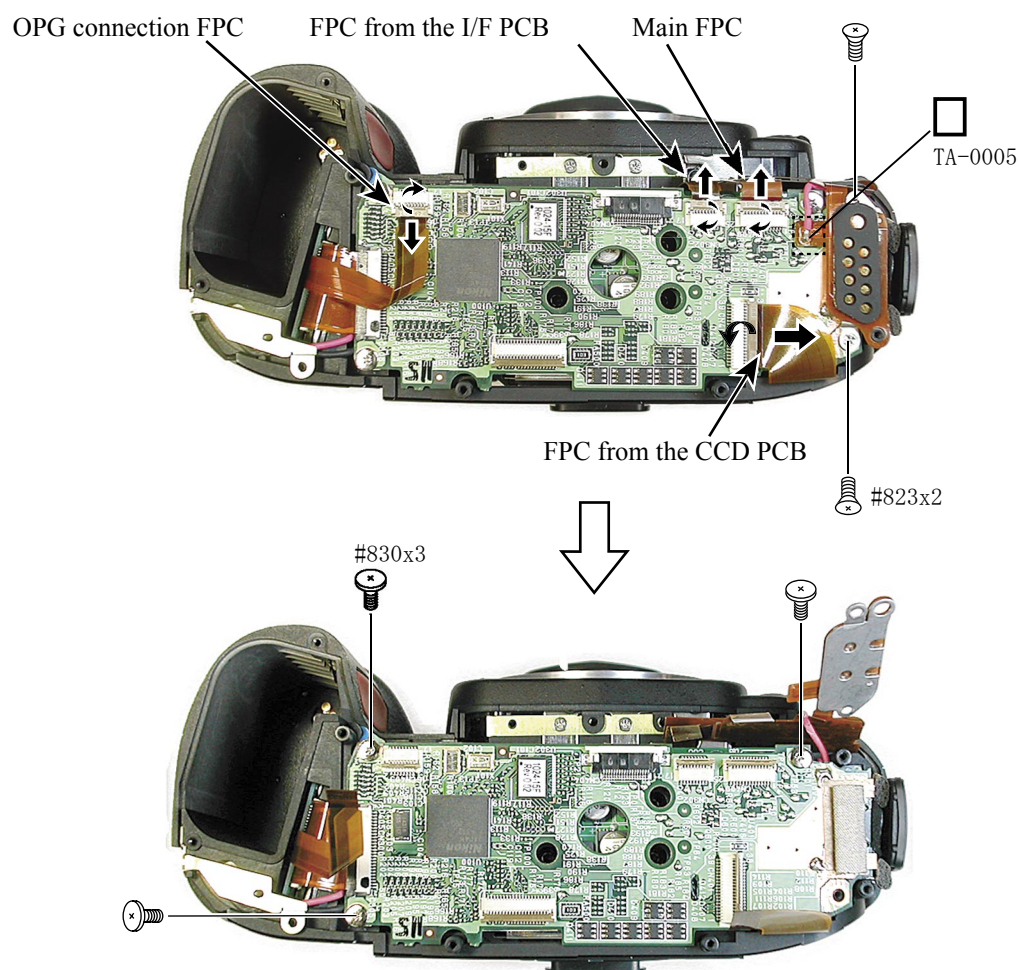
3. Discharging from Main Condenser

- Between the patterns where red and white wires are connected as in picture, perform electric discharge of the main condenser.
- For the discharging resistor, approx. $2K\Omega/5W$ should be used.

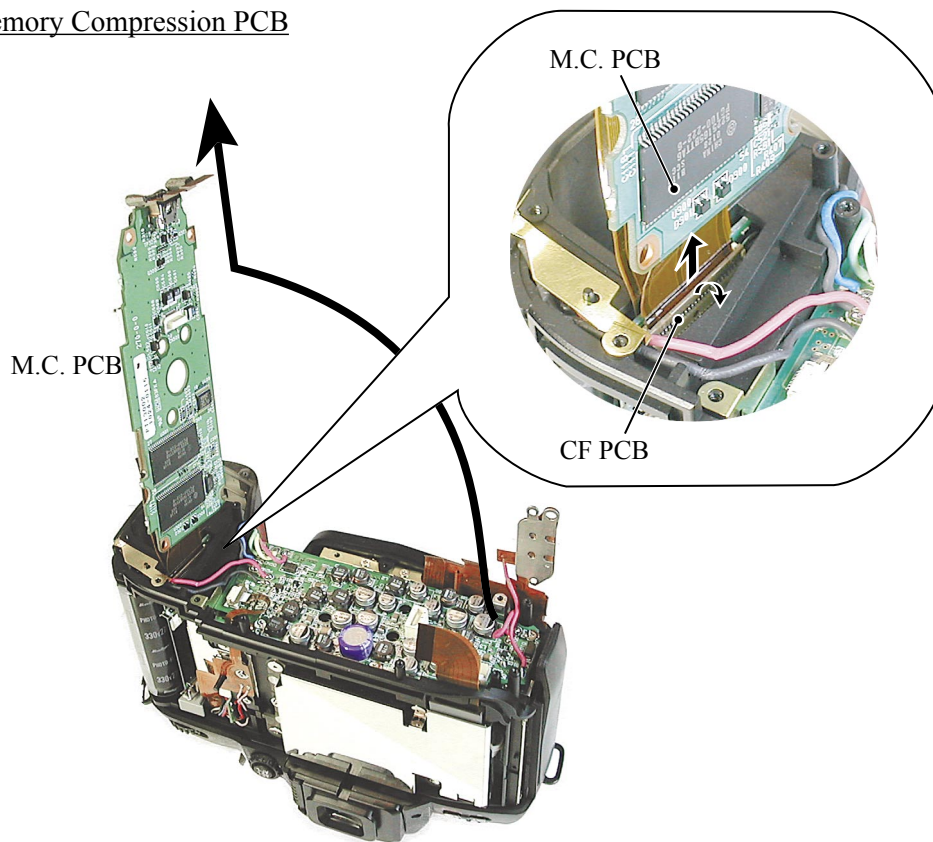


Memory Compression PCB Unit

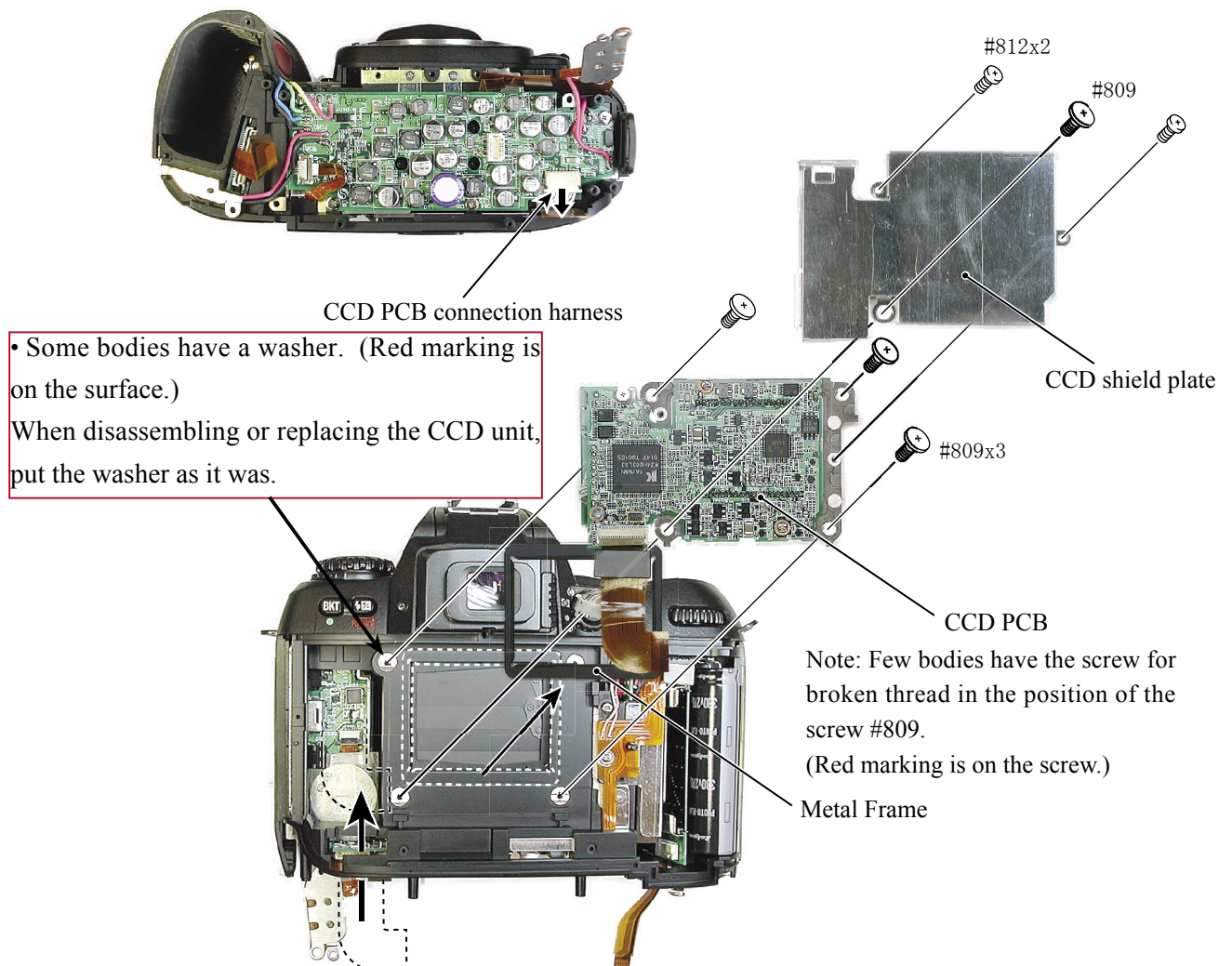
1. Disconnection of FPCs from connector



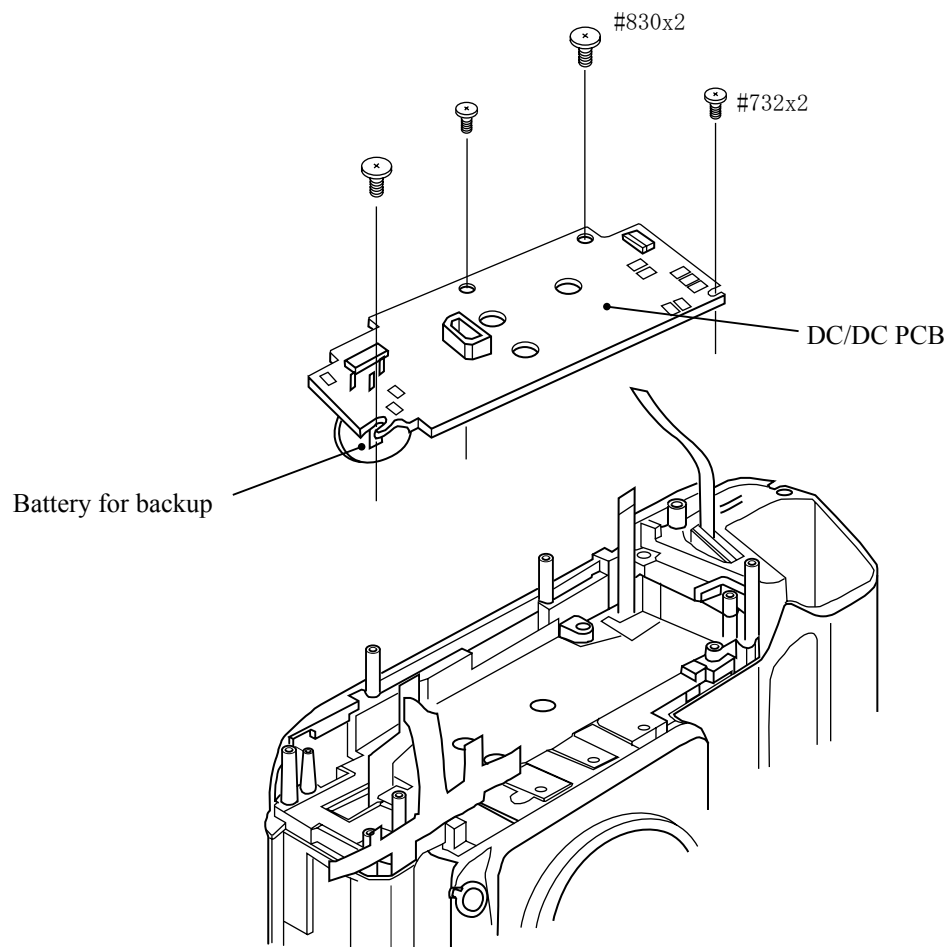
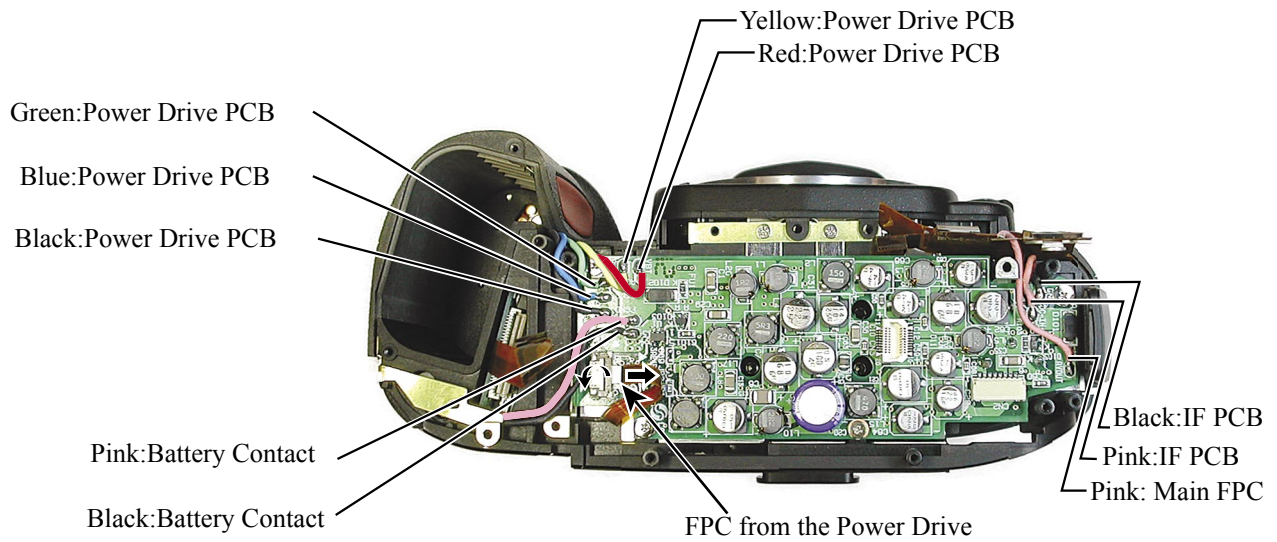
2. Removal of Memory Compression PCB



CCD PCB Unit

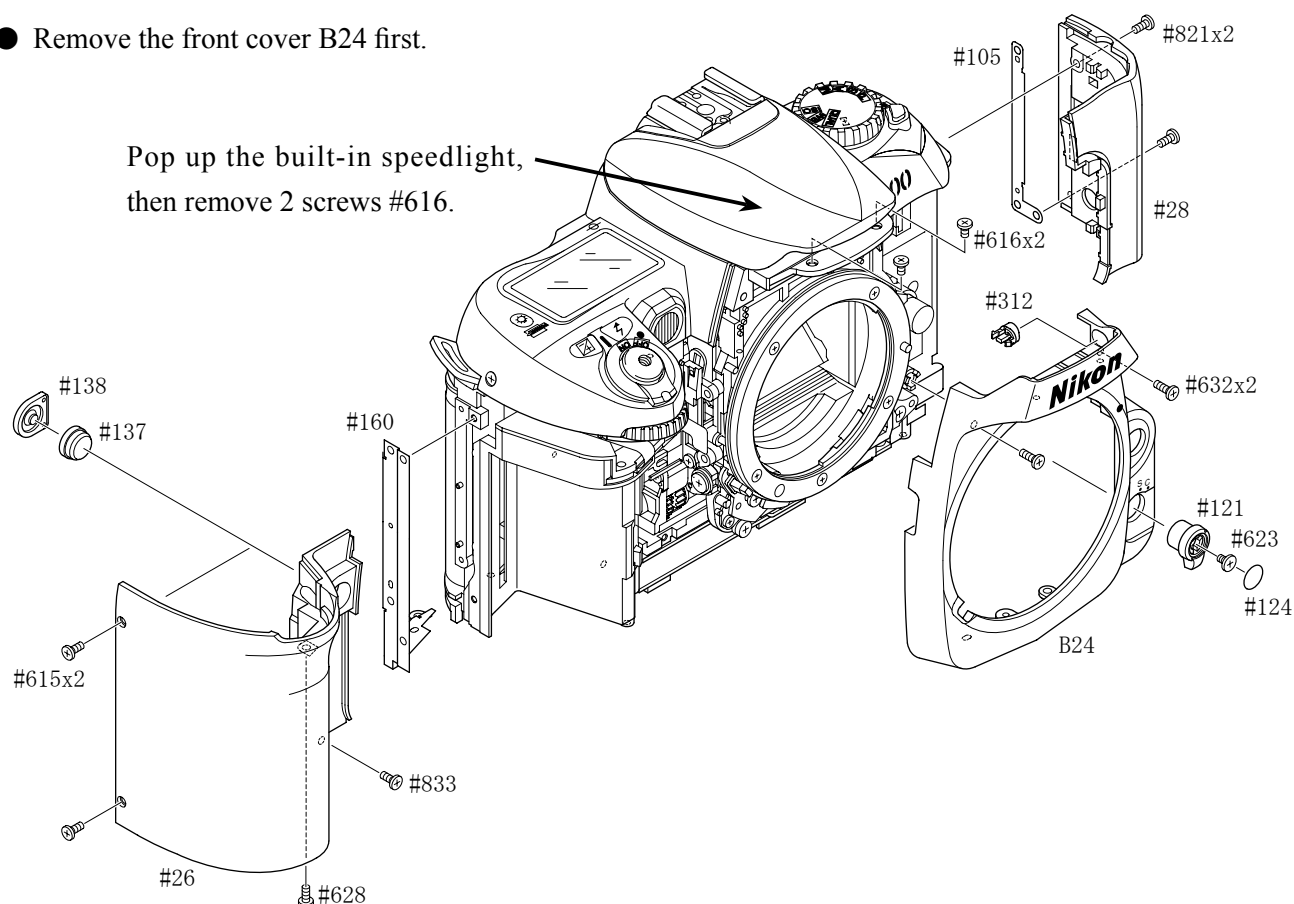


DC/DC PCB Unit



Front Cover, Grip Cover and I/F Cover

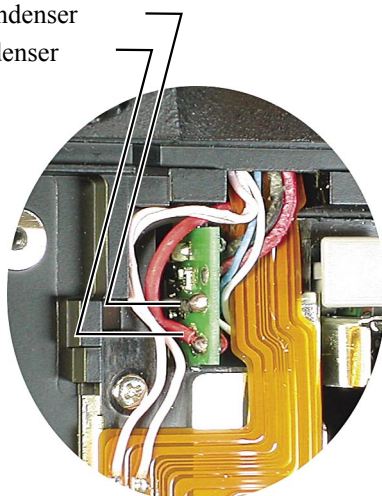
- Remove the front cover B24 first.



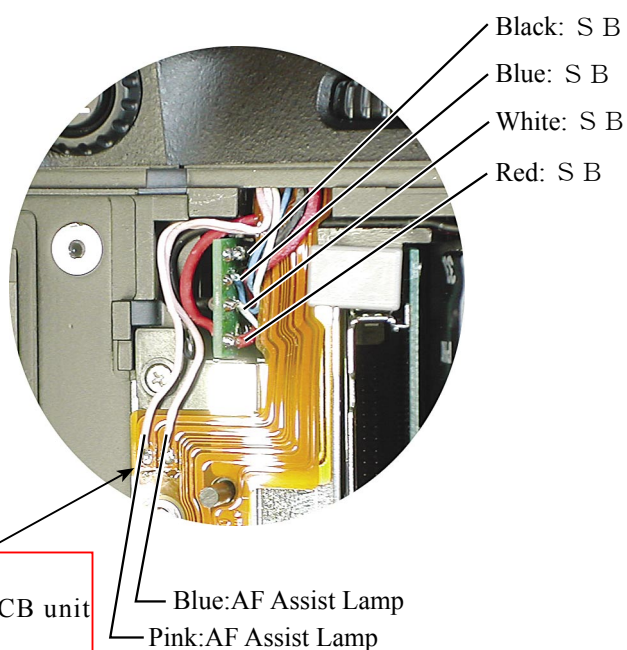
Top Cover

1. Removal of Wires

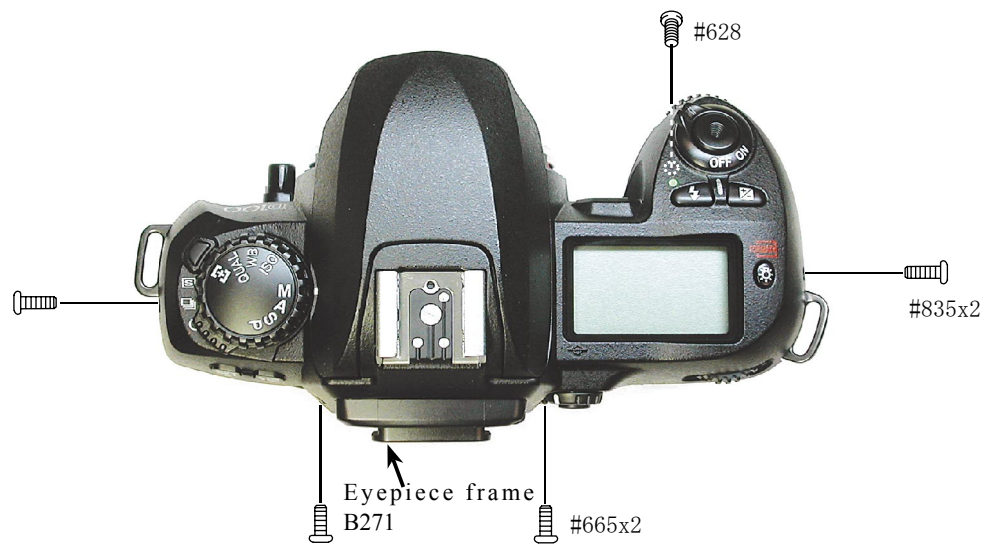
Black: Main Condenser
Red: Main Condenser



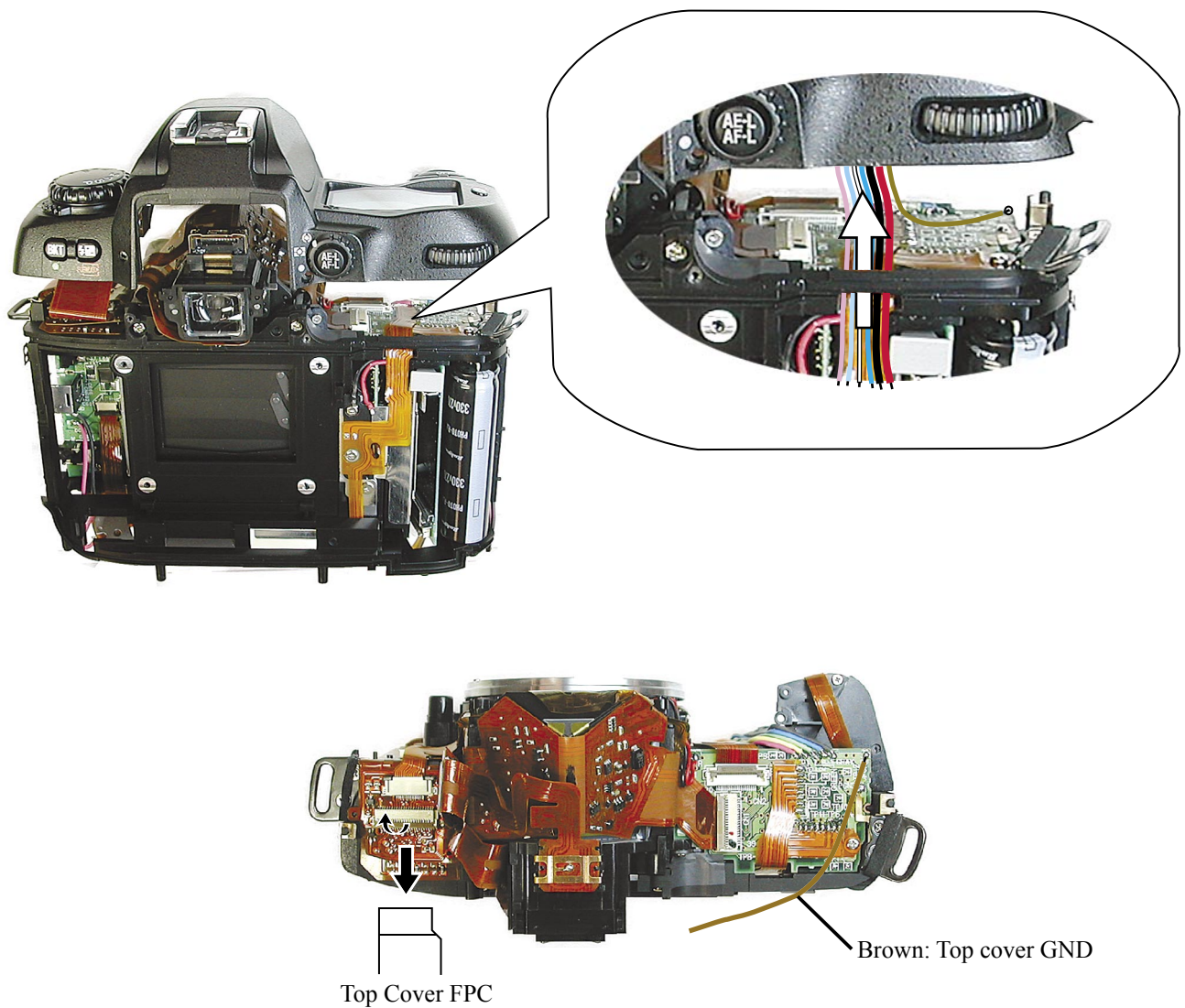
Some bodies have a tip diode.
In case of replacing of the Power drive PCB unit supplied as RP,
Remove a tip diode and then connect pink wire directly to the connection FPC.



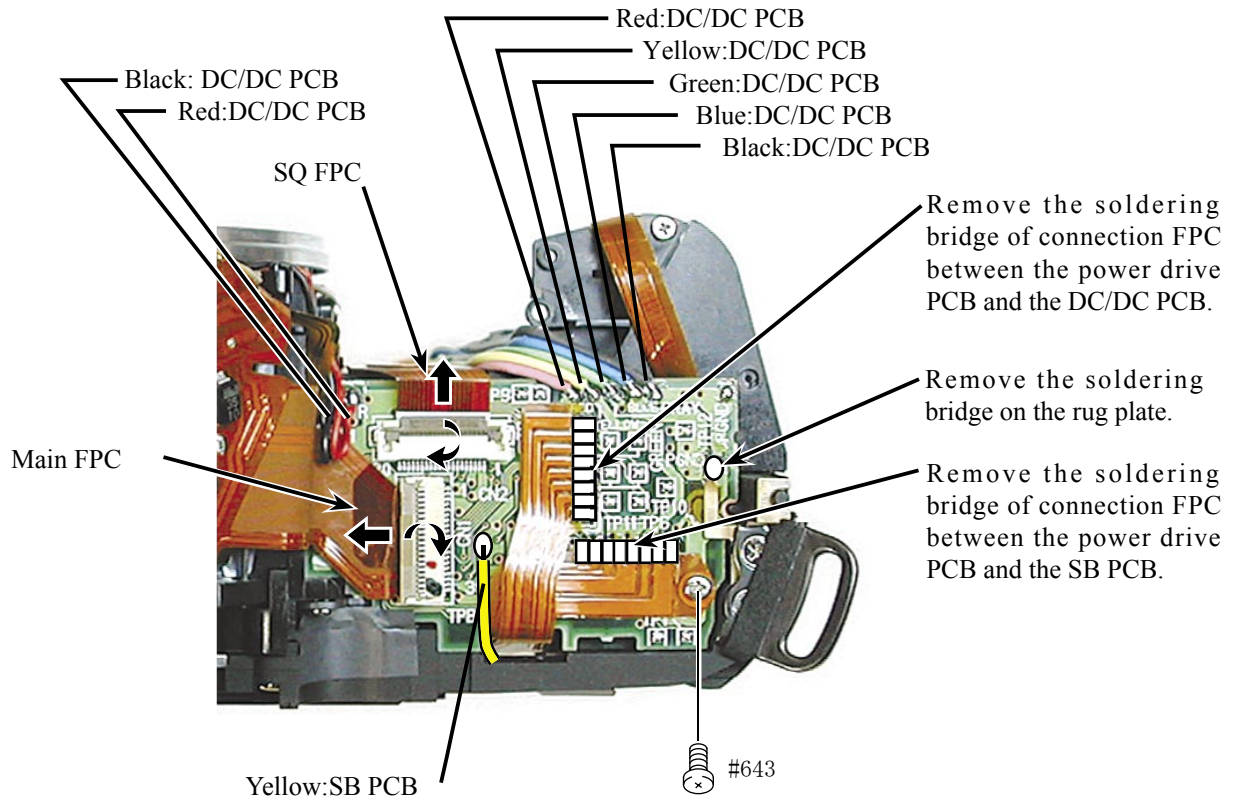
2. Removal of Screws



3. Removal of wires and FPCs

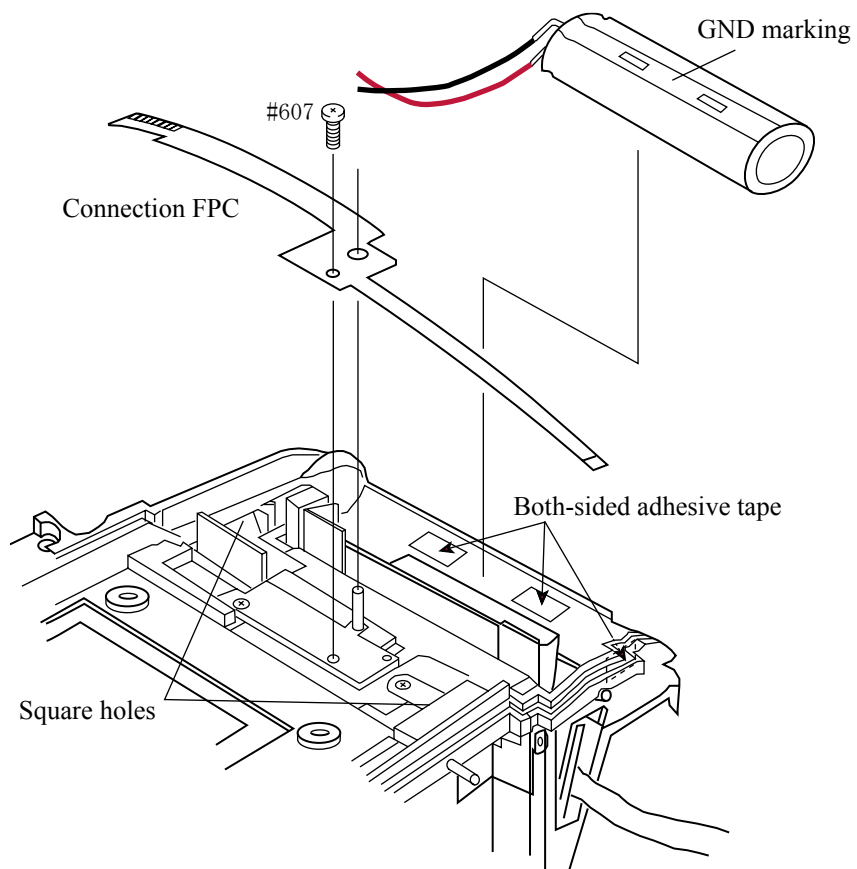


Power Drive PCB Unit

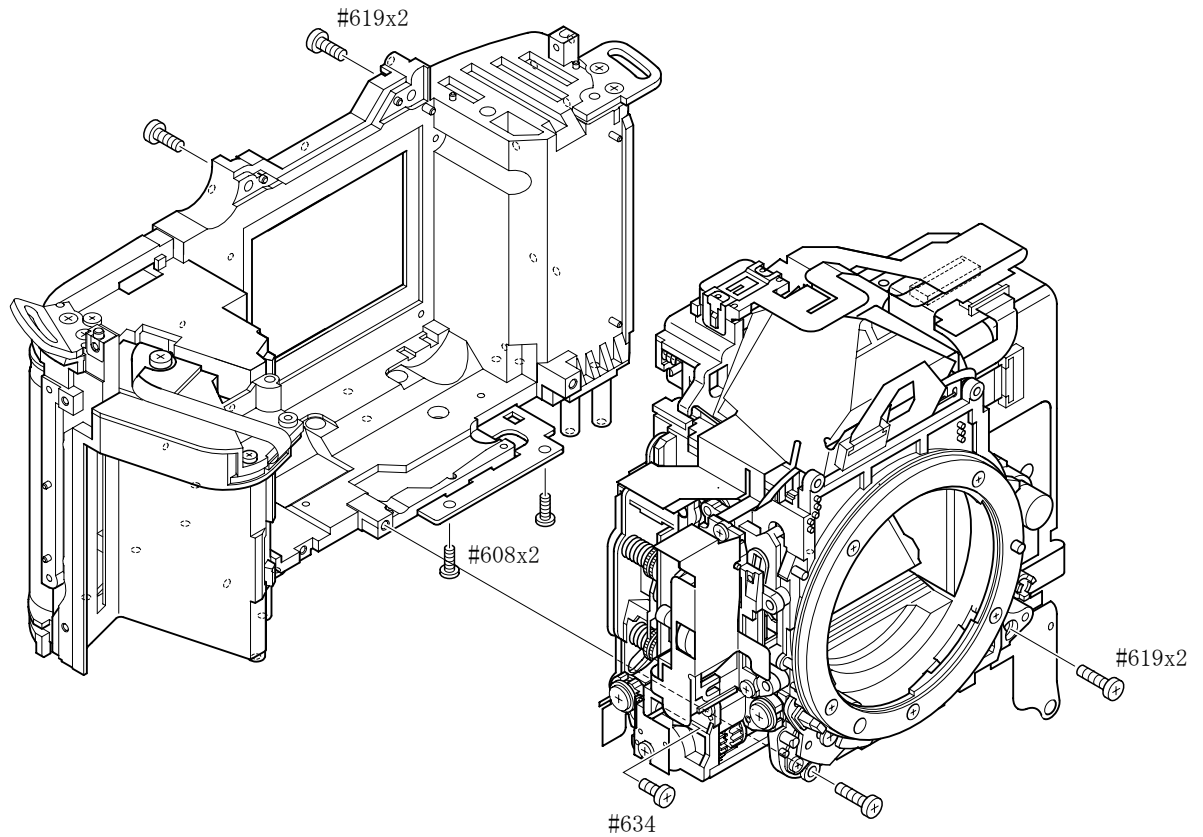


Main Condenser

- Pull out the both ends of the connection FPC from the square holes.



Separation of Front Body and Rear body

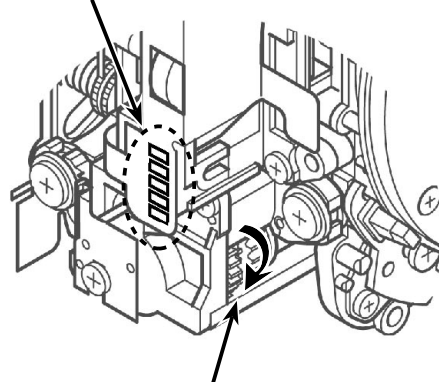


2. FRONT BODY

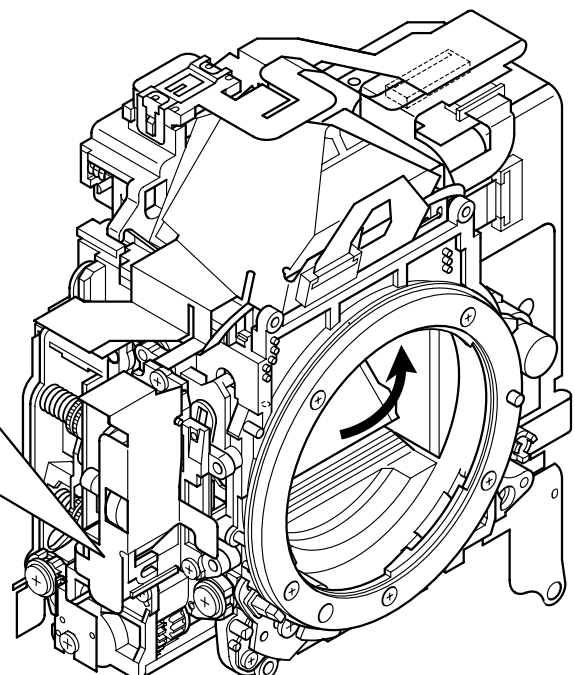
Shutter

1. Mirror-up, Removal of soldering bridges

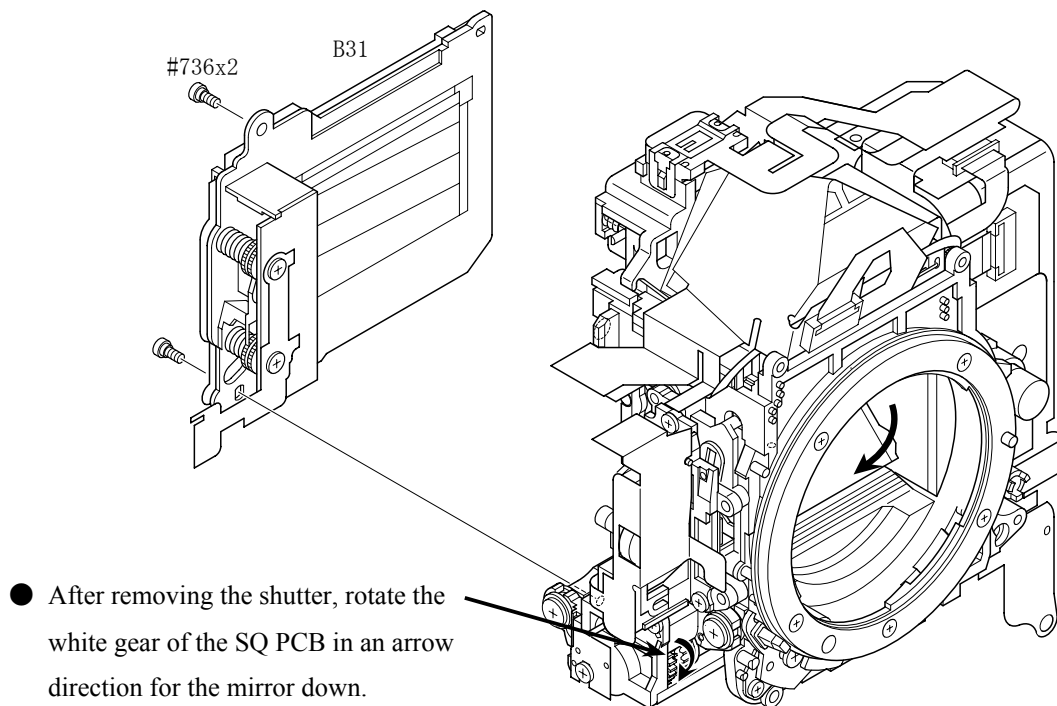
Remove the soldering bridges between the shutter FPC and the SQ FPC.



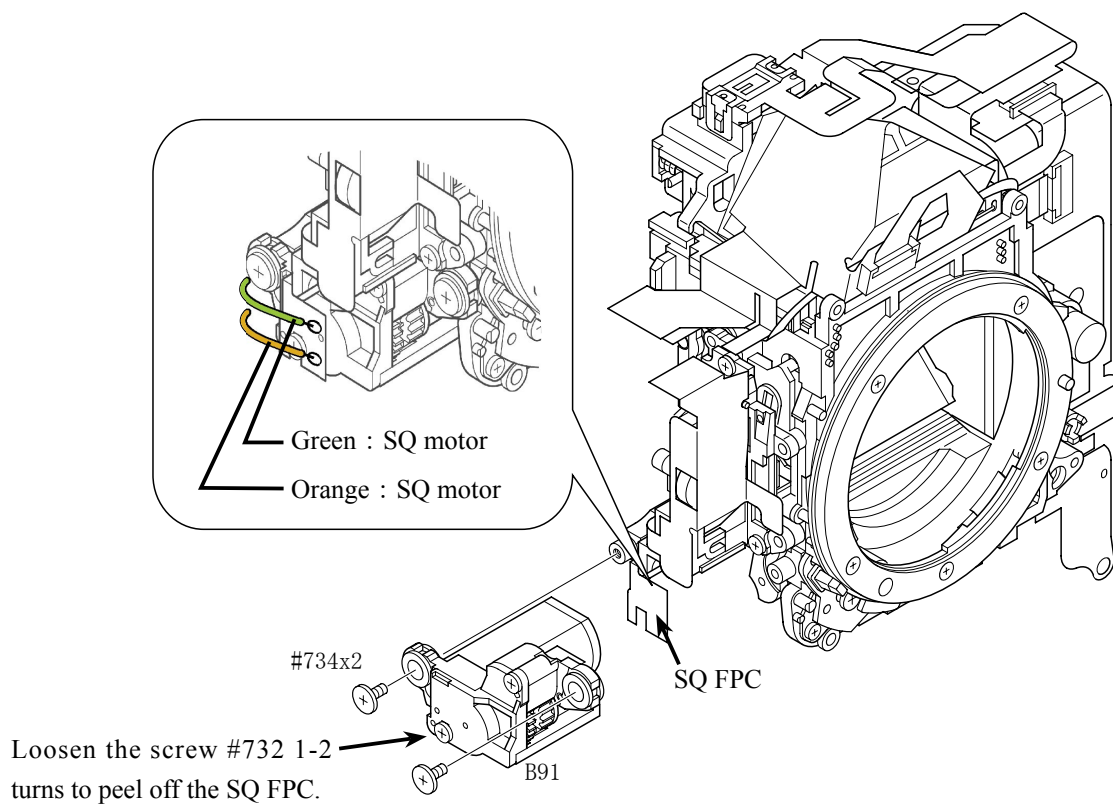
- Turn the white gear on the SQ PCB in an arrow direction for the mirror-up.



