VBA12001-R.3668.A

作成承認印	配布許可印
ニコン 映像カンパニー 品質保証部 GM	サービス 計画課 M

D50 VBA12001

REPAIR MANUAL

Nikon | NIKON CORPORATION
Tokyo, Japan

Printed in Japan June 2005

Specifications

Type	Single-lens reflex digital camera with interchangeable lenses
Effective pixels	6.1 million
CCD	23.7 × 15.6 mm; total pixels: 6.24 million
Image size (pixels)	• 3008 × 2000 (Large) • 2256 × 1496 (Medium) • 1504 × 1000 (Small)
Lens mount	Nikon F mount (with AF coupling and AF contacts)
Compatible lenses*	
Type G or D AF Nikkor	All functions supported
Micro Nikkor 85 mm f/2.8D	All functions supported except autofocus and some exposure modes
Other AF Nikkor†	All functions supported except 3D color matrix metering II
AI-P Nikkor	All functions supported except 3D color matrix metering II and autofocus
Non-CPU	Can be used in mode **M**, but exposure meter does not function; electronic range finder can be used if maximum aperture is f/5.6 or faster
* IX Nikkor lenses can not be used	† Excluding lenses for F3AF
Picture angle	Equivalent in 35-mm format is approximately 1.5 times lens focal length
Viewfinder	Fixed-eyelevel penta-Dach-mirror type
Diopter adjustment	–1.6 – +0.5 m^{-1}
Eyepoint	18 mm (–1.0 m^{-1})
Focusing screen	Type B BriteView clear matte screen Mark V with superimposed focus brackets
Frame coverage	Approximately 95% of lens (vertical and horizontal)
Magnification	Approximately 0.75× (50-mm lens at infinity; –1.0 m^{-1}
Reflex mirror	Quick return
Lens aperture	Instant return with depth-of-field preview
Focus-area selection	Can be selected from 5 focus areas
Lens servo	• Autofocus (AF): Instant single-servo AF(AF-S);continuous-servo AF (AF-C); auto AF-S/AF-C selection(AF-A); predictive focus tracking automatically activated according to subject status • Manual focus (M)

Autofocus	TTL phase detection by Nikon Multi-CAM900 autofocus module with AF-assist illuminator (range approximately 0.5–3.0 m / 1′8″–9′10″)
Detection range	–1 – +19 EV (ISO 100 at 20 °C/68 °F)
AF-area mode	Single-area AF, dynamic-area AF, dynamic-area AF with closest subject priority
Focus lock	Focus can be locked by pressing shutter-release button halfway (single-servo AF) or by pressing AE-L/AF-L button
Exposure	
Metering	Three-mode through-the-lens (TTL) exposure metering
Matrix	3D color matrix metering II (type G and D lenses); color matrix metering II (other CPU lenses); metering performed by 420-segment RGB sensor
Center-weighted	Weight of 75% given to 6, 8, 10, or 12-mm circle in center of frame
Spot	Meters 3.5-mm circle (about 2.5% of frame) centered on active focus area
Range (ISO 100 equivalent, f/1.4 lens, 20 °C/68 °F)	0 – 20 EV (3D color matrix or center-weighted metering) 2 – 20 EV (spot metering)
Exposure meter coupling	CPU coupling
Exposure control	
Operating mode	Digital Vari-Program (auto, portrait, landscape, Child, close up, sports, night portrait), programmed auto (P) with flexible program; shutter-priority auto (S); aperture priority auto (A); manual (M)
Exposure compensation	–5 – +5 EV in increments of 1/3 or ½ EV
Bracketing	Exposure and / or flash bracketing (up to ± 2EV over 3 exposures)
Exposure lock	Luminosity locked at detected value with AE-L/AF-L button
Shutter	Combined mechanical and CCD electronic shutter
Speed	30 – 1/4000 s in steps of 1/3 or ½ EV, bulb, remote
Sensitivity	200 – 1600 (ISO equivalent) in steps of 1/3 EV
White balance	Auto (TTL white-balance with 420 pixels RGB sensor), six manual modes with preset white balance
Bracketing	3 exposures in increments of 1, 2, or 3

Built-in Speedlight	• AUTO, , , , auto flash with auto pop-up • P, S, A, M : manual pop-up with button release
Guide number (m / ft at 20 °C/68 °F)	• ISO 200: approximately 15/49 (manual 17/56) • ISO 100: approximately 11/36 (manual 12/39)
Flash	
Sync contact	X-contact only; flash synchronization at up to 1/500 s
Flash control	
TTL	TTL flash control by 420-segment RGB sensor (CPU lenses only) • Built-in Speedlight: i-TTL balanced fill-flash for digital SLR, or standard i-TTL flash for digital SLR (spot metering or mode dial set to M) • SB-800 or 600: i-TTL balanced fill-flash for digital SLR, or standard i-TTL flash for digital SLR (spot metering)
Auto aperture	Available with SB-800 with CPU lens
Non-TTL auto	Available with such Speedlights as SB-800, 80DX, 28DX, 28, 27, and 22s
Range-priority manual	Available with SB-800
Sync modes	• AUTO、、、: front curtain sync, red-eye reduction • : slow sync, slow sync with red-eye reduction • 、: front curtain sync and red-eyereduction available with optional Speedlights • P, S, A, M: front curtain sync, slow sync, rear-curtain sync, red-eye reduction, slow sync with red-eye reduction
Flash compensation	–3 – +1 EV in increments of 1/3 or ½ EV
Accessory shoe	Standard ISO hot-shoe contact with safety lock
Creative Lighting System	Supports Flash Color Information Communication and FV lock with built-in Speedlight, SB-800, and SB-600. SB-800 and 600 also support Advanced Wireless Lighting.
Storage	
Media	SD (Secure Digital) memory cards
File system	Compliant with Design Rule for Camera File System (DCF) 2.0 and Digital Print Order Format (DPOF)
Compression	• NEF (RAW): compressed 12-bit • JPEG: JPEG baseline-compliant

Self-timer	Electronically controlled timer with 2 – 20 s duration
Monitor	2.0″, 130,000-dot, low-temperature polysilicon TFT LCD with brightness adjustment
Video output	Can be selected from NTSC and PAL
External interface	USB 2.0 Hi-speed
Tripod socket	¼″ (ISO)
Firmware upgrades	Firmware can be upgraded by user
Supported languages	Chinese (Simplified and Traditional), Dutch, English, French, German, Italian, Japanese, Korean, Portuguese, Russian,Spanish, Swedish
Power source	• One rechargeable Nikon EN-EL3 Li-ion battery; charging voltage (MH-18a quick charger or optional MH-19 multi charger): 7.4 V DC • EH-5 AC adapter (available separately)
Dimensions (W × H × D)	Approximately 133 × 102 × 76 mm (5.2″ × 4.0″ ×3.0″)
Weight	Approximately 540 g (1 lb 3 oz) without battery, memory card, body cap, or monitor cover
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).

• Nikon reserves the right to change the specifications of the hardware and software described this manual at any time and without prior notice. Nikon will not be held liable for damages that may result from any mistakes that this manual may contain.

Points to notice for Disassembly / Assembly

⚠ WARNING	
	● Due to an internal high voltage area, take extra care not to get an electric shock when detaching covers.. ● After removing covers, be sure to discharge the main condenser according to the instructions of repair manuals.

Note:

① When disassembling/(re)assembling, be sure to use the conductive mat (J5033) and wrist strap (J5033-5) for static protection of electrical parts.

② Before disassembling, be sure to remove batteries or AC power wires.

③ When disassembling, make sure to memorize the processing state of wires and FPC, screws to be fixed and their types, etc.

④ Because the low pass filter of the imaging CCD PCB is easily damaged, handle it with enough care.

Points to notice for Lead-free solder products

- Lead-free solder is used for this product.
- For soldering work, the special solder and soldering iron are required.
- Do NOT mix up lead-free solder with traditional solder.

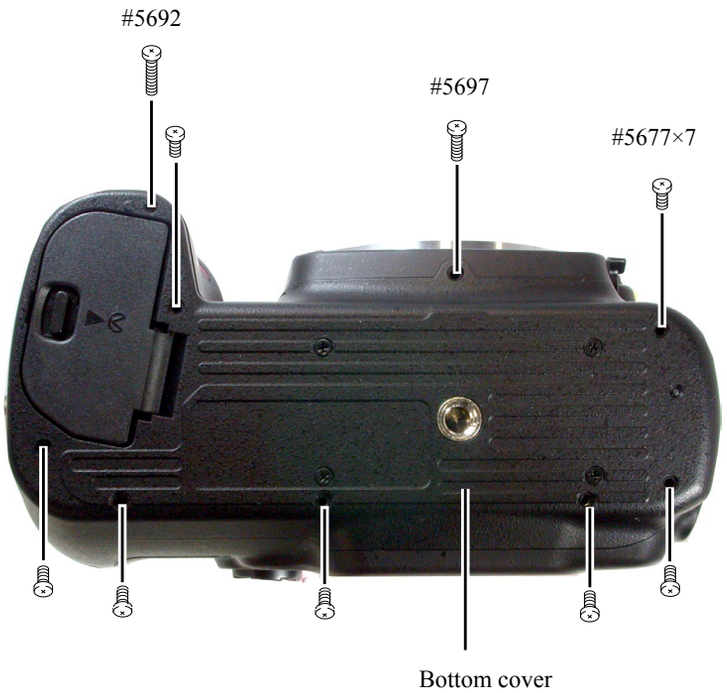
Note:
When "Seprating Front and Rear bodies","Disassembling Image PCB",and"Disassembling Bayonet",
be sure to perform"Reset of AF defocus compensation amount"by D2X adjustment software after reassembly.

Disassembly

1. Separation of Front and Rear Bodies

Bottom Cover

- Take out the screws (#5692 and #5697) and 7 screws (#5677).
- Remove the bottom cover.

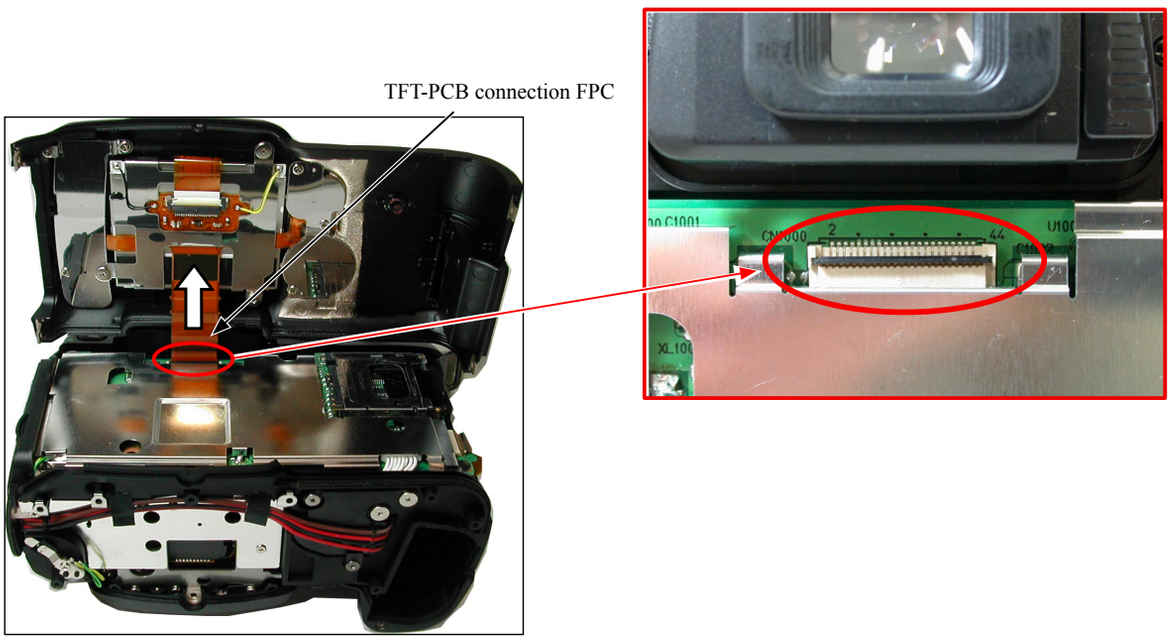


Rear cover

- Take out 4 screws (#623).
- Cover to remove the rear cover.

