

作成承認印

配布許可印



D200 VBA13001

REPAIR MANUAL

Nikon | NIKON CORPORATION
Tokyo, Japan

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Specifications

| | |
|--------------------------|---|
| Type | Single-lens reflex digital camera with interchangeable lenses |
| Effective pixels | 10.2 million |
| LBCAST image sensor | 23.6× 15.8 mm; total pixels: 10.92 million |
| Image size (pixels) | 3872× 2592 (L), 2896× 1944 (M), 1936× 1296 (S) |
| Lens mount | Nikon F mount (with AF coupling and AF contacts) |
| Compatible lenses | |
| Type G or D AF Nikkor | All functions supported (except IX Nikkor) |
| Micro Nikkor 85 mm F2.8D | All functions supported except autofocus and some exposure modes |
| Other AF Nikkor | All functions supported except 3D color matrix metering II and 3D multi-sensor balanced fill-flash for digital SLR |
| AI-P Nikkor | All functions supported except 3D color matrix metering II , 3D multi-sensor balanced fill-flash for digital SLR, and autofocus |
| Non-CPU | Can be used in exposure modes A and M; electronic range finder can be used if maximum aperture is f/5.6 or faster; color matrix metering, multi-sensor balanced fill-flash for digital SLR, and aperture value display supported if user provides lens data (Non-Ai lens cannot be used.) |
| Picture angle | Equivalent in 35-mm format is approximately 1.5 times lens focal length |
| Viewfinder | Fixed eyelevel pentaprism |
| Diopter adjustment | - 2 ~ + 1 m ⁻¹ |
| Eyepoint | 19.5 mm (-1.0 m ⁻¹) |
| Focusing screen | Type B BriteView clear matte screen Mark II provided (Focus frame; grid line display for composition) |
| Frame coverage | Approximately 95% of lens (vertical and horizontal) |
| Magnification | Approximately 0.94× (50-mm F1.4 lens at infinity; -1.0 m ⁻¹) |
| Reflex mirror | Quick return |
| Lens aperture | Instant return with depth-of-field preview |

| | |
|------------------------------|--|
| Focus-area selection | Normal frame (11 focus areas): Single area or group can be selected from 11 focus areas Wide frame (7 focus areas): Single area can be selected from 7 focus areas |
| Lens servo | Instant single-servo AF (S); continuous-servo AF (C); manual (M); predictive focus tracking automatically activated according to subject status in continuous-servo AF (C) |
| Autofocus | TTL phase detection by Nikon Multi-CAM2000 autofocus module |
| Detection range | -1- +19 EV (ISO 100, room temperature 20 °C/68 °F) |
| AF-area mode | Single-area AF, dynamic-area AF, group dynamic-AF, dynamic-area AF with closest subject priority |
| Focus lock | Focus can be locked by pressing shutter-release button half-way (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 supported with type G and D lenses; color matrix metering II available with other CPU lenses; and color matrix metering available with non-CPU lenses if user provides lens data |
| Center-weighted | Weight of 75% given to 6, 8, 10, or 13-mm circle in center of frame, or weighting based on average of entire frame |
| Spot | Meters 3-mm circle (about 2% of frame); metered area linked to selected focus area (with non-CPU lens, fixed in center) |
| Range | EV0 ~ 20 (3D color matrix or center weighted metering) EV2 ~ 20 (spot metering) (ISO 100 equivalent, f/1.4 lens, 20°C /68°F) |
| Exposure meter coupling | Combined CPU and AI |
| Exposure modes | Programmed auto with flexible program; shutter-priority auto; aperture priority auto; manual |
| Exposure compensation | ±5EV in increments of 1/3, 1/2, or 1 EV |
| Bracketing | Exposure and/or flash bracketing (2-9 exposures in increments of 1/3, 1/2, 2/3, or 1EV) WB (2-9 exposures in increments of 1- 3EV) |
| Exposure lock | Luminosity locked at detected value with AE-L/AF-L button |
| Shutter | Electronically-controlled vertical-travel focal-plane shutter |
| Speed | 30- 1/8000 in steps of 1/3, 1/2, or 1EV, bulb |
| Sensitivity | 100 -1600 (in steps of 1/3, 1/2, or 1EV), auto gain to ISO 1600 equivalent |
| White balance | Auto (TTL white-balance control with 1,005 pixels RGB sensor), six manual modes with fine-tuning, color temperature setting, preset, white balance bracketing |
| Built-in Speedlight | Pop-up Speedlight with button release |
| Guide number (at 20° C/68°F) | ISO 100: approximately 12 (Manual full-flash: approx. 13) |



| Flash | |
|--------------------------|--|
| Sync contact | X-contact only; flash synchronization at up to 1/250 s |
| Flash control | TTL flash control by 1005-segment RGB sensor: - i-TTL balanced fill-flash for digital SLR (built in Speedlight or SB-800/SB-600 with other meterings than spot metering) - Standard i-TTL balanced fill-flash for digital SLR (built in Speedlight or SB-800/SB-600 with spot metering) (Can be set on speedlight when SB-800/SB-600 is used) Auto aperture is available with CPU lenses and SB-800 Non-TTL auto is available with SB-800, SB-80DX, SB-28DX, SB-27, SB-22S, etc Range-priority manual is available with SB-800 |
| Sync modes | Front curtain sync (normal), slow sync, rear-curtain sync, red-eye reduction, red-eye reduction with slow sync |
| Flash-ready indicator | Lights when B-800, SB-600, SB-80DX, SB-28DX, SB-50DX, SB-28, SB-27, B-22S, etc, is fully charged; blinks for 3 sec. after flash is fired at full output |
| Accessory shoe | Standard ISO hot-shoe contact with safety lock |
| Creative Lighting System | - with SB-800, SB-600, or SB-R200, supports Advanced Wireless Lighting (with SB-600 and SB-R200, remote only) Setting Comand mode can control built-in Speedlight as Master flash - Supports Auto FP High-Speed Sync, Flash Color Information Communication, modeling illumination, and FV lock |

| | |
|------------------------------|--|
| Storage | |
| Media | Type I and II CompactFlash memory cards; Microdrives |
| File system | Compliant with DCF2.0 (Design Rule for Camera File Systems) and DPOF (Digital Print Order Format) |
| Compression | - Compressed NEF (RAW): 12-bit (about 50% ~ 60%) compression - JPEG baseline-compliant (size priority, image priority can be selected) |
| Self-timer | Electronically controlled timer with 2, 5, 10, and 20 sec. duration |
| Depth-of-field preview | Lens aperture stopped down when depth-of-field preview button is pressed. Stopped down up to set aperture value with A · M mode; up to control aperture value with P · S mode. |
| Monitor | 2.5", 230,000-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 | 1/4 (ISO 1222) |
| Firmware updates | Can be updated by users |
| Language | German, English, Spanish, French, Korean, Italian, Dutch, Portuguese, Russian, Swedish, simplified Chinese, and Japanese |
| Power source | - One rechargeable Nikon EN-EL3e lithium-ion battery Voltage 7.4V DC [Quick charger MH-18a] is used - MB-D200 multi-power battery pack (available separately) with one or two rechargeable Nikon EN-EL3e lithium-ion batteries or six (LR6 (AA) alkaline, ZR6 nickel-manganese, or HR6 nickel-metal-hydride) batteries - EH-6 AC adapter (available separately) |
| Dimensions (W×H×D) | Approximately 147×113× 74 mm |
| Weight | Approximately 830g without battery, memory card, body cap, or LCD monitor cover |
| Operating environment | |
| Temperature | 0 ~ 40°C |
| 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 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 and Assembly

| | |
|--|--|
|  WARNING | |
|  | <ul style="list-style-type: none"> ● 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. |

Caution:

- ① In disassembly/(re)assembly, be sure to use conductive mat (J5033) and wrist strap (J5033-5), in order to protect electric parts from static electricity.
- ② Before disassembling, be sure to remove batteries or AC power cord.
- ③ In disassembling, be sure to memorize the processing state of wires and FPC, screws to be fixed and their types, etc.
- ④ The low-pass filter of the image PCB is easily damaged. Handle it very carefully.

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| Points to notice for Lead-free solder products |
| <ul style="list-style-type: none"> ▪ 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. |

Caution:

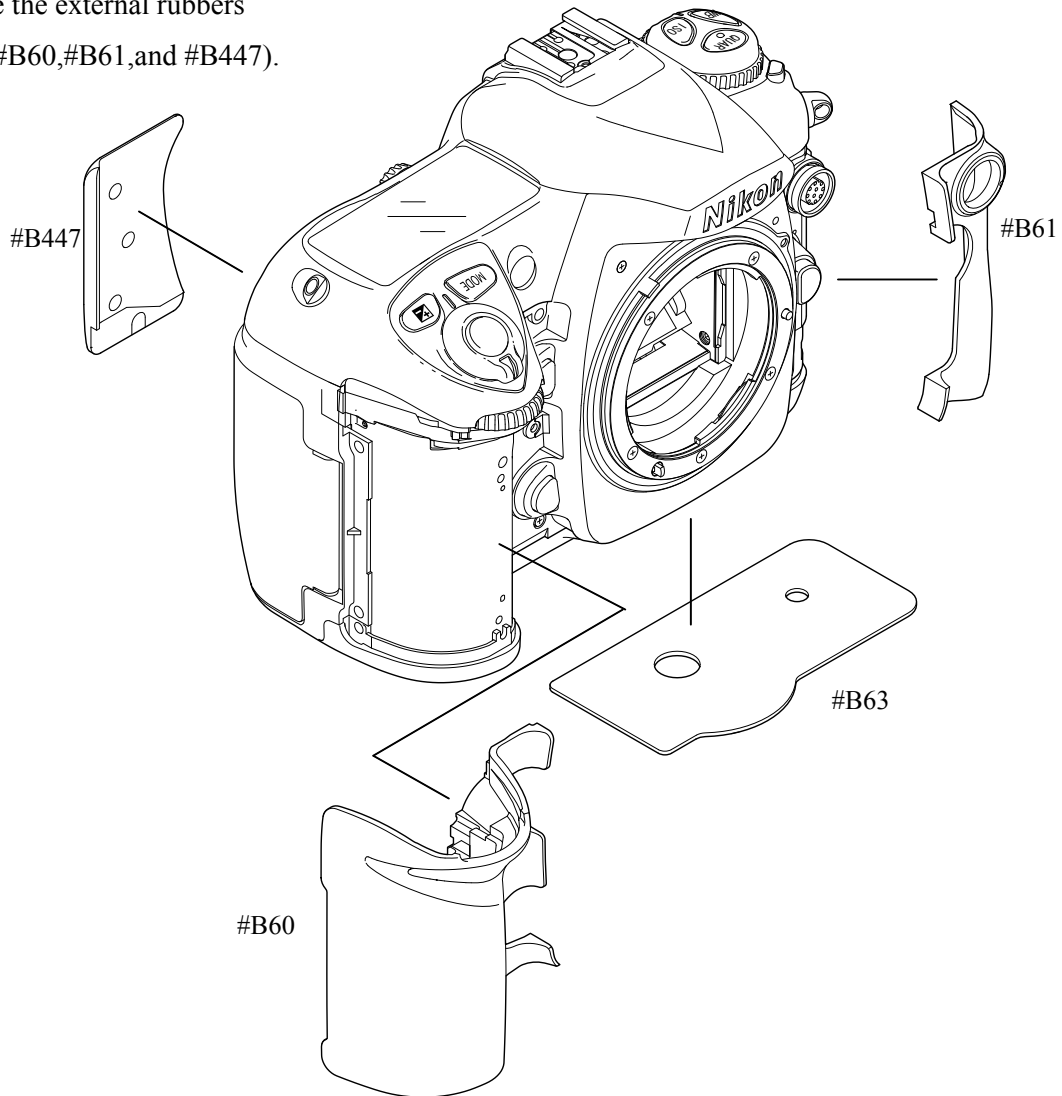
When "Separation of Front body from Rear body", "Disassembly of CCD/FPC unit" and "Disassembly of Bayonet" are performed, be sure to carry out "RESET AF-DEFOCUS COMPENSATION" of the D200 adjustment software after assembly.

Disassembly

1. Separate Front and Rear bodies

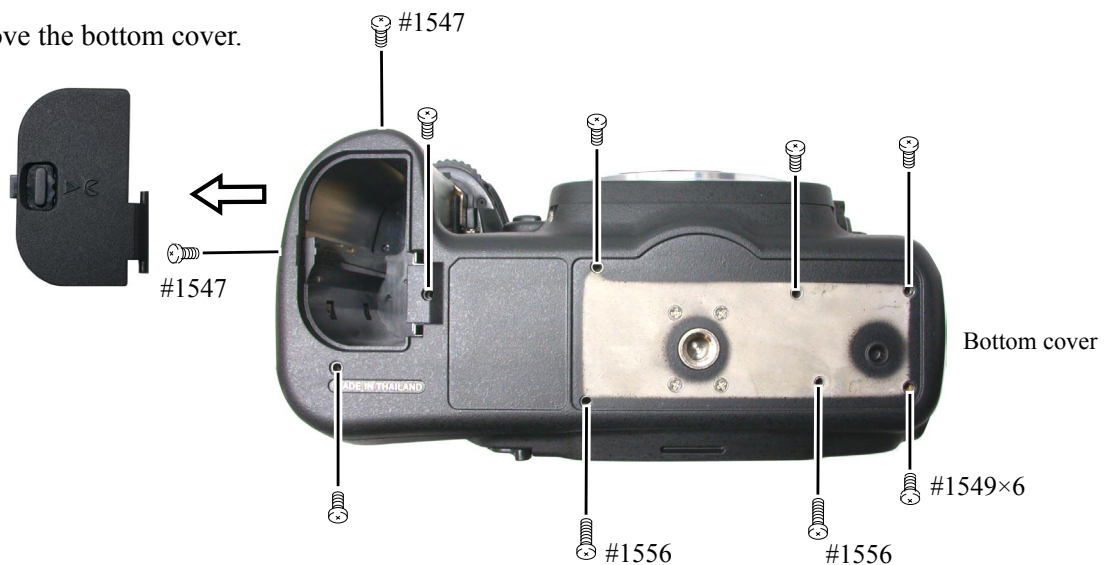
External rubber

- Remove the external rubbers (#B63,#B60,#B61,and #B447).



Bottom cover

- Remove the battery lid (by tilting and pulling it).
- Take out two screws (#1556), six screws (#1549) and two screws (#1547).
- Remove the bottom cover.



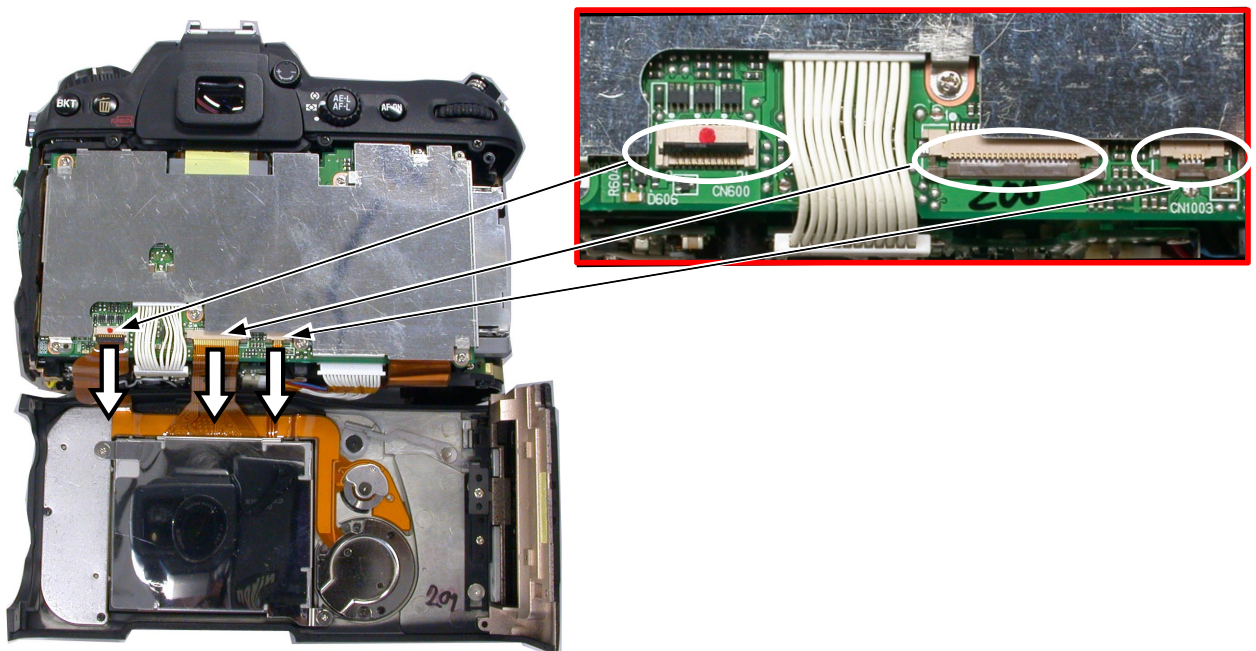
Rear cover


- Take out two screws (#1552), two screws (#1547) and one screw (#1549).
- Remove the rear cover.



• Be careful NOT to cut the TFT-PCB connection FPC that is at the lower side of the rear cover.

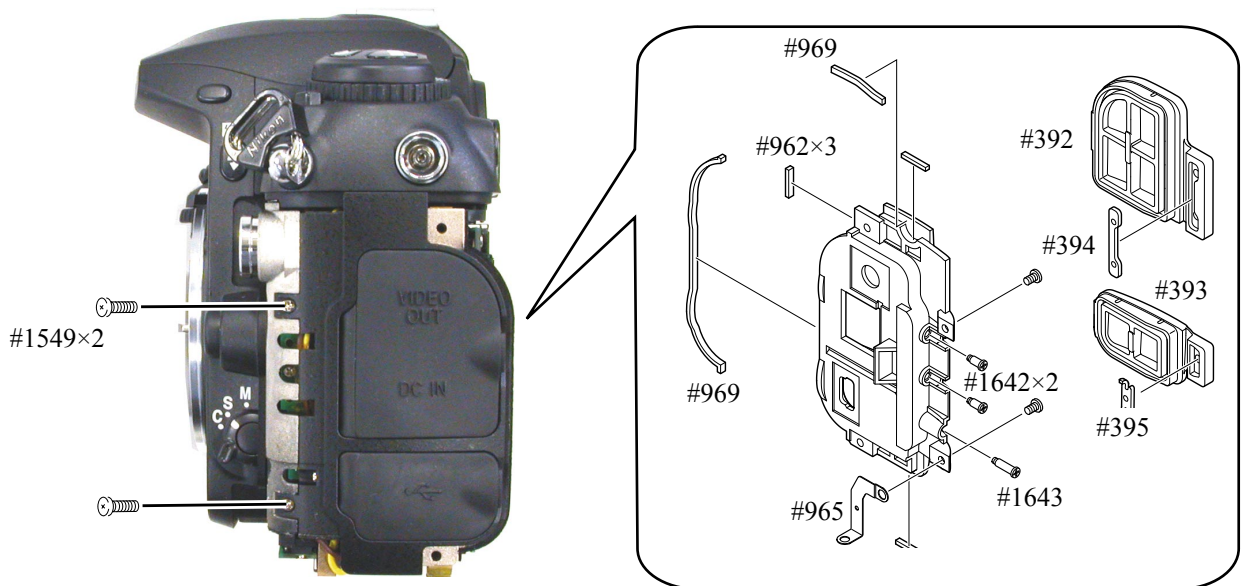
- Remove the three TFT-PCB connection FPCs from the connector.



| | |
|---|--|
| ⚠ WARNING | |
|  | <ul style="list-style-type: none"> ● 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. |

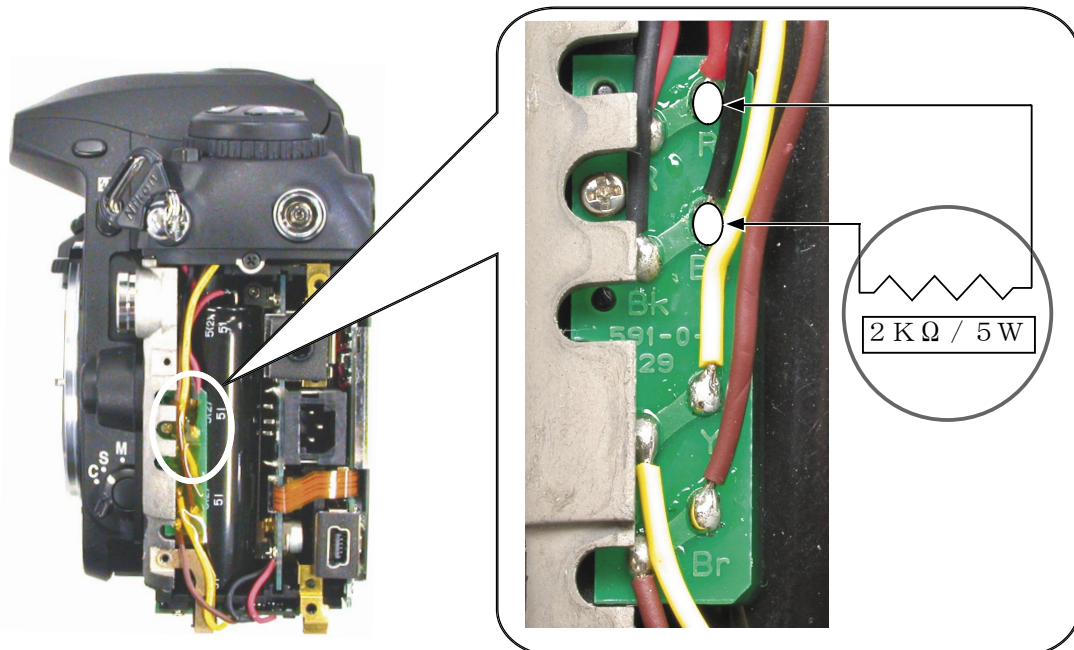
I/F cover

- Take out two screws (#1549).
- Remove the I/F cover unit.

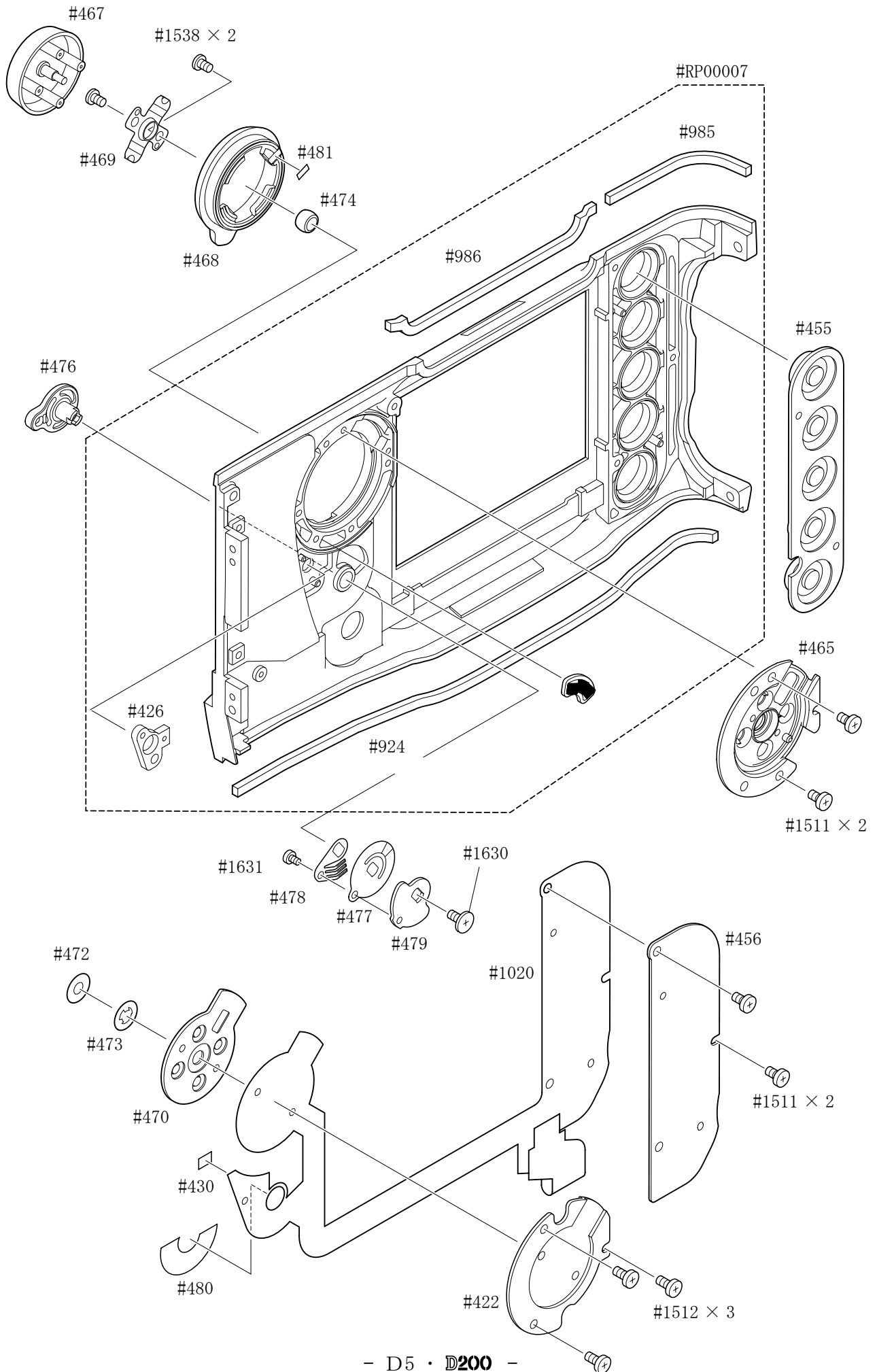


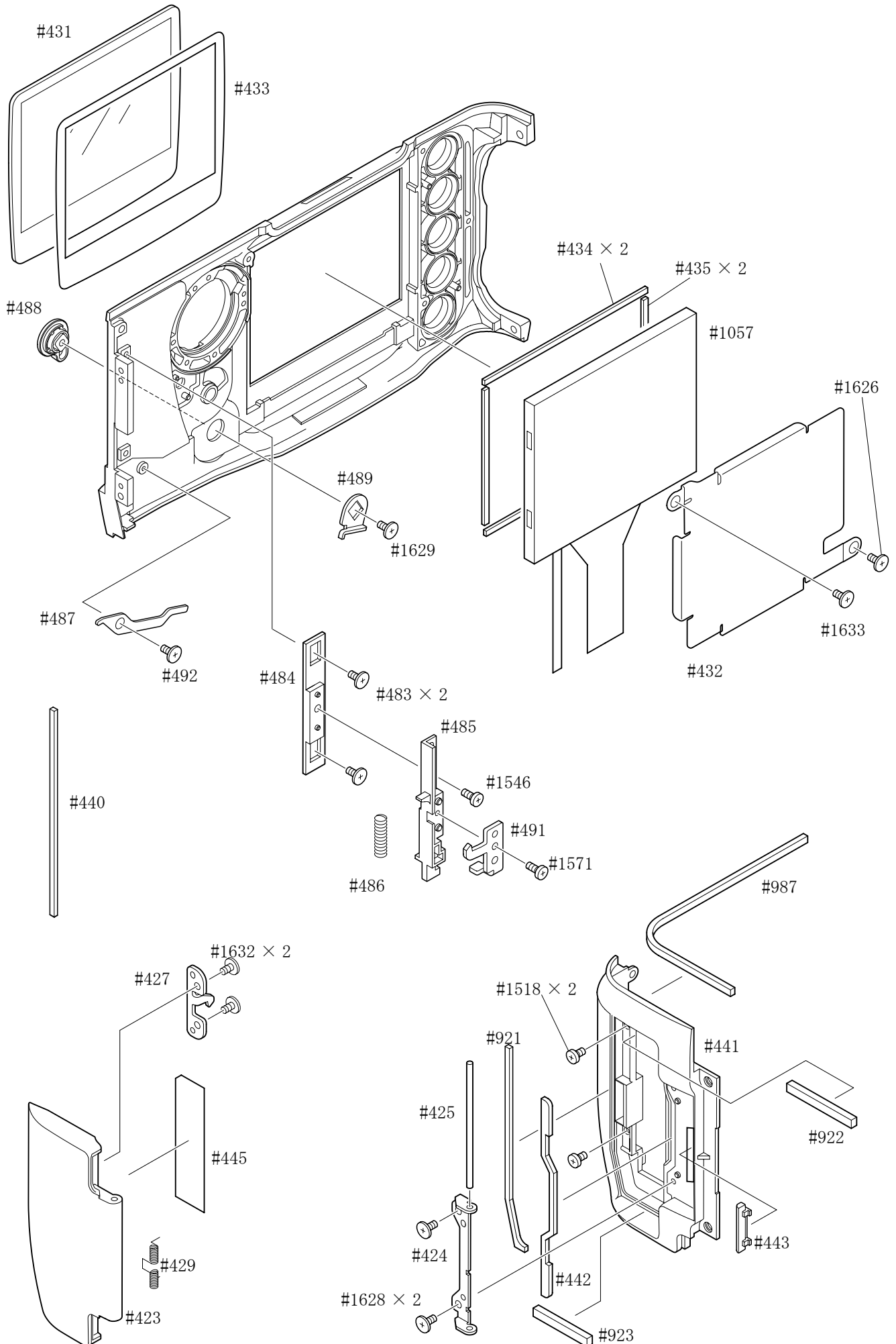
Discharge of Main condenser

- Discharge the main condenser .



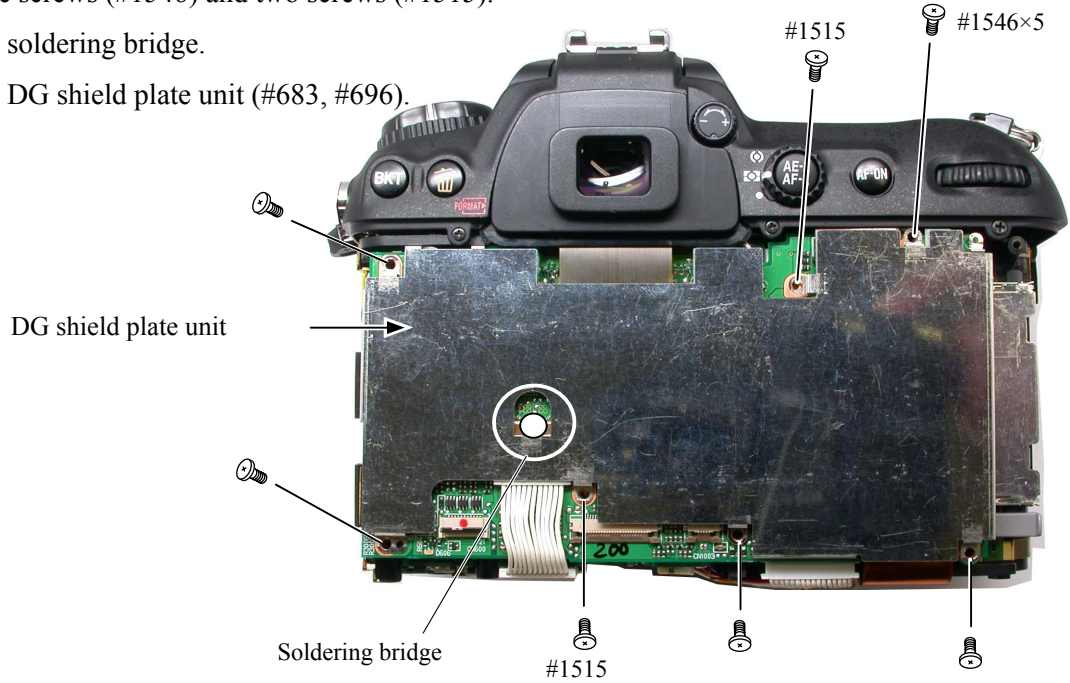
Disassemble Rear Cover





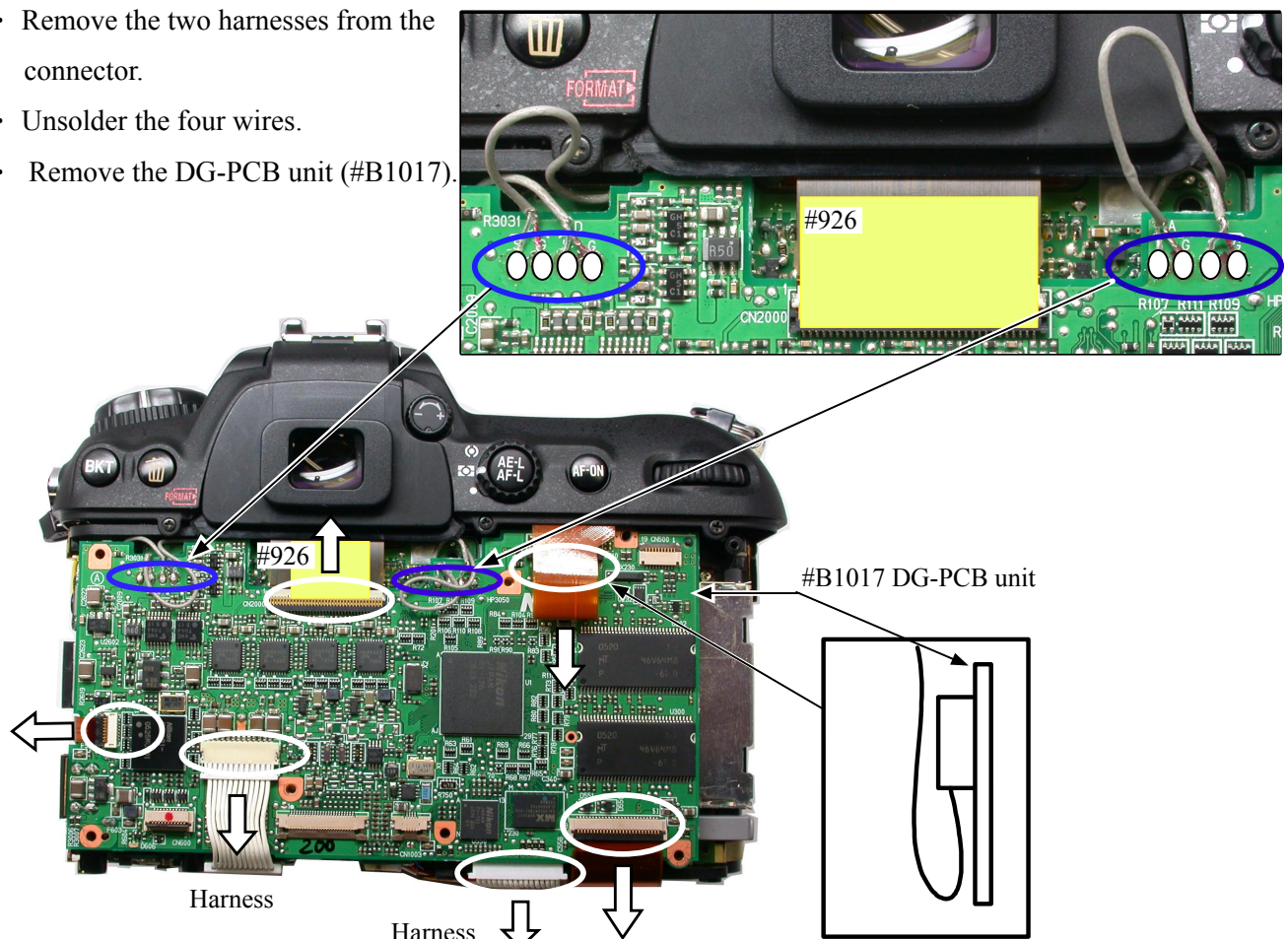
DG shield plate

- Take out five screws (#1546) and two screws (#1515).
- Remove the soldering bridge.
- Remove the DG shield plate unit (#683, #696).



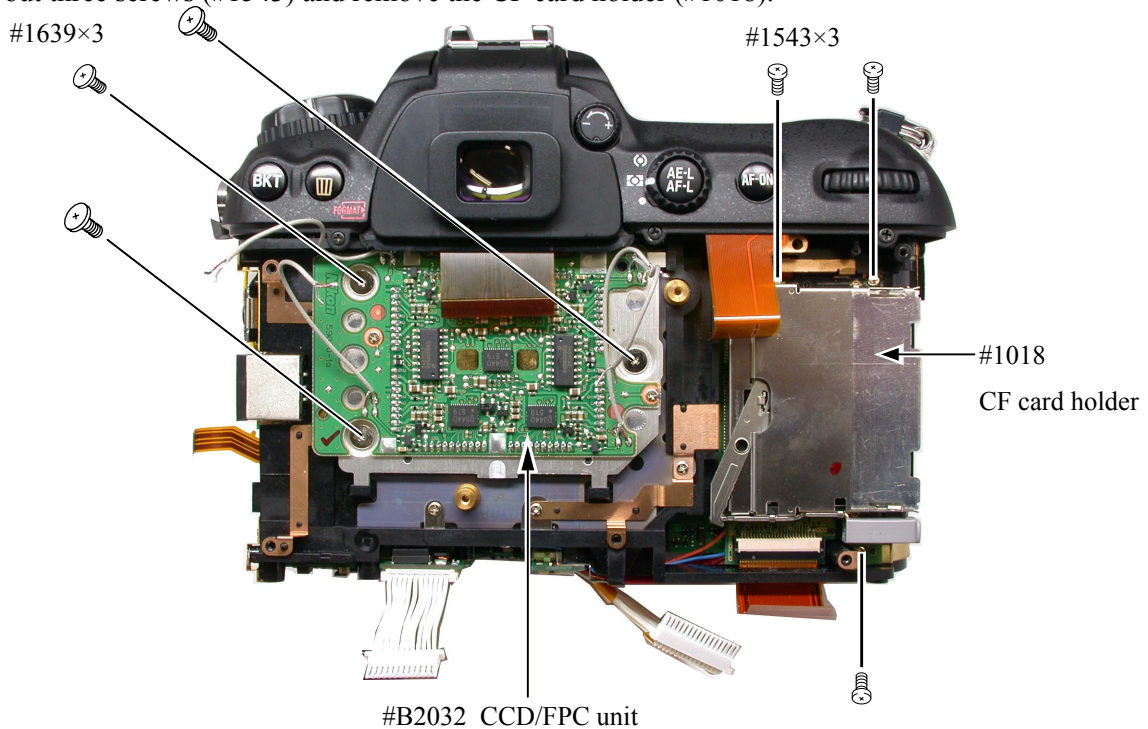
DG-PCB unit

- Remove the tape (#926).
- Remove five FPCs from the connector.
- Remove the two harnesses from the connector.
- Unsolder the four wires.
- Remove the DG-PCB unit (#B1017).

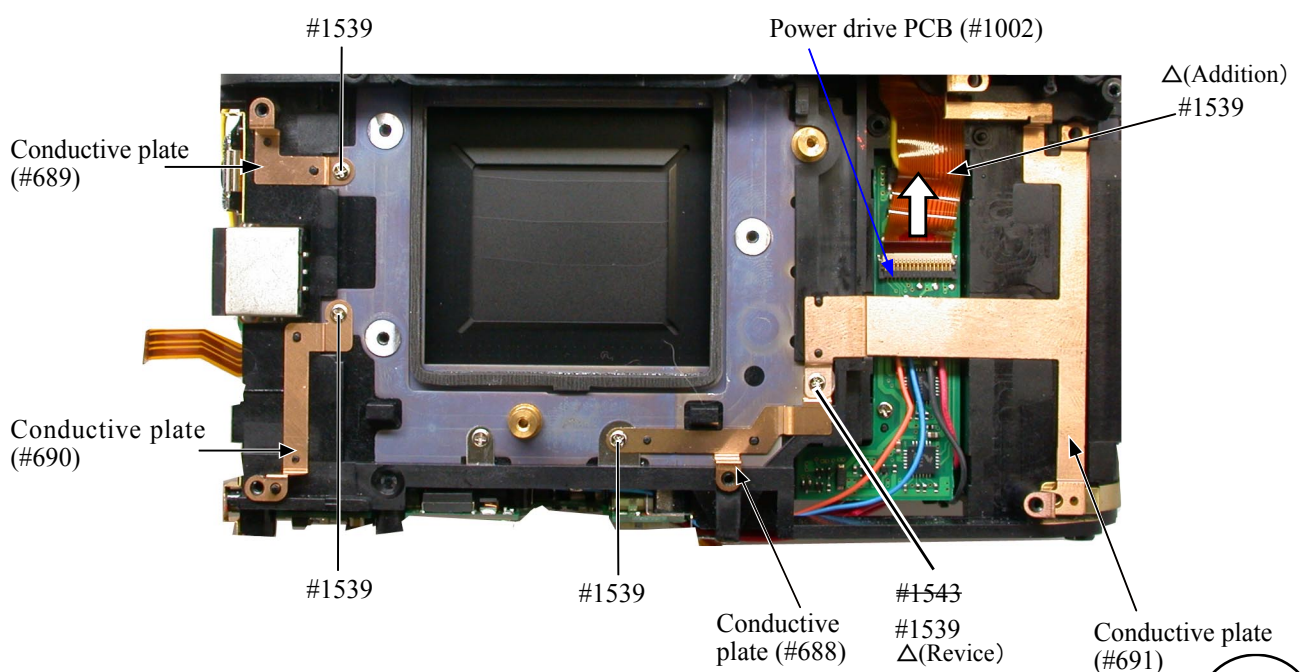


CCD/FPC unit
CF card holder

- Take out three screws (#1639) and remove the CCD/FPC unit (#B2032).
- Take out three screws (#1543) and remove the CF card holder (#1018).

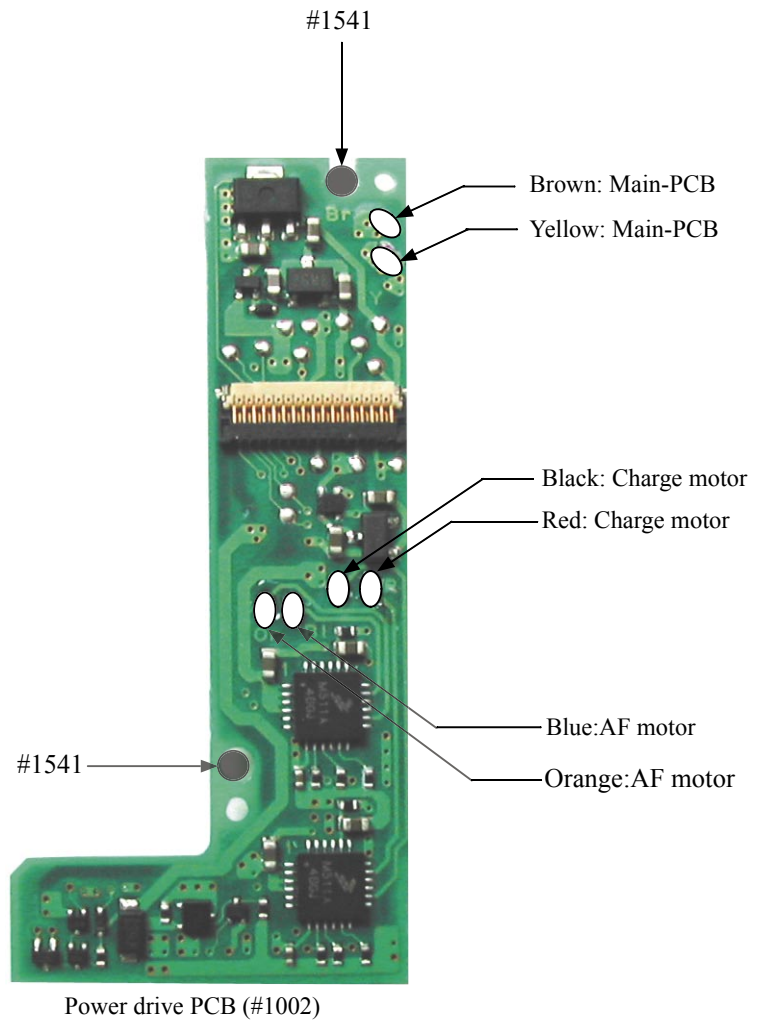


- Take out the screw (#1539) and remove the conductive plate (#691).
- Take out four screws (#1539) and remove the conductive plates (#689, #690, and #688).
- Remove the main connection FPC (#1035) from the connector of the power drive PCB (#1002).

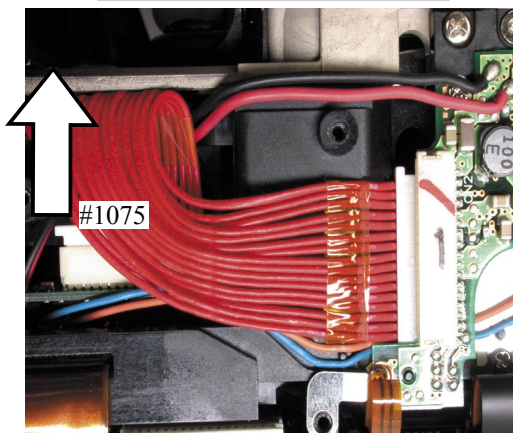


Power drive PCB

- Unsolder six wires.
- Remove the harness of the back of the power drive PCB.
- Take out two screws (#1541) and remove the power drive PCB.

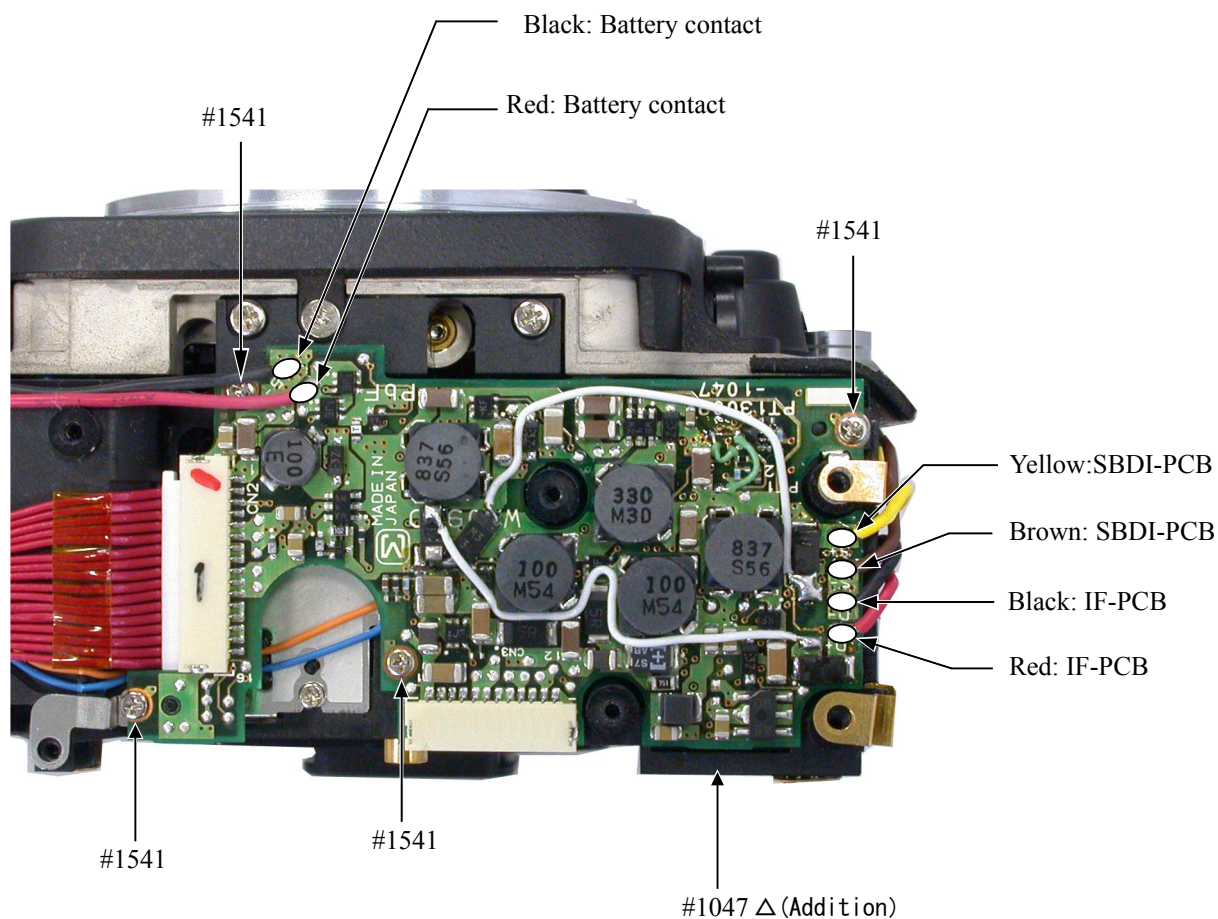


Harness: DC/DC PCB

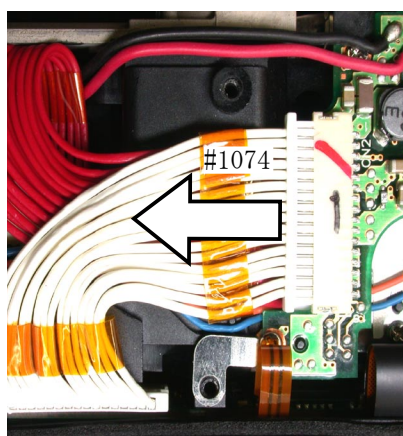


DC/DC PCB unit

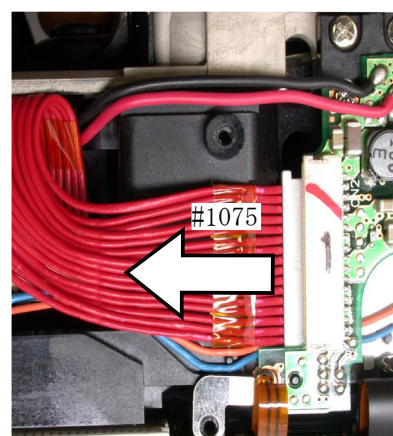
- Unsolder six wires.
- Take out four screws (#1541) of the DC/DC-PCB (#1047).
- Remove the harness (#1074) from the DC/DC-PCB (#1047).
- Remove the harness (#1075) from the DC/DC-PCB (#1047) and from the connector of the power drive PCB (#1002).



Harness: DG-PCB



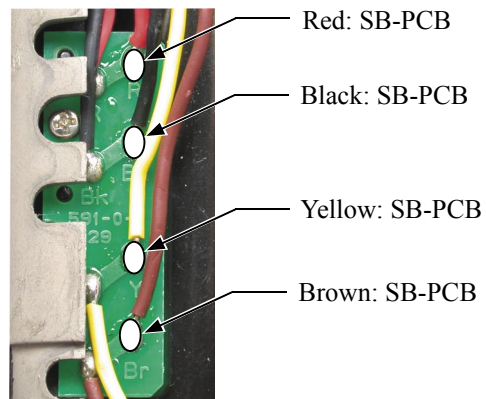
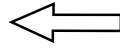
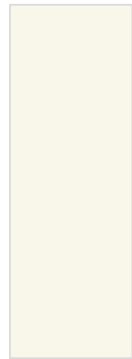
Harness: Power drive PCB



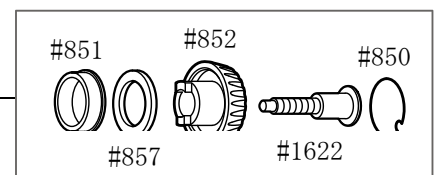
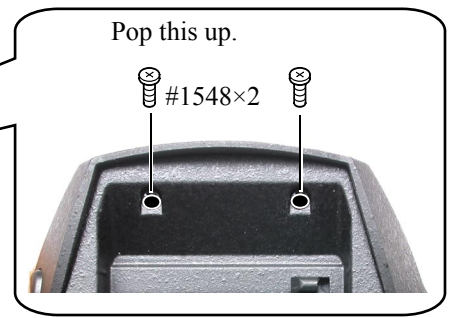
Top cover

- Remove the tape (#930).
- Unsolder four wires.