2. Removal of Shutter

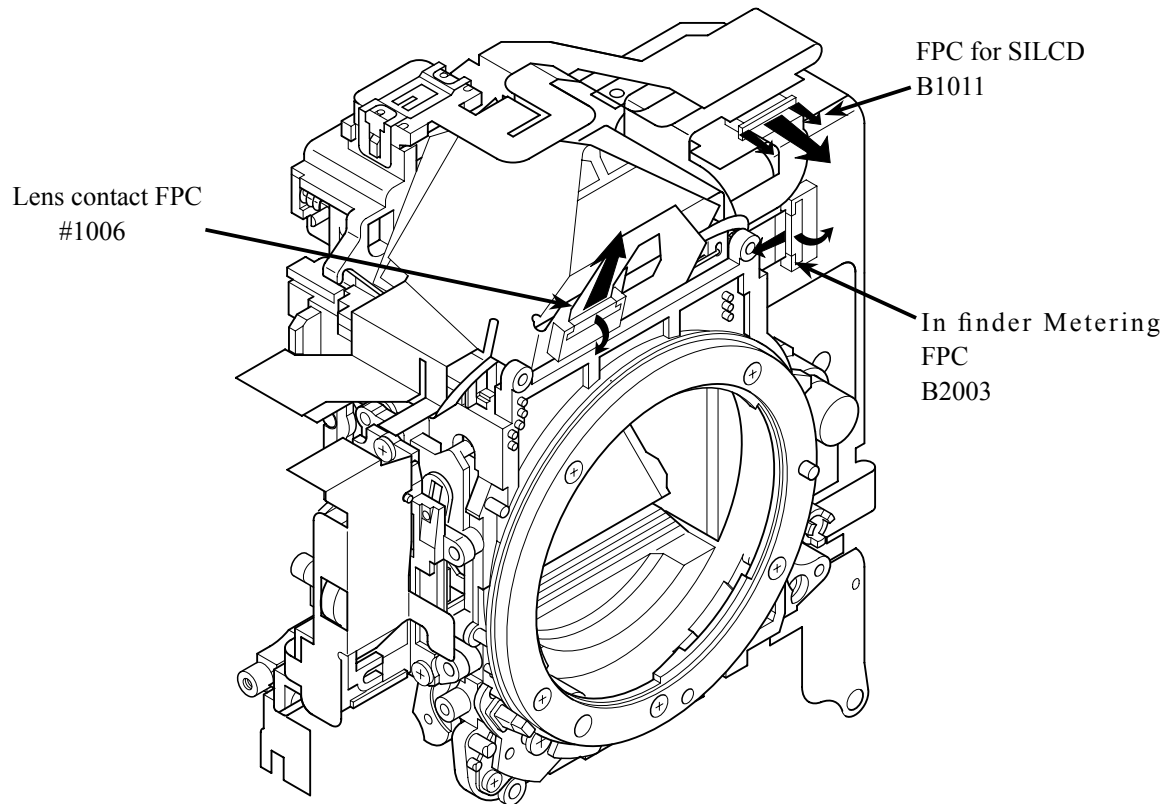


SQ FPC

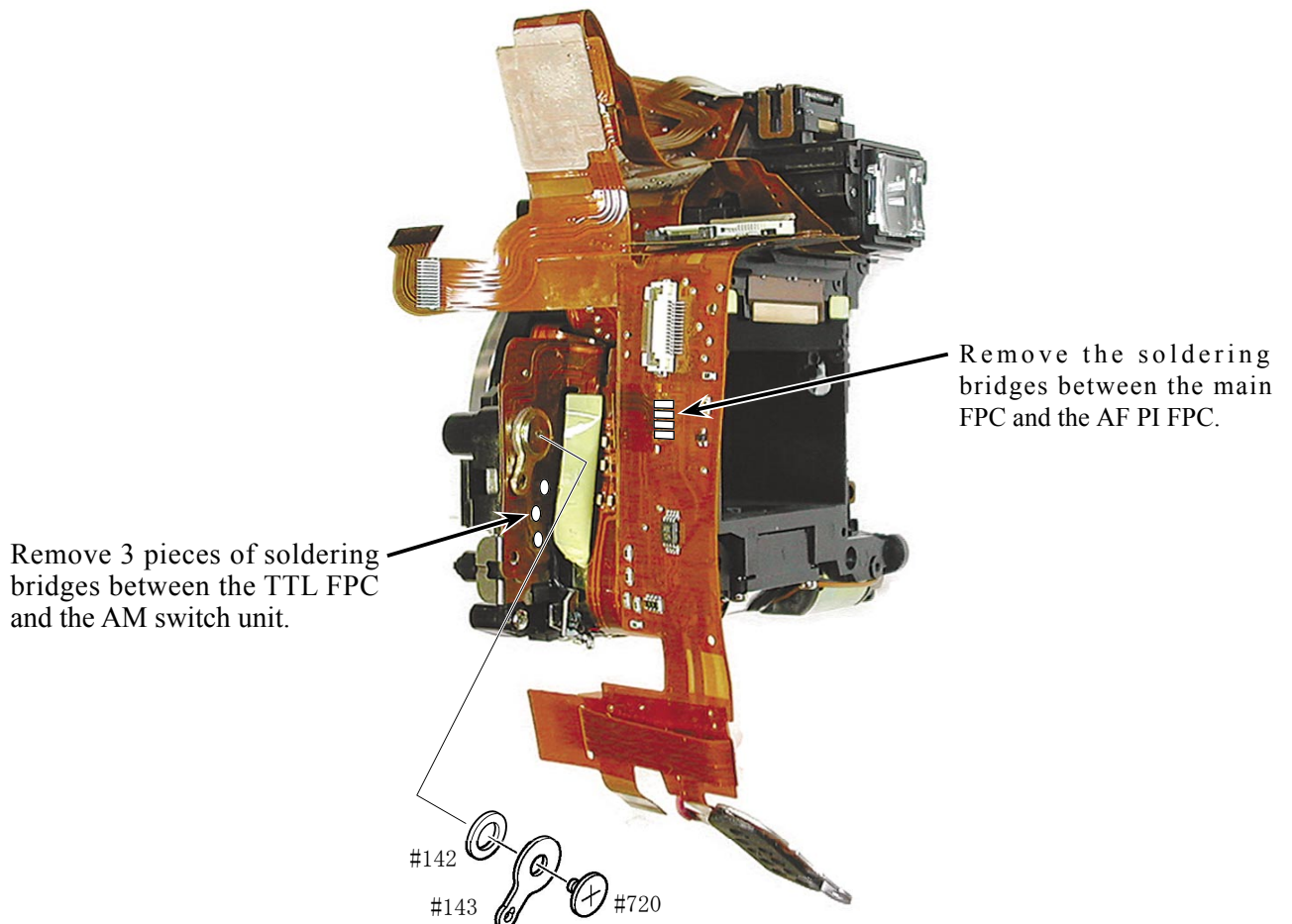


Main FPC

1. Removal of FPC from the connector

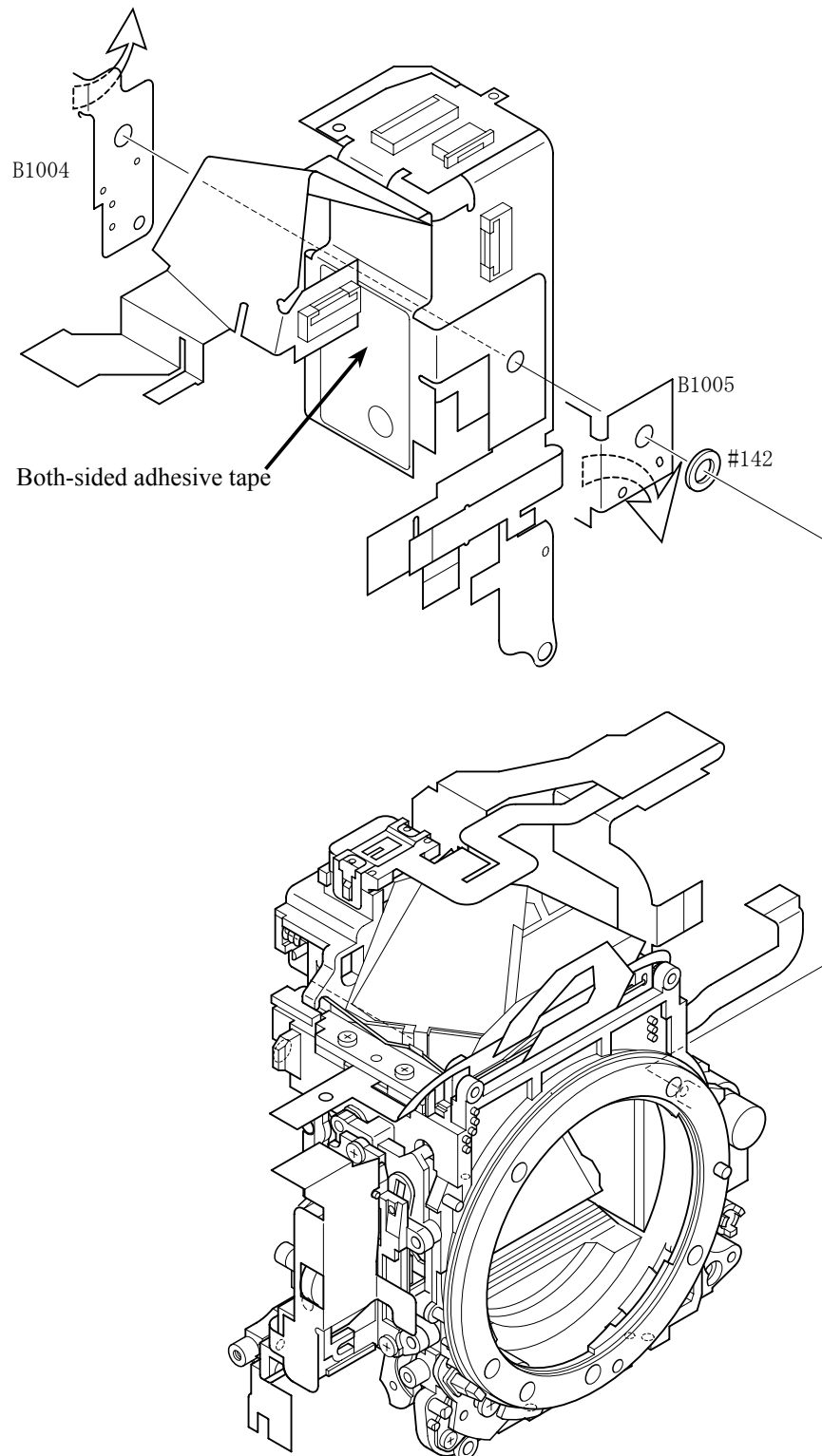


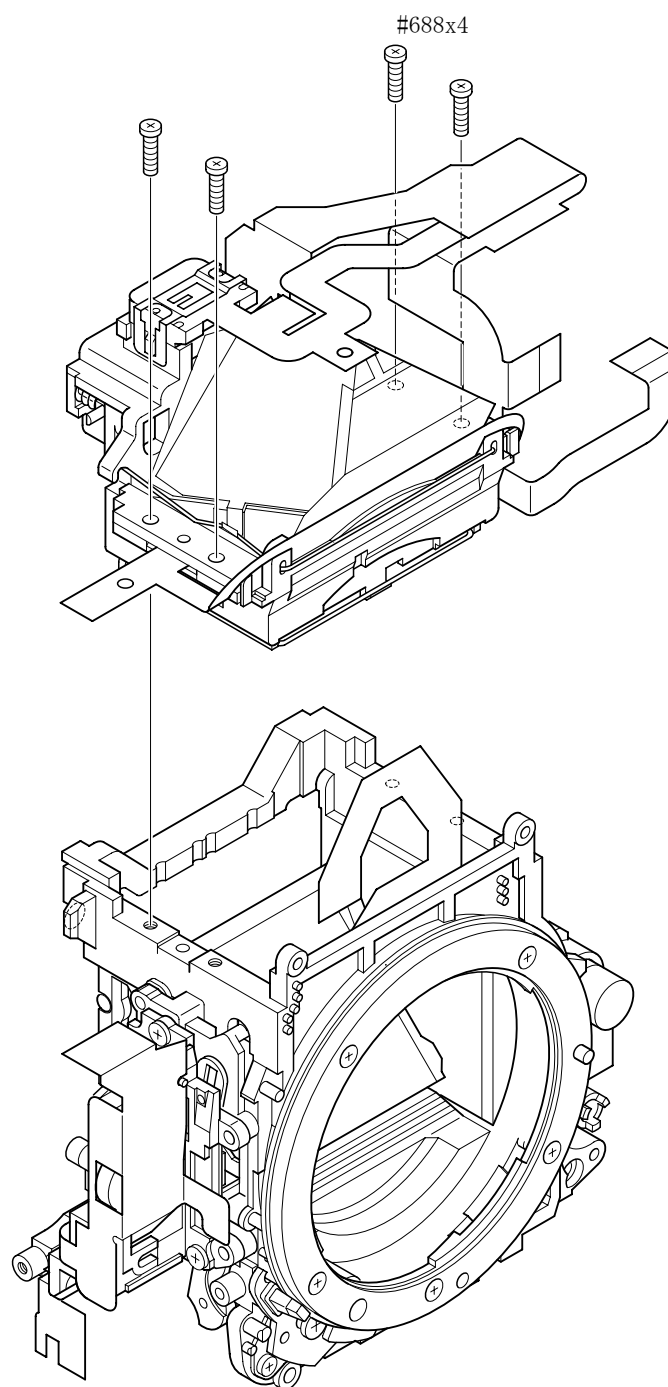
2. Removal of pressure welding and soldering bridges



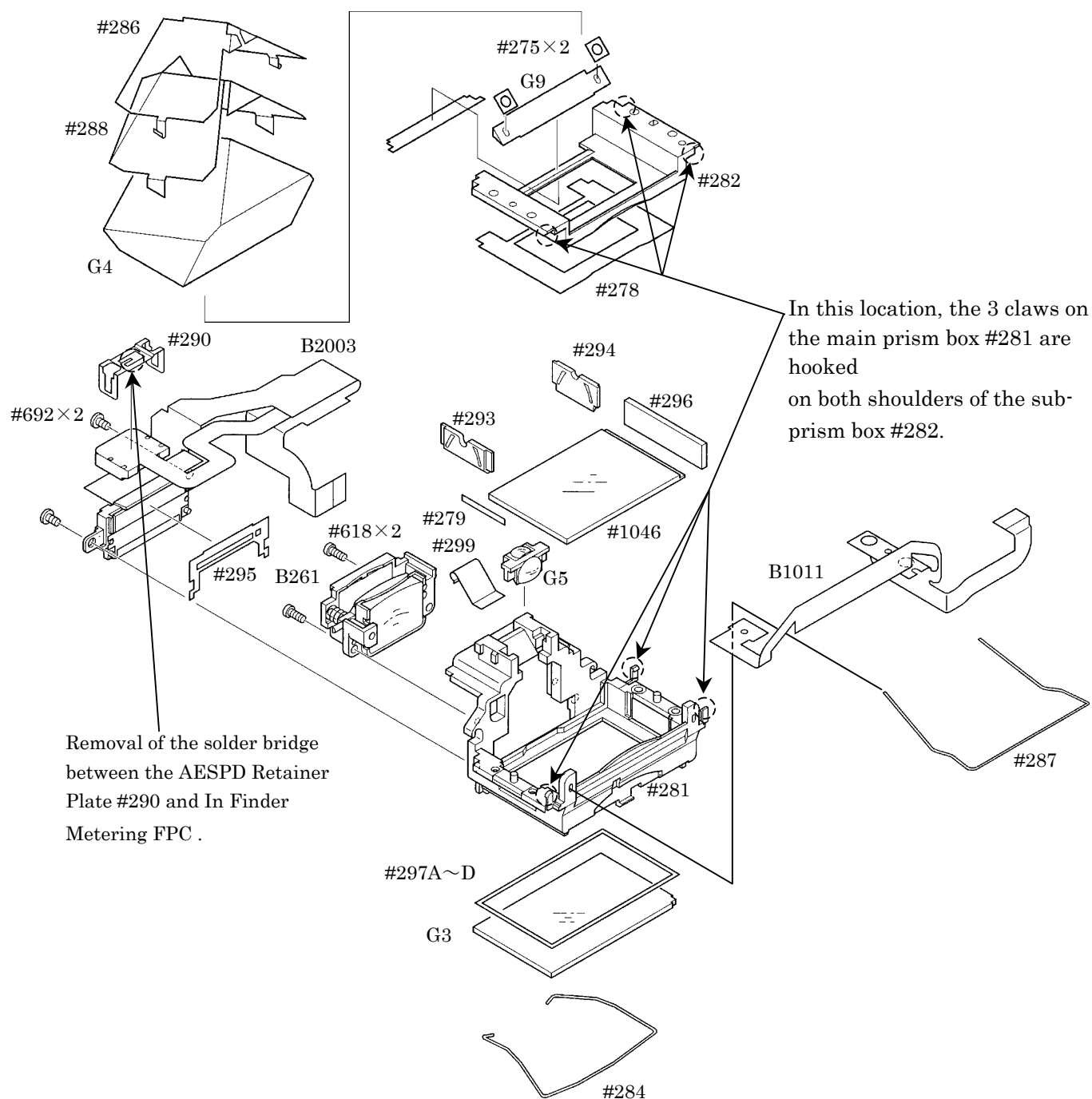
3. Removal of Main FPC

- Stand the TTL FPC #B1004 and the CCD FPC #B1005 at an angle of 90 degree or more to an arrow direction to remove the main FPC #B2001.

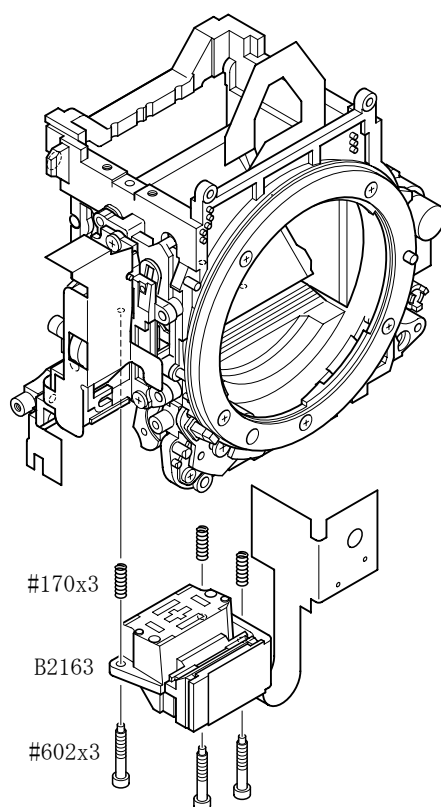


Prism Box Unit**1. Removal of Prism Box Unit from Front Body**

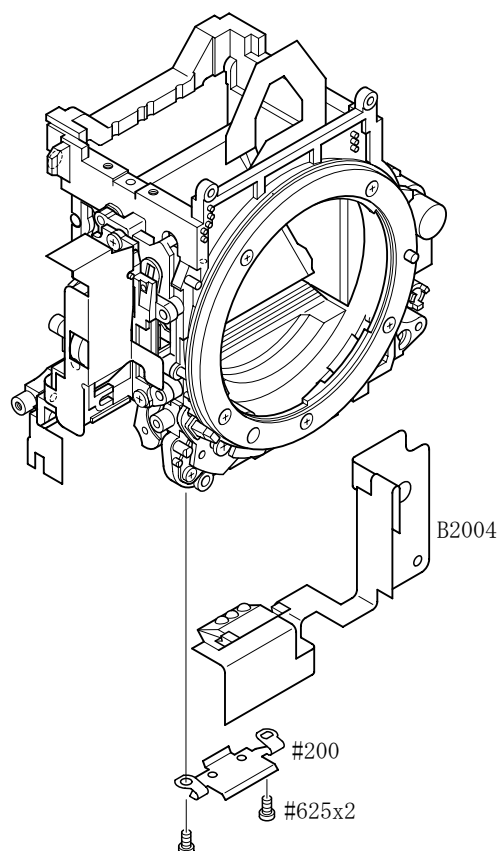
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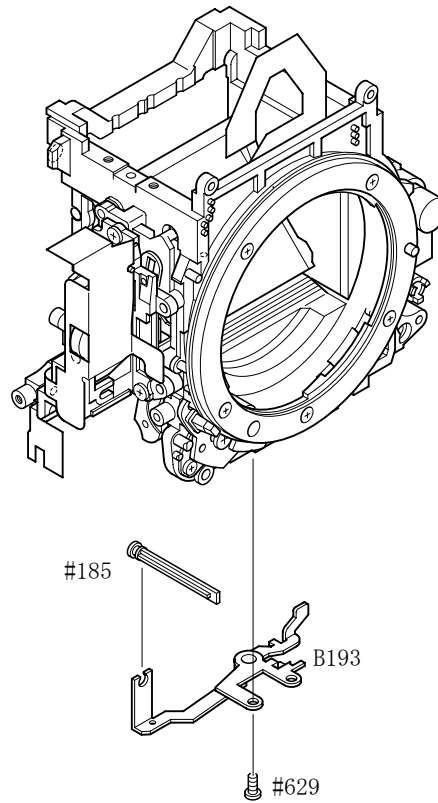
AF Sensor Unit