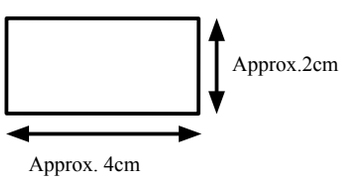
Note: Remove the rear cover slowly so as not to cut TFT-PCB connection FPC of the upper portion of the cover.

・ Remove TFT-PCB connection FPC from the connector.



SB pop-up

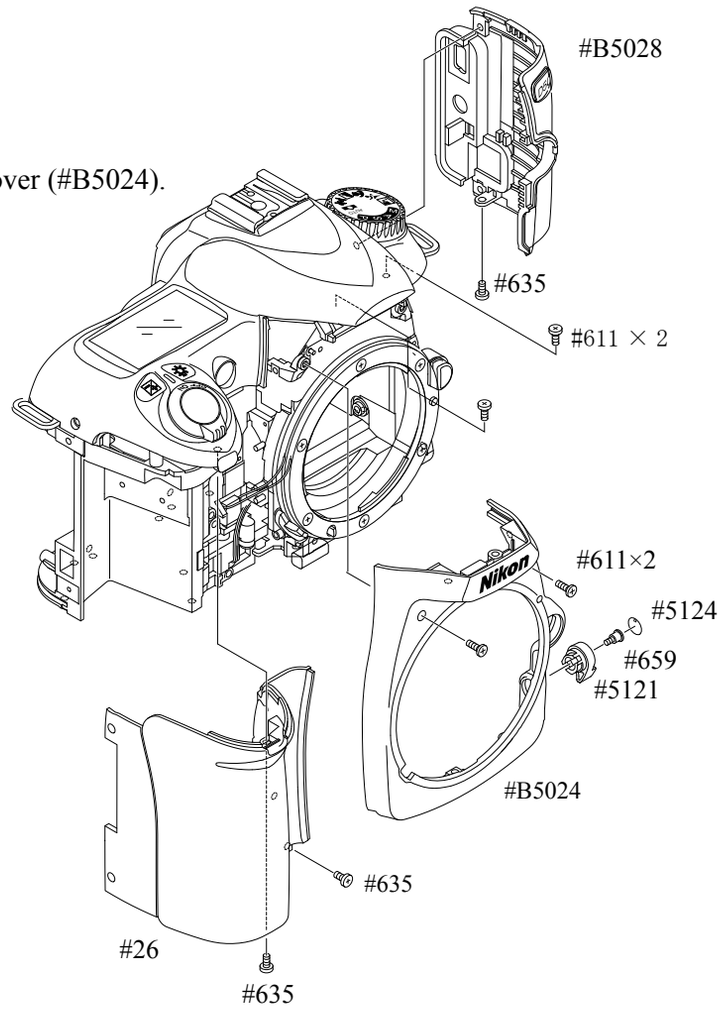
・Cut the tracing film sheet, etc into the below size of piece. Then insert it into the clearance of the top cover pop-up part as shown right, and pop it up by sliding the sheet in the direction of the arrow.



⚠WARNING	
	● Due to an internal high voltage area, take extra care not to get an electric shock when detaching covers. ● After removing the covers, be sure to discharge the main condenser according to the instructions of repar manuals.

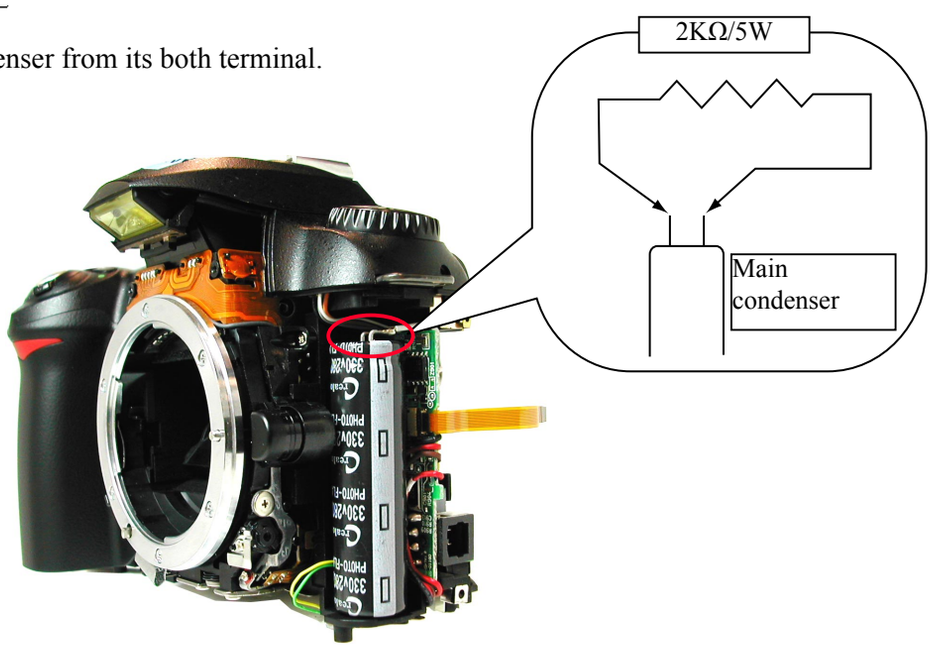
Covers

・ First, remove the front cover (#B5024).



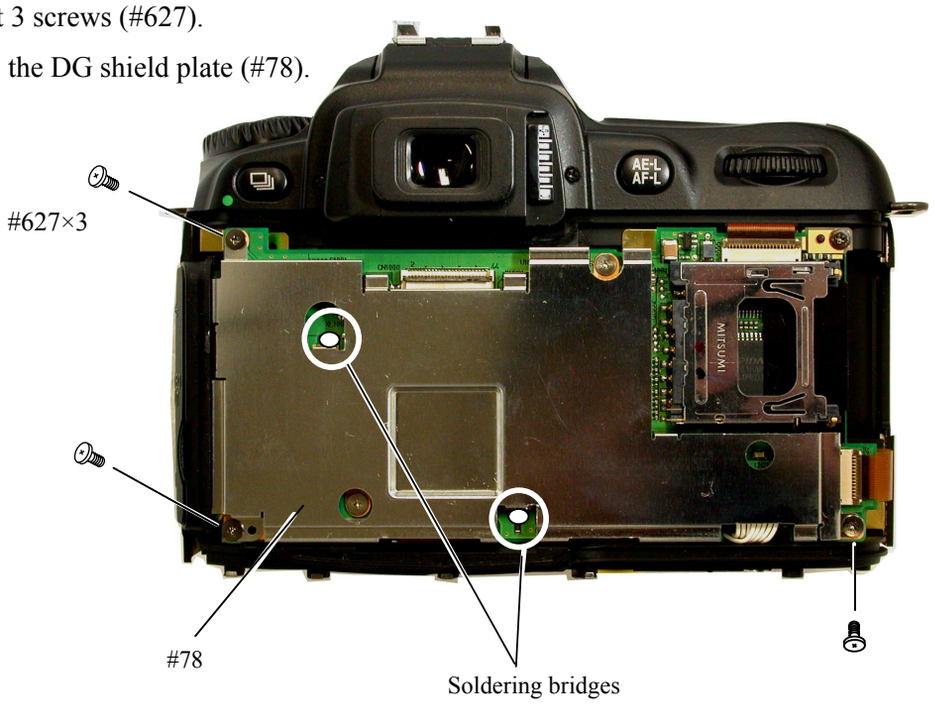
Discharge Main condenser

・ Discharge the main condenser from its both terminal.



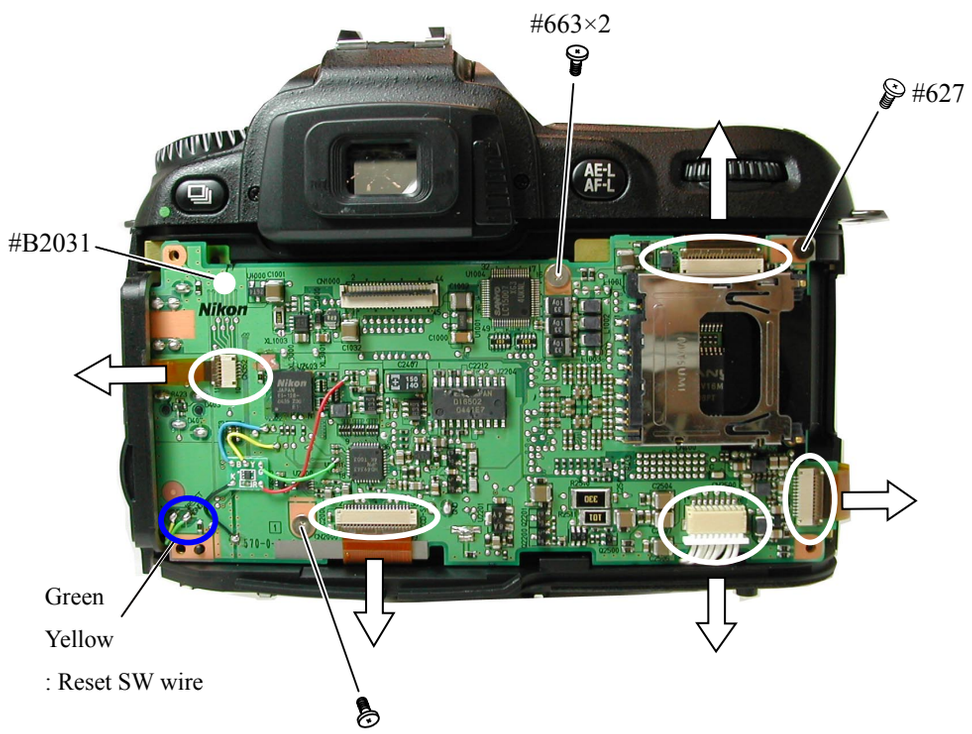
DG shield plate

- Remove 2 soldering bridges.
- Take out 3 screws (#627).
- Remove the DG shield plate (#78).



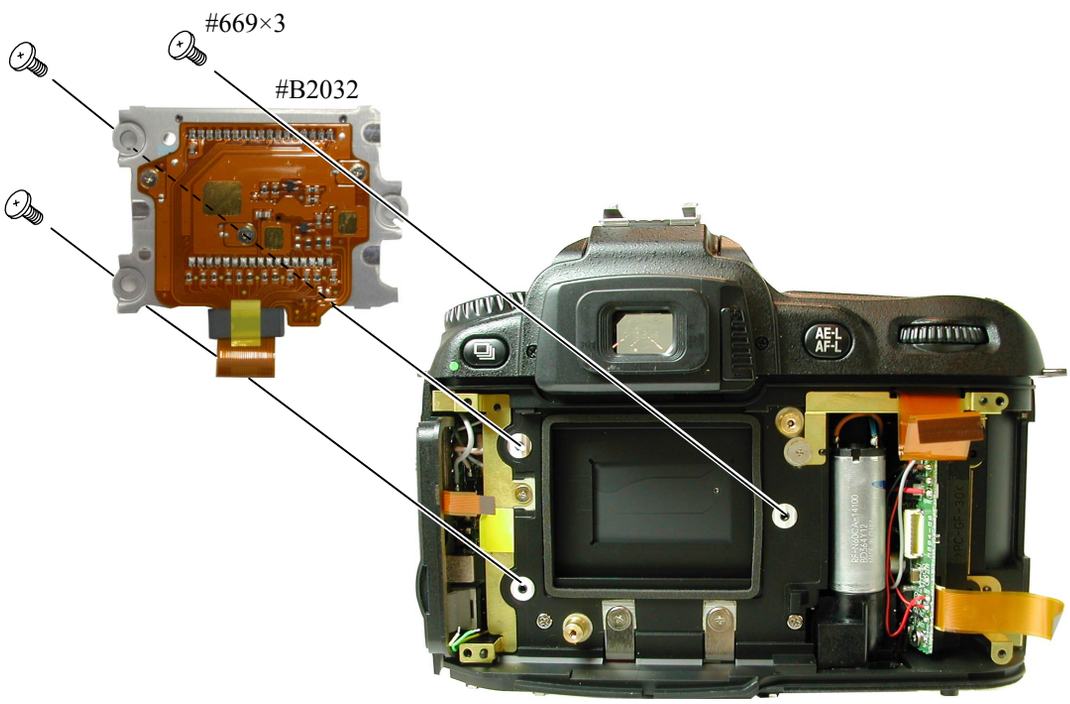
DG-PCB unit

- Remove 5 connectors.
- Unsolder 2 reset SW wires.
- Take out 2 screws (#663) and the screw (#627) to remove the DG-PCB unit (#B2031).