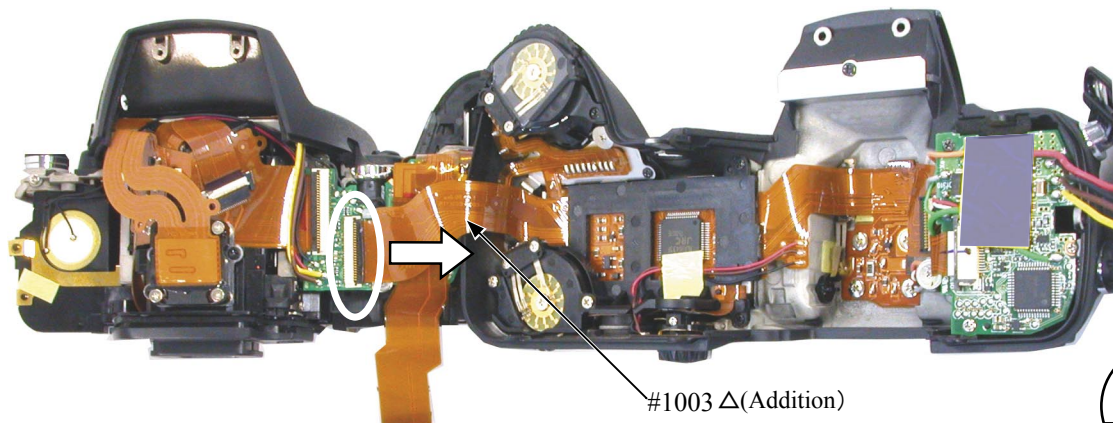
Tape (#930)



- Remove the cover (#850). Take out the screw (#1622), and remove the diopter adjustment knob unit (#852, #857, #851).
- Pop the SB up, and take out two screws (#1548).
- Take out two screws (#1511), two screws (#1547) and two screws (#1555).
- Lift the top cover unit slowly not to cut the FPC.



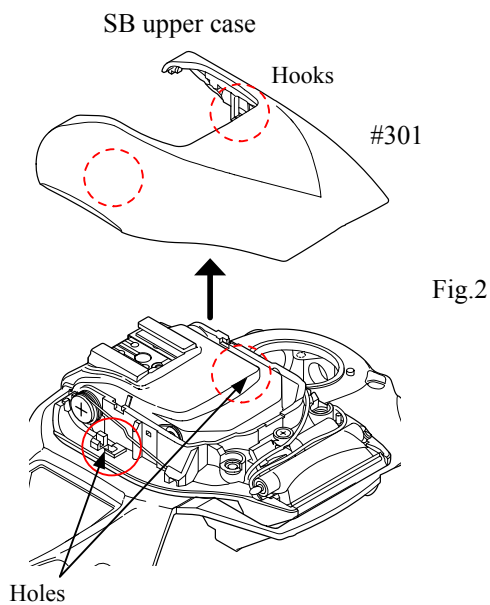
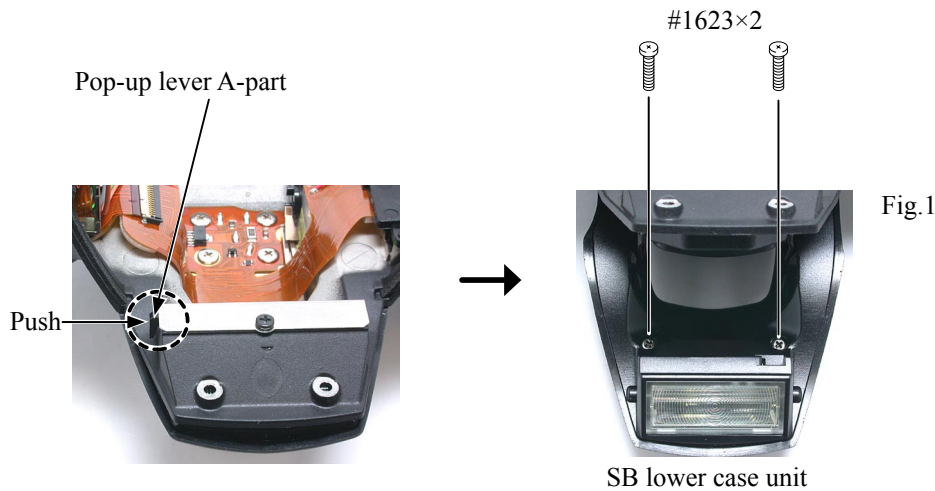
- Remove the top cover FPC (#1003) from the connector.



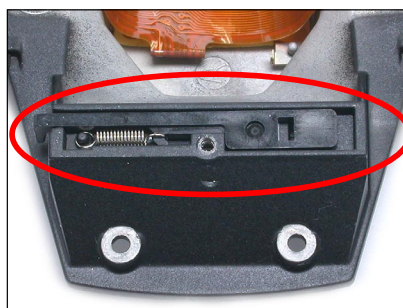
Disassembly of Top cover unit

SB upper case

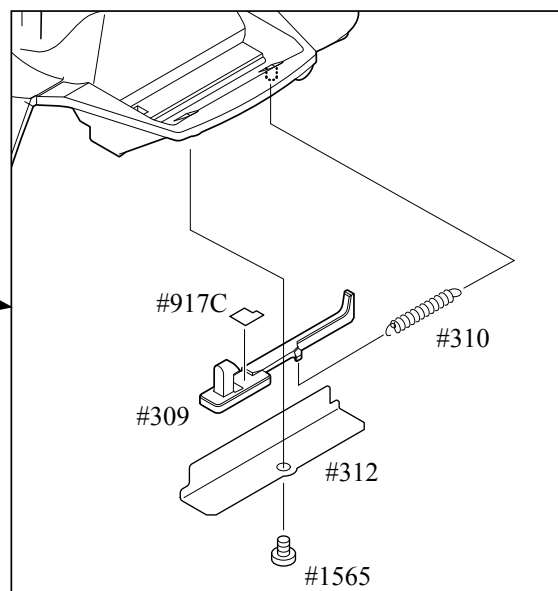
- Push the pop-up lever A-part of the top cover unit, and lift the built-in SB.
- Take out two screws (#1623). (Fig.1)
- Fold down #301 of the SB lower case on the top cover. Then while holding the hooks of the SB upper case from both sides by hand, release them from the two holes by sliding/tilting, then remove #301. (Fig.2)



SB lock cover



- Remove the spring (#310).
- #309 comes off.



Removal of Top cover FPC / Wires / SB-PCB

- Unsolder the three metering mode FPC lead wires.
- Unsolder the accessory shoe contact at four locations.

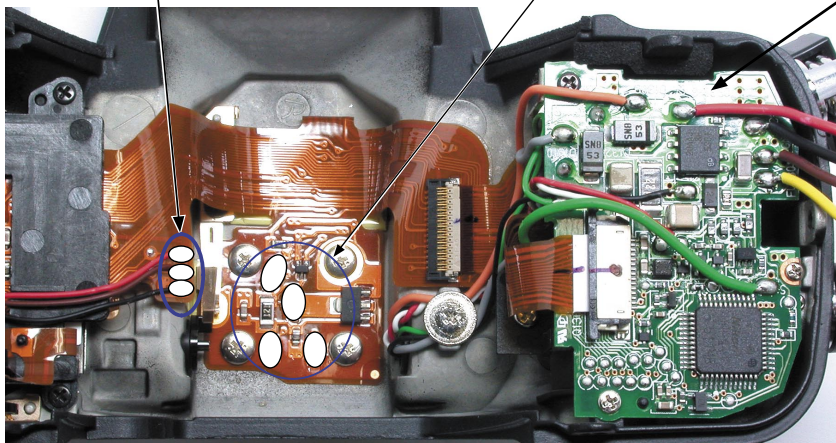
Metering mode FPC lead wire
~~Red×1, Brown×1, Black×1~~
 Red, Brown, Black Δ (Revise)

Accessory shoe contact×4

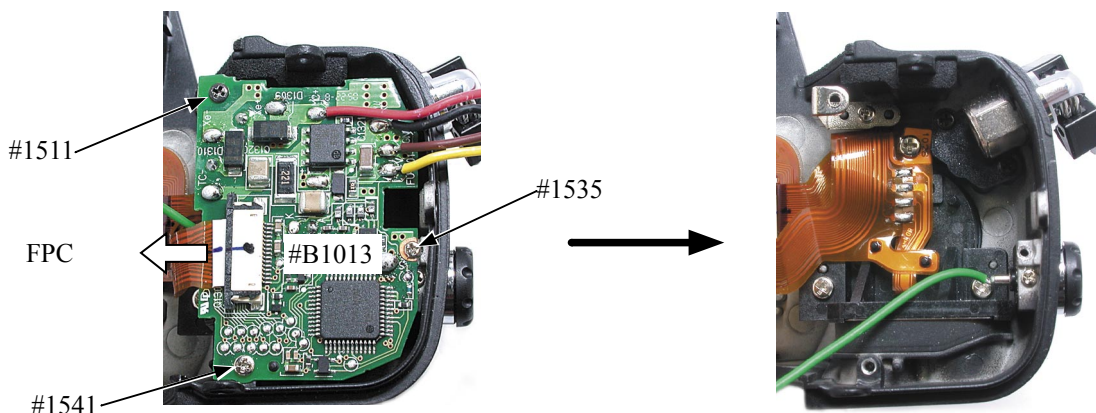
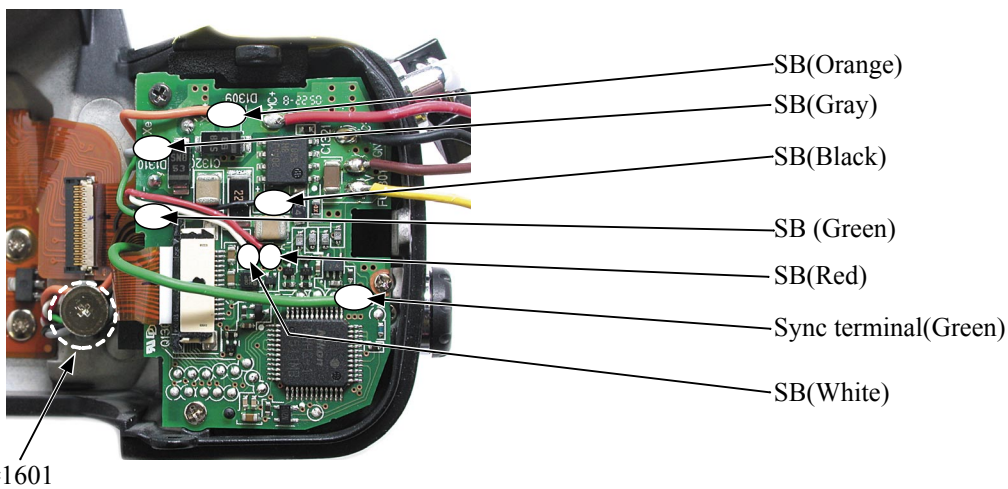
Δ (Addition)



• It demounts tapes.

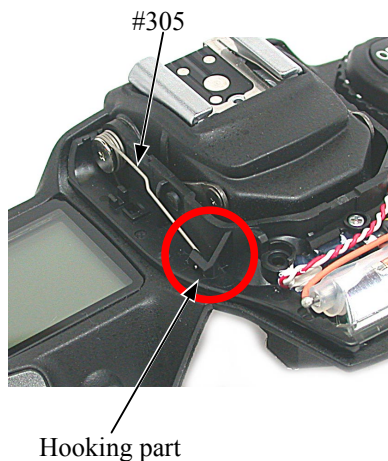
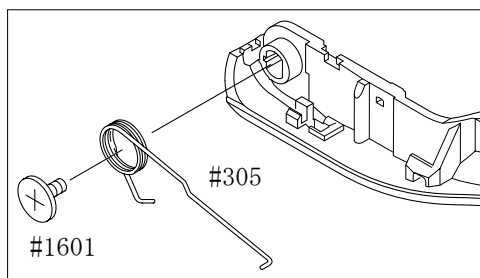


- Unsolder the seven lead wires of the SB-PCB.
- Take out the screw (#1601).
- Remove the FPC of SB-PCB (#B1013).
- Take out the screw (#1511).
- Take out the screw (#1535).
- Take out the screw (#1541).



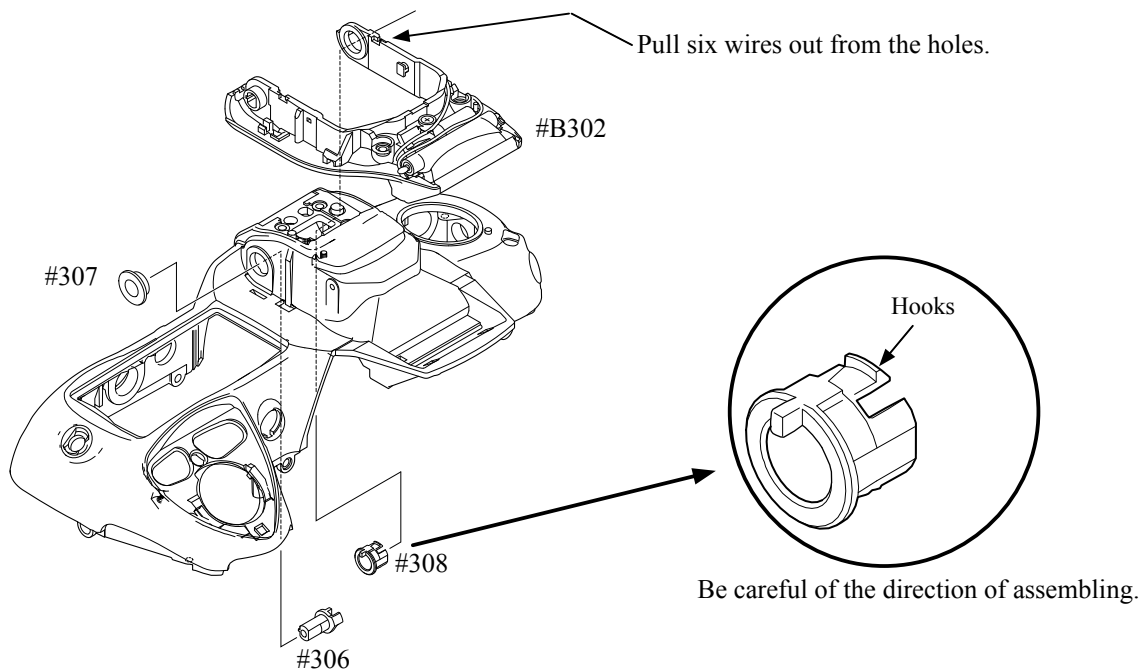
SB-up spring

- Remove the SB-up spring (#305) from the hooking part.
- Take out the screw (#1601) and remove the SB-up spring (#305).

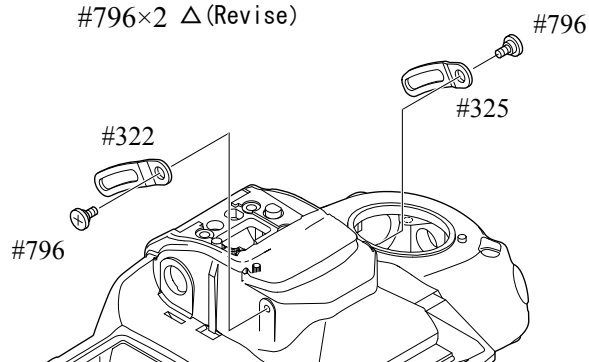


SB lower case unit

- Pull each wire from the holes.
- While releasing the two hooks of the collar (#308), remove #308.
- Remove the rotation axes (#306 and #307).
- Remove the SB lower case unit (#B302) from the top cover.

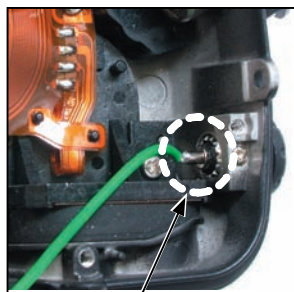
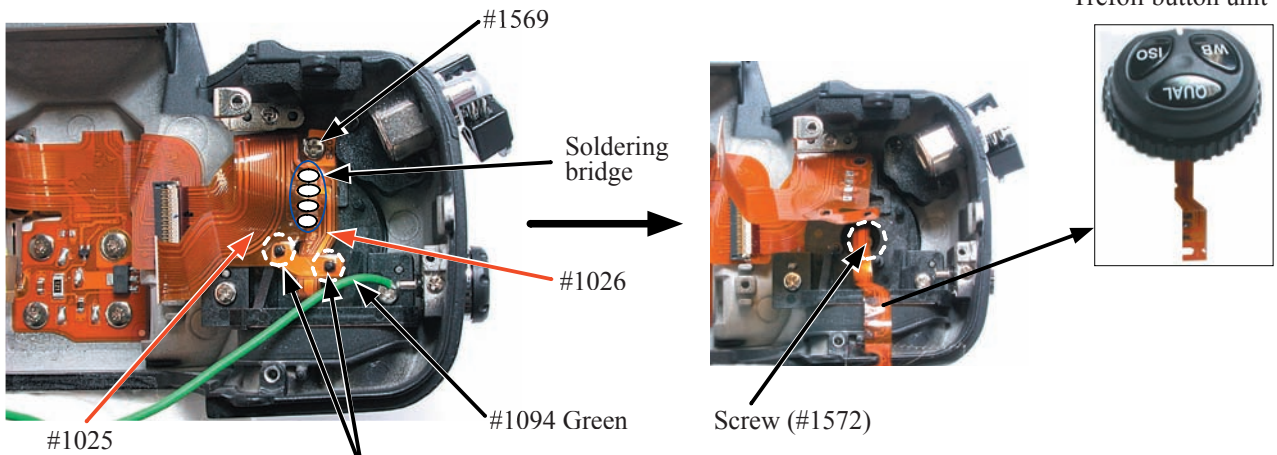


- Remove #796, #322, and #325.

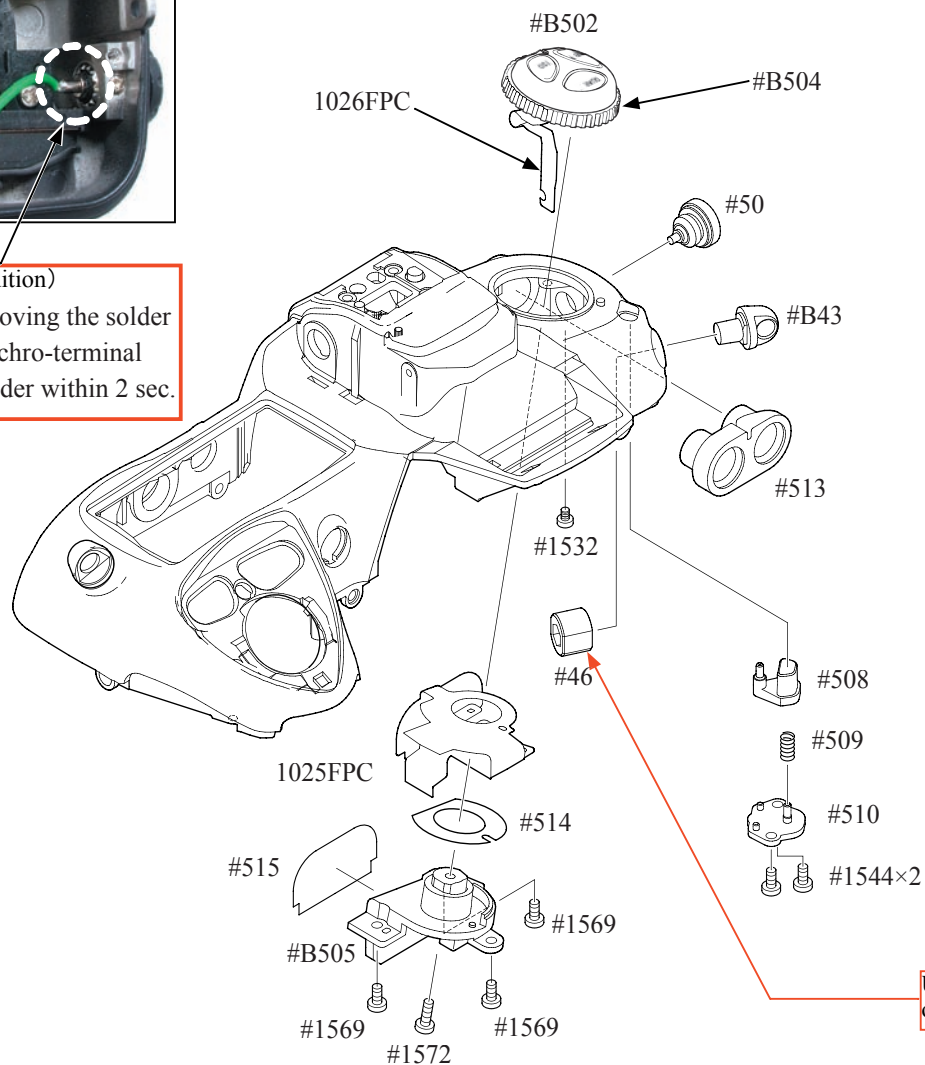


M/DFPC unit

- Remove the FPC soldering bridges of #1025 and #1026.
- Take out the screw (#1569).
- Detach #1025 from the bosses.
- Unsolder the lead wire (#1094).
- Remove the solder of the lead wire (#1094). Δ (Addition)
- Lift the FPC, and take out the screw (#1572).
- Remove B502 and B504 (Trefoil button unit).



※ Δ (Addition)
When removing the solder on the synchro-terminal unit, unsolder within 2 sec.

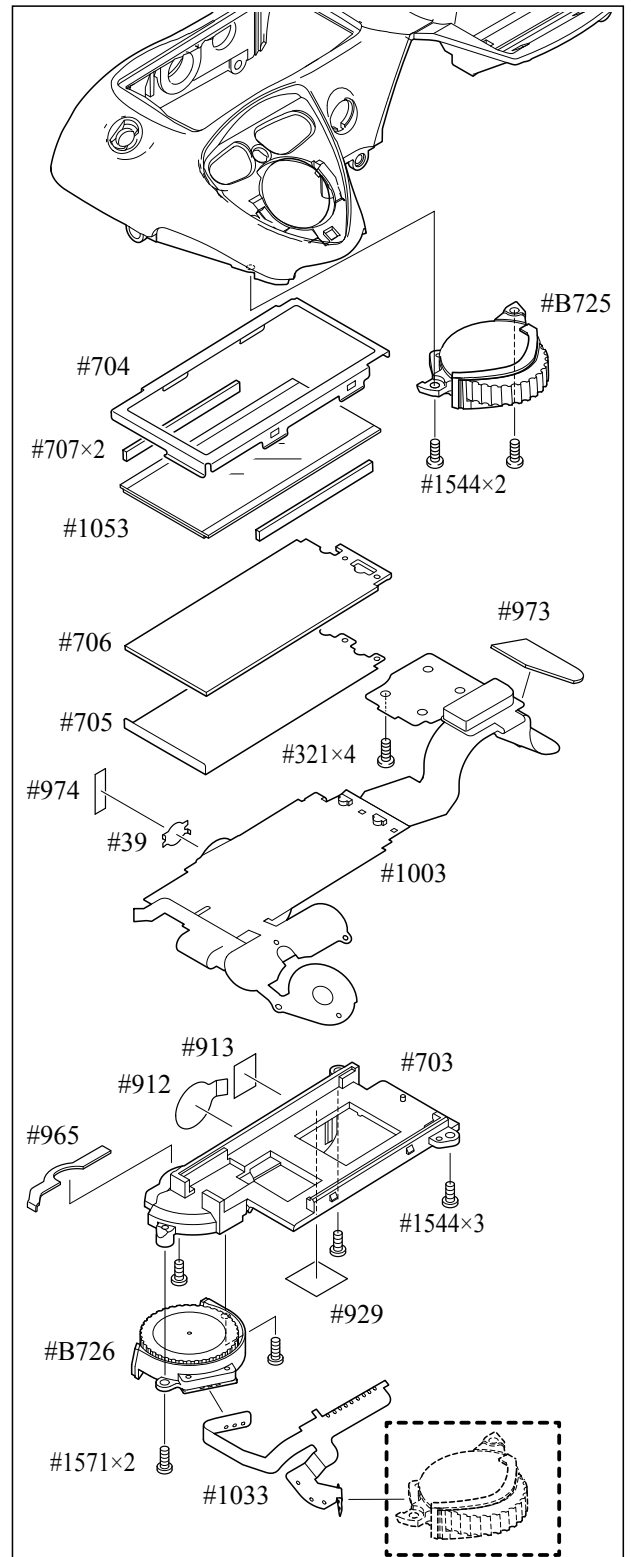
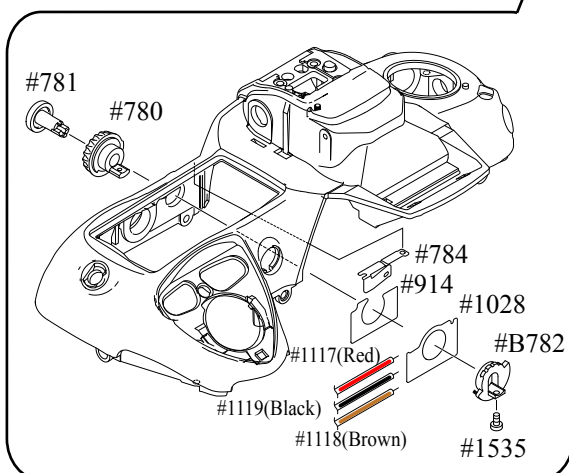
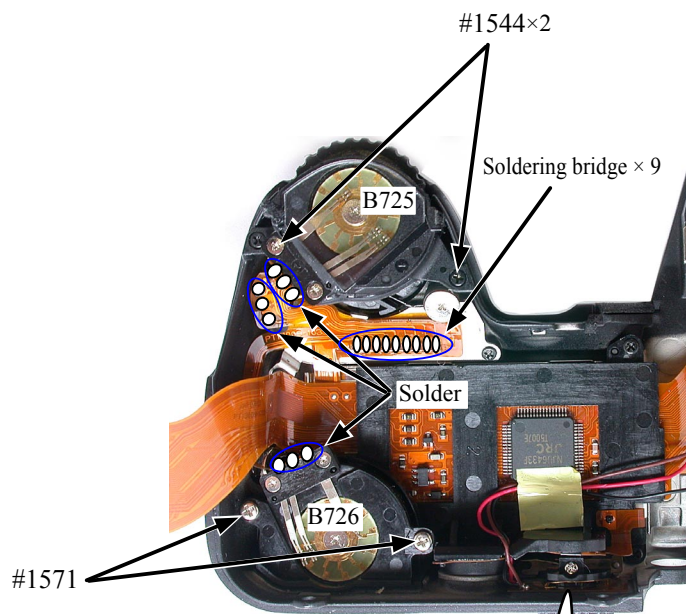


Use the Hexagonal wrench of 5-mm diameter

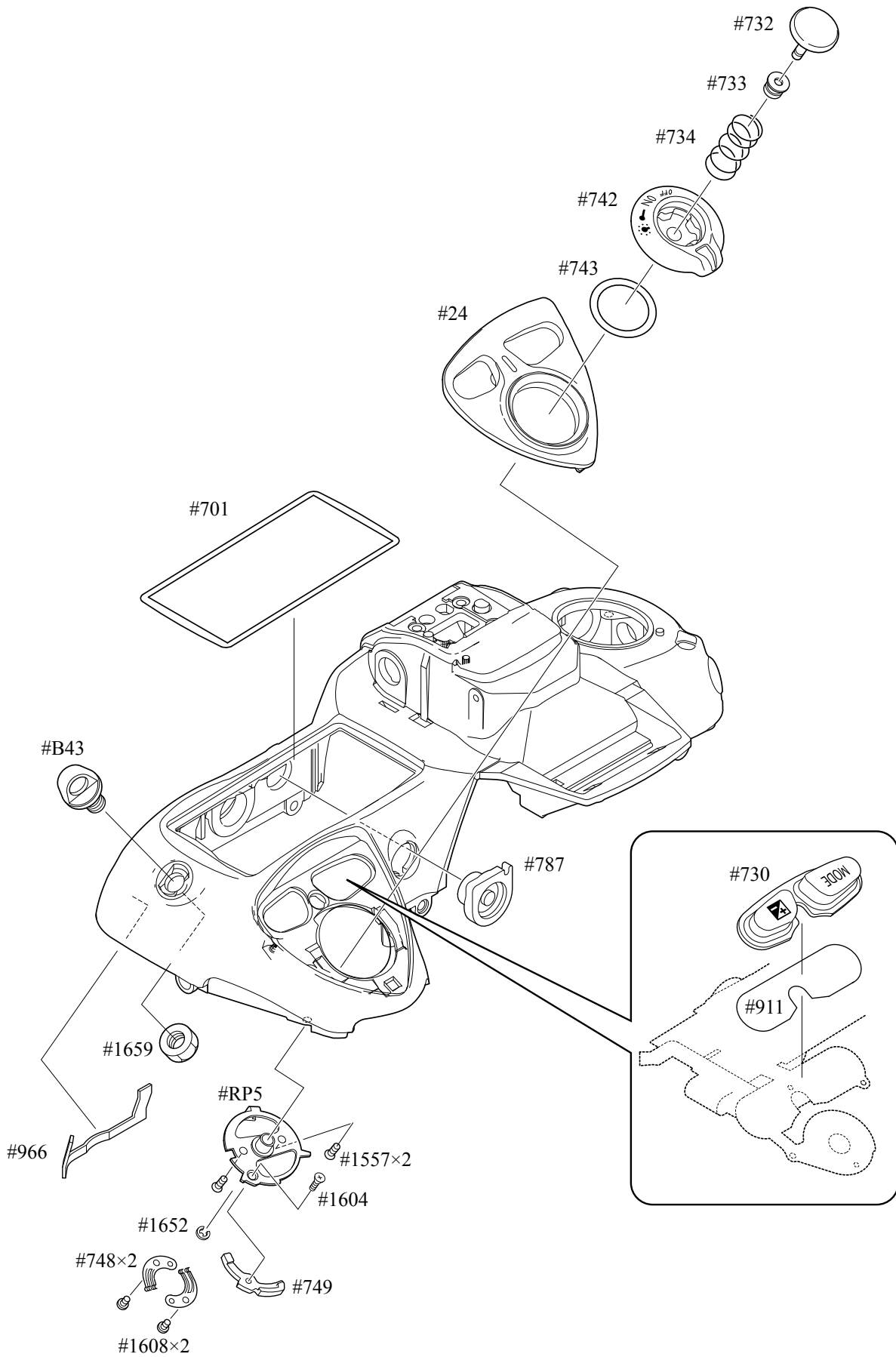


Top cover FPC unit

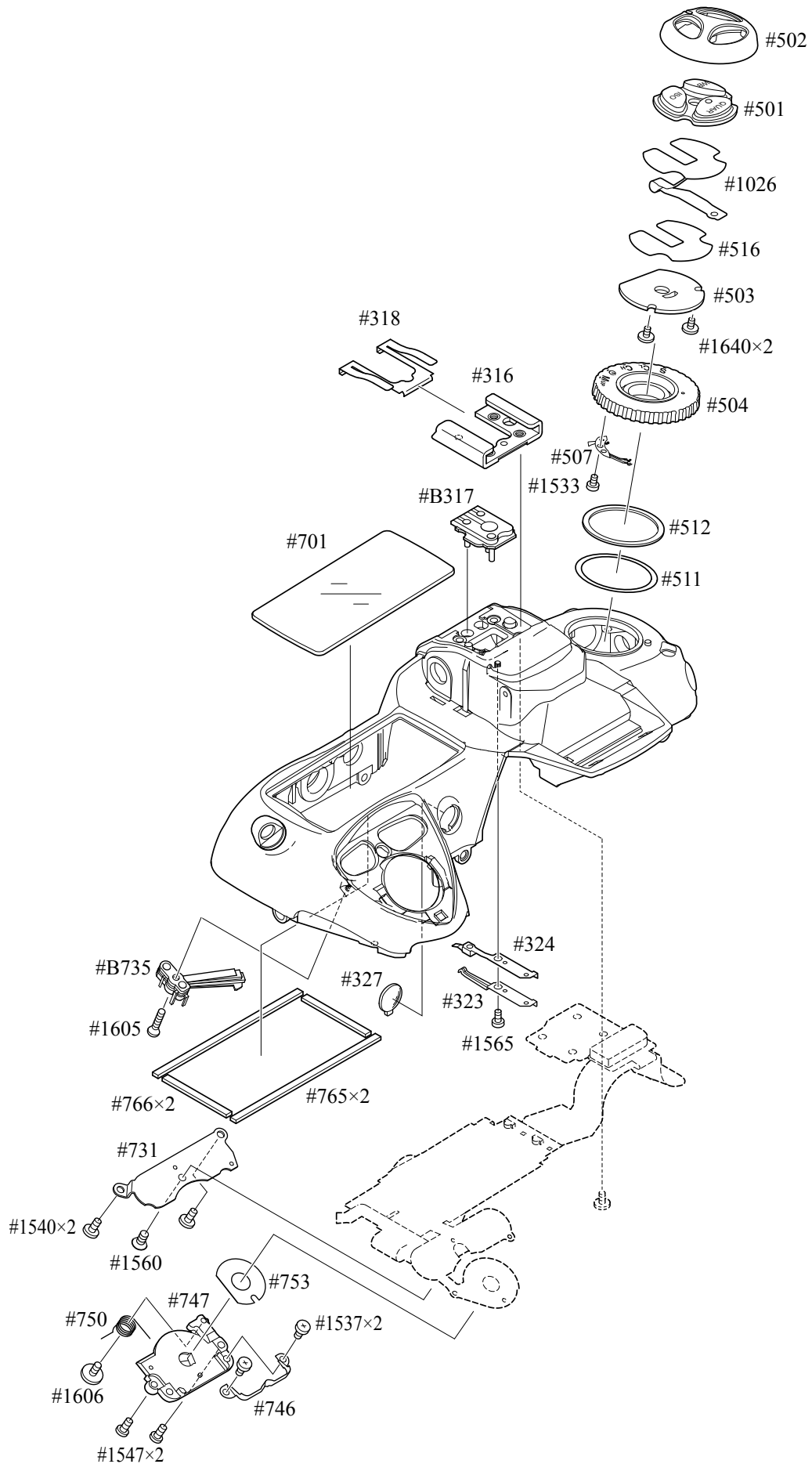
- Remove the soldering bridges .
- Unsolder the SUB dial command unit (B725) .
- Take out two screws (#1544).
- Remove the SUB command dial unit (B725).
- Unsolder the MAIN command dial unit (B726) .
- Take out two screws (#1571).
- Remove the MAIN command dial unit (B726).
- Remove the relies SW unit .



Release button / Other small parts

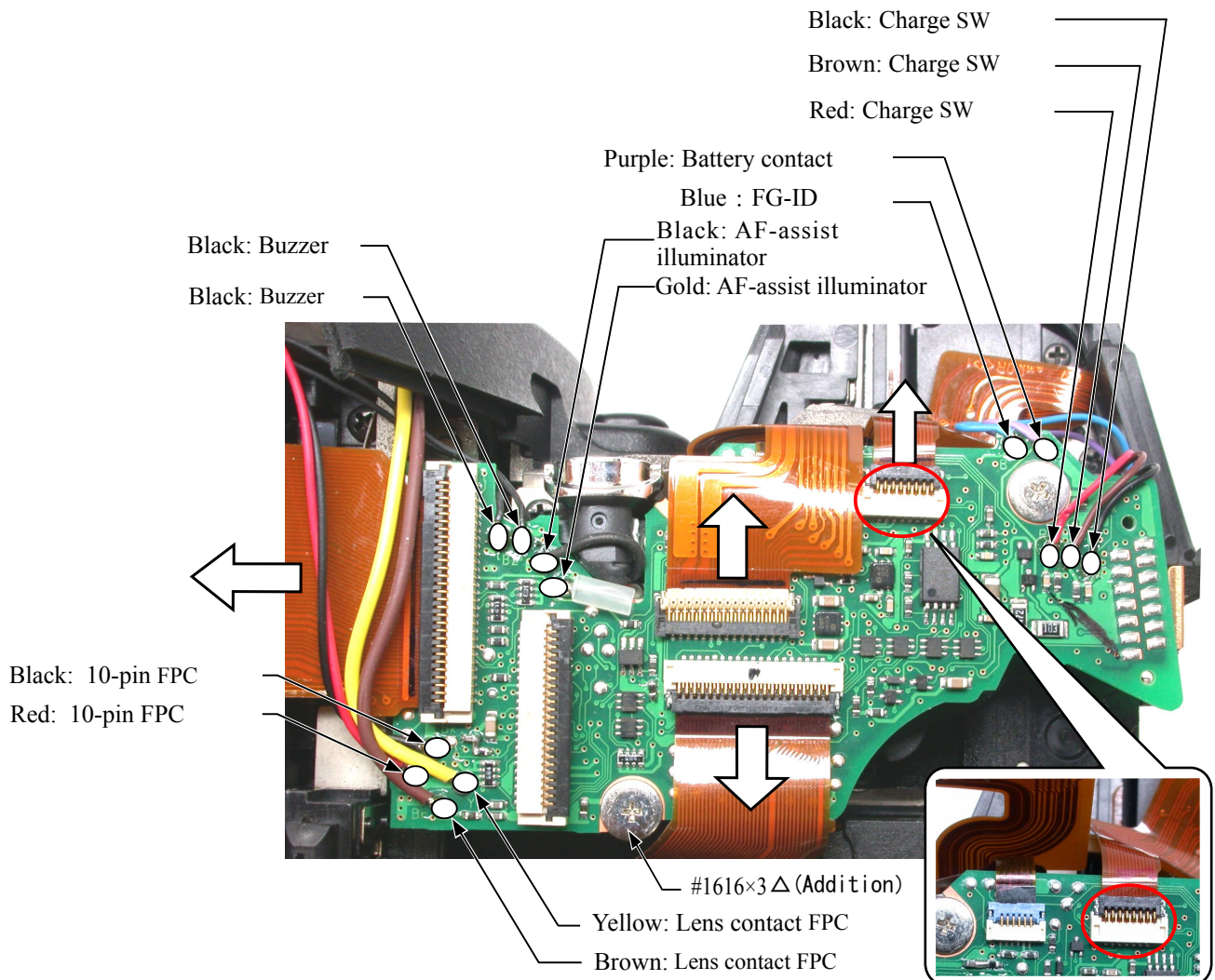


Outer LCD window / Shoe mold unit / Accessory shoe / Other small parts

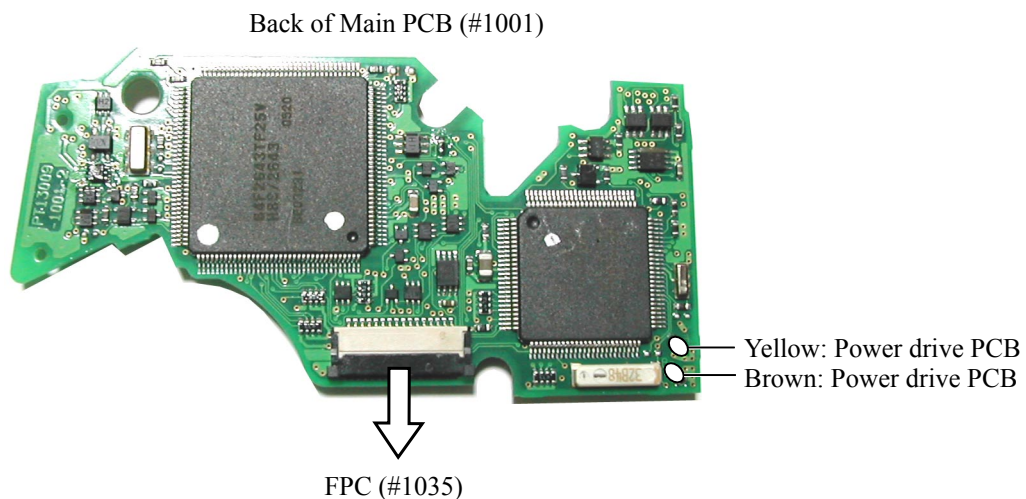


Main PCB unit

- Unsolder thirteen wires.
- Remove five FPCs from the connector.
- Take out three screws (#1616) and remove the main PCB unit (#B1001).

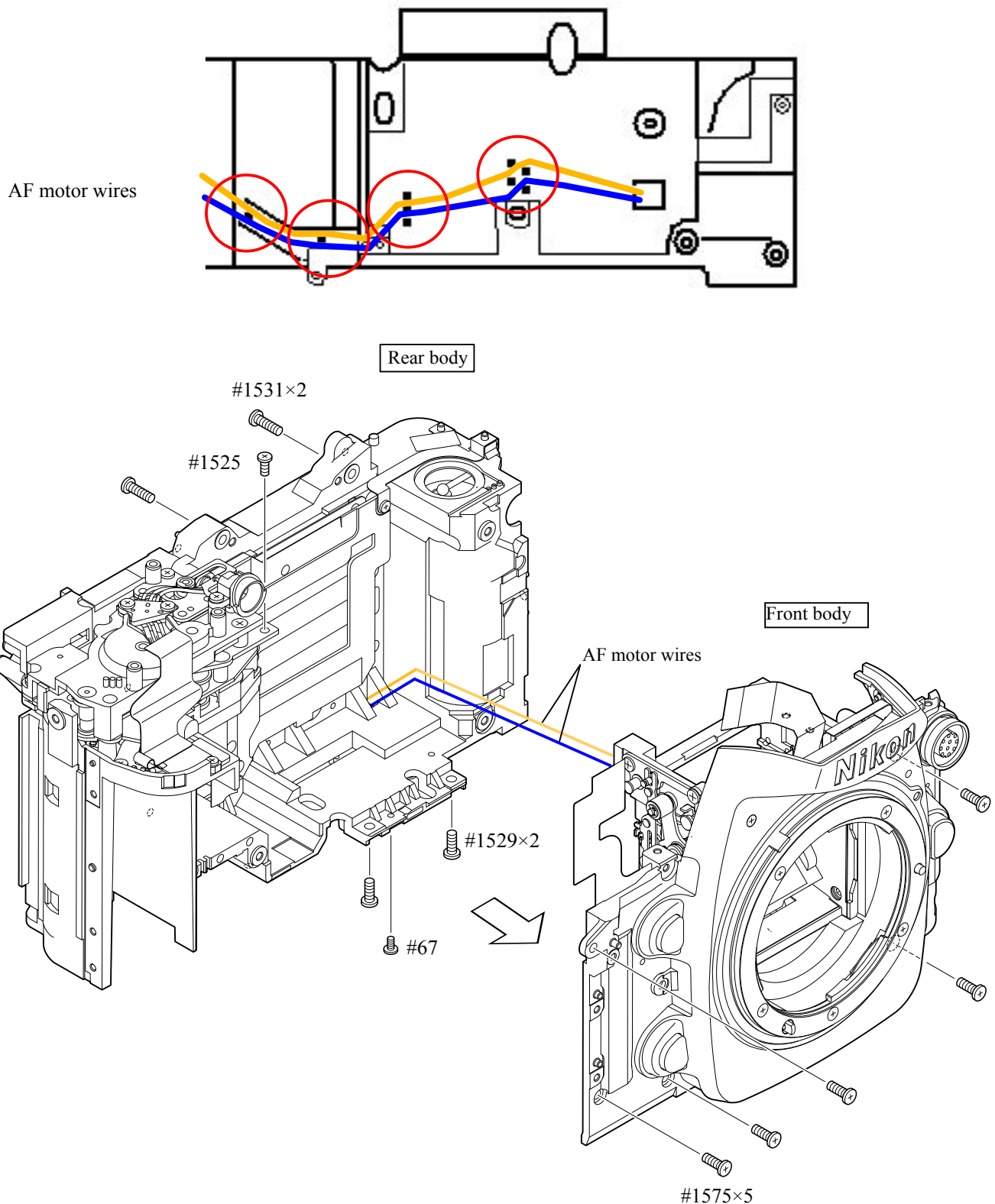


- Unsolder the two wires of the back of the main PCB unit (#1001).
- Remove the main connection FPC (#1035) from the connector of the back of the main PCB unit (#1001).



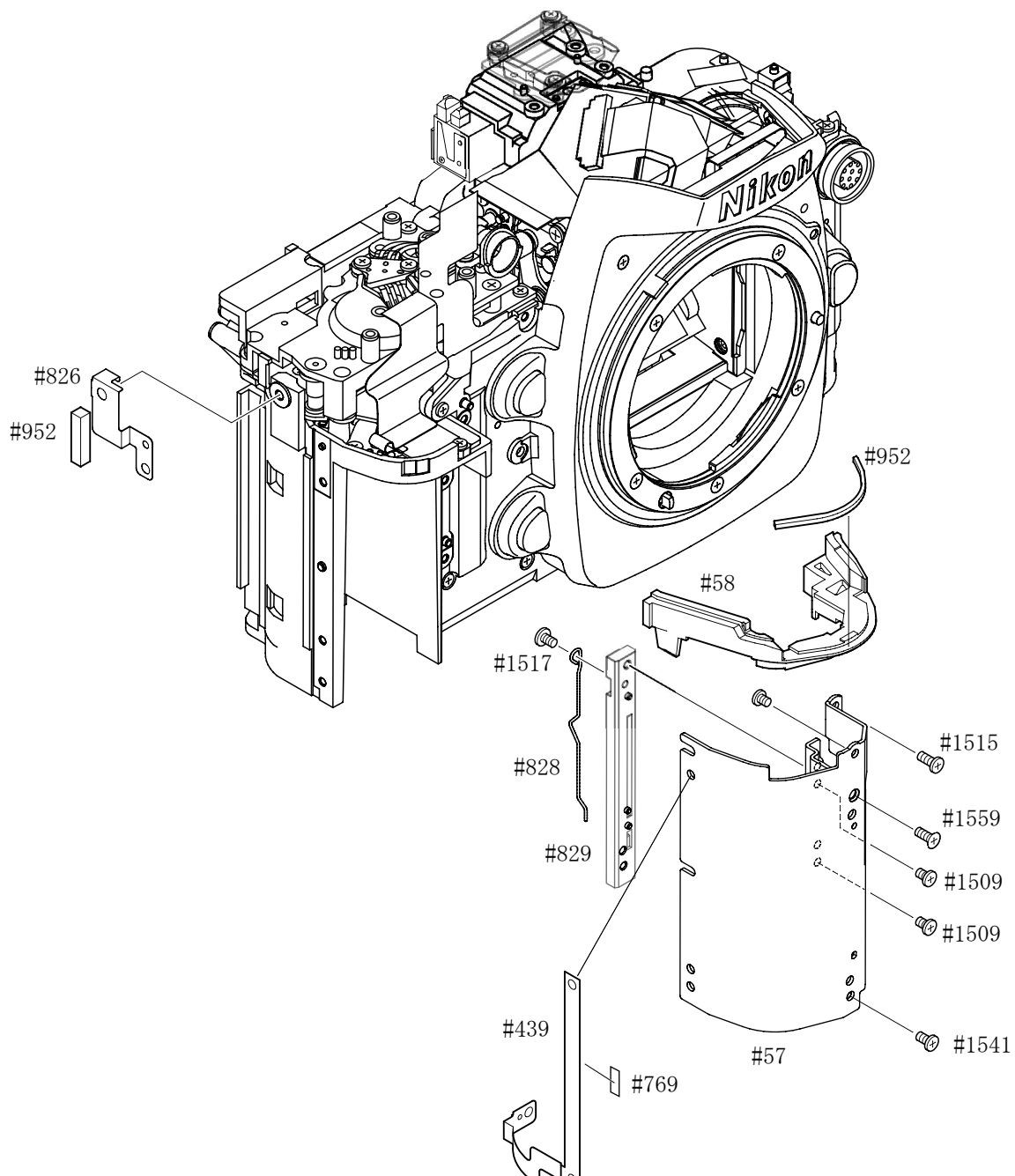
Separation of Front body from Rear body

- Take out two screws (#1529), one screw (#67), two screws (#1531), one screw (#1525) and five screws (#1575).
- Release the AF motor wires from the bosses, and while pulling them slowly from the holes of the rear body, remove the front body.



Grip unit

- Remove the grip (#57) with the screw (#1515) and two screws (#1509).



2. Front body

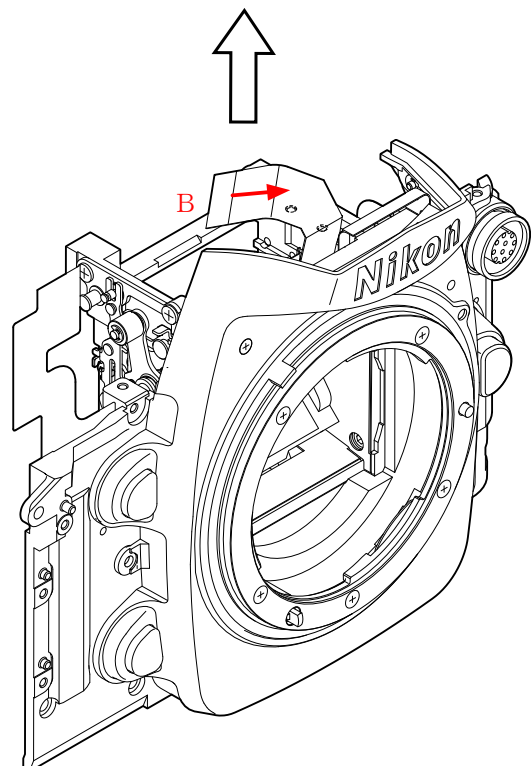
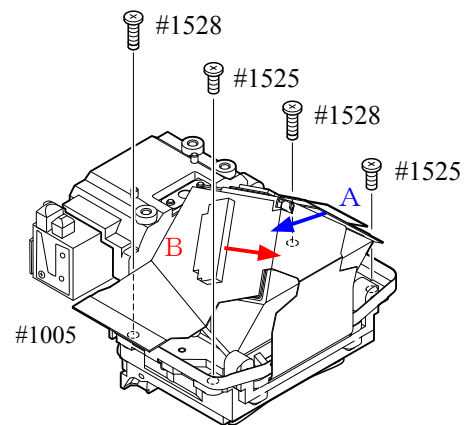
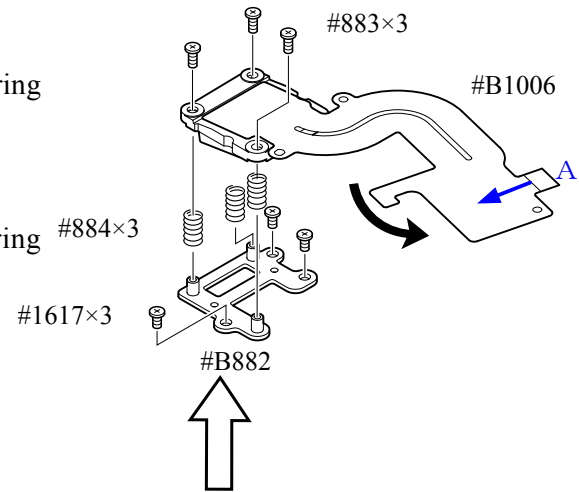
Metering FPC unit
Prism box unit
(with prism and eyepiece)

- Remove the metering FPC from the connector of the SI-FPC (#1005).
- Take out three screws (#883), and remove the metering FPC unit (#B1006).
- Three springs (#884) come off.
- Take out two screws (#1617) and remove the metering FPC unit pedestal (#B882).