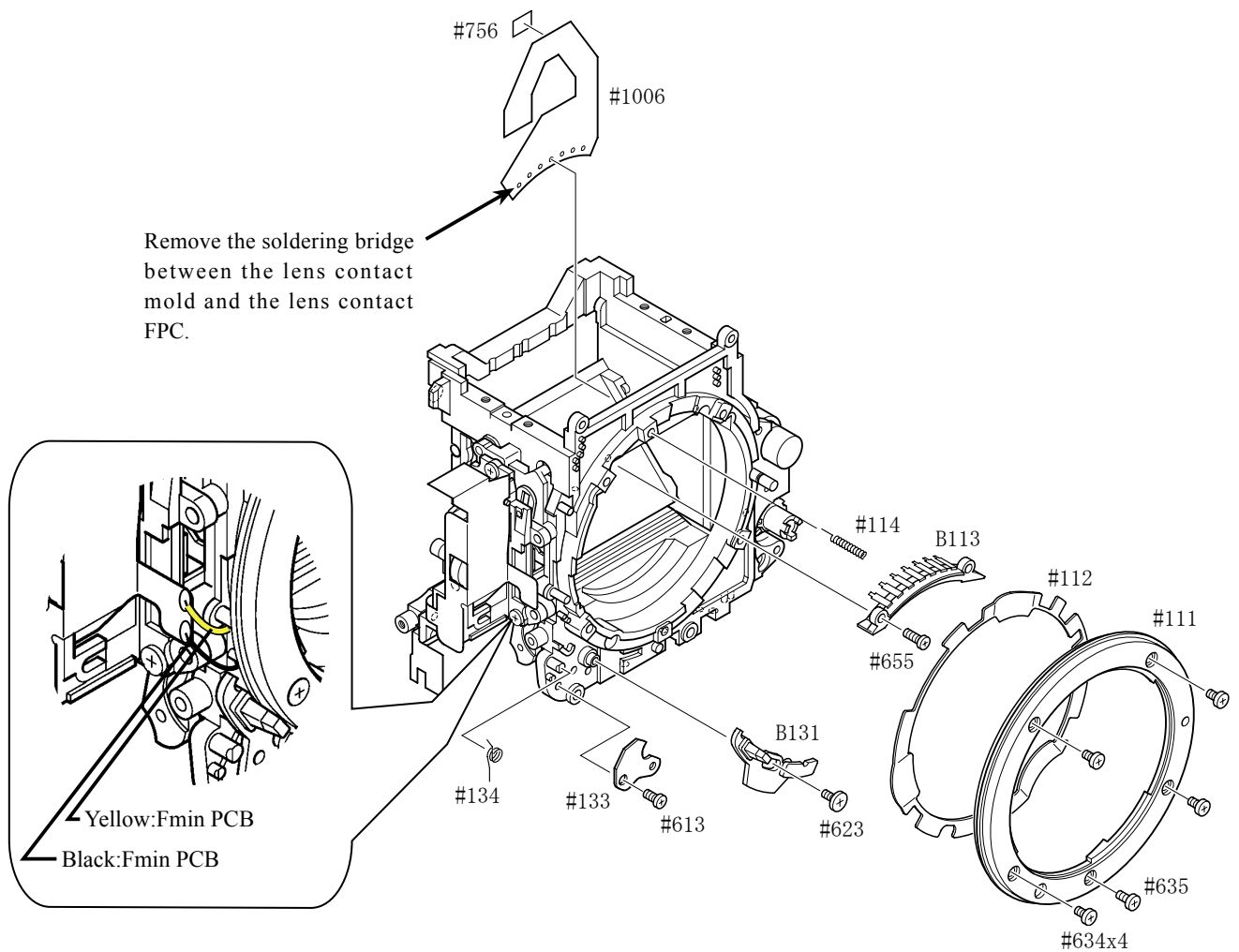
TTL SPD Unit



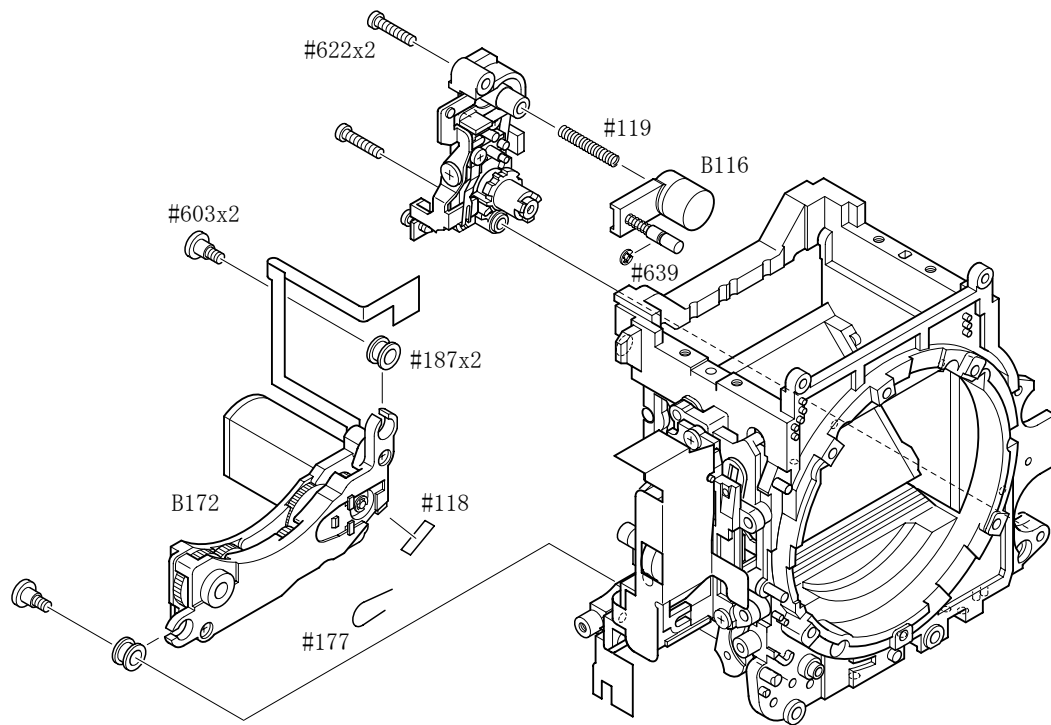
Horizontal AF Lever Unit



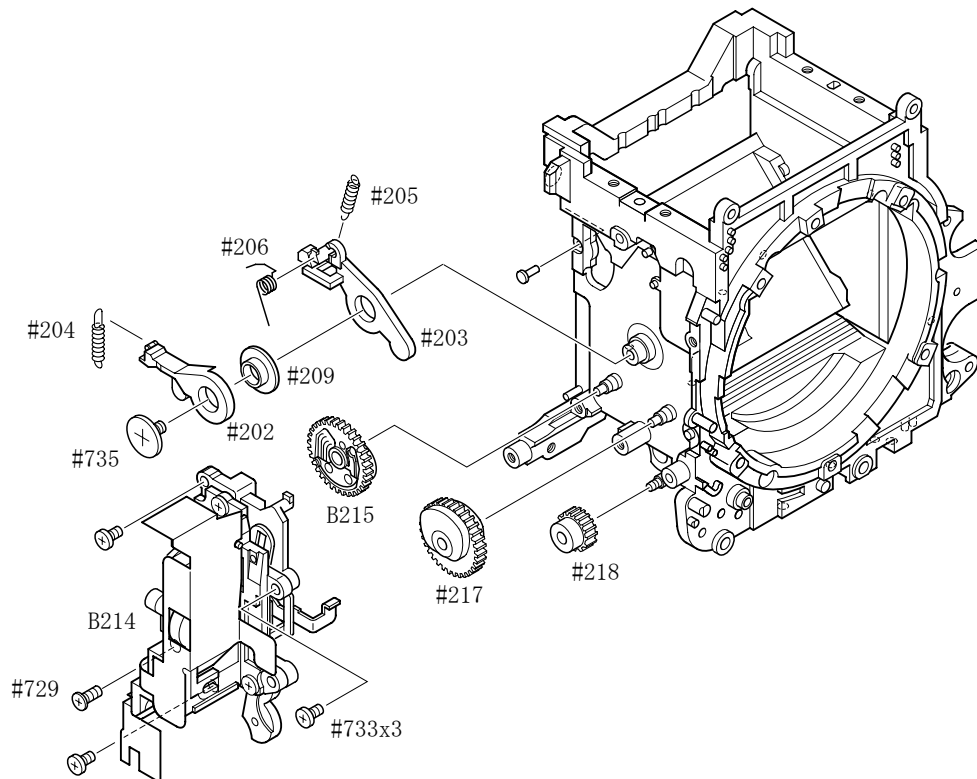
Bayonet Mount



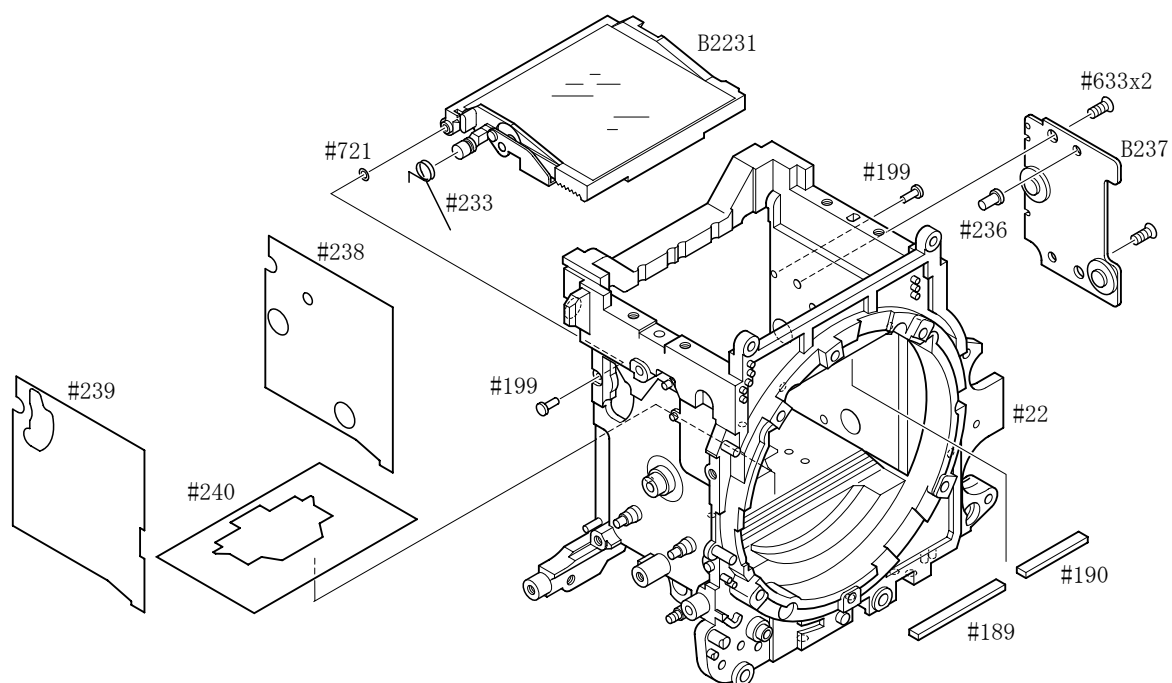
AM Switch Unit and AF Driving Unit



Aperture Control Base Plate

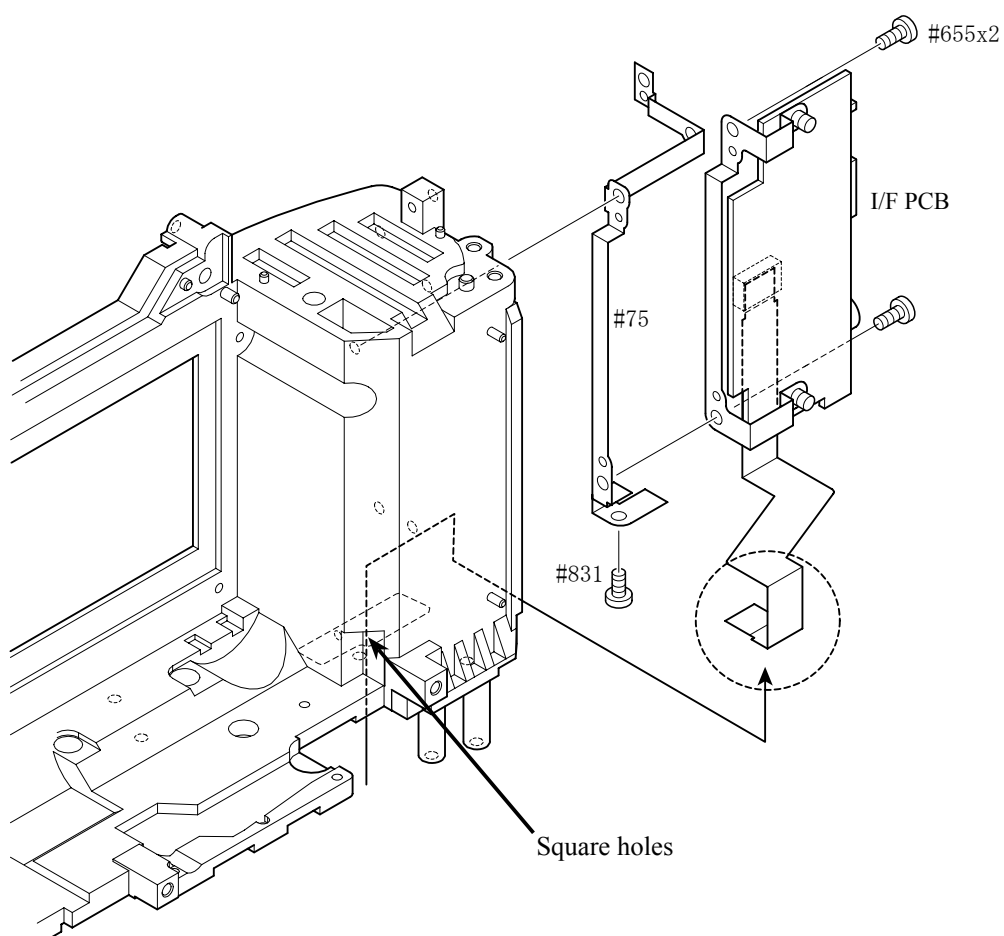


Mirror Holder

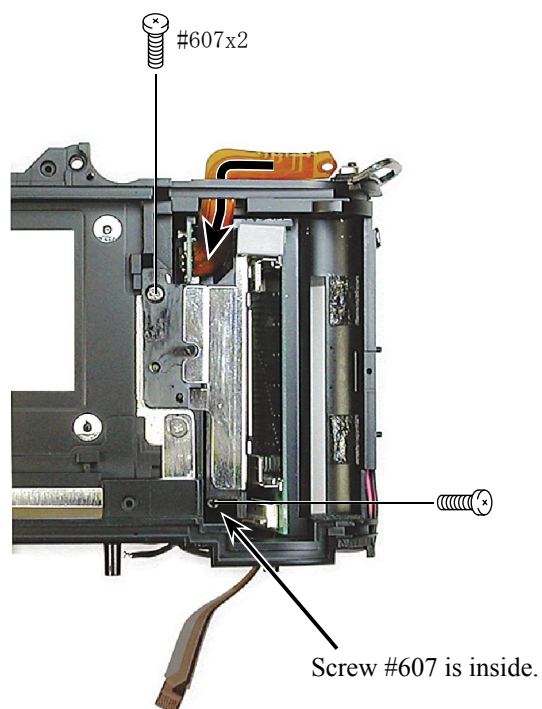


3. REAR BODY

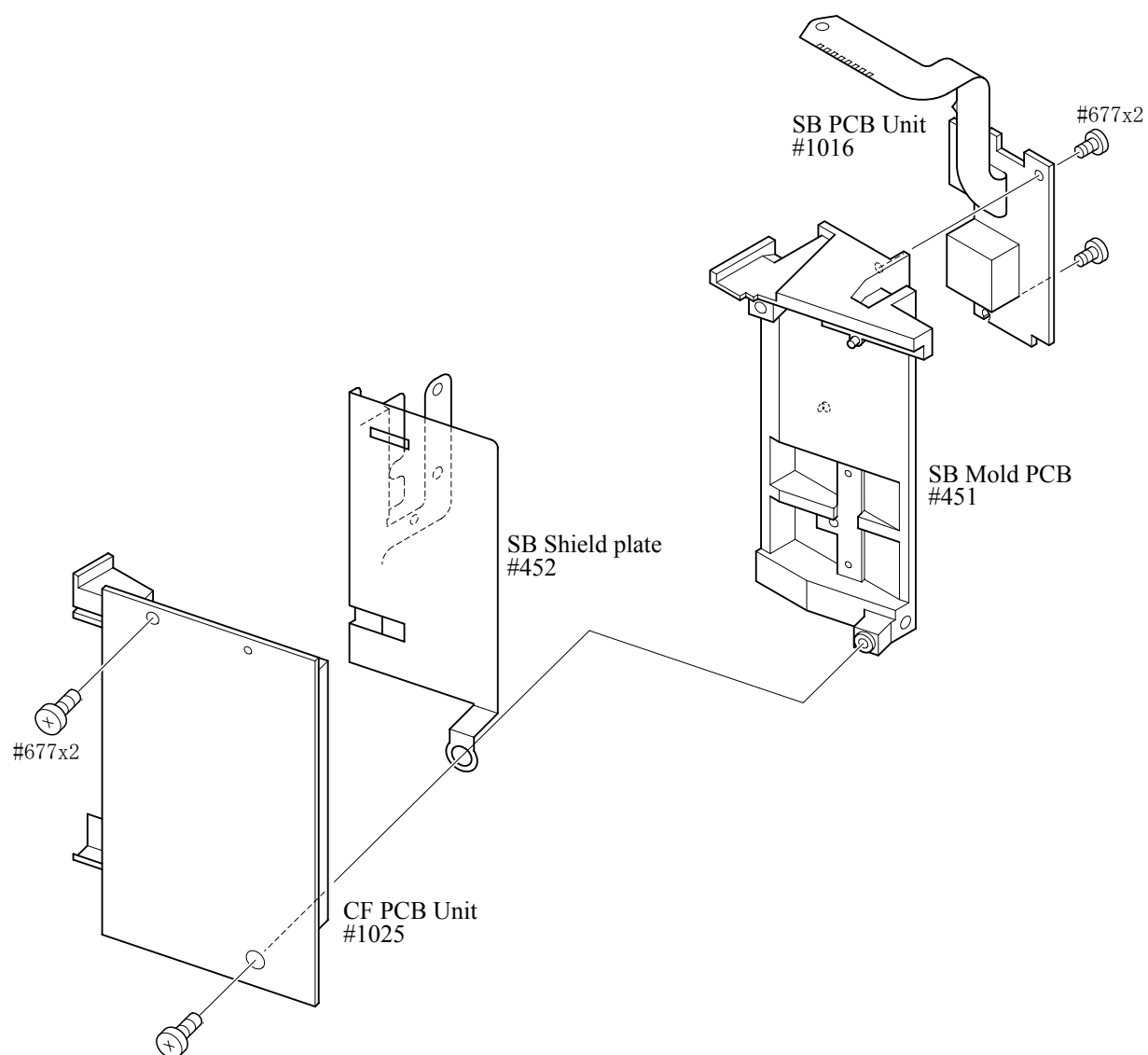
I/F PCB Unit



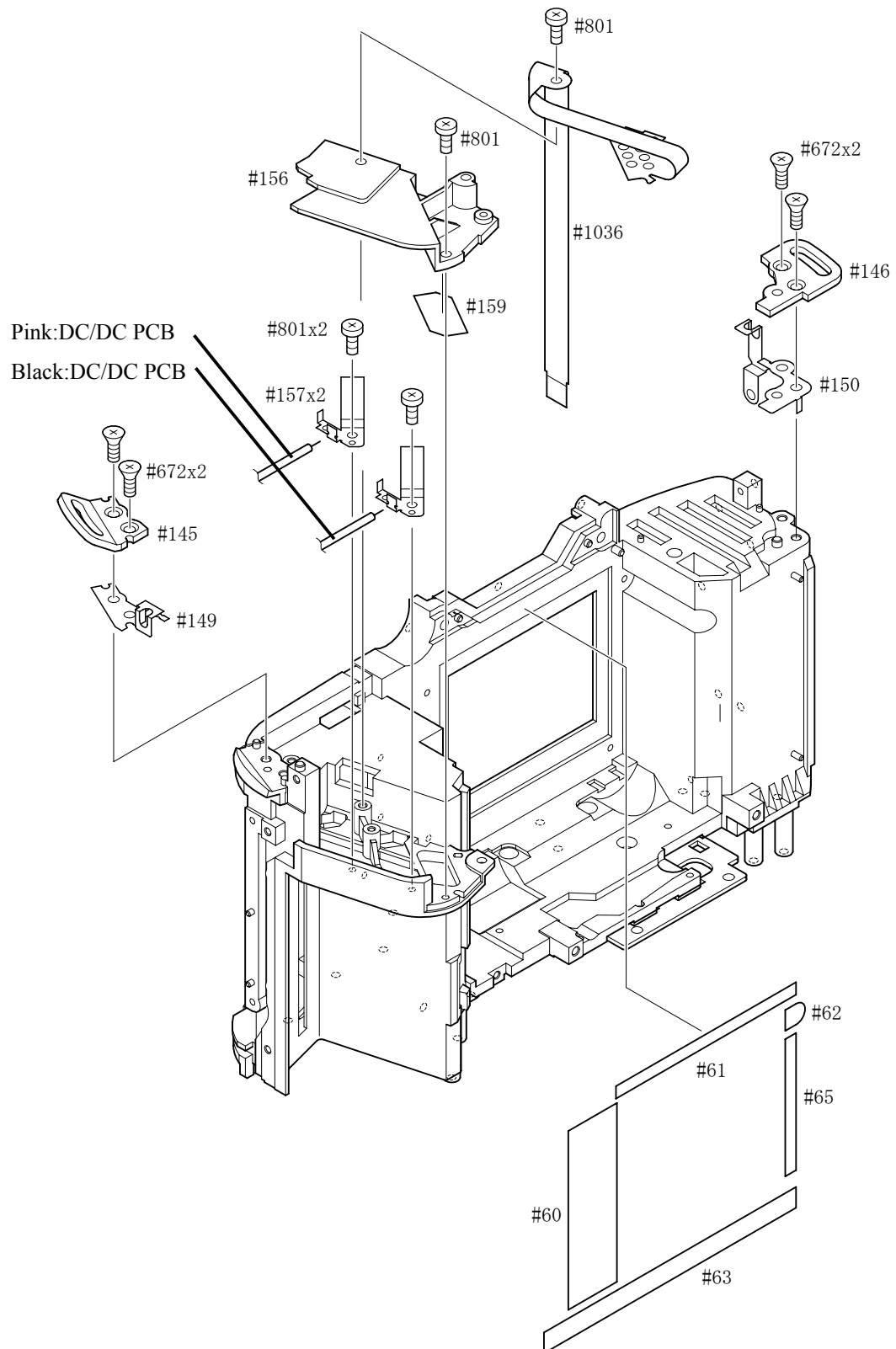
CF PCB Unit



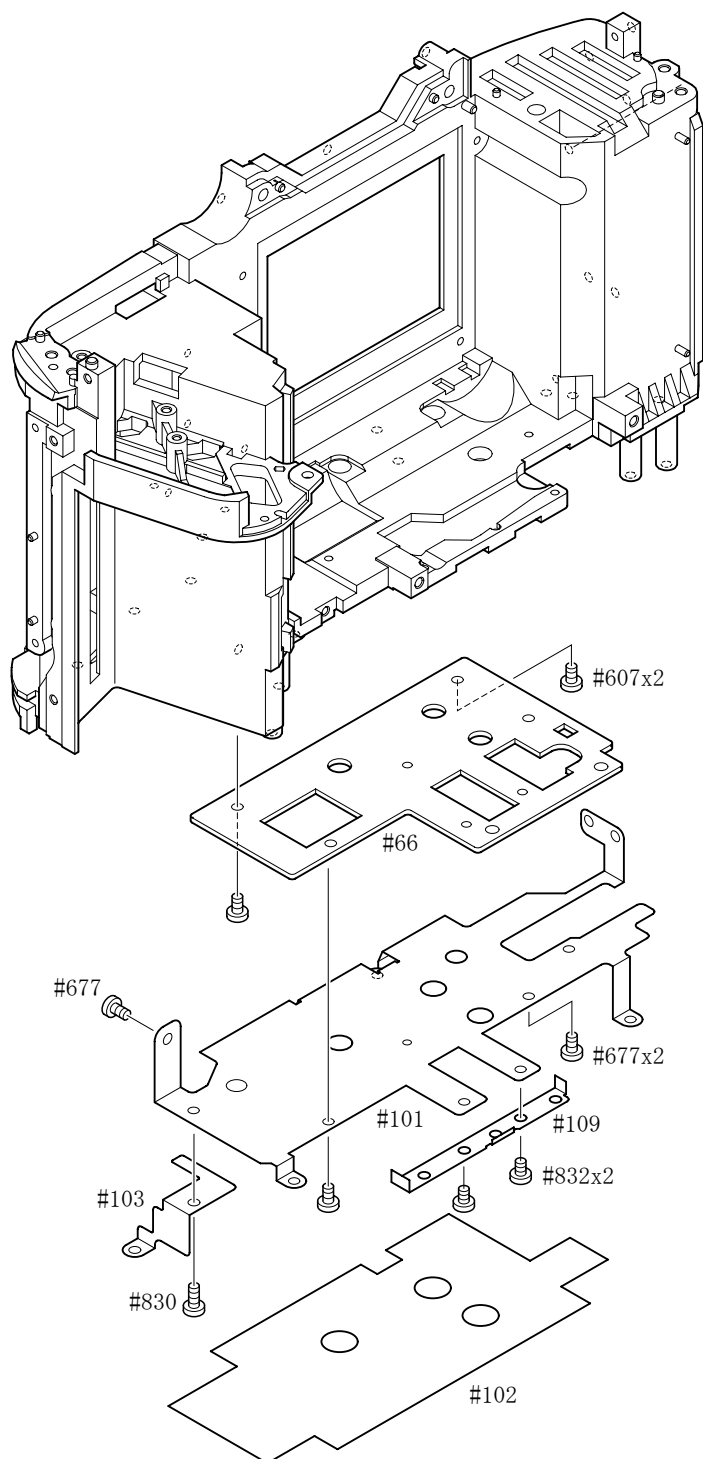
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Battery Contact and Small Parts in Rear Body



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ASSEMBLY AND ADJUSTMENT

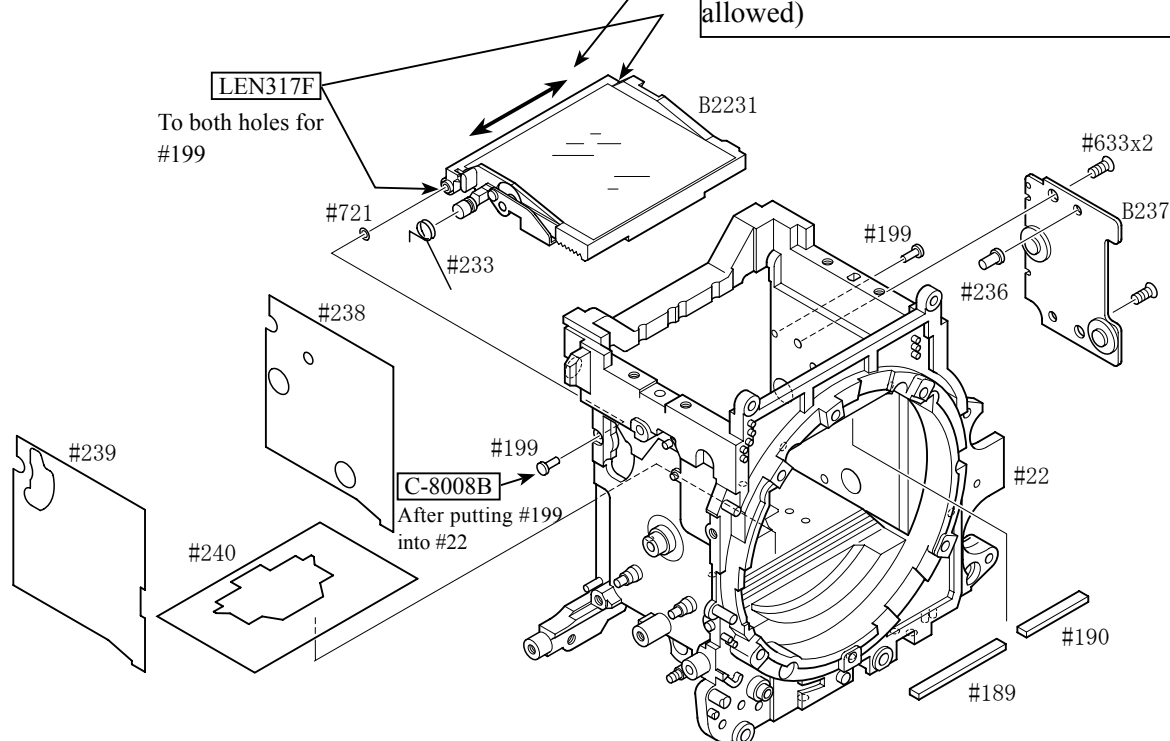
1. FRONT BODY

Mirror Holder

- ① Affix both flocked paper and mirror receipt mold on the front body #22.
(Extrusion from each side of #22 is not allowed).
- ② Press the shaft #199 A side into the front body #22 and press 1/3 of the shaft #199 B side into the front body #22.
- ③ Place the washer #721 through the shaft #199 A side.
- ④ Assemble the mirror holder B2231 in the front body #22 aligning it with the shaft #199 A side and press the shaft #199 B side in the body to the end, aligning it with the mirror holder B2231.

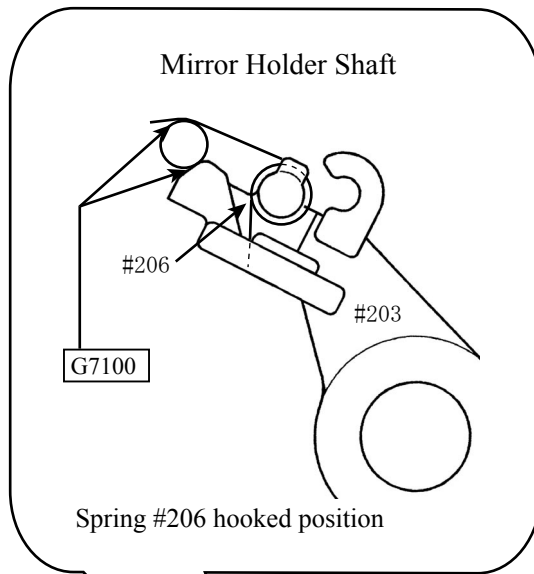
After the mirror holder is assembled in the front body #22 in step ④ above, check the thrust backlash. If the backlash is out of standard, replace it by either of three thickness types of the washer #721 and adjust it.

Backlash Standard: 0.02 mm or less (0 is not allowed)

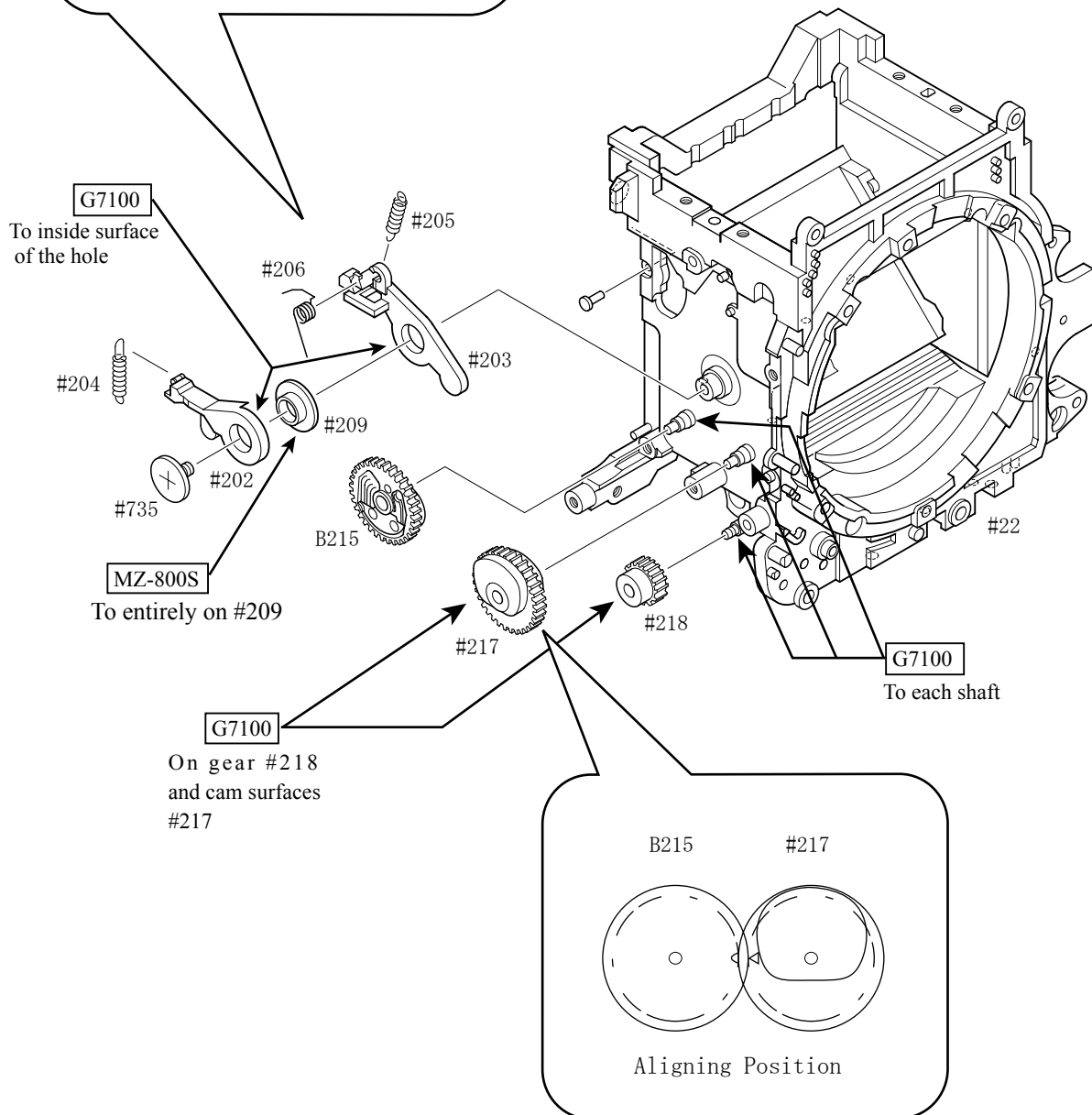


- ⑤ Stand the mirror up and assemble the sub-mirror deflection pin #236 into the front body #22.
- ⑥ Align the hole on the mirror box PCB B237 with the boss on the front body #22, and assemble and fix them using the screws #633×2.

Mirror Up Lever



- ① Assemble the mirror up levers #203, #209 and #202 in the front body #22 in this order and fix them with screw #735.
- ② Assemble the SQ shutter charge cam B215, #217 and #218 in the front body #22.
- ③ Hook the springs #204, #205 and #206 onto each lever.



Aperture Control Unit

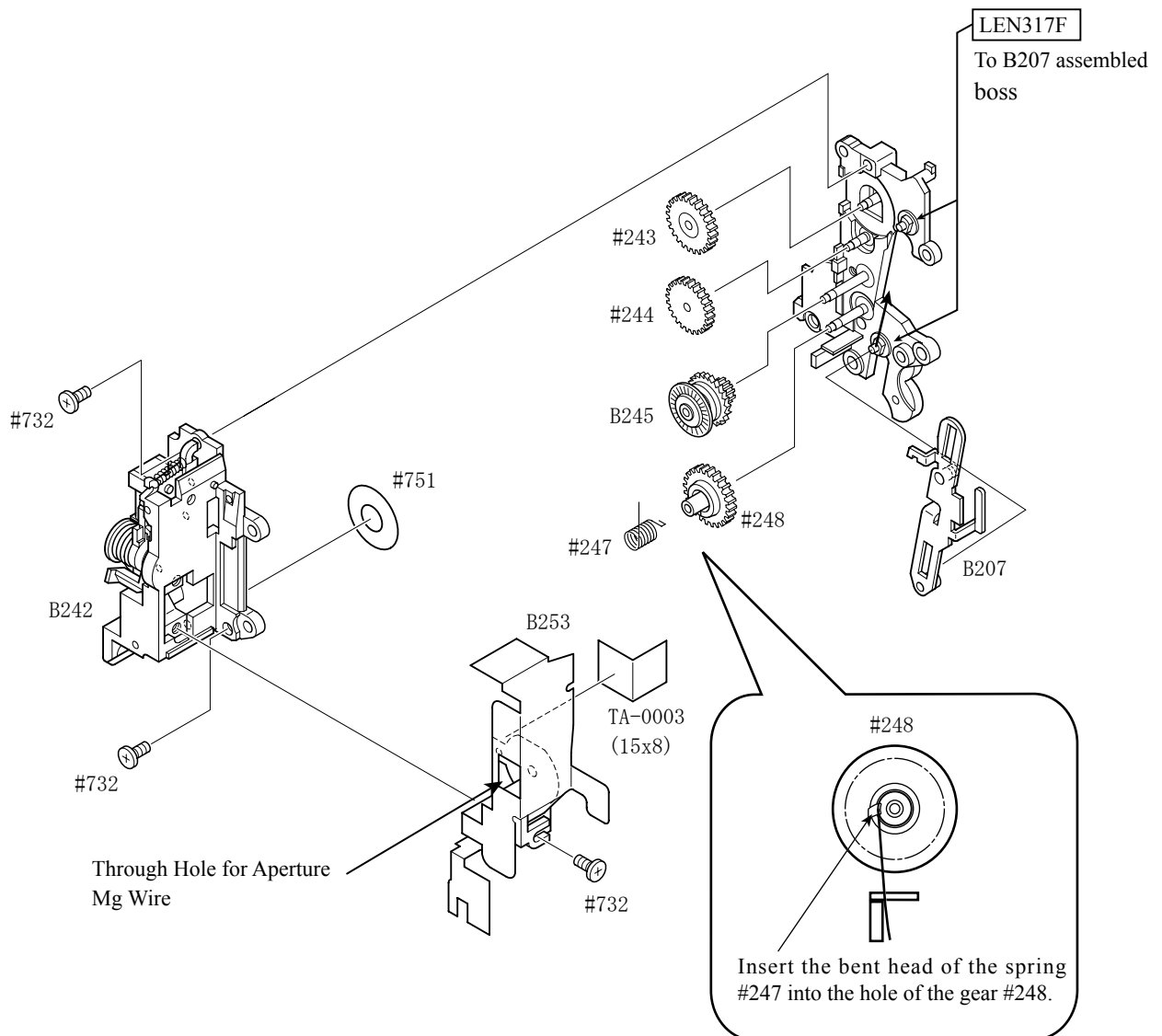
1. Assembly of Aperture Upper and Lower Base Plates

- ① Assemble the gears #243 and #244, aperture driving lever B207, gear #248, spring #247 and gear B245 onto the aperture control lower base plate #241 in this order.

Note : The aperture driving gear B242 should be slid to the arrow direction (upper) in advance.

- ② Attach the aperture upper base plate B242 on the aperture control unit #241 which has been assembled in step ①, using the screws #732×2.

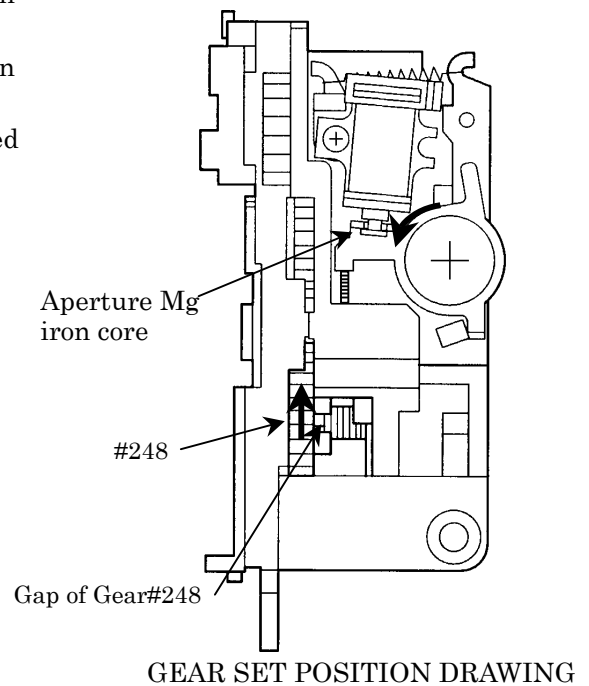
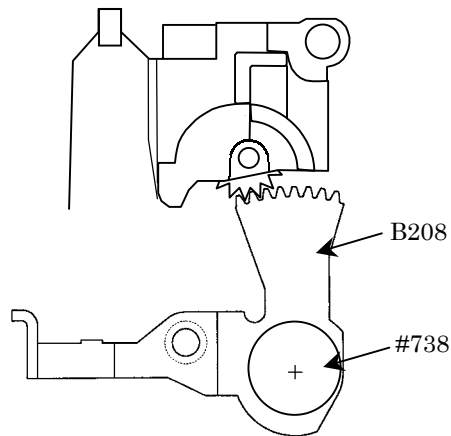
● Oil the four gear shafts using “CFD-005.5H”.



- ③ Affix the aperture PI FPC unit B253 on the aperture control unit which has been assembled in step ②, using a double-sided adhesive tape #751 and TA-0003.
- ④ Fix the PI section of the aperture PI FPC unit B253 using the screw #732.

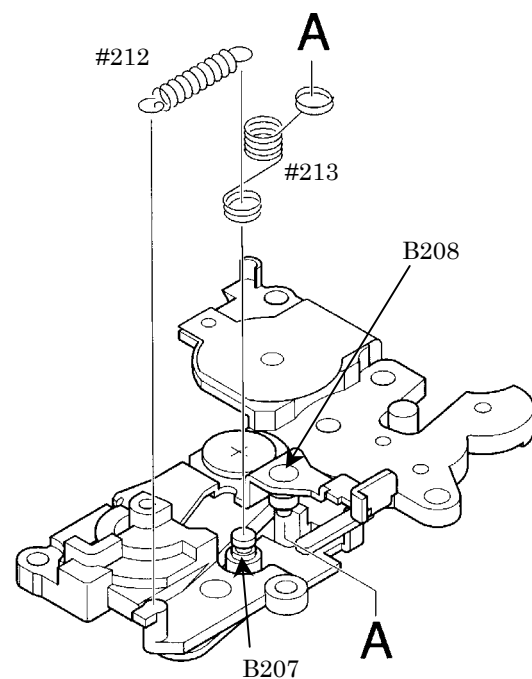
2. Aperture Lever Installation

- ① Turn the gear #248 to the arrow direction as shown in the Gear Set Position Drawing. Turn one more time after the spring #247 starts working, and stop it when the groove of the gear #248 can be seen. Pull out the Aperture Mg iron core with forceps and fix the aligned gears.
- ② Attach the Aperture lever B208 at the position as shown in the figure, using the screw #738.



3. Hook the spring

- ③ Hook the double wound side of the spring #213 on the column of the Aperture lever B208 and triple wound side of the spring #213 on the column of the Aperture control lever B207.
- ④ Hook the spring #212 on the position as shown in the figure.

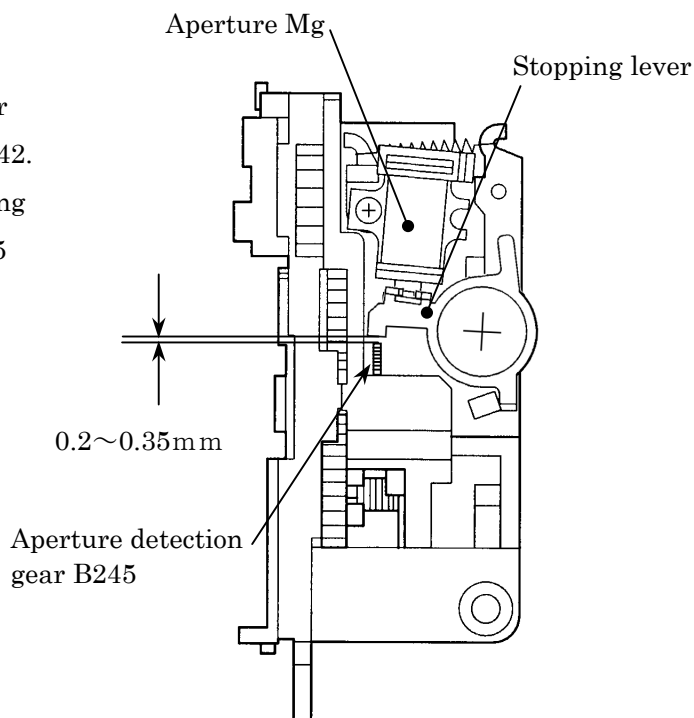


Check: Push down the Mg iron core which has been projected in the procedure of "2. Aperture Lever Installation" and make sure that when the Aperture lever B208 is pushed down with a finger it securely returns to the upward (installed position) when finger is released.

4. Adjustment for the aperture Mg position

- Adjust the aperture Mg position as the following procedure when disassembling or replacing the aperture upper base unit B242. Measure the clearance between the stopping lever and the aperture detection gear B245 and make it be in the standard

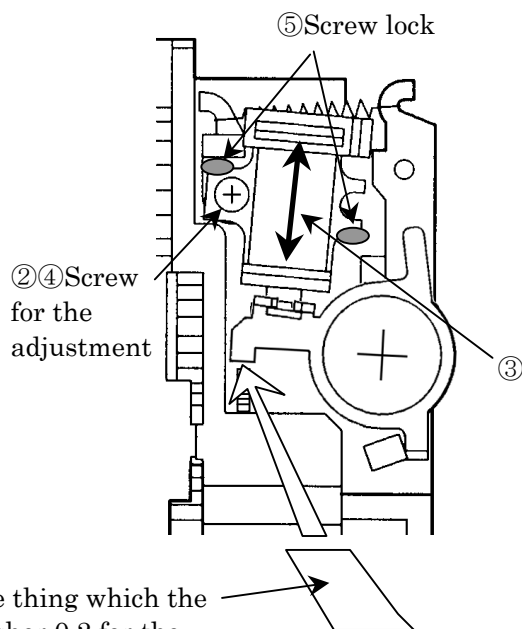
STANDARD : 0.2~0.35mm



• Adjustment procedure

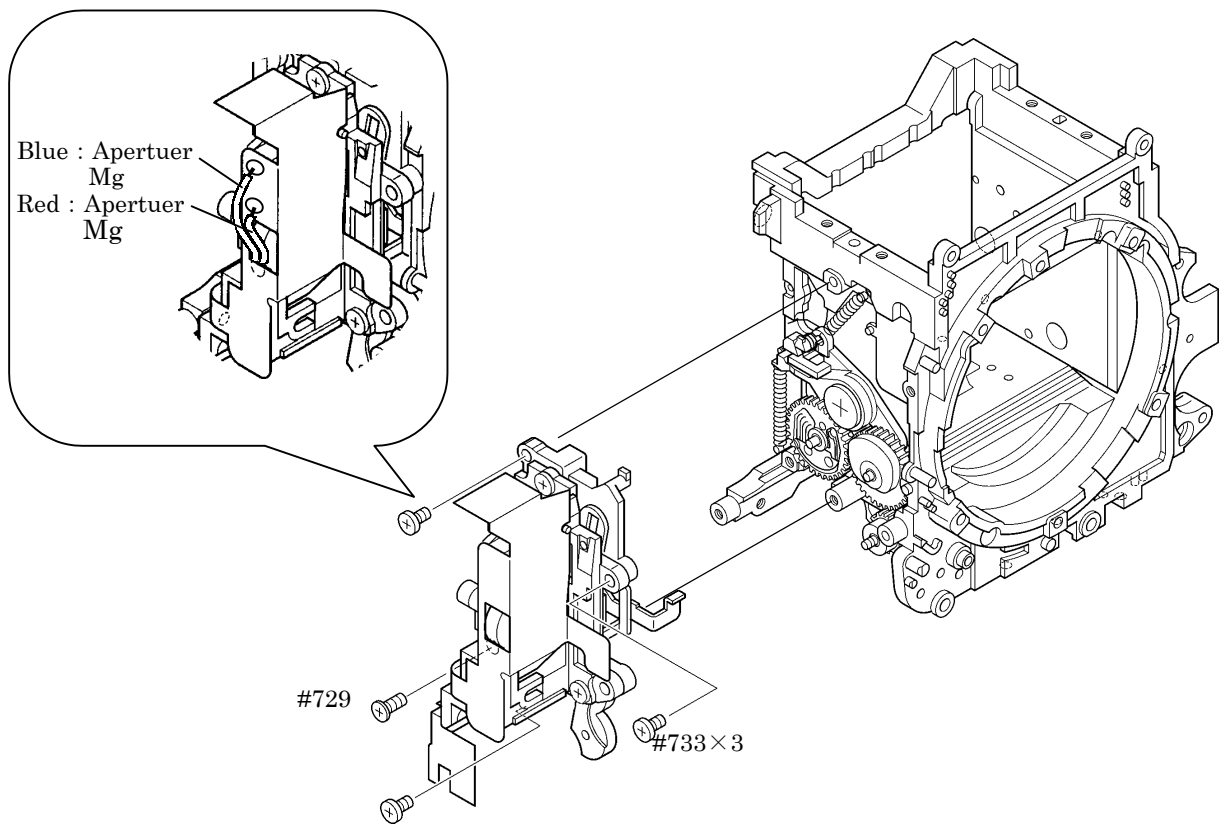
Adsorb the iron core of the aperture Mg to the Mg side during the adjustment.

- ① Put the washer of 0.2 mm into the clearance to be adjusted.
- ② Loosen the screw for the adjustment.
- ③ Move the aperture Mg to make the above clearance be the same thickness as the washer.
- ④ Drive the screw for the adjustment and fix the aperture Mg.
- ⑤ Fix the Mg by the screw lock.

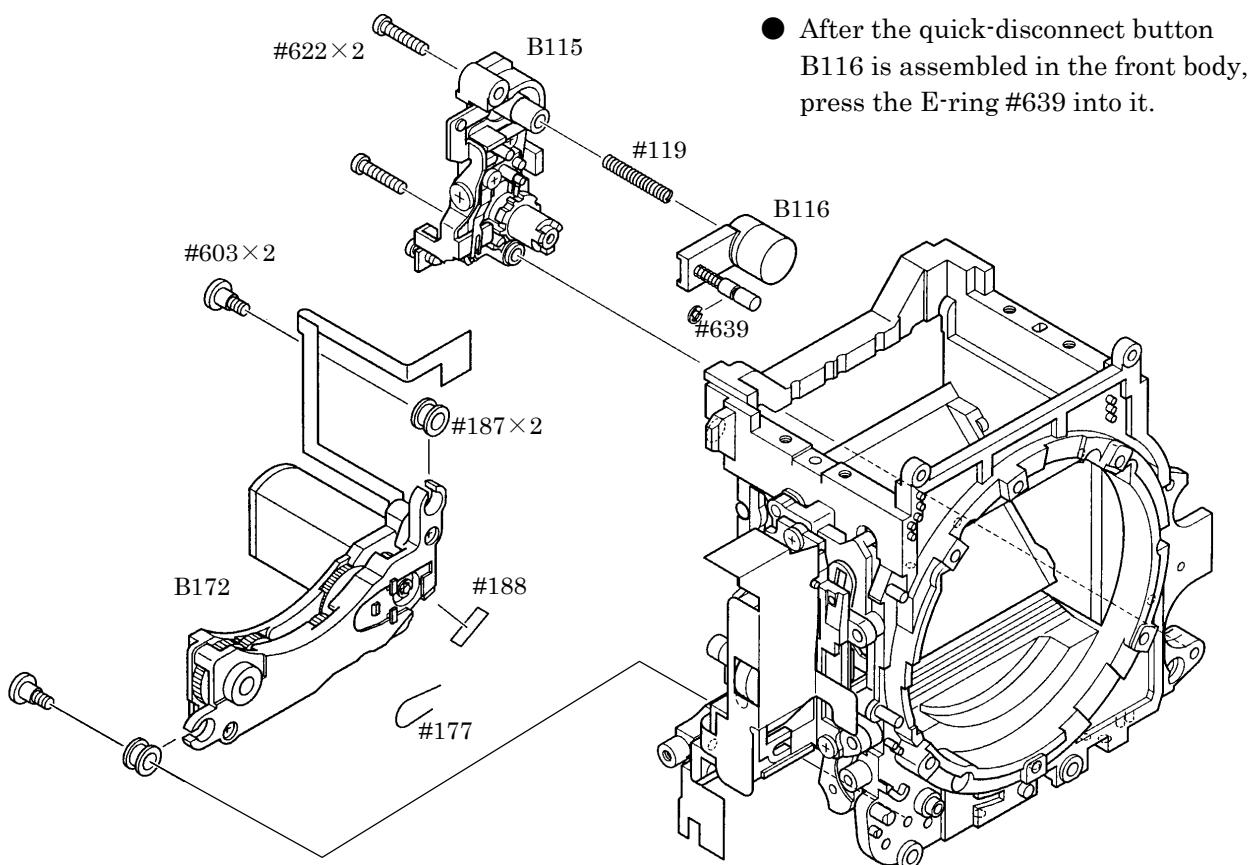


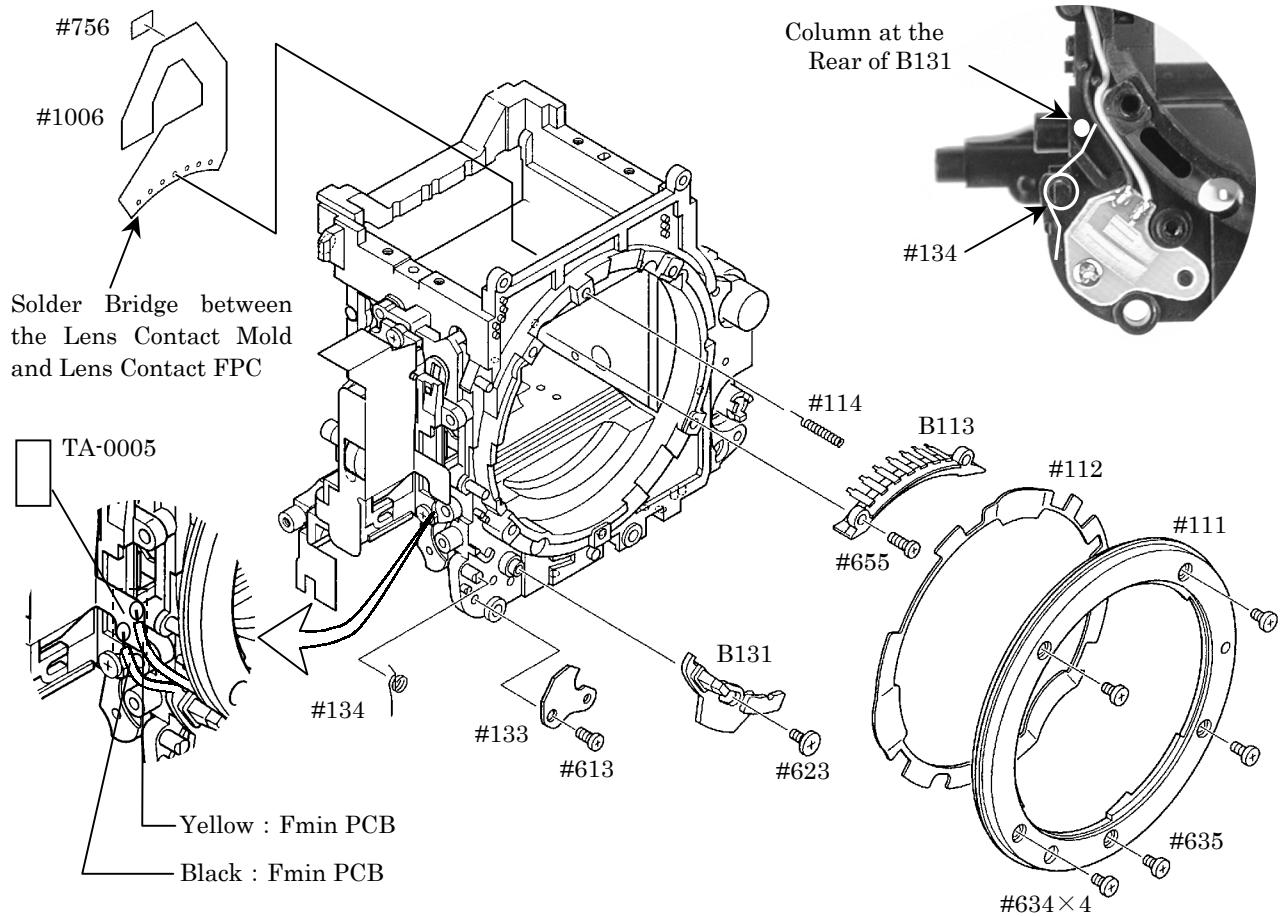
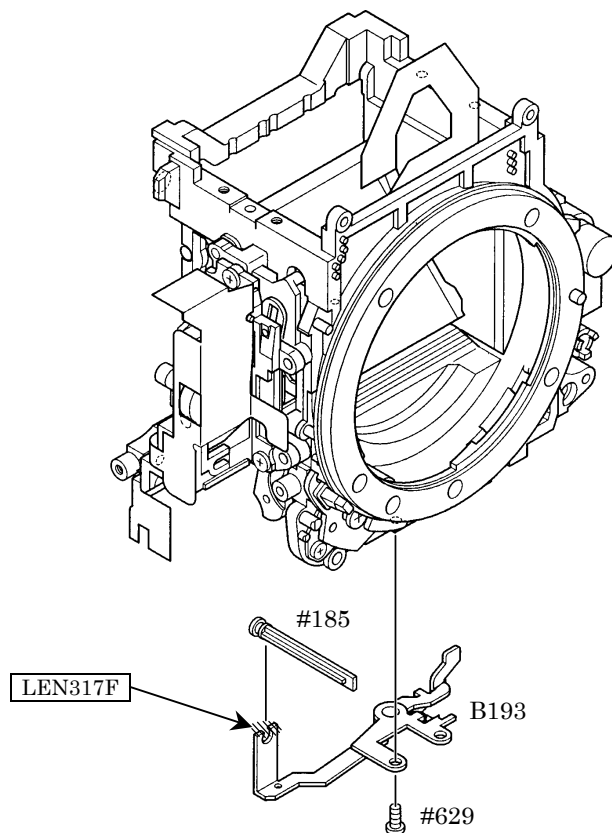
- ① The thing which the washer 0.2 for the adjustment infinity and so on is cut in the suitable dimension.

5. Installation of the Apertuer Control unit on the Front Body

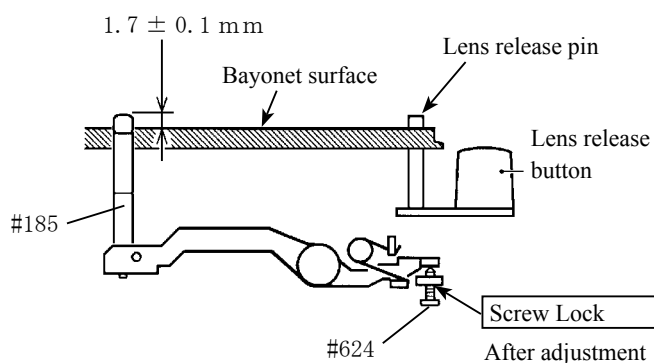


AF DRIVING UNIT, AM SWITCH UNIT



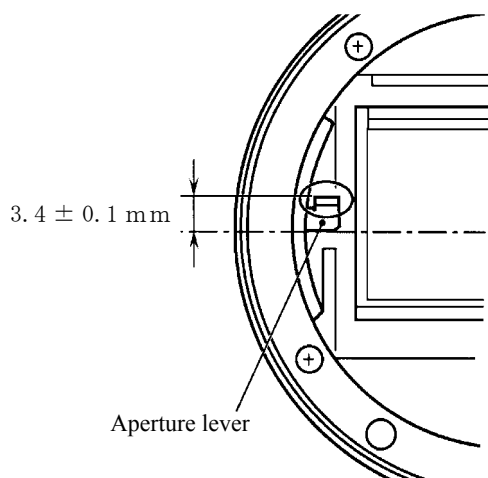
BAYONET MOUNT**HORIZONTAL AF LEVER UNIT**

HIGHT ADJUSTMENT OF AF COUPLING SHAFT#185



- ① Set the A/M switch cam #122 to "S".
After pressing the lens release button two or three times, measure the height of the AF coupling shaft #185.
- ② Adjust the height of the AF coupling shaft using screw #624.
- ③ The AF coupling shaft should not protrude over the bayonet surface, when the height of lens release pin is adjusted to 0.4mm.
- ④ After adjusting, fix screw #624 using the screw lock.