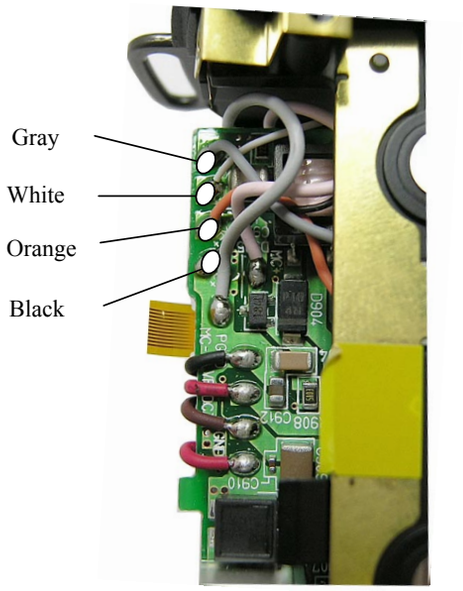
CCD/FPC unit

・ Take out 3 screws (#669) to remove the CCD/FPC unit (#B2032).

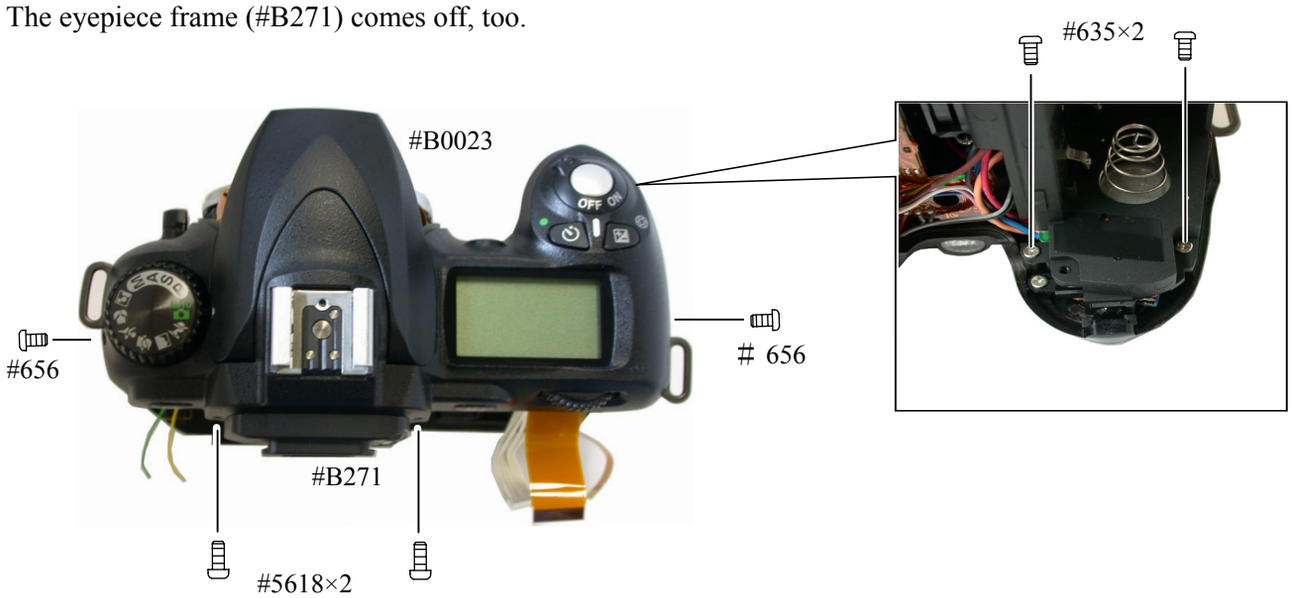


Top Cover

- Unsolder 4 wires.

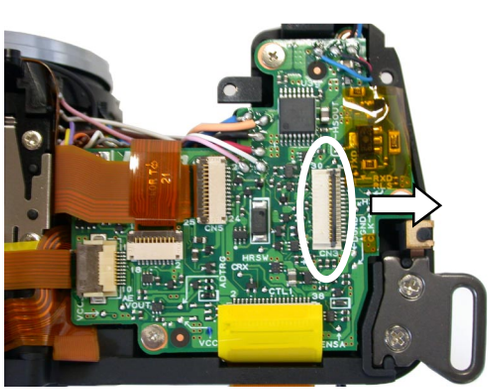


- Take out 2 screws each of (#635, #656, and #5618).
  The eyepiece frame (#B271) comes off, too.

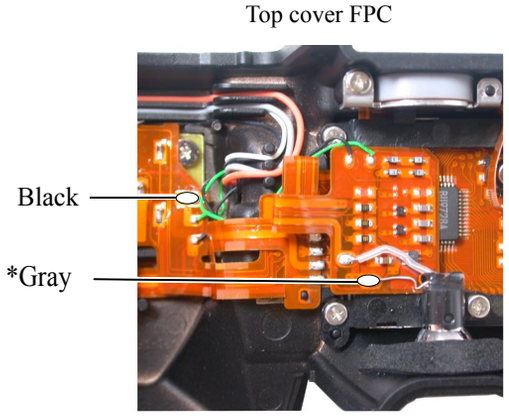


- Remove the top cover FPC (#1007) from the connector.
- Unsolder 2 wires of the top cover FPC.

* The solder land of gray wire is same as AF assist lanp unit.



Top cover FPC



SB upper case

- Press the pop-up lever A part of the top cover unit so that the built-in SB pops up.
- Take out 2 screws (#629).
- Push from beneath the hooking lever of the SB upper case as shown in Fig.1 . Then slide 2 hooks in the direction of the arrow to remove the lever.
- Deactivate pop-up of the SB lower case unit, and remove the SB upper case. (Fig.2)

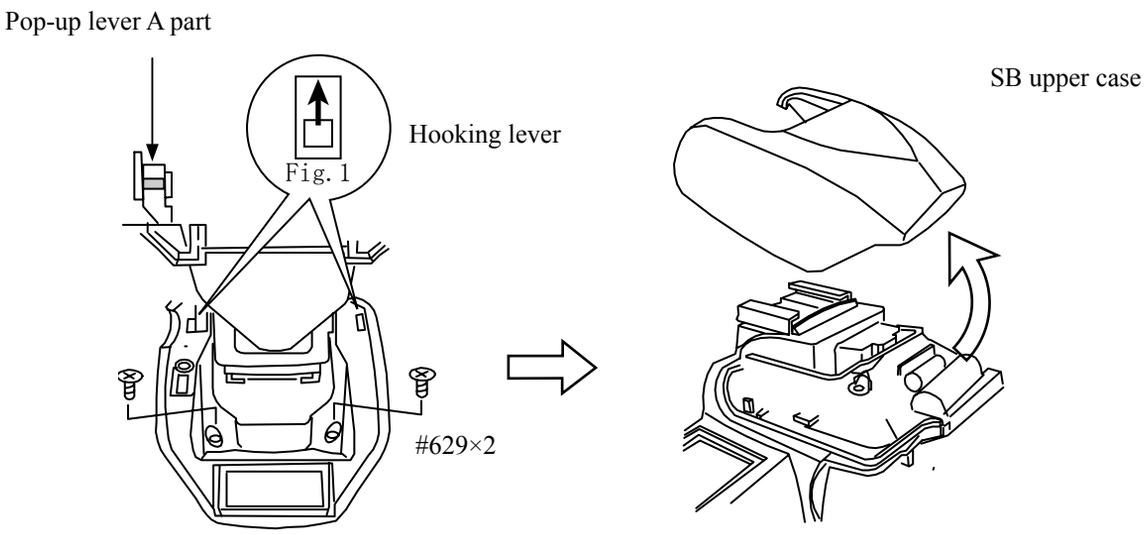
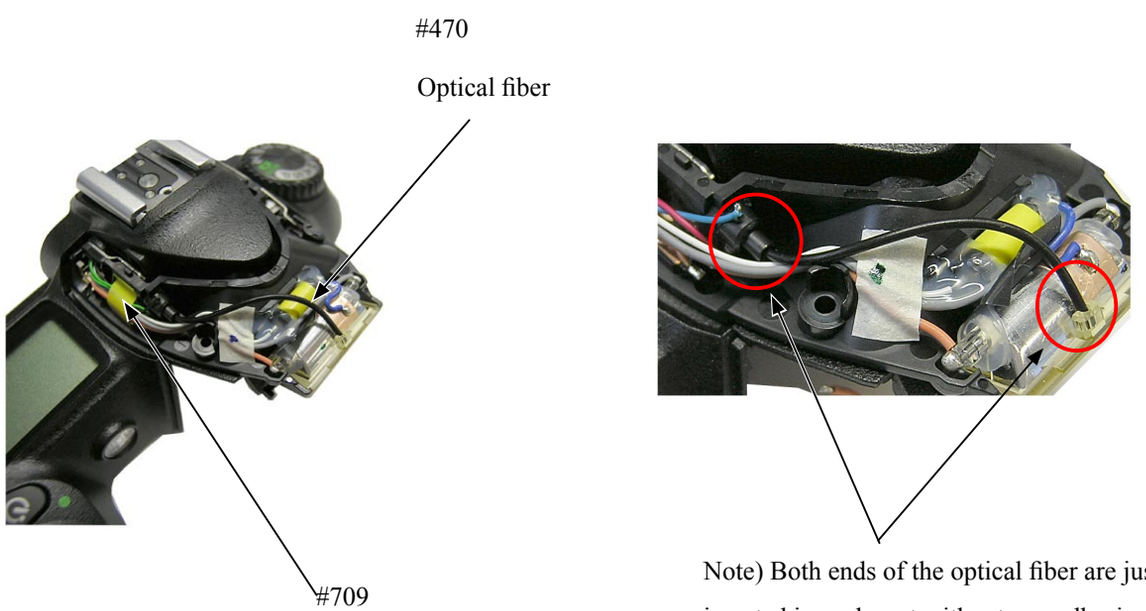