Caution:

The screw (#883) is attached with the adhesive.
In case the screw (#883) is moved, the AECCD positioning adjustment (ref. Assembly) becomes necessary.

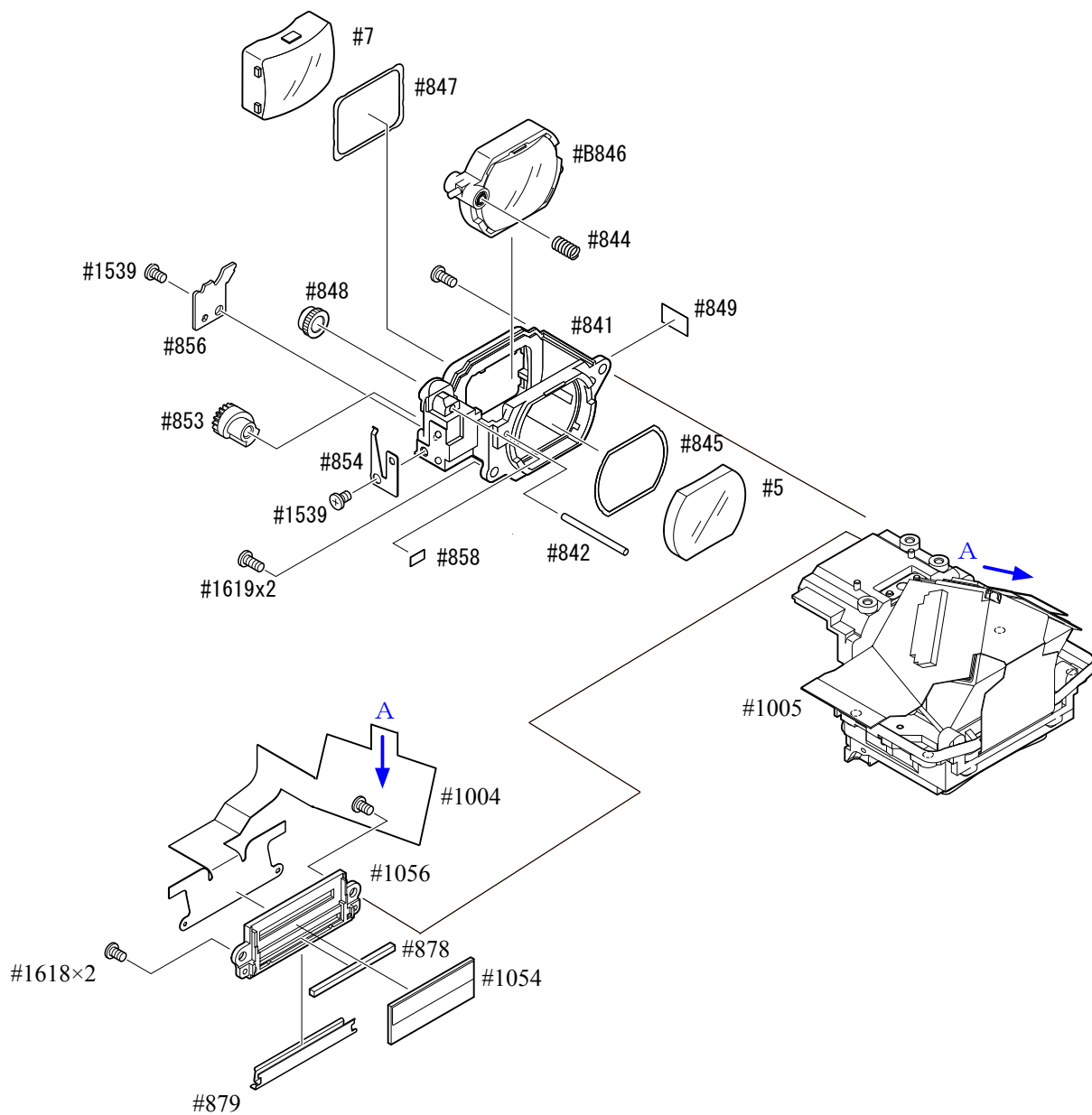
- Remove the lens contact FPC unit (#B1008) from the connector of the SI-FPC (#1005).
- Take out two screws (#1525) and two screws (#1528), and remove the prism box unit from the front body.



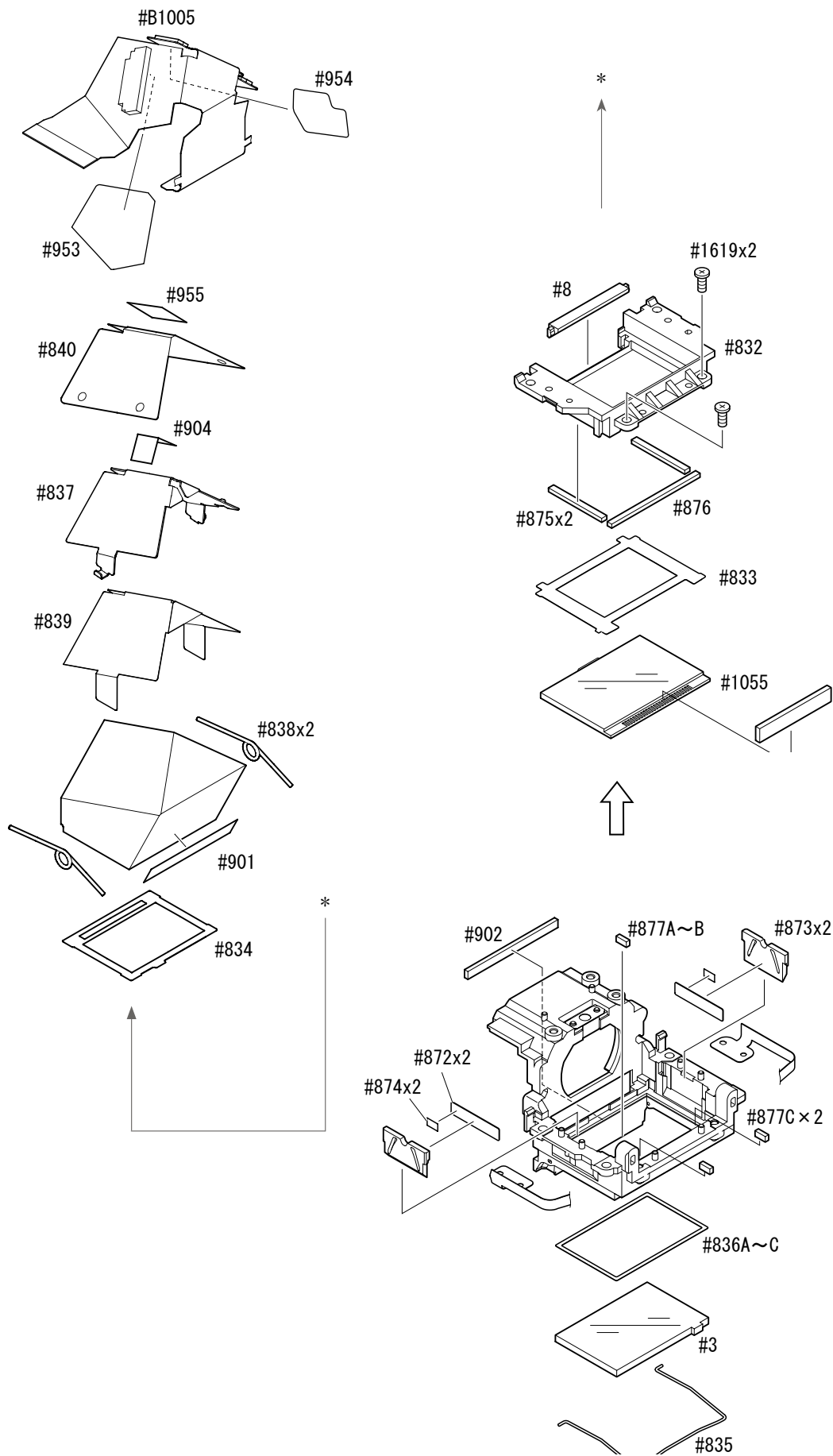
Eyepiece lens-barrel unit

Inner LCD unit

- Take out two screws (#1619), and remove the eyepiece lens-barrel unit.
- Remove the finder-display FPC (#1004) from the connector of the SI-FPC.
- Take out two screws (#1618), and remove the finder-display LCD unit.

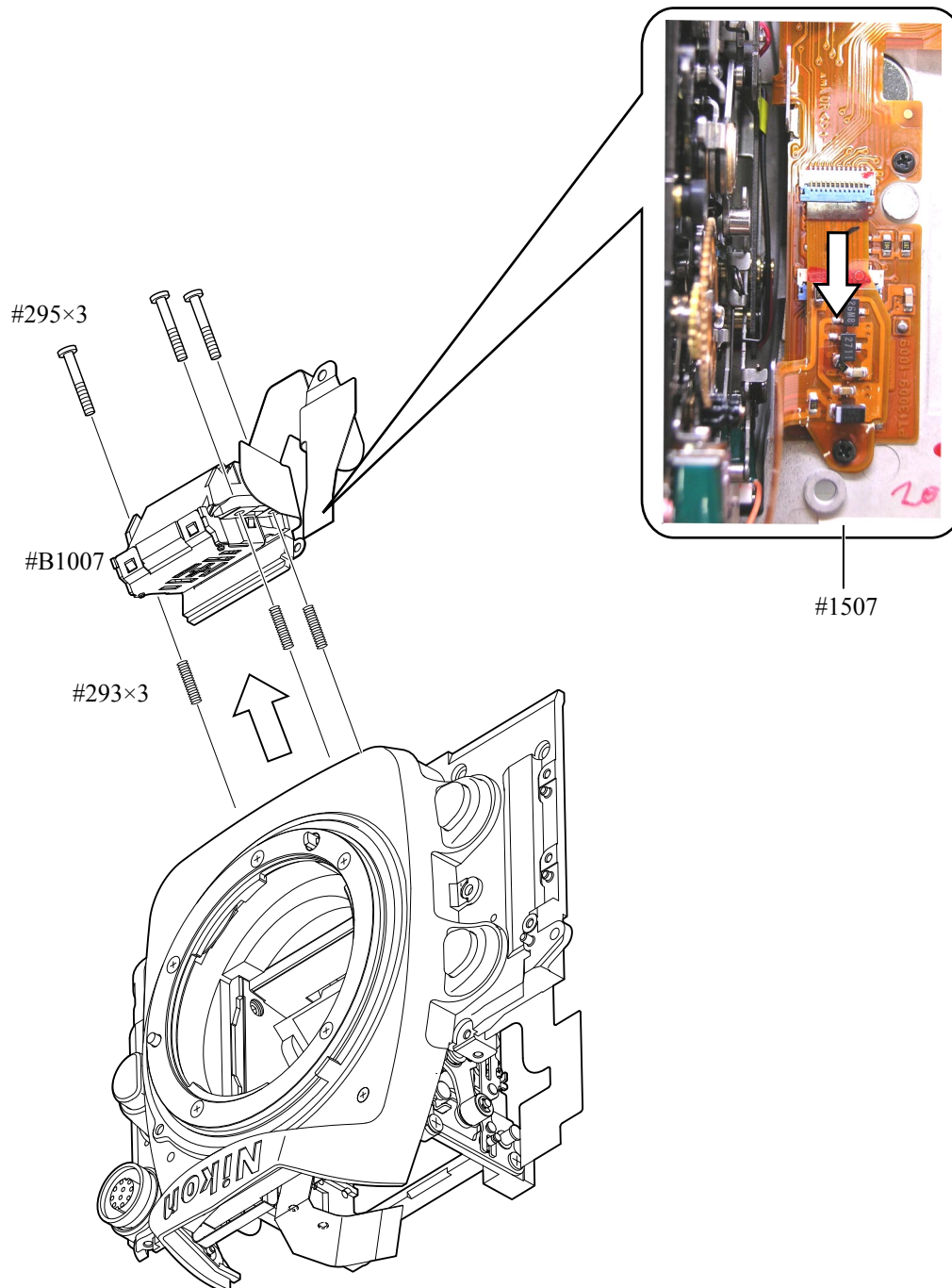


Penta unit



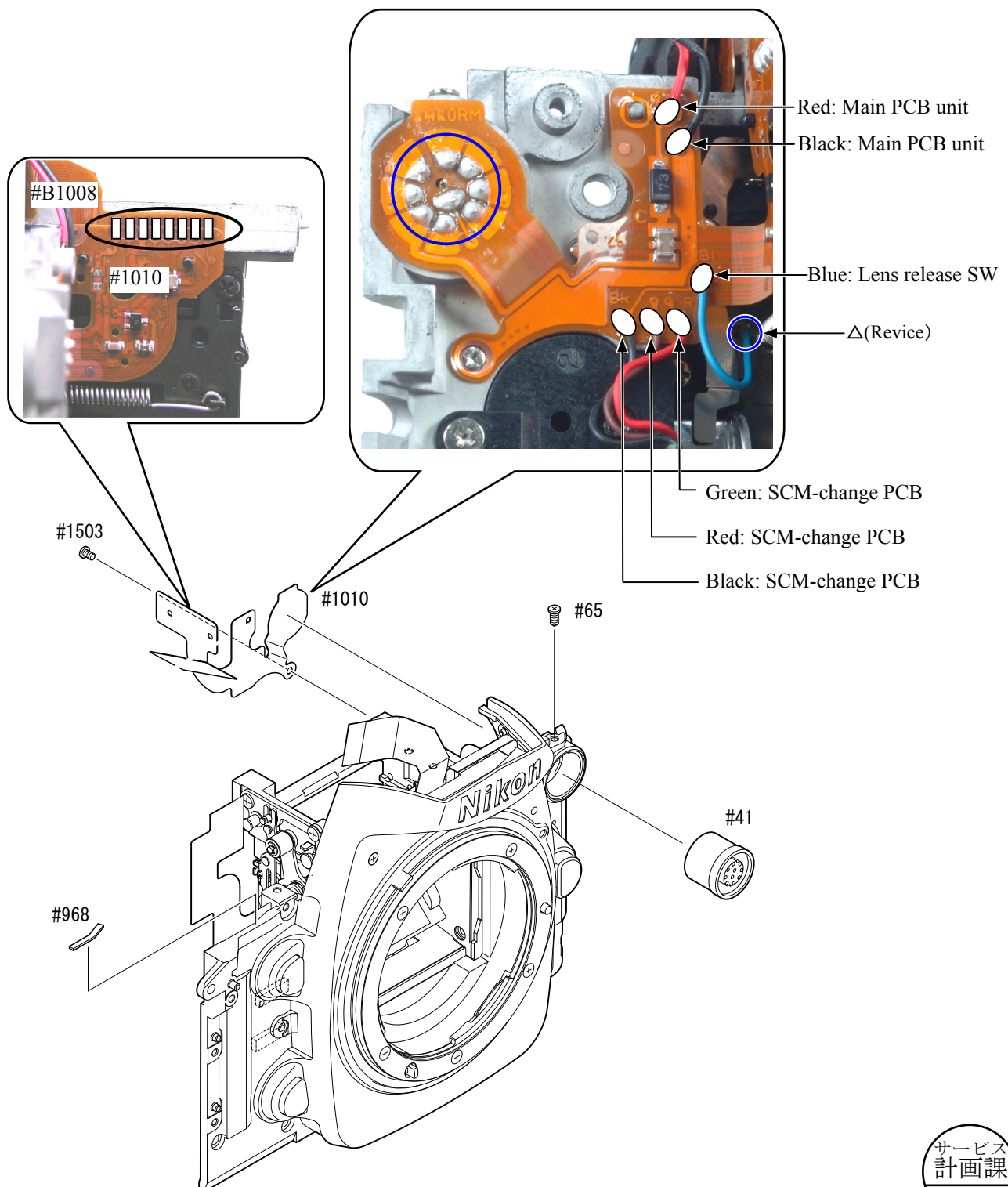
AF-PCB unit

- Take out the screw (#1507).
- Remove the AF-PCB FPC from the connector.
- Take out the three screws (#295) with the Hexagonal wrench, and remove the AF-PCB unit (#B1007).
- Three springs (#293) come off.



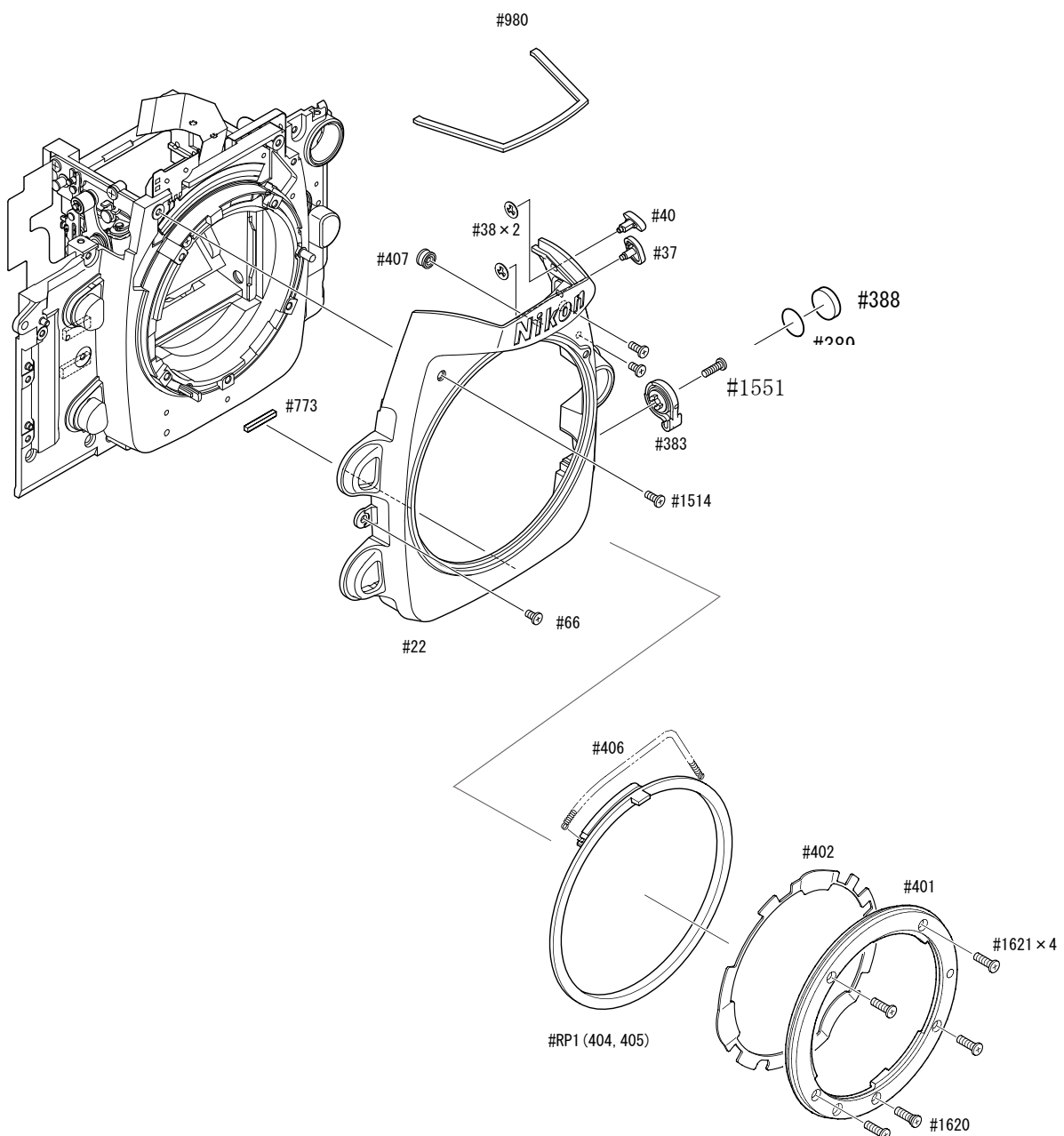
10-pin plug
10-pin FPC unit

- Unsolder six wires.
- Remove the soldering bridge at nine locations of the 10-pin terminal (#41) and 10-pin FPC.
- Remove the soldering bridges at eight locations of the 10-pin FPC (#1010) and the lens contact FPC.
- Take out the screw (#1503) and remove the 10-pin FPC (#1010).
- Take out the screw (#65) and remove the 10-pin terminal.

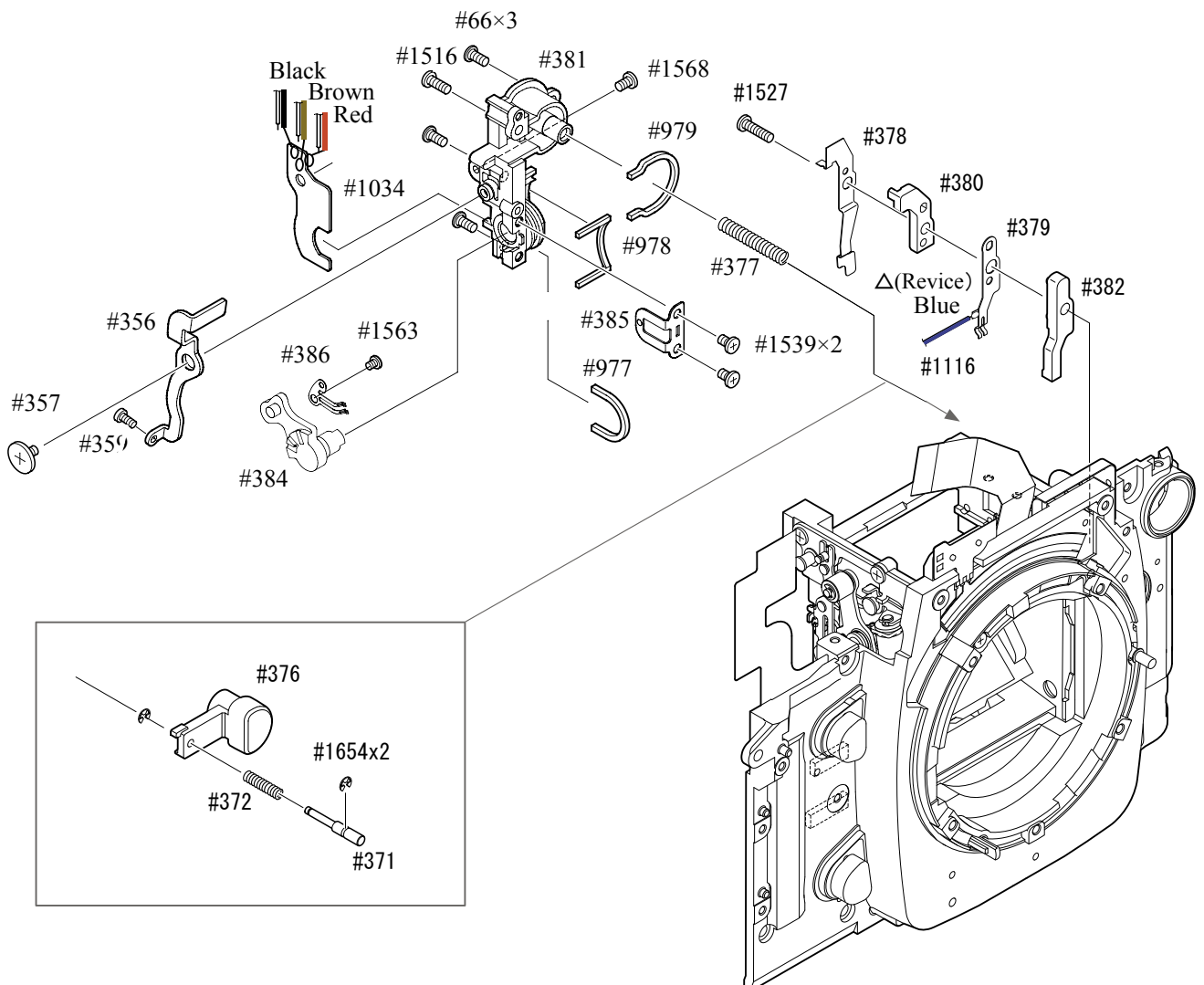


- | |
|--|
| Bayonet unit Aperture coupling-ring unit SCM-change lever unit Front cover unit |
|--|

- Remove the SCM screw cover plate (both-sided adhesive tape: #389). Take out the screw (#1551) and remove the SCM-change lever (#383).
- Take out four screws (#1621) and the screw (#1620), and remove the bayonet (#401) and the bayonet spring (#402).
- Remove the front cover (#22) and the aperture coupling ring. (The aperture coupling-ring roller comes off, too.)

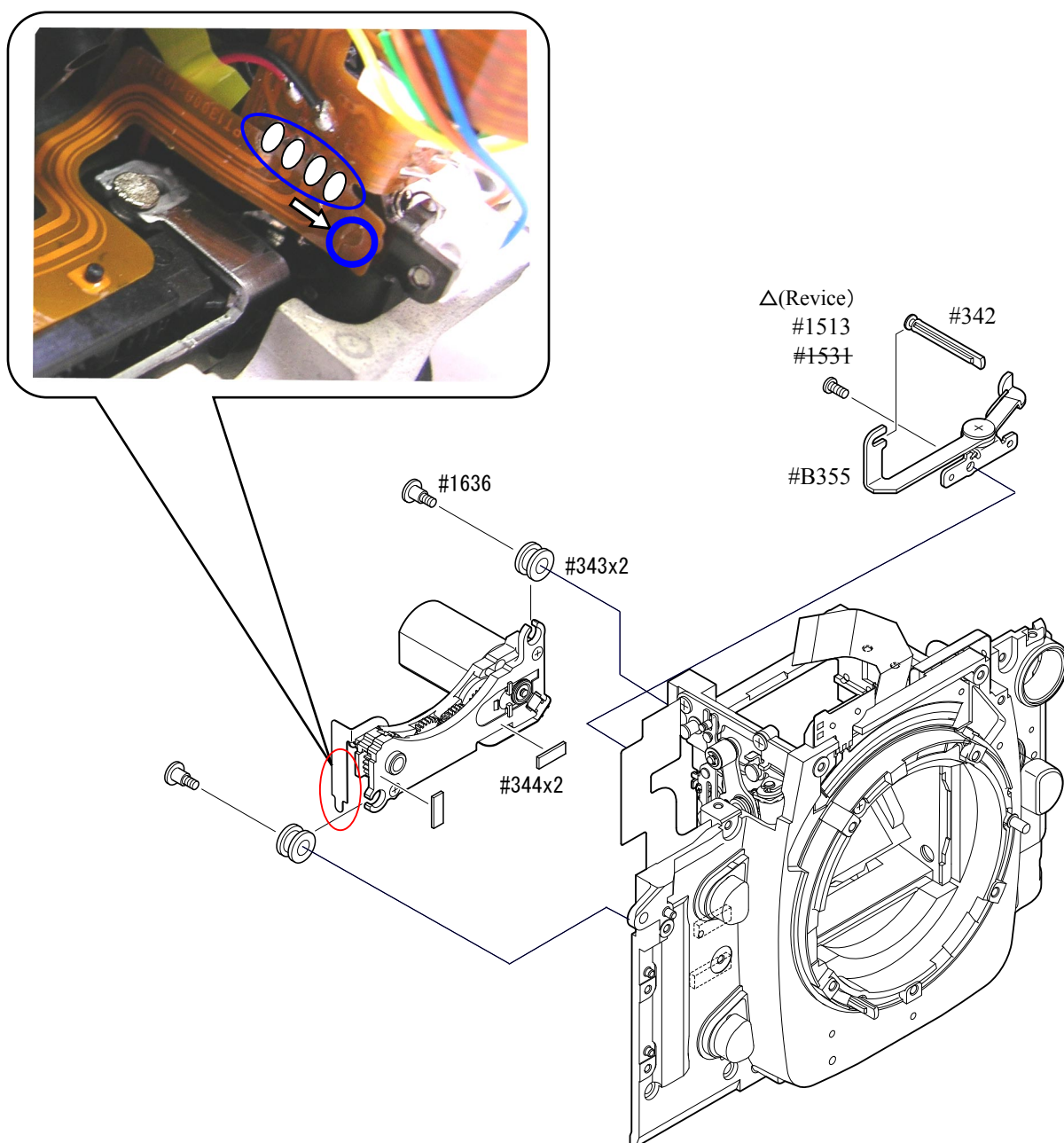


Lens release SW
 Lens release PCB unit
 Vertical-shooting lever
 SCM-change PCB



AF drive-PCB unit
Horizontal-shooting lever unit

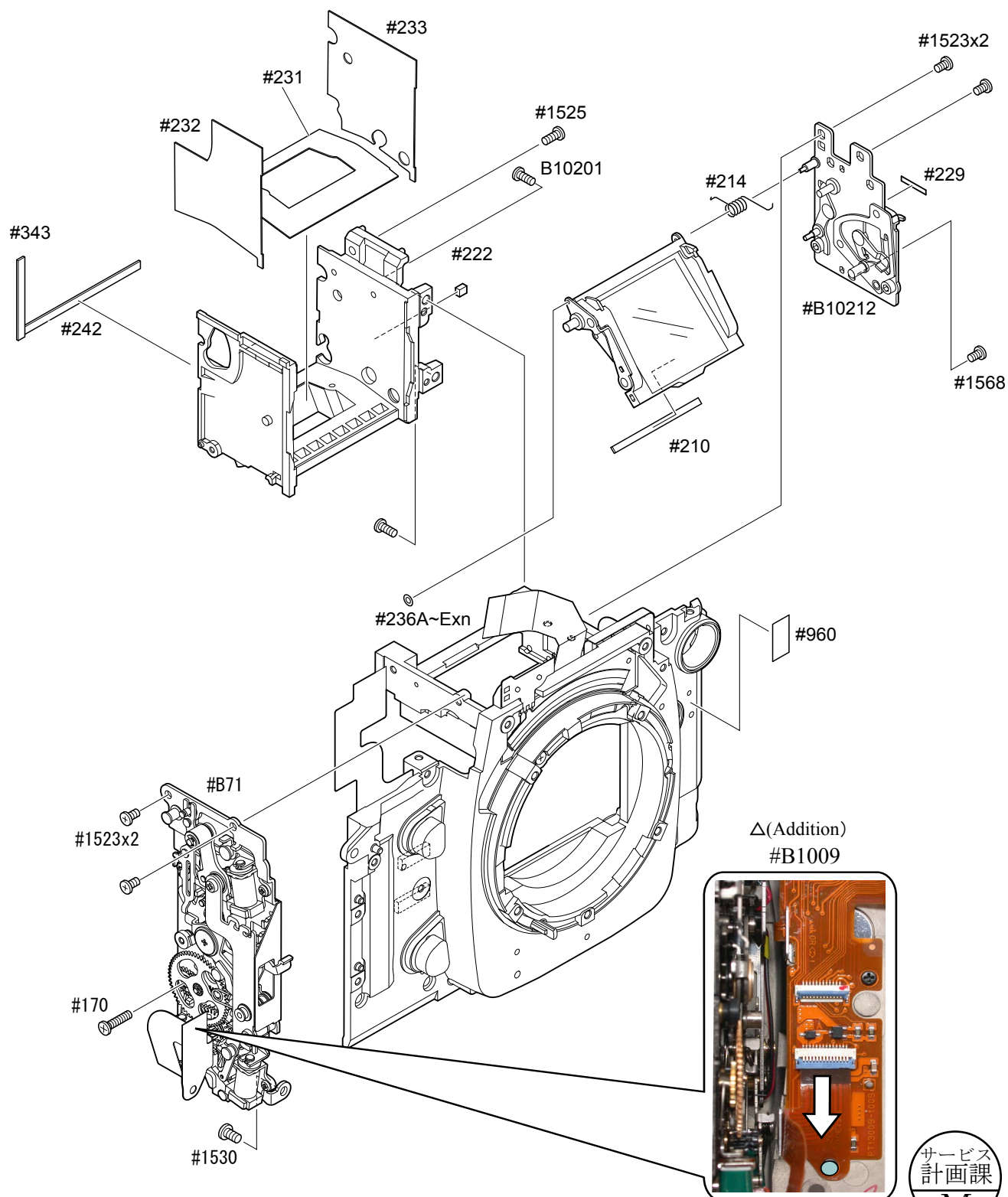
- Take out the screw (#1513) and remove the horizontal-shooting lever unit (#B355) and the coupling shaft (#342).
- Remove the soldering bridges at four locations of the AF drive FPC.
- Take out two screws (#1636) and remove the AF drive-PCB unit (#B328).



Mirror BOX unit
 I-base plate unit
 45°-support base plate
 Mirror unit

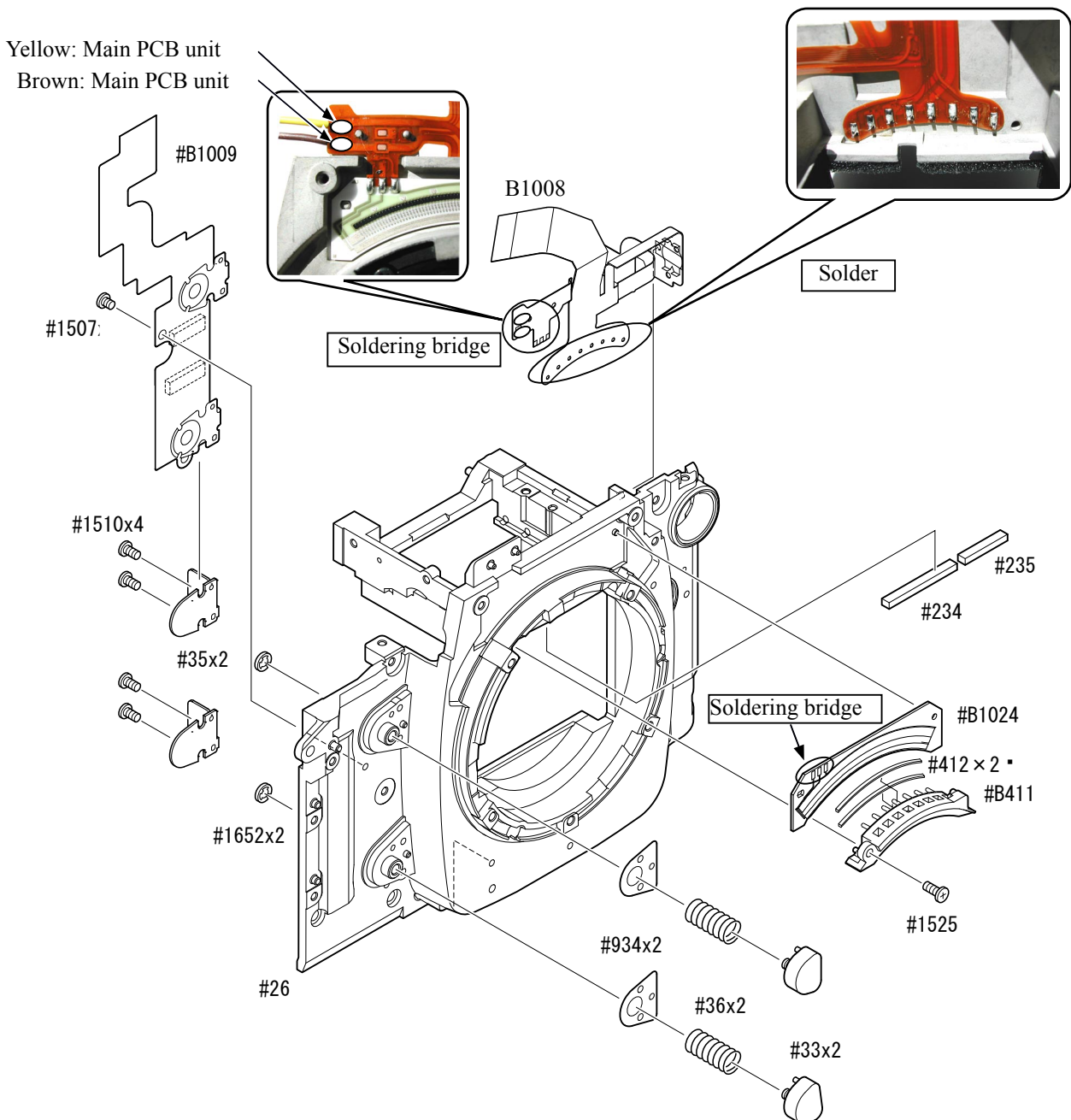
- Remove the FPC of the I-base plate unit (#B71) from the connector of #B1009.

Be careful NOT to lose the washers (#236A - E).



- Lens-contact unit
- F-F0 PCB unit
- Mirror-support sponge
- Front plate-FPC unit
- Preview button
- Function button
- Lens contact FPC unit

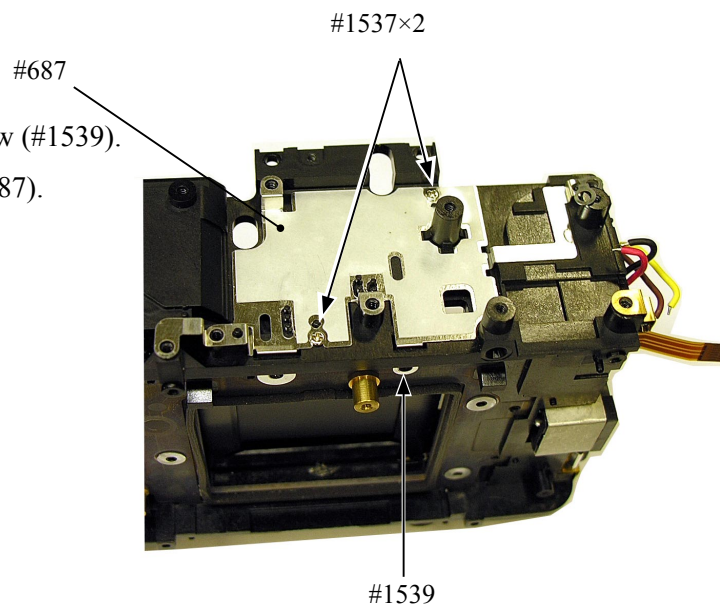
- Remove the soldering bridges at three locations of #B1024 and #B1008.
- Remove #1024 from #26.
- Unsolder #B411 and #B1008 at eight locations.
- Take out the screw (#1525) and remove the lens-contact unit (#B411).



2. Rear body

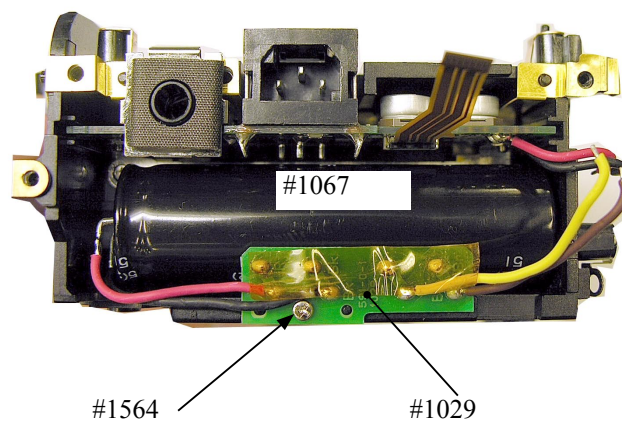
DC/DC-PCB shield plate

- Take out two screws (#1537) and the screw (#1539).
- Remove the DC/DC-PCB shield plate (#687).



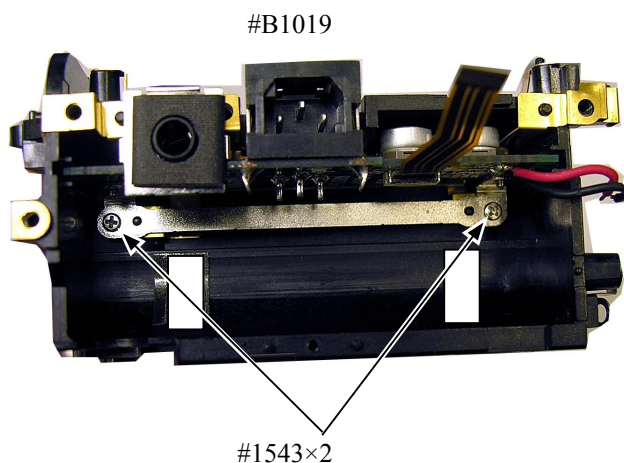
Main condenser/DI-PCB

- Take out the screw (#1564), and remove the DI-PCB (#1029).
- Remove the condenser (#1067).

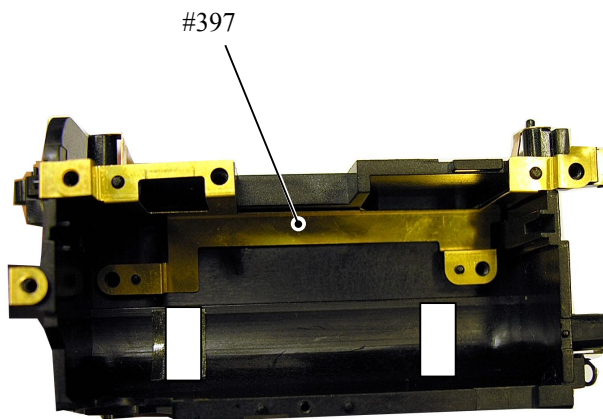


I/F-board unit

- Take out two screws (#1543).
- Remove the I/F-board unit (#B1019).

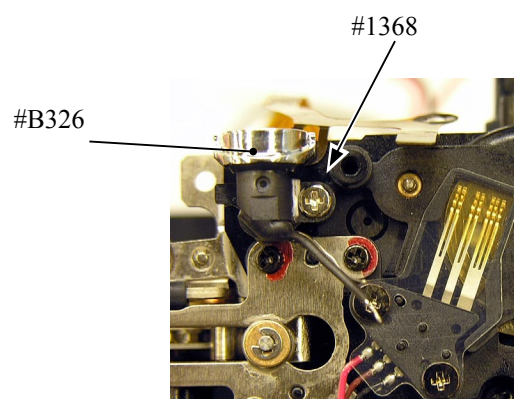


- Remove the IF GND steel plate (#397).



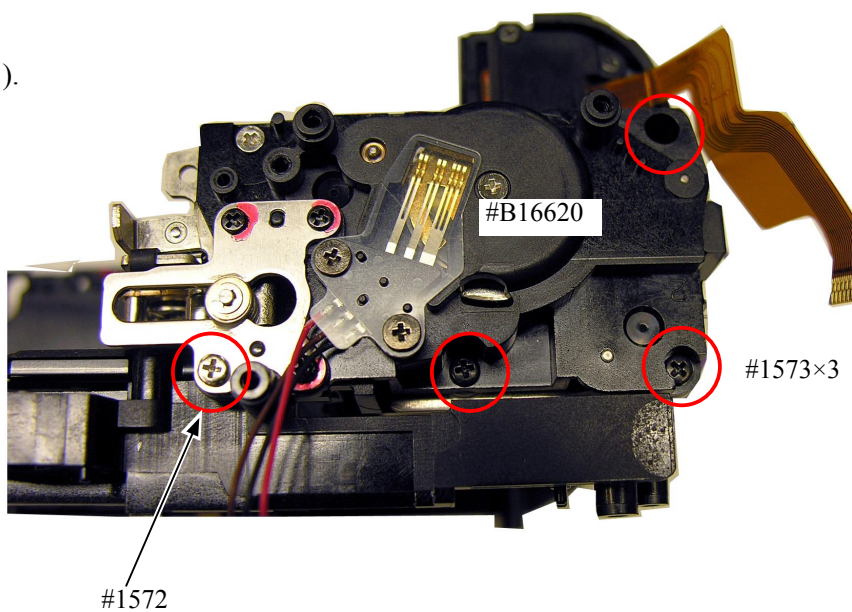
AF-assist lamp

- Take out the screw (#1368).
- Remove the AF-assist lamp (#B326).



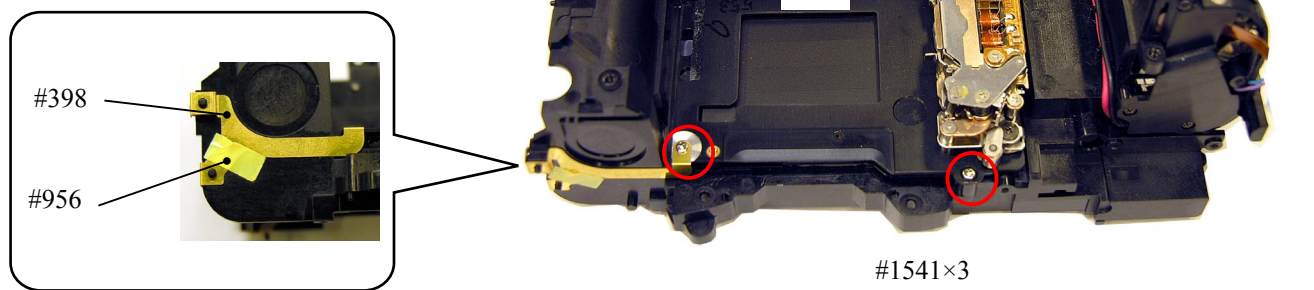
U/D base plate

- Take out the screw (#1572).
- Take out three screws (#1573).

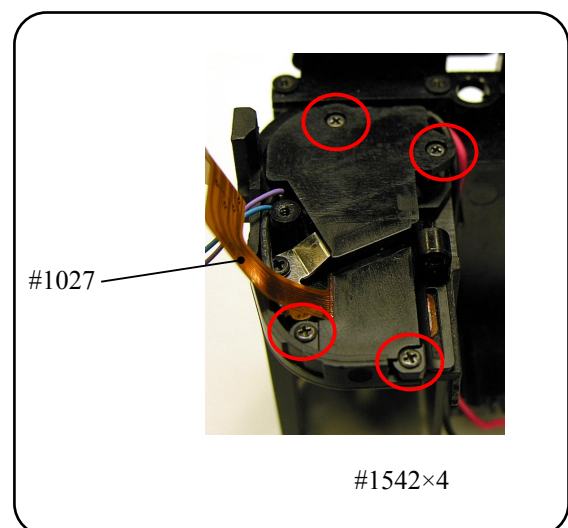


Shutter unit

- Remove the retaining tape (#956).
- Take out three screws (#1541).
- Remove the GND steel plate (#398).
- Remove the shutter unit (#31).

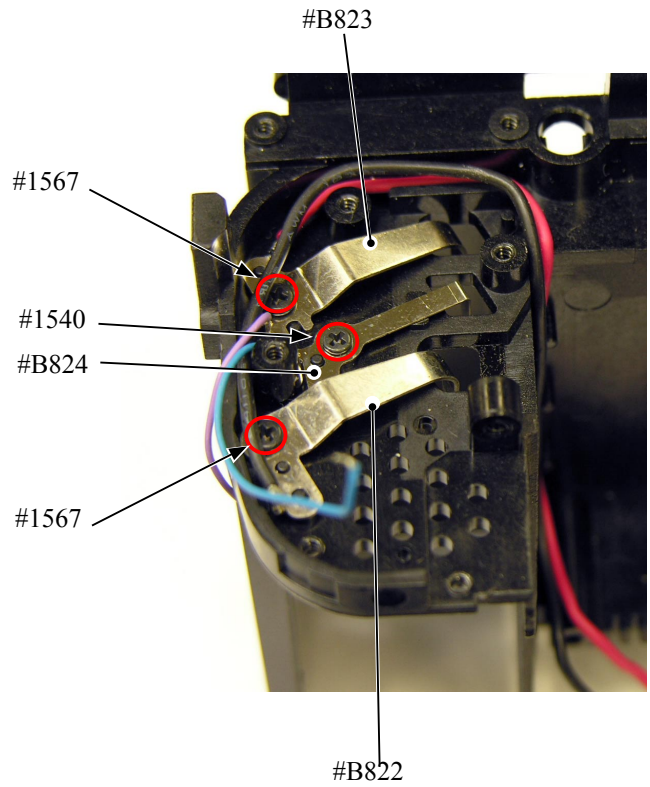
Option pack FPC

- Take out four screws (#1542).
- Remove the option pack FPC (#1027).

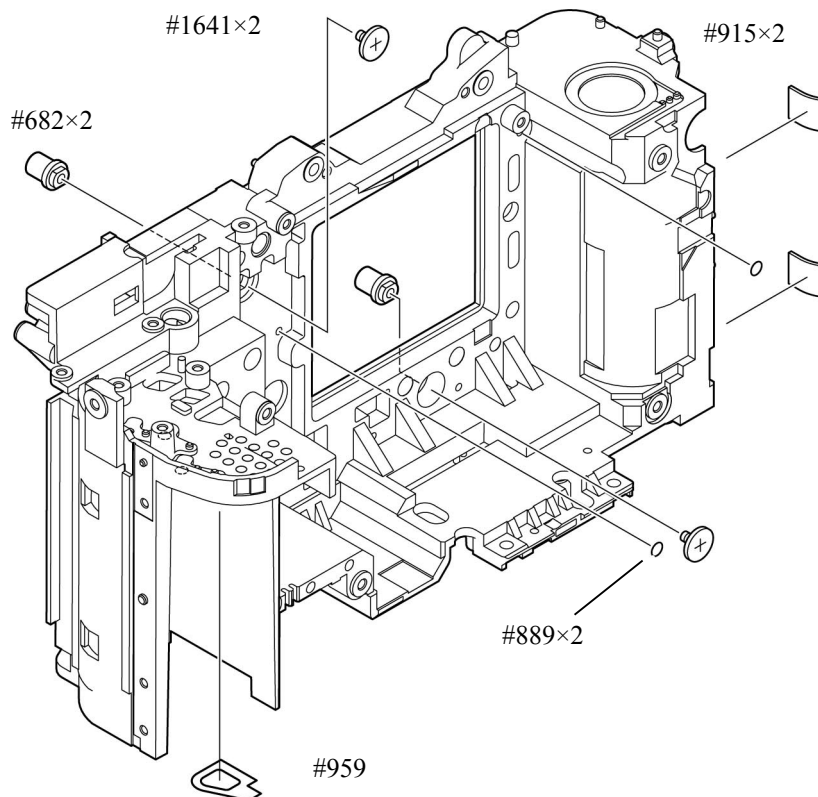


Battery contact spring

- Take out the screw (#1567), and remove #B822.
- Take out the screw (#1567), and remove #B823.
- Take out the screw (#1540), and remove #B824.