ADJUSTMENT OF APERTURE LEVER POSITION

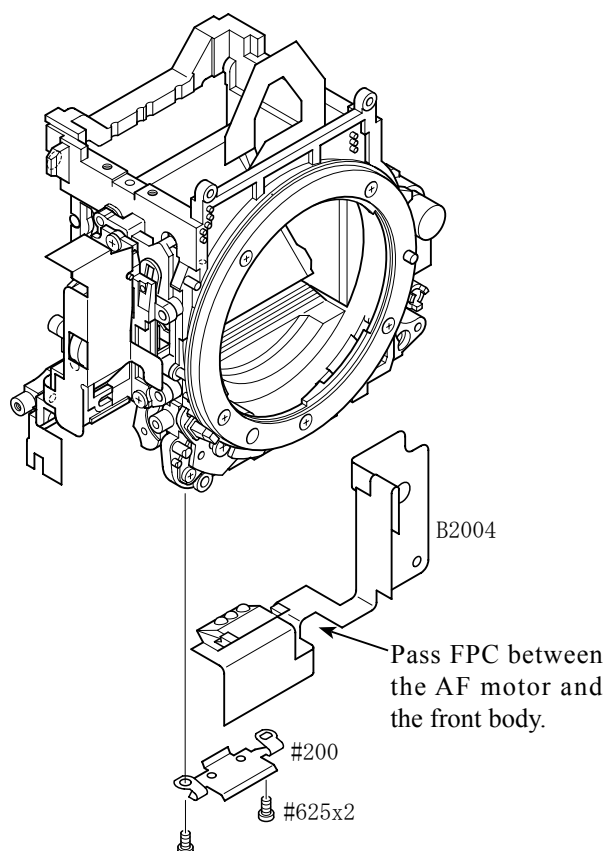


- Measure the height of the aperture lever using tool J18004.

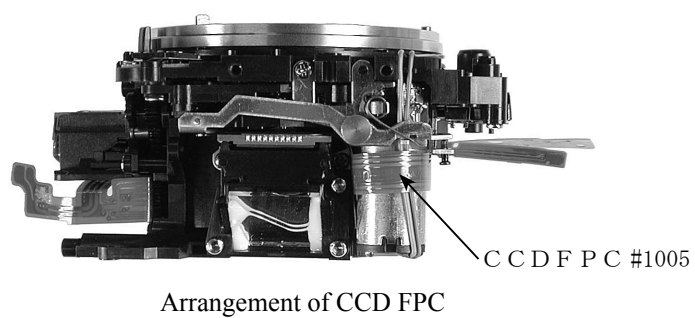
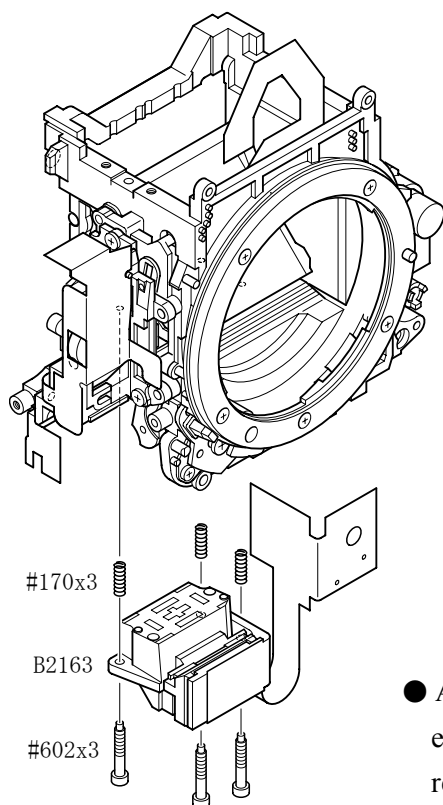
Standard Value : $3.4 \pm 0.1 \text{ mm}$

If the height of the aperture lever is out of the standard, bend the circled position to adjust. While adjusting, take care not to bend the inside lever and stopper portion.

TTL SPD Unit



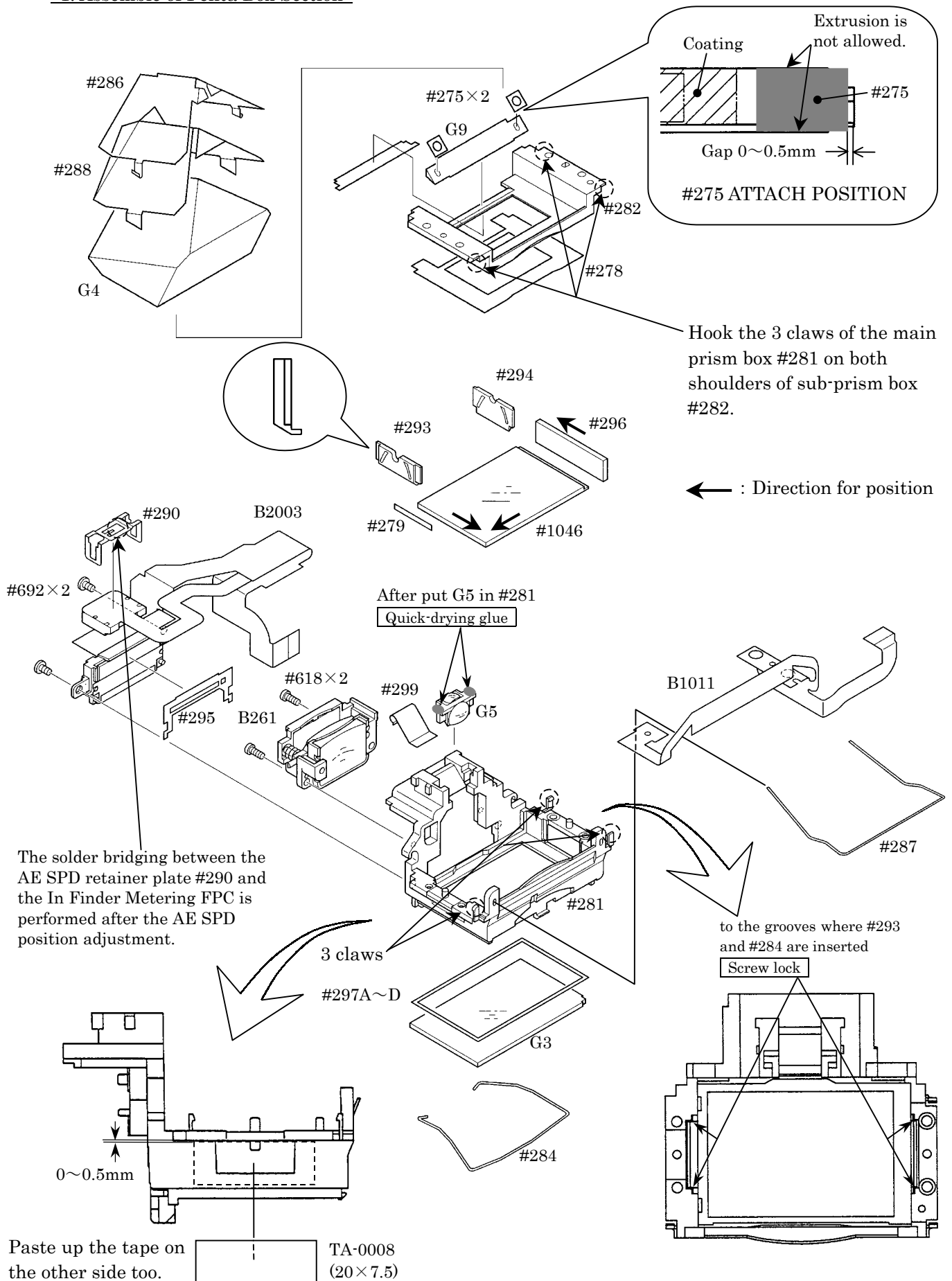
AF Sensor Unit



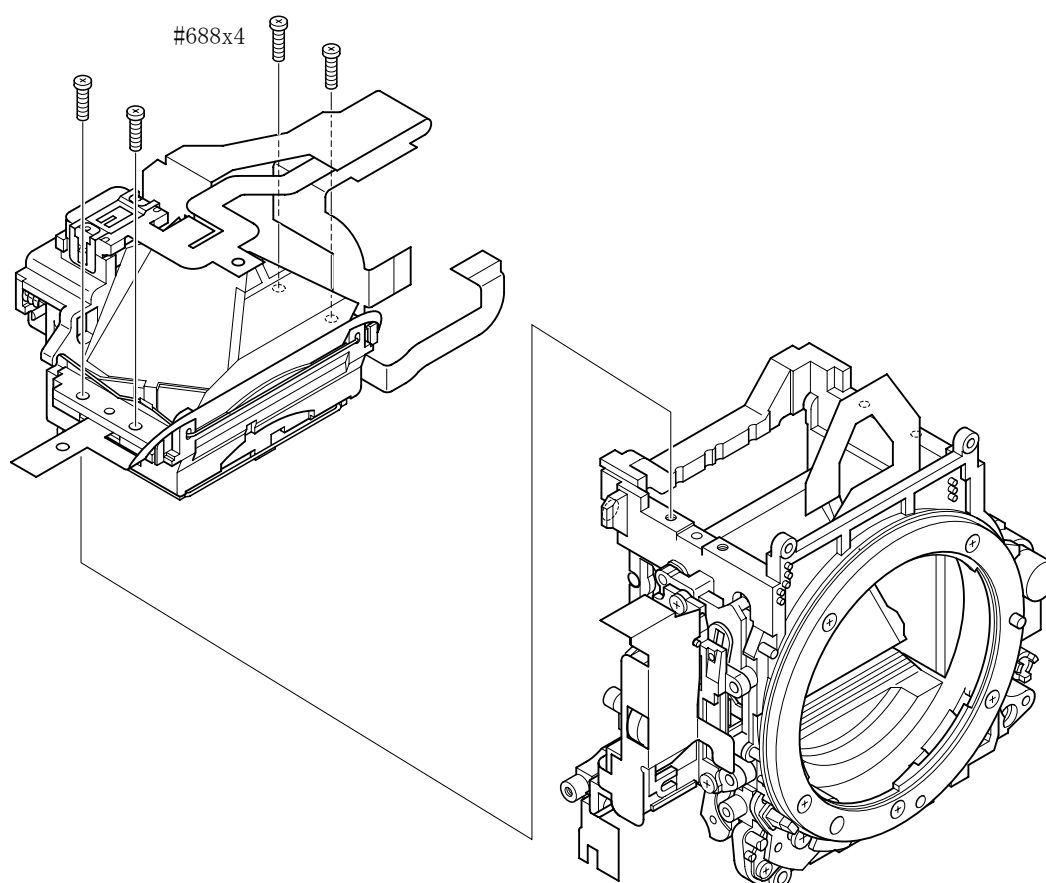
- After the screw #602×3 is fastened to the end using a hex key, turn it about 2 revolutions reverse.

PRISM BOX UNIT

1. Assemble of Penta Box Section



2. Mount Prism Box on Front Body



ANGLE ADJUSTMENT OF MAIN MIRROR AND SUB MIRROR TO 45°

Note : Adjust the followings after mounting the prism box to the front body as described page A11.

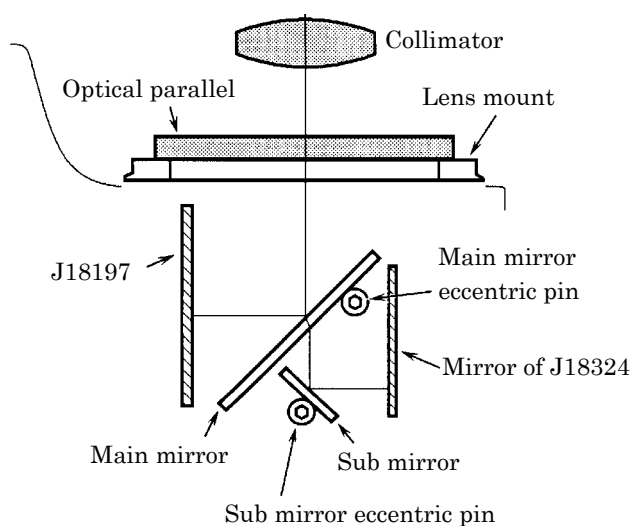
* Use tools

1. Angle adjustment of main mirror

- ① Collimator (J19002)
- ② Mirror angle inspection mirror (J18197)
- ③ Optical parallel (J18037)
- ④ Hexagonal wrench

2. Angle adjustment of sub mirror

- ① Collimator (J19002)
- ② Sub mirror angle adjustment tool (J18324)
- ③ Hexagonal Wrench



- Angle adjustment of main mirror to 45°

Note : Check to confirm the accuracy of the main mirror before and after adjustment by moving it up and down several times.

- ① Checking the discrepancy (right/left)

If horizontal displacement is out of the standard value, it is possible that bayonet spring #112 is pinched, mirror unit B2231 is defective, or mirror shaft is bent.

- ② Checking the discrepancy (up/down)

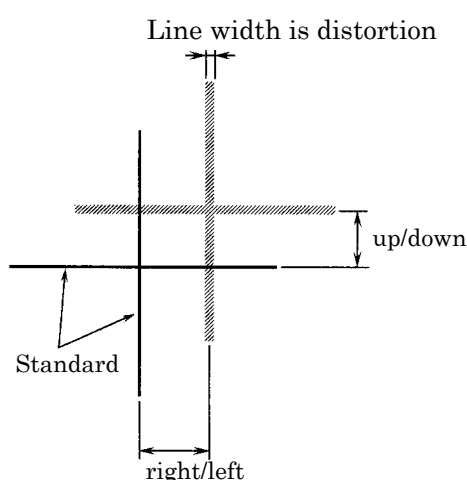
If the amount of the discrepancy is out of the standard value, rotate the main mirror eccentric pin to adjust.

- Angle adjustment of sub mirror to 45° (47.75°)

Note : Check to confirm the accuracy of the main mirror before and after adjustment by moving it up and down several times.

- ① Checking the discrepancy (up/down)

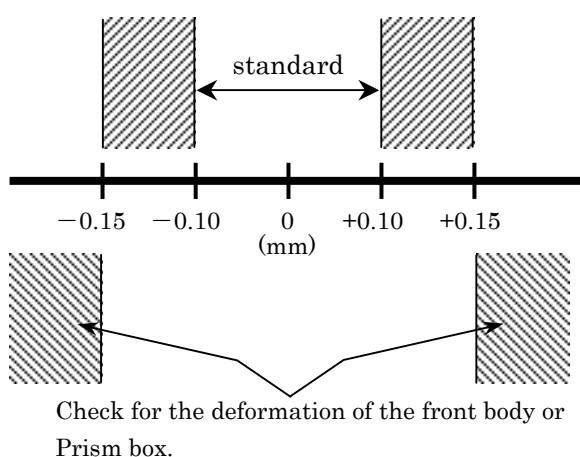
If the amount of the discrepancy is out of the standard value, rotate the sub mirror eccentric pin to adjust.



Standard :

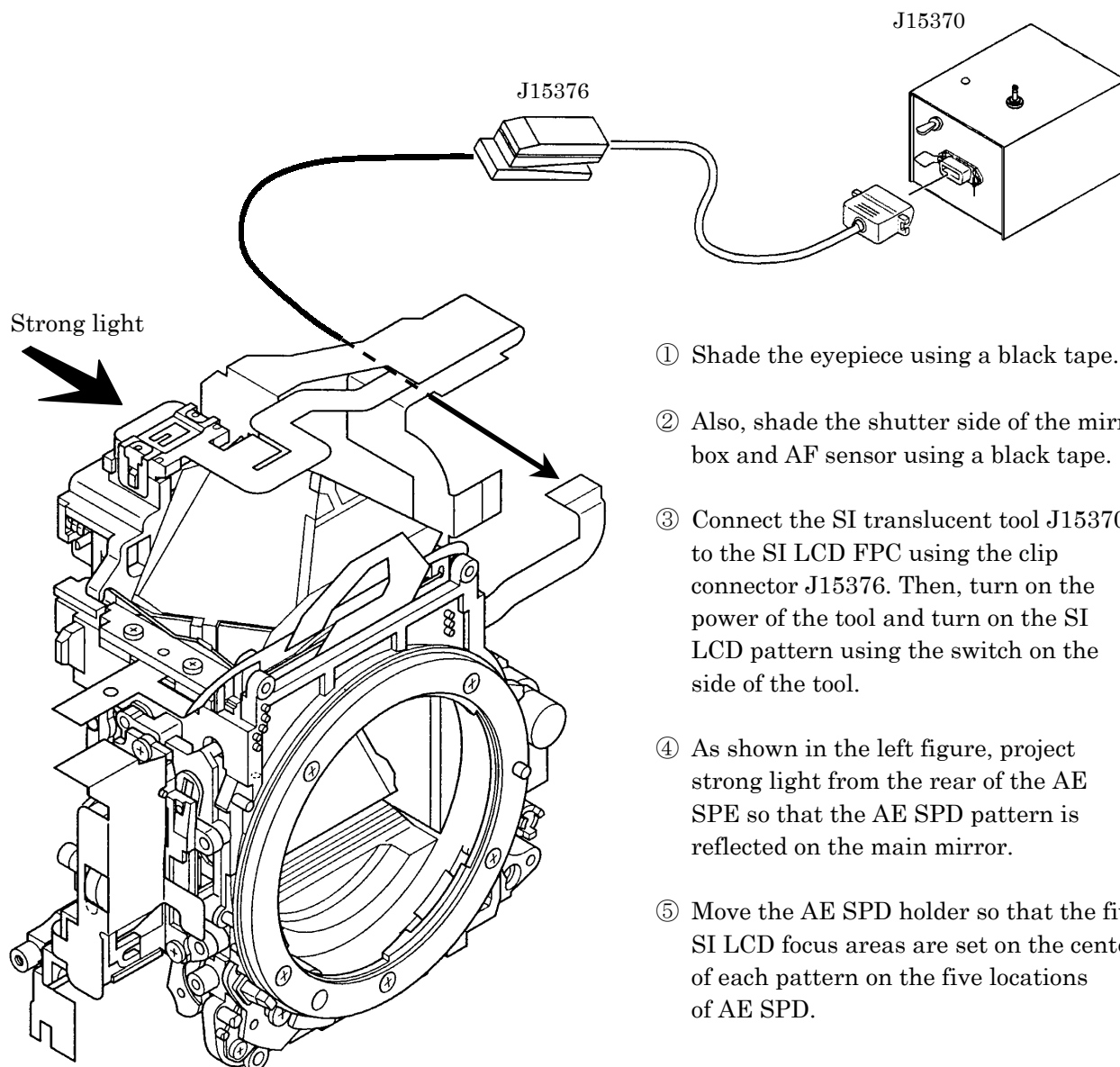
	Main mirror	Sub mirror
Discrepancy (right/left)	Within $\pm 20'$	
Discrepancy (up/down)	Within $\pm 5'$	Within $\pm 5'$
Distortion	Within $\pm 8'$	Within $\pm 8'$

ADJUSTMENT OF INFINITY (∞)

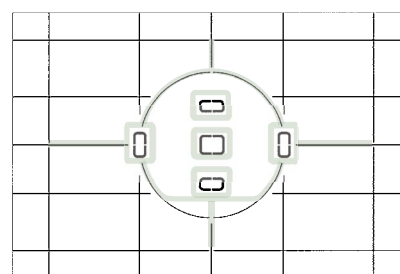
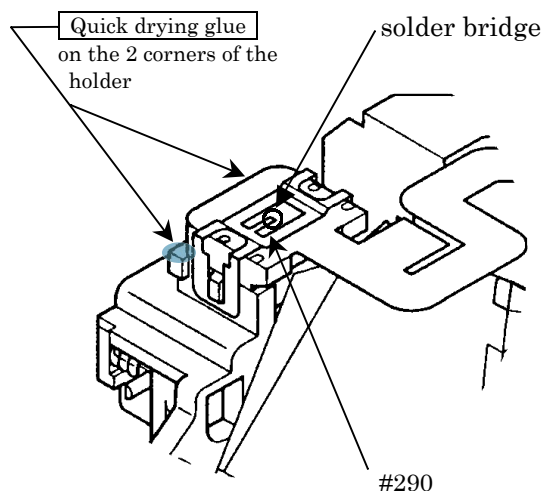


- ① Replace the screen by the screen J15371 (Common to the screen of F601M).
 - ② Connect the SI translucent tool J15370 to the SI LCD FPC using the clip connector J15376. Then, turn on the power of the tool as described page A12.
 - ③ Set the reference lens J18010 and read the value.
- In the case of $-0.10 \sim +0.10$
As it is within the standard range, adjustment is not required.
 - In the case of $-0.15 \sim -0.10$ or $+0.10 \sim +0.15$
Replace the G3 washer #297.
 - In the case of -0.15 or less or $+0.15$ or more
Check for the deformation of the front body or Prism box.

AE SPD POSITION ADJUSTMENT



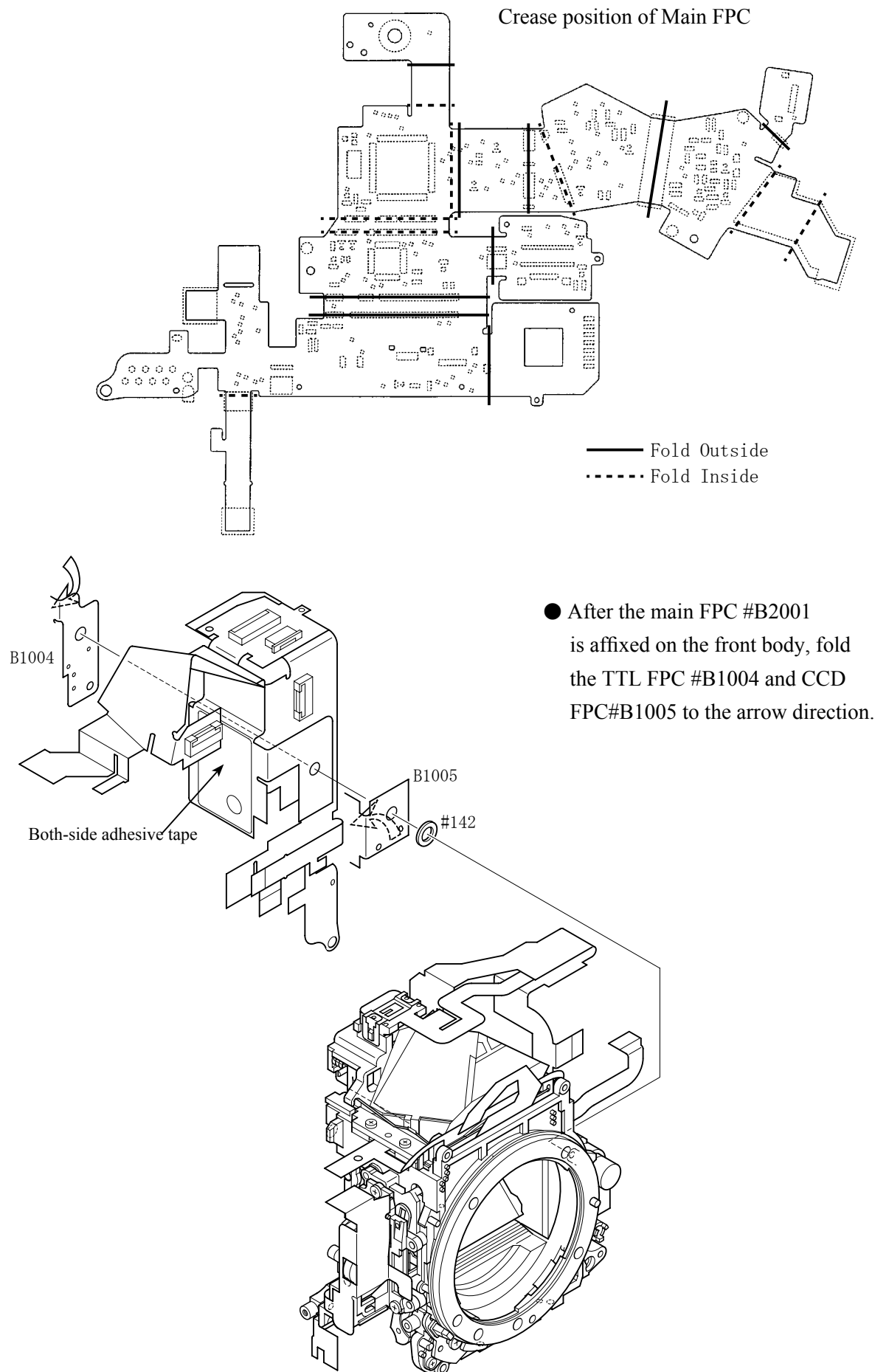
- ① Shade the eyepiece using a black tape.
- ② Also, shade the shutter side of the mirror box and AF sensor using a black tape.
- ③ Connect the SI translucent tool J15370 to the SI LCD FPC using the clip connector J15376. Then, turn on the power of the tool and turn on the SI LCD pattern using the switch on the side of the tool.
- ④ As shown in the left figure, project strong light from the rear of the AE SPD so that the AE SPD pattern is reflected on the main mirror.
- ⑤ Move the AE SPD holder so that the five SI LCD focus areas are set on the center of each pattern on the five locations of AE SPD.



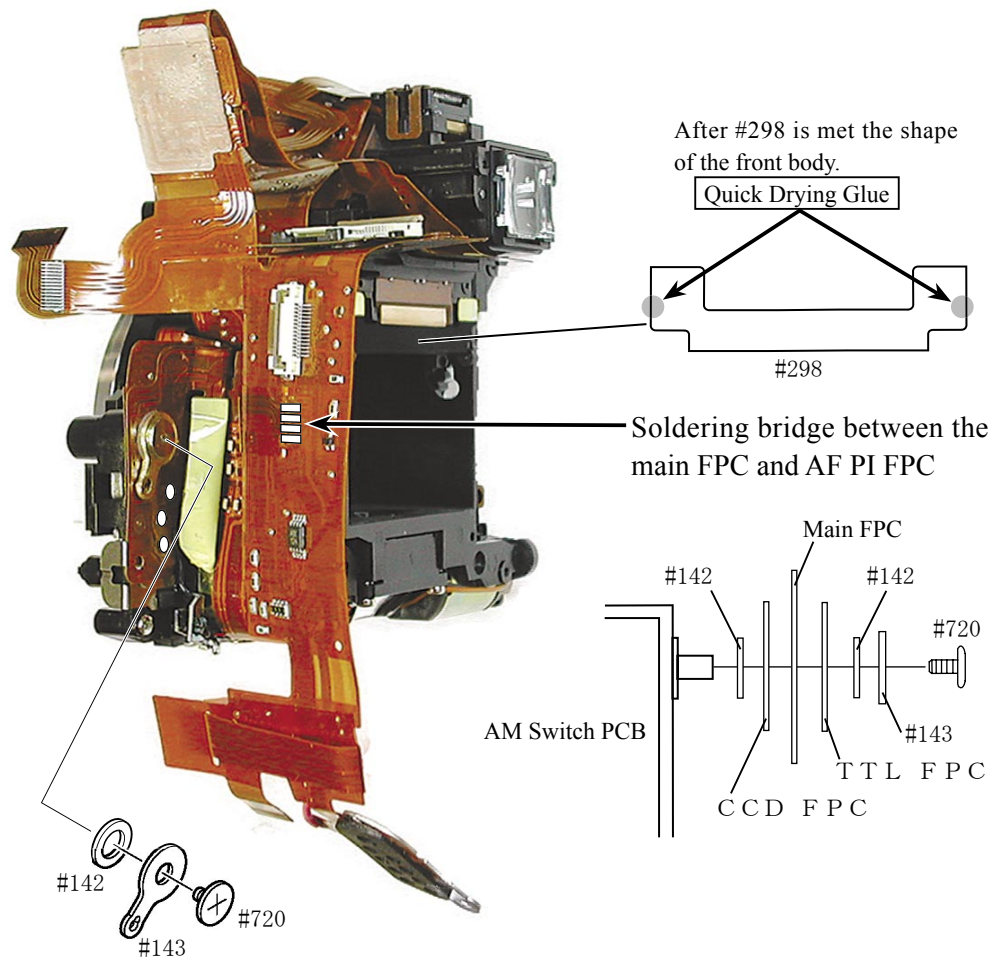
- ⑥ Fix the AE SPD holder on the prism box using Quick drying glue.
- ⑦ Perform solder bridging between the AE SPD retainer plate #290 and In Finder Metering FPC.