Fig.2

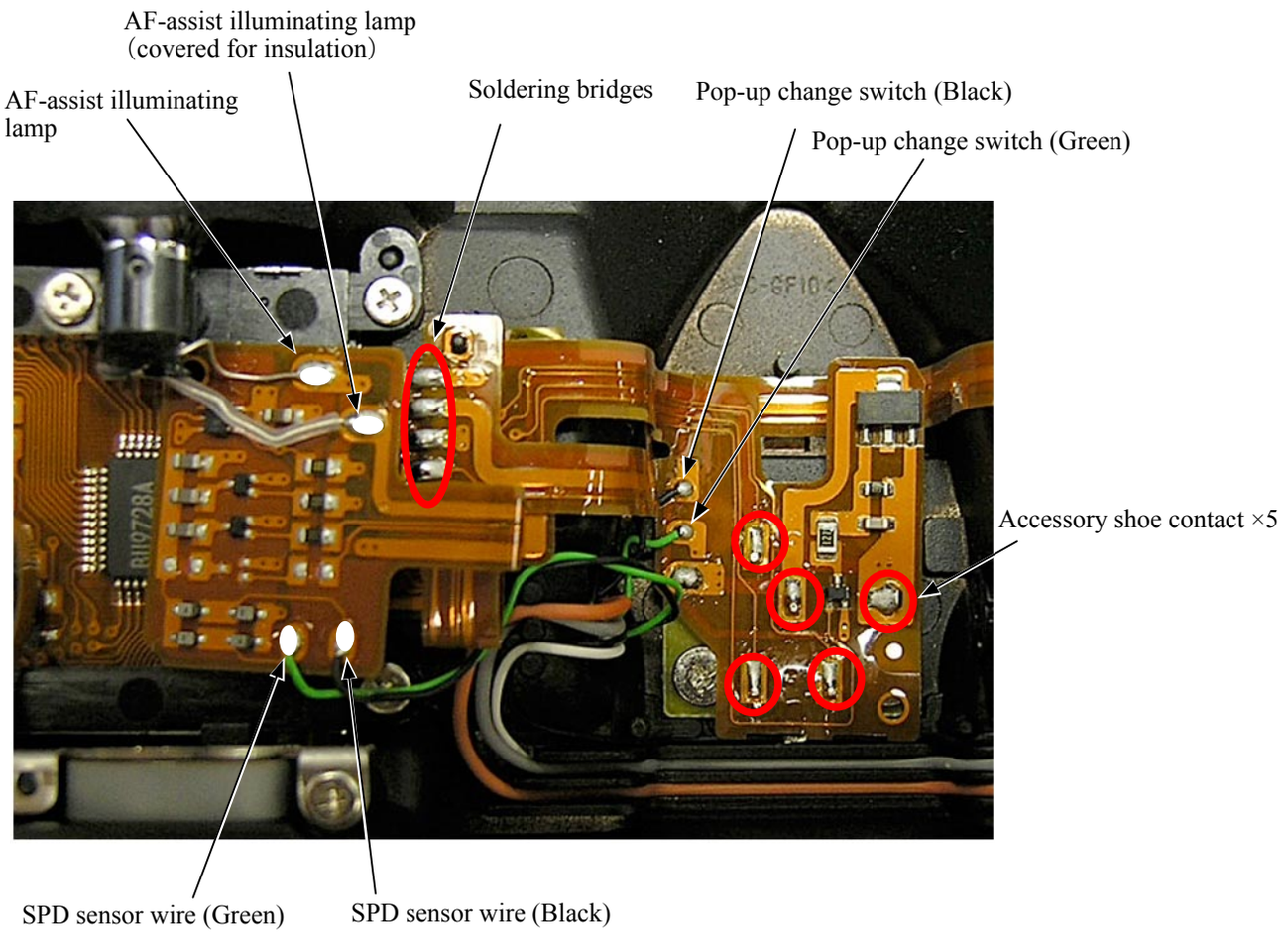
- Remove the tape (#709).
- Remove the optical fiber (#470) from the sensor.



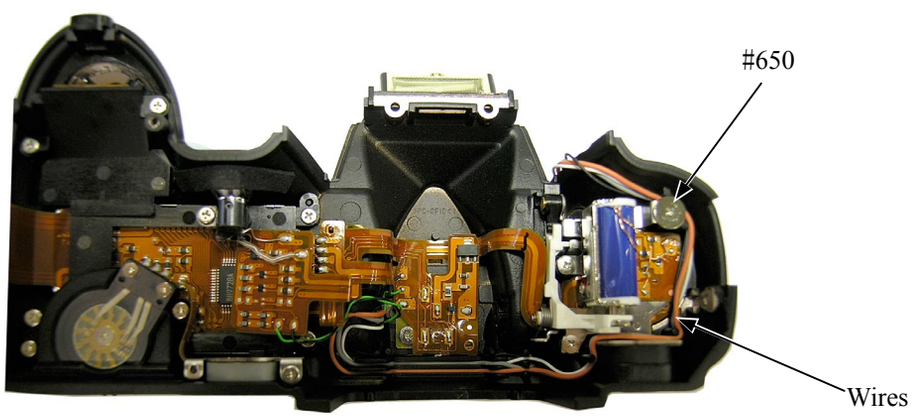
Note) Both ends of the optical fiber are just inserted in each part without any adhesive.

Top cover FPC / Wiring

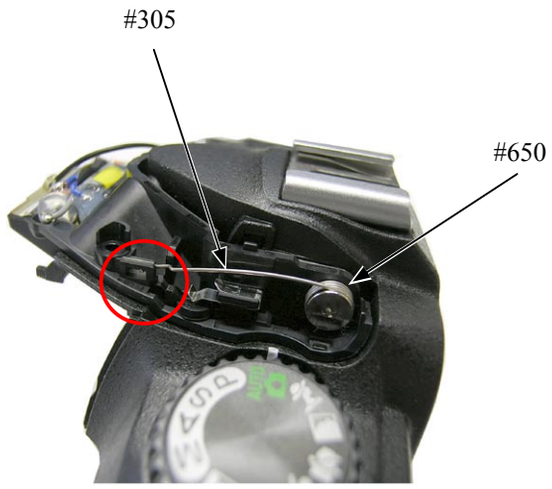
- Remove the soldering bridges.
- Remove the 2 solders of AF-assist illuminating lamps.
- Remove the solders of 2 SPD sensor wires.
- Remove the solders of 2 pop-up change SW wires.
- Remove the solders of 5 accesory shoe contacts.



- Remove the wire-retaining screw (#650).
- Remove wires.



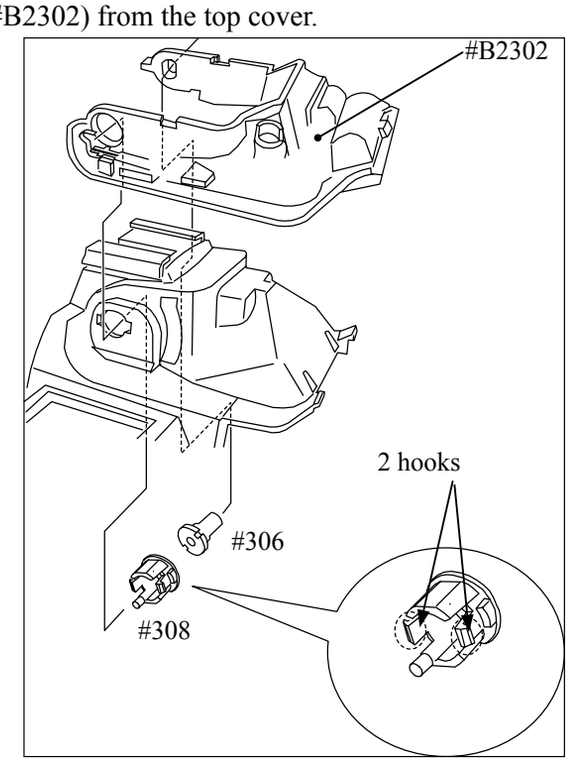
Flash-up spring



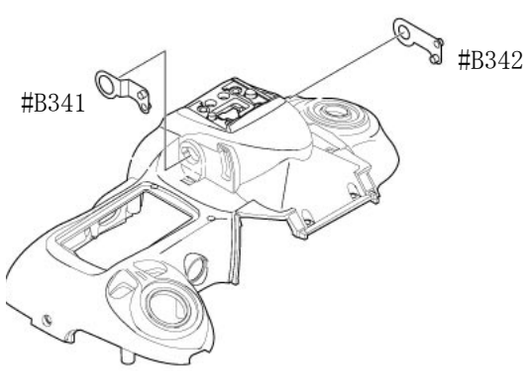
- Unhook the Flash-up spring (#305).
- Take out the screw (#650) and remove the Flash-up spring (#305).

SB lower case unit

- Pull each wire out of hole.
- Loosen 2 hooks of the collar (#308) to remove it.
- Remove the SB case axle (#306).
- Detach the SB lower case unit (#B2302) from the top cover.

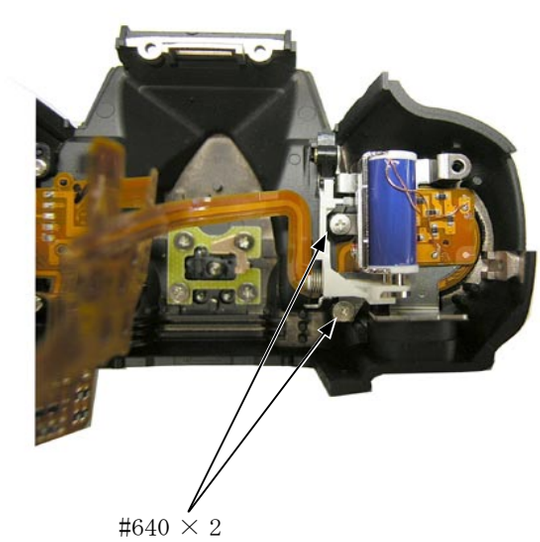


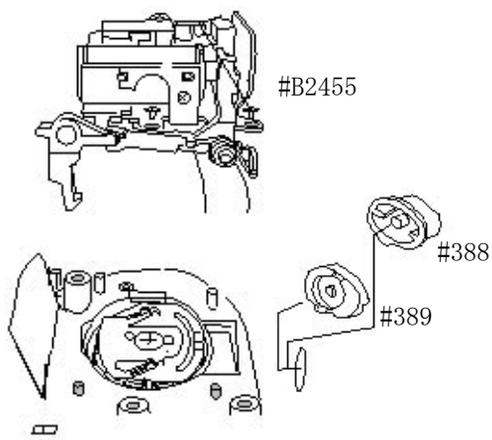
- Remove #B341 and #B342.



M/DFPC unit

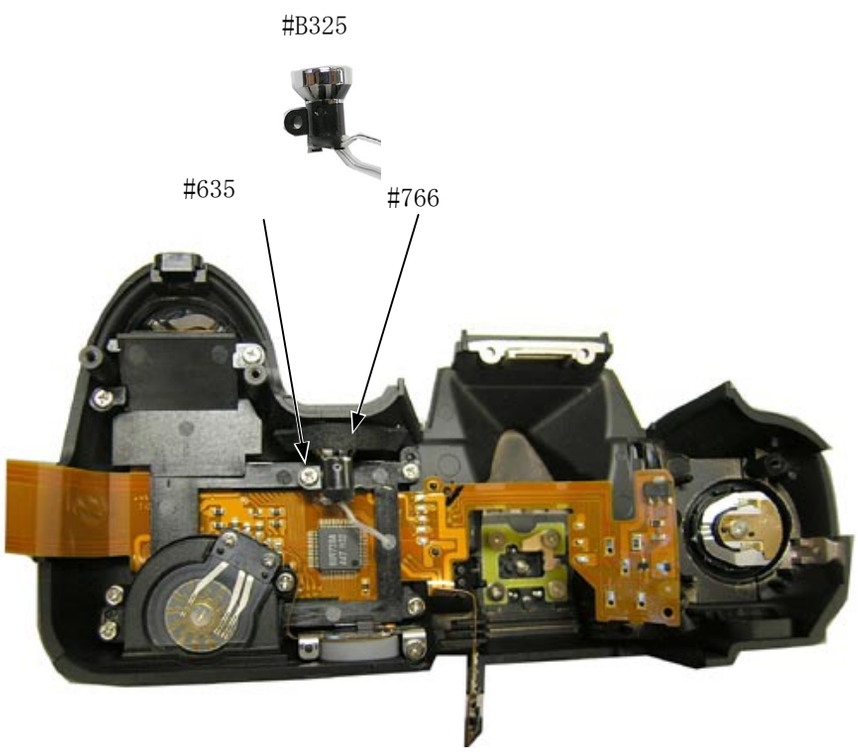
- Take out 2 screws (#640) to remove the M/DFPC unit (#B2455).
- Remove the rubber SW (#389) and shooting operation-mode button (#388).