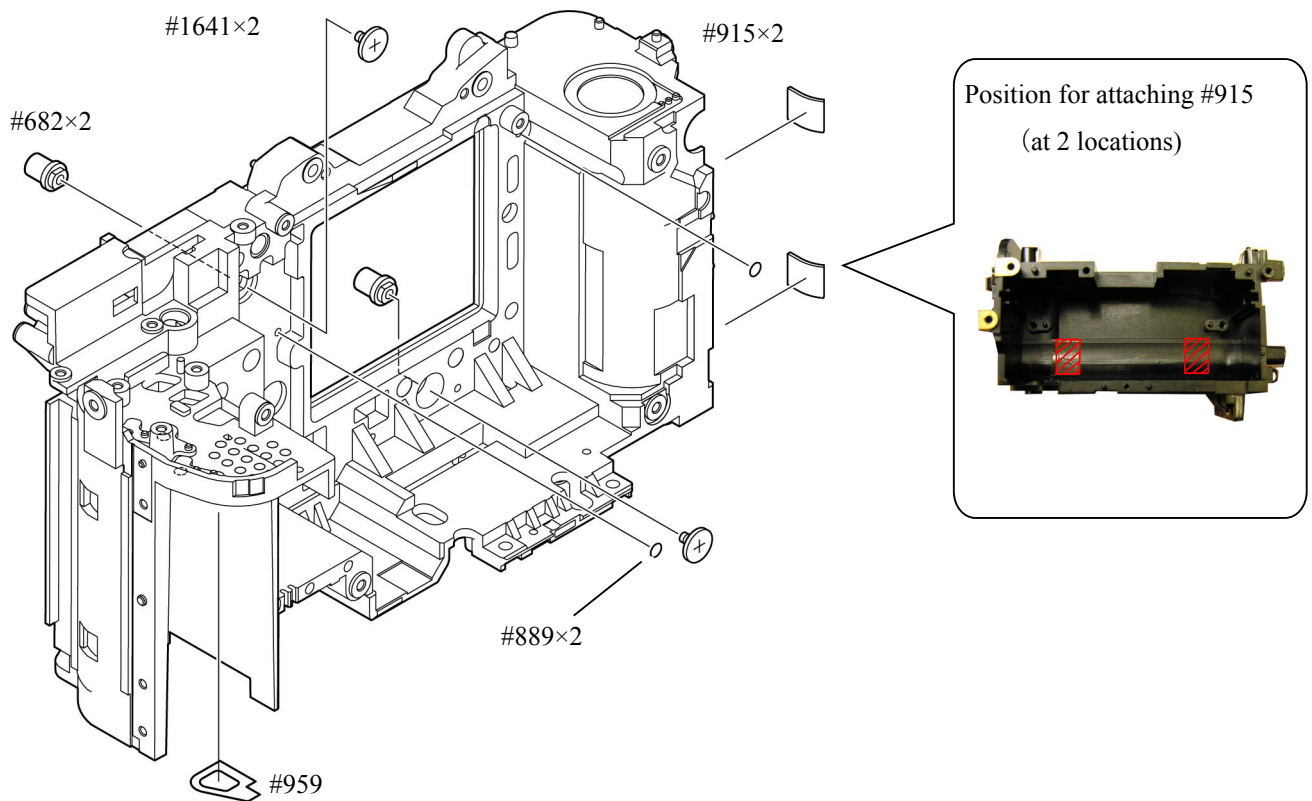


Rear body small parts



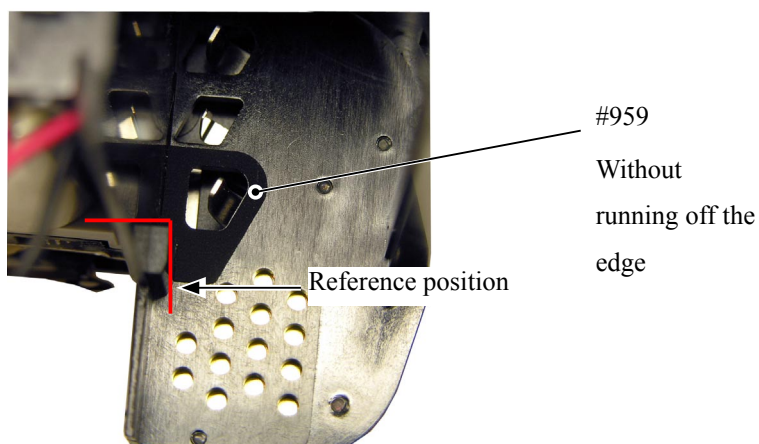
Rear body small parts

- Attach two #682 on the body and fix them with two screws (#1641).
- Attach two #889 to cover the screw holes without fail.
- Attach the 2 pieces of the both-sided adhesive tape (#915).



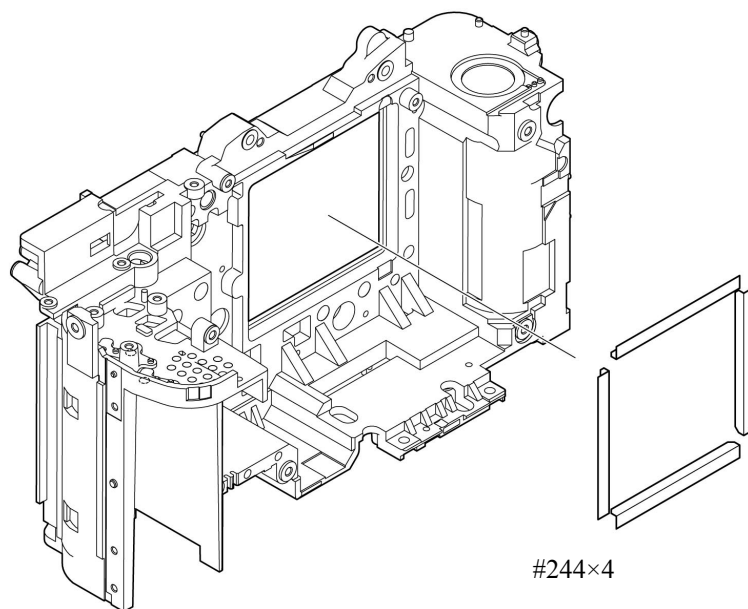
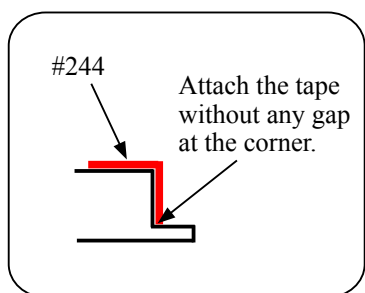
Battery chamber cover tape

- Attach the tape (#959) by aligning with the reference position.



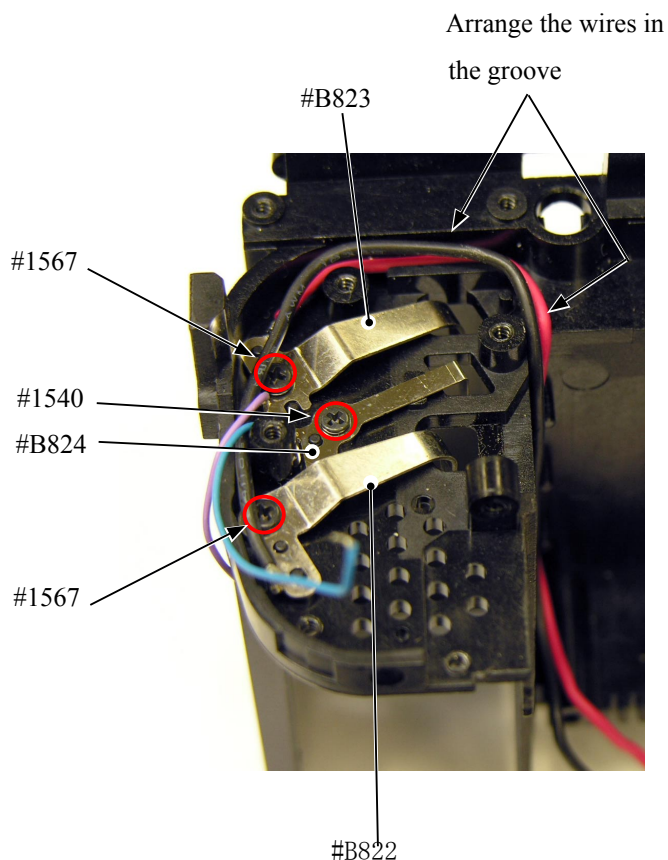
Both-sided adhesive tape (to collect dust around aperture)

- Attach 4 pieces of #244 on the body.
- ※ Attach the tape from the inside without any slackness, then fold it down to conform to the shape of the corner.



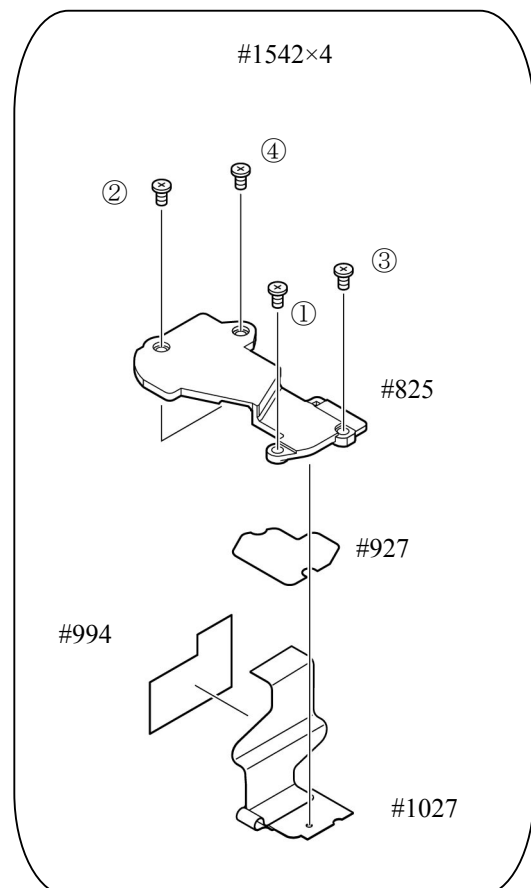
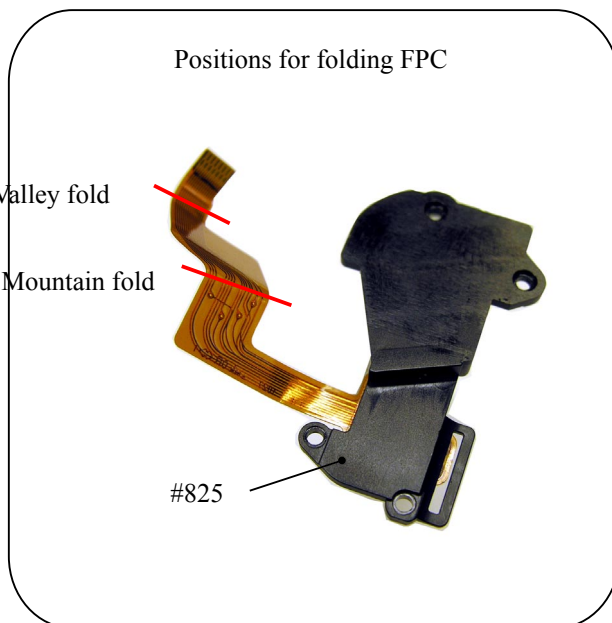
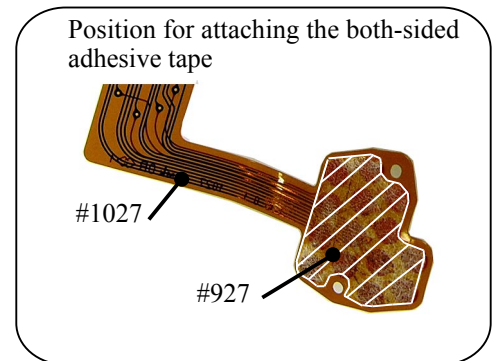
Battery contact spring

- Assemble #B824 into the body by fitting in the boss of the body.
- Tighten the screw (#1540).
- Assemble #B822 into the body.
- Tighten the screw (#1567).
- Assemble #B823 into the body.
- Tighten the screw (#1567).
- Arrange the wires (red and black) in the groove.



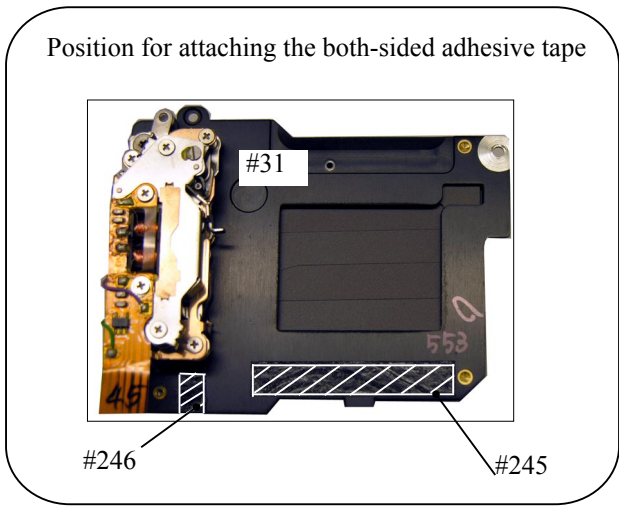
Optional pack

- Attach the both-sided adhesive tape (#927) on #1027.
- ※ Do NOT cover the positioning hole of #1027.
- Attach #1027 on #825.
- Attach #994 on #1027.
- Make a crease on #1027.
- Assemble #825 in the body, and tighten four screws (#1542) in order.



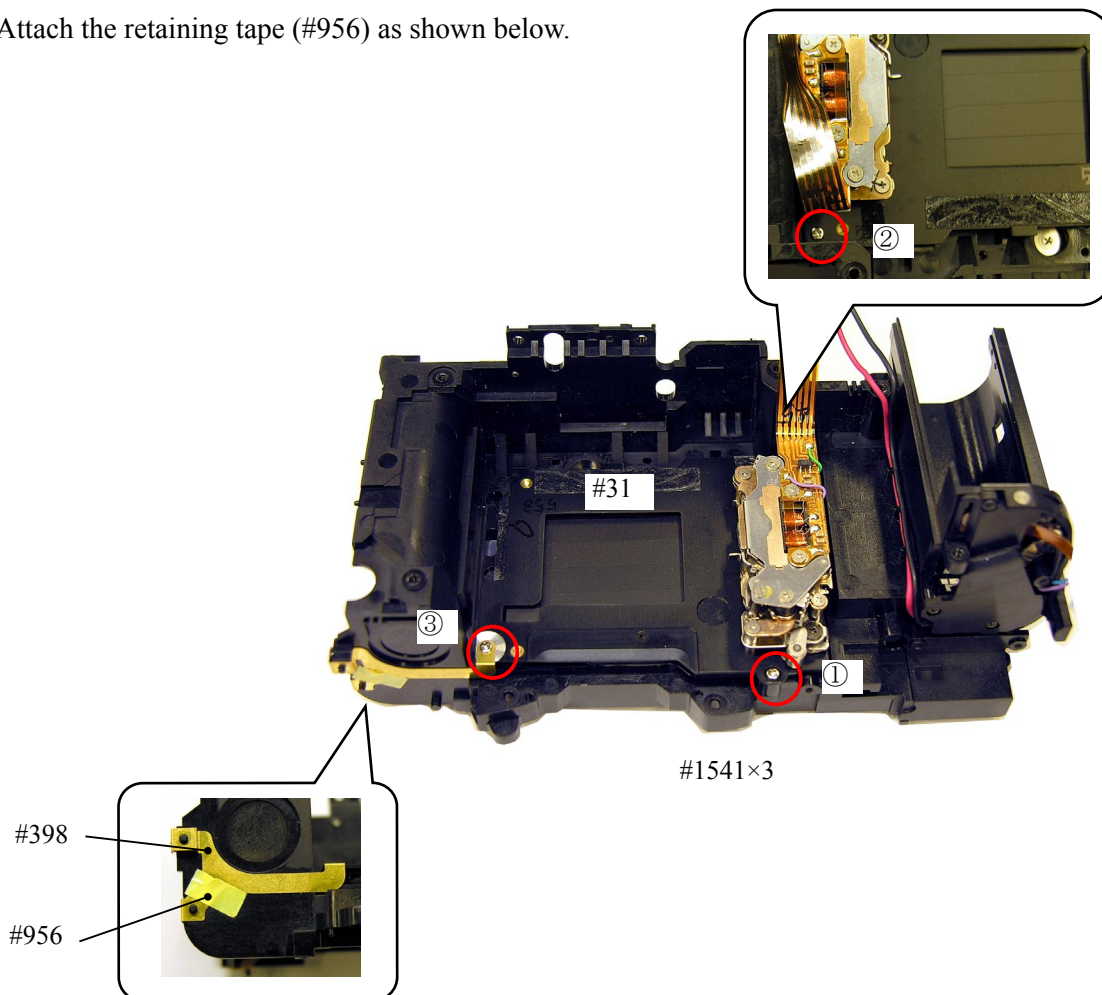
Shutter unit

- Attach the both-sided adhesive tape (#245 and #246) on #31 to collect dust.
- ※ When attaching, be careful NOT to give pressure on the shutter side.



Installment of Shutter unit

- Peel off the four pieces of the backing paper (#244) that were attached on the rear body. (ref. Page A2)
- Assemble the shutter unit (#31) into the body.
- Assemble the GND steel plate (#398).
- Tighten three screws (#1541) in order.
- Attach the retaining tape (#956) as shown below.



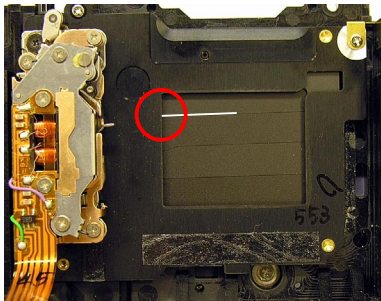
U/D PCB unit

- Assemble the U/D PCB unit (#B16620) in the body.

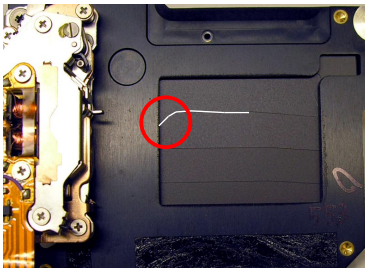
- ① The shutter must be in state of charging (being about to be released).
(Check this by the shutter curtain.)
- ② The charging SW must be at the initial position.
(All the brushes are on the gold pattern.)
- ③ The mirror charge lever and shutter charge lever must be at the initial position.

① In state of charging

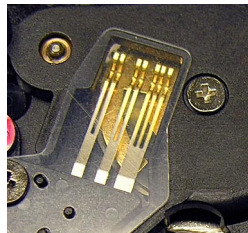
OK



NG



② Charge SW:
Initial position

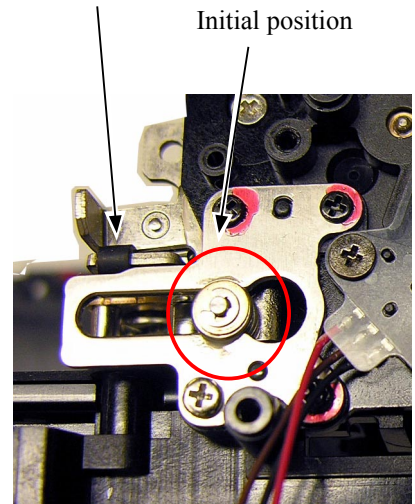


③ Charge lever (Mirror):

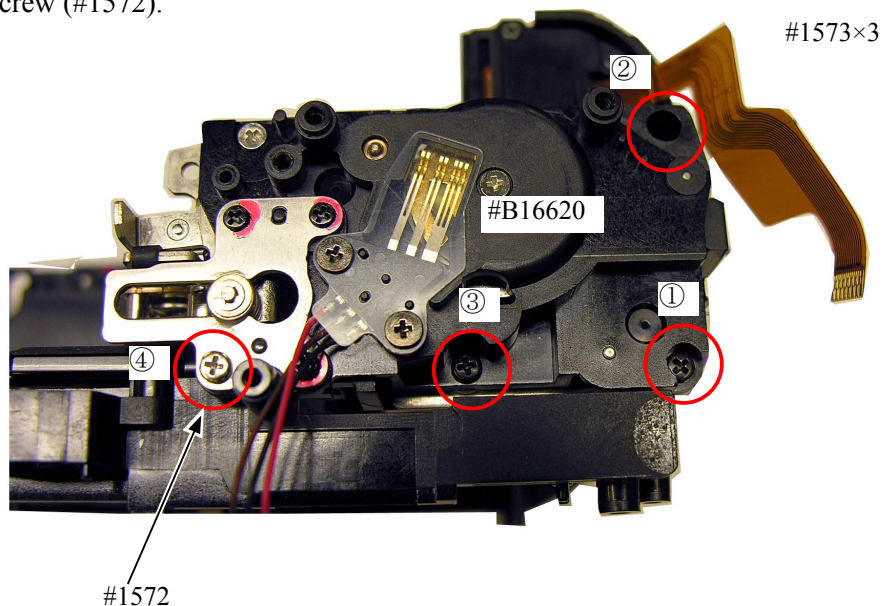
No gap

③ Charge lever (shettur):

Initial position

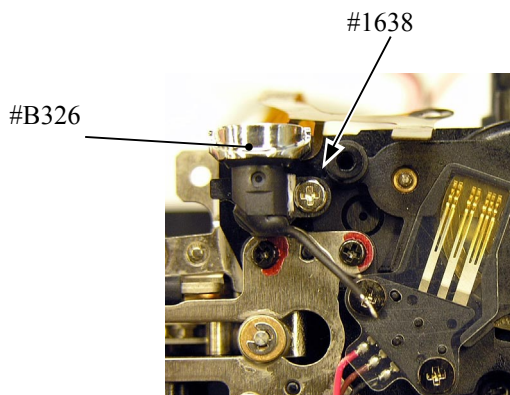
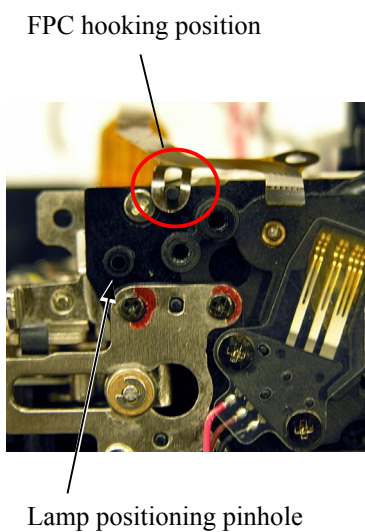


- Tighten three screws (#1573) in order.
- Tighten the screw (#1572).



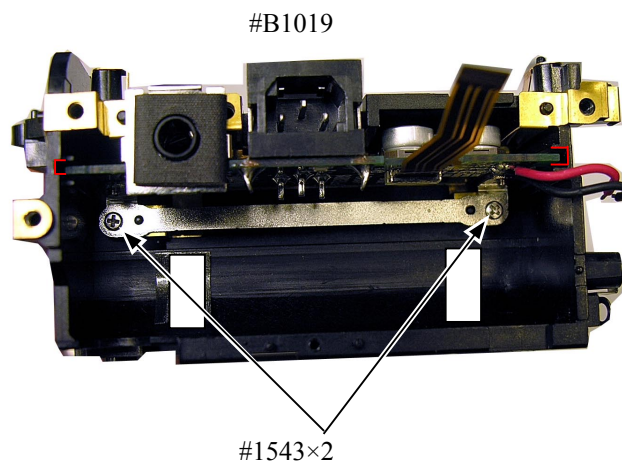
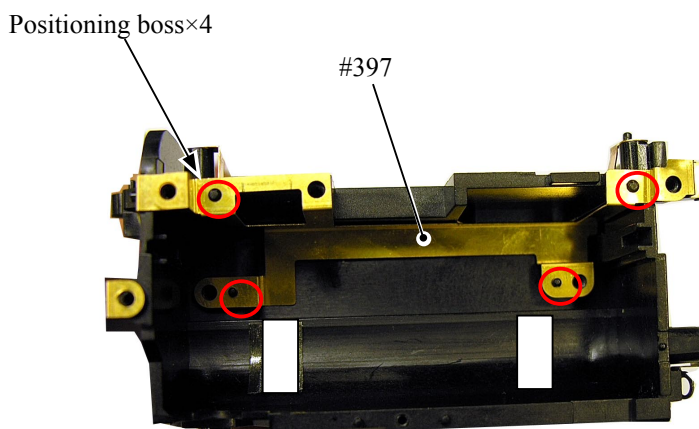
AF-assist lamp

- Hook the shutter FPC to the boss.
(See below)
- Put the AF-assist lamp (#B326), and tighten the screw (#1638).



I/F board unit

- Fit the I/F GND steel plate (#397) in the positioning bosses.
- Put and fix the I/F-board unit (#B1019) with two screws (#1543).

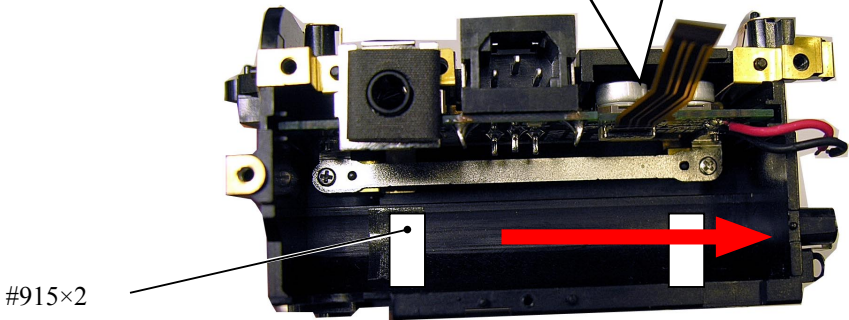
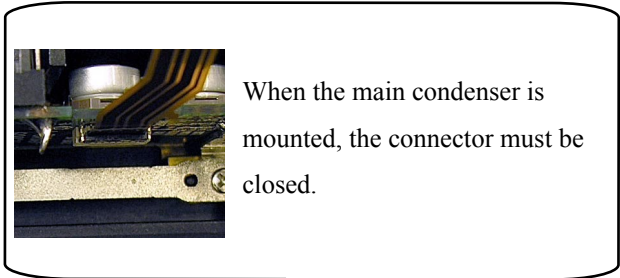


Main condenser/DI-PCB

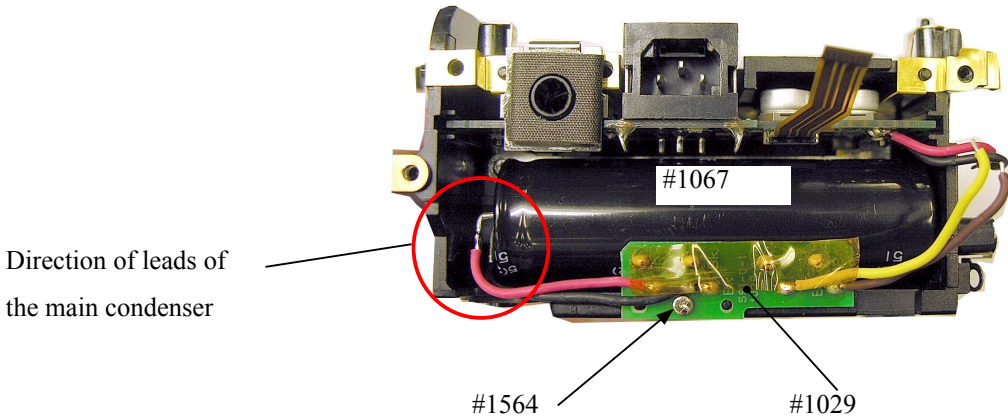
- Assemble the main condenser (#1067) in the body, and attach two pieces of the both-sided adhesive tape (#915).

※ Refer to the below for the lead direction of the main condenser.

- Mount the DI-PCB (#1029), and tighten the screw (#1564).

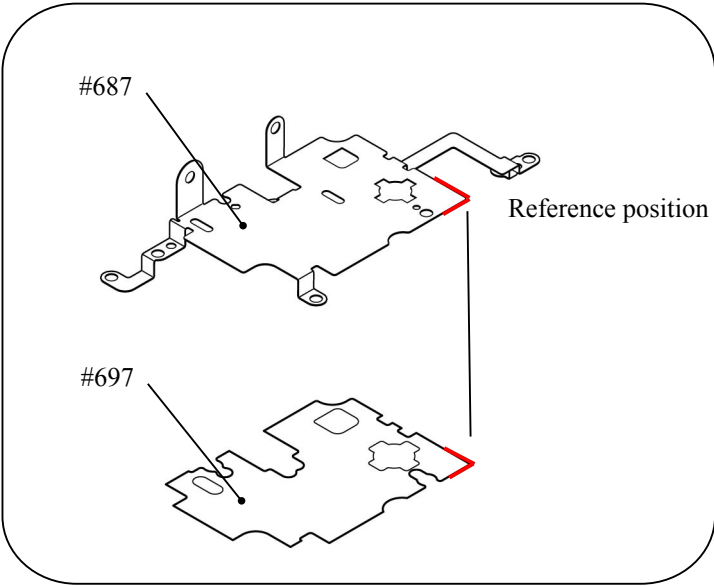


Position by following the direction of the arrow

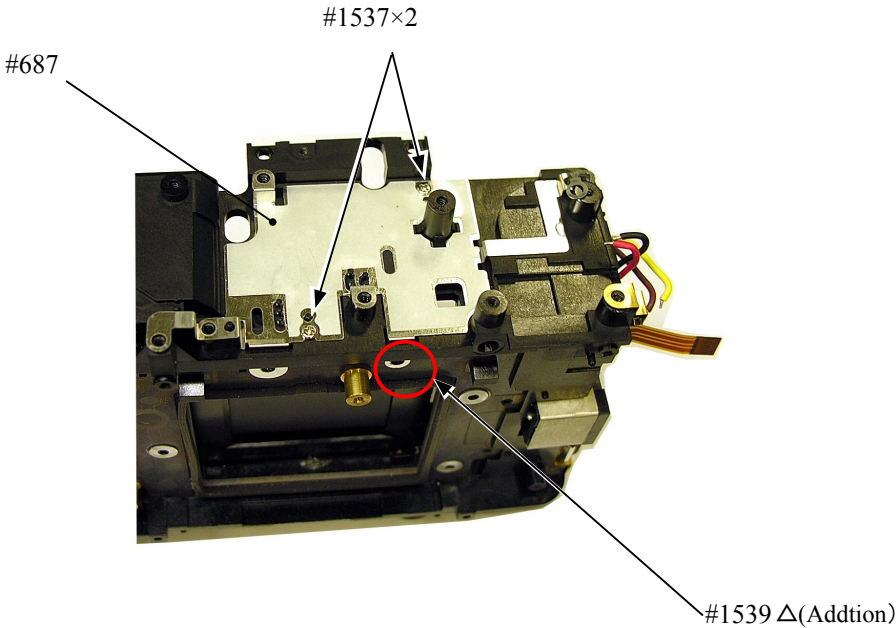


DC/DC shield plate

- Attach the DC/DC-PCB insulating sheet (#697) on the DC/DC-PCB shield plate (#687).



- Assemble the DC/DC-PCB shield plate (#687) in the body.
(Put the bending portions of #687 into the square holes of the body.)
- Tighten two screws (#1537).
- Tighten screws (#1539). Δ(Addtion)

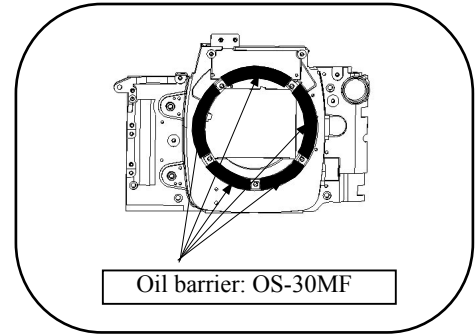


Assembly / Adjustment

• NOTE: For undescribed tapes and sponges here in "Assembly", refer to PARTS LIST.

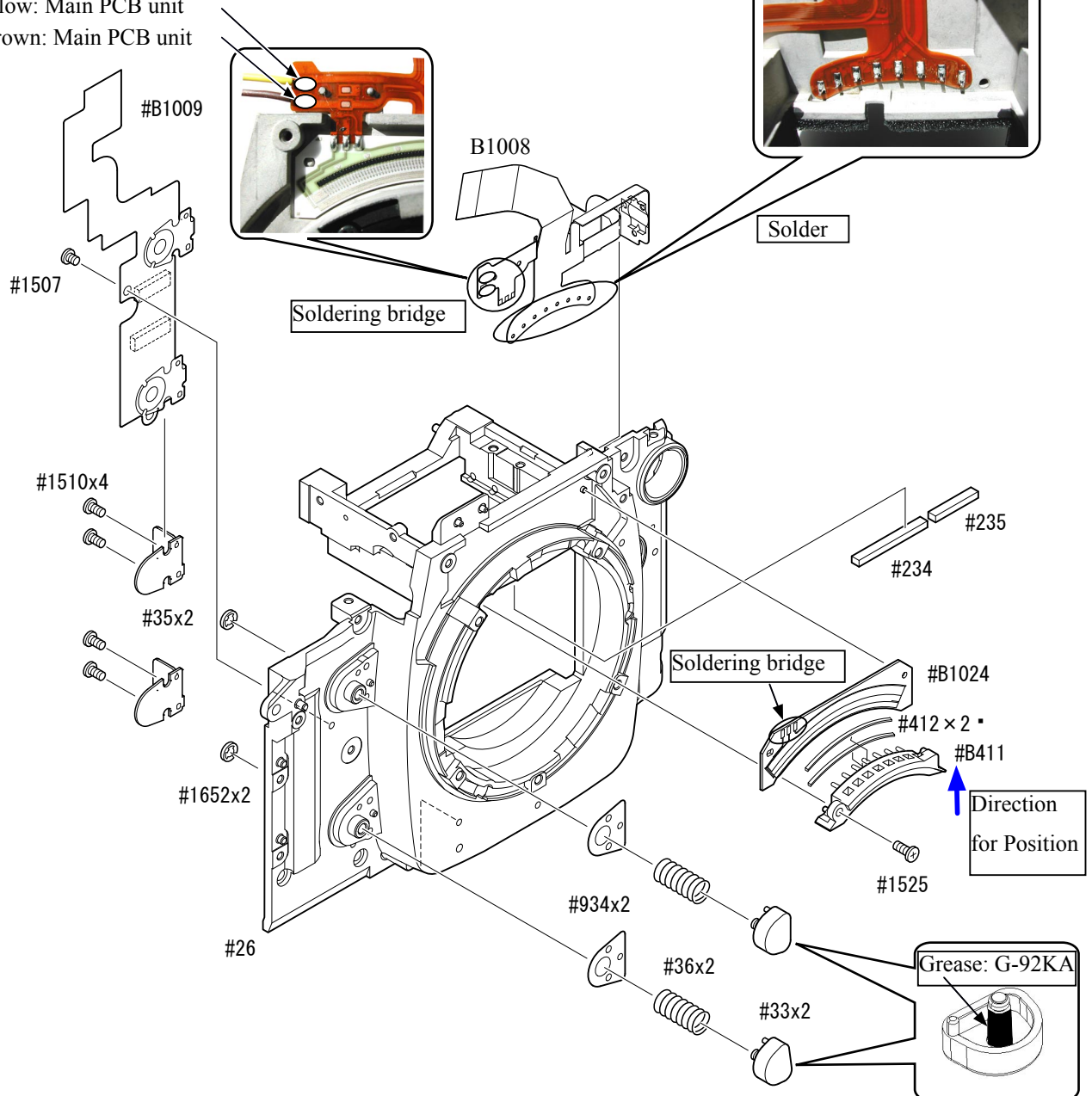
1. Front body

- Lens-contact unit
- F-F0 PCB unit
- Mirror-support sponge
- Front plate-FPC unit
- Preview button
- Function button
- Lens contact FPC unit



- Position #B411 upwards, and fix it with the screw (#1525).
- Attach #B1024 by aligning with the positioning boss of #26.
- Solder #B411 and #B1008 at eight locations.
- Make soldering bridges of #B1024 and #B1008 at three locations.

Yellow: Main PCB unit
Brown: Main PCB unit

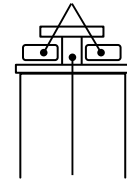


Installment of Mg

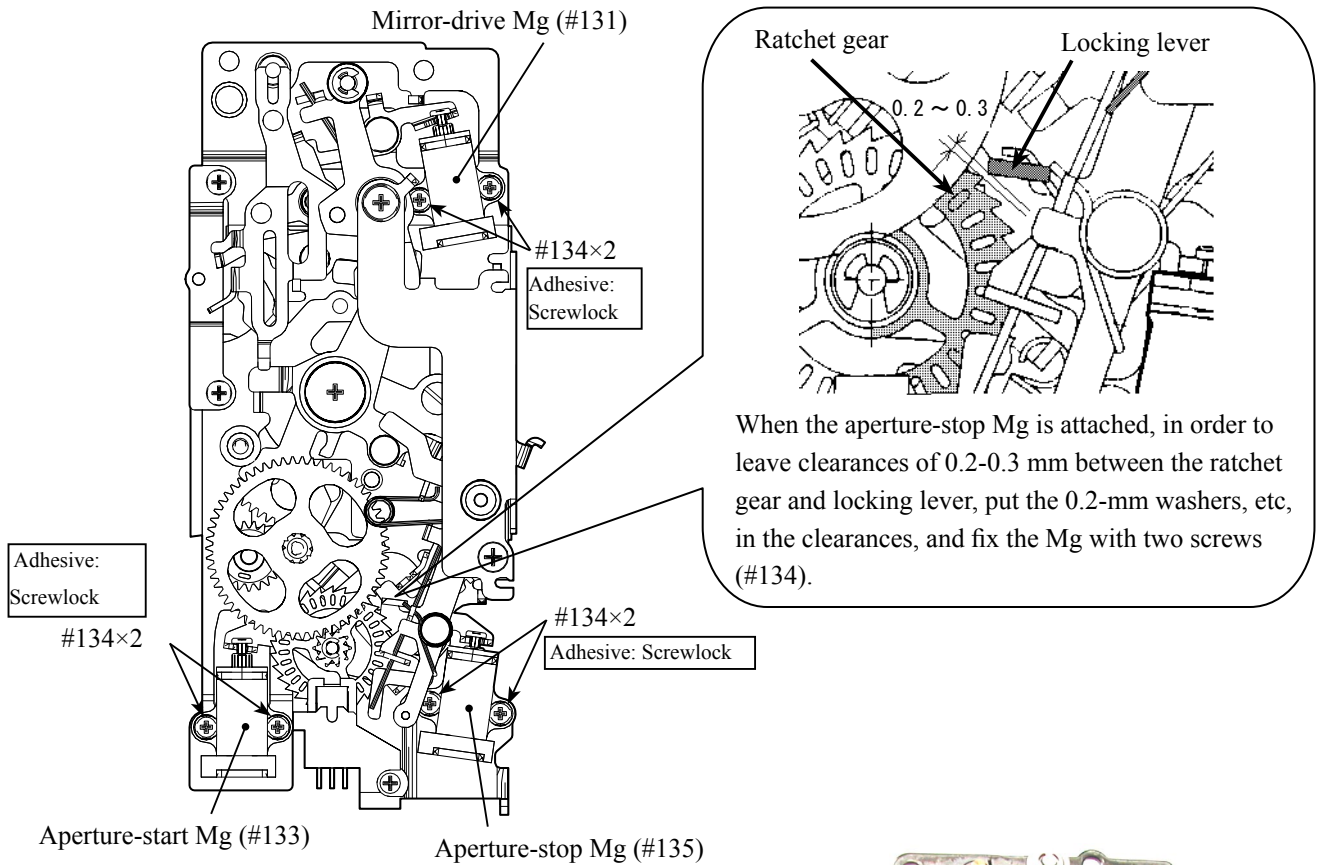
- When mount each Mg, arrange clearances between the U-groove lever and the iron core.

Check the clearances when the iron core of Mg is attached.

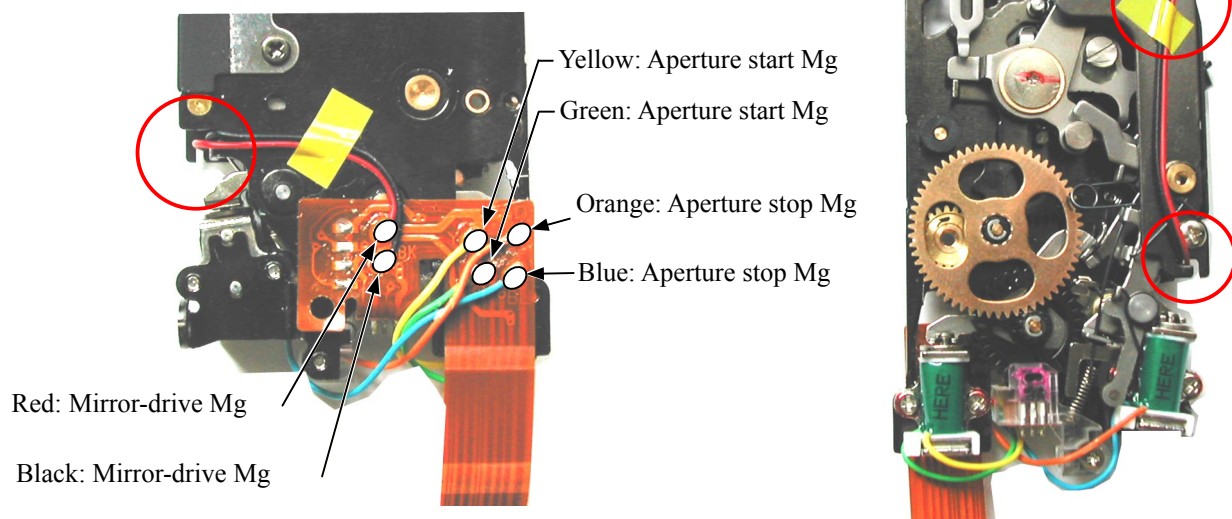
U-groove lever



Iron core of Mg

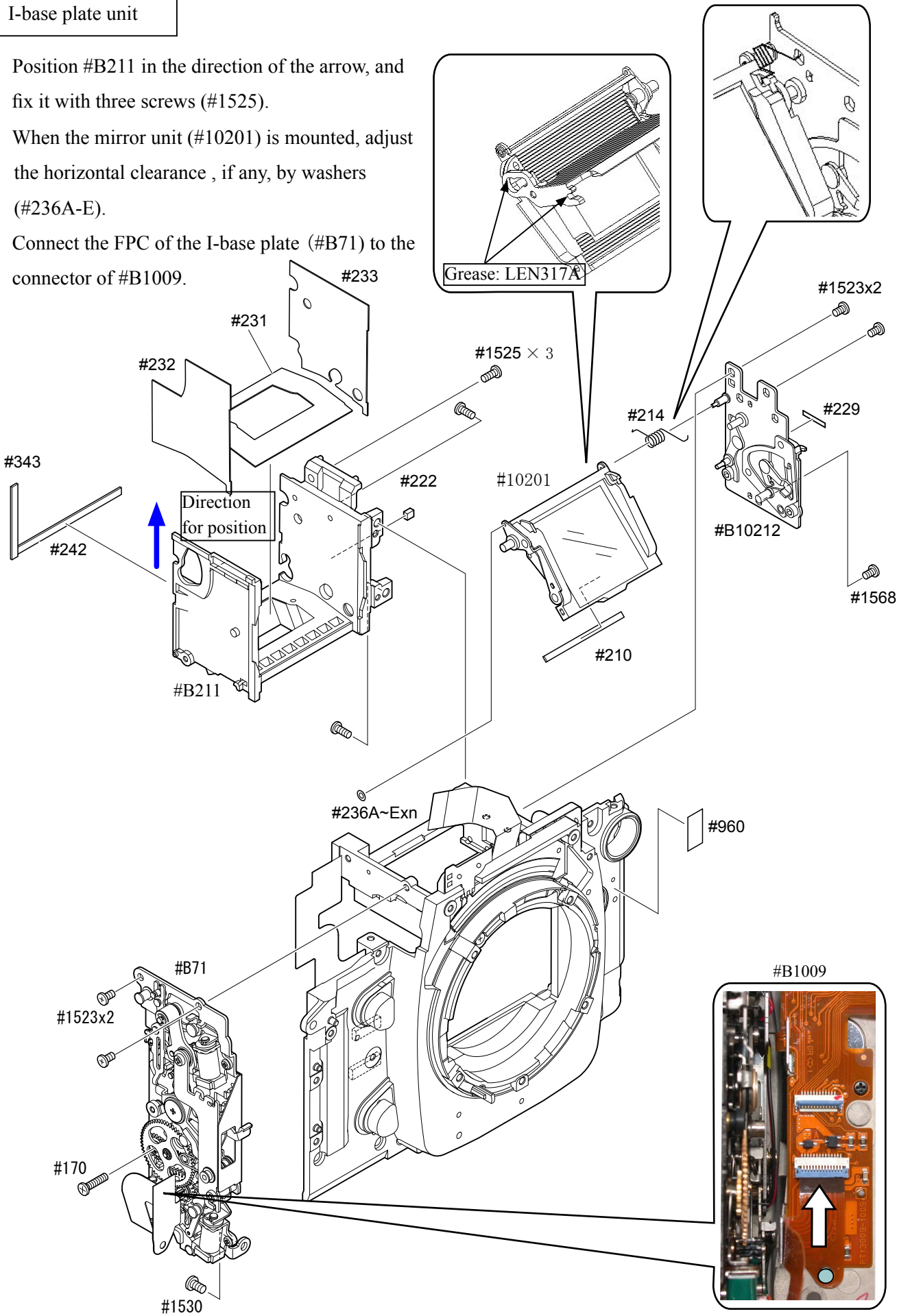


Wire arrangement of each Mg and Soldering



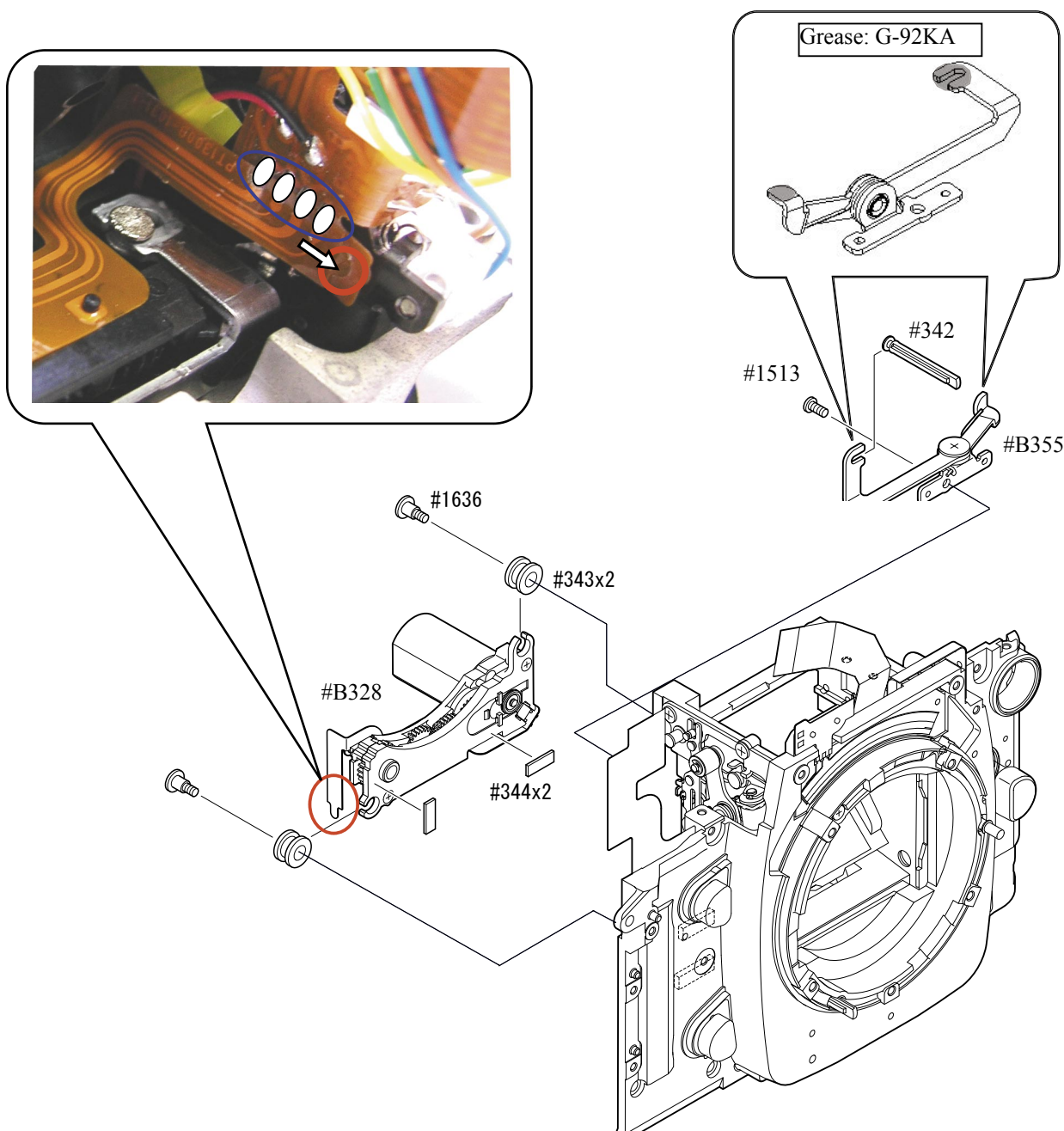
| |
|-------------------|
| Mirror BOX unit |
| Mirror unit |
| I-base plate unit |

- Position #B211 in the direction of the arrow, and fix it with three screws (#1525).
- When the mirror unit (#10201) is mounted, adjust the horizontal clearance, if any, by washers (#236A-E).
- Connect the FPC of the I-base plate (#B71) to the connector of #B1009.

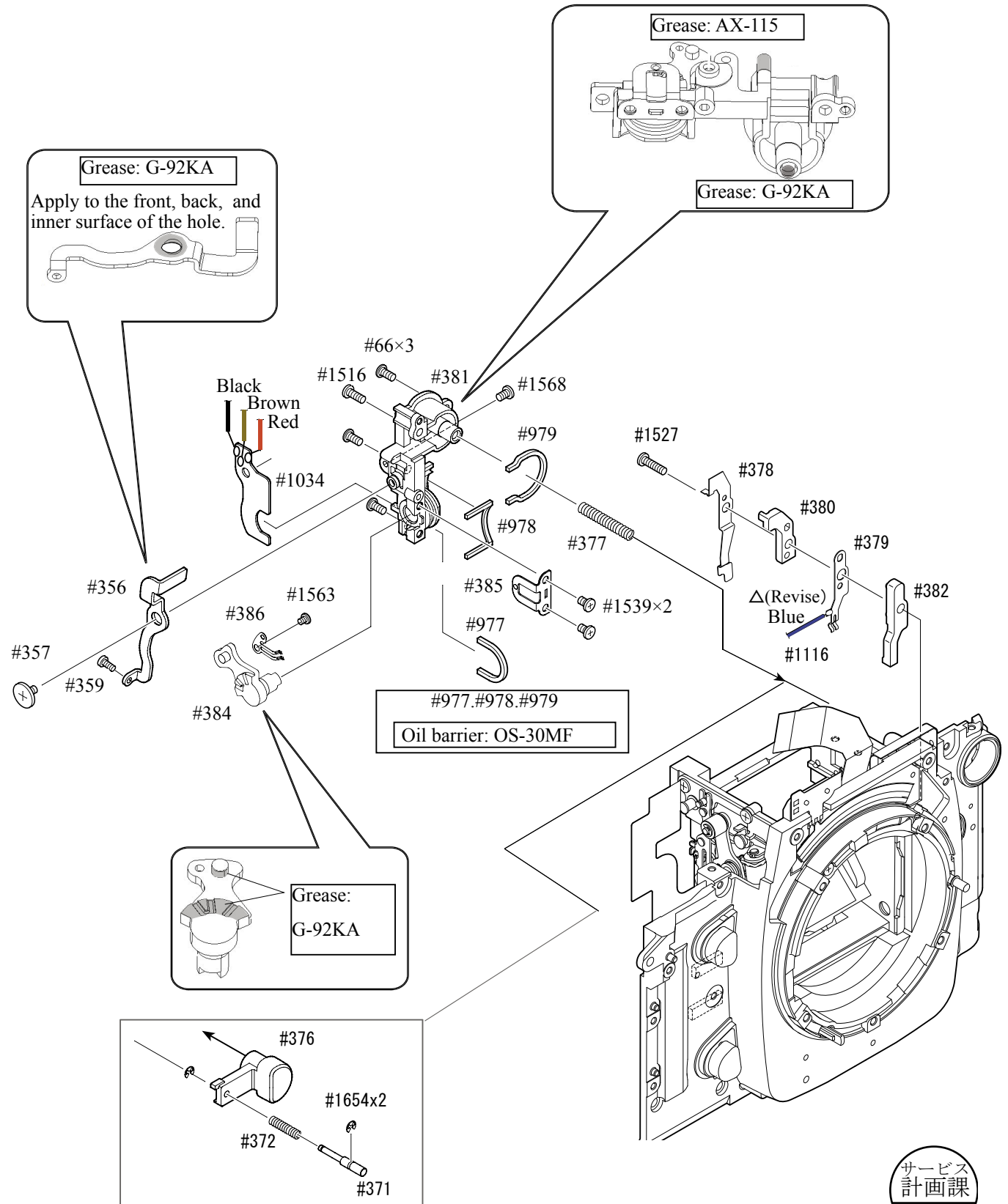


| |
|---|
| AF drive unit Horizontal-shooting lever unit |
|---|

- Fix the AF drive-PCB unit (#328) with two screws (#1636).
Be careful NOT to pinch the AFFPC.
- While holding the pedestal of the horizontal-shooting lever unit (#B355), turn the lever unit clockwise to apply compression to the spring.
- Fit the groove part of the coupling shaft (#342) in the U-part of the horizontal-shooting lever unit (#B355), and tighten the screw (#1513).
- Put the edge of the AF drive unit FPC into the hole of the I-base plate FPC, and make soldering bridges at four locations.