Main FPC

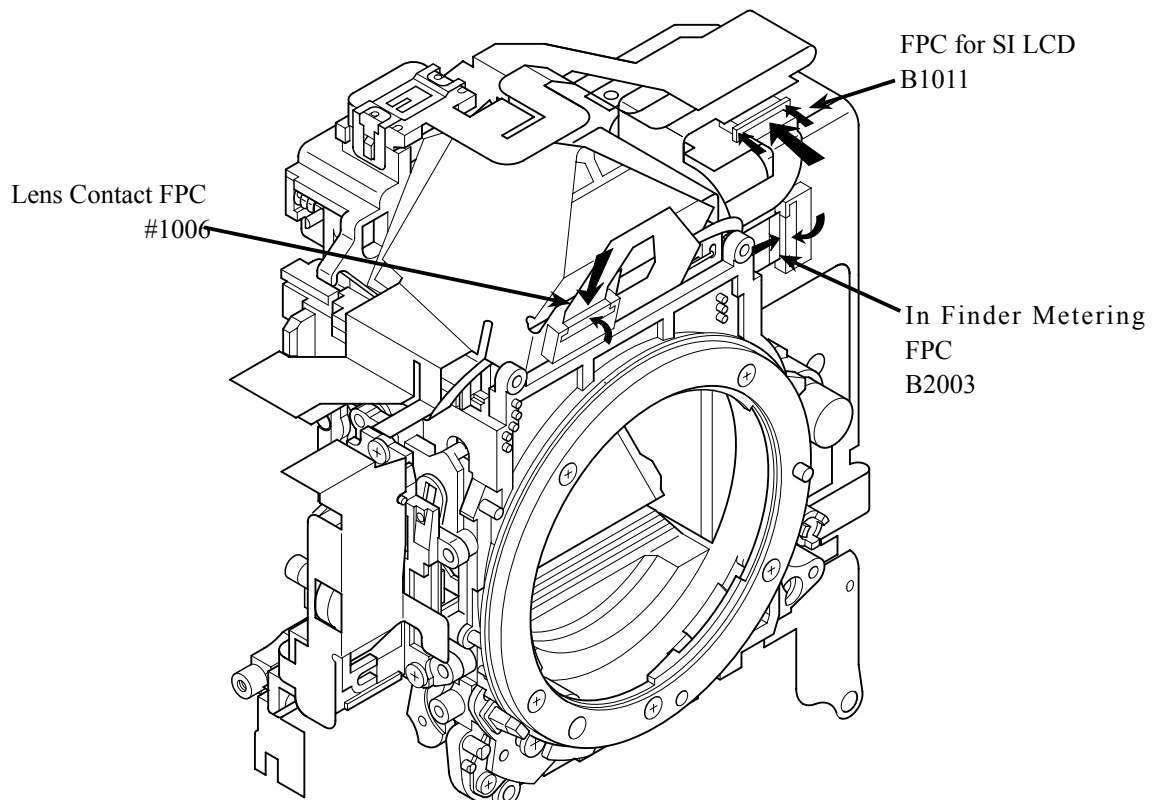
1. Mount Main FPC to Front Body



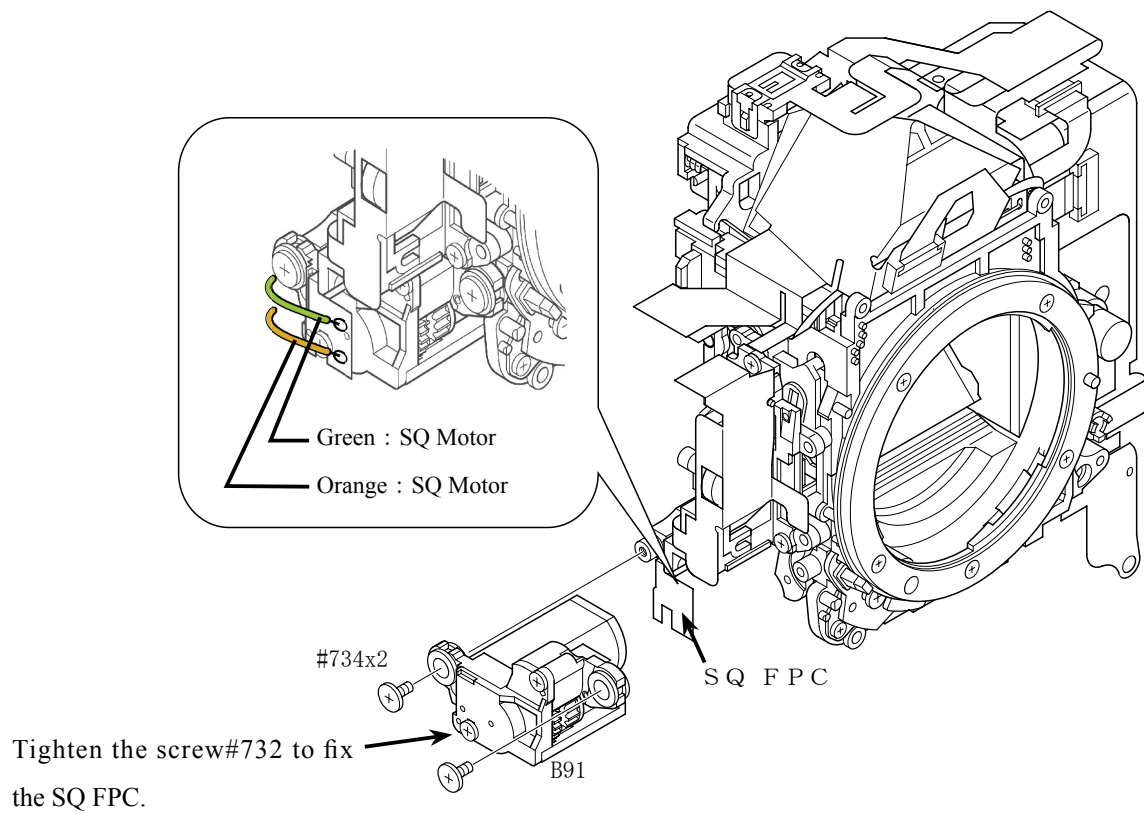
2. Pressure Welding and Solder Bridge



3. Connect FPCs to Connectors

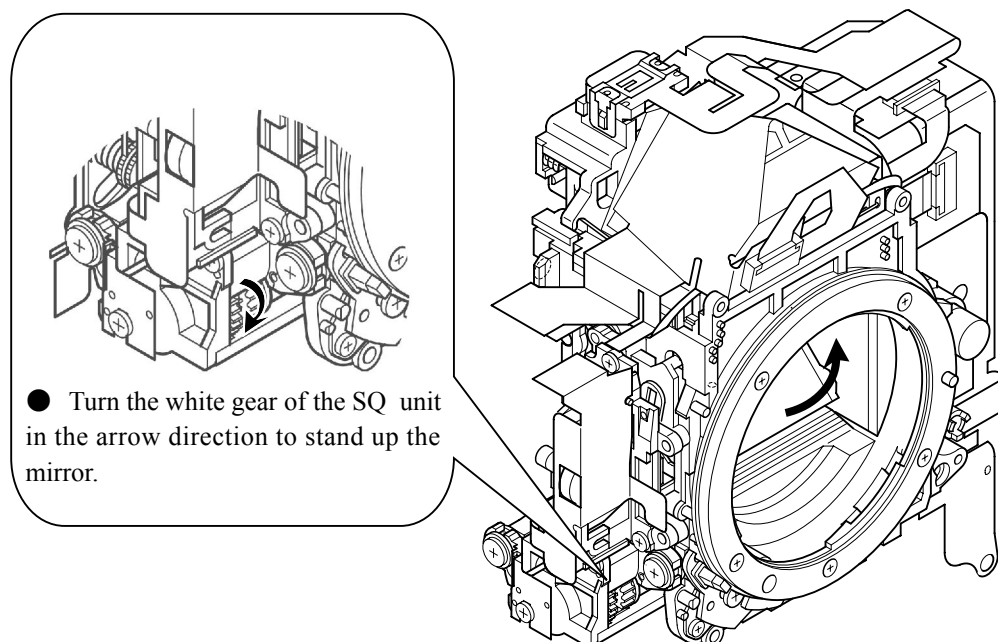


SQ FPC

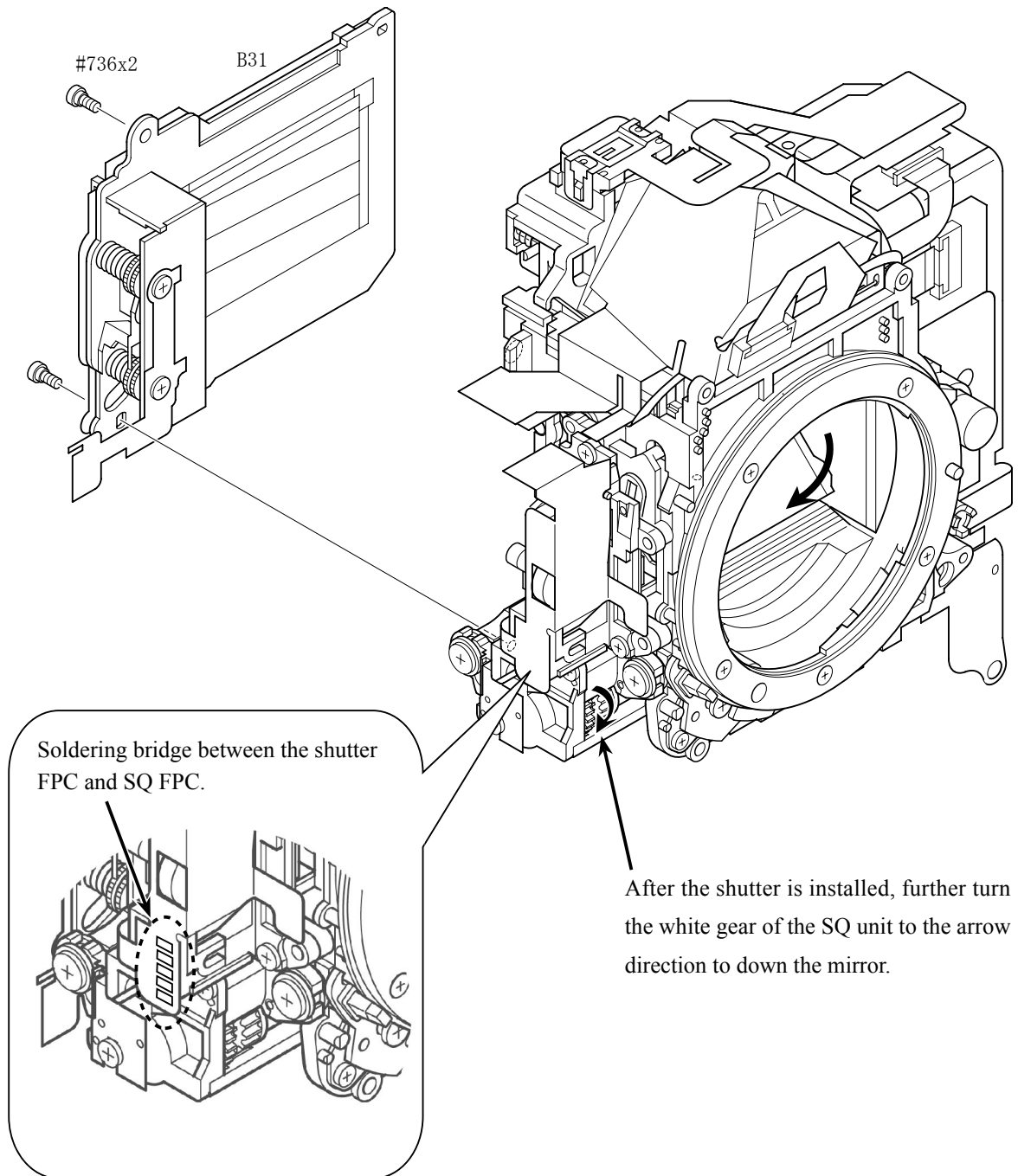


SHUTTER

1. Mirror up



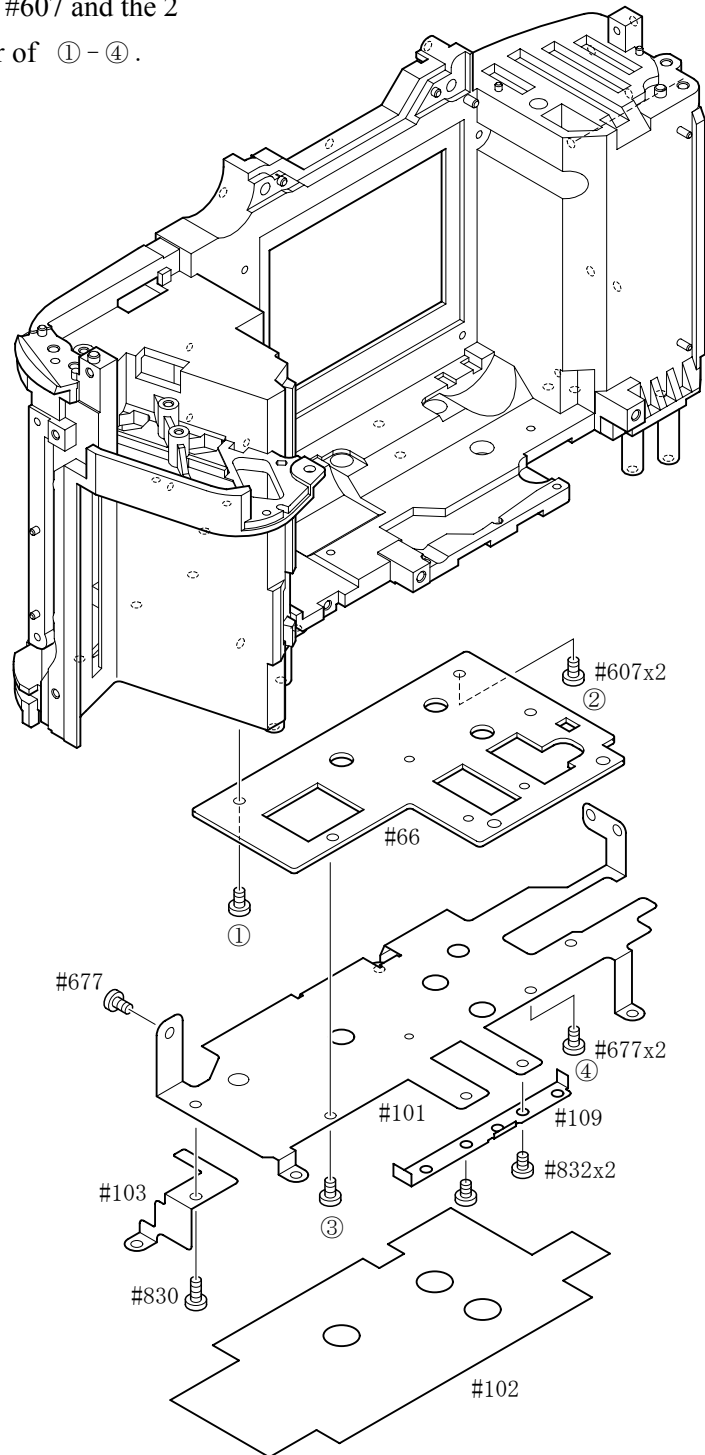
2. Mount Shutter Unit to Front Body



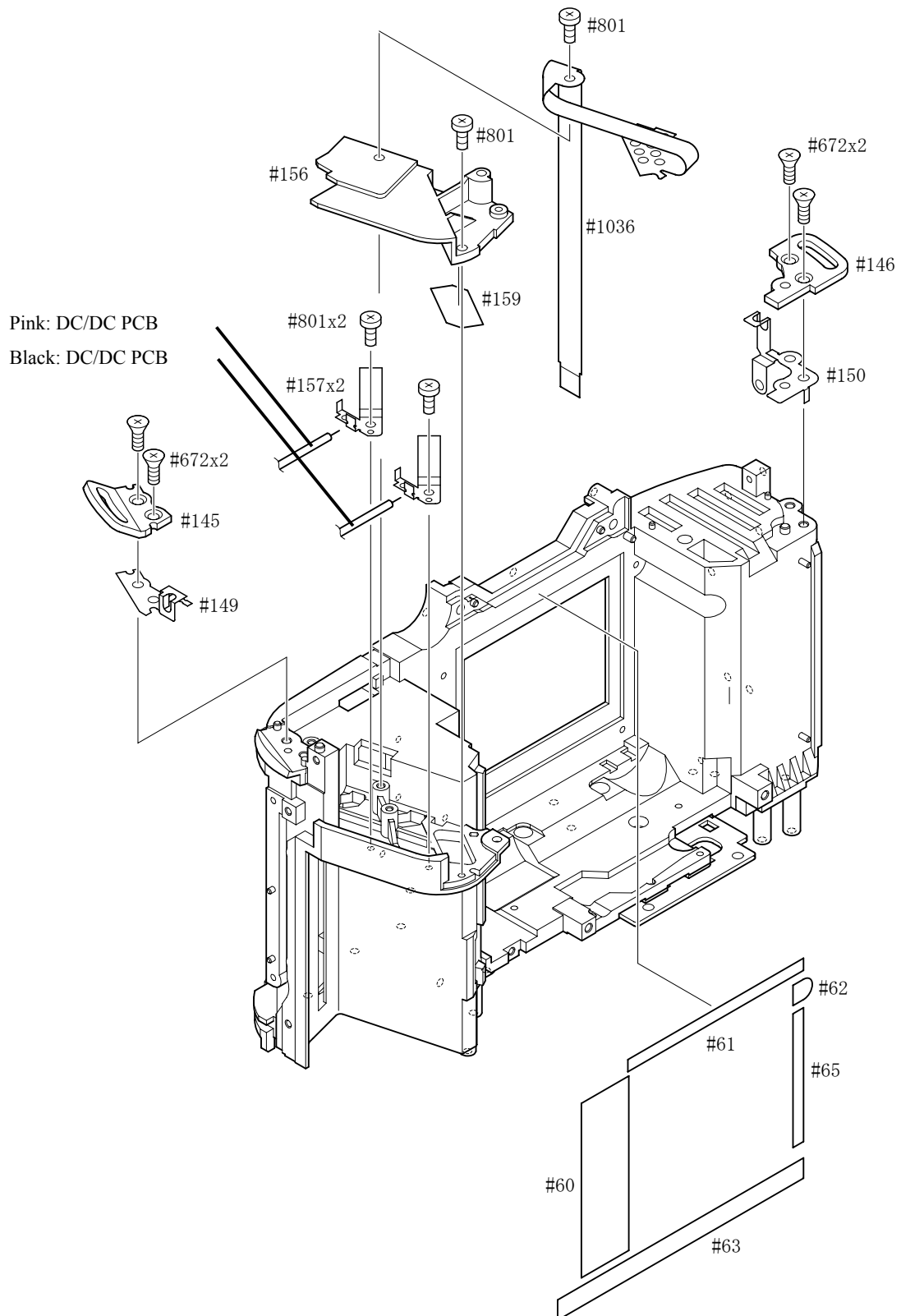
2. REAR BODY

Bottom Plate Unit

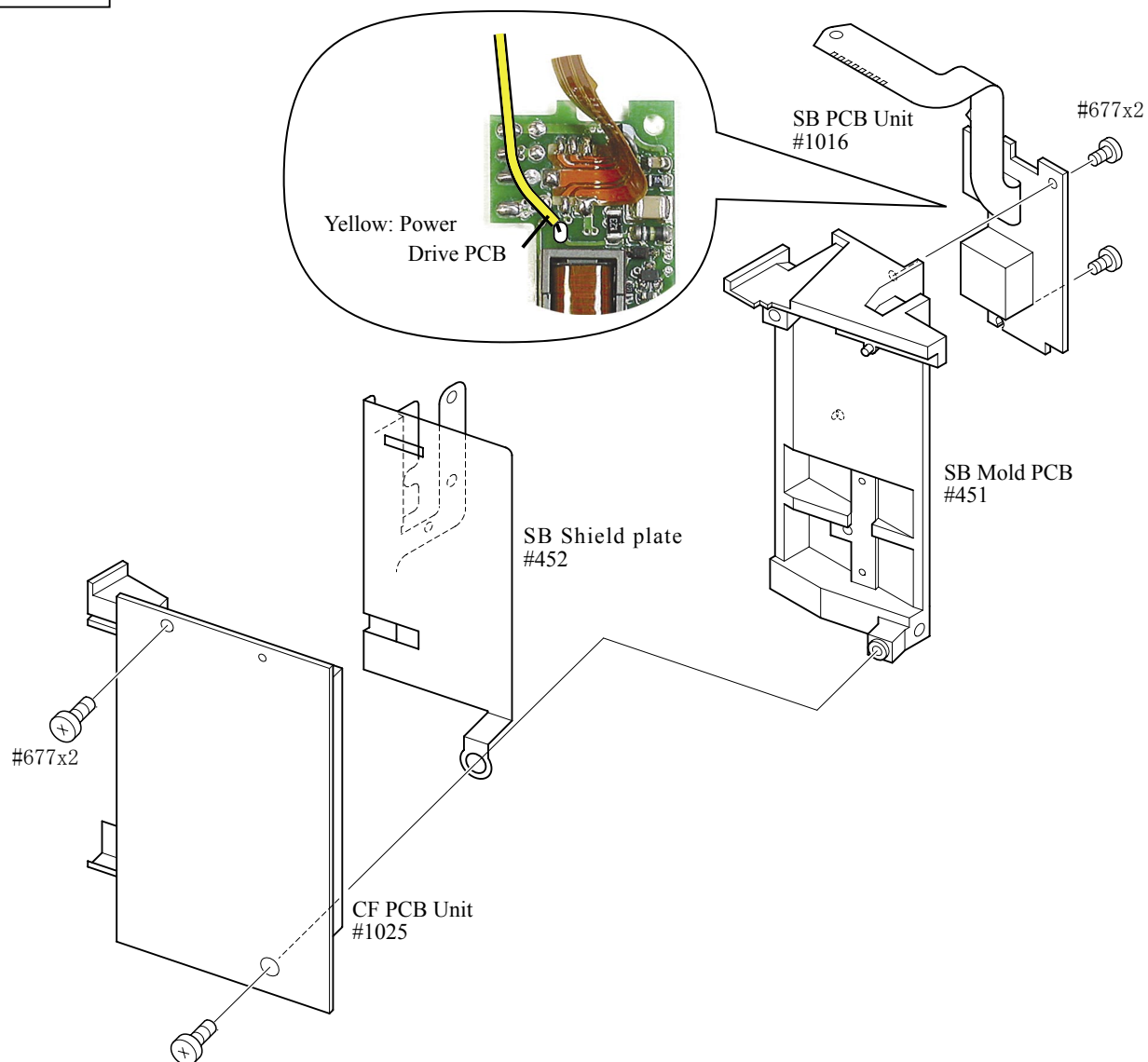
- Tighten the 2 screws #607 and the 2 screws #677 in order of ① - ④.



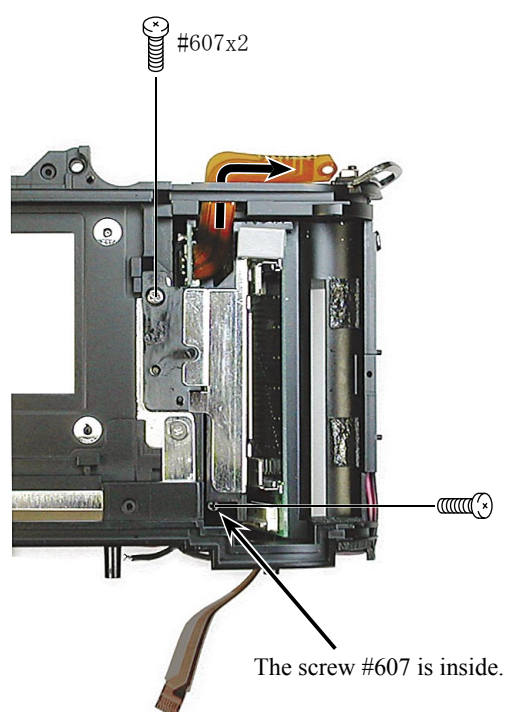
Battery Contact and Small Parts on Rear Body



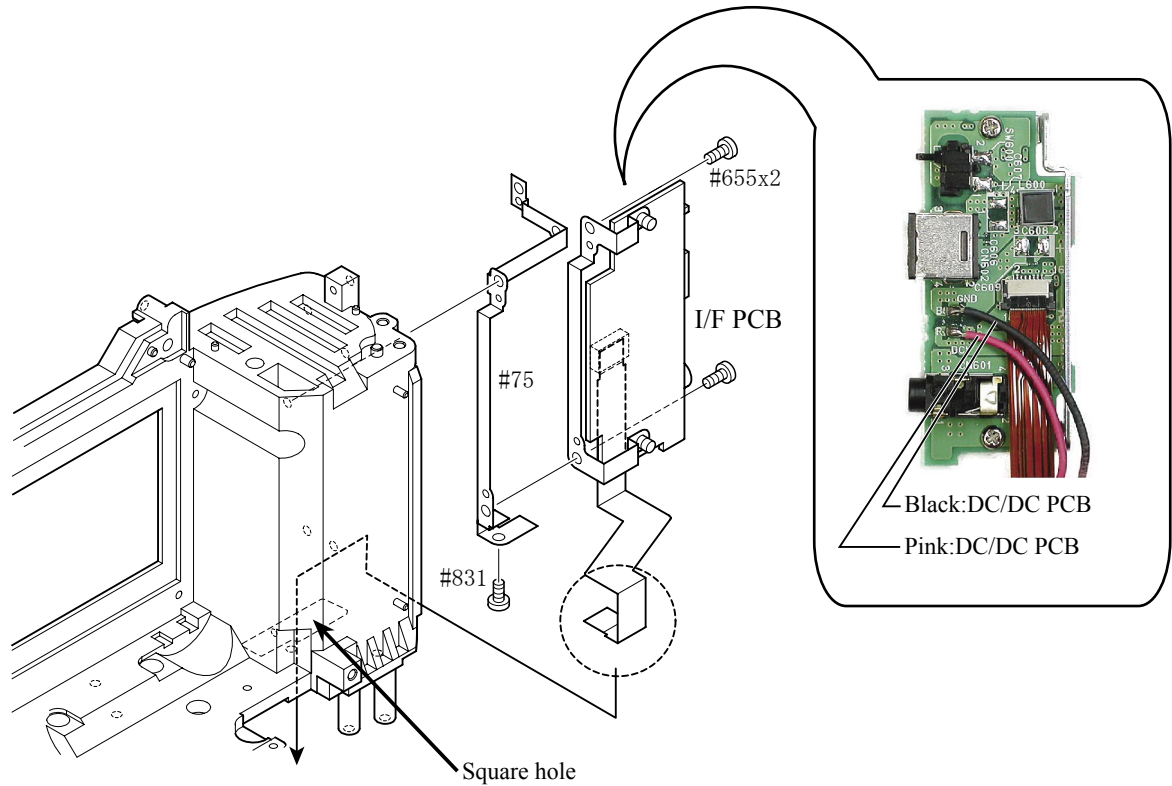
SB PCB Unit



CF PCB Unit

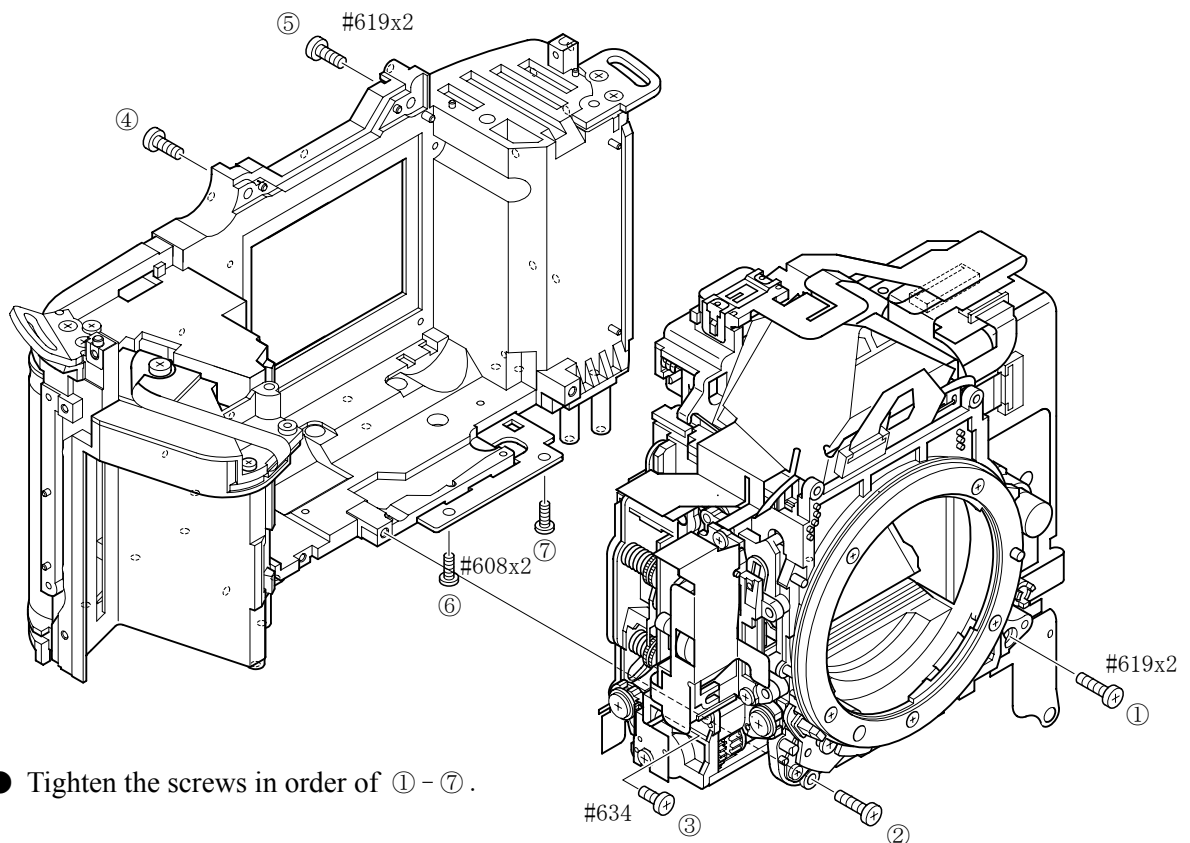


I/F PCB Unit



3. MOUNTING BOTH THE FRONT AND THE REAR BODIES

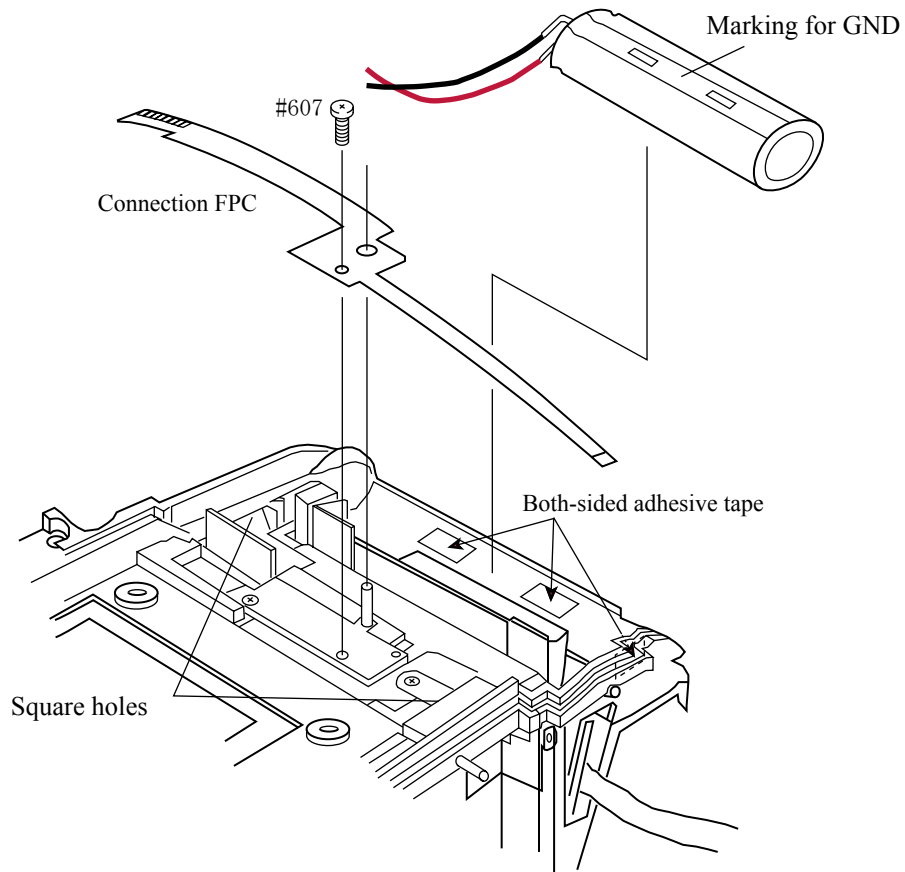
Mount Front Body to Rear Body



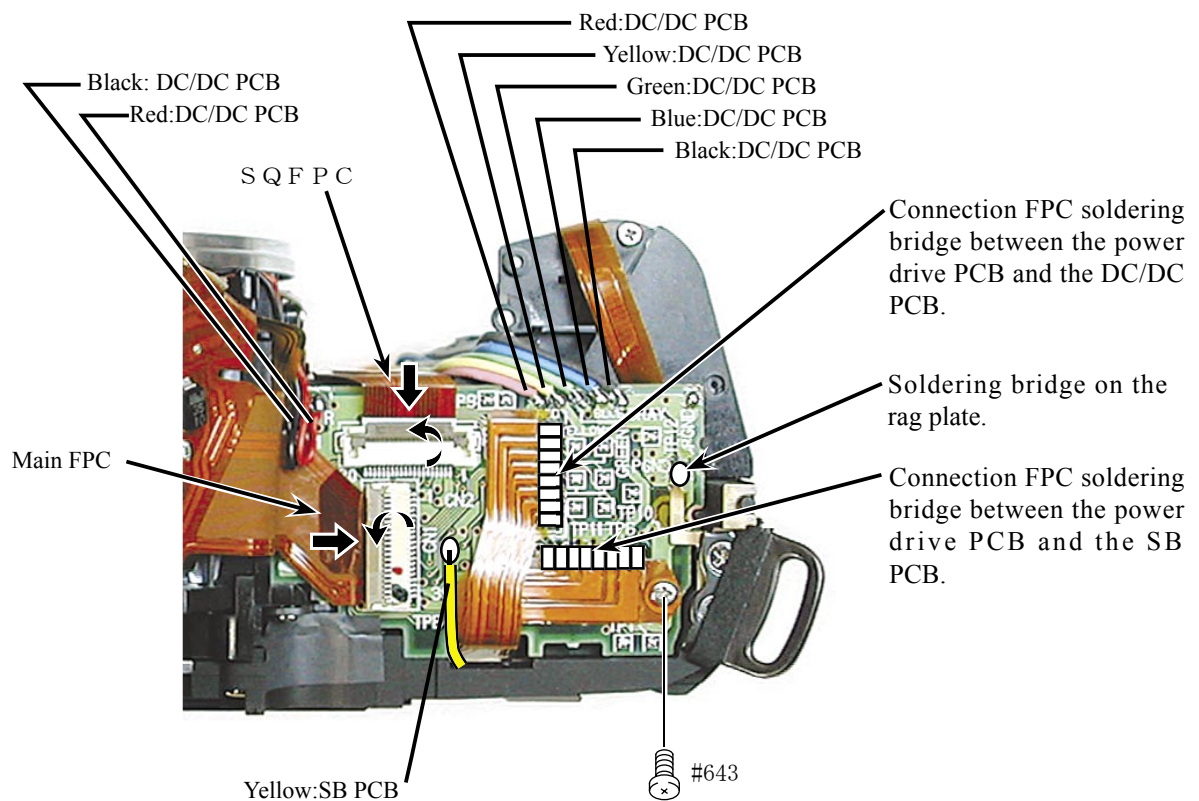
● Tighten the screws in order of ① - ⑦.

Main Condensor

- Pass the ends of the connection FPC through the square holes.

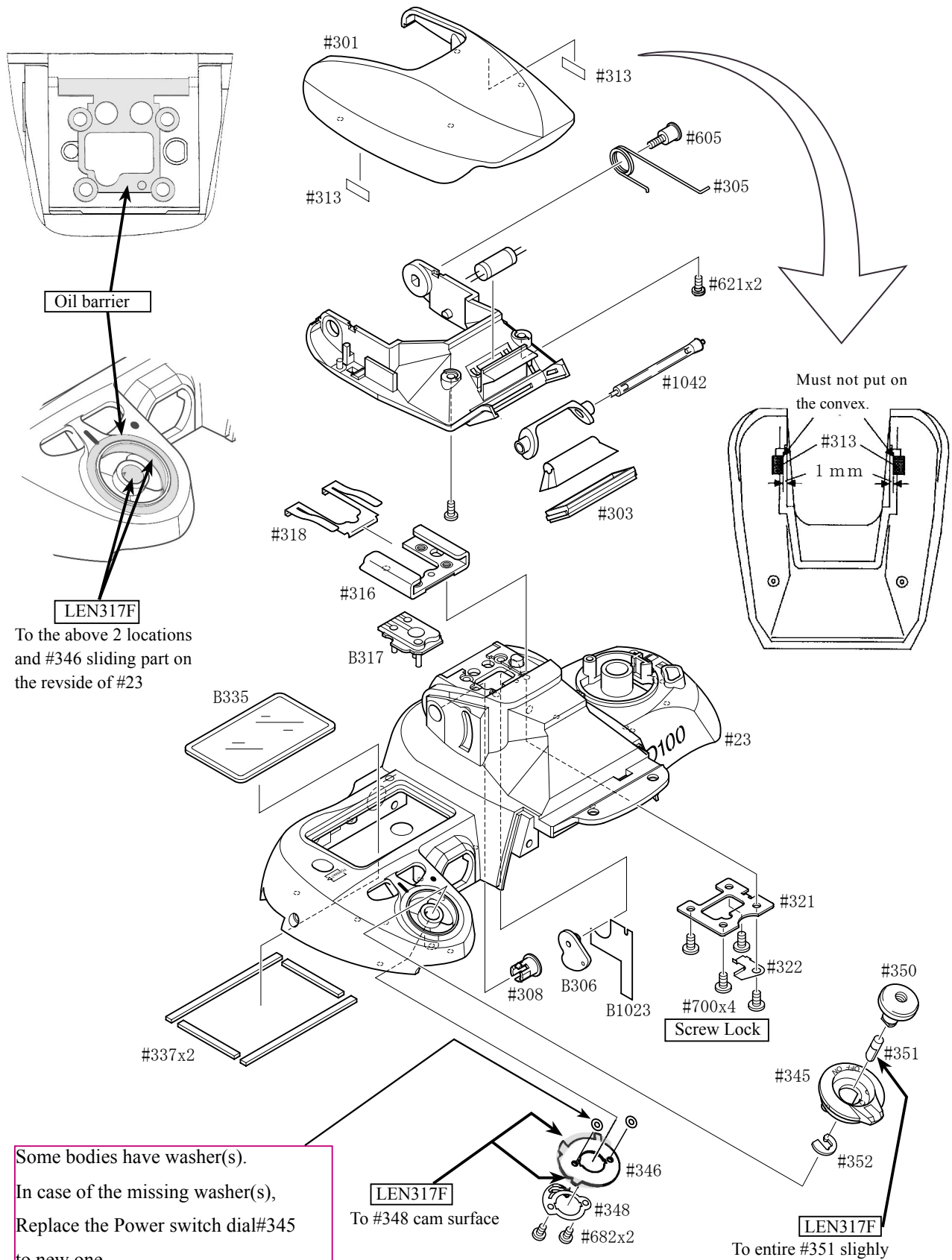


Power Drive PCB Unit



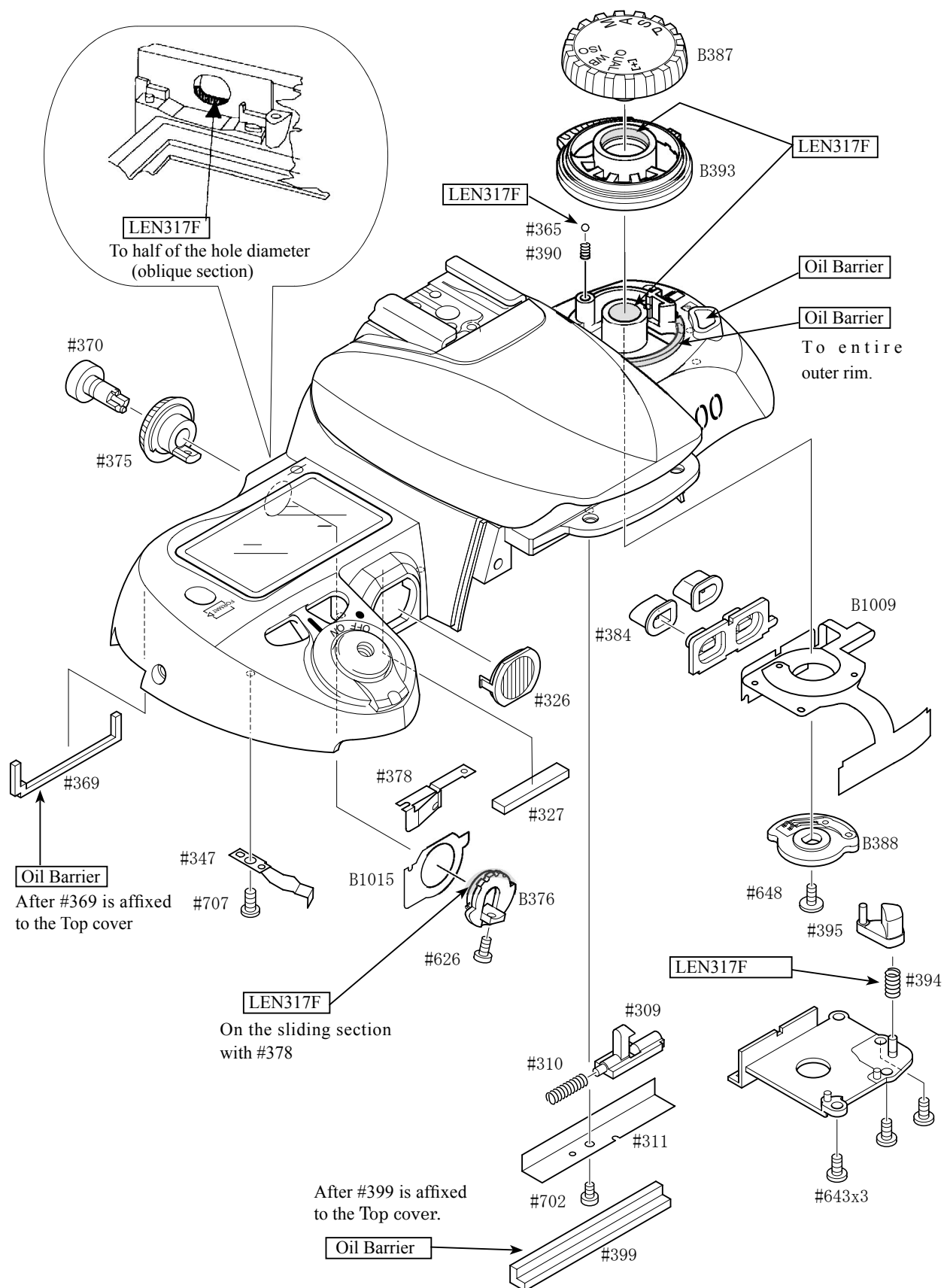
Top Cover

1. SB Unit and Small Parts



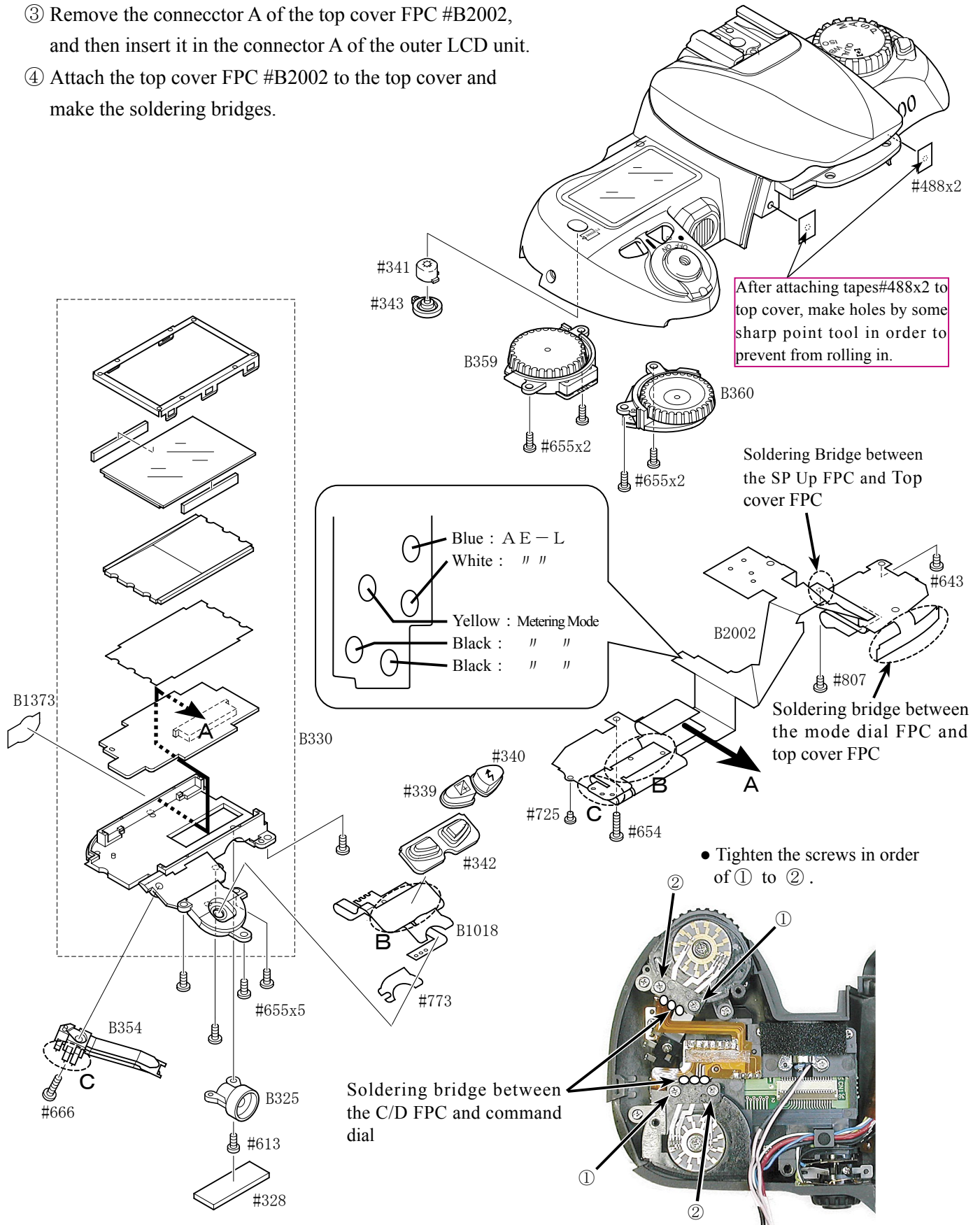
Some bodies have washer(s).
In case of the missing washer(s),
Replace the Power switch dial#345
to new one.
Also when replacing the Power switch
dial#345, remove the all washer(s).

2. Mode Dial and Small Parts



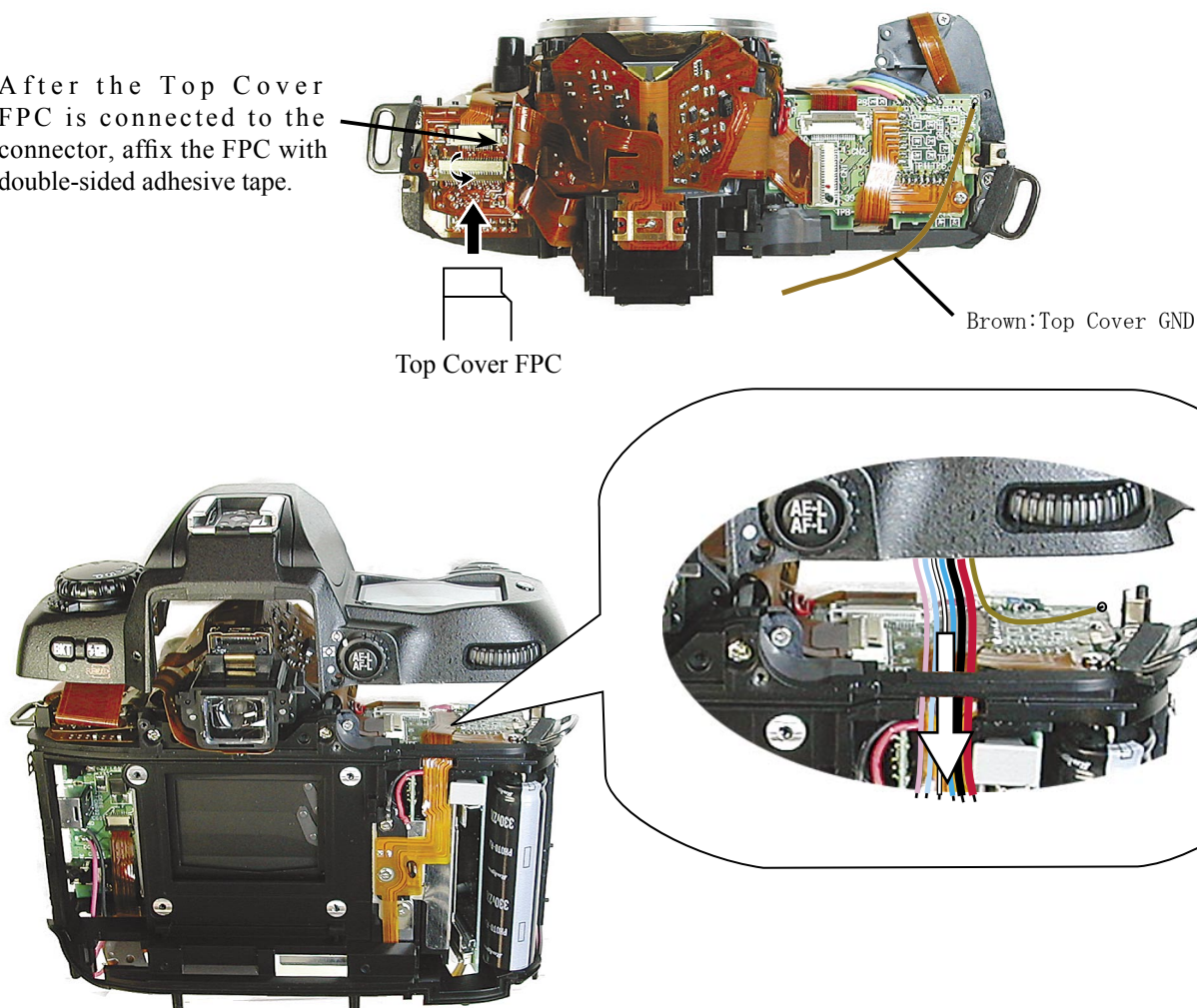
3. Outer LCD Unit, Command Dials and Top Cover FPC

- ① Affix the C/D FPC #B1018 on the outer LCD Unit and fix it on the top cover using the screw #655 x 4.
- ② Attach the release switch unit B354, and main and sub-command dials on the top cover.
- ③ Remove the connector A of the top cover FPC #B2002, and then insert it in the connector A of the outer LCD unit.
- ④ Attach the top cover FPC #B2002 to the top cover and make the soldering bridges.



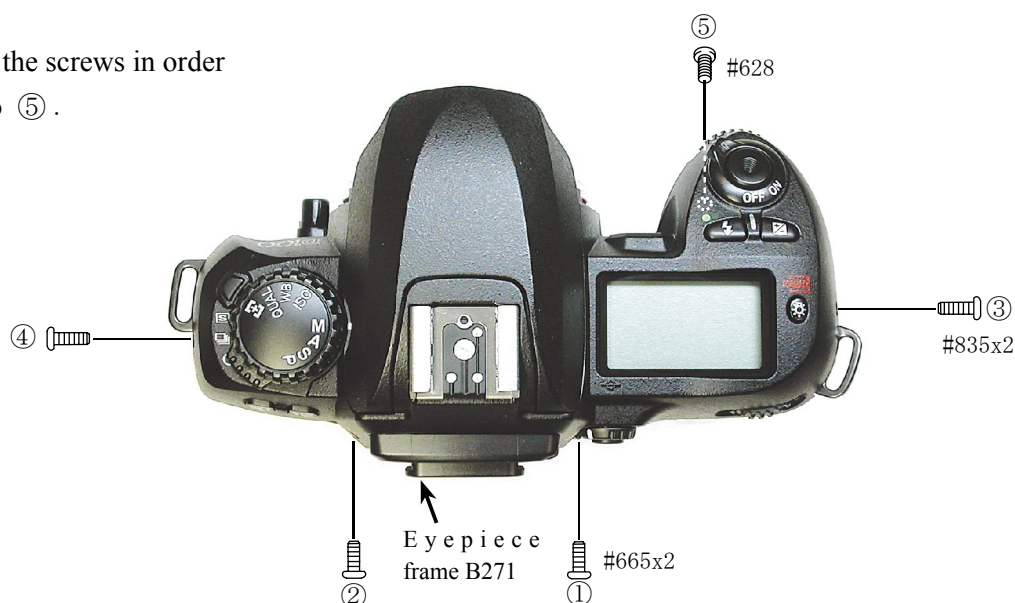
4. Mount Top Cover to Body

After the Top Cover FPC is connected to the connector, affix the FPC with double-sided adhesive tape.