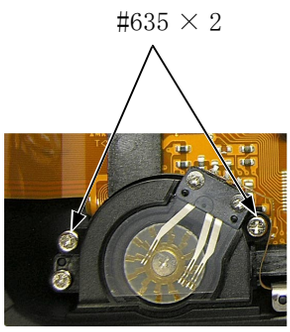




AF-assist illuminating lamp / Command dial

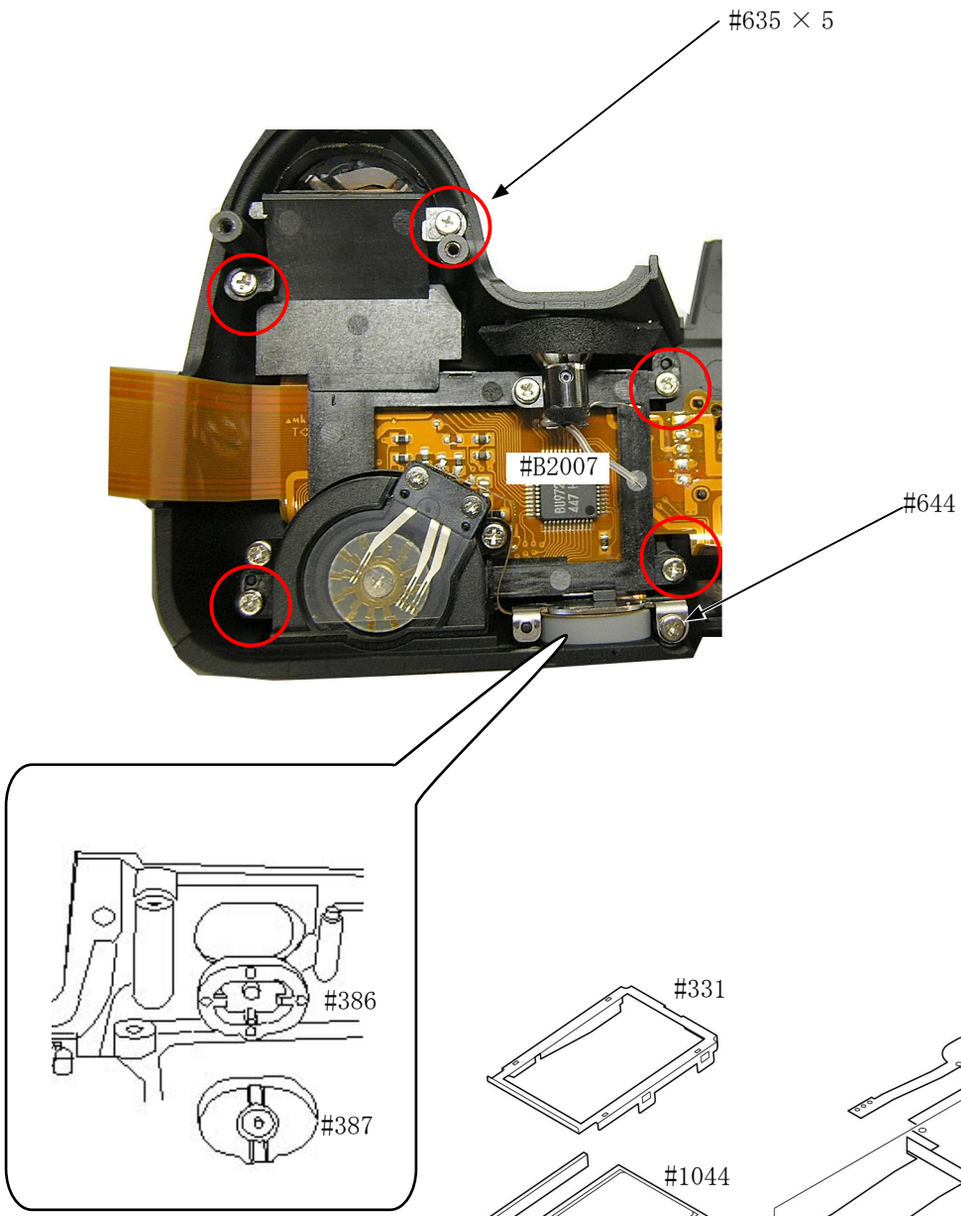
- Remove the light-leak proof sponge (#766).
- Take out the screw (#635).
- Remove the AF-assist illuminating lamp (#B325).
- Remove 2 screws (#635).
- Lift to slack the command dial (#B367).

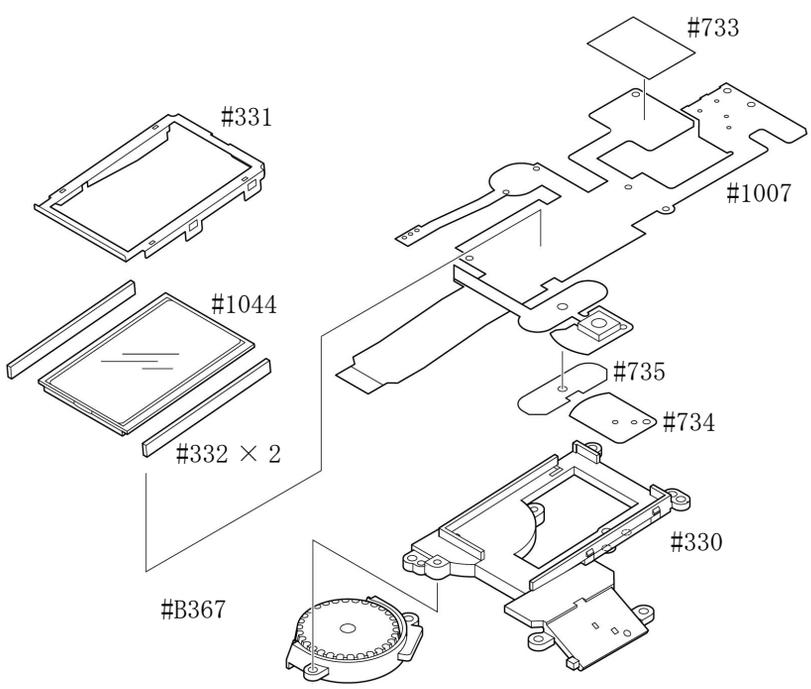




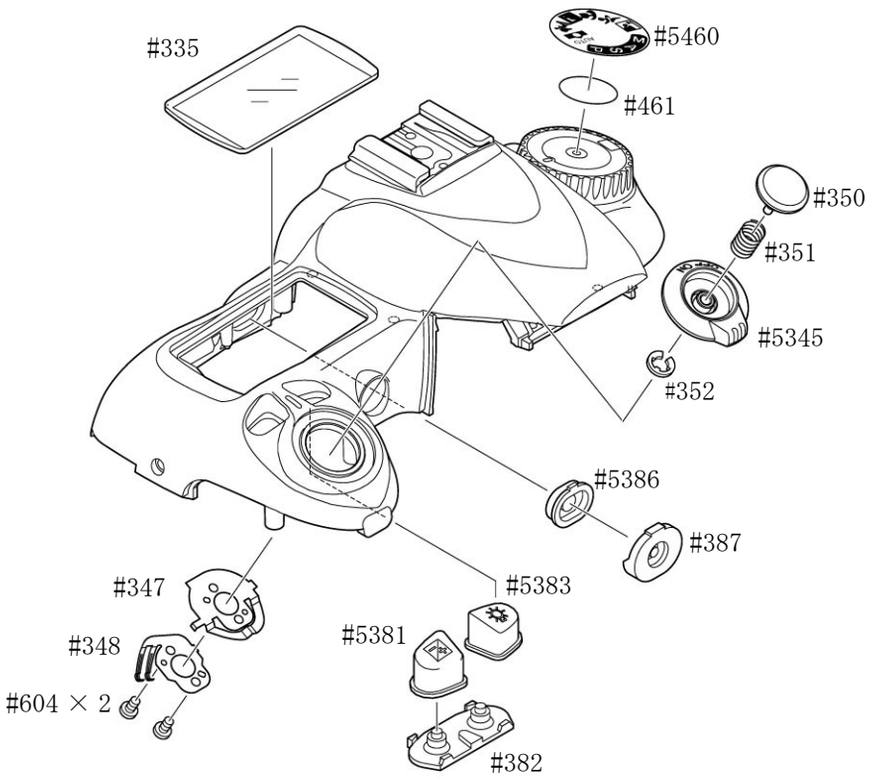
Top cover FPC

- Take out the screw (#644).
- Take out 5 screws (#635).
- Remove the top cover FPC (#B2007).
- Remove the AE-L rubber SW (#387) and AE-L button (#386).