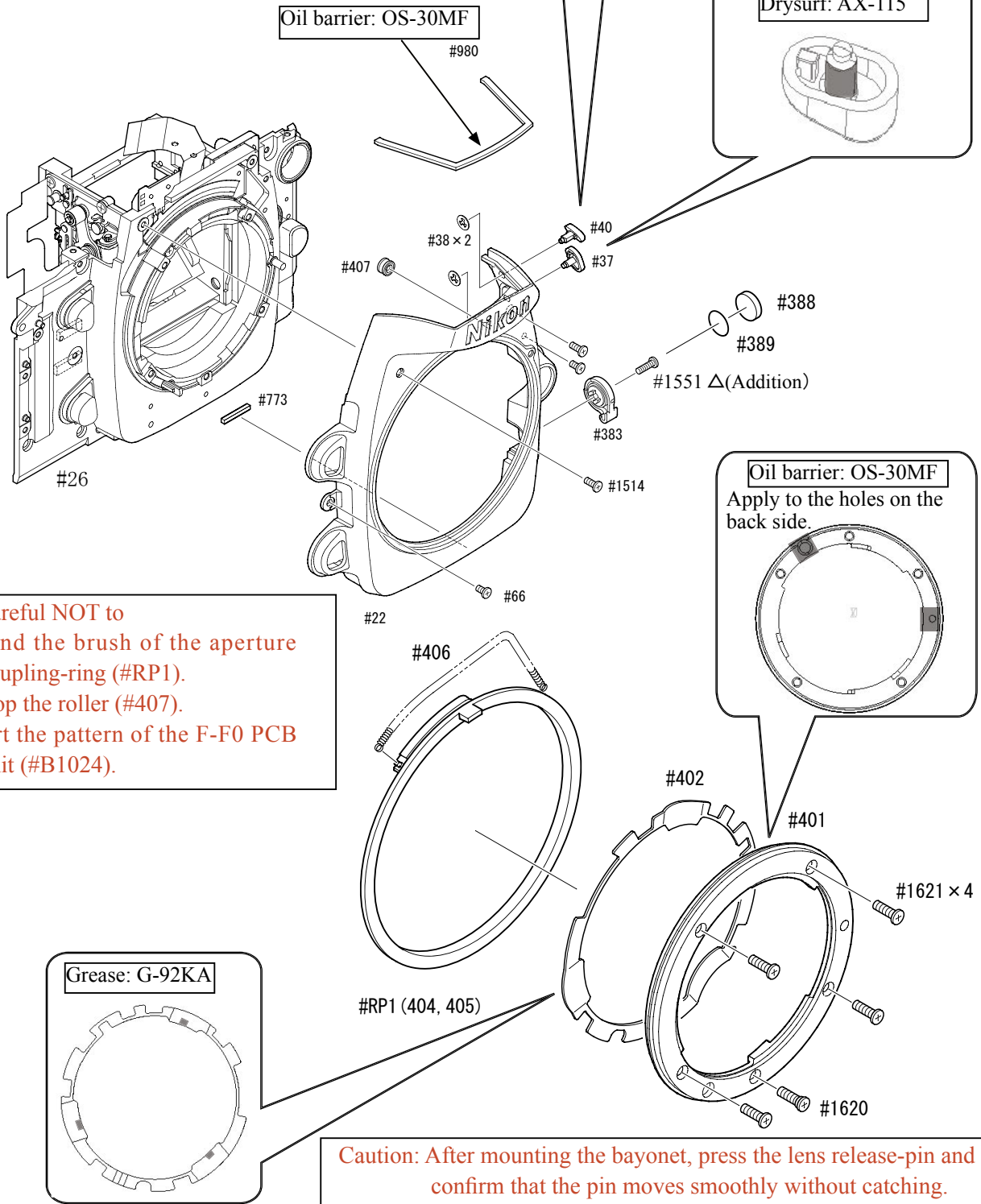


Lens release SW
 Lens release unit
 Vertical lever
 SCM-change PCB



Front cover unit
Aperture coupling-ring unit
Bayonet

- Assemble the aperture coupling-ring (#RP1) into the apron (#22), and attach the spring (#406) and roller (#407). Then mount this assembled unit on the front body by turning slightly clockwise, and fix it with two screws (#1514) and two screws (#66).



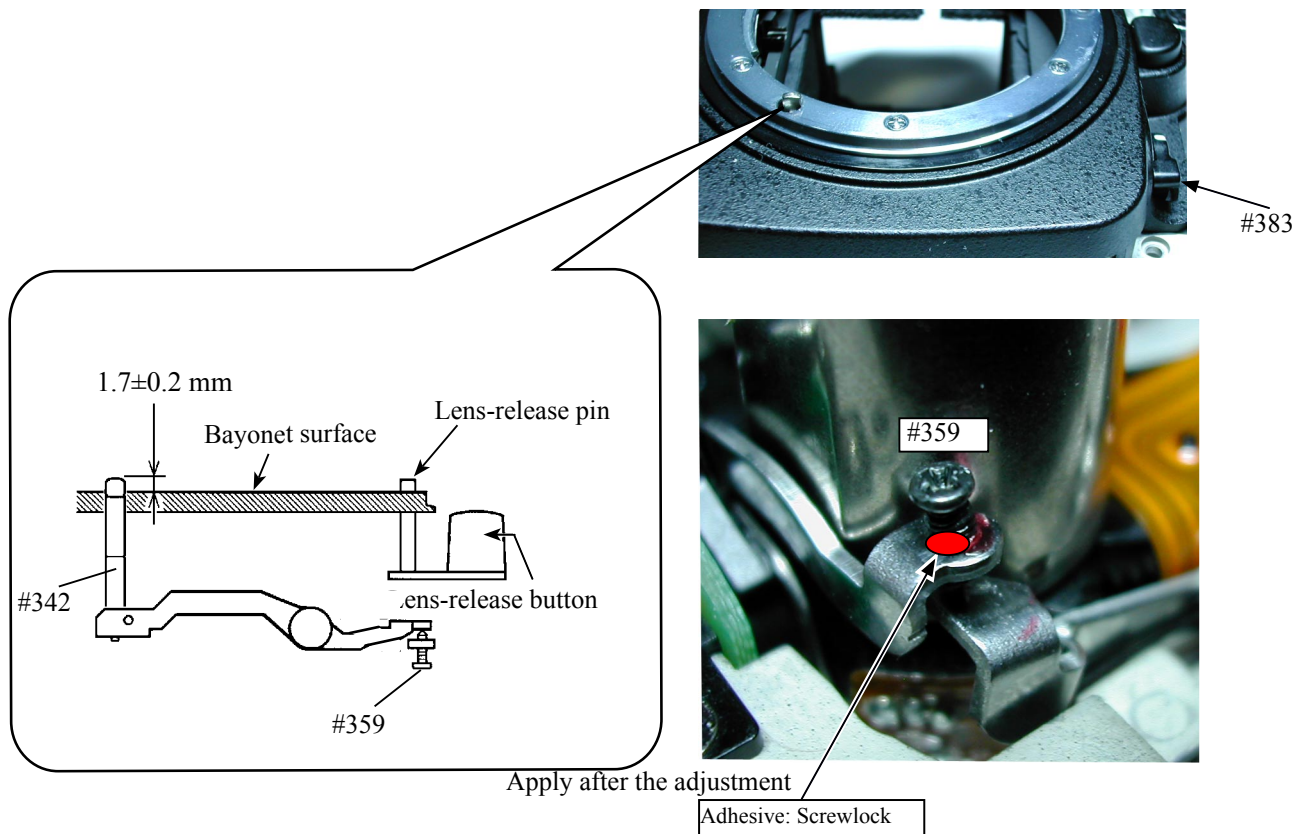
Be careful NOT to

- bend the brush of the aperture coupling-ring (#RP1).
- drop the roller (#407).
- dirt the pattern of the F-F0 PCB unit (#B1024).

Caution: After mounting the bayonet, press the lens release-pin and confirm that the pin moves smoothly without catching.

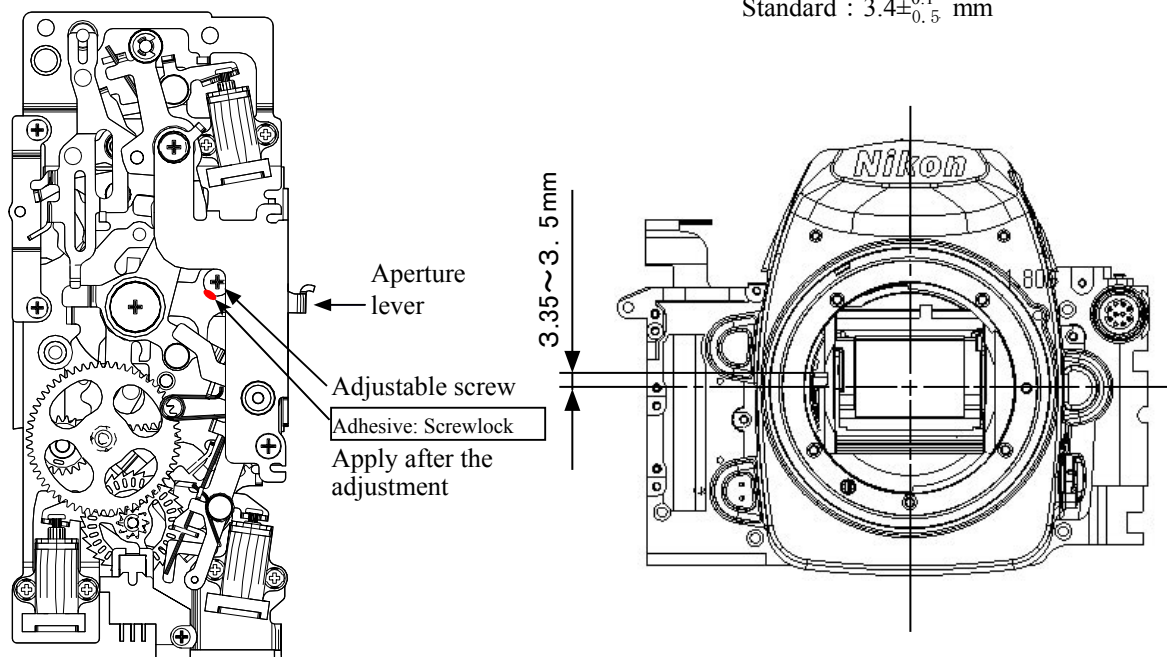
Height adjustment of AF coupling shaft

- ① Set the SCM-change lever (#383) to "S mode".
(AF coupling shaft (#342) protrudes from the bayonet face.)
- ② Adjust the height of the AF coupling shaft (#342) by using the screw (#359) to "1.7±0.2 mm".
- ③ After the adjustment, fix the screw (#359) with Screwlock.



Height adjustment of Aperture lever

- Measure the height of the aperture lever by using the tool (J18004).
Standard : $3.4 \pm_{0.5}^{0.1}$ mm



Angle adjustment of Main mirror and sub-mirror

• Main mirror 45° adjustment

Caution: • Before and after the adjustment, check the accuracy by moving the main mirror up- and downwards a few times.

① Check for the right-left deviation.

In case the deviation is out of standard, loose three screws (#1523) and make an adjustment by moving the main mirror shaft PCB (#B10212).

② Check for the up-down deviation. In case the deviation is out of standard, make an adjustment by turning the eccentric pin with Hexagonal wrench.

• Sub-mirror 59° adjustment

Caution: Before and after the adjustment, check the accuracy by moving the main mirror up- and downwards a few times. Confirm if the two-pronged part of the sub-mirror firmly fits in the eccentric pin.

• Check for the up-down deviation.

In case the deviation is out of standard, make an adjustment by turning the sub-mirror eccentric pin.

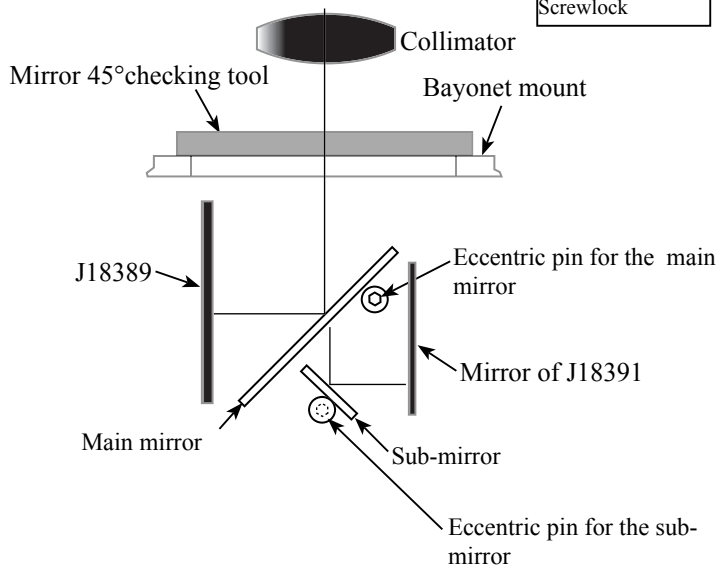
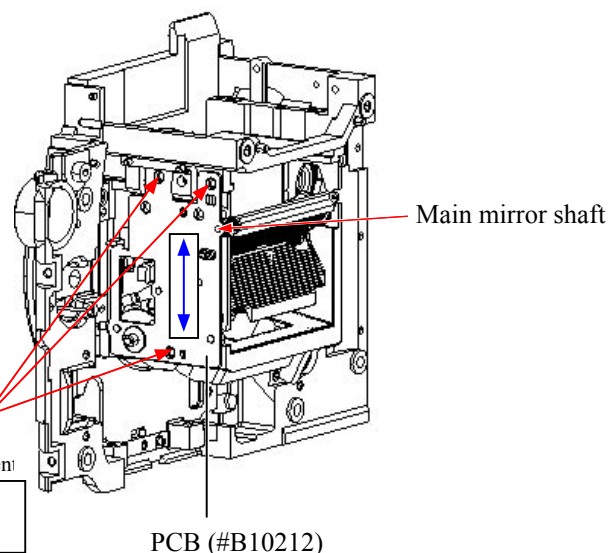
* Device

1. For Main mirror adjustment

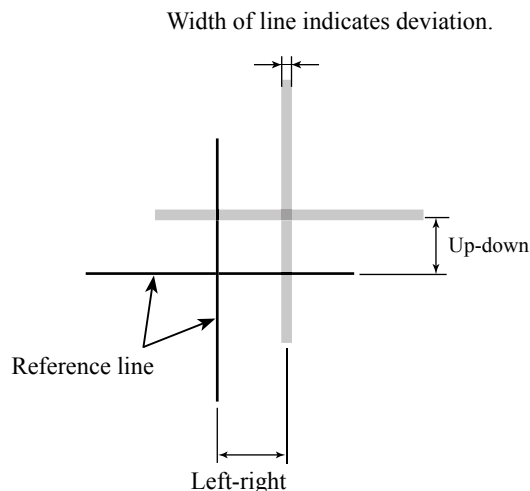
- ① Collimator (J19002)
- ② 45° mirror tool (J18389)
- ③ Mirror 45° inspection tool (J18037)
- ④ Hexagonal wrench (φ1.5mm)

2. For sub-mirror adjustment

- ① Collimator (J19002)
- ② Sub-mirror 59° inspection tool (J18391)
- ③ Hexagonal wrench (φ1.5mm)

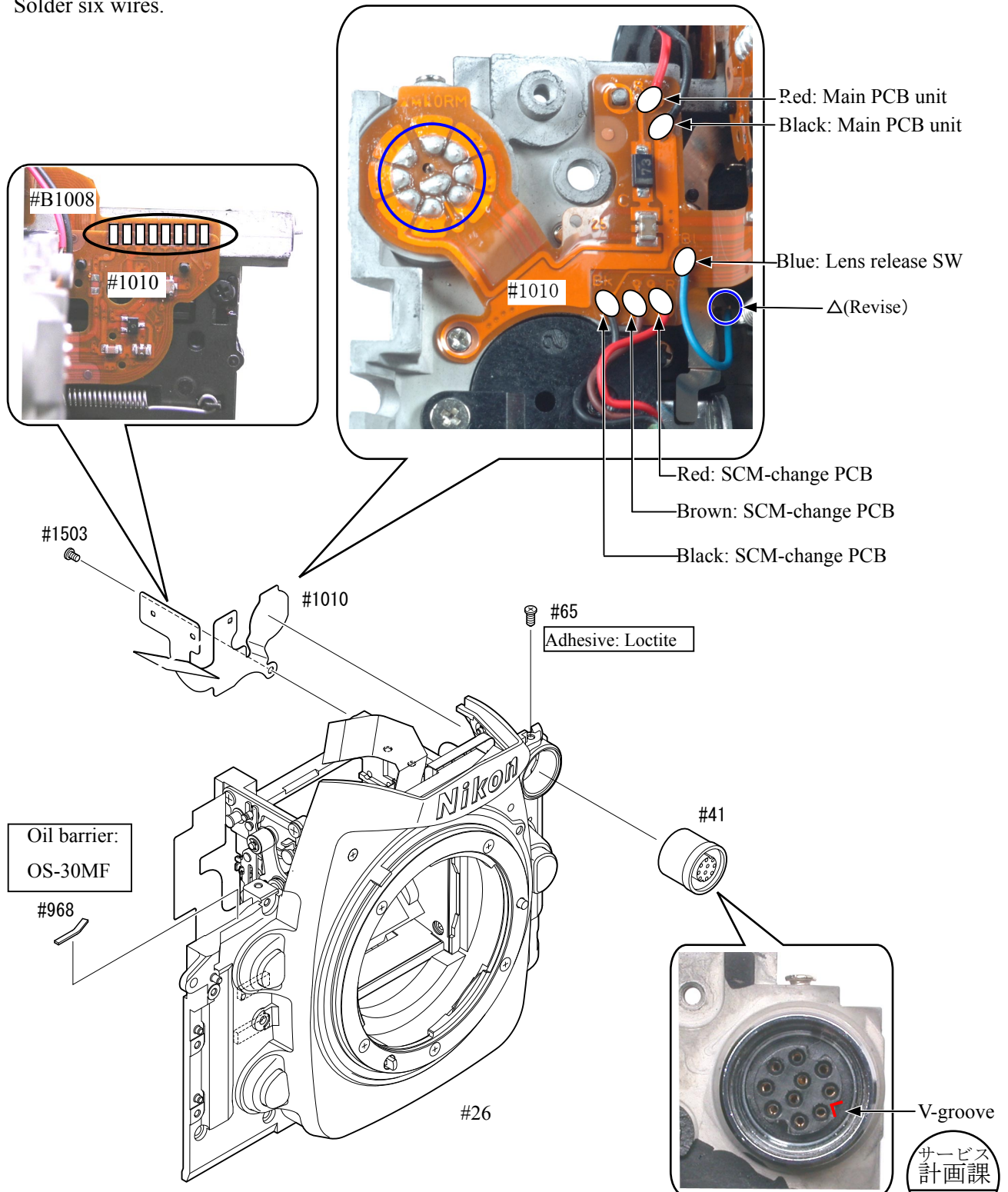


| | Main mirror | Sub-mirror |
|----------------------|-------------|------------|
| Left-right deviation | ±15' | ±15' |
| Up-down deviation | ±5' | ±15' |
| Distortion | 6' or less | 6' or less |



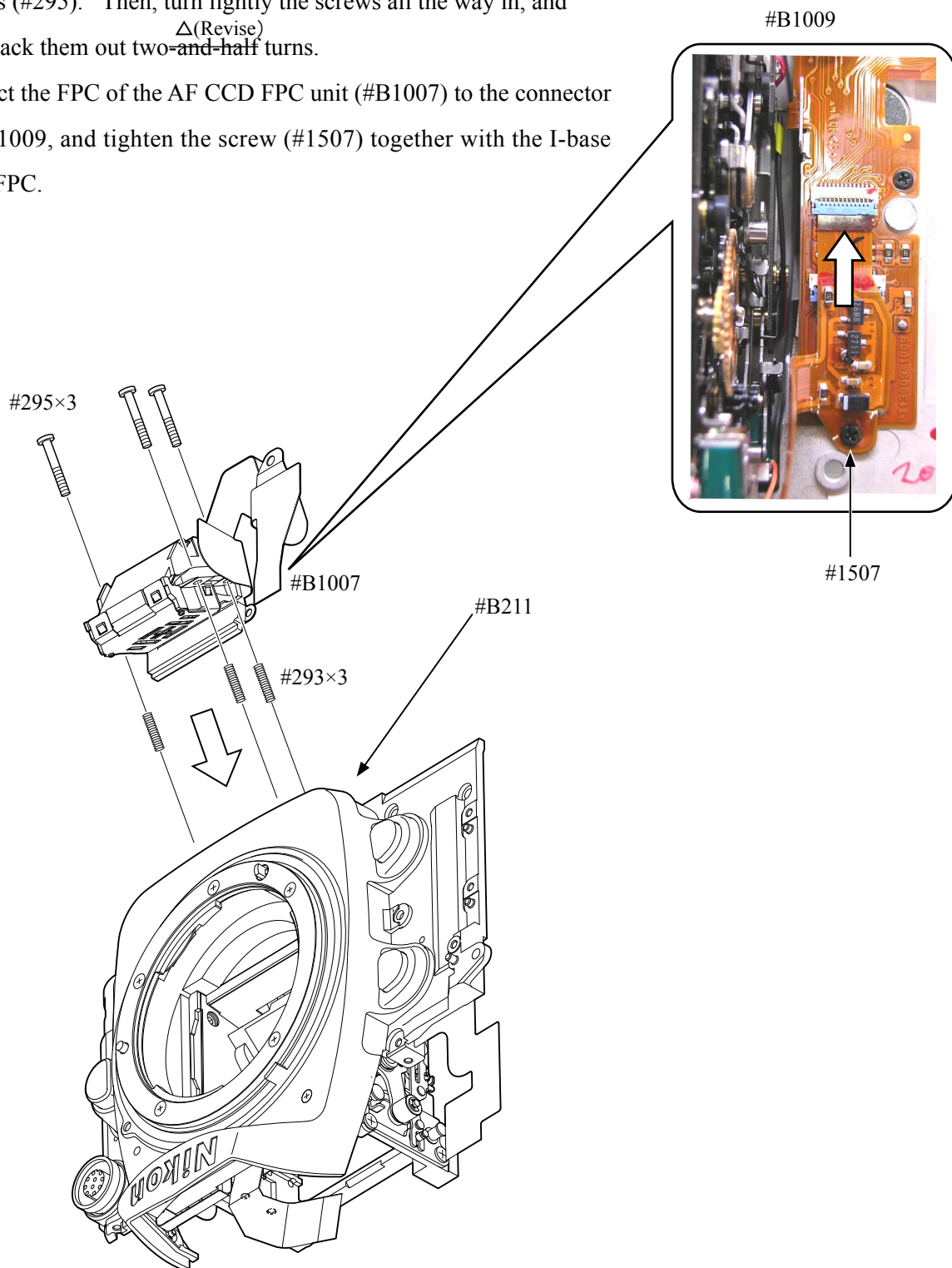
10-pin plug
10-pin FPC unit

- Position the 10-pin plug (#41) so that the V-groove comes in the lower right-hand corner (viewed from the front), then fit it in the holes of the back side of the 10-pin FPC (#1010), and assemble them into #26.
- Apply Loctite to the screw (#65) and tighten it.
- Fix the 10-pin FPC (#1010) with the screw (#1503).
- Make soldering bridges of the 10-pin plug (#41) and 10-pin FPC at nine locations.
- Make soldering bridges of 10-pin FPC (#1010) and lens contact-FPC at eight locations.
- Solder six wires.



AF CCD FPC unit

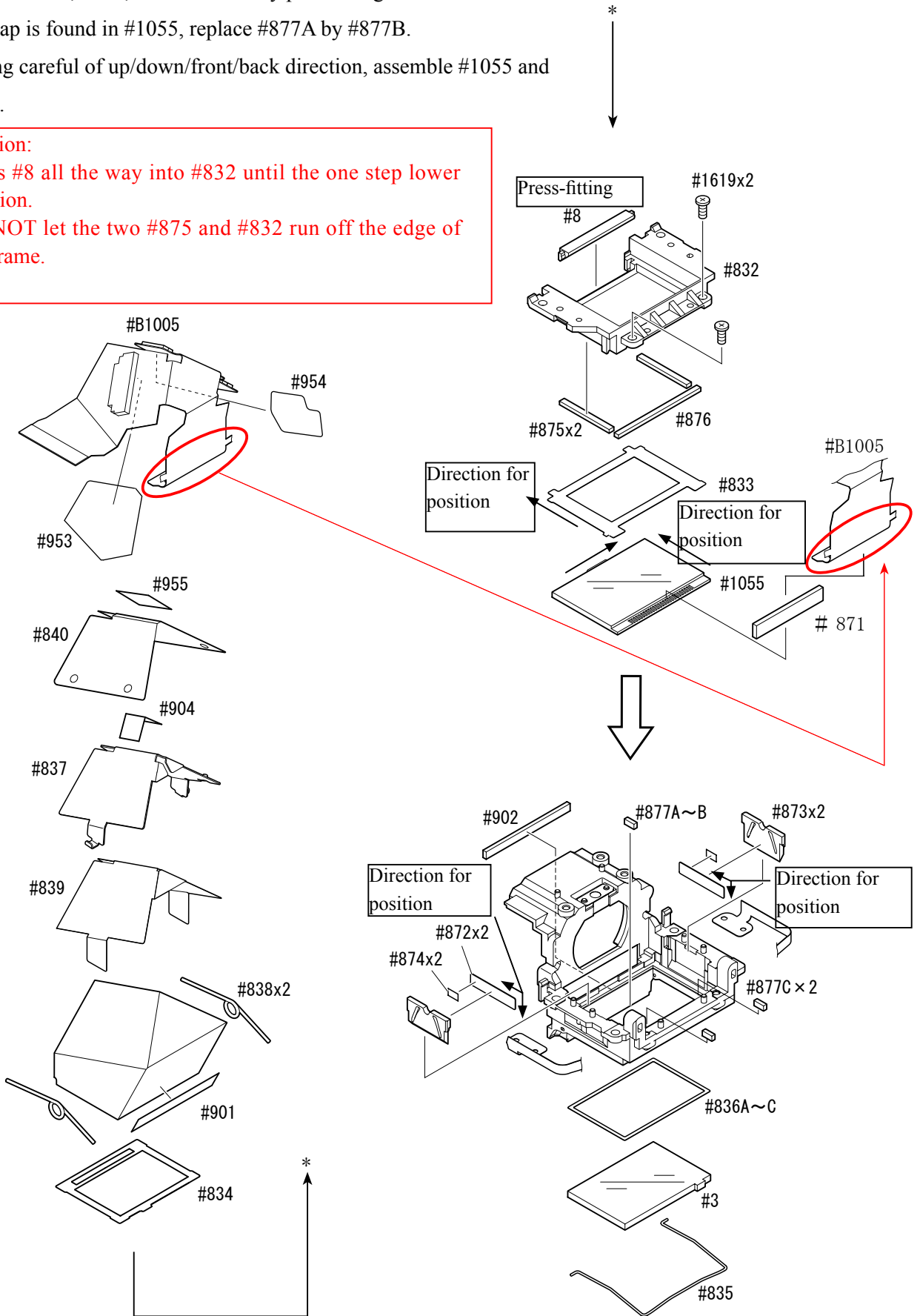
- Assemble the adjustment springs (#293) in the bottom of the mirror BOX unit (#B211).
- Attach the AF CCD FPC unit (#B1007) with three Hexagonal-Key screws (#295). Then, turn lightly the screws all the way in, and then back them out two-^{Δ(Revise)}and-half turns.
- Connect the FPC of the AF CCD FPC unit (#B1007) to the connector of #B1009, and tighten the screw (#1507) together with the I-base plate FPC.



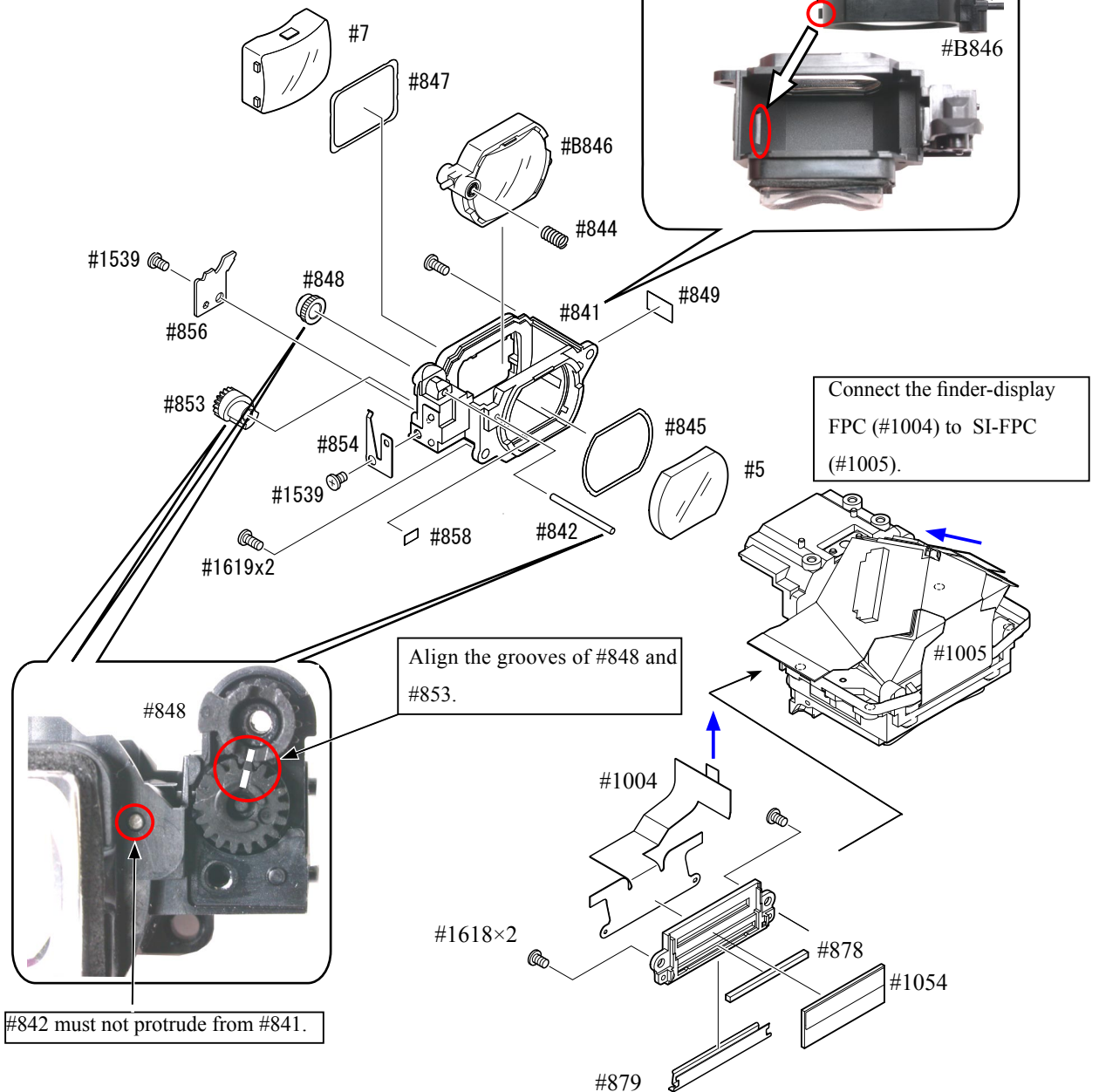
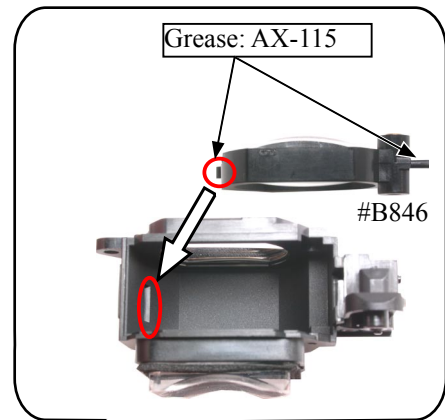
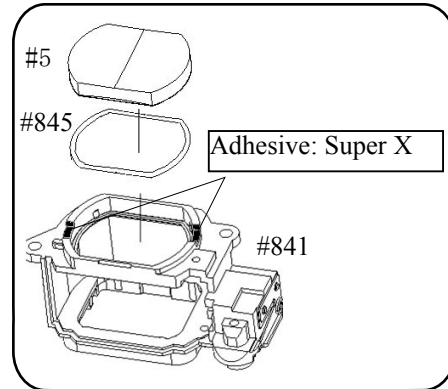
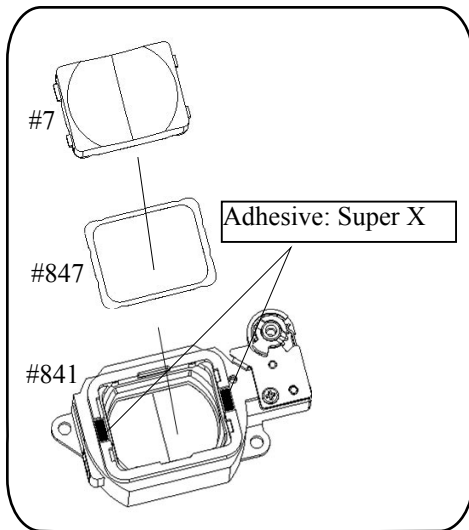
Penta unit
Prism box unit

- Press #8 into #832.
- Attach #1055, #833, and two #872 by positioning them.
- If a gap is found in #1055, replace #877A by #877B.
- Taking careful of up/down/front/back direction, assemble #1055 and #833.

Caution:
Press #8 all the way into #832 until the one step lower position.
Do NOT let the two #875 and #832 run off the edge of the frame.

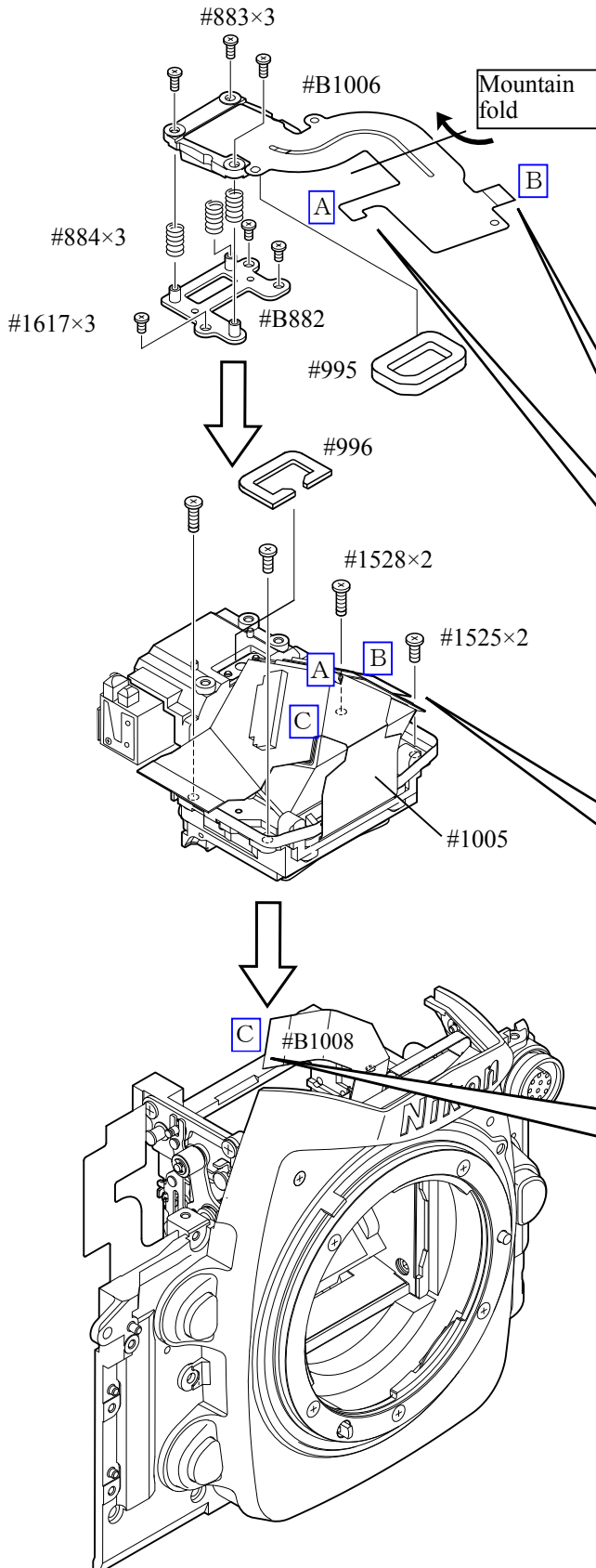


Eyepiece lens-barrel unit

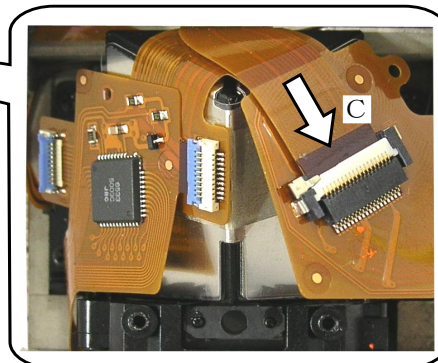
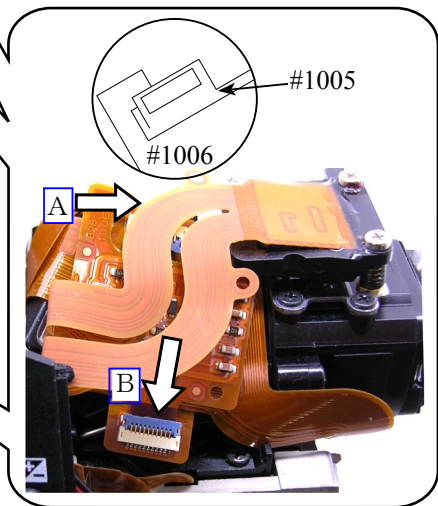
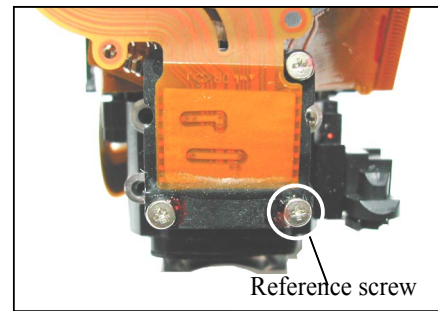


Metering FPC unit

- Fix the metering adjusting plate (#B882) with three screws (#1617).
- Fix the metering FPC unit (#B1006) and three springs (#884) temporarily with three screws (#883).
- Make a mountain fold of FPC, and hook **A**-part to the SI-FPC (#1005), while **B**-part to the connector.
- Fix the prism BOX unit with two screws (#1525) and two screws (#1528).
- Connect the lens contact-FPC (#B1008) to the connector **C**-part of the SI-FPC (#1006).



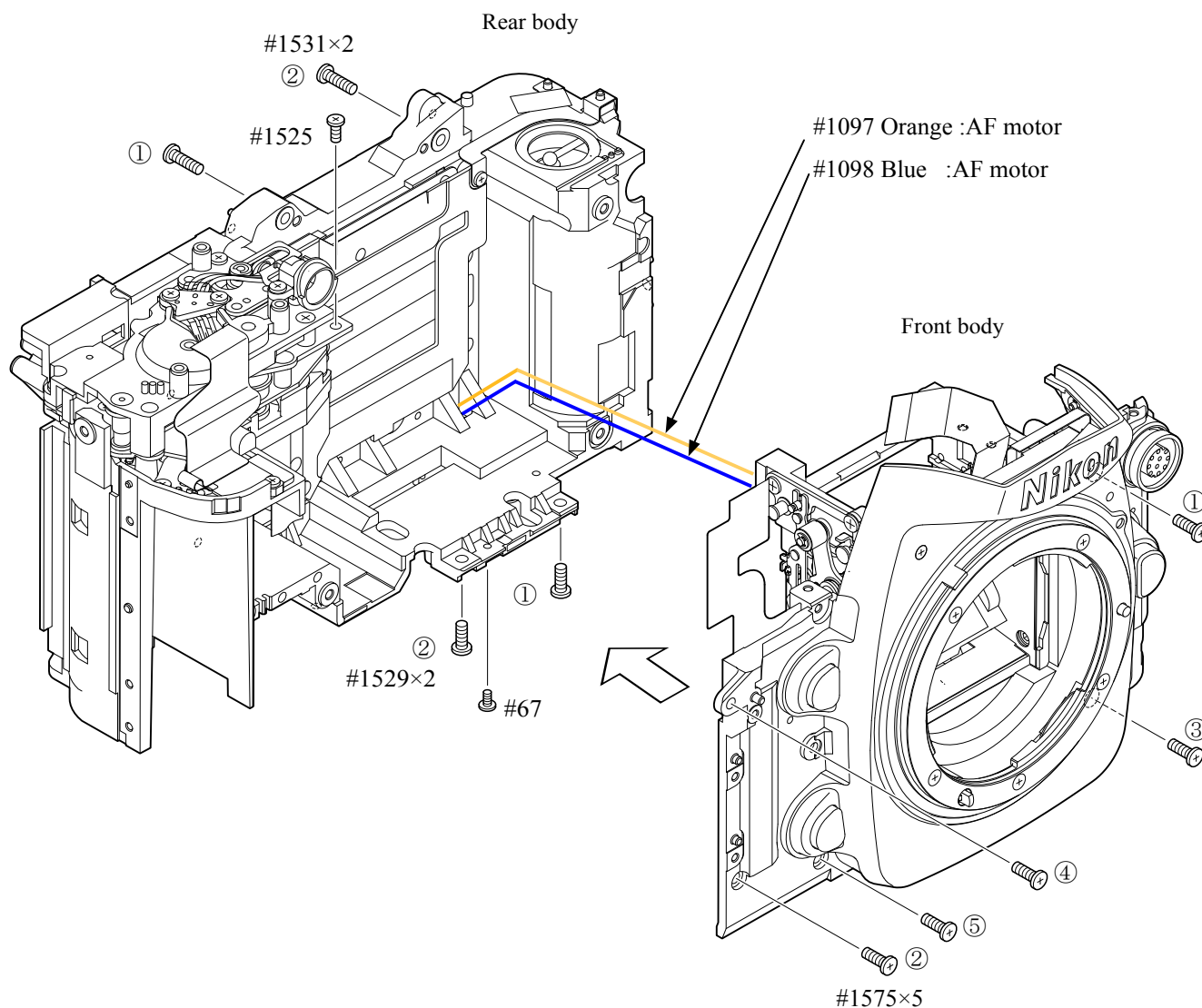
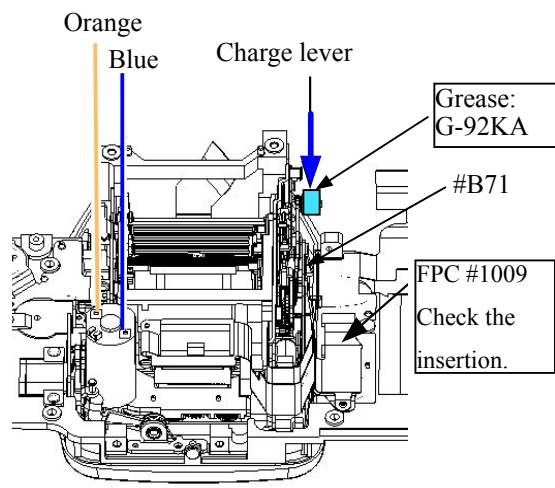
- Attach the metering FPC unit. Turn lightly three screws (#883) all the way in, and then back one reference screw of them out one three-and-halfturn.
△(Revise)



3. Mount Front body on Rear body

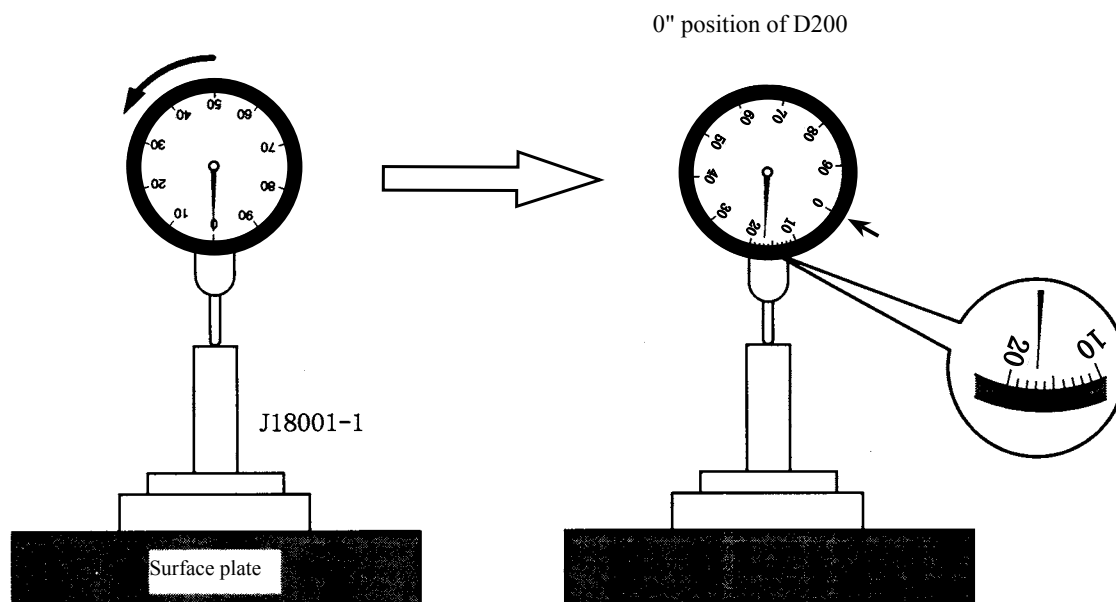
Mount the front body on the rear body

- ① Operate the charge-lever of the I-base plate unit (#B71) for mechanical reset.
- ② Check the connection status of the FPC (#1009).
- ③ While passing the two lead wires of the AF motor (#B26) into the hole of the rear body, assemble the front body (by taking care NOT to pinch the wires but to pull them.)
- ④ Tighten the five screws (#1575) in the order from ① to ⑤.
- ⑤ Tighten two screws (#1531) in the order of ① and ②.
- ⑥ Tighten the screw (#1525).
- ⑦ Tighten two screws (#1529) in the order of ① and ②.
- ⑧ Tighten the screw (#67).



| |
|--|
| Inspection and Adjustment of Body back |
|--|

* "0" positioning of the dial gauge

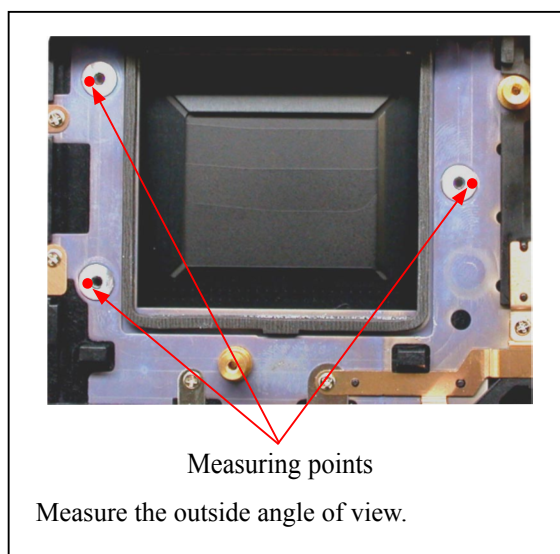


- ① Put the tool (J18001-1) on the surface plate, and set the dial gauge to "0".
- ② Turn the index ring in the direction of the arrow, and shift the position by "0.17 mm" from 0 that was set in ①. (This is "0"-position of D200.)
- ③ Measure the body back based on "0" reference position of the index ring.

- Measure 4 parts from the bayonet face to the CCD-PCB attaching face.

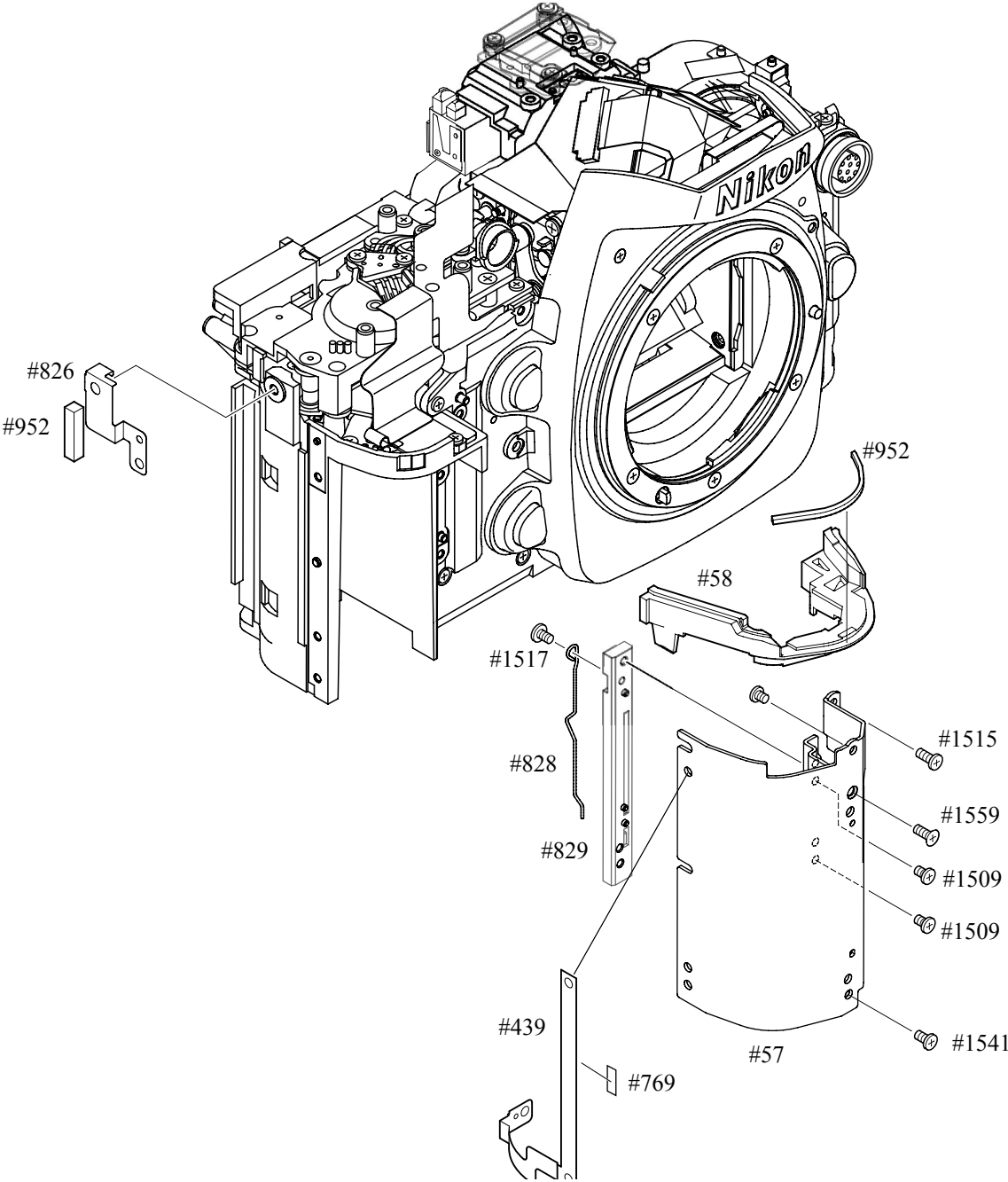
Standard: 48.5±0.015mm / Parallelism: within 0.015mm

- In case it is out of standard, make an adjustment by loosening screws that attach the front and rear bodies, or by putting the washer(s) on the contact surface between the front body and rear body.