5. Mount the Screws

- Tighten the screws in order of ① to ⑤.

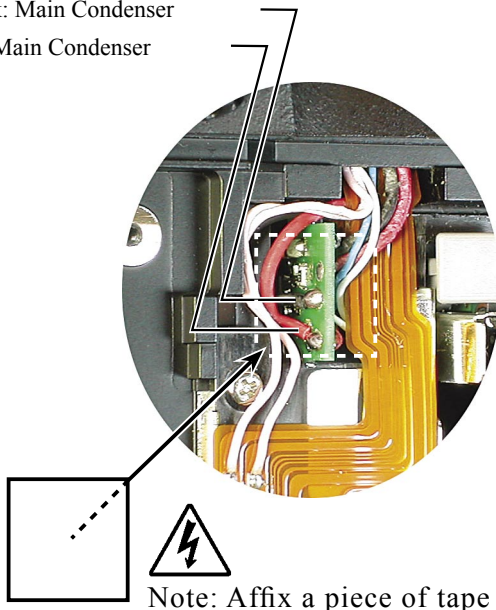


- Attach the eyepiece frame B271, setting the diopter adjustment lever to “-” side (lowest position) and passing the frame under the movable lens lever.

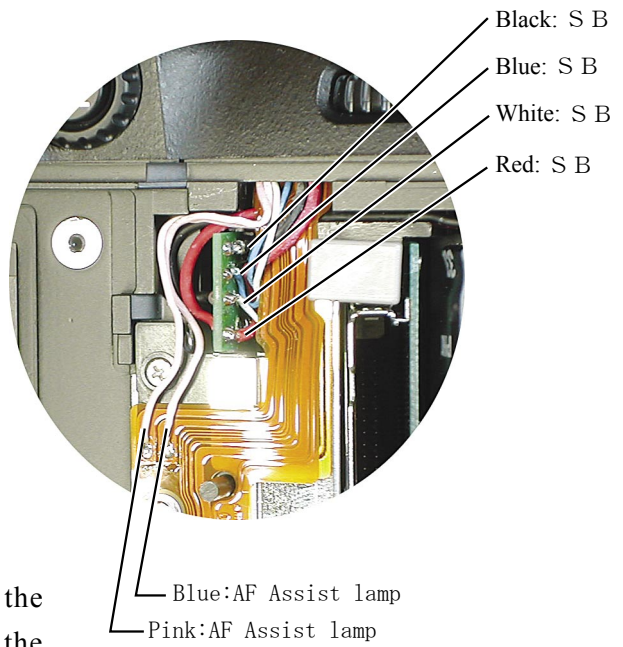
Check : After the eyepiece frame is attached, slide the diopter adjustment lever and check the diopter correction lens performance.

6. Solder Wires

Black: Main Condenser
Red: Main Condenser

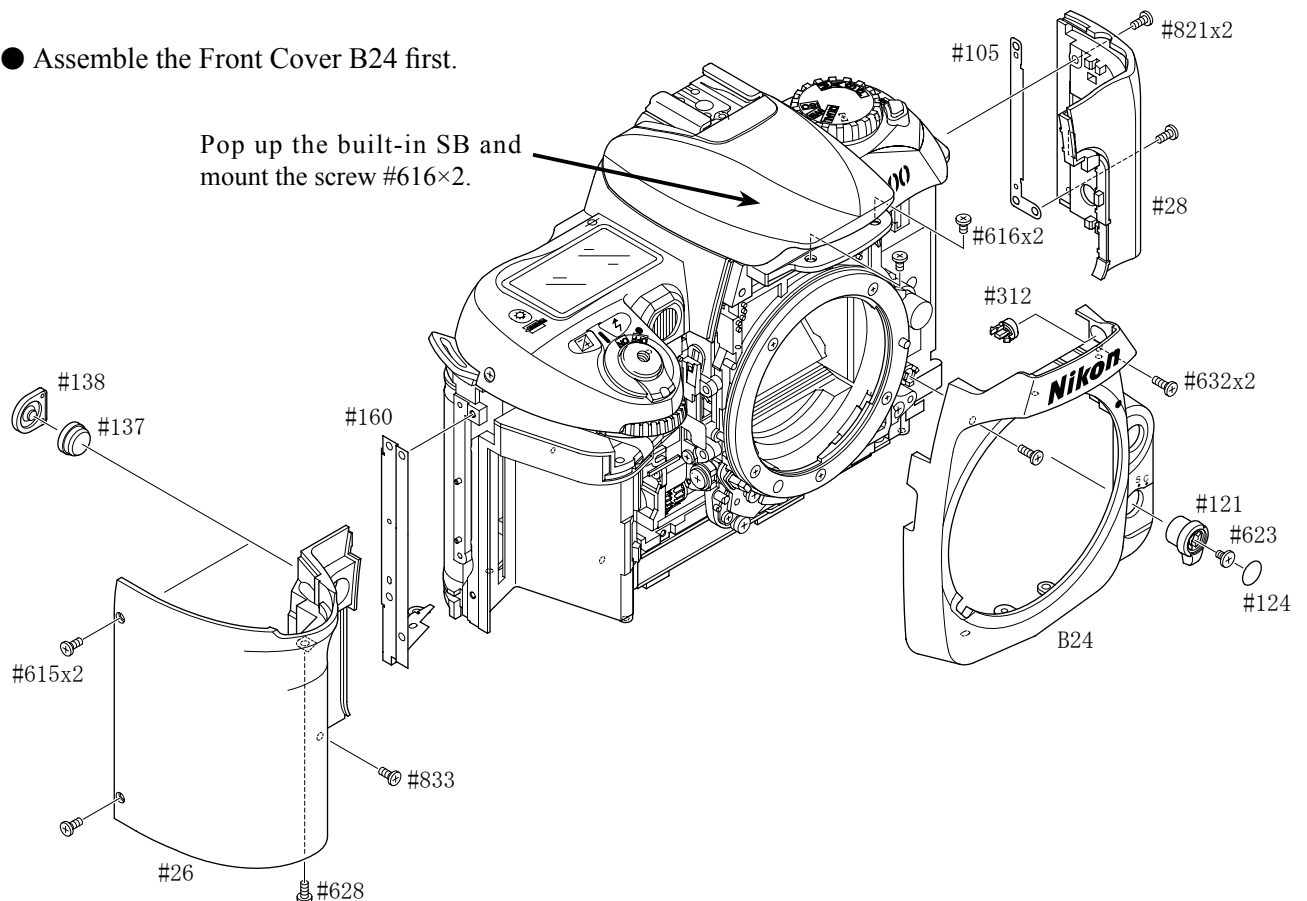


Note: Affix a piece of tape until the camera can be adjusted to avoid the electric shock.



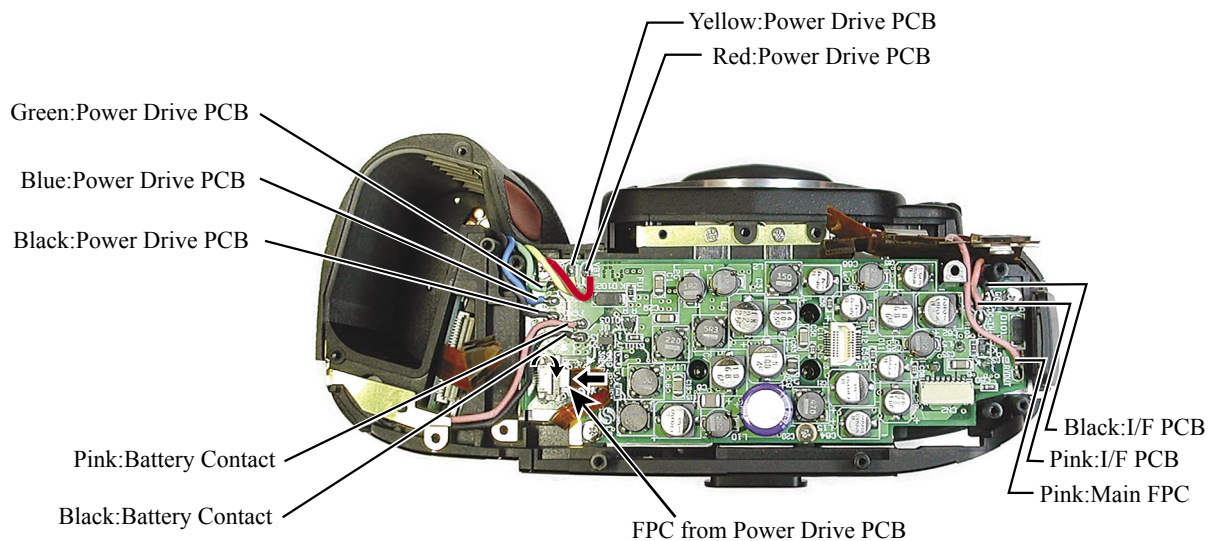
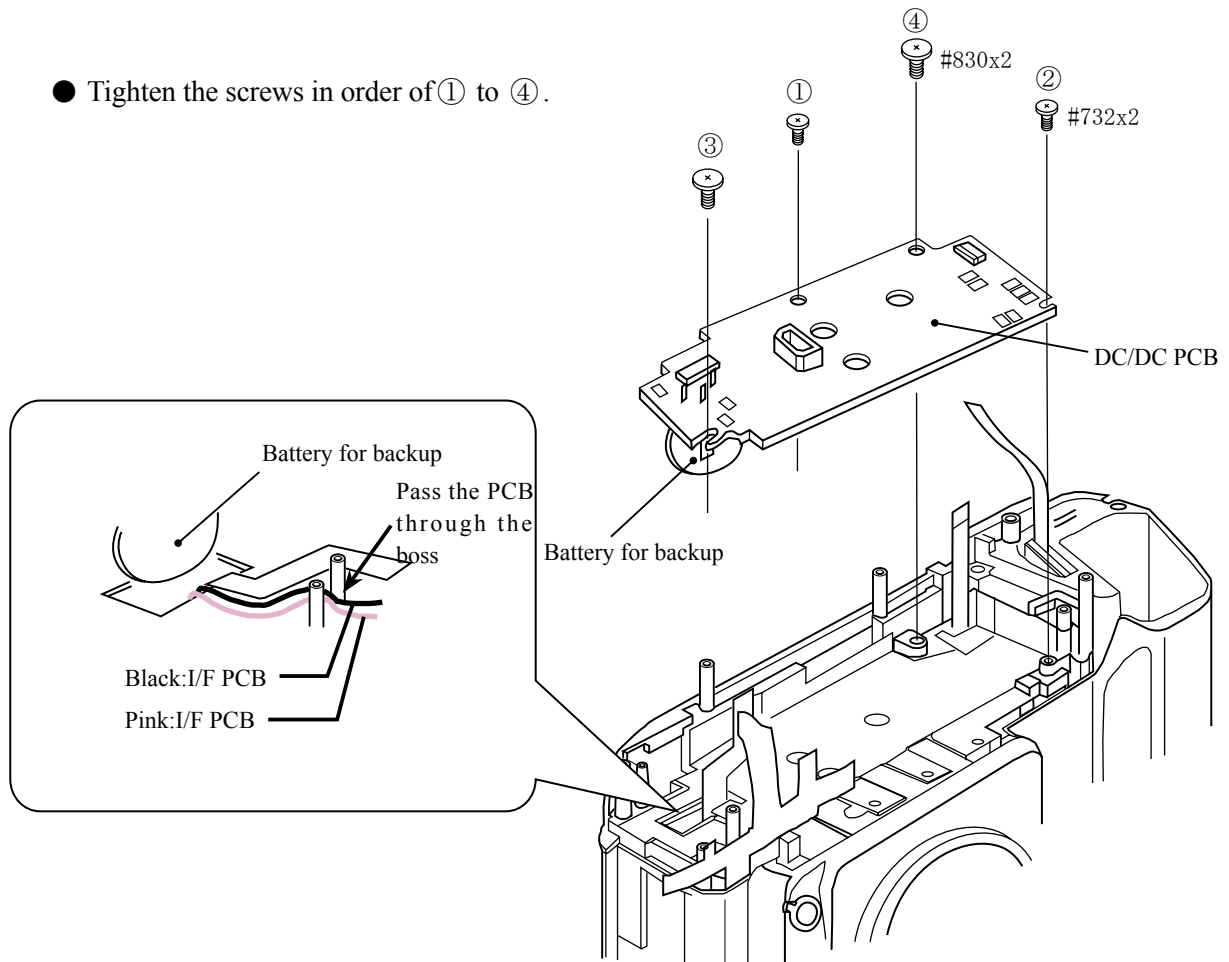
Grip Cover, I/F Cover and Front Cover

- Assemble the Front Cover B24 first.



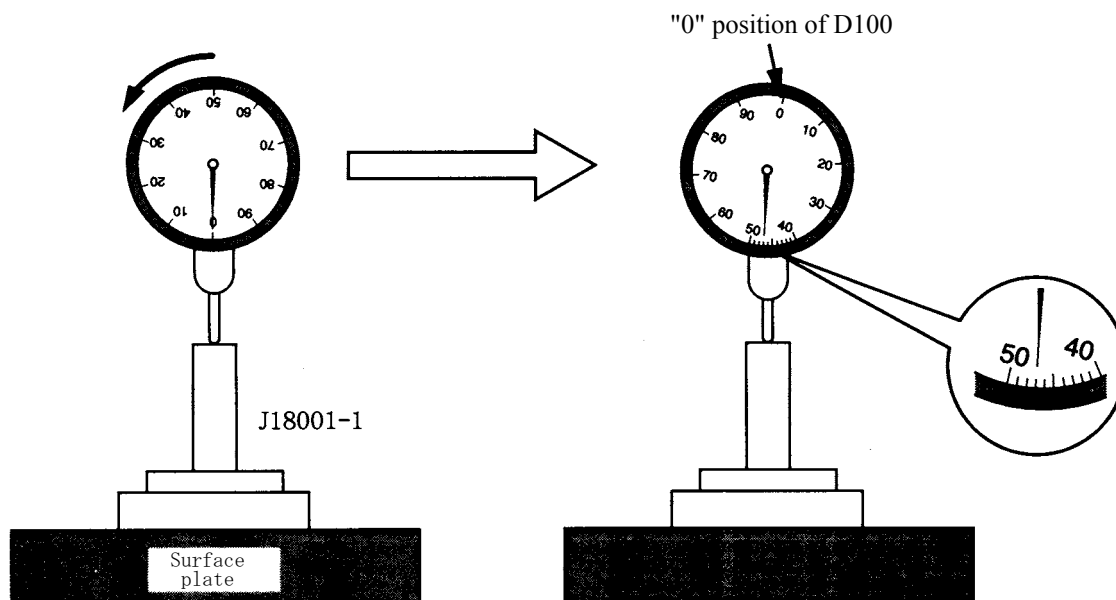
DC/DC PCB Unit

- Tighten the screws in order of ① to ④.

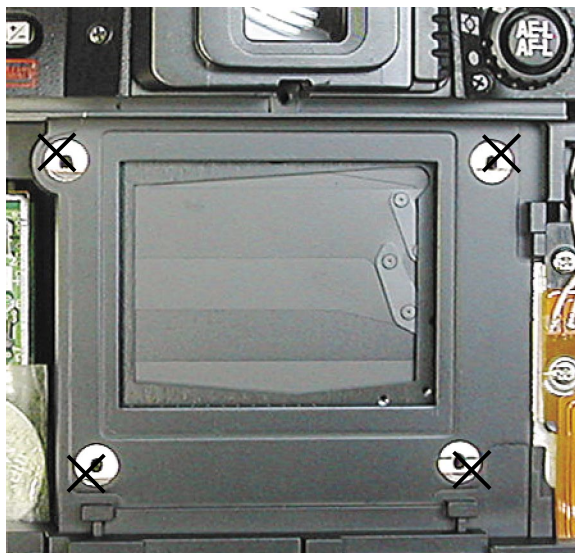


ADJUSTMENT FOR THE BODYBACK

- Set the "0" position of the dial gauge.



- ① Put the tool (J18001-1) on the surface plate and set the dial gauge to "0".
- ② From the "0" position set in process ①, turn the dial gauge by "0.47mm" in an arrow direction. (This is the "0" position of D100.)
- ③ Measure the body back with the "0" position of D100 as a reference.

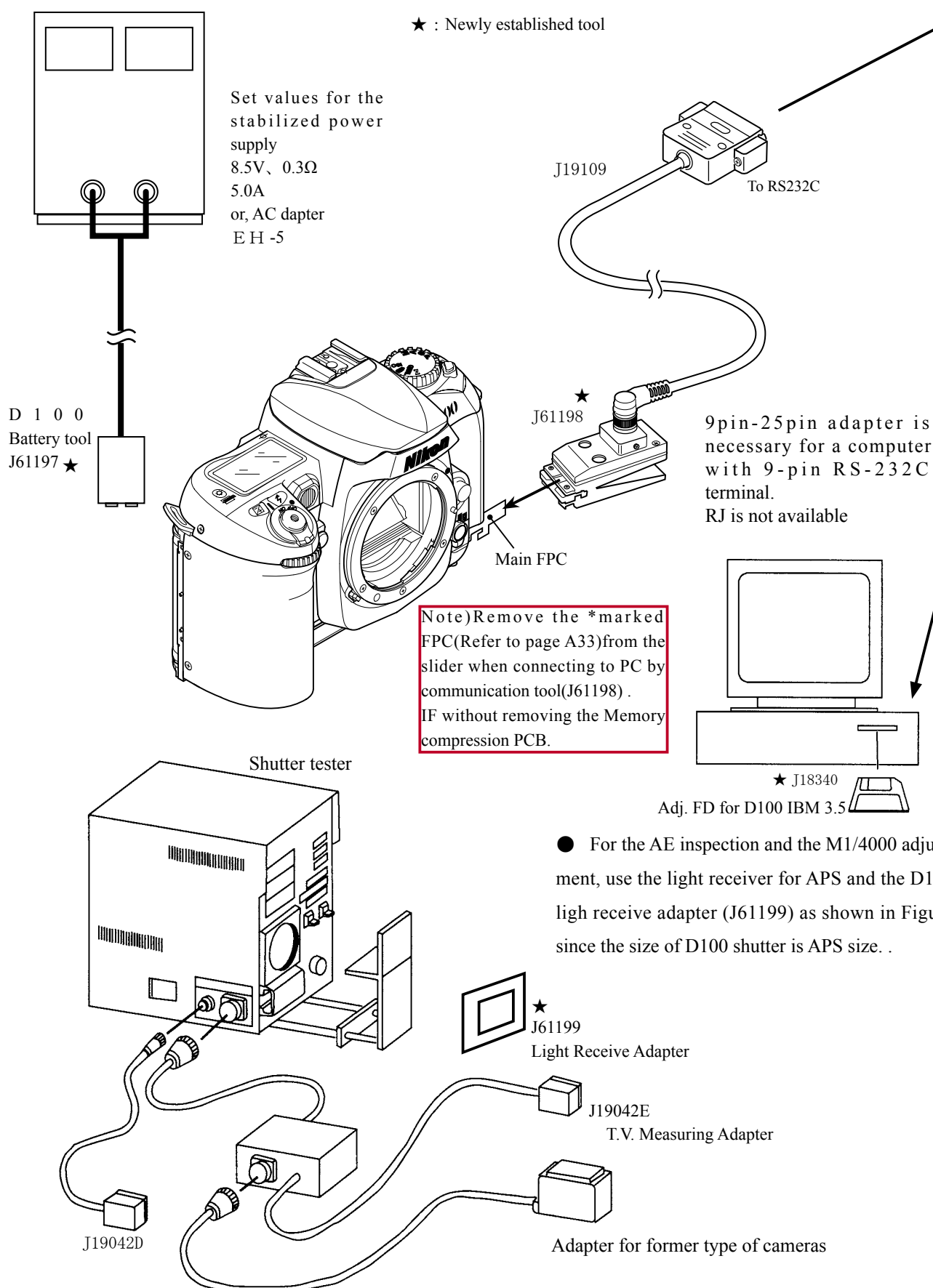


- Measure from the bayonet surface to the external rail. The 4 ×-marked positions are where to be measured. Standard : 48.2 ± 0.015 mm / Tolerance for flatness : within 0.015 mm
- If the measured value is out of the standard, unfasten the screws fixing the front body and the rear body to move the front body back and forth. Or, adjust it, placing a washer between the docking surface of front and rear bodies.

Note: Some bodies have a washer on the CCD PCB attaching position. (Red marking is on the surface.) When disassembling or relacing the CCD PCB, put the washer where it was in.

ADJUSTMENT THROUGH PC

- If the camera is connected to a personal computer, connect the MC-31 (J19109) to the RS232C connector of the personal computer as shown in the following figure and connect the communication tool (J61198) to the camera.



Conduct each adjustment in accordance with the adjustment software instructions on PC screen.

1. Adjustment for temperature detection voltage
2. AE adjustment
3. Aperture adjustment
4. M1/ 4000 adjustment
5. TTL adjustment

AF ADJUSTMENT

Note: When using this adjustment software for the first time, prepare 5 units of D100 cameras to measure and obtain the average value of them at the AF accuracy inspection.

Then input the average value of these measured 5 units in "WRITING OF AF ADJ. LENS OFFSET VALE" in the main menu.

*If there is lens data for adjustment of F65, it is possible to make a file for D100 from the file for F65 at "WRITING OF AF ADJ. LENS OFFSET VALUE" in the menu of adjustment software.

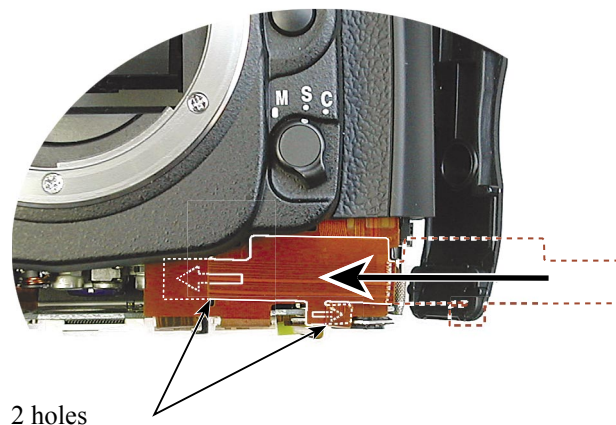
[Inspection and adjustment items]

- ① Inspection and adjustment for the AF accuracy (whole item shall be adjusted)
- ② YAW, PITCH
- ③ LARK adjustment

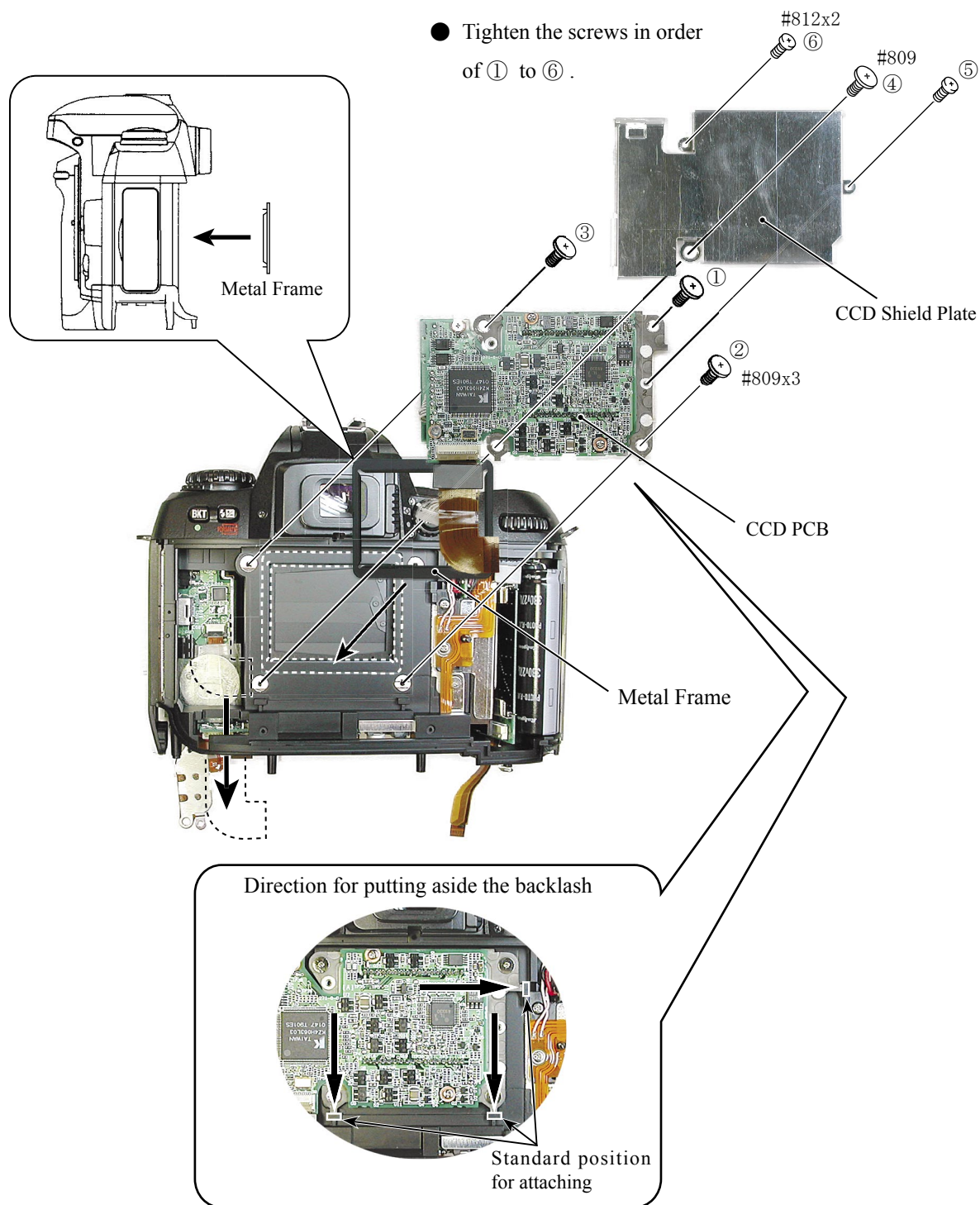
[Tools in use]

1. For adjustment of whole item:
The tool(s) used for the AE-oriented adjustment shall be utilized.
2. For check of the AF accuracy
 - ① Z adjustment lens (J18266) for F5, F100
 - ② AF adjustment stand (J15259)
 - ③ Z lens holder (J15280) or position conversion adapter (J15271) for tripod socket
 - ④ AF chart (J18344) for D100
 - ⑤ Lighting box (J15264) for high frequency
3. For adjustment of YAW, and PITCH
 - ① The whole tool used for the check of AF accuracy just as mentioned above
 - ② Adjustment tool for YAW, and PITCH (J18230)
4. For adjustment of LARK
The whole tool used for the check of AF accuracy just as mentioned above
5. For adjustment of CCD output
AF50/1.4D lens

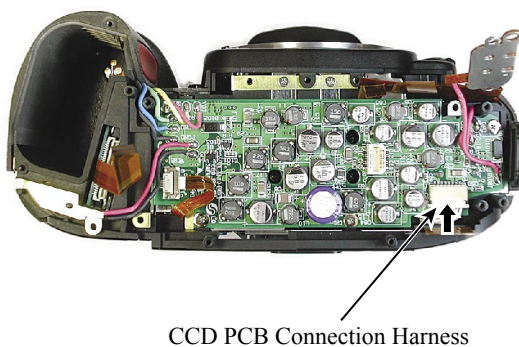
- After the adjustment, insert the FPC used for communication into the 2 holes.



CCD PCB Unit

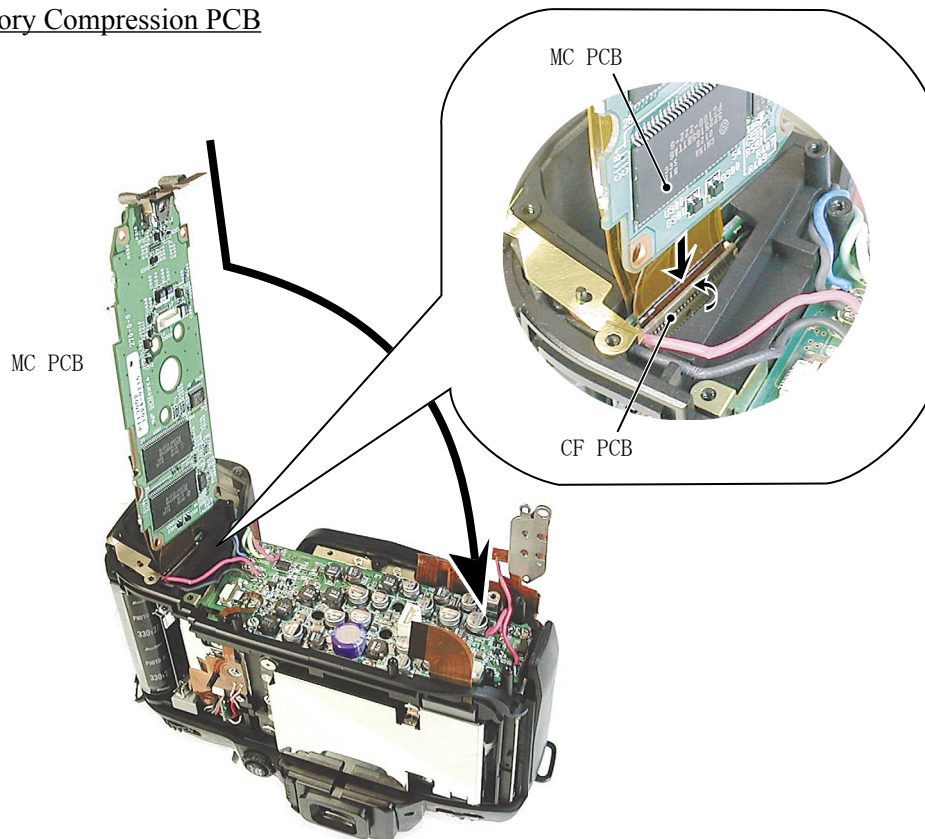


- Put the harness from the CCD PCB in the DC/DC PCB.

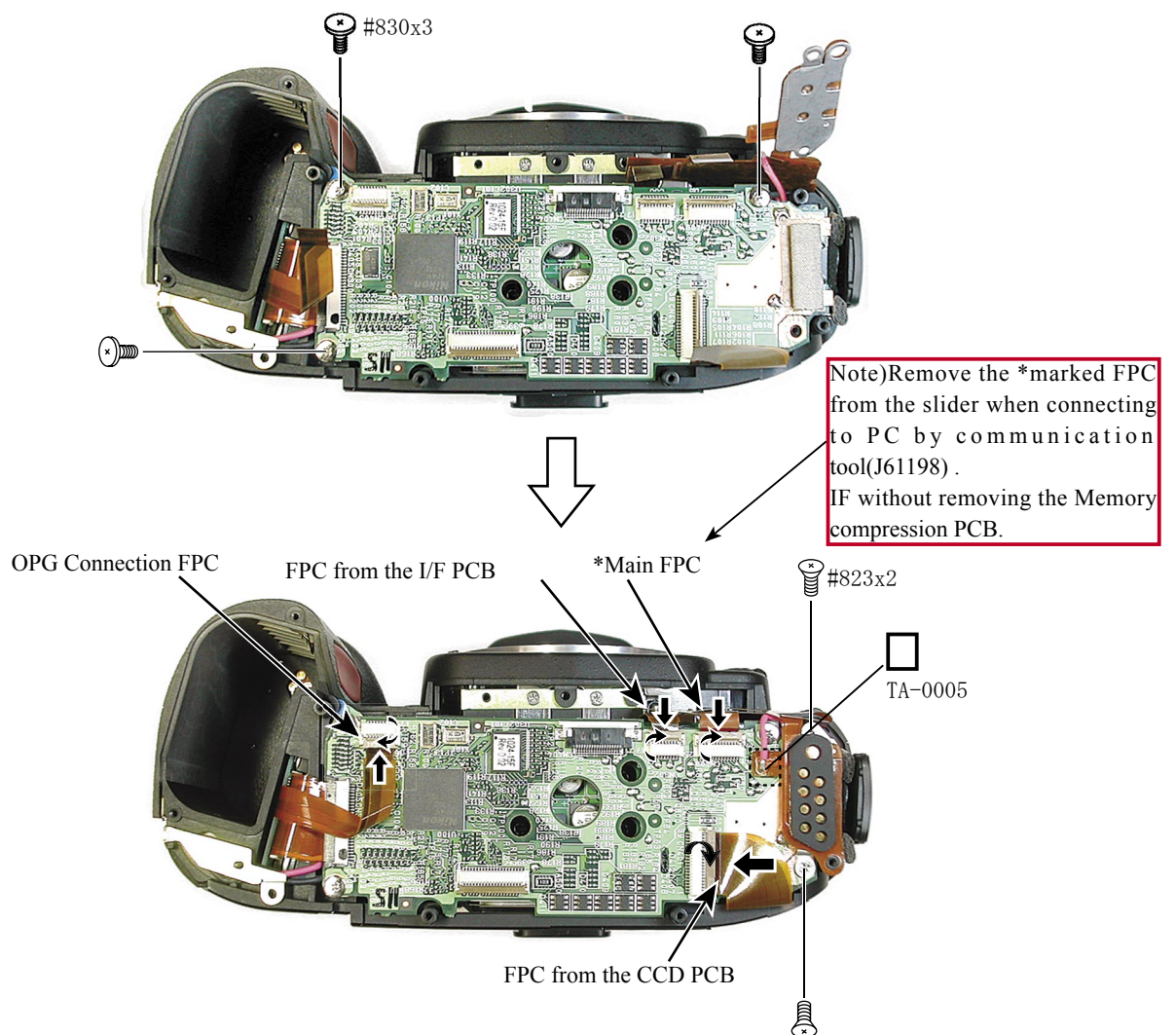


Memory Compression PCB

1. Affix the Memory Compression PCB

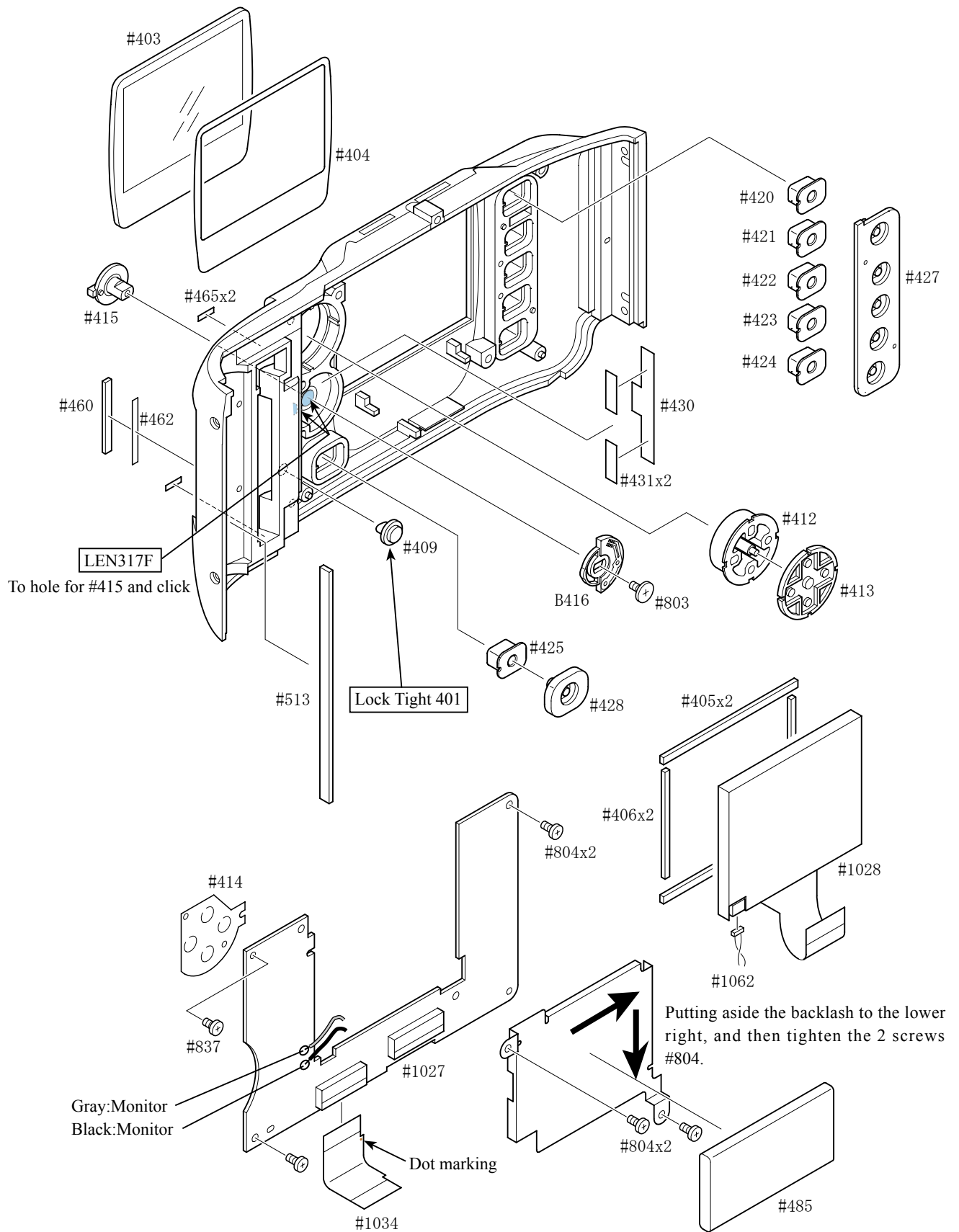


2. Connect the FPCs



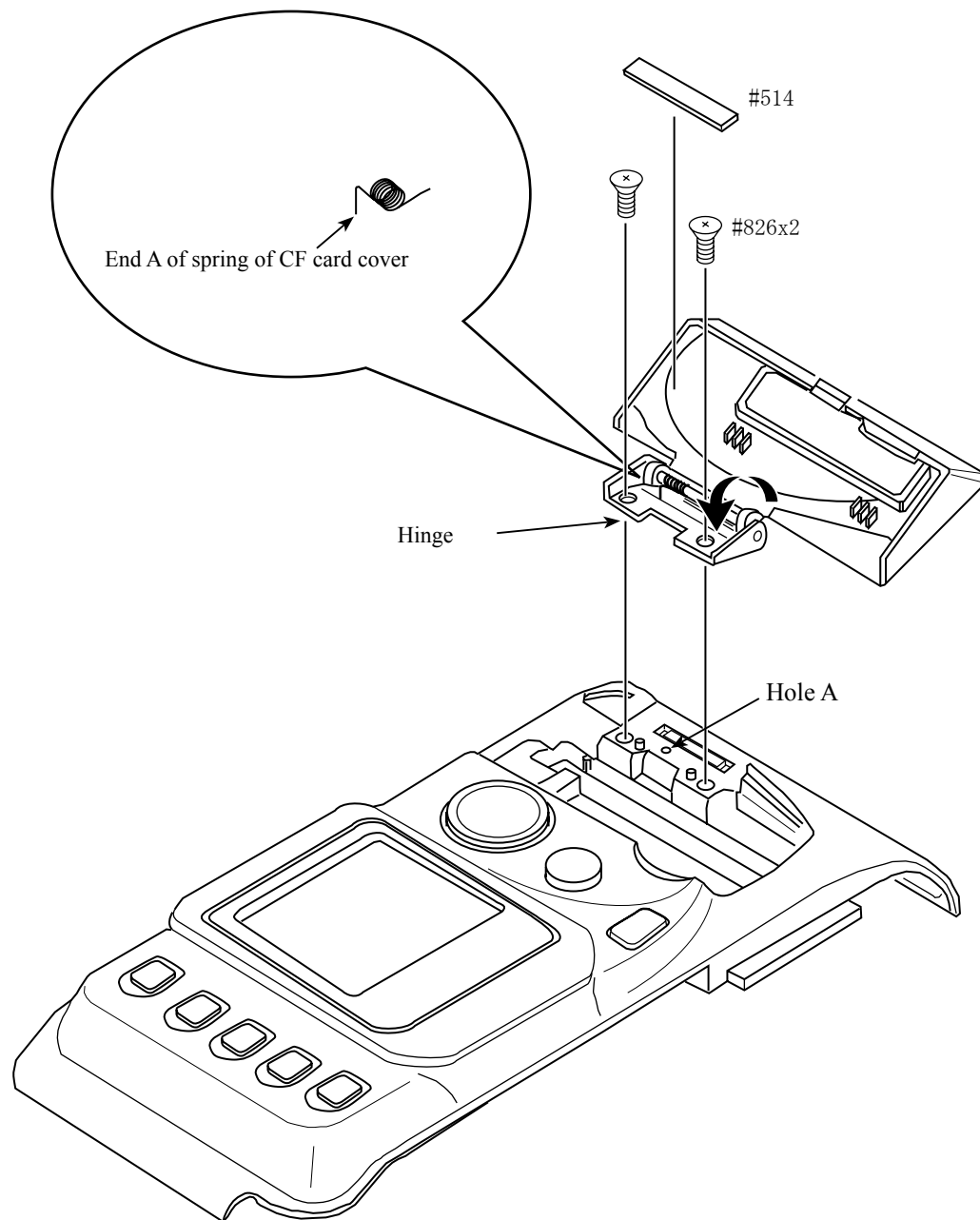
Back Cover

1. Assemble the Monitor PCB Unit



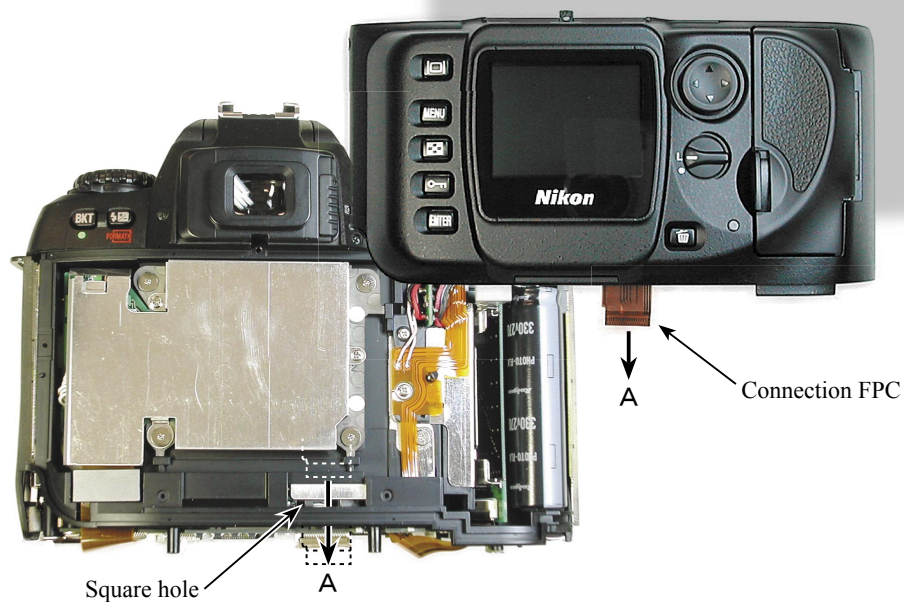
2. Assemble the CF Card Cover Unit

- ① Insert the end A of hinge spring into the hole A on the back cover.
- ② Bend the hinge in an arrow direction and then fix it with the 2 screws #826.