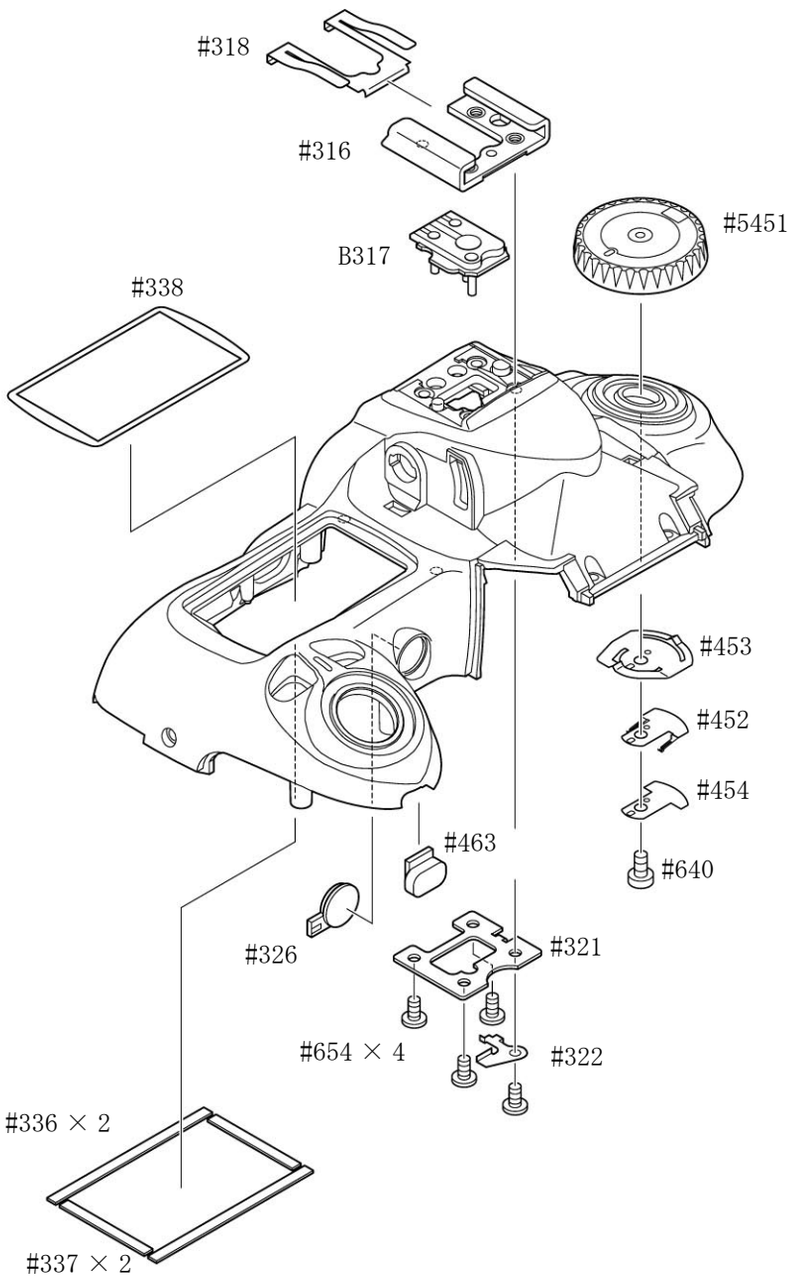




Release button / other small parts

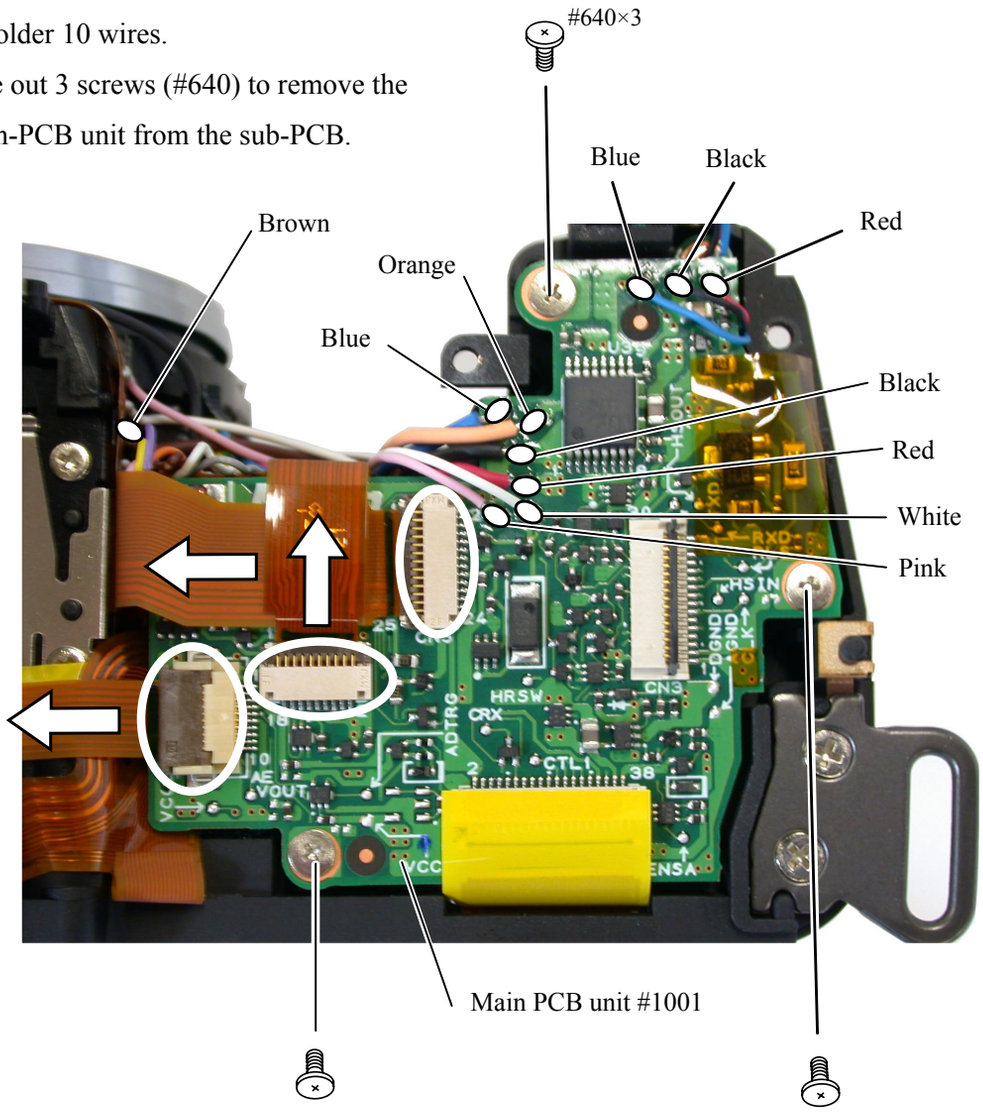


Outer LCD window / shoe mold unit / accessory shoe / other small parts



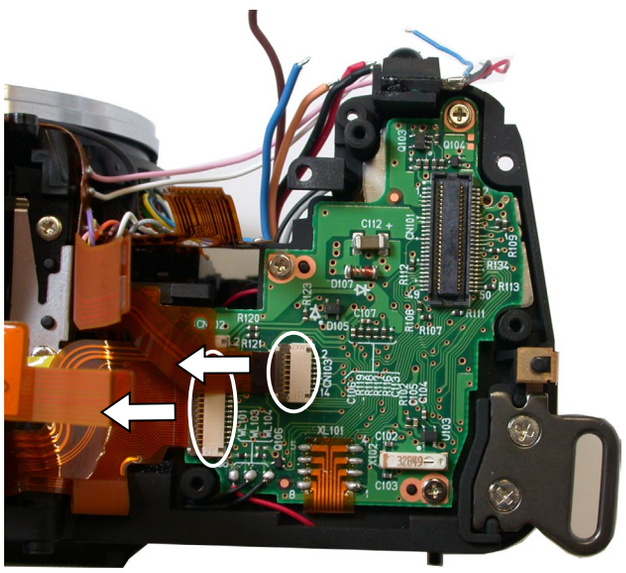
Main PCB unit

- Remove 3 FPCs from the connector.
- Unsolder 10 wires.
- Take out 3 screws (#640) to remove the main-PCB unit from the sub-PCB.



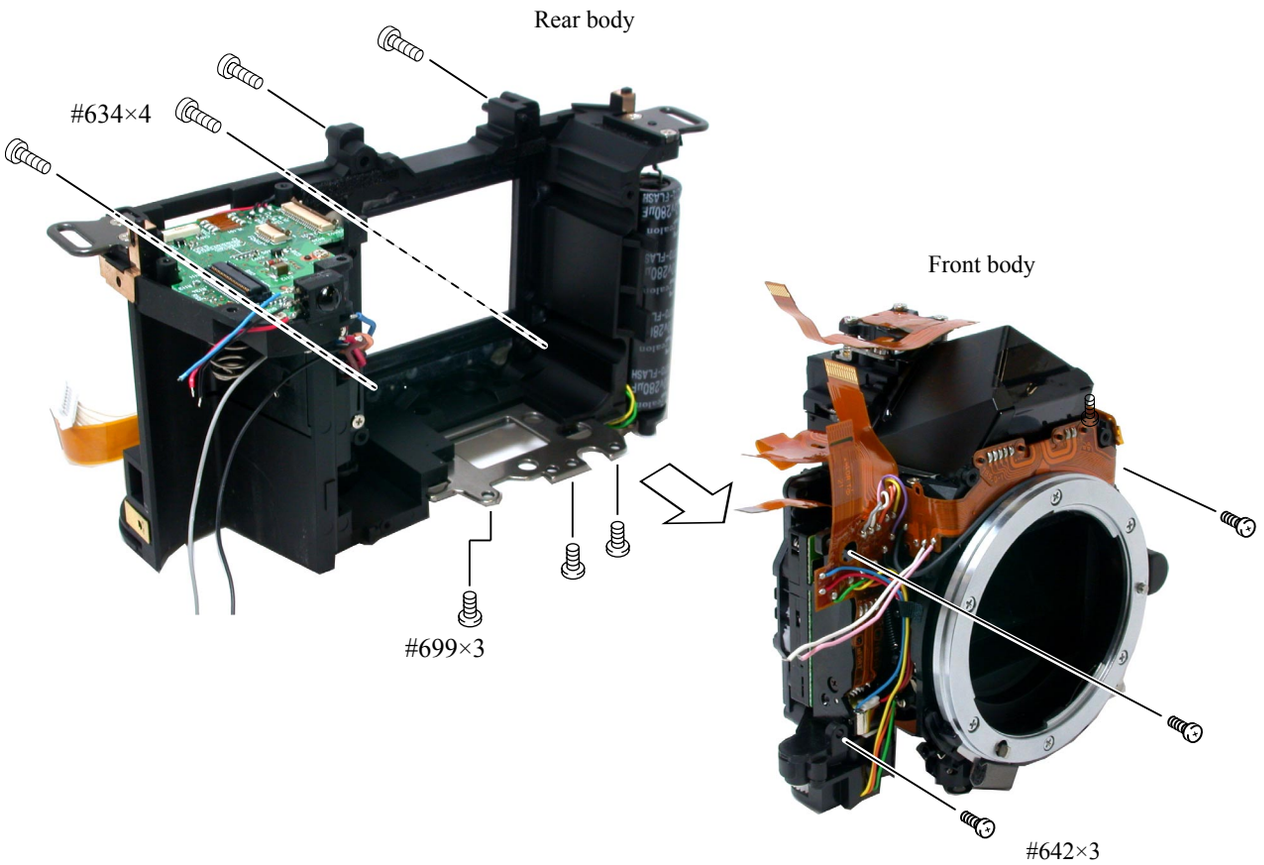
Removal of Connector

- Remove 2 FPCs from the connector



Separation of Front and Rear bodies

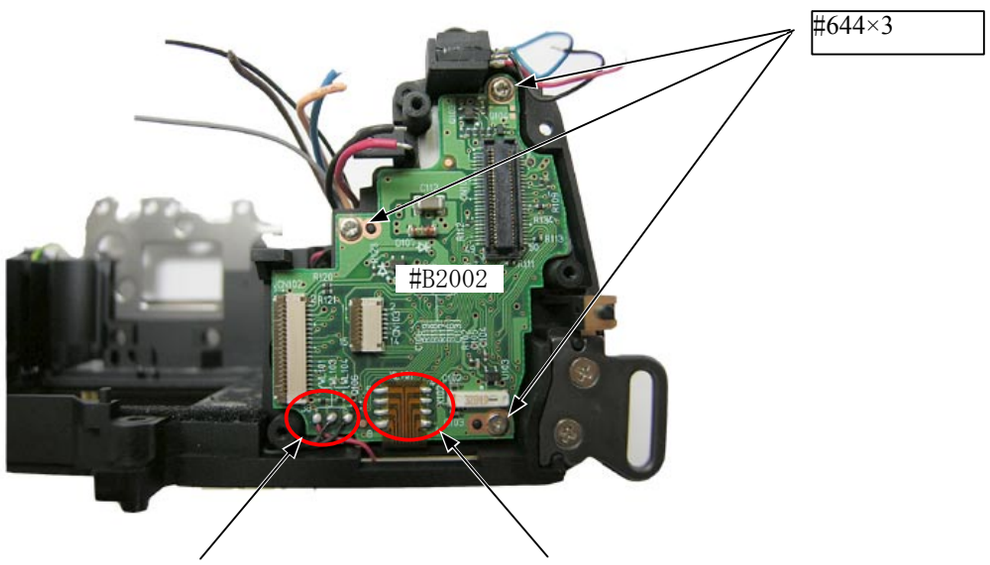
・ Take out 3 screws (#699), 4 screws (#634), and 3 screws (#642) to remove the front body.



2. Rear body

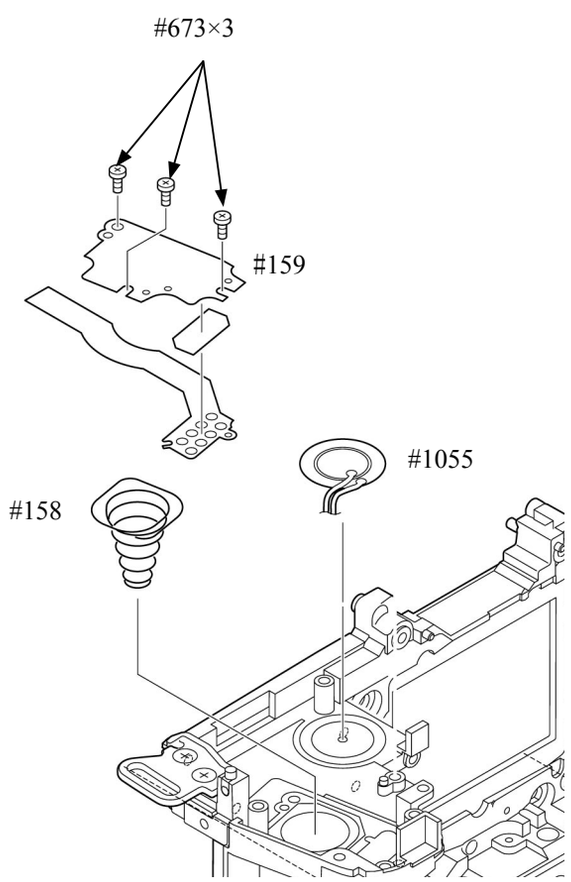
Sub-PCB unit

- Unsolder 3 wires of electronic buzzer .
- Remove the soldering bridges.
- Take out 3 screws (#644).
- Remove Sub-PCB.(#B2002)



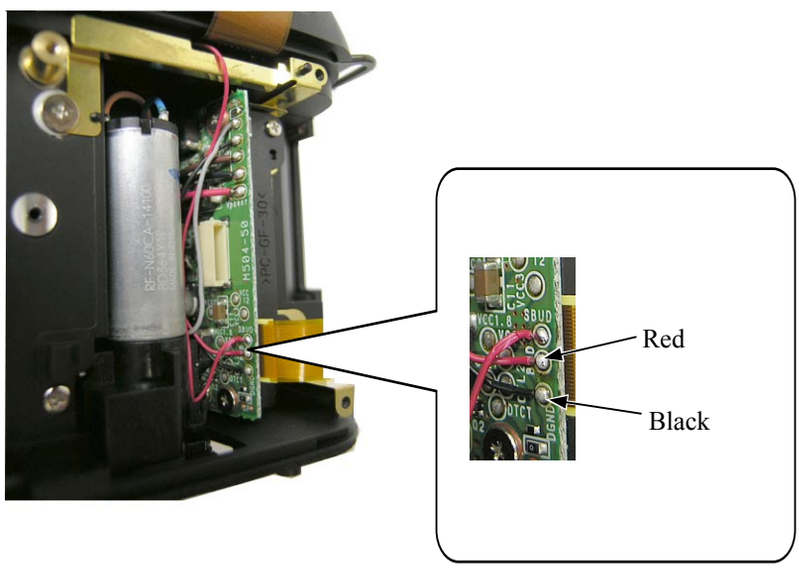
Electronic buzzer unit / Battery-extrusion spring