Grip unit

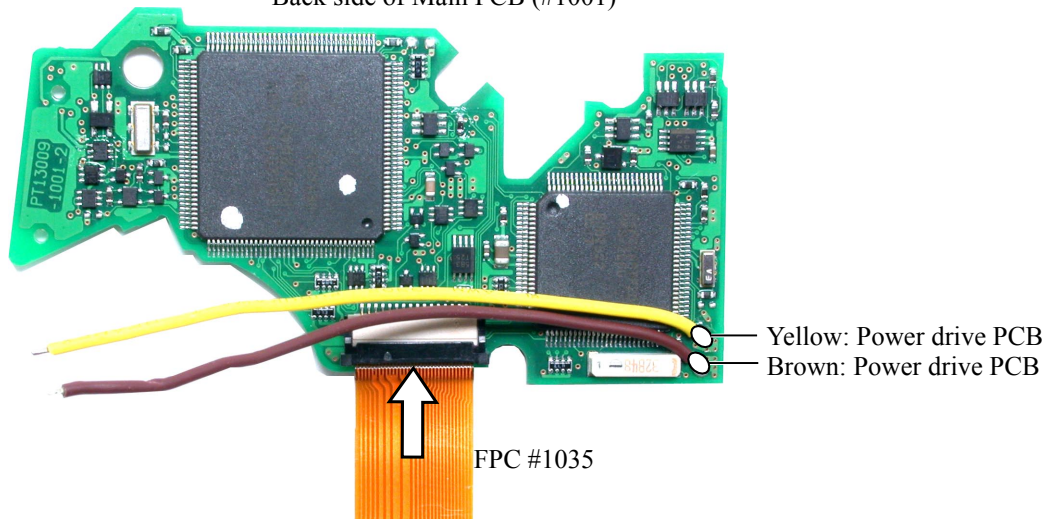
- Fix the grip (#57) with the screw (#1515) and two screws (#1509).



Main PCB unit

- Solder two wires on the back side of the main PCB unit (#1001).
- Connect the main connection-FPC (#1035) to the connector of the back side of (#1001).

Back side of Main PCB (#1001)



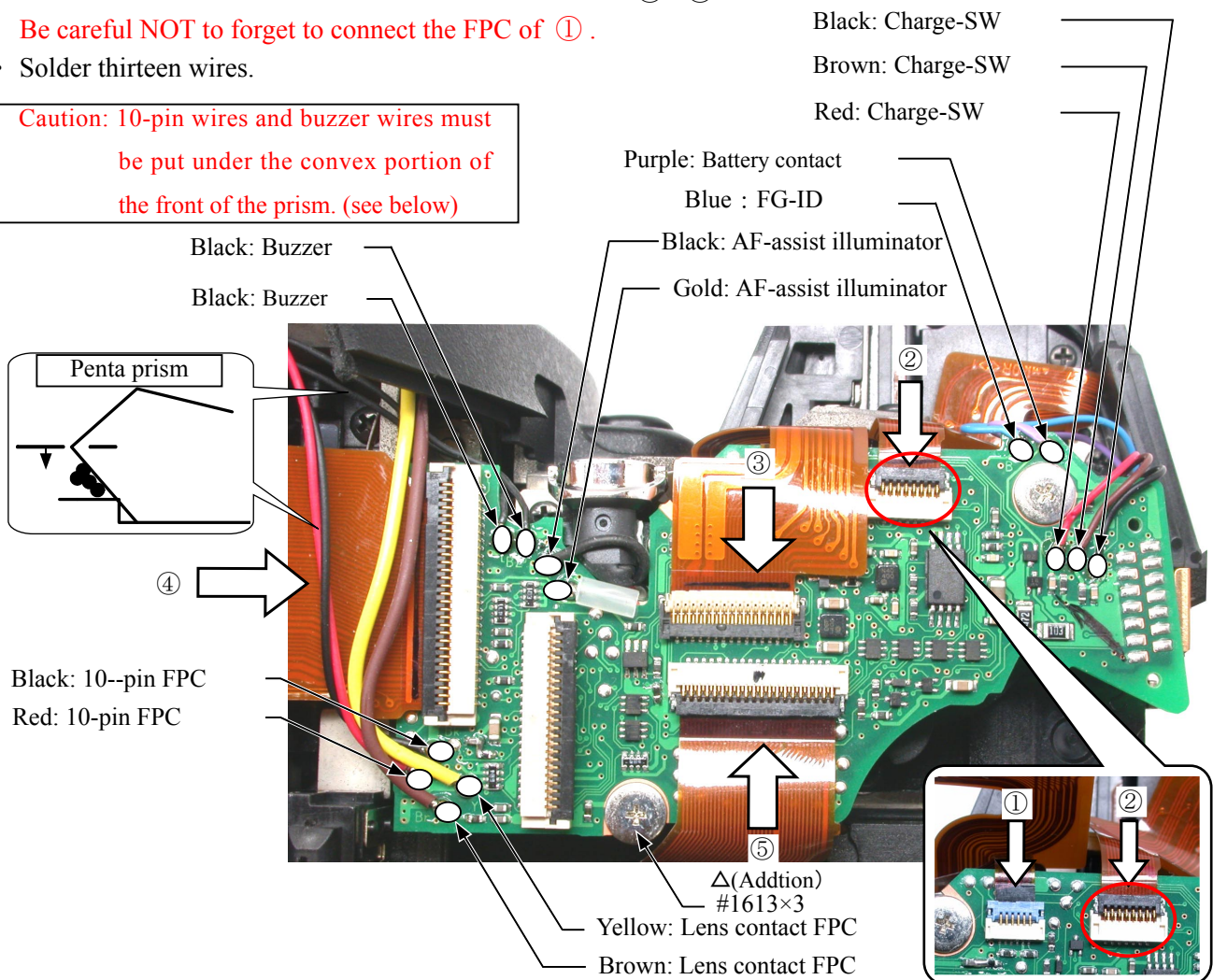
- Pass the FPC (#1035) through the hole of the rear body, and fix the main PCB unit (#1001) with three screws (#1616).

- Connect the five FPCs to the connectors in the order of ① - ⑤ .

Be careful NOT to forget to connect the FPC of ① .

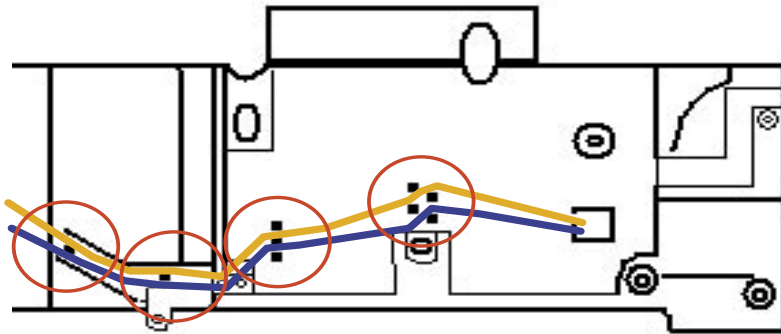
- Solder thirteen wires.

Caution: 10-pin wires and buzzer wires must be put under the convex portion of the front of the prism. (see below)

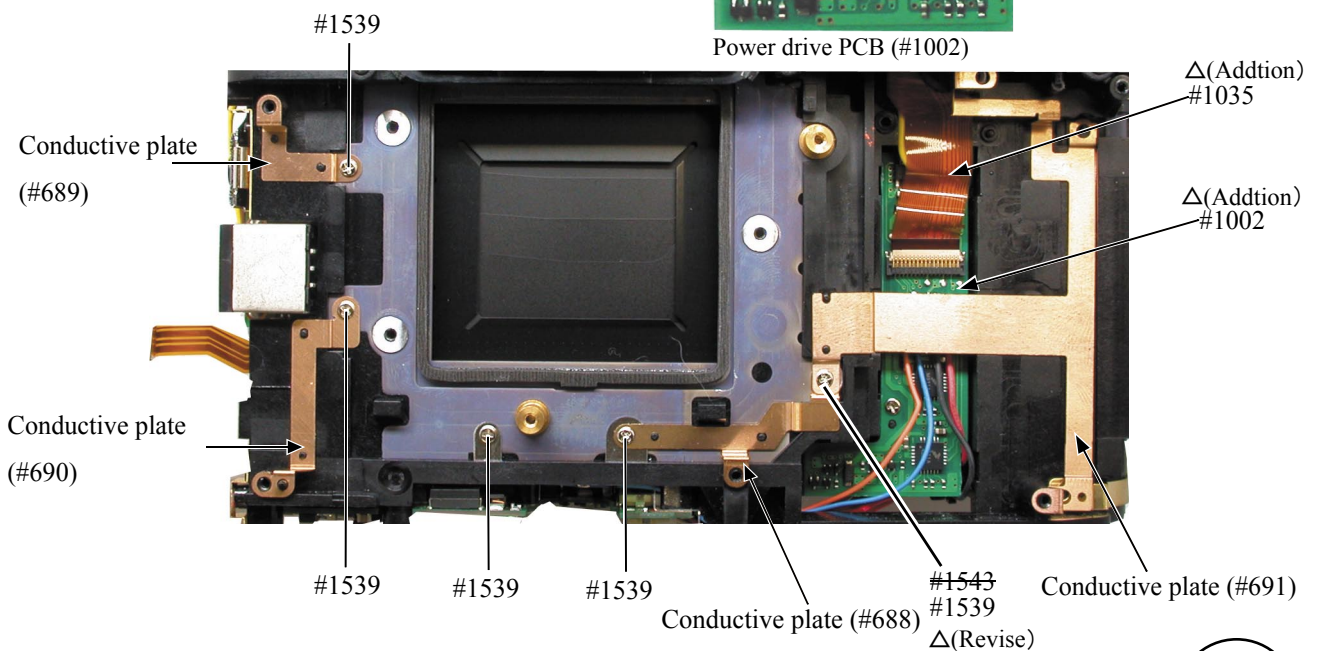
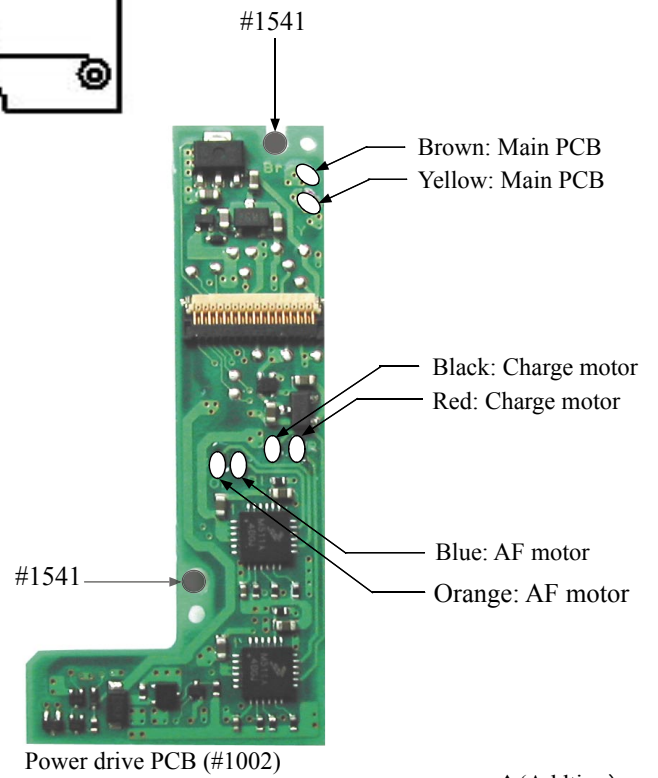
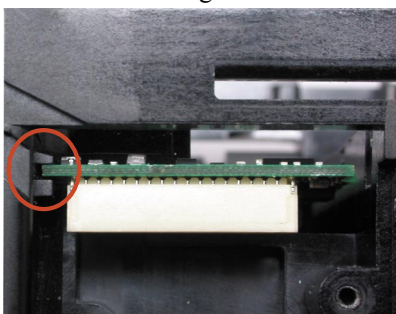


AF motor wire arrangement

- Arrange the AF motor wires by placing them properly among bosses at four locations.
- Put the power drive-PCB (#1002) into the rear body groove, and fix it with two screws (#1541).
- Solder six wires.
- Fix the conductive plate (#688, #689, and #690) with three screws (#1539).
- Fix the conductive plate (#691) with the screw (#1543).

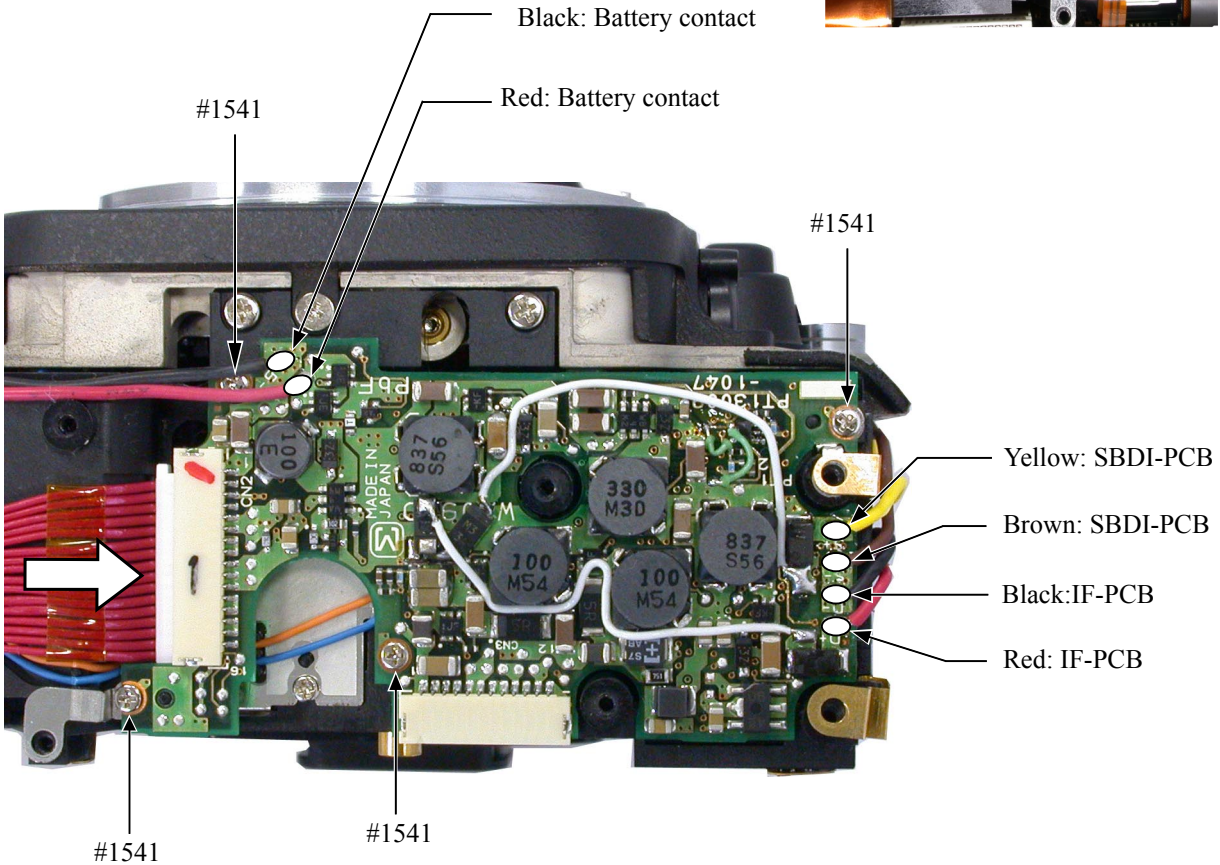
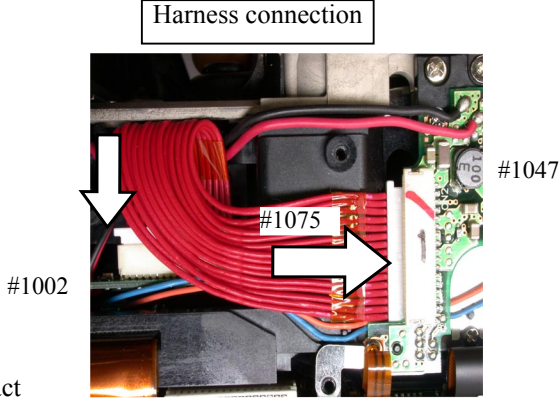
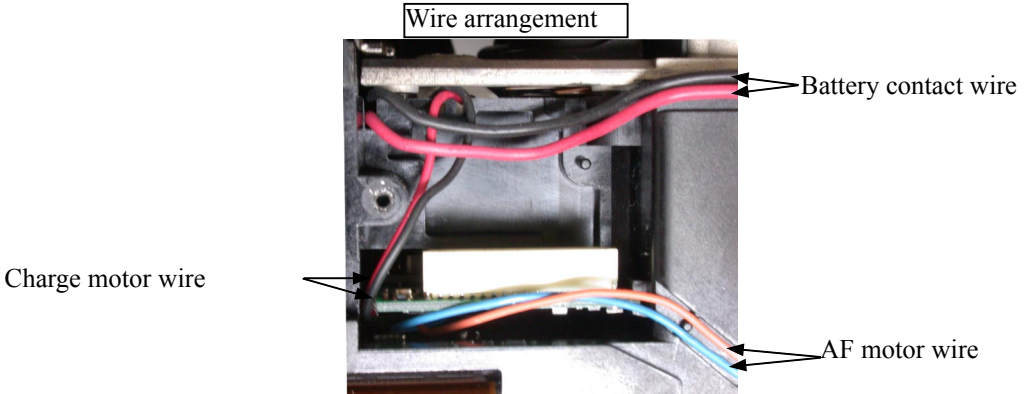


Put #1002 in the groove.



DC/DC PCB unit

- Connect the harness (#1075) to the DC/DC PCB (#1047) and the connector of the power drive PCB (#1002).
- Fix the DC/DC PCB (#1047) with four screws (#1541).
- Solder six wires.



Inspection and adjustment of AE CCD Alignment

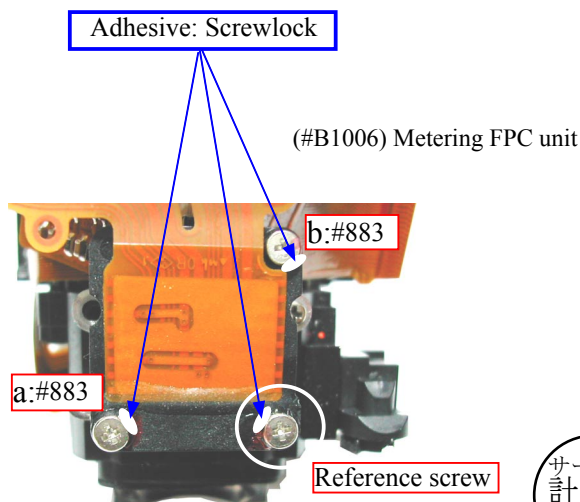
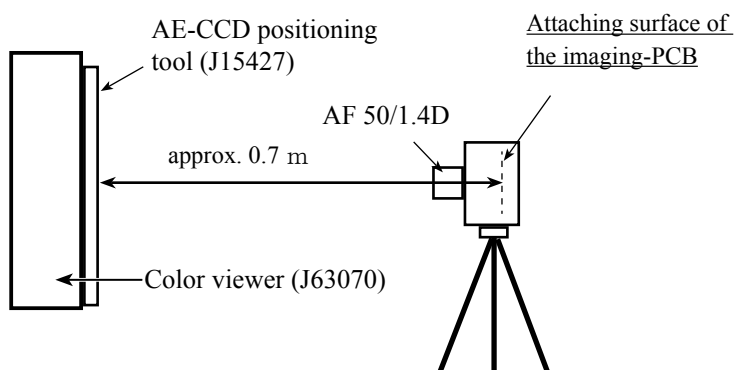
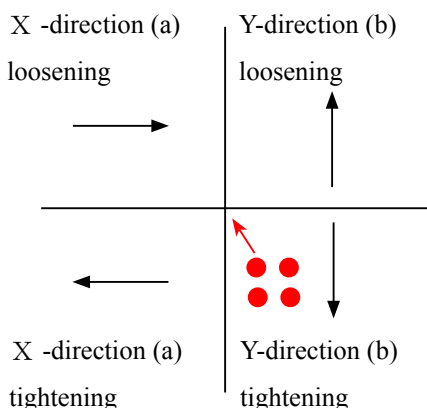
- * Under the environment where the AE-CCD positioning is adjusted, use the reference body (and change the environment depending on measured results).
- In case the measured value is out of standard, check if there is no misalignment of the grid lines.
- In case the measured value is out of standard, change the environment of measurements. (e.g. setting place/direction, room brightness, etc)

Procedure

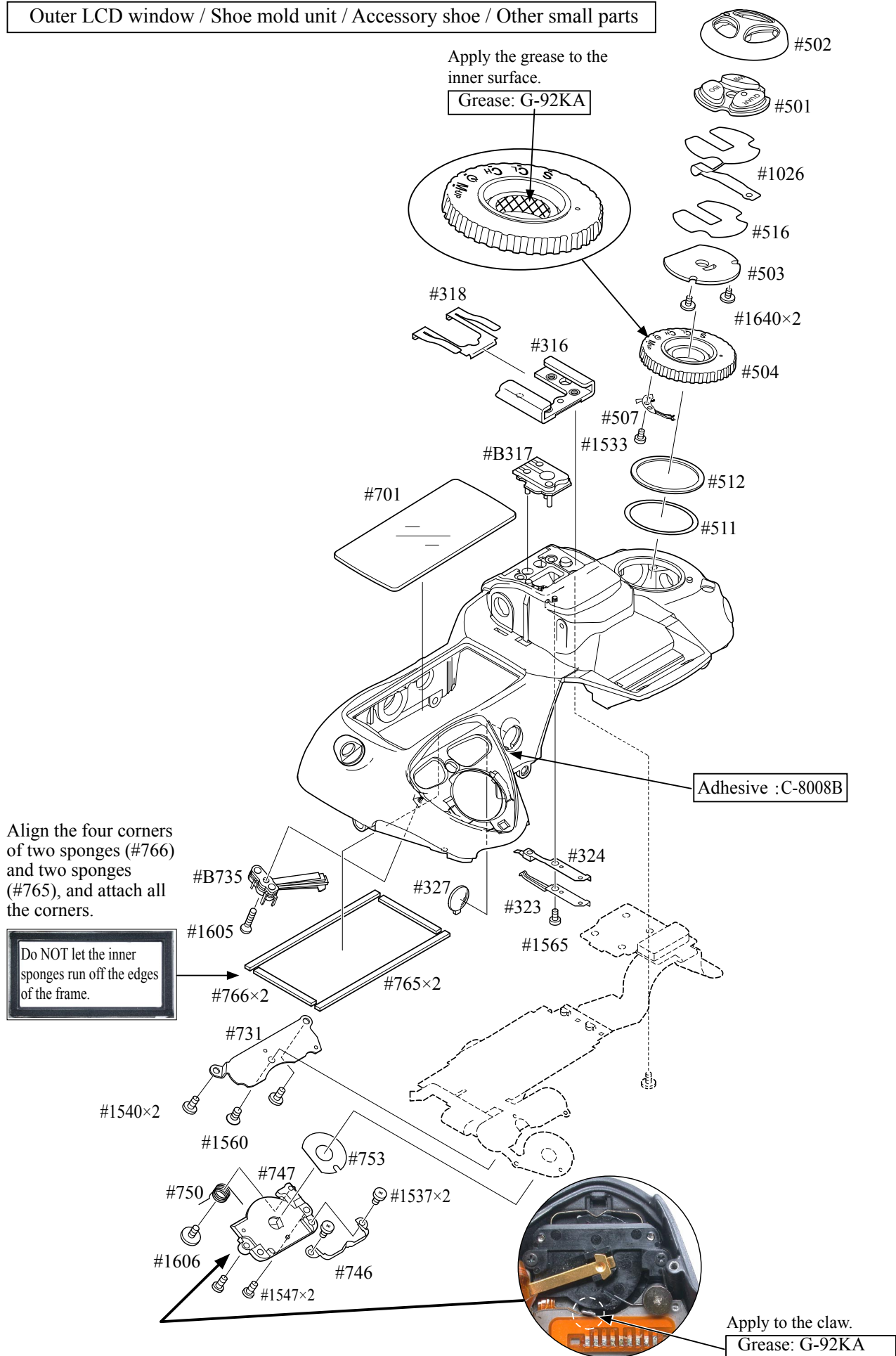
- ① Fix the bottom cover with four screws.
- ② Mount "AF50/1.4D" on the camera, and fix them on the tripod horizontally.
- ③ Connect the camera and PC via the cable (MC-31).
- ④ Provide power to camera by the AC adapter (EH-6).
 - * Be careful NOT to cause a short-circuit at uncovered portions.
- ⑤ Attach the AE-CCD positioning tool (J15427) in the color viewer (J63070), and turn power ON.
- ⑥ Keep the 0.7-m distance between the front face of the AE-CCD positioning tool and the reference surface of the camera. Set the camera AF to manual, and the focus ring to "0.7 m" by rotating it.
- ⑦ Start up the inspection and adjustment software for D200 (J18397), and select "INSPECTION AND ADJUSTMENT FOR AECCD POSITION" then "Set Camera for AE CCD POSITION".
Looking through the viewfinder, and move the camera so that the grid lines of the camera coincide with the extension lines of the AE-CCD positioning tool. (Turn "d2: Grid Display" of Custom menu to ON.)
 - * Set the camera and AE-CCD positioning tool horizontally.
- ⑧ Select "CCD ALIGNMENT INSPECTION AND ADJUSTMENT".
 - * Cover the camera with a black cloth, etc, when measured.
- ⑨ By following instructions on PC, make the position adjustment of AECCD by the screws (a:#883,b:#883).
- ⑩ Select "CCD SLANT INSPECTION" of the adjustment software and make an inspection. Then, fix the three screws with Screwlock slightly. The adjustment is completed.

• Attach the metering FPC unit.
Turn lightly three screws (#883) all the way in, and then back one reference screw of them out Δ (Revise) three-and-half turn, and adjust by the screw (a. and b.).

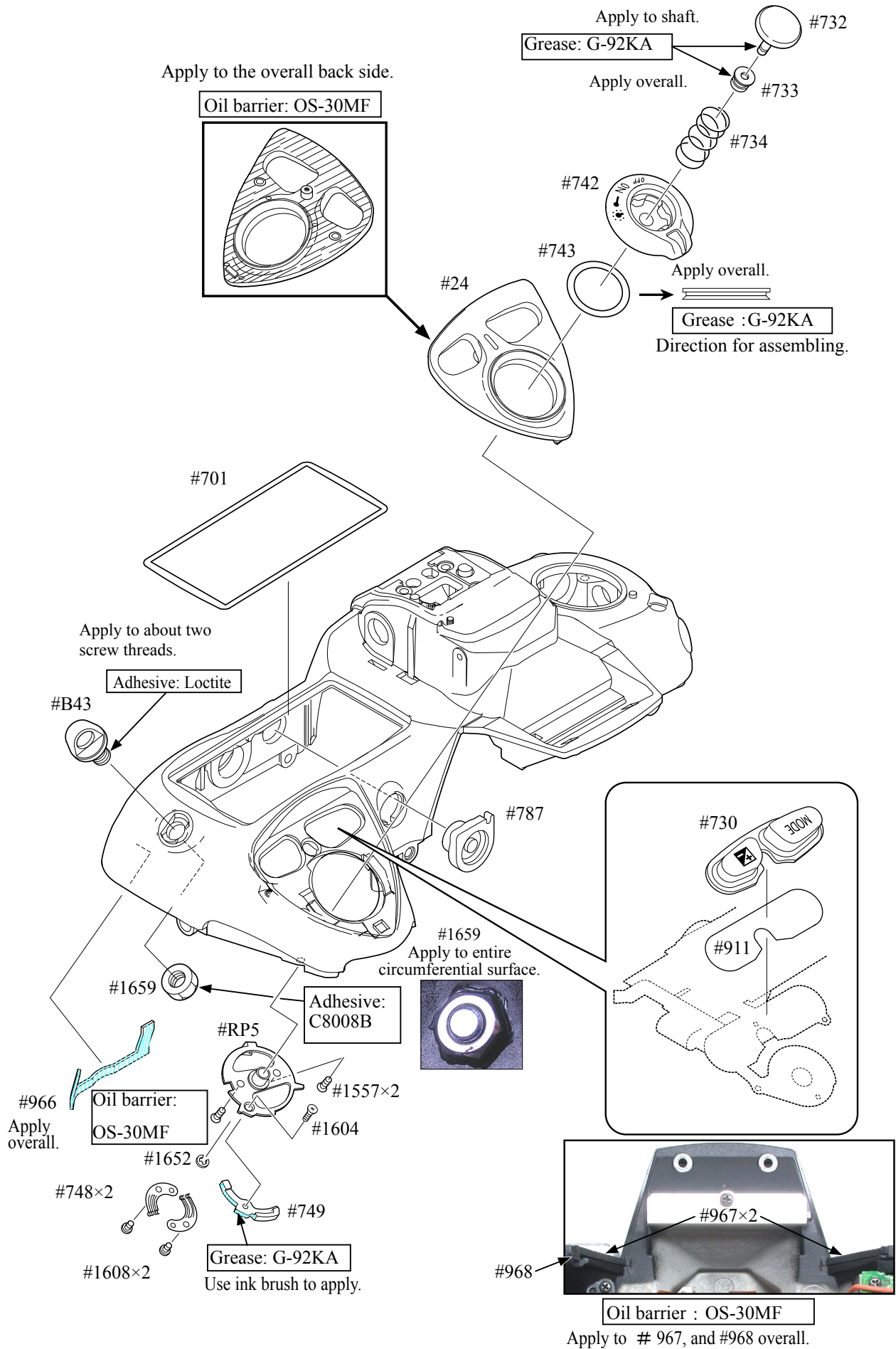
Standard → Reference screw
X-direction → a: Screw
Y-direction → b: Screw



Outer LCD window / Shoe mold unit / Accessory shoe / Other small parts

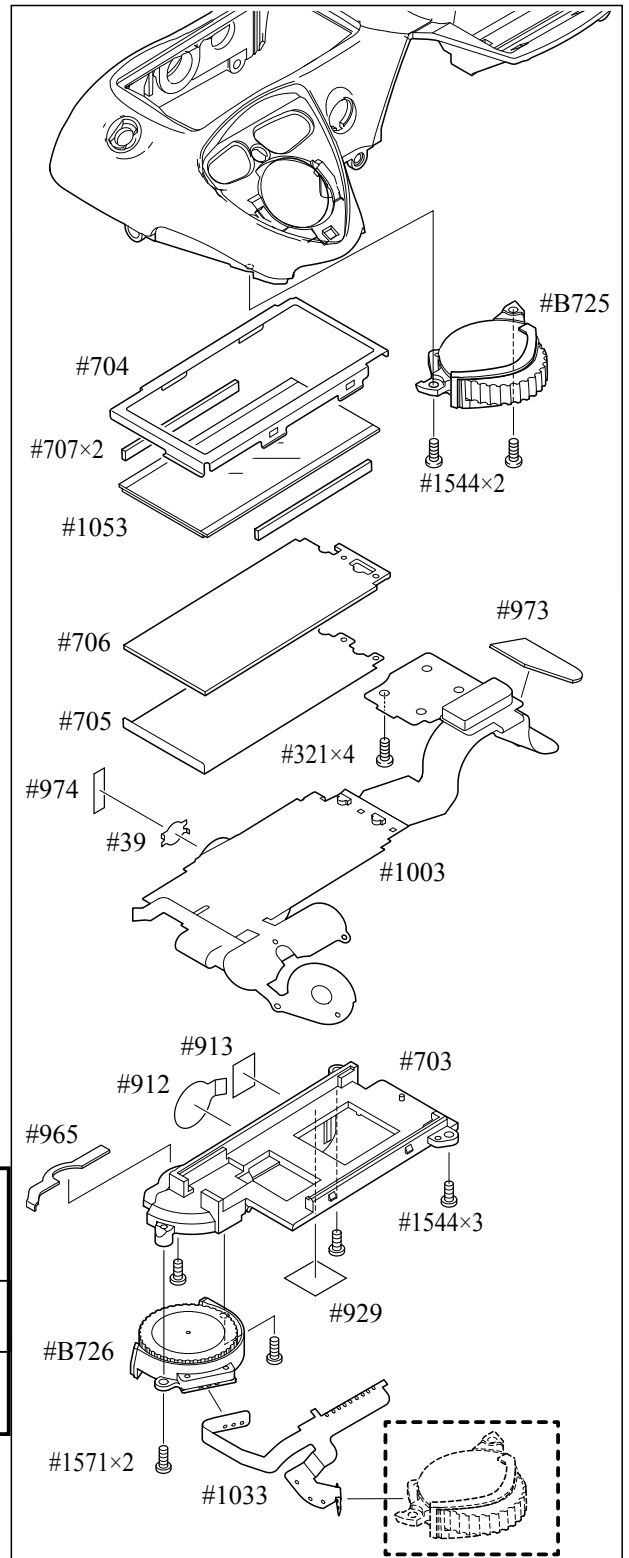
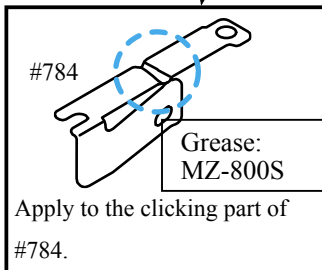
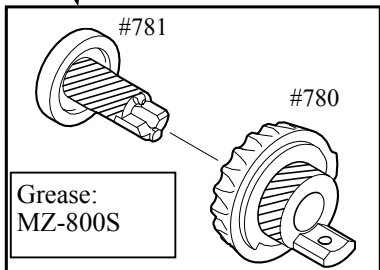
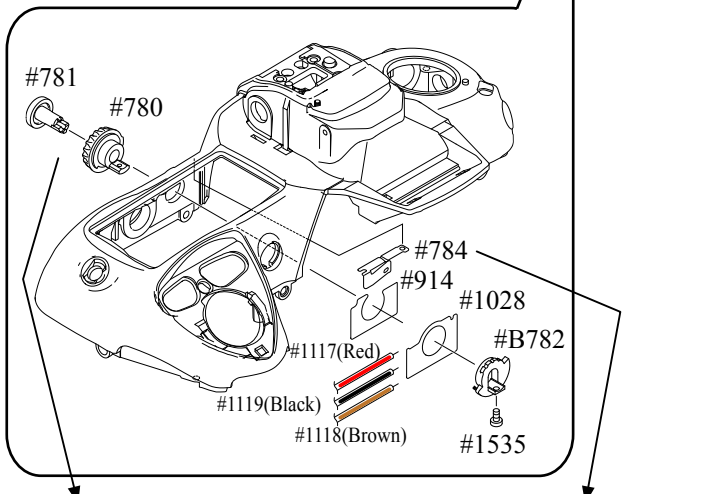
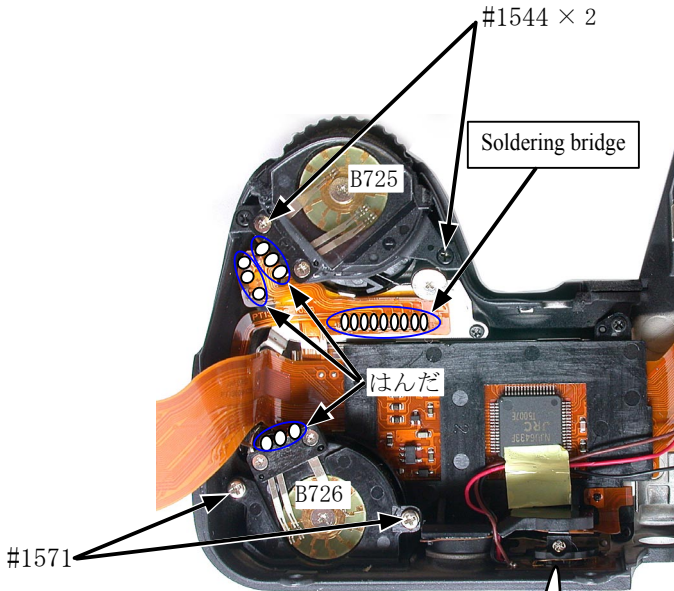


Release button / Other small parts



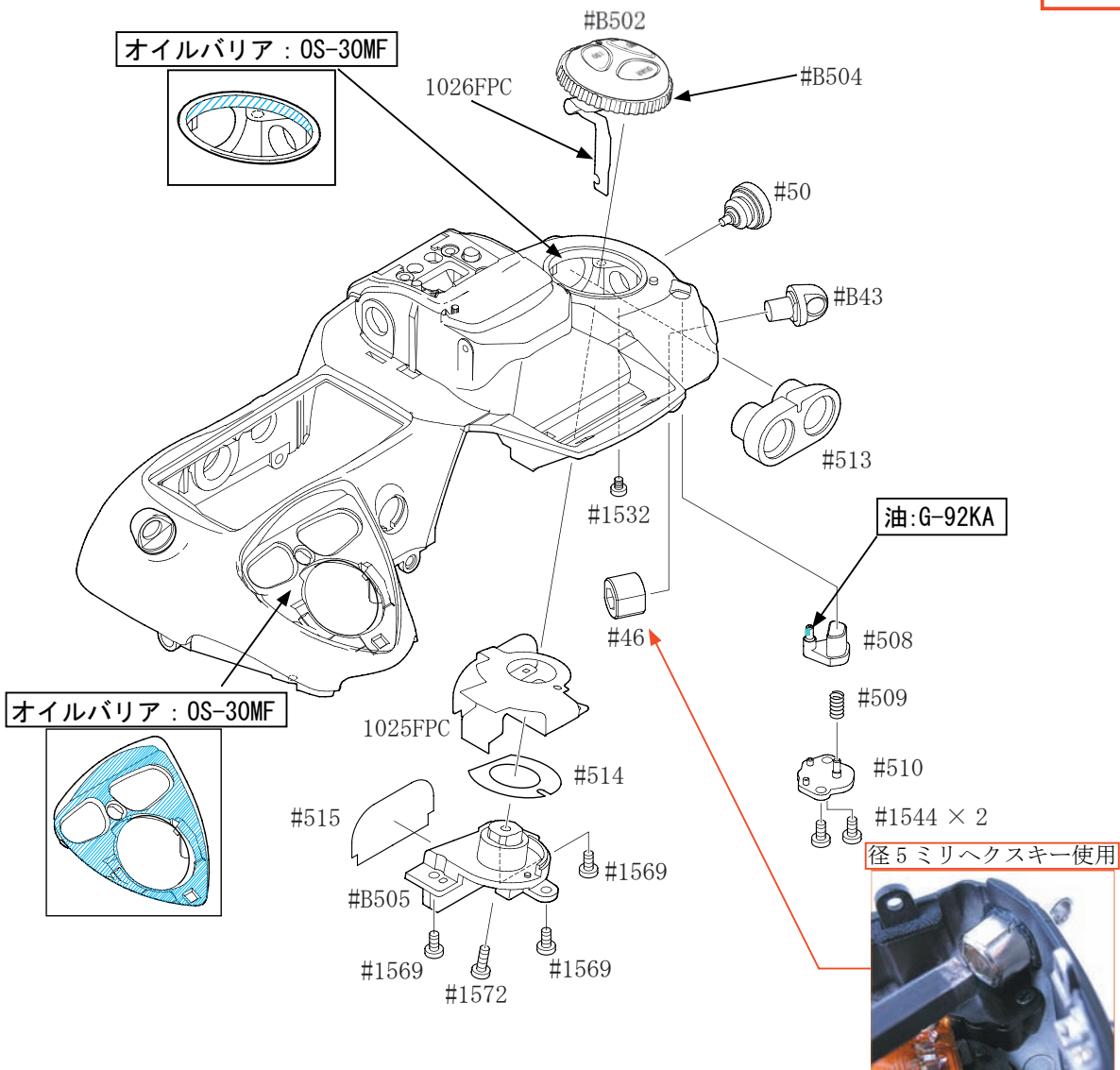
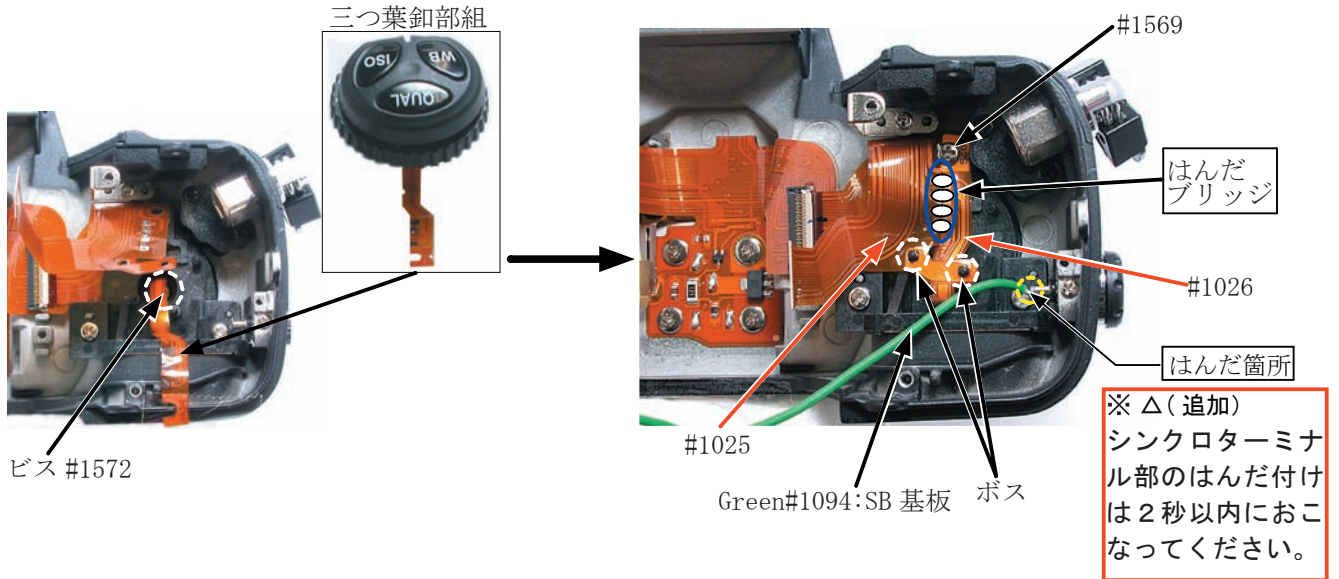
Top cover FPC unit

- Mount the rear command dial unit (B726).
- Tighten two screws (#1571).
- Solder the rear command dial unit (B726) at three locations.
- Mount the front command dial unit (B725).
- Tighten two screws (#1544).
- Solder the front command dial unit (B725) at three locations.
- Make soldering bridges at nine locations.



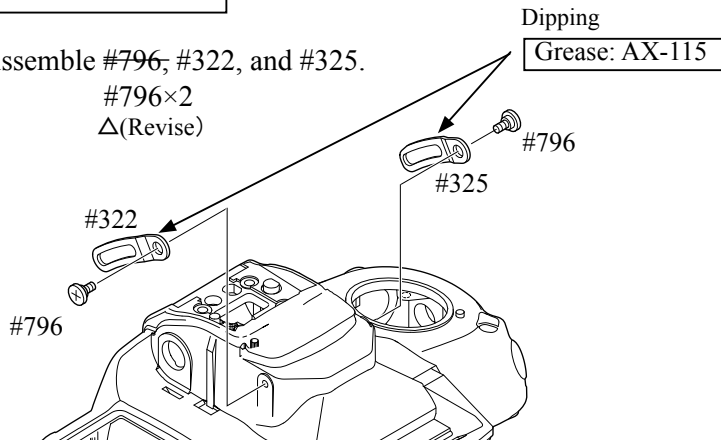
M/DFPC部組

- B502, B504 (三つ葉釦部組) を取り付け。
- FPC を持ち上げビス #1572 を締める。
- #1094 シンクロターミナルコードのはんだ付けをする。※△(追加)
- #1025 をボスに差し込む。
- ビス #1569 を締める。
- #1025、#1026 の FPC はんだブリッジをはんだ付けをする。

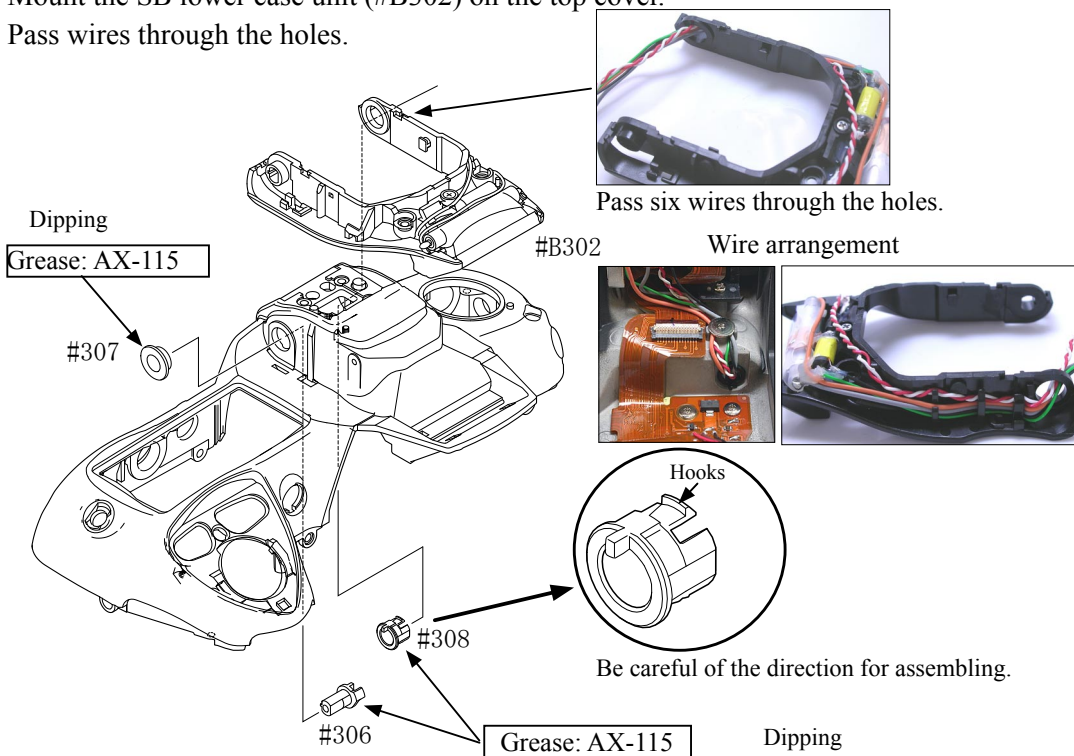


SB lower case unit

- Assemble #796, #322, and #325.
#796×2
△(Revise)

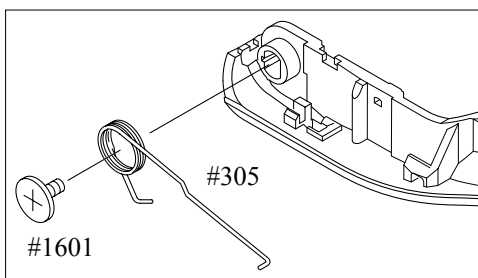


- Insert the collar (#308).
- Insert the rotation axes (#306 and #307).
- Mount the SB lower case unit (#B302) on the top cover.
- Pass wires through the holes.



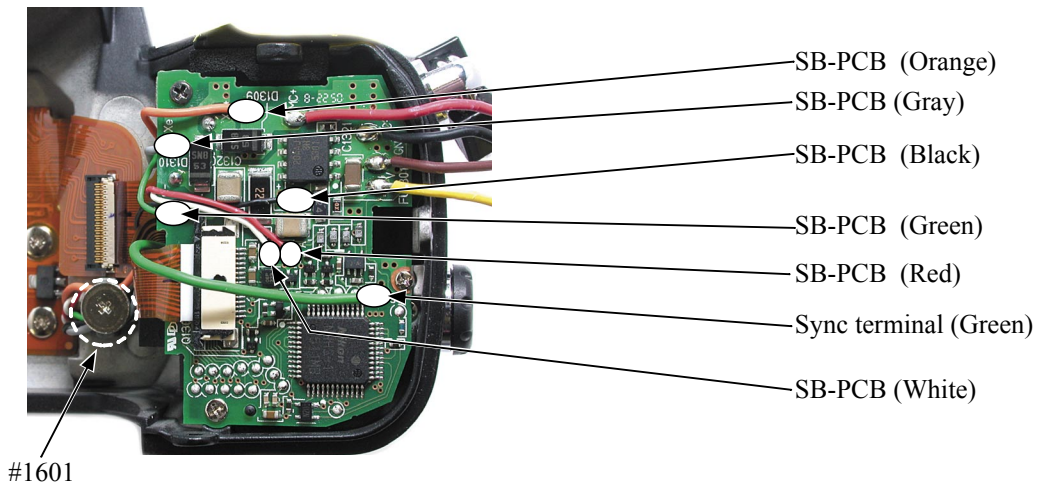
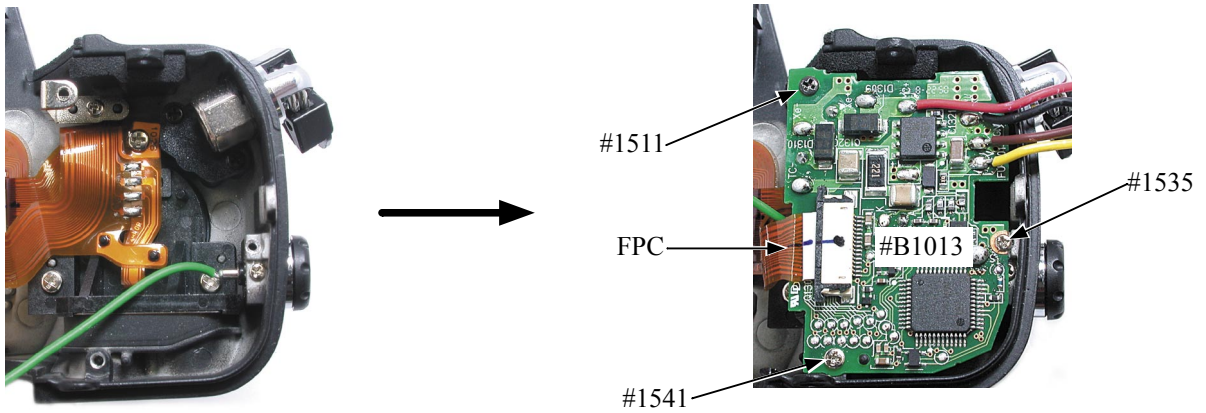
SB-up spring

- Attach the SB-up spring (#305) to the hooking part.
- Fix the SB-up spring (#305) with the screw (#1601).