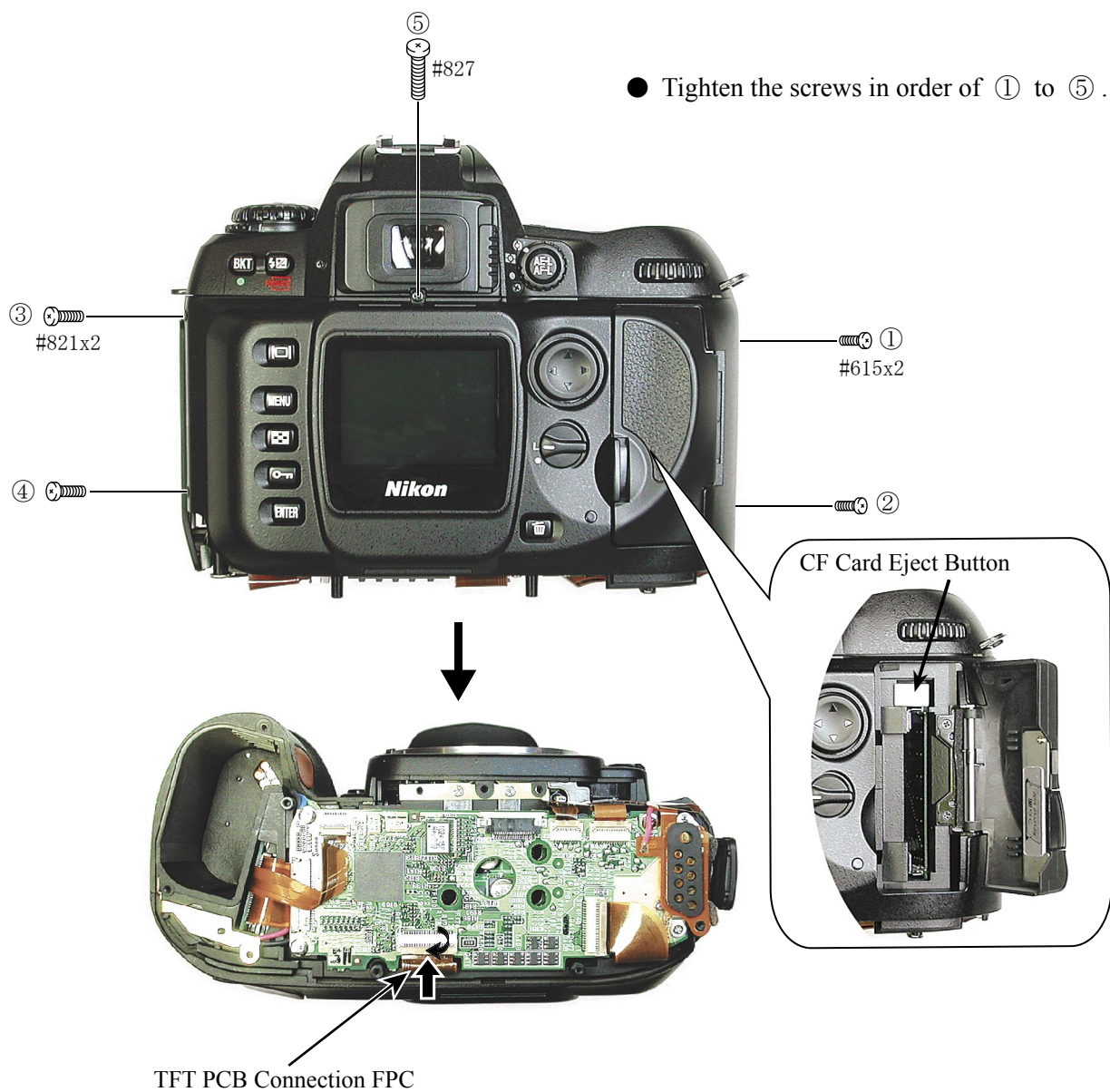


3. Pass the connection FPC through the square hole

- Pass the connection FPC through the square hole



4. Mount the screws



Bottom Cover

● Tighten the screws in order of ① to ⑨.



Adjustment through PC operation required at replacement of part(s)

1 . Adjustment Software

Items of adjustment Parts replaced	Adjustment for temp. de- tection voltage	AE Accuracy	Aperture accuracy	Shutter adjustment 1/4000	TTL accuracy	AF accuracy
Shutter unit				○		
Main FPC unit	○	○	○	○	○	○
AF base plate unit						○
TTL SPD unit	○				○	○
DC/DC circuit board						
In finder metering FPC		○				

2. Shooting Image Adjustment Software

Items of adjustment Parts replaced	Built-in speedlight ad- justment	TFT adjust- ment	BC adjustment	CCD EEPROM Flash up	TFT EEPROM Flash up	CCD defect com- pensation
Shutter unit						
Main FPC unit	○		○			
AF base plate unit						
TTL SPD unit						
DC/DC circuit board			○			
In finder metering FPC						
Memory Compression PCB		○		○	○	
CF PCB						
I/F PCB						
CCD PCB *				○		○
SB PCB or SB emission part	○					
TFT PCB or TFT monitor		○			○	

*RP of CCD PCB unit is already adjusted the following items,

• Sensitivity adjustment. • CCD GrGb level compensation adjustment. • Color sensitivity ratio adjustment. • Open aperture sensitivity compensation adjustment.

Shooting Image Adjustment

1. Outline

When you replace a part of the D100 image system or TFT display system or a part shown on the table in P. A39, make adjustment with the D100 image adjustment software (J65043). This chapter will describe the adjustment and handling of this software.

2. Functions of adjustment software

- (1) Sensitivity adjustment
- (2) Color sensitivity ratio adjustment
- (3) CCD GrGb level compensation adjustment
- (4) Open aperture sensitivity compensation
- (5) Battery check level adjustment
- (6) Built-in speed light adjustment
- (7) TFT display position adjustment
- (8) CCD-EEPROM Flashram up
- (9) TFT-EEPROM Flashram up
- (10) CCD defect compensation

* When replacing the CCD unit, perform only "CCD-EEPROM Flashram up" and "CCD defect compensation".

* Before performing "Sensitivity adjustment", "CCD GrGb level compensation adjustment" and "Color sensitivity ratio adjustment", acquire the reference values by using a reference body.

3. Environment for operation

Applicable OS: Windows98SE, Windows2000, Windows Me and Windows XP

Necessary input/output port: 1 or more for USB

Screen size: Screen of 1024×768 pixels or more is recommended.

4. How to set up

Make an optional directory in the hard disk of PC and copy the following files required for the operation of this software.

- Q50ImageAdjustENG.EXE: Application file
- NkdStor.dll: USB communication application extension
- STD.DAT: Standard storing file

* Copy the above files in the same directory.

5. Installation of hardware

When using this software, it is necessary to connect D100 with USB and install the hardware driver. This work is different according to OS. In Windows2000 and Windows XP, connect D100 with USB. Installation of driver is not necessary.

For Windows98SE, its special driver must be installed.

[How to install the Windows98SE driver]

- (1) Connect the camera to PC with the USB cable.
- (2) "New hardware addition wizard" starts. Select "Specify the driver place" and click "Next".
- (3) Specify the setup information (INF file ndcStor. inf) and register it.

6. How to use

- (1) Execute "Q50ImageAdjustENG.EXE", and the main menu starts. (Refer to Fig. 1.)
- (2) Select an item to be executed in "Contents".
- * Before performing "Sensitivity adjustment", "CCD GrGb level compensation adjustment" and "Color sensitivity ratio adjustment", acquire the reference values by using a reference body.
- (3) Click the START button with the mouse. The selected item is executed.
- (4) Hereafter, make adjustment according to the instructions on the screen.
- (5) To end the adjustment, click "X" on the upper right on the main menu with the mouse.

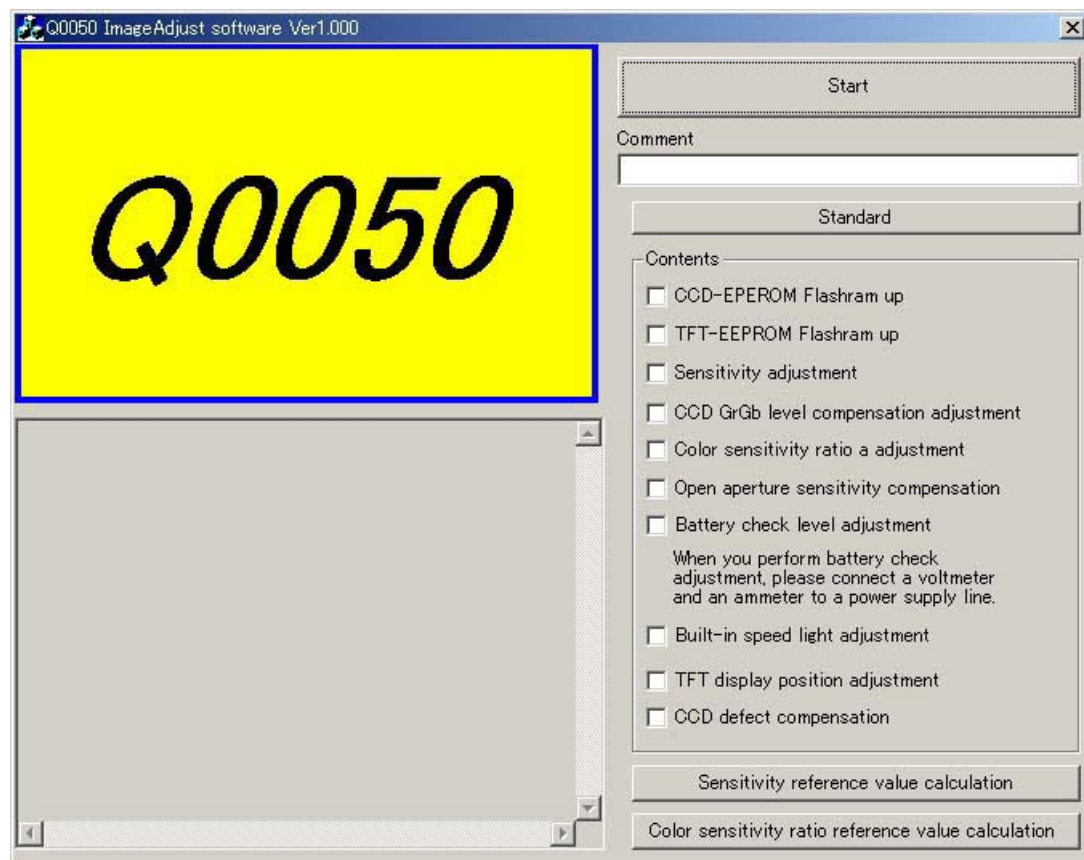


Fig.1

[Necessary tools and conditions for adjustment items]

* Use the AC power supply if not specified.

The USB cable (mini B type) is used for all adjustments and so it is not mentioned below.

Item	Necessary tools	Setting/remarks
CCD-EEPROM Flashram up		None
TFT-EEPROM Flashram up		None
Sensitivity adjustment	• 5100K Color viewer	Luminance LV13
	• Tool lens (Fixed aperture lens) J61185	Aperture F8 is used
	• ND filter	ND 3
CCD GrGb level compensation adjustment	• 5100K Color viewer	Luminance LV13
	• Tool lens (Fixed aperture lens) J61185	Aperture F8 is used
	• Color bar chart	Red and blue charts are used
Color sensitivity ratio adjustment	• 5100K Color viewer	Luminance LV13
	• Tool lens (Fixed aperture lens) J61185	Aperture F8 is used
Open aperture sensitivity compensation	• Brightness box (Shutter tester)	Luminance LV9 Value "k" = 1.16)
	• 50mmF1.4D lens	
Built-in speed light adjustment	• 50mmF1.4D lens	Aperture F2.8 and F5.6 are used.
	• Standard test paper	Approx. 1.2m×1.2m
Battery check level adjustment	• Constant-voltage power supply	9 [V] and 5 [A] or more can be supplied.
	• Battery type battery tool	Product without resistor
	• Ammeter	This must be connected between the battery tool and camera. It can measure approx. 1 [mA].
	• Voltmeter	It is used for measuring the voltage of the constant-voltage power supply and can measure up to 0.01 [V].
TFT display position adjustment		None
CCD defect compensation	• Body cap	It can interrupt the light from the mount.

7. Outline of adjustment

The outline of each adjustment is as follows.

- CCD-EEPROM Flashram up

The values of CCD EEPROM on the CCD PCB are copied into the Flash-RAM of the compression record PCB (AK PCB). The adjustment values about image are stored in EEPROM on the CCD PCB. The camera expands the values recorded in Flash-RAM of the AK PCB for RAM to operate without accessing CCD EEPROM directly. To make use of the adjustment values, you must copy the values stored in CCD EEPROM into Flash-RAM.

- TFT-EEPROM Flashram up

The values of TFT EEPROM are copied into the Flash-RAM in the same way as above.

- Sensitivity adjustment

The output "G" of CCD is adjusted. According to the output "G" of ISO200 acquired by the reference camera, the aimed value of each ISO sensitivity is calculated and adjustment is performed against the calculated value. In fact, the inclination of sensitivity is obtained by using the adjustment values of ISO200 and ISO1600 and besides the medium correction values are calculated.

- CCD GrGb level compensation adjustment

The adjustment values are obtained to correct the difference between the output "Gr" and "Gb" when showing the blue and red charts.

- Color sensitivity ratio adjustment

The "R/G/B" output ratio of CCD is adjusted. The output "R" and "B" is adjusted based on the output "G" to be the same as the color balance (G/R ratio, G/B ratio) acquired by the reference camera.

- Open aperture sensitivity compensation

The sensitivity and sensitivity ratio which are changed depending on aperture are adjusted. The adjustment value is calculated by the ratio of R, G and B when release is done with the aperture of F8 and F1.4. With other aperture values except F1.4 and F8, the adjustment values are calculated by using the values of F1.4 and F8.

- Built-in speed light adjustment

The flash level of speed light built in the camera is adjusted. When the distance is 1.4m between the camera and standard reflect paper, the flash level of the pre-flash and main flash is adjusted according to the output "G" level of CCD.

- TFT display position adjustment

The display position of TFT is adjusted. Adjustment is done with each video mode of NTSC and PAL.

- CCD defect compensation

The CCD pixel defect information is written in the camera. The light from the mount is shielded and release is done. If the pixel output is beyond the standard value at that time, the pixel is recognized as "defect".

8. Adjustment procedure

• CCD-EEPROM Flashram up

- (1) Supply the power to the camera through the AC cable.
- (2) Connect the USB cable to the camera.
- (3) Select “CCD-EEPROM Flashram up” in “Contents” on the menu display.
- (4) Press the START button. Perform the procedure according to the instructions on the screen.
- (5) The adjustment result is displayed at the result display position. If “OK” is displayed, the adjustment is normally ended. If the adjustment is NG, “NG” is displayed and the contents of the error are displayed in the column of “COMMENT”.
- (6) Remove the USB cable from the camera and then remove the AC cable.

• TFT-EEPROM Flashram up

- (1) Supply the power to the camera through the AC cable.
- (2) Connect the USB cable to the camera.
- (3) Select “TFT-EEPROM Flashram up” in “Contents” on the menu display.
- (4) Press the START button. Perform the procedure according to the instructions on the screen.
- (5) The adjustment result is displayed at the result display position. If “OK” is displayed, the adjustment is normally ended. If the adjustment is NG, “NG” is displayed and the contents of the error are displayed in the column of “COMMENT”.
- (6) Remove the USB cable from the camera and then remove the AC cable.

• Sensitivity adjustment

*Before adjustment, acquire the sensitivity reference value and color sensitivity ratio reference value by using the reference body. (Refer to the next page for the procedure.)

- (1) Set the luminance of the color viewer to “LV13”.
- (2) Select “Sensitivity adjustment” in “Contents” on the menu display.
- (3) Supply the power to the camera through the AC cable.
- (4) Connect the USB cable to the camera.
- (5) Set the tool lens (fixed aperture is F8, with ND3 filter) onto the camera.
- (6) Set the camera onto the luminance surface of the color viewer with nearest distance.
- (7) Press the START button. Perform the procedure according to the instructions on the screen.
- (8) The adjustment result is displayed at the result display position. If “OK” is displayed, the adjustment is normally ended. If the adjustment is NG, “NG” is displayed and the contents of the error are displayed in the column of “COMMENT”.
- (9) Remove the USB cable from the camera and then remove the AC cable.

• CCD GrGb level compensation adjustment

*Before adjustment, acquire the sensitivity reference value and color sensitivity ratio reference value by using the reference body. (Refer to the next page for the procedure.)

- (1) Set the luminance of the color viewer to “LV13”.
- (2) Set the color bar chart onto the color viewer.

- (3) Select “CCD GrGb level compensation adjustment” in “Contents” on the menu display.
- (4) Supply the power to the camera through the AC cable.
- (5) Connect the USB cable to the camera.
- (6) Set the tool lens (fixed aperture is F8, without ND filter) onto the camera.
- (7) Set the camera onto the luminance surface of the color viewer with nearest distance.
- (8) Press the START button. Perform the procedure according to the instructions on the screen.
(According to the instructions on the screen, move the camera to the center of red chart and blue chart. Look into the finder to make sure that the whole screen is the color of chart.)
- (9) The adjustment result is displayed at the result display position. If “OK” is displayed, the adjustment is normally ended. If the adjustment is NG, “NG” is displayed and the contents of the error are displayed in the column of “COMMENT”.
- (10) Remove the USB cable from the camera and then remove the AC cable.

• Color sensitivity ratio adjustment

*Before adjustment, acquire the sensitivity reference value and color sensitivity ratio reference value by using the reference body. (Refer to the following description for the procedure.)

- (1) Set the luminance of the color viewer to “LV13”.
- (2) Select “Color sensitivity ratio adjustment” in “Contents” on the menu display.
- (3) Supply the power to the camera through the AC cable.
- (4) Connect the USB cable to the camera.
- (5) Set the tool lens (fixed aperture is F8, with ND3 filter) onto the camera.
- (6) Set the camera onto the luminance surface of the color viewer with nearest distance.
- (7) Press the START button. Perform the procedure according to the instructions on the screen.
- (8) The adjustment result is displayed at the result display position. If “OK” is displayed, the adjustment is normally ended. If the adjustment is NG, “NG” is displayed and the contents of the error are displayed in the column of “COMMENT”.
- (9) Remove the USB cable and then remove the AC cable.

[Acquirement of the sensitivity reference value and color sensitivity ratio reference value by using the reference body]

- (1) Set the luminance of the color viewer to “LV13”.
- (2) Click “Sensitivity reference value calculation” on the menu display.
- (3) Supply the power to the camera through the AC cable.
- (4) Connect the USB cable to the camera.
- (5) Set the tool lens (fixed aperture is F8, with ND3 filter) onto the camera.
- (6) Set the camera onto the luminance surface of the color viewer with nearest distance.
- (7) Perform the procedure according to the instructions on the screen.
- (8) After ending the procedure, remove the USB cable and AC cable from the camera.
- (9) Carry out the procedure for the color sensitivity ratio reference value in the same way as the above.

- Open aperture sensitivity compensation

- (1) Set the luminance of the brightness box (shutter tester) to “LV9”.
- (2) Set a lens of 50mmF1.4D (a ready-made product) onto the camera.
- (3) Set the focus ring of the lens to “infinity”.
- (4) Select “Open aperture sensitivity compensation” in “Contents” on the menu display.
- (5) Supply the power to the camera through the AC cable.
- (6) Connect the USB cable to the camera.
- (7) Set the camera onto the luminance surface of the brightness box with nearest distance.
- (8) Press the START button. Perform the procedure according to the instructions on the screen.
- (9) The adjustment result is displayed at the result display position. If “OK” is displayed, the adjustment is normally ended. If the adjustment is NG, “NG” is displayed and the contents of the error are displayed in the column of “COMMENT”.
- (10) Remove the USB cable from the camera and then remove the AC cable.

- Built-in speed light adjustment

- (1) Set a lens of 50mmF1.4D (a ready-made product) onto the camera.
- (2) Set the focus ring of the lens to “1.4m”.
- (3) Set the camera at a 1.4m position from the standard reflect paper. Look into the finder to make sure that the standard reflect paper is seen on the whole screen.
- (4) Supply the power to the camera through the AC cable.
- (5) Connect the USB cable to the camera.
- (6) Select “Built-in speed light adjustment” in “Contents” on the menu display.
- (7) Press the START button. Perform the adjustment according to the instructions on the screen.
- (8) The adjustment result is displayed at the result display position. If “OK” is displayed, the adjustment is normally ended. If the adjustment is NG, “NG” is displayed and the contents of the error are displayed in the column of “COMMENT”.
- (9) Remove the USB cable from the camera and then remove the AC cable.

- Battery check level adjustment

- (1) As shown below (Fig. 2), connect the constant-voltage power supply, voltmeter and ammeter to the battery tool (without resistor).
- (2) Set the voltage of the constant-voltage power supply to 7.2 [V].
- (3) Set the battery tool (without resistor) onto the camera and start the camera.
- (4) Connect the USB cable.
- (5) Select “Battery check level adjustment” in “Contents” on the menu display.
- (6) Press the START button. Perform the procedure according to the instructions on the screen.
- (7) The adjustment result is displayed at the result display position. If “OK” is displayed, the adjustment is normally ended. If the adjustment is NG, “NG” is displayed and the contents of the error are displayed in the column of “COMMENT”.
- (8) Remove the USB cable from the camera and then remove the AC cable.

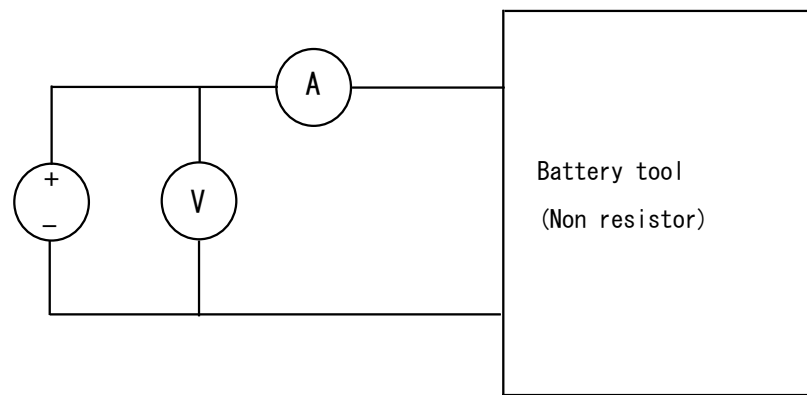


Fig. 2

- TFT display position adjustment

- (1) Supply the power to the camera from the AC power supply.
- (2) Connect the USB cable to the camera.
- (3) Select "TFT display position adjustment" in "Contents" on the menu display.
- (4) Press the START button. Perform the procedure according to the instructions on the screen.
- (5) Select "NTSC" and adjust the display position by clicking the "UP", "DOWN", "LEFT" and "RIGHT" buttons.
- (6) Adjust "PAL" in the same way and then press the OK button to end the adjustment.
- (7) Remove the USB cable from the camera and then remove the AC cable.

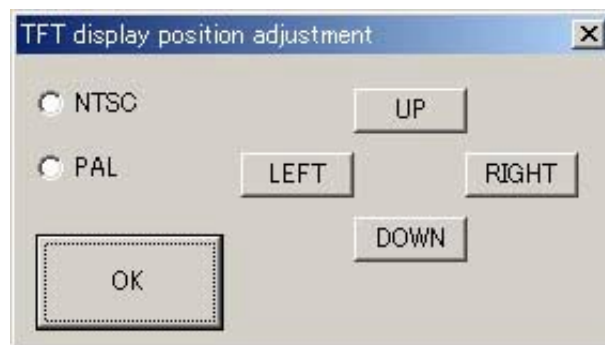
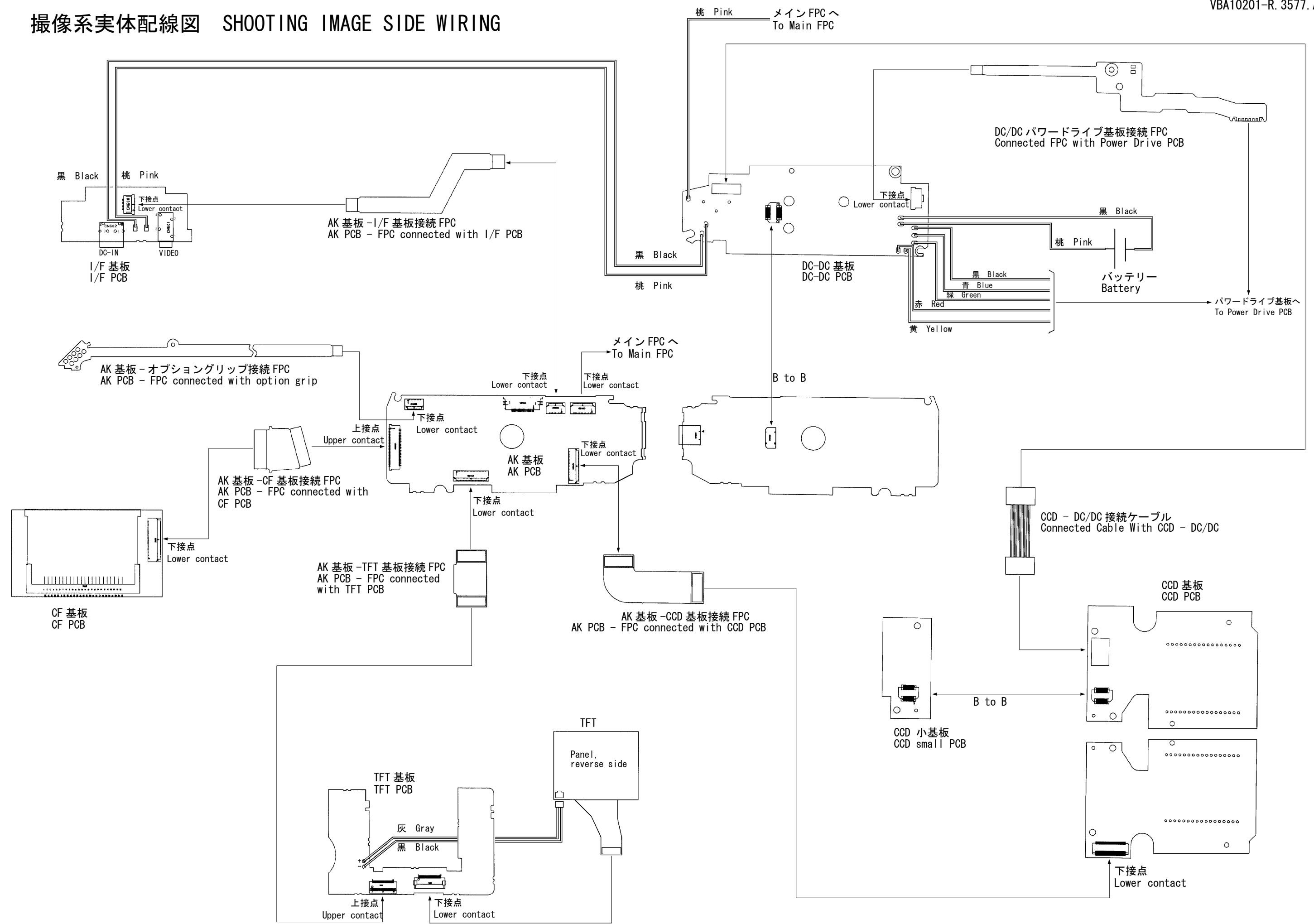


Fig. 3

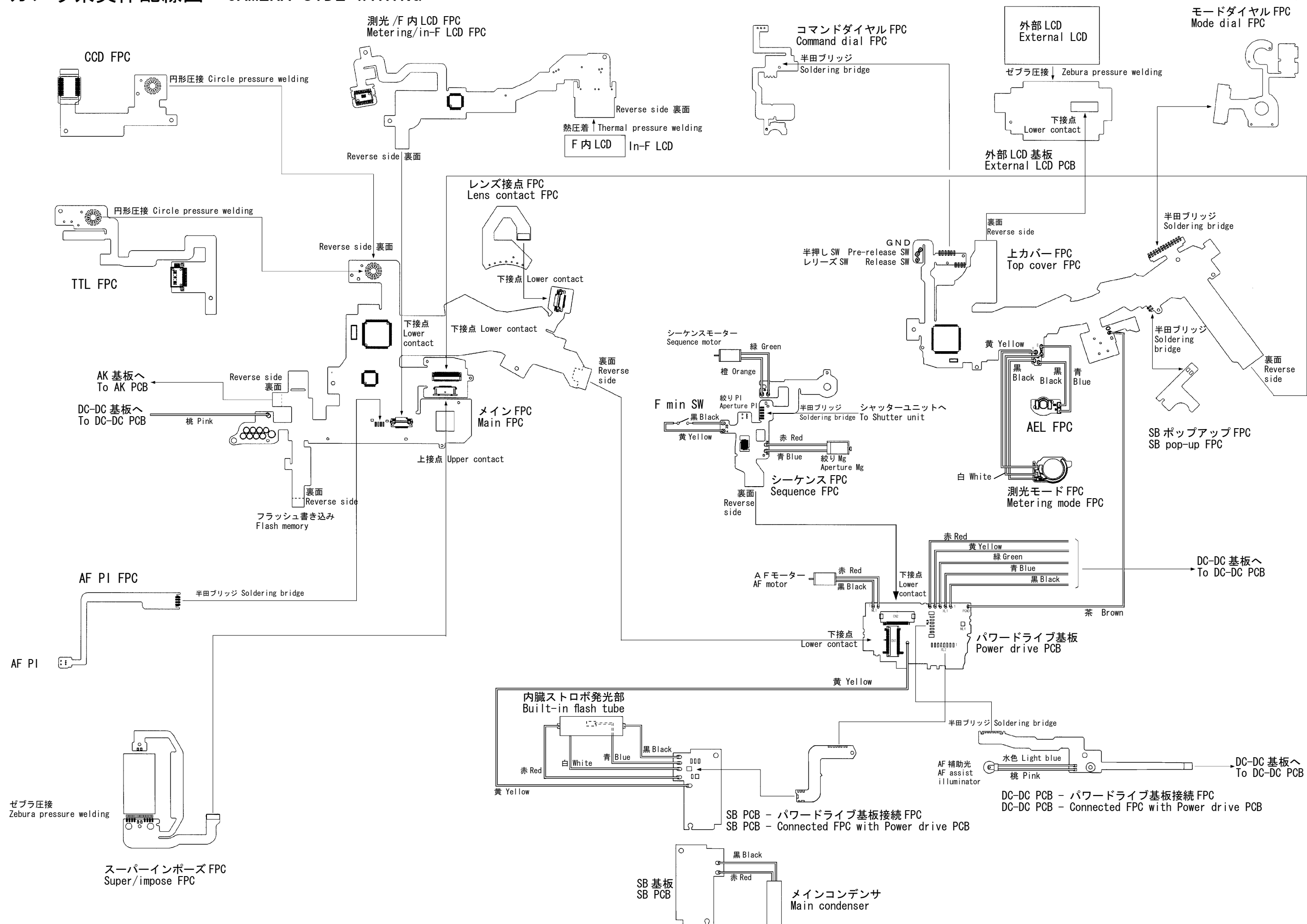
- CCD defect compensation

- (1) Supply the power to the camera from the AC power supply.
- (2) Set the body cap onto the camera to prevent the light from entering through the mount surface.
- (3) Connect the USB cable to the camera.
- (4) Select "CCD defect compensation" in "Contents" on the menu display.
- (5) Press the START button. Perform the procedure according to the instructions on the screen.
- (6) The adjustment result is displayed at the result display position. If "OK" is displayed, the adjustment is normally ended. If the adjustment is NG, "NG" is displayed and the contents of the error are displayed in the column of "COMMENT".
- (7) Remove the USB cable from the camera and then remove the AC cable.

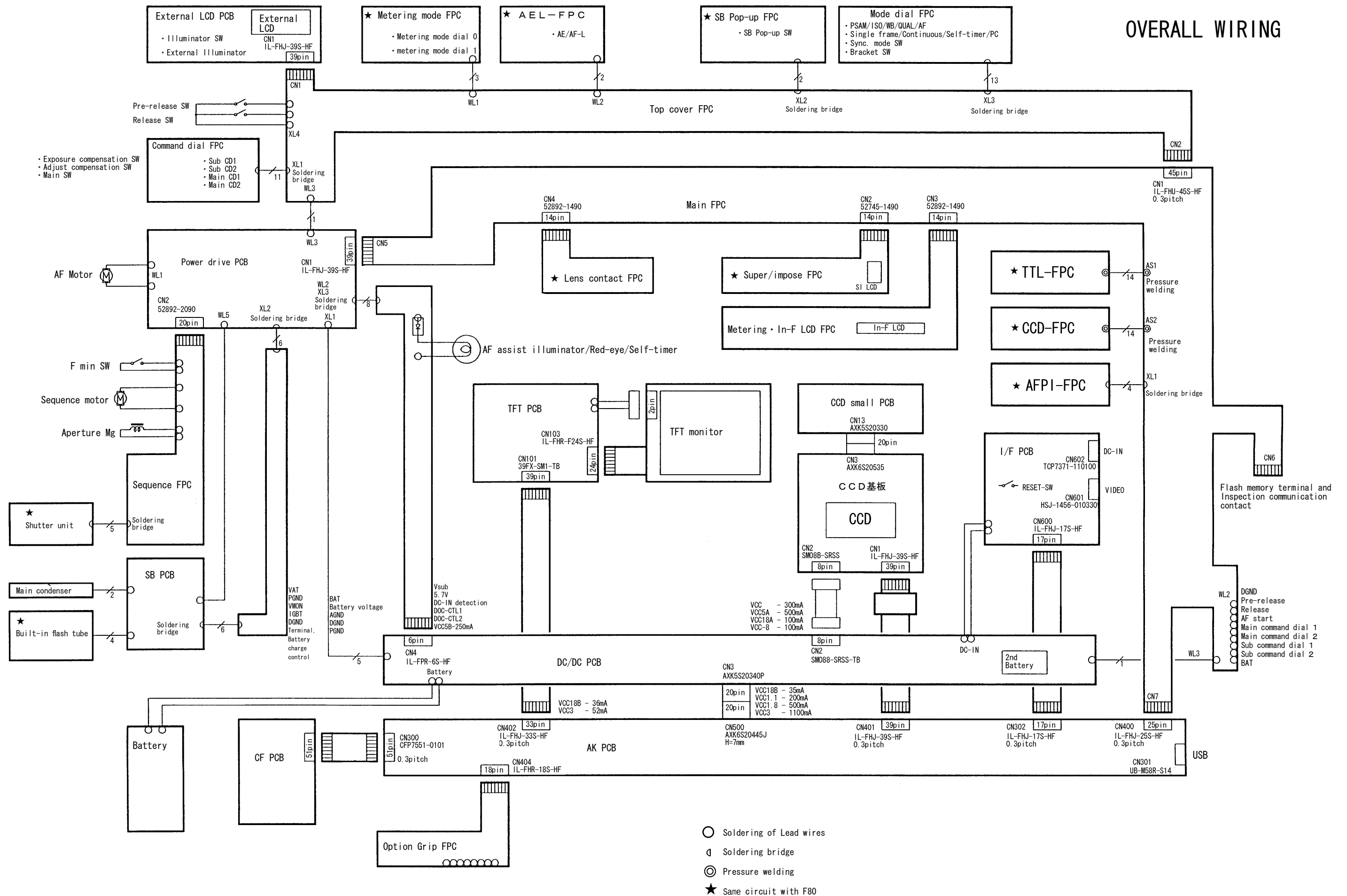
撮像系実体配線図 SHOOTING IMAGE SIDE WIRING



カメラ系実体配線図 CAMERA SIDE WIRING

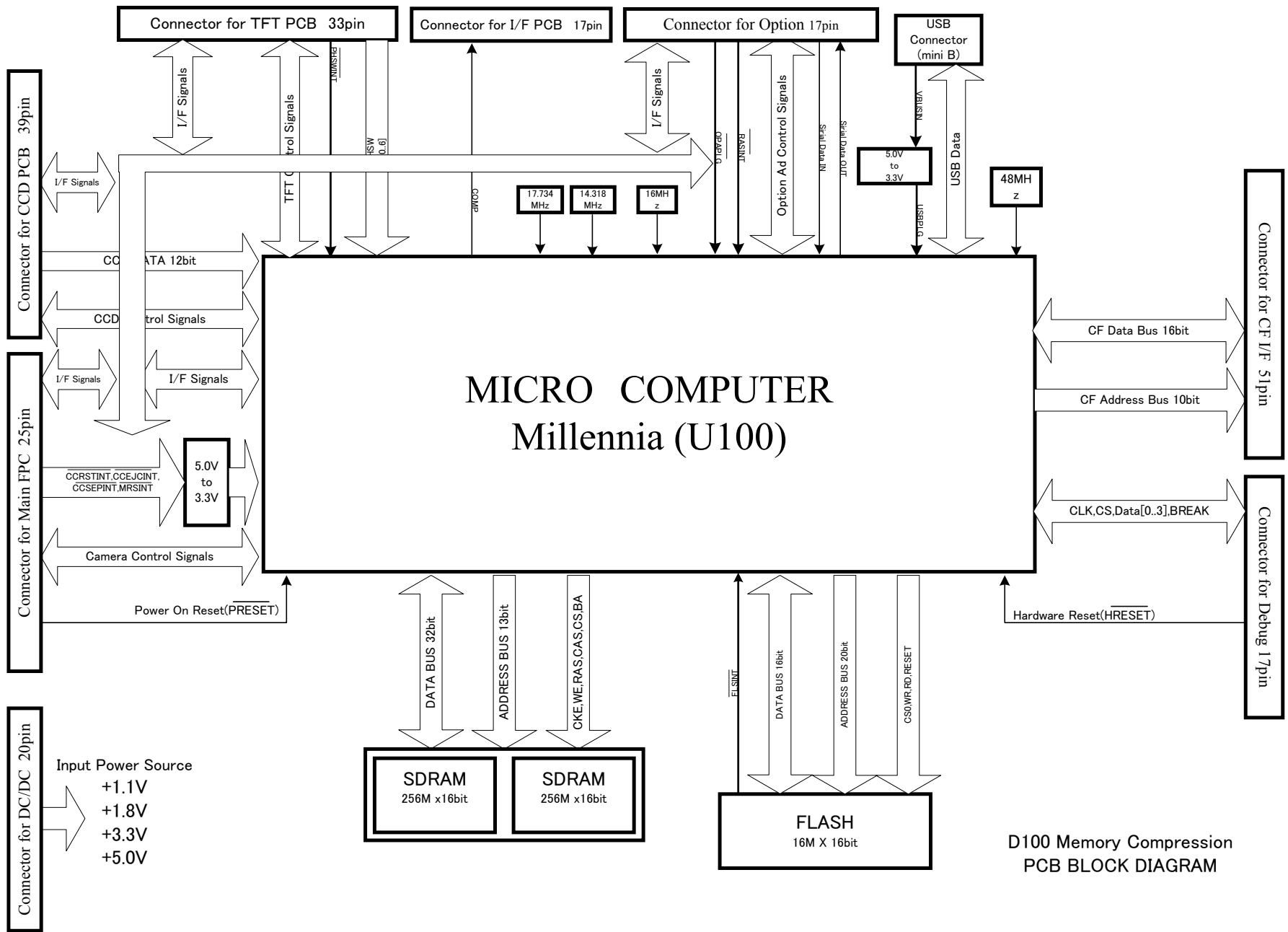


OVERALL WIRING

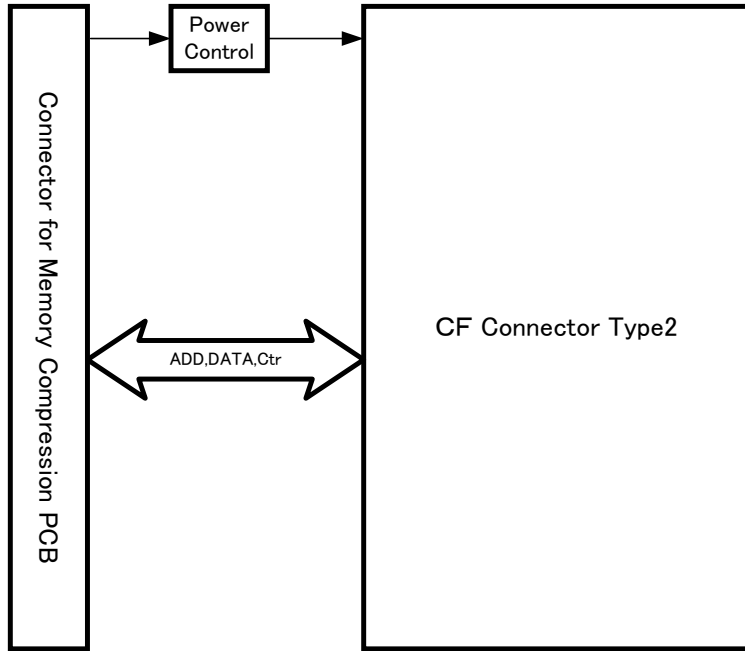


BLOCK DIAGRAM

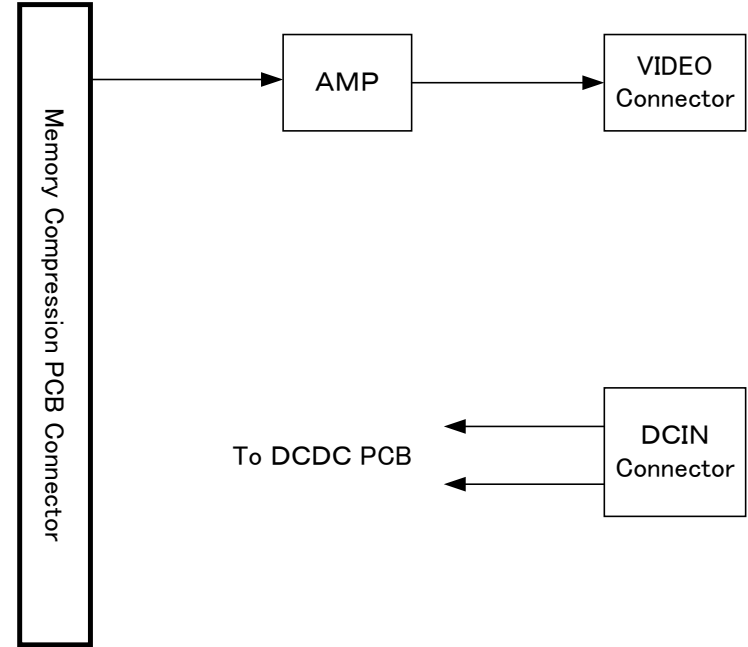




D100 Memory Compression
PCB BLOCK DIAGRAM



CF PCB BLOCK DIAGRAM



IF PCB BLOCK DIAGRAM

Explanation of Chapter "Electricity"

1. Outline of power supply system and control system

① Periphery of power supply

① -1: Main power supply: DC - IN (9V), or rechargeable EN-EL3 lithium ion battery (7.4V)

When the external pack is used (lithium ion: 2 pcs., or AA dry battery: 6 pcs.)