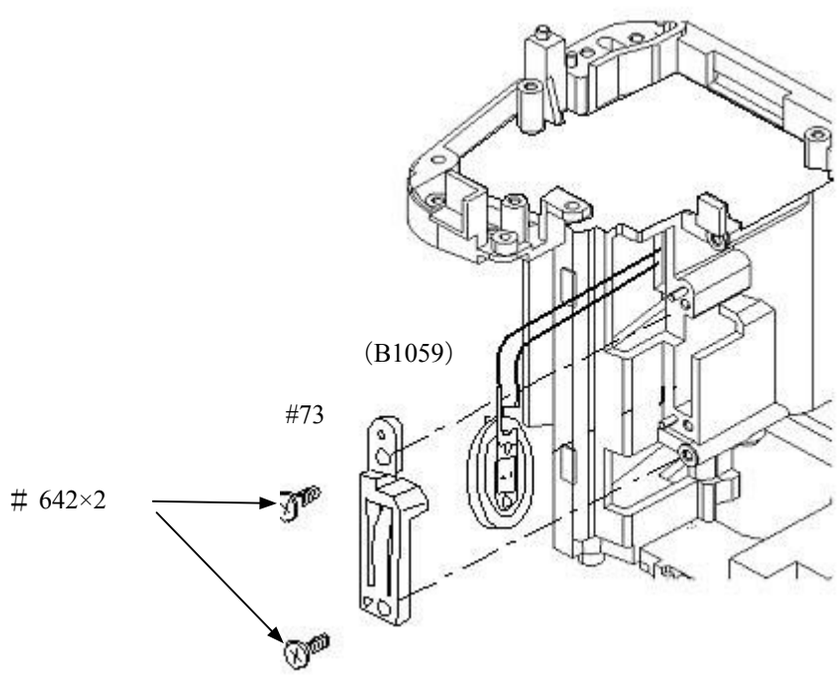
- Take out 3 screws (#673).
- Remove the retaining plate (#159).
- Remove the battery-extrusion spring (#158).
- Remove the electronic buzzer unit (#1055).



Clock battery unit

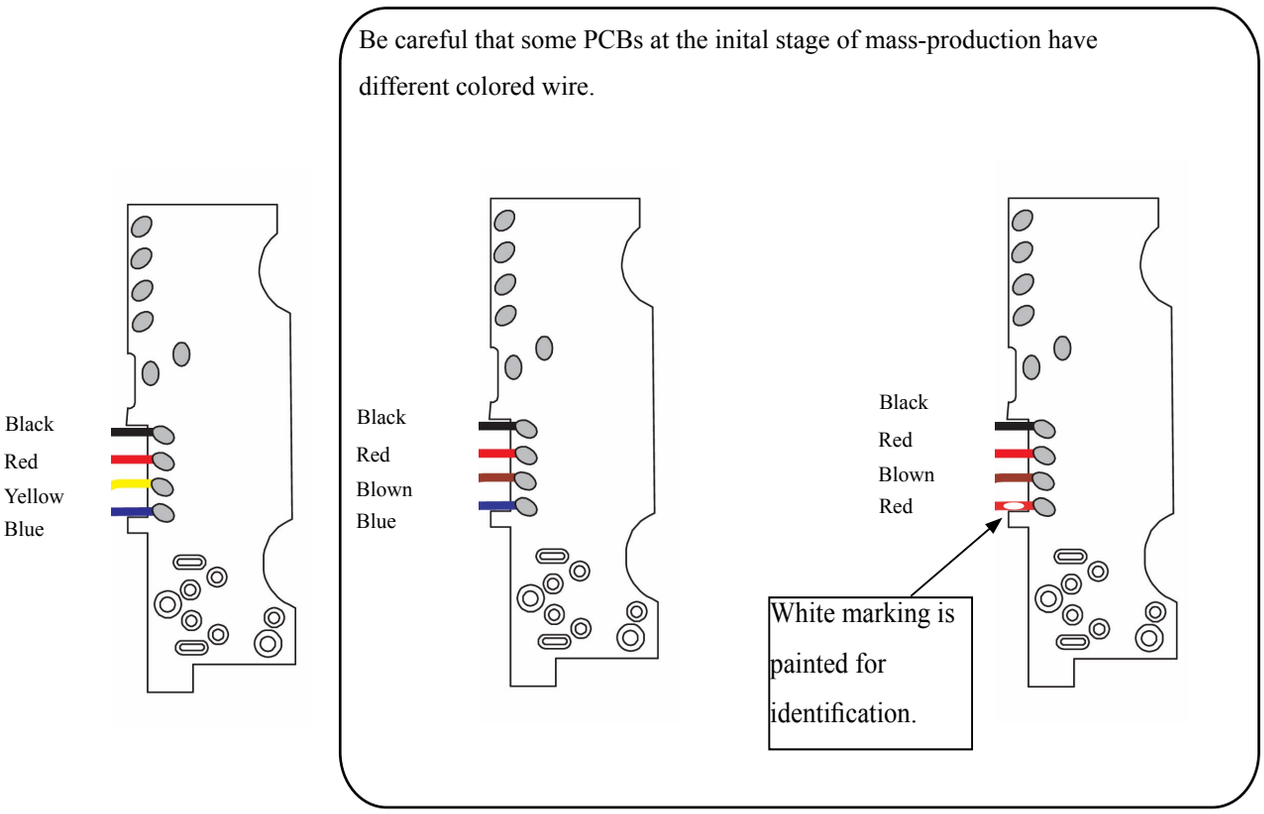
- Unsolder 2 wires of the clock battery unit.
- Remove 2 screws (#642).
- Remove the clock battery holder (#73).
- Remove the clock battery unit (B1059).





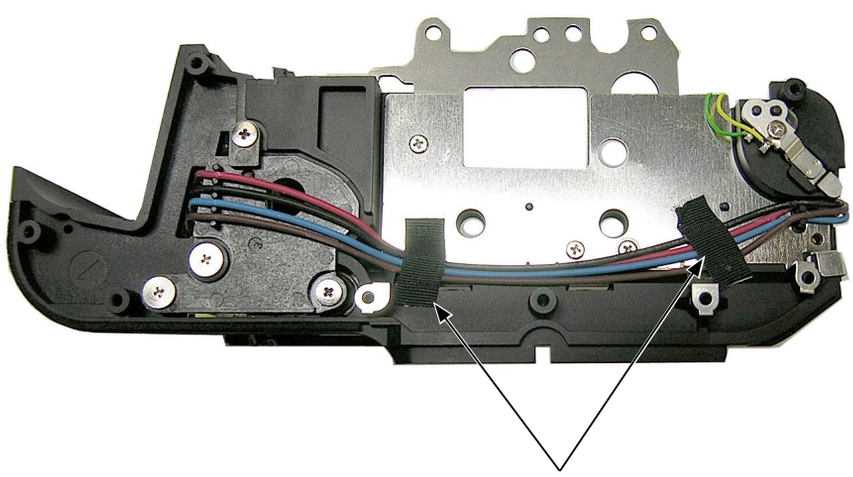
SB-PCBwires

・ Unsolder 4 wires of DC/DC PCB unit.



Bottom wires

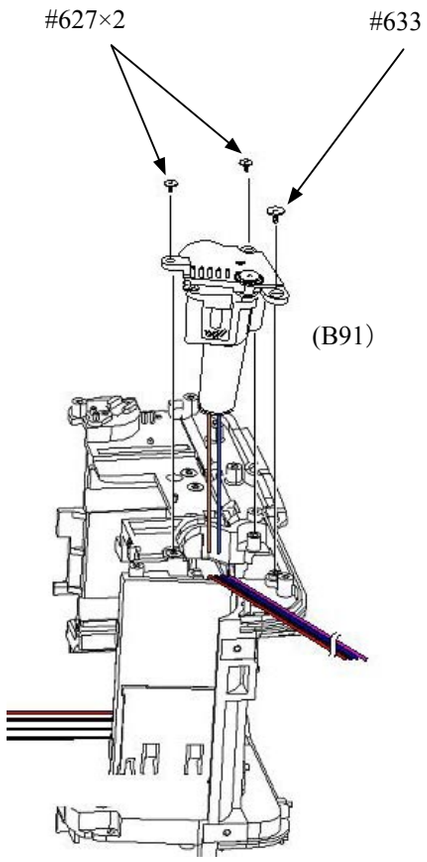
・ Remove 2 pieces of tape that arrange wires (#715).
・ Remove wires.



Wire arrangement tape
#715×2

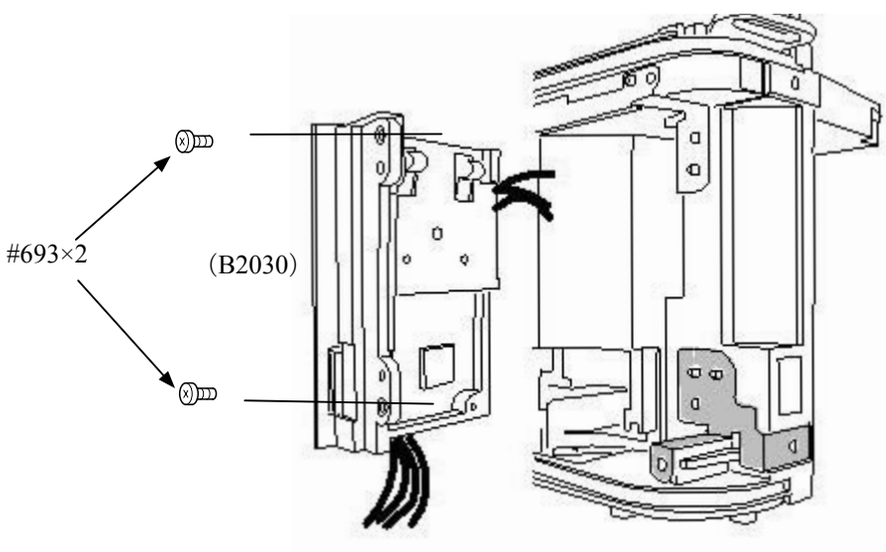
SQ PCB

- Take out 2 screws (#627).
- Take out the screw (#633).
- Remove the SQ-PCB (B91).



DC/DC PCB unit

- Take out 2 screws (#693).
- Remove the DC/DC PCB unit (B2030).