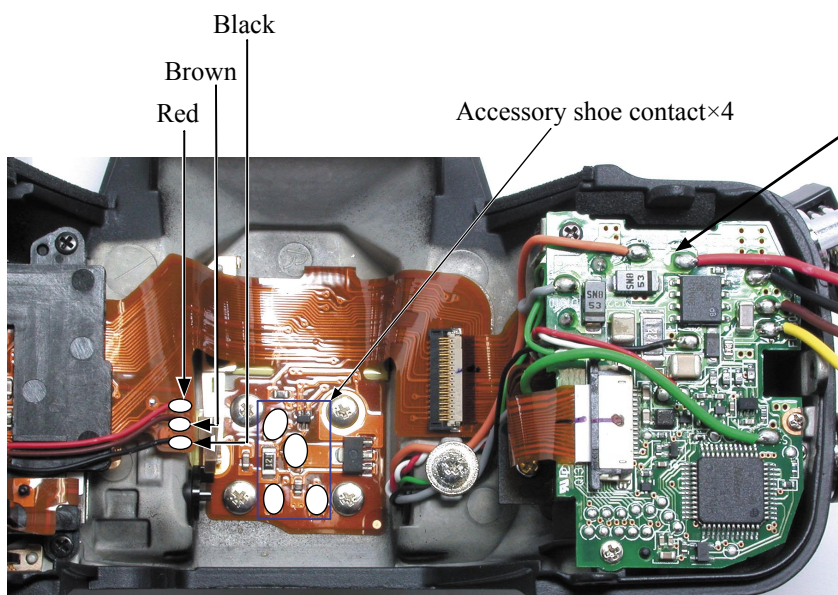
Installment of Top cover FPC / Wires / SB-PCB

- Tighten the screw (#1541).
- Tighten the screw (#1535).
- Tighten the screw (#1511).
- Attach the FPC of the SB-PCB (#B1013).
- Tighten the screw (#1601).
- Solder seven lead wires of the SB-PCB.



- Solder the three metering lead FPC lead wires.
- Solder the four accessory shoe-contacts.

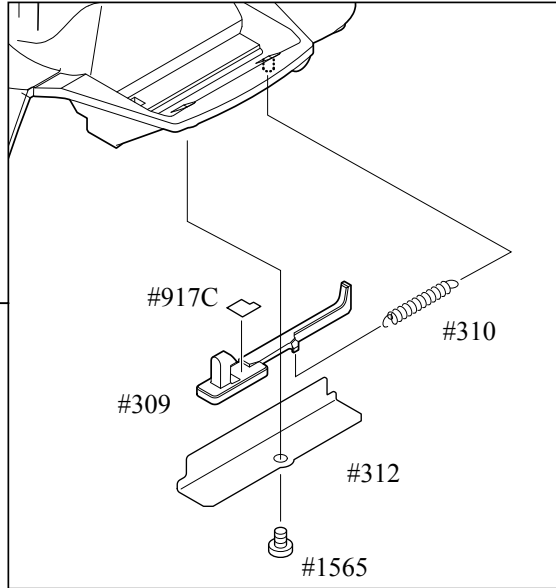
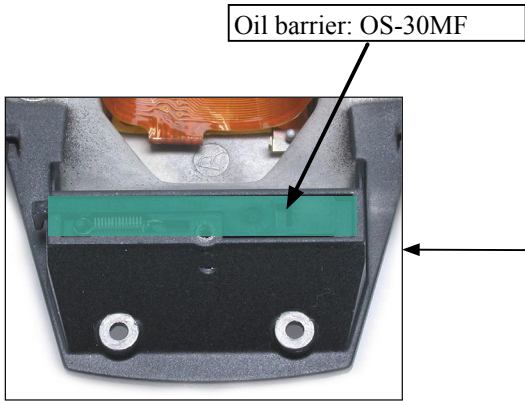
△(Addition)



• The tape is applied.

Assembly of Top cover unit

SB lock cover



- Attach #309.
- Attach the spring (#310).

SB upper case

- While sliding the SB lower case (#301) downwards, attach its two hooks to the holes. (Fig.1)
- Tighten two screws (#1623). (Fig.2)

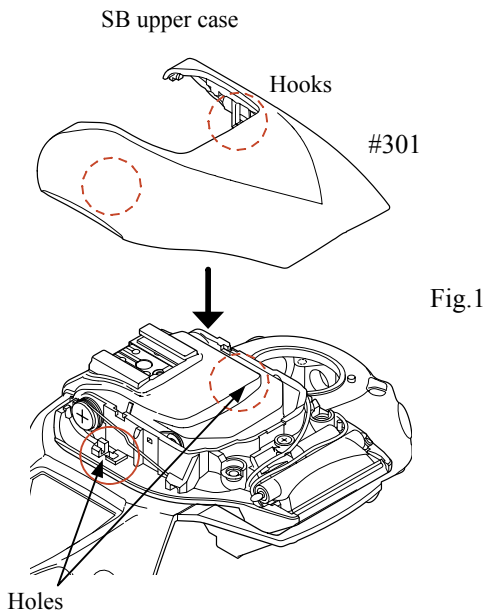


Fig.1

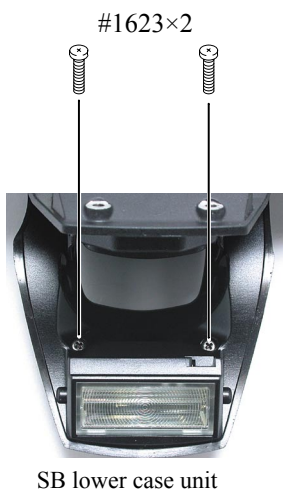
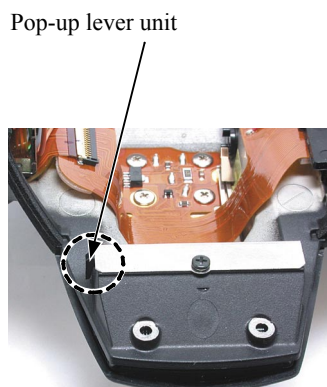


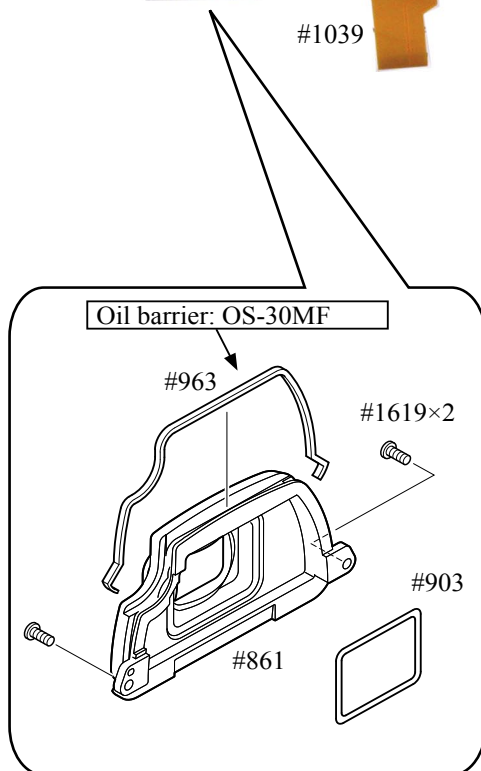
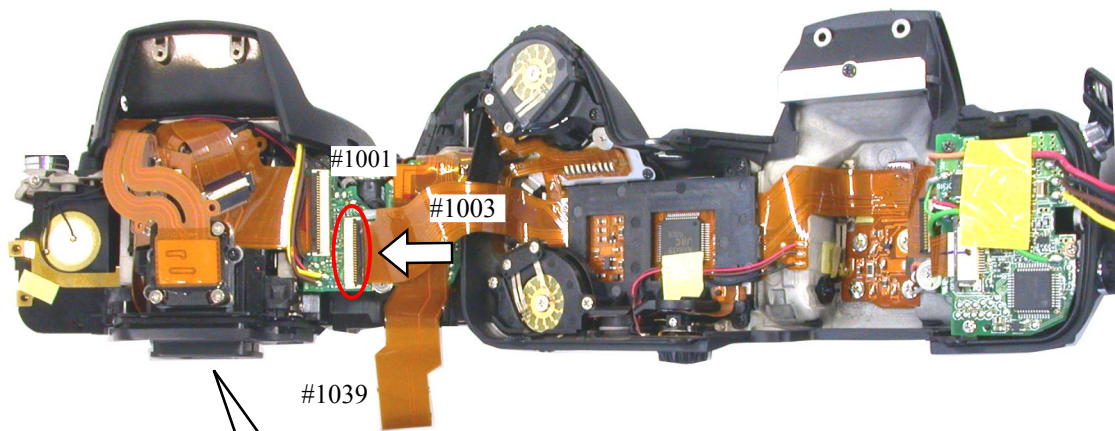
Fig.2



SB lower case unit

Top cover
 Eyepiece frame

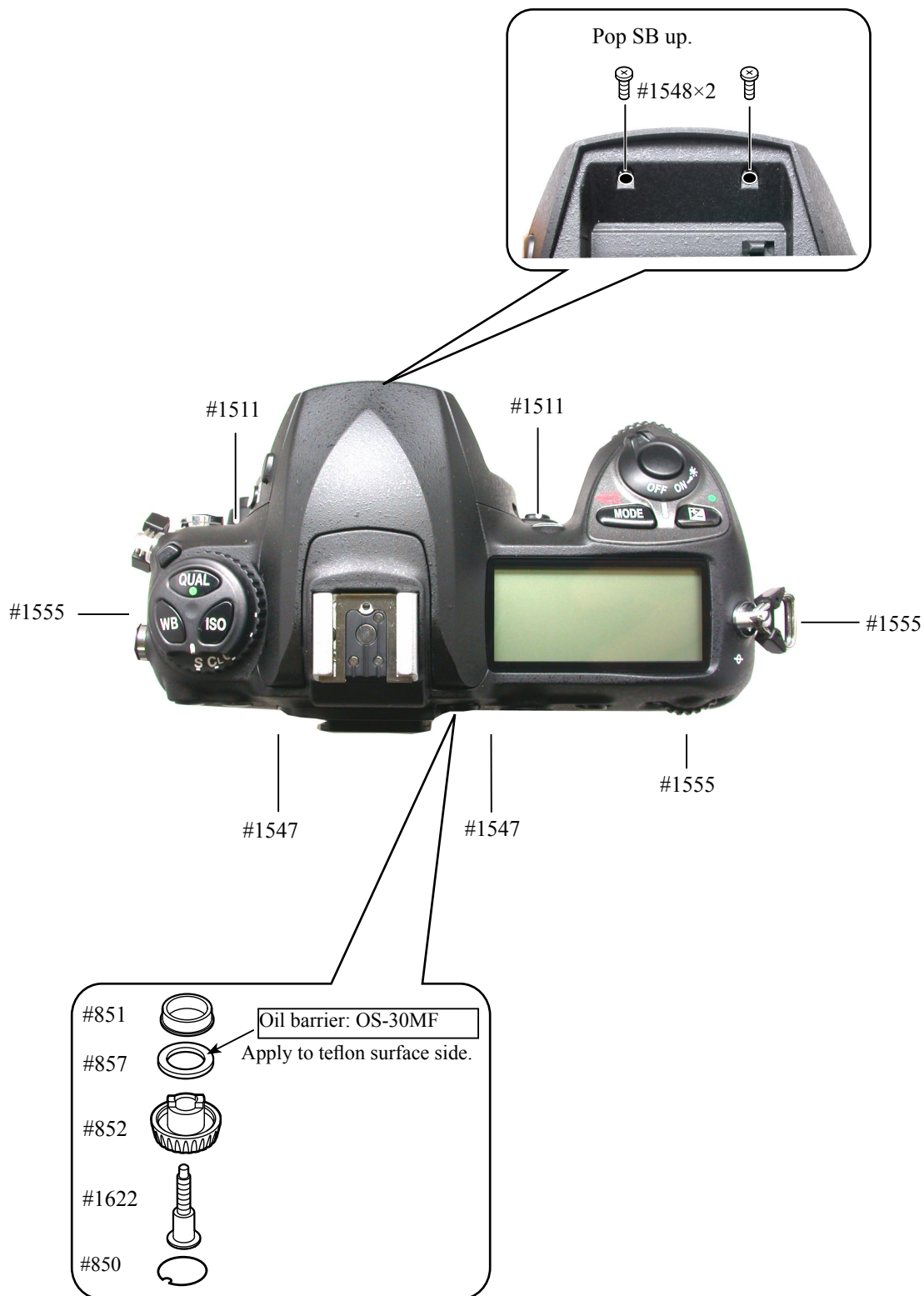
- Fix the eyepiece frame unit (#861, #963, and #903) with two screws (#1619).
- Connect the top cover FPC (#1003) to the connector of the main PCB unit (#1001).



Top cover
 Diopter adjustment knob

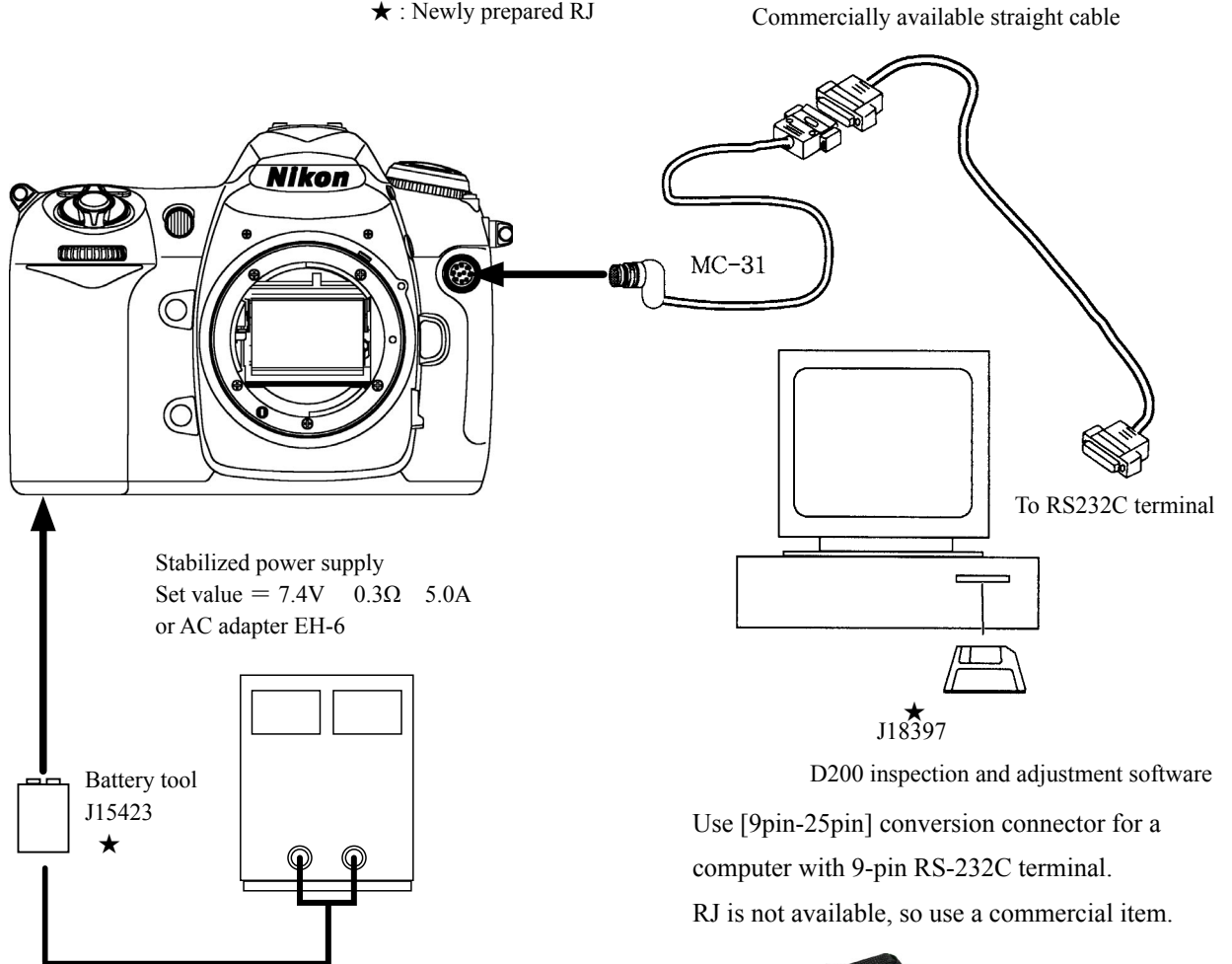
- Fix the top cover with two screws (#1511), three screws (#1555), two screws (#1547), the two screws (#1548).
- Fix the diopter adjustment knob unit (#851, #857, and #852) with the screw (#1622). Then attach the cover (#850).

* After attaching the top cover, turn the diopter adjustment knob to check the operations of the diopter adjustment lens.

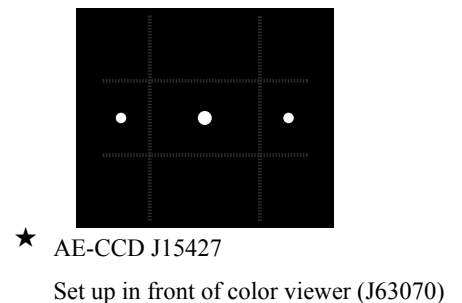
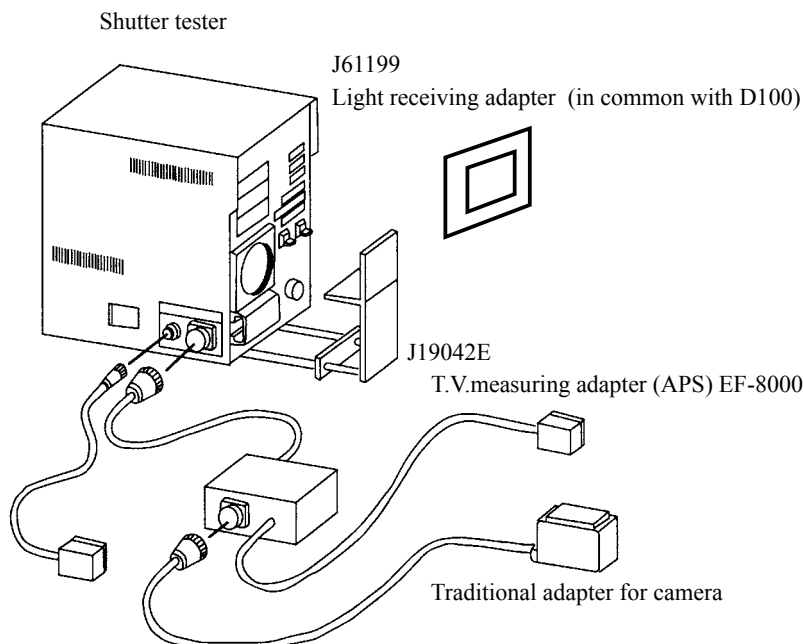


Accuracy inspection and adjustment (Camera body)

★ : Newly prepared RJ



* Note:
When checking "battery check", be sure to use the battery tool (J15423).
When this tool is used, LCD indications of camera disappear.



When M 1/8000 is adjusted, use the T.V.measuring adapter (APS) EF-8000(J19042E) and the light receiving adapter (J61199).

Caution: When the inspection and adjustment are made with the shutter tester, turn the tester ON to light a lamp, and carry out the aging for 3-5 minutes.

D200 Inspection and Adjustment Software (J18397)

This inspection and adjustment software runs on Windows.

Install the software by following the below procedure.

<Operating environment>

Check the following operating environment which is required for installing this program on PC.

| | |
|--------------------|--|
| PC | IBM PC/AT compatible |
| OS | Windows XP Professional Edition, Windows XP Home Edition, Windows2000, Windows 98 Second Edition (SE) |
| CPU | 80486 100MHz ~ Pentium 4 2.2GHz |
| RAM (memory) | 32MB or more |
| HD | 6MB-or-more free disk space is required when installing |
| Monitor resolution | 800×600 pixels or more |
| Interface | Serial interface (switchable from COM1 to COM9) ※ USB interface is not available. |

As long as the above hardware requirements are met, any PC such as desktop or laptop, etc is available.

< Cautions in starting program >

When starting this program, close all the other applications.

If some other applications are running, this program may not be activated.

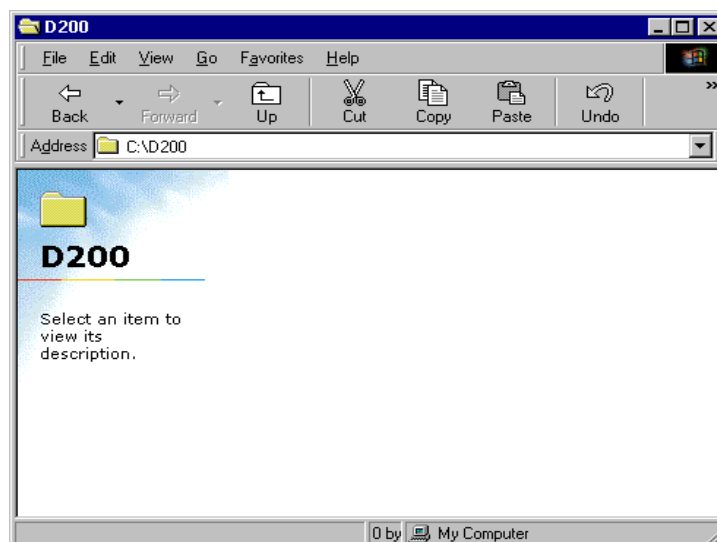
<Procedure for installation>

The file (D200SOFT.EXE) of this program is provided via FD or e-mail.

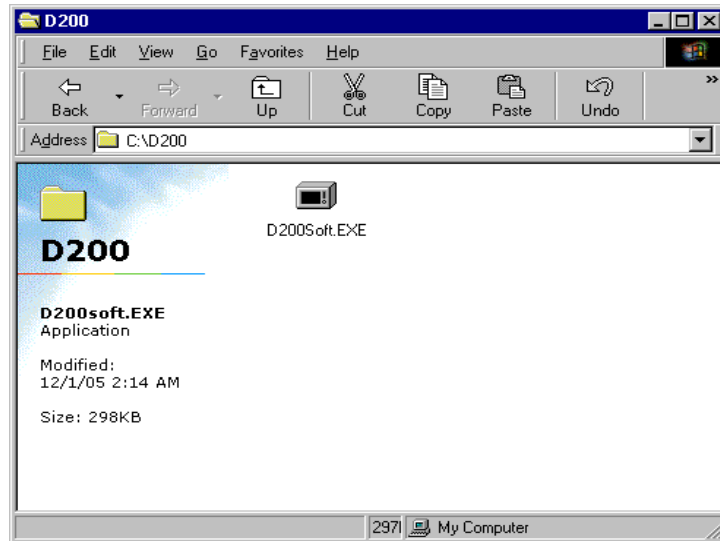
Because this is the self-extracting file, decompress the file before installing, following the next procedure.

1. Create a folder for installation under a name you like and PC drive.

(e.g.) C:\D200

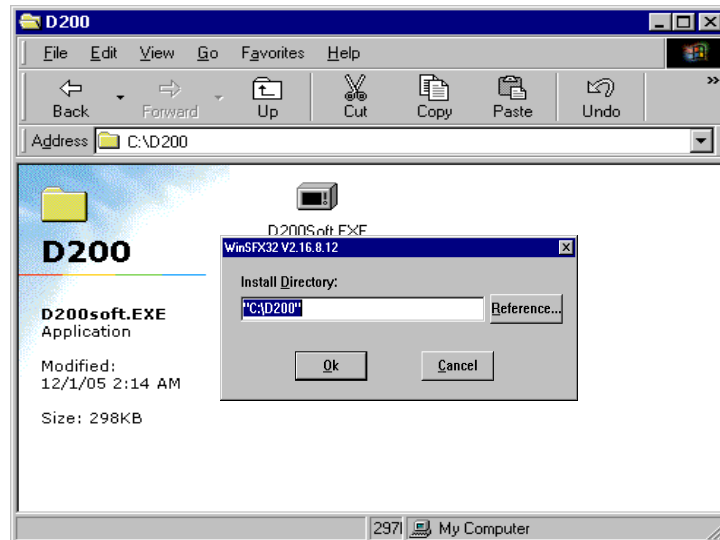


2. Paste the file (D200SOFT.EXE) in the created folder.

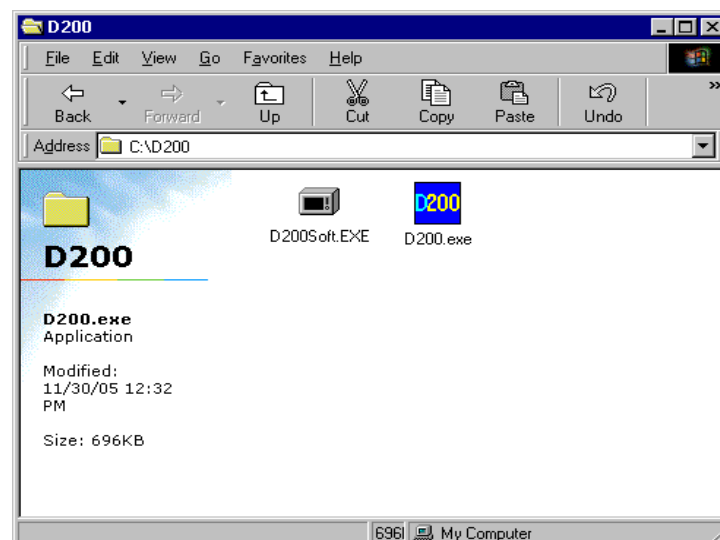


3. Double-click on the pasted file to display the following screen.

Press the OK button, then decompression starts.



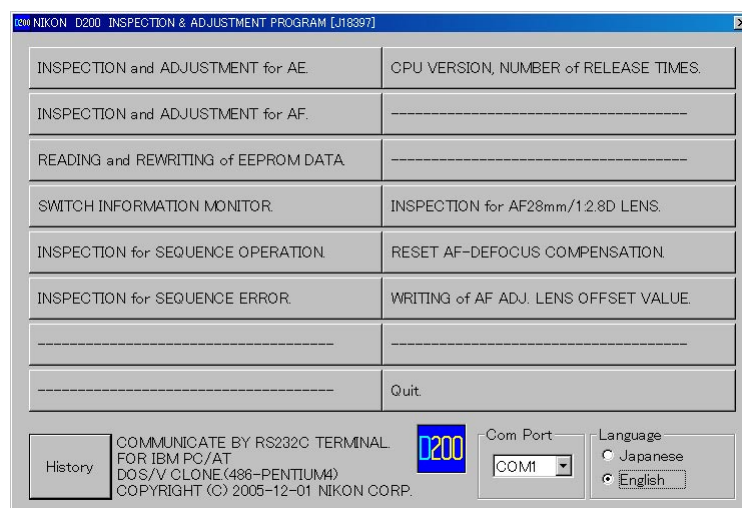
4. When the decompression of file is finished, the file (D200.EXE) is created.



5. The installation is completed.

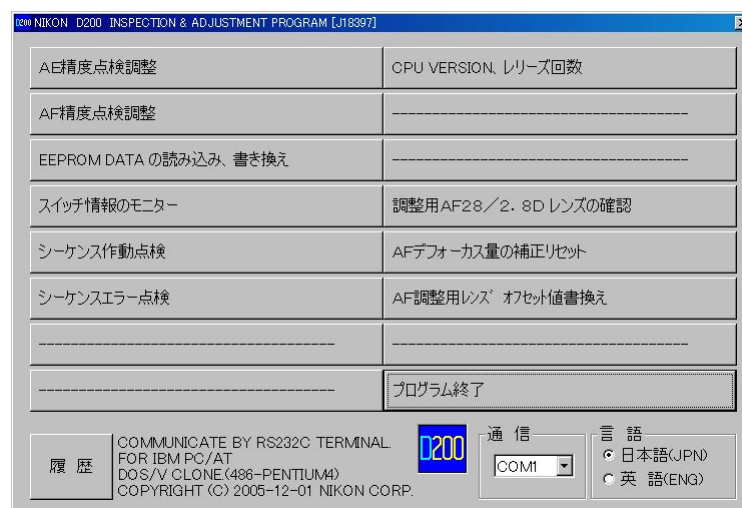
<Start-up of Program>

1. Double-click the file (D200.EXE), then Inspection and adjustment program for D200 starts.



2. To display in Japanese, select the radio button "JAPANESE" in "LANGUAGE" in the lower right-hand corner of the screen.

However, this is not properly viewed in the English OS.



3. For "COM PORT" (communication port), the selection from "COM1" to "COM9" is available.
4. When the "HISTORY" button at the lower-left is pressed, the program version will be displayed.



5. Select each item button according to operation.

Follow the instructions on the next screen that will be shown after pressing the item button.

6. To finish the program, press the "Close (×)" button in the right-hand corner of the screen or "QUIT".

AE inspection and adjustment

- ① AE CCD alignment inspection and adjustment (ref. Page A28 for details)
- ② AE accuracy inspection and adjustment
- ③ Aperture accuracy inspection
- ④ M1/8000 Accuracy inspection and adjustment
- ⑤ Adjustment for battery check level (Use the battery tool (J15423) and stabilized power supply.)

* Check & Adjust an out put of Built-in Speed light, after assembling until Rear cover.

- ⑥ Built-in SB flash inspection and adjustment

[Tools required] ref. Page A38.

• AE accuracy inspection and adjustment

For this camera, the AE shift amount, which is fundamental for other lenses, is adjusted by using the AF28/2.8D lens.

Check in advance, by "INSPECTION for AF28mm/1:2.8D LENS." on the main menu, whether the adjustment AF28/2.8 D lens is available.

When checking the lens, measure by using the reference body (used for the shooting image adjustment, too), using the adjustment AF50/1.4D lens, and using the adjustment AF28/2.8D lens.

When inspecting and adjusting the AE accuracy, make an adjustment by combining the adjustment AF50/1.4D lens, which was confirmed by "INSPECTION for AF28mm/1:2.8D LENS." and the adjustment AF28/2.8D lens.

• "Battery check" inspection

When the battery tool (J15423) is connected, the indications of the outer LCD of this camera disappear. After adjusting "Battery check", inspect by the software by powering to camera at 7.8V.

• Built-in SB flash inspection and adjustment

Set the distance between camera and flash meter to 1 m, and inspect and adjust the light volume of the built-in SB. (ref. adjustment software for details)

AF inspection and adjustment

Note: When using the adjustment software for the first time, prepare 3 cameras of D200 and measure by "WRITING OF AF ADJ. LENS OFFSET VALUE" on the main menu.

- ① AF accuracy inspection and adjustment (Make all the following adjustments.)
- ② YAW, PITCH inspection and adjustment
- ③ LARK adjustment (inc. CCD output adjustment)
- ④ AF shift adjustment

[Tools required]

1. When adjusting for all adjustment items

ref. Page A38.

2. When inspecting AF accuracy

- ① AF adjustment lens (J18266)
- ② AF adjusting tool (J15259)
- ③ Lens holder for F4 (J15280)
- ④ AF chart (J18344)
- ⑤ Chart illuminator for AF (J15264)

3. When adjusting YAW, PITCH

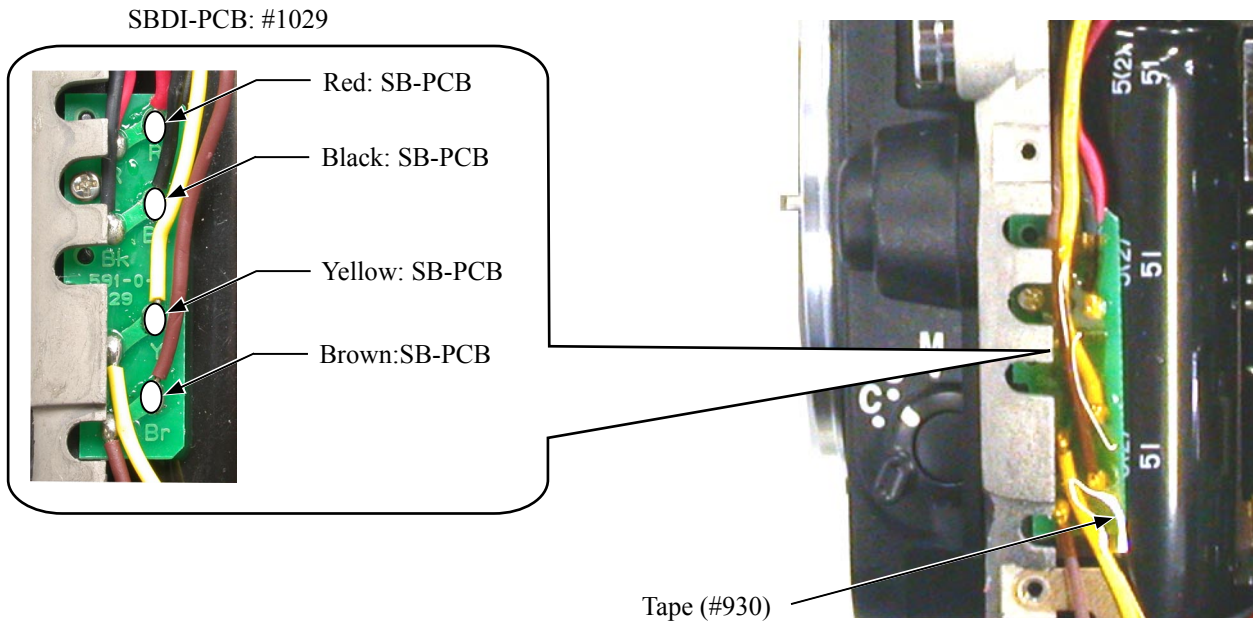
YAW, PITCH tool (J18230)

4. When adjusting LARK

The above tool when inspecting AF accuracy

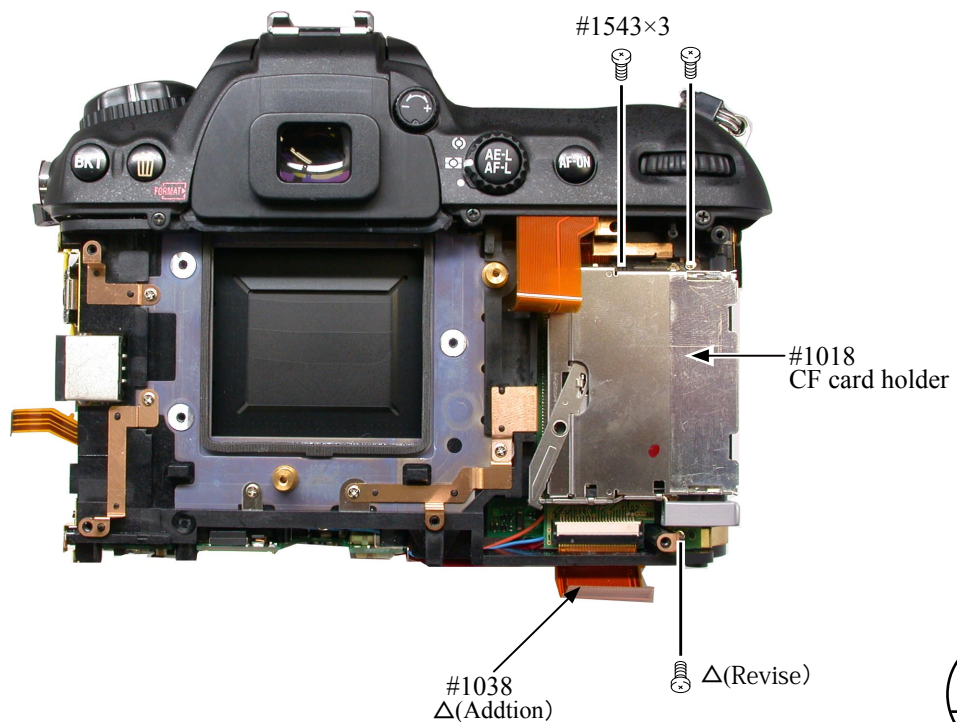
In "AF shift adjustment", the distance from the bayonet reference plane to the imaging area (CCD) is calculated by the actual shot photo, and its error is recorded in EEPROM as compensation amount, and adjusted.

- Solder four wires that are connected from the SB-PCB.
- Arrange four wires by positioning them towards the front body, and attach the tape (#930).



CF card holder

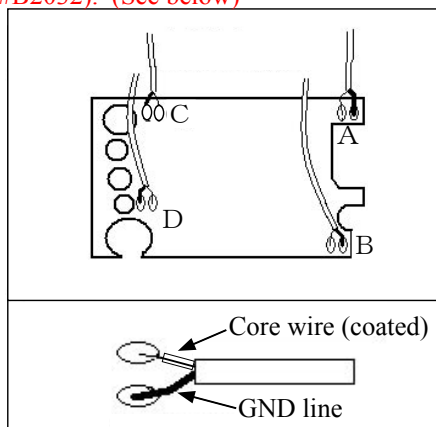
- Connect the CF-DG connection-FPC (#1038) to the CF card holder (#1018).
- Pass the CF-DG connection-FPC (#1038) through the hole of the body, and fix it with three screws (#1543).



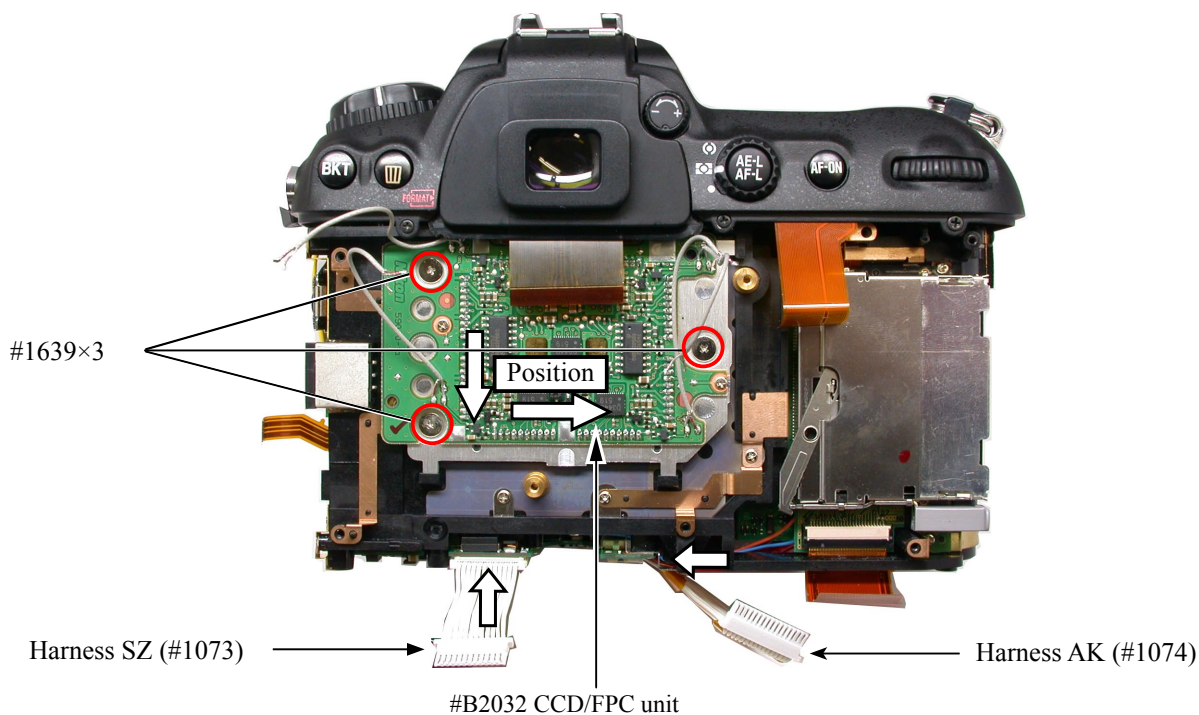
| |
|--------------|
| CCD/FPC unit |
|--------------|

- Position the CCD/FPC unit (#B2032) towards the direction of the arrow, and fix it with three screws (#1639).
- Connect the harness SZ (#1073) and harness AK (#1074) to the DC/DC-PCB (#1047).
- Solder the four shielding wires. (ref. Fig)

• Solder the GND line of the shielding wire on the outer soldering lands of the CCD-PCB (#B2032). (See below)



Fig



Note: For some bodies, washer(s) are already put on the attaching face of the CCD-bracket.

There are 2 cases as follows.

1. Purpose : To adjust the height of the camera body

There are indications by color marker (washer thickness) on the camera body side of the CCD-PCB attaching face.

{One red marking = 0.02mm (#534), Two red markings = 0.04mm (#534×2)}

* The position, number, etc of washers are not the same at 3 locations.

* By adding the measured value to the thickness of washers, check if it is within the standard (48.5±0.015mm).

2. Purpose : To adjust the height of the CCD bracket

There are indications by blue marker (doughnut shaped) of the CCD-bracket attaching face

{One marking at upper right corner = 3 locations = 0.01mm} * Washers are equally put on the 3 locations.

* When the CCD PCB is replaced, remove the washers.

DG-PCB unit

- Solder the GND line on G-side of the DG-PCB (#B1017). (There are "S" and "G" letters on the DG-PCB)
- Solder each shield wire on A, B, C, and D. (ref. Fig)

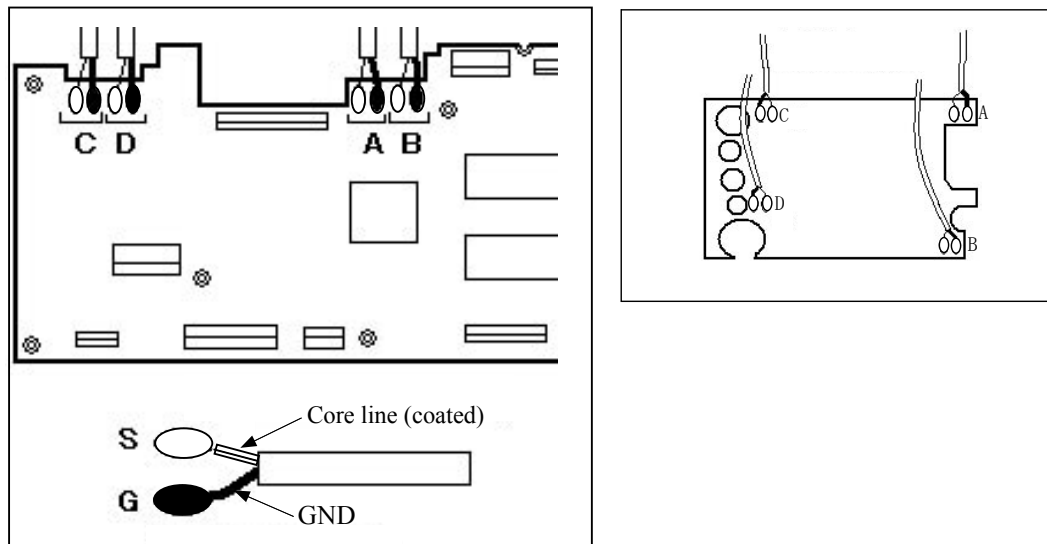
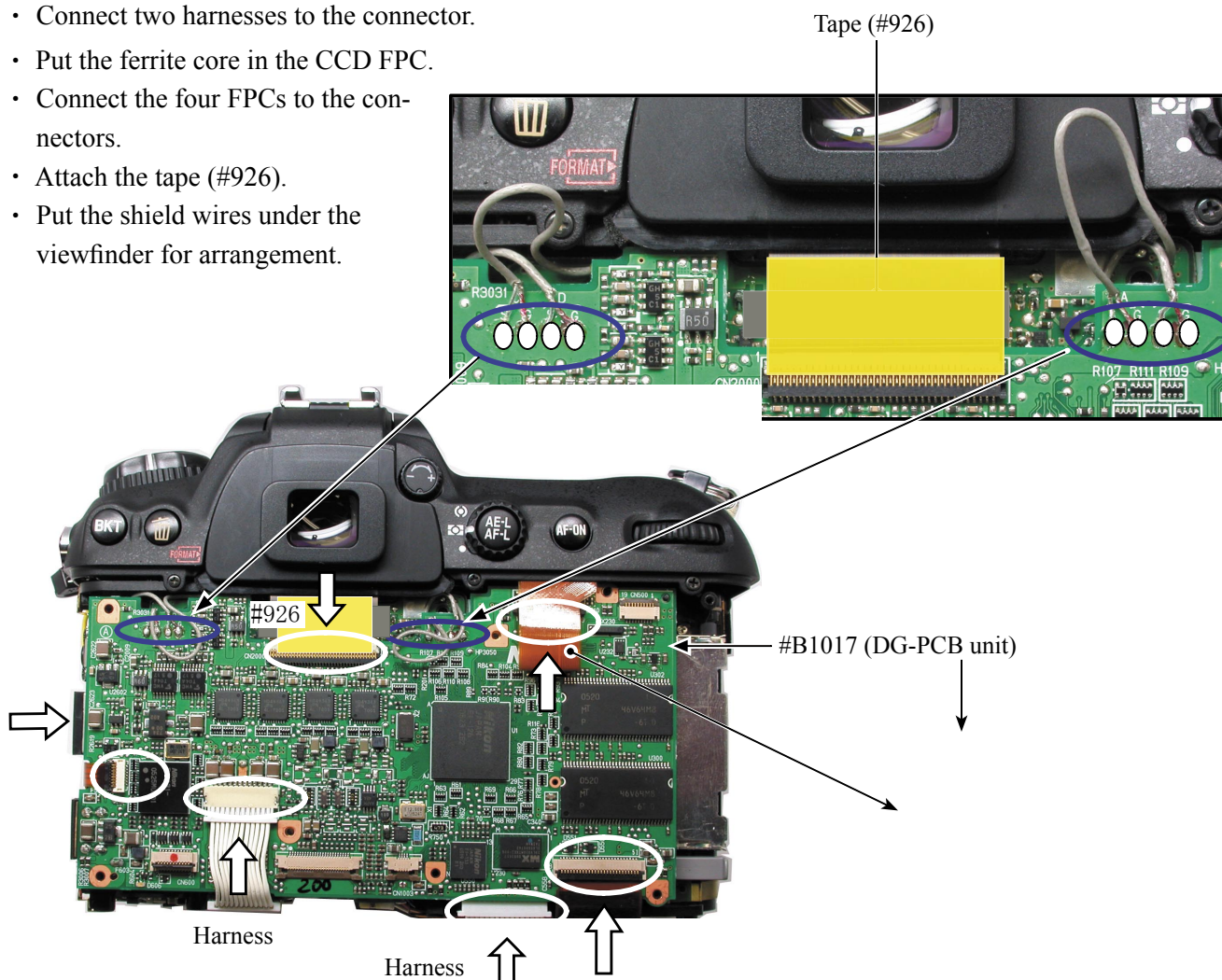


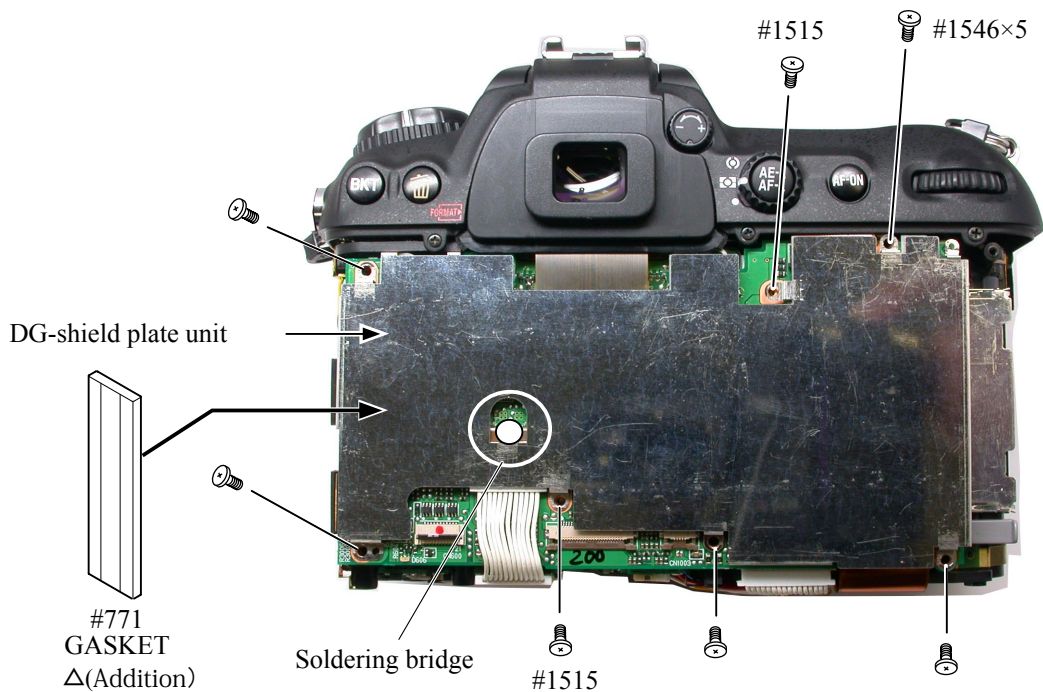
Fig.

- Mount the DG-PCB unit (#B1017).
- Solder the four shield wires. (ref. Fig.)
- Connect two harnesses to the connector.
- Put the ferrite core in the CCD FPC.
- Connect the four FPCs to the connectors.
- Attach the tape (#926).
- Put the shield wires under the viewfinder for arrangement.