Built-in clock: Secondary battery 3V 65mAH

① -2: DC/DC converter

By this DC/DC converter, DC voltage of 3.5V~10.8V is inputted and nine kinds of voltage for the following eight systems are outputted.

- +1.1V (VCC1.1)
- +1.8V (VCC1.8)
- +3.3V (VCC3)
- +4.0V (VCC4)
- +7.0V (VCC7)
- +5.125V (VCC5B)
- +18.0V (VCC18A, VCC18B)
- -8.0V (VCC-8)

Output is controlled by the control terminals of two systems.

The control terminal CTL1 controls VCC4, VCC7, VCC18A and VCC-8.

The control terminal CTL2 controls VCC1.1, VCC1.8, VCC3, VCC5B and VCC18B.

◆ Image unit (→ CCD PCB)

- VCC4
- VCC7
- VCC18A
- VCC-8

◆ TFT unit (→ TFT PCB)

- VCC18B
- VCC3

◆ Compression unit (→ AK PCB)

- VCC1.1
- VCC1.8
- VCC3.3
- VCC5B

◆ Camera unit (→ Main FPC via power drive PCB)

- VCC5B

◆ Compression unit (→ I/F PCB via AK PCB)

- VCC5B

② Display

- ② -1: External LCD: F80 drive voltage 5.7V is changed to 5.4V. The display pattern is changed.
- ② -2: LCD in F: Only the display pattern is changed. The drive voltage is the same as F80/N80.
- ② -3: SILCD: The same product as F80/N80 is used. The drive voltage 5.7V is changed to 5.4V.

③ Control units

③ -1: Change of the built-in SB circuit PCB

To prevent collision against the lithium ion battery protection circuit, the following functions and circuit are added: limit of the charge current, detection of overcharging and thermal protection circuit

③ -2: Inspection communication

One method is to contact by removing the bottom cover, and the other is communication via RISC (USB).

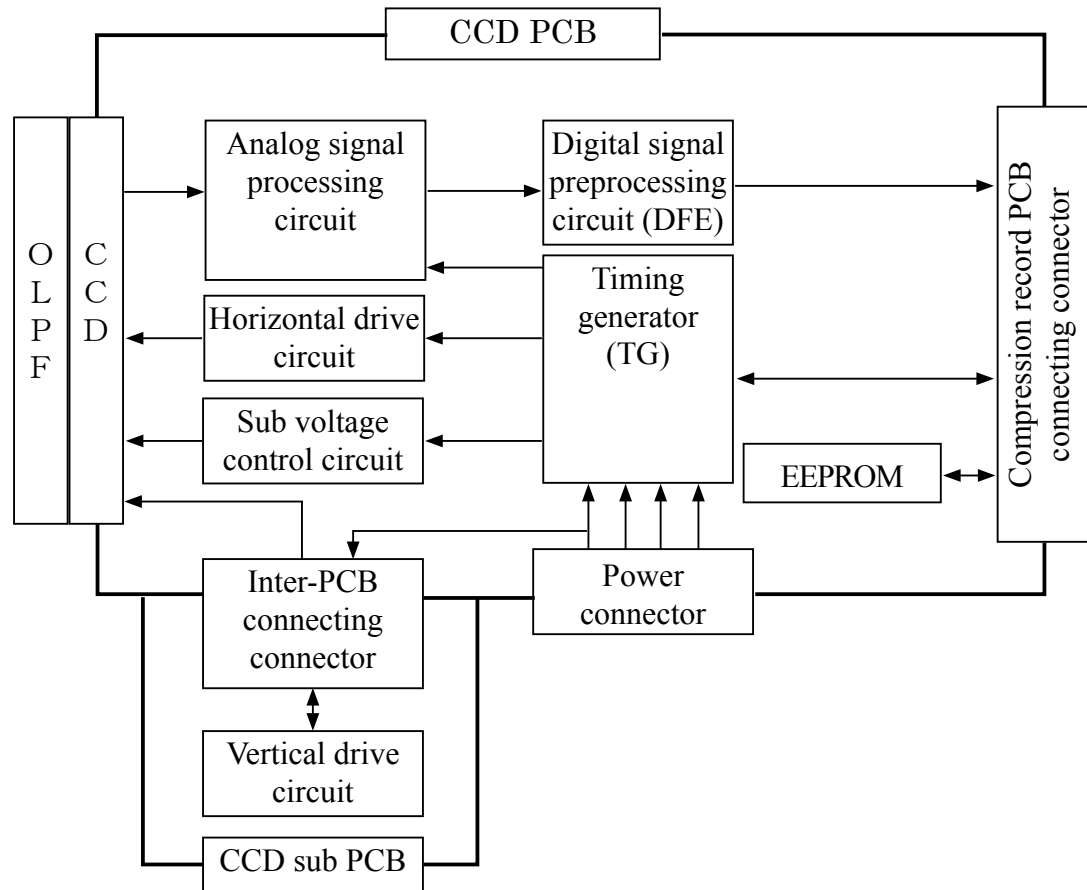
③ -3: System reset switch

The system reset switch is set on DC-IN.

Reason of setting: The sub MCU is equipped with the backup battery and so, if an accident has occurred, the instrument cannot be reset by turning on/off the main power supply.

2. CCD PCB unit

① Block diagram



② Configuration and function

The CCD PCB unit is composed of the following parts:

② -1. PCB

There are two PCBs, CCD PCB and CCD sub PCB.

② -1-1. CCD PCB

This is composed of the following circuit blocks.

- CCD
- Optical low-pass filter
- Timing generator
- Digital signal preprocessing circuit
- CCD horizontal drive circuit
- Analog signal processing circuit
- EEPROM
- CCD sub voltage control circuit
- Power connecting connector
- CCD sub PCB connecting connector
- Compression record PCB connecting connector

② -1-2. CCD sub PCB

This is composed of the following circuit blocks.

- CCD vertical drive circuit
- CCD PCB connecting connector

② -2. Function

② -2-1. CCD PCB

• CCD

Effective pixels for image: 6.15million

• Optical low-pass filter (OLPF)

This is the optical low-pass filter to suppress Moire.

• Timing generator and digital signal preprocessing circuit

This is a custom ASIC, and the timing generator and digital signal preprocessing circuit are housed in one package. It is 100-pin QFP package.

The timing generator unit outputs the control pulse for the CCD horizontal and vertical drive, the sampling pulse for the analog signal processing circuit and the synchronous wave toward the compression record PCB.

The digital signal preprocessing circuit (DFE) unit corrects the digital clamp, etc. and outputs the digital data toward the compression record PCB.

• CCD horizontal drive circuit

This is a drive circuit for CCD horizontal transmission.

• Analog signal processing circuit

Correlative double sampling is applied to a signal outputted from CCD and the specified gain is applied to the signal by the programmable gain amplifier (PGA). A/D conversion is done and the digital data is outputted to the digital signal preprocessing circuit (DFE).

PGA in this unit changes sensitivity of the camera.

• EEPROM

The adjustment data of the image system (sensitivity, sensitivity ratio, defective pixels, line crawl correction quantity, sensitivity F value dependence, etc.) are stored in EEPROM.

• CCD sub voltage control circuit

This circuit controls the CCD sub straight voltage (V sub voltage) and adjusts the saturation charge quantity of CCD.

• Power connecting connector

This 8-pin connector consists of +18V, -8V, +7V, +4V and four ground wires.

This connector is connected to the DCDC PCB with lead wire.

• CCD sub PCB connecting connector

This is a connecting connector with the CCD sub PCB and is a board-to-board connector.

• Compression record PCB connector

This 37-pin flexible connector connects the CCD PCB to the compression record PCB.

② -2-2. CCD sub PCB

• CCD vertical drive circuit

This is a drive circuit for CCD vertical transmission.

• CCD PCB connecting connector

This is a connecting connector with the CCD PCB and is a board-to-board connector.

3. Image compression record unit

The D100 compression record unit is composed of the compression record PCB, compact flash PCB and interface PCB.

① : Compression record PCB (AK PCB)

This PCB has the following main functions.

- Processing of image data: Processes an image from CCD, performs compression and stores image.
- Restoration of image data: Restores the stored image on TFT.
- Transmission of image data: Transmits the stored image and processed image to PC.

① -1: MICRO COMPUTER (U100)

MICRO COMPUTER (U100) is LSI exclusively for digital camera. It is equipped with the CCD signal processing function, JPEG compression function, SDRAM controller, video interface, CF card interface, USB interface, etc.

Internal RISC: 64MHz, Image processing unit: 64MHz, SDRAM: 64MHz

Oscillator for RISC: 16MHz, for USB in RISC: 48MHz

Radiator for PAL in RISC: 17.734MHz, for NTSC in RISC: 14.318MHz

This IC is equivalent to "MPC823 + ASIC" of the D1 series.

① -2: 16M (×16 bit) FLASH memory (U302)

Memory for storing the firm software

① -3: 256M (×16 bit) SDRAM (U300, U301)

Working memory for firm software/image processing memory

Operates with max. 64MHz.

This IC is equivalent to "64MSDRAM + (256SDRAM × 2 ~ 4) of D1X and H.

② : Compact flash PCB (CF PCB)

This PCB has the following main functions.

- Connection of CF card: Connects the CF card via a connector and inputs/outputs data from/to AK PCB.

② -1: CF connector (CN700)

A connector of the JST type 2 specification is used.

② -2: Connector for connecting with AK PCB (CN702)

This connector is equipped with 0.5mm pitch and 50 pins. It performs input/output for the CF control signal wire and power.

③ : Interface PCB (IF PCB)

This PCB has the following main functions.

- Video output: Performs output of video signal inputted from AK PCB to a monitor such as TV via an amplifier.
- DCIN: Inputs power from the AC adapter.

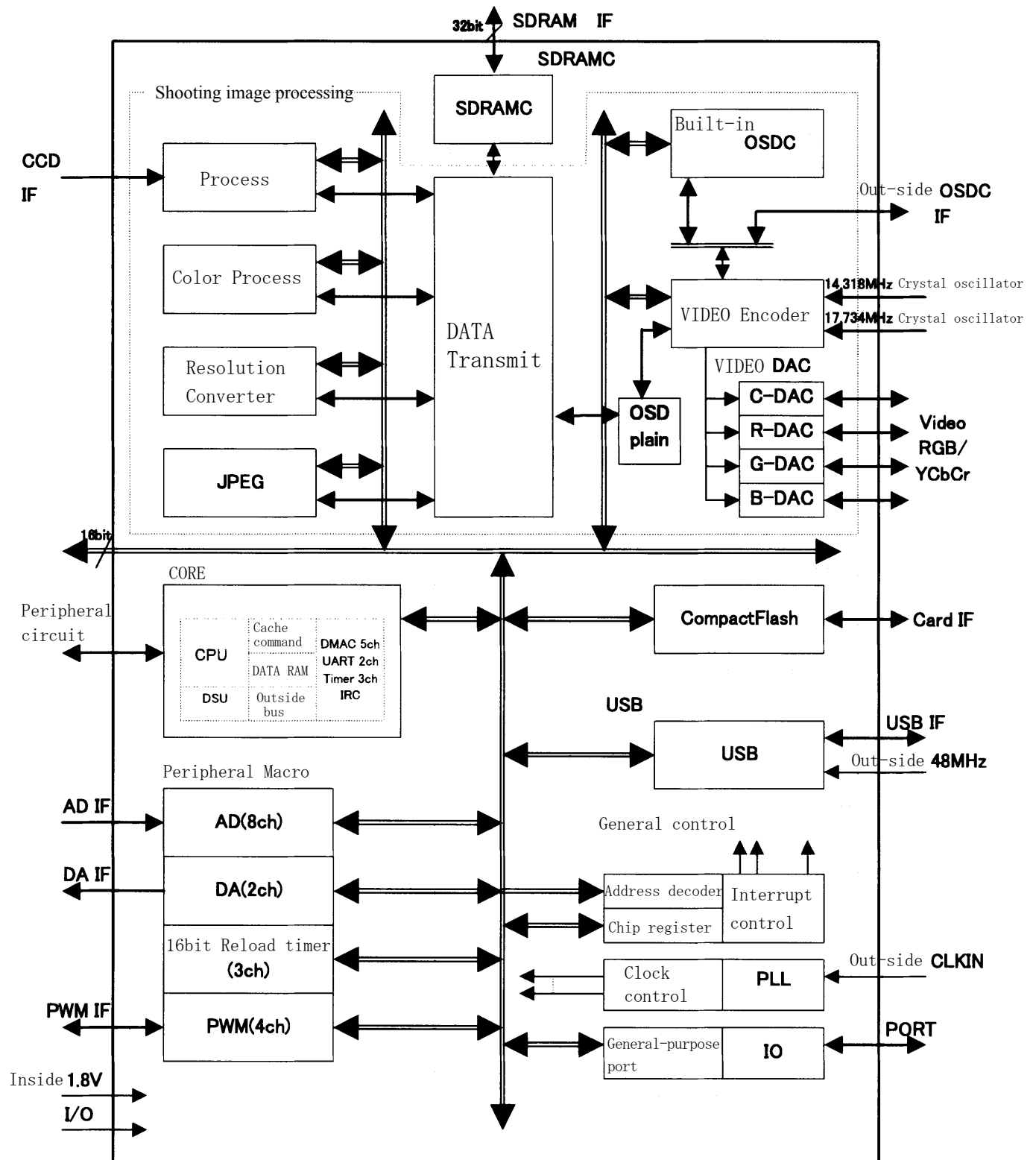
③ -1: Video connector (CN601)

This is a φ3.5mm connector. This connector is interchangeable with the one of the D1 series.

③ -2: Video amplifier circuit (periphery of U600)

③ -3: Connector for connecting with AK PCB (CN600)

④ : MICRO COMPUTER (U100) Inside BLOCK DIAGRAM

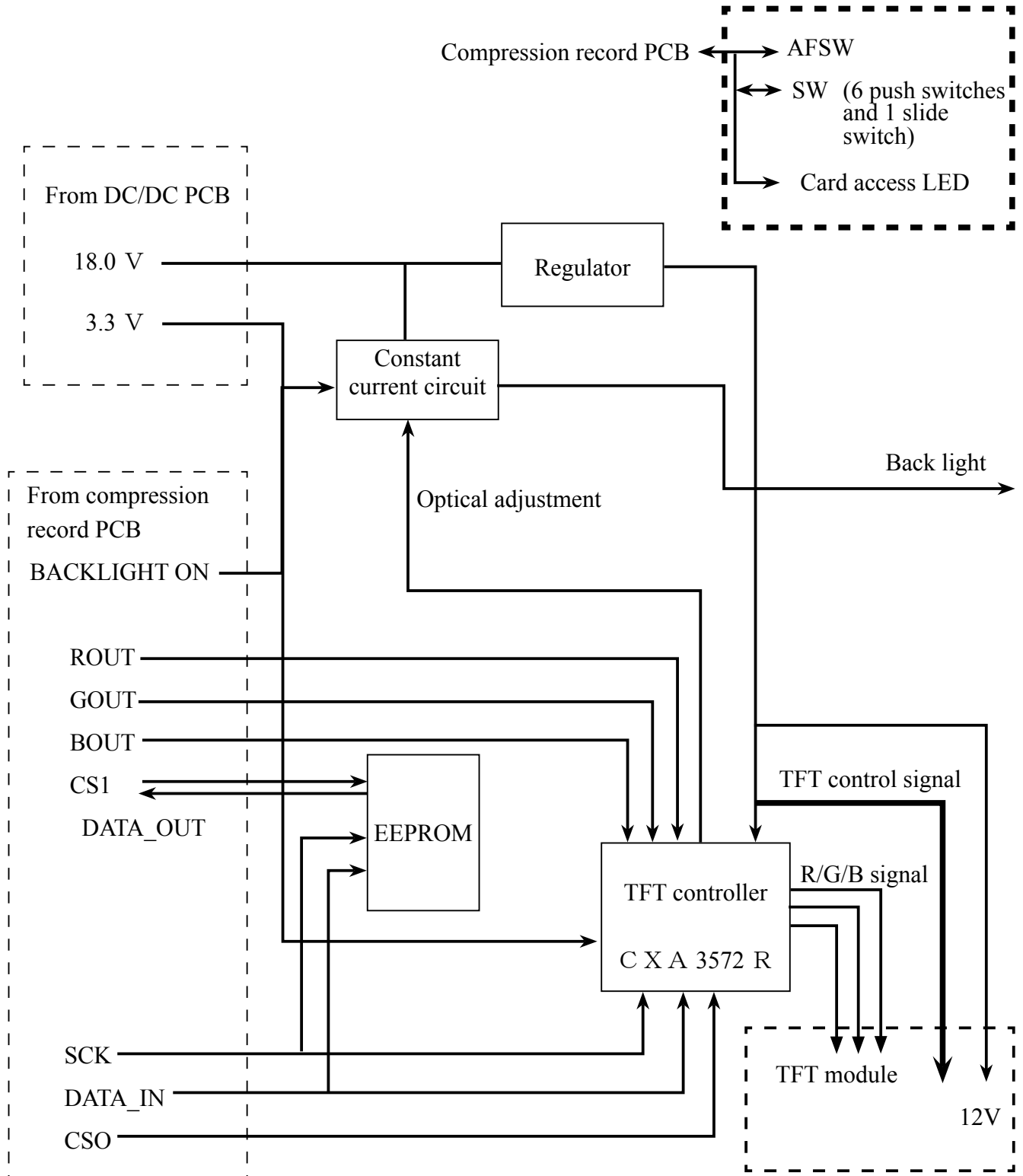


4. TFT circuit unit

① TFT monitor module

The driver equipped with the low-temperature multi-crystal silicon transistor is built in. This module is equipped with the LED back light of the active matrix panel with diagonal length 4.62cm.

② Block diagram of TFT circuit



D100 EEPROM DATA

2002-06-10

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
0	CAMERA CONTROL DATA	1 2 8			
1	"	9			
2	BATTERY CHECK ADJUSTMENT	1 1 1			
3	"	2			
4	CAMERA CONTROL DATA	1 3 4			
5	"	1 2 8			
6	"	1 0 9			
7	"	1 6			
8	"	1 6			
9	"	1 6			
1 0	"	1 0 0			
1 1	"	1 0 0			
1 2	"	0			
1 3	"	1 0 4			
1 4	"	1 7 6			
1 5	"	1 4 2			
1 6	"	1 4 0			
1 7	"	2 4			
1 8	"	3 8			
1 9	"	3 8			
2 0	"	4 0			
2 1	"	1 0 0			
2 2	"	1 0 0			
2 3	"	1 3 2			
2 4	"	0			
2 5	TEMPERATURE ADJUSTMENT DATA	2 5			
2 6	"	0			
2 7	"	3			
2 8	CAMERA CONTROL DATA	3 9			
2 9	"	3 9			
3 0	"	1 0 0			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
3 1	CAMERA CONTROL DATA	5 0			
3 2	"	5 0			
3 3	"	8 0			
3 4	"	1 3 4			
3 5	"	1 1			
3 6	"	1 2 8			
3 7	"	1 2			
3 8	TEMPERATURE DATA WHEN ADJ.	4 1			
3 9	"	2			
4 0	CAMERA CONTROL DATA	5 0			
4 1	"	4			
4 2	AF ADJUSTMENT	0			
8 9	AF ADJUSTMENT	0			
9 0	CAMERA CONTROL DATA	6 3			
9 1	"	5 1			
9 2	"	6 5			
9 3	"	0			
9 4	"	2 4			
9 5	"	4 5			
9 6	"	6 6			
9 7	"	1 2 8			
9 8	"	5 3			
9 9	"	1 3 7			
1 0 0	"	5 3			
1 0 1	"	1 3 7			
1 0 2	"	5 3			
1 0 3	"	6			
1 0 4	"	5 5			
1 0 5	"	6			
1 0 6	"	5 9			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
1 0 7	CAMERA CONTROL DATA	1 5 3			
1 0 8	"	6 0			
1 0 9	"	1 5 3			
1 1 0	"	5 9			
1 1 1	"	1 5 3			
1 1 2	"	6 3			
1 1 3	"	1 0 2			
1 1 4	"	5 4			
1 1 5	"	7 1			
1 1 6	"	0			
1 1 7	"	2			
1 1 8	"	8 0			
1 1 9	"	0			
1 2 0	"	8 0			
1 2 1	"	0			
1 2 2	"	2 0 0			
1 2 3	"	0			
1 2 4	"	6 3			
1 2 5	"	1 0 2			
1 2 6	"	5 4			
1 2 7	"	7 1			
1 2 8	"	5 4			
1 2 9	"	6			
1 3 0	"	5 3			
1 3 1	"	1 3 7			
1 3 2	"	5 3			
1 3 3	"	1 3 7			
1 3 4	TEMPERATURE DATA WHEN ADJ.	2 5 2			
1 3 5	"	2			
1 3 6	"	4 3			
1 3 7	"	1			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
1 3 8	CAMERA CONTROL DATA	0			
1 3 9	"	2 4 6			
1 4 0	"	9 2			
1 4 1	"	0			
1 4 2	"	6 1			
1 4 3	"	0			
1 4 4	"	0			
1 4 5	"	0			
1 4 6	"	0			
1 4 7	"	1 6 6			
1 4 8	"	2 5 0			
1 4 9	"	0			
1 5 0	"	6 0			
1 5 1	"	7			
1 5 2	"	1 4			
1 5 3	"	0			
1 5 4	"	0			
1 5 5	"	1 0			
1 5 6	"	2 9			
1 5 7	"	0			
1 5 8	"	3 9			
1 5 9	"	0			
1 6 0	"	0			
1 6 1	"	0			
1 6 2	"	0			
1 6 3	"	9			
1 6 4	"	4 9			
1 6 5	"	0			
1 6 6	"	3 9			
1 6 7	"	1 0			
1 6 8	"	1 4			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
1 6 9	CAMERA CONTROL DATA	0			
1 7 0	"	3 2			
1 7 1	"	1 7 8			
1 7 2	"	1 8 0			
1 7 3	"	0			
1 7 4	"	3 9			
1 7 5	"	0			
1 7 6	"	0			
1 7 7	"	0			
1 7 8	"	3 2			
1 7 9	"	1 7 8			
1 8 0	"	1 8 0			
1 8 1	"	0			
1 8 2	"	3 9			
1 8 3	"	0			
1 8 4	"	0			
1 8 5	"	0			
1 8 6	"	7 6			
1 8 7	"	2 4 9			
1 8 8	"	9 8			
1 8 9	"	0			
1 9 0	"	3 9			
1 9 1	"	2			
1 9 2	"	0			
1 9 3	"	0			
1 9 4	"	7 6			
1 9 5	"	2 4 9			
1 9 6	"	9 8			
1 9 7	"	0			
1 9 8	"	3 9			
1 9 9	"	2			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
2 0 0	CAMERA CONTROL DATA	0			
2 0 1	"	0			
2 0 2	"	2 5			
2 0 3	"	2 4 0			
2 0 4	"	6 7			
2 0 5	"	0			
2 0 6	"	3 9			
2 0 7	"	1 4			
2 0 8	"	0			
2 0 9	"	0			
2 1 0	"	2 5			
2 1 1	"	2 4 0			
2 1 2	"	6 7			
2 1 3	"	0			
2 1 4	"	3 9			
2 1 5	"	1 4			
2 1 6	"	0			
2 1 7	"	0			
2 1 8	M 1/4000 ADJUSTMENT DATA	0			
2 1 9	"	0			
2 2 0	CAMERA CONTROL DATA	2 1 0			
2 2 1	"	0			
2 2 2	"	0			
2 2 3	"	0			
2 2 4	"	4 0			
2 2 5	"	2 3 2			
2 2 6	TTL ADJUSTMENT DATA	0			
2 2 7	"	0			
2 2 8	"	1 8 0			
2 2 9	"	3			
2 3 0	CAMERA CONTROL DATA	3 8			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
2 3 1	CAMERA CONTROL DATA	0			
2 3 2	"	2 5 5			
2 3 3	"	2			
2 3 4	"	3 6			
2 3 5	"	0			
2 3 6	"	3 6			
2 3 7	"	9 6			
2 3 8	"	0			
2 3 9	"	6 4			
2 4 0	"	3 6			
2 4 1	"	3 2			
2 4 2	"	0			
2 4 3	BUILT-IN SB ADJUSTMENT DATA	0			
2 4 4	"	0			
2 4 5	CAMERA CONTROL DATA	8 0			
2 4 6	"	1 5 5			
2 4 7	"	1 7			
2 4 8	"	8			
2 4 9	"	3 6			
2 5 0	"	1 3			
2 5 1	"	3			
2 5 2	"	5			
2 5 3	"	1 0			
2 5 4	"	2 0			
2 5 5	"	3 0			
2 5 6	"	4 0			
2 5 7	"	5 0			
2 5 8	"	6 0			
2 5 9	BATTERY CHECK ADJUSTMENT	1 0			
2 6 0	"	1 0 0			
2 6 1	"	1 0			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
2 6 2	BATTERY CHECK ADJUSTMENT	1 0 0			
2 6 3	CAMERA CONTROL DATA	2 5 5			
2 6 4	"	5 1			
2 6 5	"	6 8			
2 6 6	"	6 8			
2 6 7	"	1 0			
2 6 8	"	1 6 8			
2 6 9	"	3 2			
2 7 0	"	1 7 9			
2 7 1	"	5 1			
2 7 2	"	3 8			
2 7 3	"	1 5 0			
2 7 4	"	8 5			
2 7 5	"	2 4 2			
2 7 6	"	1 0 2			
2 7 7	"	8 0			
2 7 8	"	3 7			
2 7 9	"	3 7			
2 8 0	"	6 0			
2 8 1	"	1 0 0			
2 8 2	"	2 0			
2 8 3	"	5			
2 8 4	"	3 2			
2 8 5	AF ADJUSTMENT DATA	1 5			
2 8 6	"	1 5			
2 8 7	"	2 0			
2 8 8	"	2 0			
2 8 9	"	1 2			
2 9 0	"	1 2			
2 9 1	"	1 0 5			
2 9 2	"	7 6			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
2 9 3	AF ADJUSTMENT DATA	1 1 0			
2 9 4	"	1 1 0			
2 9 5	"	7 3			
2 9 6	"	7 3			
2 9 7	"	2 4 0			
2 9 8	"	2 4 0			
2 9 9	"	2 4 0			
3 0 0	"	2 4 0			
3 0 1	"	2 4 0			
3 0 2	"	2 4 0			
3 0 3	AF ADJUSTMENT DATA	0			
	"				
7 3 2	AF ADJUSTMENT DATA	0			
7 3 3	CAMERA CONTROL DATA	0			
7 3 4	"	0			
7 3 5	"	1 2 8			
7 3 6	"	0			
7 3 7	"	8			
7 3 8	"	3 1			
7 3 9	"	3 4			
7 4 0	"	3 1			
7 4 1	"	3 6			
7 4 2	"	4 2			
7 4 3	"	4 2			
7 4 4	"	0			
7 4 5	"	0			
7 4 6	"	1 7 9			
7 4 7	"	1 7 9			
7 4 8	"	1 7 9			
7 4 9	"	1 7 9			
7 5 0	"	1 7 9			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
7 5 1	CAMERA CONTROL DATA	1 7 9			
7 5 2	"	0			
7 5 3	"	0			
7 5 4	"	1 3 5			
7 5 5	"	8			
7 5 6	"	1 6			
7 5 7	"	0			
7 5 8	"	3 0			
7 5 9	"	8			
7 6 0	"	8			
7 6 1	"	3 2			
7 6 2	"	5 0			
7 6 3	"	1 6			
7 6 4	"	1 2 8			
7 6 5	"	1 6			
7 6 6	"	6 4			
7 6 7	"	0			
7 6 8	"	3 8			
7 6 9	"	3 5			
7 7 0	"	3 5			
7 7 1	"	1 0			
7 7 2	"	2 0			
7 7 3	"	3			
7 7 4	"	0			
7 7 5	"	2 4			
7 7 6	"	6			
7 7 7	"	6			
7 7 8	"	7			
7 7 9	"	7			
7 8 0	"	0			
7 8 1	"	1 0 4			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
7 8 2	CAMERA CONTROL DATA	1 2			
7 8 3	"	6			
7 8 4	"	8 0			
7 8 5	"	1 2			
7 8 6	"	4			
7 8 7	"	6 4			
7 8 8	"	5 1			
7 8 9	"	4 8			
7 9 0	"	1			
7 9 1	AE ADJUSTMENT DATA	1 2 8			
8 0 2	AE ADJUSTMENT DATA	1 2 8			
8 0 3	CAMERA CONTROL DATA	3 2			
8 0 4	"	0			
8 0 5	"	2 4 7			
8 0 6	"	3			
8 0 7	"	3 8			
8 0 8	"	7			
8 0 9	"	2 5			
8 1 0	"	1 6			
8 1 1	"	8			
8 1 2	"	2 5			
8 1 3	"	1 0			
8 1 4	"	6			
8 1 5	"	1 4			
8 1 6	"	1 0			
8 1 7	"	1 4			
8 1 8	"	1 4			
8 1 9	"	8 0			
8 2 0	"	3 5			
8 2 1	"	4			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
8 2 2	CAMERA CONTROL DATA	2 0			
8 2 3	"	2 0			
8 2 4	"	8 2			
8 2 5	"	9 2			
8 2 6	"	0			
8 2 7	"	1 6 6			
8 2 8	"	6			
8 2 9	"	6			
8 3 0	"	0			
8 3 1	"	0			
8 3 2	"	2 4 6			
8 3 3	"	6			
8 3 4	"	4			
8 3 5	"	0			
8 3 6	"	1 7			
8 3 7	"	0			
8 3 8	"	1 2 0			
8 3 9	"	4 8			
8 4 0	"	1 0			
8 4 1	"	5 4			
8 4 2	"	1 2 0			
8 4 3	"	0			
8 4 4	"	0			
8 4 5	"	0			
8 4 6	"	0			
8 4 7	"	0			
8 4 8	"	0			
8 4 9	TTL ADJUSTMENT DATA	1 1 0			
8 5 3	TTL ADJUSTMENT DATA	1 1 0			
8 5 4	"	1 2 2			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
8 5 5	TTL ADJUSTMENT DATA	2 0 0			
8 5 6	〃	0			
8 5 7	CAMERA CONTROL DATA	0			
8 5 8	〃	0			
8 5 9	〃	4 0			
8 6 0	〃	3 0			
8 6 1	〃	3 0			
8 6 2	〃	2 0			
8 6 3	〃	3 0			
8 6 4	〃	4 0			
8 6 5	〃	1			
8 6 6	〃	0			
8 6 7	〃	1			
8 6 8	〃	0			
8 6 9	〃	4 0			
8 7 0	〃	8			
8 7 1	〃	2 5			
8 7 2	〃	5 0			
8 7 3	〃	1 2 5			
8 7 4	〃	5			
8 7 5	〃	2 2 4			
8 7 6	〃	4			
8 7 7	〃	5			
8 7 8	〃	6			
8 7 9	〃	8			
8 8 0	〃	1 1			
8 8 1	〃	1 5			
8 8 2	〃	1 9			
8 8 3	〃	2 6			
8 8 4	〃	3 4			
8 8 5	〃	4 5			

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
8 8 6	CAMERA CONTROL DATA	6			
8 8 7	"	1 9			
8 8 8	"	6 2			
8 8 9	"	6 2			
8 9 0	"	2 5			
8 9 1	"	3 0			
8 9 2	"	3 7			
8 9 3	"	4 4			
8 9 4	"	7 5			
8 9 5	"	7 5			
8 9 6	"	0			
8 9 7	"	2 5			
8 9 8	"	2			
8 9 9	"	2			
9 0 0	"	1 0			
9 0 1	"	0			
9 0 2	"	0			
9 0 3	"	0			
9 0 4	"	0			
9 0 5	"	0			
9 0 6	"	0			
9 0 7	"	0			
9 0 8	"	3 2			
9 0 9	"	1			
9 1 0	"	0			
9 1 1	CHECK SUM DATA —				
9 1 2	CAMERA CONTROL DATA —				
	"				
9 2 9	CAMERA CONTROL DATA —				
9 3 0	RECORD OF SEQUENCE ERR —				
9 3 1	" —				

ADDRESS	CONTENTS	CPU			REMARKS
		1. 23 ~			
9 3 2	CAMERA CONTROL DATA	—			
9 4 0	CAMERA CONTROL DATA	—			
9 4 1	SEQUENCE ERR DATA	—			
9 4 2	CAMERA CONTROL DATA	—			
9 9 1	CAMERA CONTROL DATA	—			
9 9 2	MANUFACTURING PROCESSES DATA	—			
1 0 2 3	MANUFACTURING PROCESSES DATA	—			

- Each 'value' explained here means the fixed value and the default value.
Of them, there are some changes according to the camera operational condition(s).
- The sign of 「—」 in the table above means a value which changes in accordance with the camera operational condition(s).

工具編 TOOLS

★ : NEW TOOL

1. カメラ部 FOR CAMERA

	RJ 番号 RJ No.	日本語名称 JAPANESE NAME	英語名称 ENGLISH NAME
★	J61197	D100 電池工具	D100 BATTERY TOOL
★	J61198	D100 通信工具	D100 COMMUNICATION TOOL
★	J61199	D100 AE 受光部アダプター	D100 LIGHT RECEIVE ADAPTER
	J15225	ストロボ 代用工具 (TC-XN)	SPEED LIGHT SHAPED TOOL FOR TC-XN
	J15259	AF 調整工具台	AF ADJUSTING TOOL
	J15274	J15264 用チャートボード	CHART BOARD FOR J15264
	J15280	レンズホルダー	LENS HOLDER FOR F4
	J15336	ストロボ代用工具	SB ALTERNATIVE TOOL
	J15370	F80 SI 表示透過工具	F80 SI DISPLAY CHECK TOOL
	J15371	無限合致調整用スクリーン	INFINITY FOCUS CHECK SCREEN
	J15376	SI 表示透過工具用クリップコネクター	CLIP CONNECTOR FOR SI TOOL
	J15387	標準反射板 (シャッター幕)	REFLECTOR
	J18001-1	ボディバック出し工具	BODY BACK FOCUS GAUGE
	J18004	絞りレバー位置測定工具	APERTURE LEVER POSITIONING GAU
	J18010	基準レンズ 50/1.8	STANDARD LENS 50/1.8
	J18037	ミラ 45° 点検工具	MIRROR 45 DEG. INSPECTION TOOL
	J18069	標準反射板 1.8MX2.5M	STANDARD REFLECTOR 1.8M X 2.5M
	J18142-1	タイムカウンタ - TC-XN2(CE)	TIME COUNTER TC-XN2(CE)
	J18197	45° 出し工具 ミラ -	TOOL MIRROR
	J18230	YAW PITCH 工具	YAW PITCH TOOL
	J18266	AF 調整レンズ (1m)	AF ADJUSTMENT LENS (1m)
	J18267	測光用 AF50/1.4 D	AE ADJUSTMENT LENS AF 50/1.4 D
★	J18344	マルチカム 900AF チャート	Multi CAM 900 AF CHART
	J18324	サブミラー点検工具 (F100 F5 F80 F65)	SUB MIRROR INS.TOOL(F100 F5 F80 F65
	J19001	調整用コリメータ - 600mm	COLLIMATOR F=600MM
	J19004-1	インジケータ - 及びスタンド	DIAL INDICATOR & STAND
	J19042D	像面露光量測定アダプター	EXP.VALUE MEASURING ADAPTER
	J19042E	T秒時測定アダプター - (APS)	T.V. MEASURING ADAPTER (APS)
	J19110	小型バック出しコリメータ (CE 対応品)	BACK FOCUS COLLIMATOR 24LT-2DTS(CE)
	工具設定なし RJNo. is not available	安定化電源 5 A	DC REGULATED POWER SUPPLY 5A
	J19119	RS232C 通信ケーブル (MC-33)	RS232C COMMUNICATION CABLE(MC-33)
★	J18340	D100 点検・調整ソフト	INSPECTION & ADJUSTMENT F.D. for D100
	工具設定なし RJNo. is not available	ミノルタフラッシュメーター	FLASH-METER
	番号未設定 RJNo. will be available	シャッター - テスタ - EF-1(CE)	SHUTTER TESTER EF-1(CE)

★ : NEW TOOL

RJ 番号 RJ No.	日本語名称 JAPANESE NAME	英語名称 ENGLISH NAME
番号未設定 RJNo. will be available	EF-1 用カメラスライド台	CAMERA SLIDE STAND CS-8
工具設定なし RJNo. is not available	パソコン（シリアルポート、U S B 必需、 Windows98SE 以降）	PC (serial port & USB are required, Windows98SE or later)
工具設定なし	デジタルマルチメーター	DIGITAL METER

2. 撮像関係点検・調整 SHOOTING IMAGE ADJUSTMENT AND TFT ADJUSTMENT

RJ 番号 RJ No.	日本語名称 JAPANESE NAME	英語名称 ENGLISH NAME
J61185	撮像関係調整用レンズ	D1 STANDARD LENS
J63064	撮像関係調整用フィルター（ND 1）	FILTER (ND1) FOR D1
J63065	撮像関係調整用フィルター（ND 3）	FILTER (ND3) FOR D1
J63066	フィルターホルダー	FILTER HOLDER
J63049	カラービューワー	COLLOR VIEWER
J63068	輝度計（BM 3000）	LUMINANCE METER BM-3000
J63053	カラーチャート	COLLOR CHART
★ J65043A	D 1 0 0 用撮像点検・調整ソフト（日本語）	D100 IMAGE SENSOR ADJ. SOFT (JAPANESE)
★ J65043B	D 1 0 0 用撮像点検・調整ソフト（英語）	D100 IMAGE SENSOR ADJ. SOFT (ENGLISH)