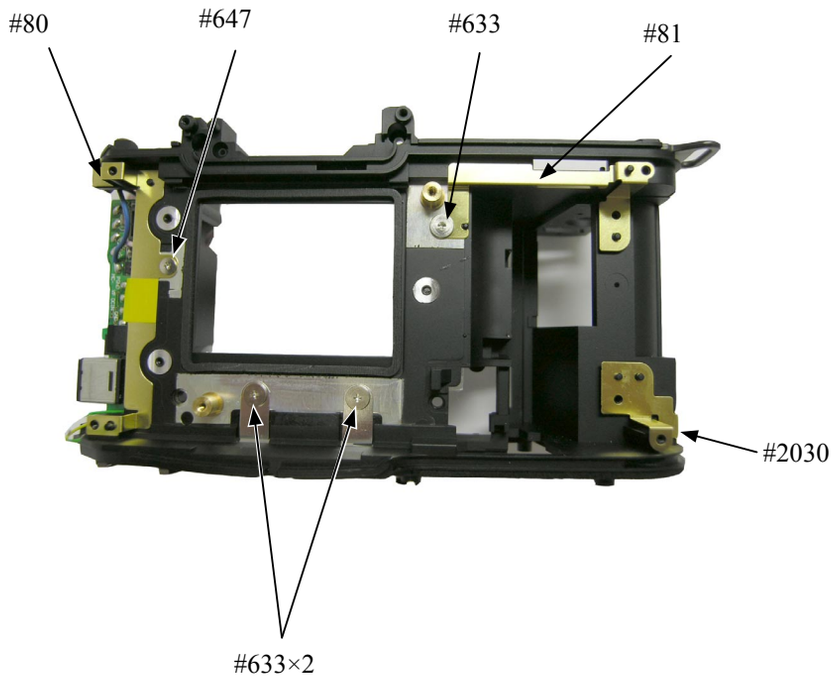


Lug plate / Bottom base unit

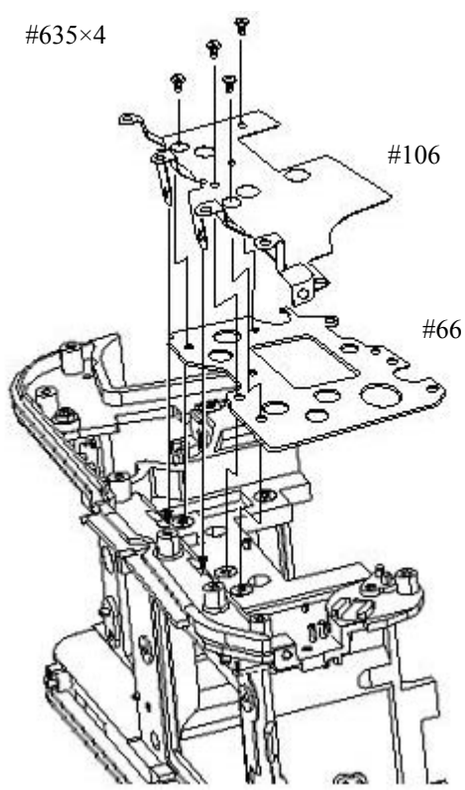
- Take out the screw (#647).
- Remove #80.

- Take out the screw (#633).
- Remove #81.

- Remove #2030.
- Take out 2 screws (#633).



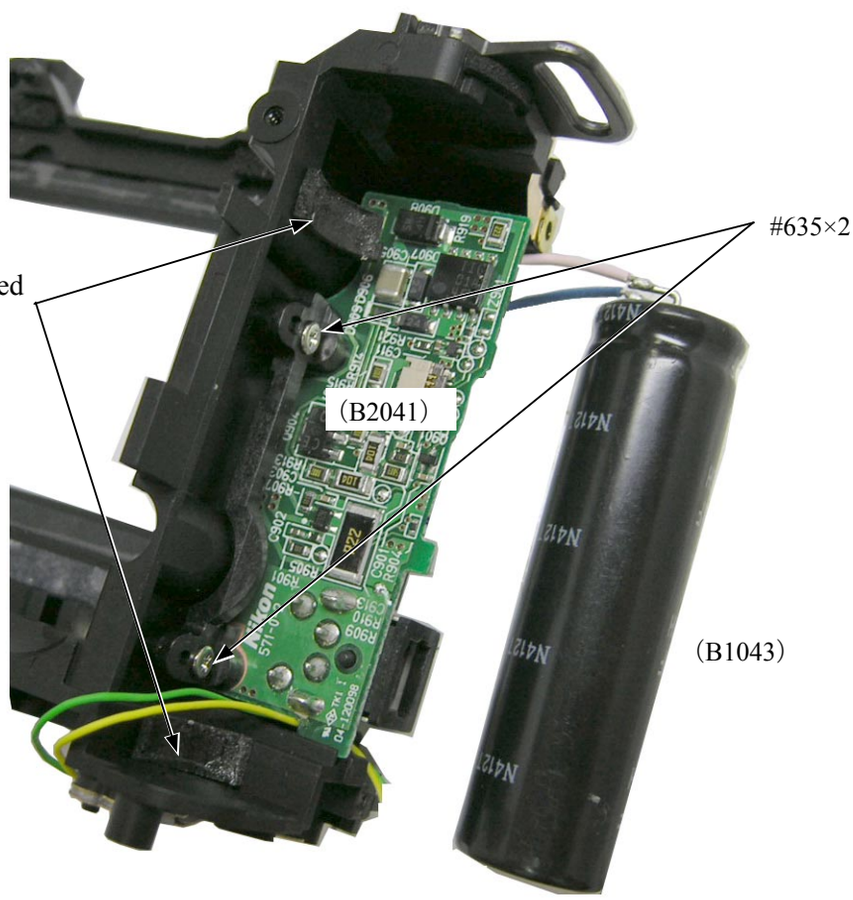
- Take out 4 screws (#635).
- Remove the bottom base unit (#66) and bottom conduction plate (#106).



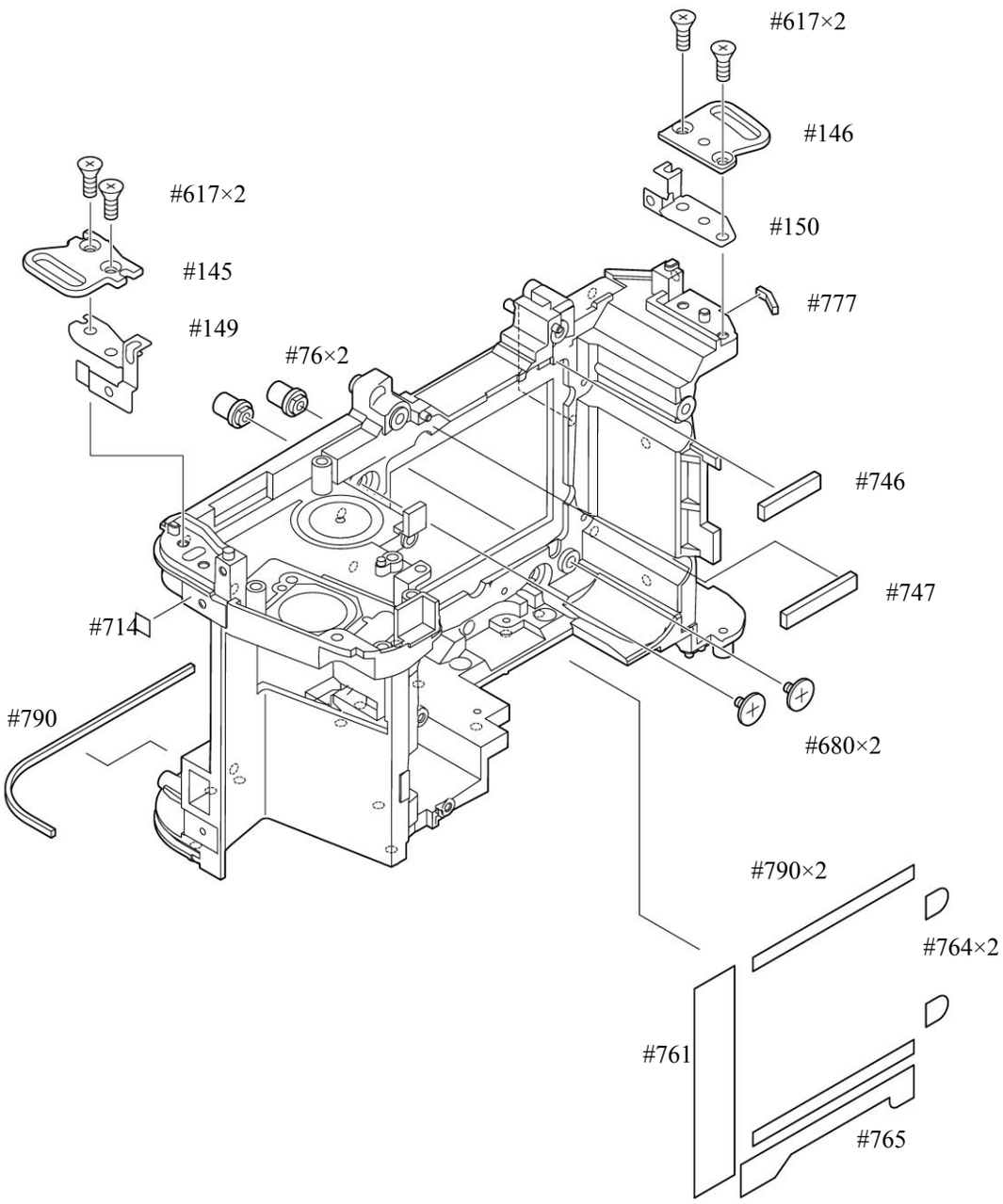
SB unit

- Remove the condenser (B1043).
- Take out 2 screws (#635).
- Remove the SB unit (B2041).

The condensor (#B1043) is fixed with 2 pieces of the both-sided adhesive tape (#754).



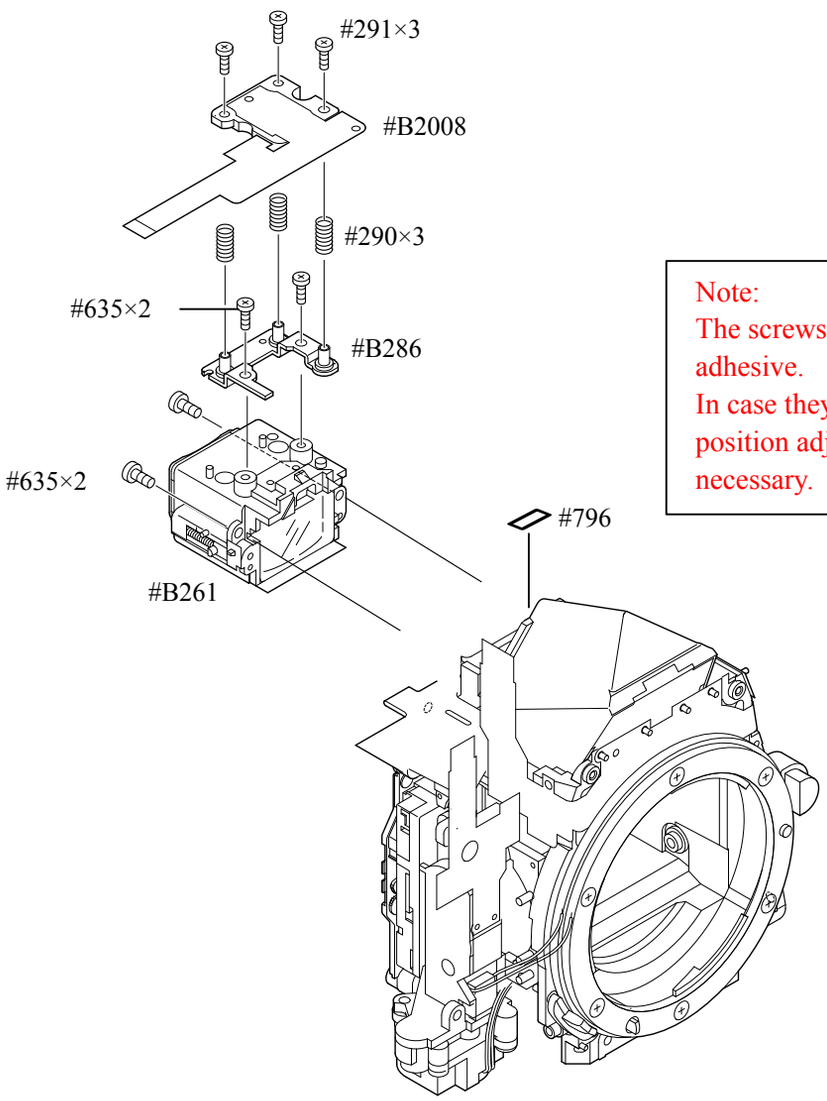
Rear body small parts



3. Front Body

Eyepiece unit Metering FPC unit

- Take out 3 screws (#291) to remove the metering FPC unit (#B2008).
- 3 springs (#290) come off.
- Take out 2 screws (#635) to remove the metering FPC-base unit (#B286).
- Remove the tape (#796).
- Take out the screw (#635) to remove the eyepiece-lens unit (#B261).



Note:
The screws (#291) are attached with the adhesive.
In case they (#291) are moved, AE CCD position adjustment (ref. Assembly) becomes necessary.