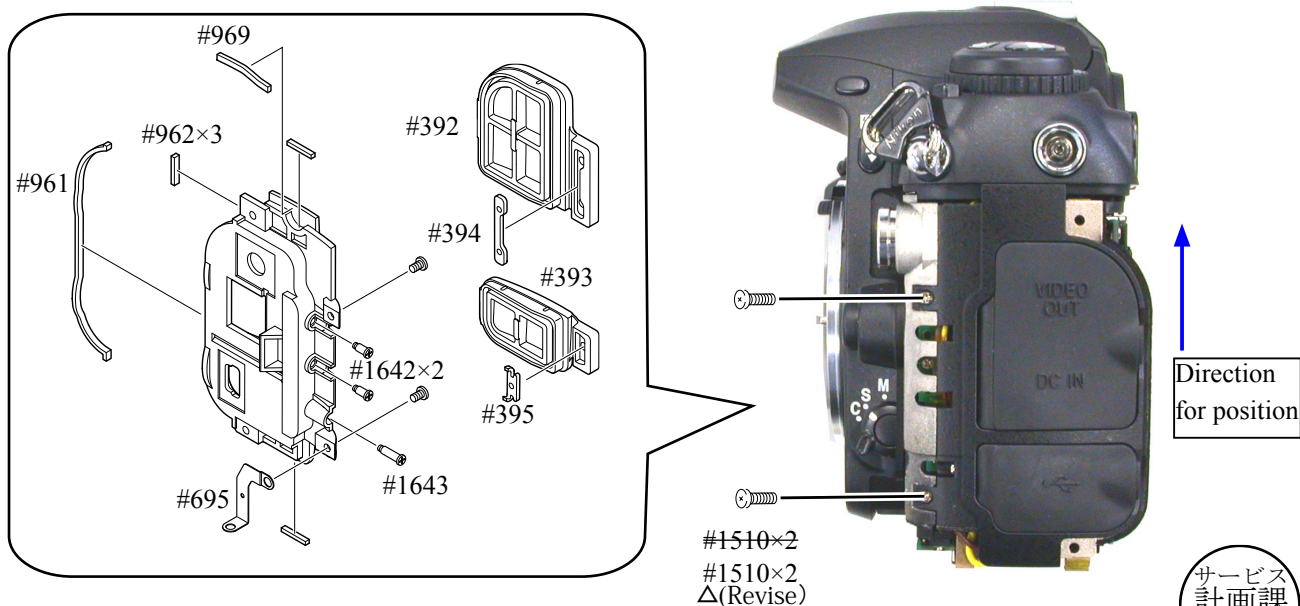
DG shield plate

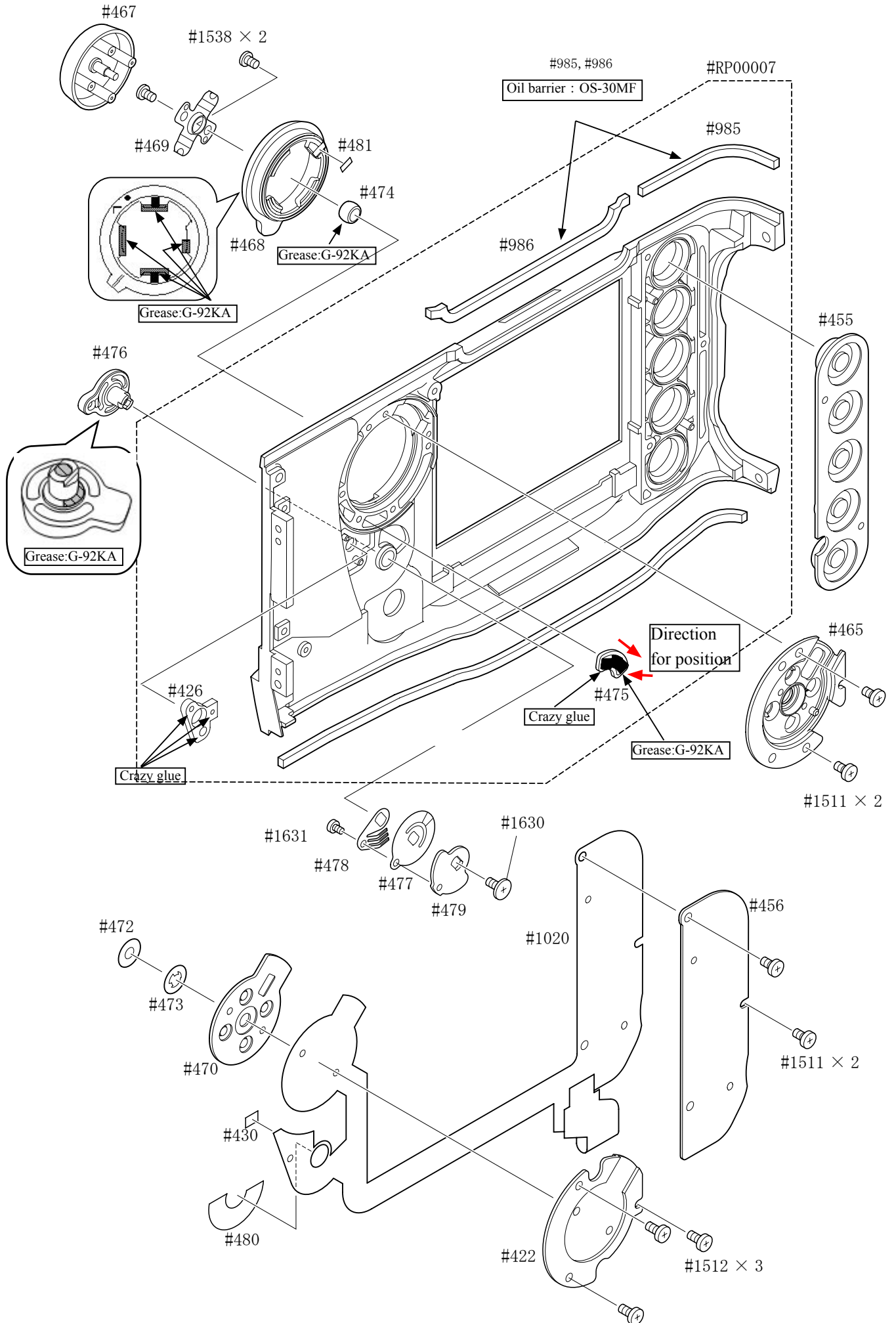
- Fix the DG-shield plate with five screws (#1546) and two screws (#1515).
- Make soldering bridge.

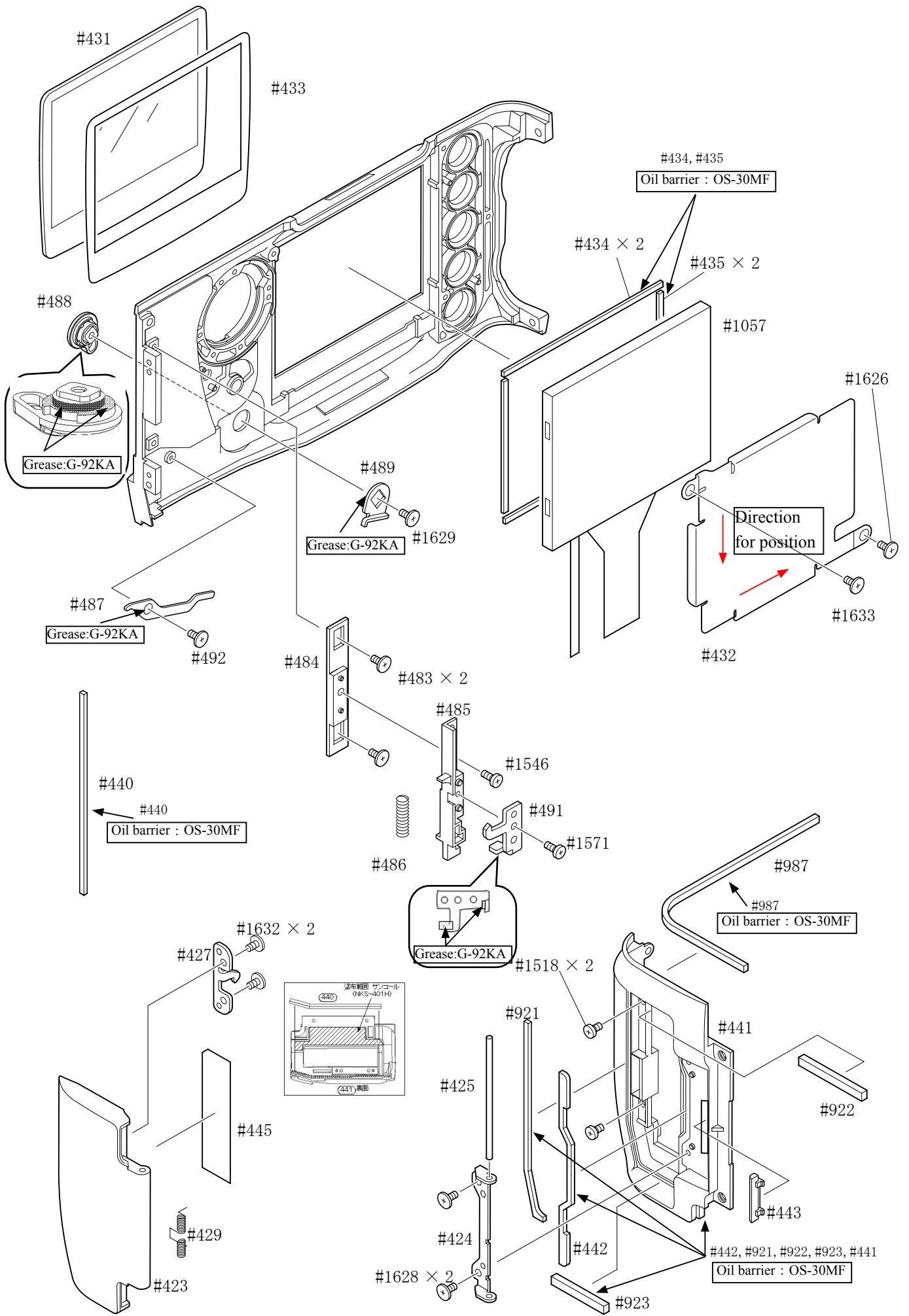


I/F cover

- Assemble the conductive plate (#695) by aligning with the boss.
- Position the I/F cover towards the top cover, and fix it with two screws (#1510). (#1549) Δ(Revise)

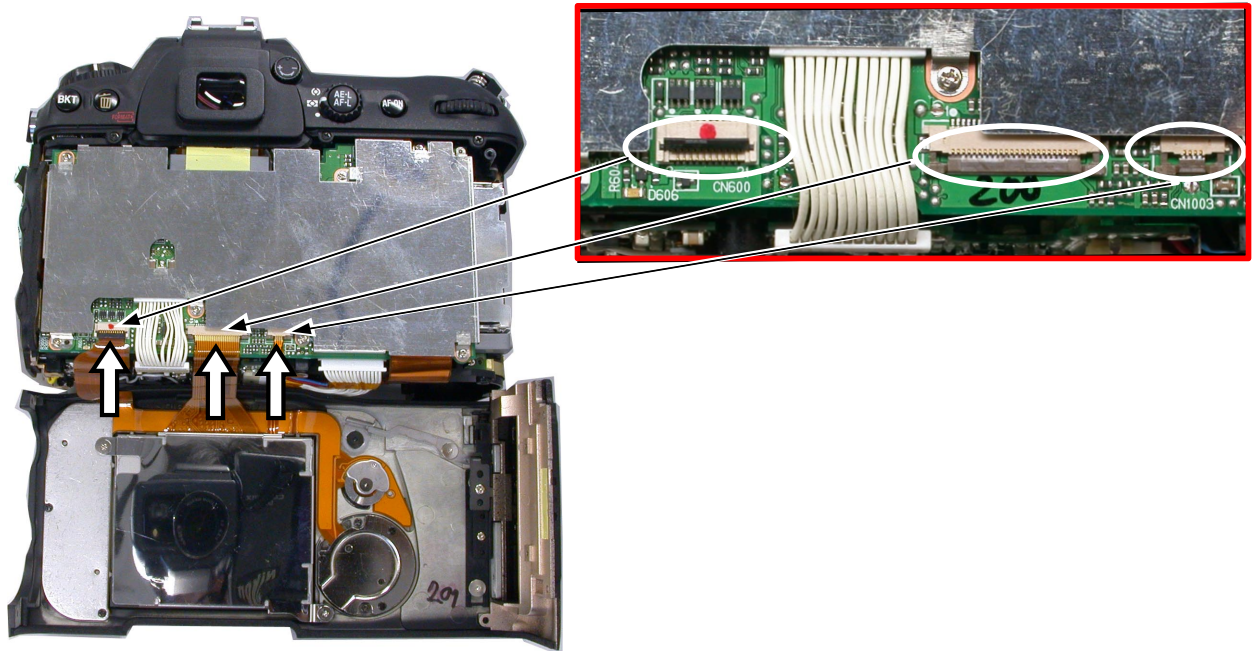






Rear cover

- Connect the three TFT-PCB connection PCBs to the DG-PCB connectors.

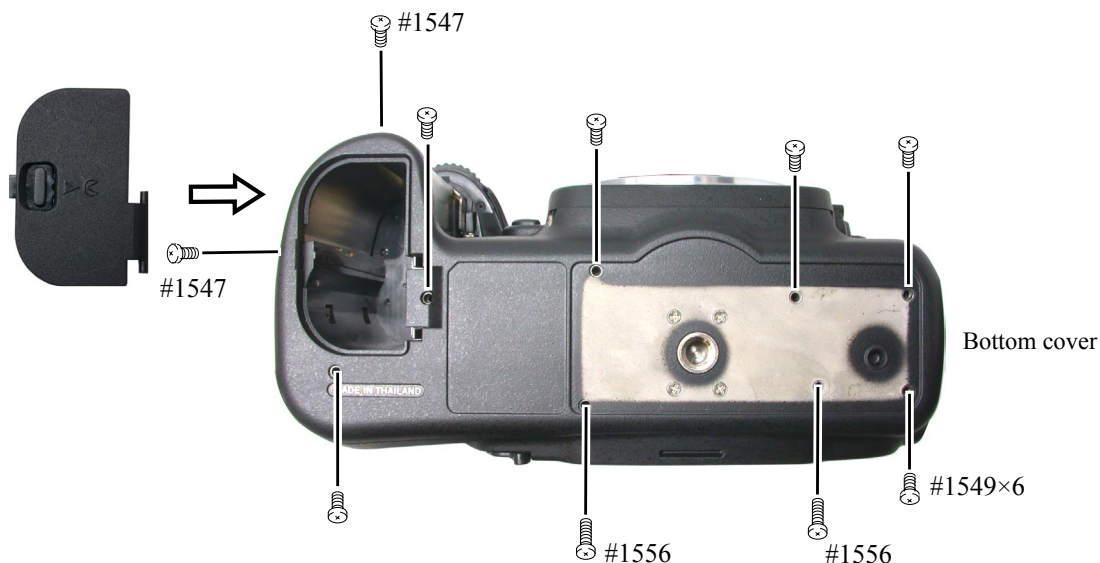


- Fix the rear cover with two screws (#1547), two screws (#1552), and one screw (#1549).



Bottom cover

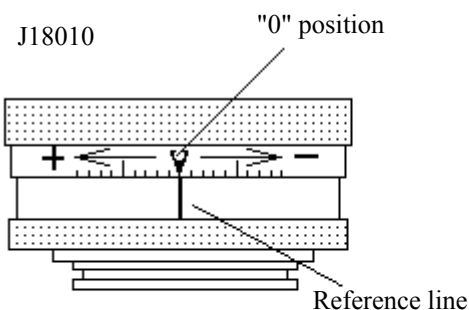
- Mount the bottom cover.
- Tighten two screws (#1556), six screws (#1549), and two screws (#1547).
- Attach the battery lid.



∞ Infinity focus inspection & adjustment

- Replace the finder screen with the infinity focus check screen (J18394), and use the reference lens (J18010) and read the value. In case it is out of standard, increase or decrease washers (#836A, #836B, or #836C) for adjustments. * Supply the power (Battery or EH-6) for checking.

Caution: When (J18394) is put in to replace the finder screen, put it with the silver spacers upward, which are attached on both sides.



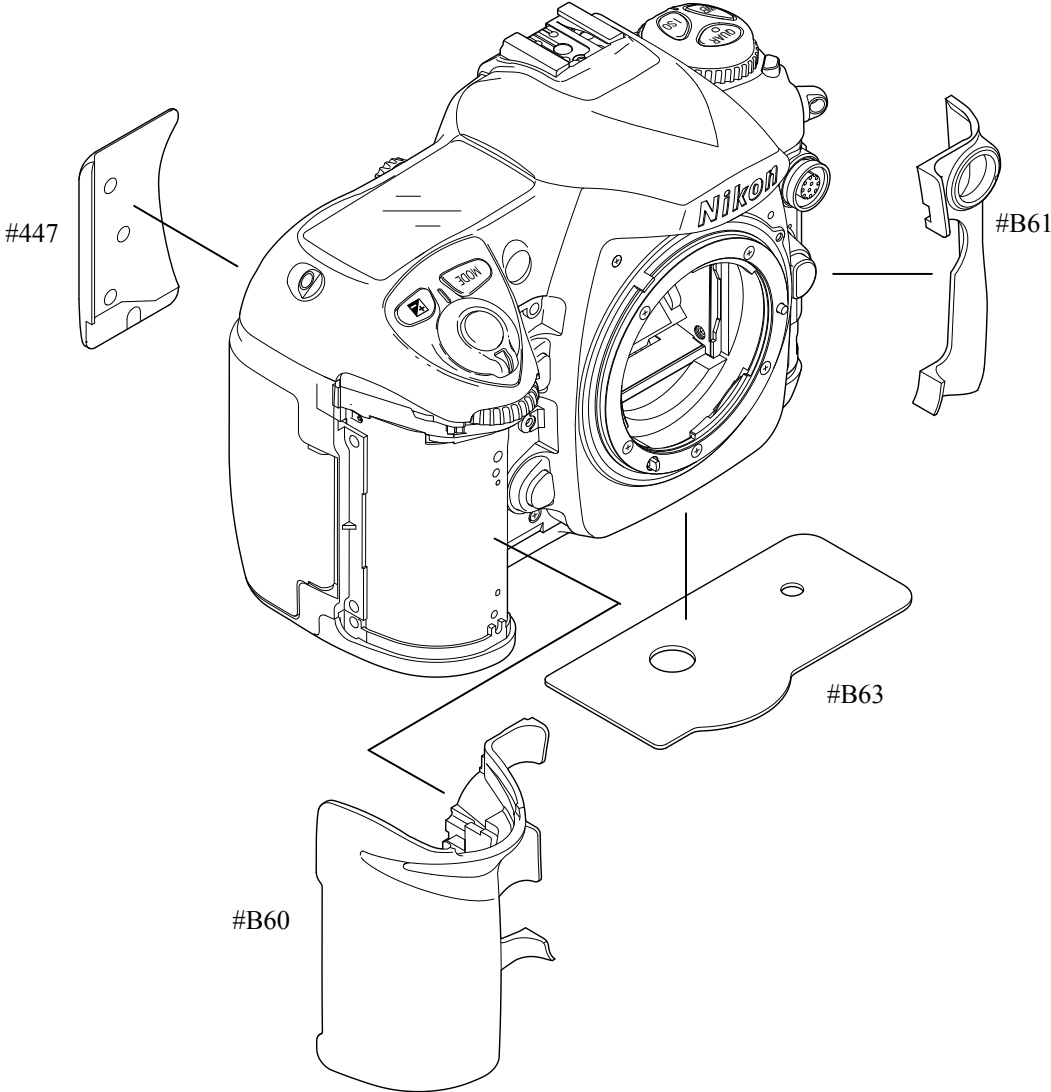
Standard: $\pm 0.04\text{mm}$ (1 scale = 0.01mm)

| Value of J18010 | Adjustment |
|-----------------|---|
| +0.04 ~ -0.04 | Within standard, adjustment unnecessary |
| +0.05 ~ +0.07 | Replace with #836C |
| +0.08 ~ +0.14 | Replace with #836A |
| +0.15 ~ | Remove the washer. |
| -0.05 ~ -0.07 | Replace with #836A, #836C |
| -0.08 ~ -0.14 | Add #836A |
| -0.15 ~ -0.17 | Add #836C |
| -0.18 ~ | Add #836B |

| | | | |
|-------|-----------|-----------------|--------|
| #836A | 1K602-832 | Screen washer A | 0.10mm |
| #836B | 1K602-833 | Screen washer B | 0.20mm |
| #836C | 1K602-840 | Screen washer C | 0.15mm |

External rubber

- Attach the external rubbers (#B63, #B60, #B61, and #B447).



Necessary adjustments when parts are replaced

1. D200 adjustment software and updates

| Adjustments Parts to be replaced | EEPROM fixed values | AE CCD positioning adjustment | AE accuracy inspection & adjustment | M1/8000 inspection & adjustment | Aperture accuracy inspection | Battery check level adjustment | Built-in SB light volume inspection & adjustment | AF accuracy inspection & adjustment |
|-------------------------------------|---------------------------|-------------------------------------|--|---------------------------------------|------------------------------------|--------------------------------------|---|--|
| Shutter unit | | | | ○ | | | | |
| Main FPC * 1 | ○ | * 2 △ | ○ | ○ | ○ | ○ | ○ | ○ |
| Sub-PCB | | | | | | | | |
| AF sensor unit | | | | | | | | ○ |
| Top cover or SB lower case unit | | | | | | | ○ | |
| DC/DC PCB unit | | | | | | ○ | ○ | |
| Metering FPC unit | | ○ | ○ | | | | | |
| Aperture control PCB unit | | | | | ○ | | | |

* 1. When the main PCB unit is replaced, be sure to update the version before writing the fixed values.

* 2. Make an inspection.

2. Shooting image adjustment software and updates

| Adjustments Parts to be replaced | Writing of fixed values | Gr/Gb difference compensation ADJ (G filter) | Sensitivity | Shading | Gr/Gb compensation adj. (R/B filter) | Sensitivity ratio | Pixel defect compensation - Black point | Pixel defect compensation - White point | Rewriting of TFT fixed data | Initial (factory default) setting |
|-------------------------------------|-------------------------|--|-------------|---------|--------------------------------------|-------------------|---|---|-----------------------------|-----------------------------------|
| Shutter unit | | | | | | | | | | |
| Main PCB unit | | | | | | | | | | |
| AF sensor unit | | | | | | | | | | |
| DC/DC PCB unit | | | | | | | | | | |
| Metering FPC unit | | | | | | | | | | |
| * 1 DG PCB unit | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | ○ |
| CCD/FPC PCB unit | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | |
| TFT monitor | | | | | | | | | ○ | |

* 1 . When the DG-PCB unit is replaced, be sure to update the firmware before writing the fixed value.

Shooting Image Adjustment

1. Summary

A53 Δ(Revise)

When D200 shooting image-related and listed parts on Page A51 are replaced, be sure to make an adjustment by the shooting image adjustment software for D200 (J65084). The details of its function and how to use this software are as follows:

2. Adjustment software function

- (1) Writing of fixed values
- (2) Gr/Gb difference compensation adjustment (G filter)
- (3) "Sensitivity" adjustment
- (4) Shading adjustment
- (5) Gr/Gb compensation adjustment (R/B filter) / Line crawl adjustment
- (6) "Sensitivity ratio" adjustment
- (7) Pixel defect compensation - black point
- (8) Pixel defect compensation - white point
- (9) Rewriting of TFT fixed data
- (10) Initial (factory default) setting
- (11) Getting reference values
- (12) Reading of RISC version
- (13) Checking of the adjustment value

※ When the adjustments from (2) to (6) are made, get in advance the reference values of (10) by using the reference body, then perform the adjustments.

3. Hardware requirements

OS : Widows98SE, Windows2000, WindowsME, WindowsXP
Japanese or English OS

PC : CPU Pentium II or more
Memory 128MB or more
USB1.1

Screen size: 1024×768 pixels or more

4. How to set up

Create any directory in the harddisc (except desk top) of PC, and copy the following files.

- D200IMG.exe Application file
- STD.DAT Standard file
- NkdPTP.dll USB-communication application extension file for WinXP
- NkdPTPDi.dll USB-communication application extension file for Win98SE and Win2000
- MPLP.dll For system
- MSVCP60.dll For system (Win2000)
- CCDFLG.DAT Fixed value data (writing of fixed values)
- CCDINIT.DAT Initial value data (factory default setting)
- Q0220IMAGEADJUSTMENT67.dll For pixel defect compensation
- LineCrawlFittingQ220DLL.dll For line crawl, shading
- LineCrawlFittingQ220.ini System initialization file for line crawl
- LineCrawlFittingQ220G.ini System initialization file for G-line crawl
- LineCrawlFittingQ220SD.ini System initialization file for shading
- preserdata.jpg Default setting WB image file

※ Be sure to copy the above file in the same directory.



Procedure for installing USB driver

If this program is used by the USB interface, installing the USB driver is necessary.

But if the OS is "Windows XP", the driver is already preloaded so it is not necessary to install it.

- (1) Set the USB of camera to "PTP".
(SETUP menu → USB setting → PTP)
- (2) Connect the camera and PC by USB cable.
Turn camera ON.
- (3) When "Add New Hardware Wizard" is displayed, click "Next".



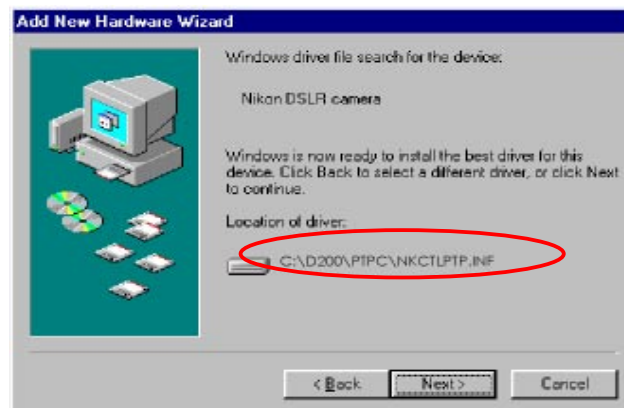
- (4) Select "Search for a better drive than the one your device is using now. (Recommended)", and click "Next".



- (5) Click "Reference" of "Specify a location" and select the directory where the driver was copied, such as "C: ¥D200¥PTP". Then click "Next".



(6) Confirm that the driver is located at the right place, and click "Next".



(7) Click "Finish".



(8) Reboot the PC to complete the installation.

6. Basic usage

- (1) Perform the D200IMG.exe to start up the main screen. (ref. Fig.1)
- (2) Select ENGLISH / JAPANESE in Language to display the expected menu. (ref. Fig.2)
- (3) Click the button to start adjustments.
- ※ When the adjustments from 2. to 6. are made, calculate to get the "Sensitivity" and "Sensitivity ratio" reference values of (7) by using the reference body beforehand, then perform the adjustments.
- (4) Follow the instructions on screen.
- (5) To complete the procedure, click "QUIT" button or "Close" button at the upper-right corner of the menu.

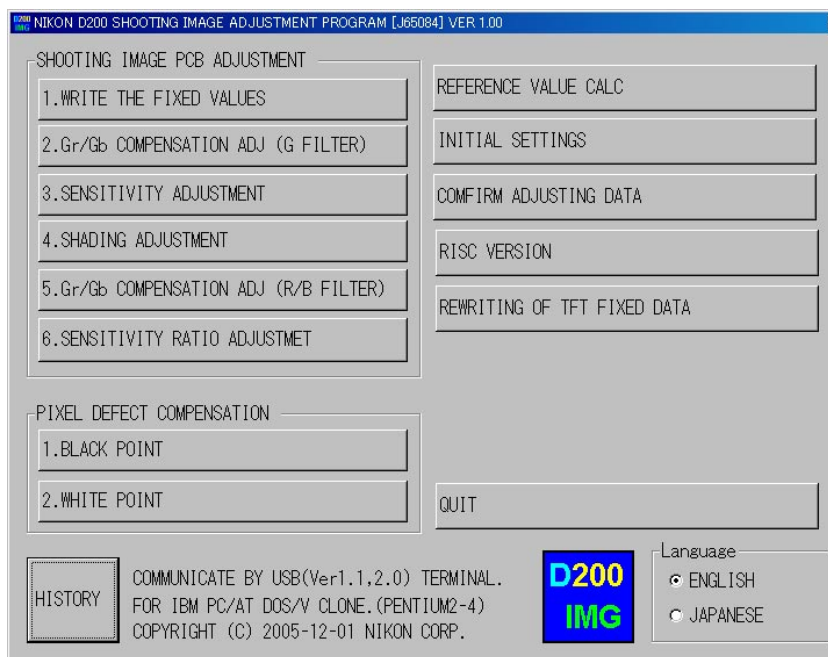


Fig.1

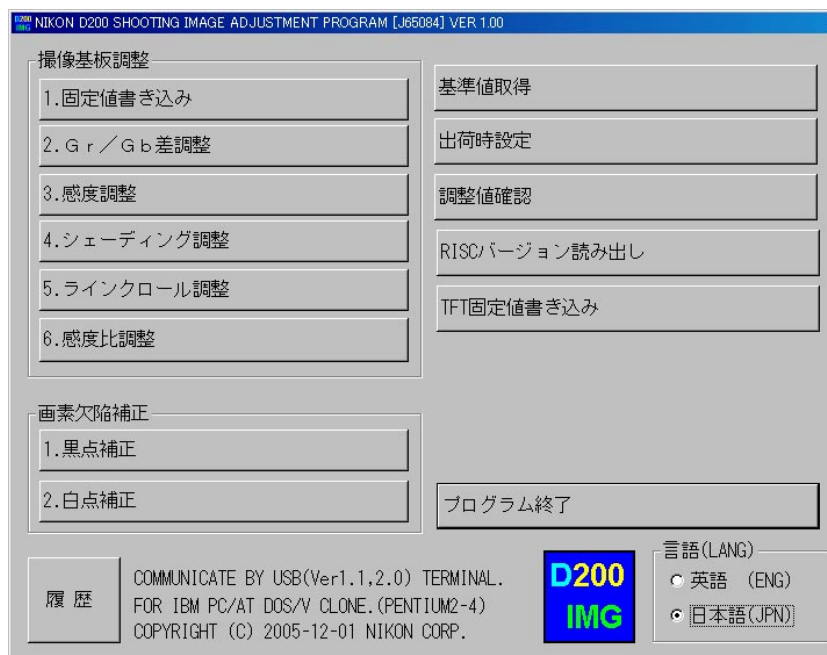


Fig.2

7. Required equipment and conditions

※ AC adapter EH-5 and USB cable (mini B type) UC-E4 are used for all adjustments so they are not specified in the list.

★ New established tool

| | Item | Required device | Setting/Remarks |
|----|--|--|---|
| 1 | Writing of fixed value | None | |
| 2 | Gr/Gb difference compensation adjustment (G filter) | <ul style="list-style-type: none"> • 5100K color viewer J63070 (ex-model viewer J63049 is also available.) • Luminance meter BM-3000 J63068 • Tool lens (to fix aperture) J61185 • SP2 (G filter) J63086 | Equivalent to luminance LV13 Aperture F8 |
| 3 | Sensitivity adjustment | <ul style="list-style-type: none"> • 5100K color viewer J63070 (ex-model viewer J63049 is also available.) • Luminance meter BM-3000 J63068 • Tool lens (to fix aperture) J61185 • ND filter (ND8×1+ND4×1) | Equivalent to luminance LV13 Aperture F8 52 mm, Use the packaged product; 5-step light reduction |
| 4 | Shading adjustment | <ul style="list-style-type: none"> • 5100K color viewer J63070 (ex-model viewer J63049 is also available.) • Luminance meter BM-3000 J63068 • Tool lens (to fix aperture) J61185 • ND filter (ND8×1) | Equivalent to luminance LV13 Aperture F5.6 Use the packaged product; 3-step light reduction |
| 5 | Gr/Gb compensation adjustment (R/B filter) / Line crawl adjustment | <ul style="list-style-type: none"> • 5100K color viewer J63070 (ex-model viewer J63049 is also available.) • Luminance meter BM-3000 J63068 • Tool lens (Fixed aperture) J61185 • SP3 (R filter) J63087 • SP1 (B filter) J63085 | Equivalent to luminance LV13 Aperture F8 |
| 6 | Sensitivity ratio adjustment | <ul style="list-style-type: none"> • 5100K color viewer J63070 (ex-model viewer J63049 is also available.) • Luminance meter BM-3000 J63068 • Tool lens (to fix aperture) J61185 | Equivalent to luminance LV13 Aperture F8; No filter |
| 7 | Pixel defect compensation - black point | <ul style="list-style-type: none"> • 5100K color viewer J63070 (ex-model viewer J63049 is also available.) • Luminance meter BM-3000 J63068 • Tool lens (to fix aperture) J61185 | Equivalent to luminance LV13 Aperture F5.6 |
| 8 | Pixel defect compensation - white point | Body cap or lens cap | Environmental temperature approx. 20 - 25°C |
| 9 | Rewriting of TFT fixed data | None | |
| 10 | Getting of reference values | Same as "Sensitivity adjustment" | No filter when sensitivity ratio reference value is calculated. |
| 11 | Initial (default) setting | None | |
| 12 | Checking of adjustment value | None | |
| 13 | Reading of RISC version | None | |

8. Summary

The summary on each adjustment is as follows:

(1) Writing of fixed values

Because the fixed value that is written in Repair Parts is blank, write the fixed value when the DG-PCB is replaced.

(2) Gr/Gb difference compensation adjustment (G filter)

Camera is faced to the light-emitting box (color viewer) of LV13 equiv. with SP2 (G filter) being put between them, and the adjustment is made so that the difference between Gr and Gb output of the center (425×425 pixels) can fall in the standard range.

G-line crawl (3895×2610 pixels) is divided into (29×25) blocks, and the difference between Gr and Gb output can fall in the standard range.

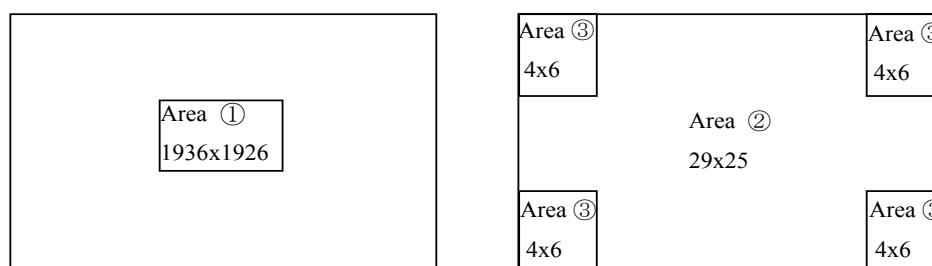
(3) Sensitivity adjustment

Camera is faced to the color viewer of LV13 equiv. with ND filter (-5 steps) being put between them, and the adjustment is made by changing the amp gain so that G output can fall in the standard range. The gain value is adjusted so that the G output average value (Average of Gr/Gb) in the center (425×425 pixels) can reach the target output level (approx. 1040LSB). The actual adjustment of the gain value is made only under the condition of ISO100 and ISO1600, and the medium sensitivity is calculated by the adjustment values of these 2 conditions.

For target output level, G output average of sensitivity reference value (ISO100) is used, which was calculated by the reference body.

(4) Shading adjustment (5100K color viewer is shot by this camera, and adjustment is made.)

Camera is faced to the color viewer of LV13 equiv. with ND filter (-3 steps) being put between them, and the adjustment of white balance distribution is made for 3 areas [Area ① : Central 1936×1926-pixel area; Area ② : All the divided areas except ③ -areas after dividing (3890×2606-pixels) into (29×25-pixels); Area ③ ; 4 corners of (4×6-pixels) after dividing (3890×2606-pixel) into (29×25-pixels)]



(5) Gr/Gb compensation adjustment (R/B filter) / Line crawl adjustment

Camera is faced to the light-emitting box (color viewer) of LV13 equiv. with SP3 (R filter) or SP1 (B filter) being put between them, and the adjustment is made so that the difference in G output average between B-G line and G-R line, when the whole screen is divided in areas, can fall in the standard range.

(6) Sensitivity ratio adjustment

Camera is faced to the color viewer of LV13 equiv., and the adjustment is made so that the R/G, B/G output becomes the same as the output ratio of the sensitivity ratio reference value that was calculated by the reference body. The adjustment is made only under the condition of ISO100, and the average value of the center (425 pixels × 425 pixels) is used.

(7) Pixel defect compensation - black point

When pixels of which the output level is under specified value with LV13 equiv., are detected, the coordinates of the detected pixels are rewritten as pixel defect compensation data.

(8) Pixel defect compensation - white point

Shots are taken on the dark surface. In case the pixel output is found to be beyond the standard value, the detected pixel coordinate is additionally written as the pixel defect compensation data.

(9) Rewriting of TFT fixed data

When TFT monitor is replaced, be sure to perform "REWRITING OF TFT FIXED DATA".

(10) Getting of reference values

- Sensitivity reference value calculation

The reference body is faced to the color viewer of LV13 equiv. with the ND filter (-5 step) being put between them. Then, store the G output average value of the center (425 pixels × 425 pixels) is stored in the STD.DAT file as the sensitivity reference value.

- Sensitivity ratio reference value calculation

The reference body is faced to the color viewer of LV 13 equiv. (without filter). Then, the sensitivity ratio reference value GR and GB is calculated, based on the G/R/B output average of the center (425 pixels × 425 pixels), and they are stored in the STD.DAT file.

It is necessary to calculate the reference values of "Sensitivity" and "Sensitivity ratio" in order to prevent the color temperature fluctuation caused by color viewer's changes over time from affecting the results of the shooting image adjustment. By using the reference body, calculate the reference values once in about every 3 months, when the fluorescent of the color viewer is replaced.

(11) Initial (factory default) setting

By reset the settings of camera, factory default settings are restored.

Select the language and video mode to perform.

Because this setting of RP DG-PCB is blank, be sure to set the initial setting when the DG-PCB is replaced.

When this setting is used, the USB mode is set to "Mass Storage" mode.

(12) Checking of adjustment value

The adjustment value is confirmed, functioning as substitute for the traditional "READING AND REWRITING OF EEPROM DATA".

(13) Reading of RISC version

The RISC firmware version is displayed.

9. Procedure

9-1. Shooting image adjustment

- Calculate the "Sensitivity" and "Sensitivity ratio" reference values by using D200 reference body beforehand, then perform the adjustments. (ref. 9-5.)
- When the DG-PCB is replaced, perform all the shooting image adjustments from (1) to (6), and in other cases, perform those from (2) to (6) in this order. The adjustments from (1) through (3) are all programmed to be executed in serial order. When (1) is completed, the software automatically goes on to the next adjustment.
- In case adjustments are interrupted by NG, the adjustments can be continued again after NG. As for adjustments that were ended with OK, the flashram-up of the adjustment value is completed.

* Note: Adjustments are not possible without resetting "Custom setting" of this camera.

Before the adjustments, record the details of "Custom setting" set by customers if necessary.

Start adjustments

- Provide the power for the camera via AC adapter.
- Reset "Custom setting".
- Set "PTP" mode by Setup menu.
- Set the focus mode to M, exposure mode to M, and the exposure compensation to "0" of the camera.
- Connect the camera and PC via USB cable.
- Set the color viewer luminance to LV13 equiv.

(1) Writing of fixed values

- Click "1. WRITE FIXED VALUE TO EEPROM" on the menu.
- The adjustment starts. When it is completed, "OK" is displayed.
- The software automatically goes on to the next adjustment item.

(2) Gr/Gb difference compensation adjustment (G filter)

- Click "2. Gr/Gb COMPENSATION ADJ (G FILTER)" of the main menu on screen.
- Attach the tool lens (Aperture F8) and SP2 (G filter) to the camera.
- Get the camera closest to the center of the illuminated surface of the color viewer.
- The adjustment starts. When it is completed, "OK" is displayed.
- The software automatically goes on to the next adjustment item.

(3) Sensitivity adjustment

- Click "3. SENSITIVITY ADJUSTMENT" of the main menu on screen.
- Attach the tool lens (Aperture F8) and ND filter (ND 8× 1+ ND 4×1) to the camera.
- Get the camera closest to the center of the illuminated surface of the color viewer.
- The adjustment starts. When it is completed, "OK" is displayed.
- The software automatically goes on to the next adjustment item.

(4) Shading adjustment

- Click "4. SHADING ADJUSTMENT" on the menu.
- Attach the tool lens (Aperture F5.6) and ND filter (ND 8× 1) to the camera.
- Get the camera closest to the center of the illuminated surface of the color viewer.
- The adjustment starts. When it is completed, "OK" is displayed.
- The software automatically goes on to the next adjustment.

(5) Gr/Gb compensation adjustment (R/B filter)

- Click "5. Gr/Gb COMPENSATION ADJ (R/B FILTER)" on the menu.
- Attach the tool lens (Aperture F8) and SP3 (R filter) to the camera.
- Get the camera closest to the center of the illuminated surface of the color viewer.
- The adjustment starts. When it is completed, the next instructions are displayed.
- Attach the tool lens (Aperture F8) and SP1 (B filter) to the camera.
- Get the camera closest to the center of the illuminated surface of the color viewer.
- The adjustment starts. When it is completed, "OK" is displayed.
- The software automatically goes on to the next adjustment.

(6) Sensitivity ratio adjustment

- Click "6. SENSITIVITY RATIO ADJUSTMENT" of the main menu on screen.
- Attach the tool lens (Aperture F8) to the camera (without filter).
- Get the camera closest to the center of the illuminated surface of the color viewer.
- The adjustment starts. When it is completed, "OK" is displayed.

9-2. Pixel defect compensation - black point

- Set the color viewer luminance to LV13 equiv.
- Provide the power for the camera via AC adapter.
- Reset "Custom setting".
- Set "PTP" mode by Setup menu.
- Set the focus mode to M, exposure mode to M, and the exposure compensation to "0" of the camera.
- Connect the camera and PC via USB cable.
- Click "BLACK POINT" of "PIXEL DEFECT COMPENSATION" of the menu.
- Attach the tool lens (Aperture F5.6) to the camera (without filter).
- Get the camera closest to the center of the illuminated surface of the color viewer.
- When the adjustment starts, pixel defects are detected, displaying the number of pixels and addresses.
- After confirming the above, click "X" button.
- When it is completed, "OK" is displayed.
- The software automatically goes on to the next "WHITE POINT" of "PIXEL DEFECT COMPENSATION".
(After the black point compensation, be sure to perform the white point compensation, too.)

* Note: In some cases, NG occurs due to dusts on the CCD.

Be sure to clean the CCD surface before adjustments.

9-3. Pixel defect compensation - white point

- Check the environmental temperature (approx. 20-25°C.).
- Provide the power for the camera via AC adapter.
- Reset "Custom setting".
- Set "PTP" mode by Setup menu.
- Set the focus mode to M, exposure mode to M, and the exposure compensation to "0" of the camera.
- Connect the camera and PC via USB cable.
- Click "WHITE POINT" of "PIXEL DEFECT COMPENSATION" of the menu.
- Cap the camera with the body cap or lens cap to shield light from the mount.
- When the adjustment starts, pixel defects are detected, displaying the number of pixels and addresses.
- After confirming the above, click "X" button.
- When it is completed, "OK" is displayed.

9-4. Getting of reference values

- Set the color viewer luminance to LV13 equiv.
- Provide the power for the camera via AC adapter.
- Reset "Custom setting".
- Set "PTP" mode by Setup menu.
- Set the focus mode to M, exposure mode to M, and the exposure compensation to "0" of the camera.
- Connect the camera and PC via USB cable.
- Select "SENSITIVITY, RATIO REFERENCE VALUE CALC" of the menu on screen.
- The current reference value is displayed on screen.
- Click "SENSITIVITY, RATIO REFERENCE VALUE CALC".
- The calculation of the sensitivity reference value starts. The message to set conditions is displayed.
- Attach the tool lens (Aperture F8) and ND filter (ND 8×1 + ND 4×1) to the camera.
- Get the camera closest to the center of the illuminated surface of the color viewer.
- The adjustment starts. When it is completed, the software goes on to the sensitivity ratio reference value.
- Attach the tool lens (Aperture F8)(Remove ND filter).
- The adjustment starts. When it is completed, the sensitivity and sensitivity reference values are stored in the standard setting file (STD, DAT).
- After this procedure, when the shooting image adjustment is made, the sensitivity and sensitivity ratio that were calculated this time are used.
- ※ Calculate the sensitivity and sensitivity ratio reference values once in about every 3 months, and when the fluorescent of the color viewer is replaced.

9-5. Reading of RISC version

- Provide the power for the camera via AC adapter.
- Set "PTP" mode by Setup menu.
- Connect the camera and PC via USB cable.
- Click "READING OF RISC VERSION" of the menu on screen.
- RISC version is displayed.

9-6. Procedure for upgrading RISC firmware:

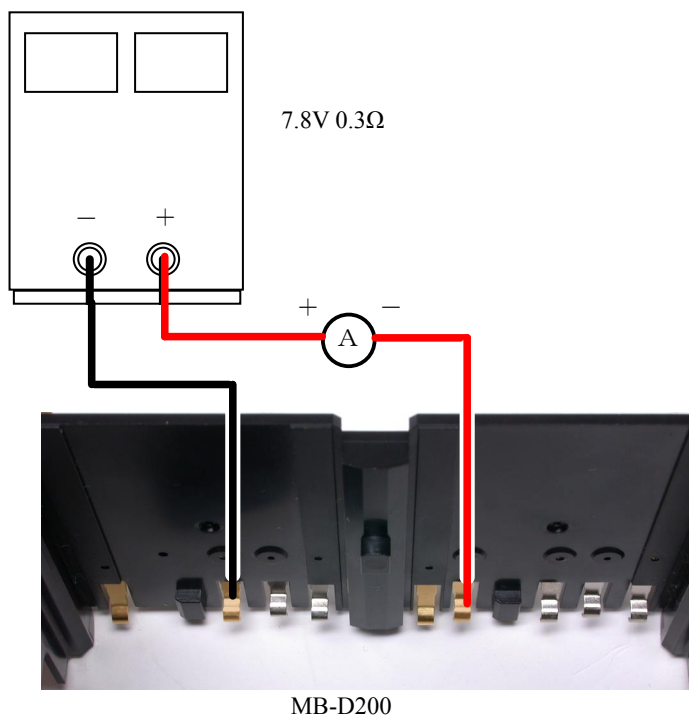
- After preparing the CF card, copy the latest version (XXXX. BIN) into the root directory.
- Insert the CF card, and select "FIRMWARE VERSION" from the SETUP menu.
- Follow the instructions on screen for version upgrading. It takes approx. 3-4 minutes.
- Check the version of firmware by "RISC VERSION" of the image adjustment software.

Note:

In case incorrect files are included in the CF card, the details for upgrading are not displayed even after selecting "FIRMWARE VERSION" from the SETUP menu.

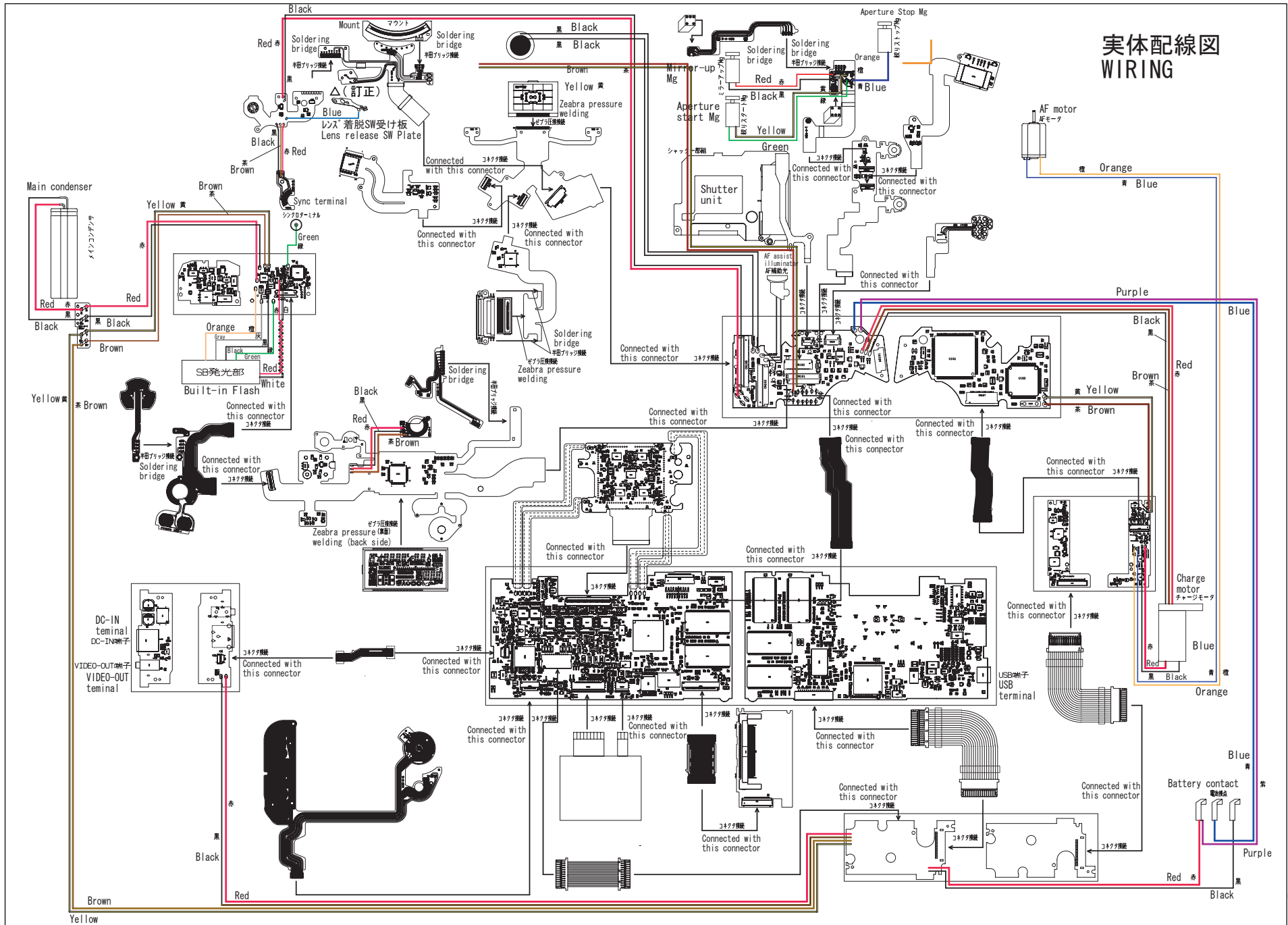
< Measurement of Consumption current value >

When this camera is used for measuring the consumption current value, set the MB-D200 and wire as follows:



| Test item | Standard | Test condition |
|--|-----------------|-------------------------------|
| Main SW • OFF All operational buttons are NOT pushed. | 200 μ A or less | ref. above. AF50/1.4D、EV12 |
| Main SW • ON (Half-release timer OFF) | 200μA or less | |
| Main SW • ON (Half-release timer ON) | 380 m A or less | |
| Main SW • ON (Illumination ON) | 400 m A or less | |
| Main SW • ON (TFT ON) | 500 m A or less | |

実体配線図
WIRING



工 具 ・ TOOLS

★ : 新規設定工具 ・ NEW TOOL

| 工具番号 Tool No. | 名 称 Name of tool | 備 考 Others |
|---|---|---|
| ★ J15427  | AE CCD 位置出し工具 AE CCD positioning tool | |
| ★ J18394  | 無限合致調整用スクリーン Infinity focus adjustment screen | |
| ★ J18389  | 反射ミラー Reflection mirror | |
| ★ J18397  | カメラ部点検、調整ソフト Inspection and adjustment software for CAMERA | |
| ★ J65084  | 撮像部点検、調整ソフト Inspection and adjustment software for IMAGING | |
| J18230  | YAW、PITCH工具 Yaw, Pitch adjustment tool | FOR F5, F100, F90, F90X, D70, D70s. D50 |
| J15259  | A F 調整工具台 AF adjusting tool | |
| J15280  | Z レンズ用支持ホルダー Lens holder | |
| J15264  | 高周波タイプ蛍光灯器具 Illumination box for AF adjustment | |
| J18266  | A F 調整用 Z レンズ (1m用) Z adjustment lens (For 1m) | FOR F5, F100, D70, D70s. D50 |
| J15274  | J15264 用チャートボード Chart board for J15264 | |
| J18344  | A F チャート AF adjusting chart | FOR D100, D70, D70s. D50 |

★ : 新規設定工具・NEW TOOL

| 工具番号 Tool No. | 名 称 Name of tool | 備 考 Others |
|---|--|--|
| J19002  | 縦型焦点面検査機 LT-500S Back focus collimator LT-500S | J 19110 usable J 19110 でも代用可 |
| ★ J18391  | サブミラー59°出し工具 Sub mirror angle adjustment tool | |
| J18037  | オプチカルパラレル Optical parallel | |
| J18004  | 絞りレバー高さ点検工具 Aperture lever positioning gauge | |
| J19004-1  | インジケータ及びスタンド (ボディバック台、ゲージ) Dial indicator and Stand | |
| J18001-1  | ボディバック出し工具 Body back focus gauge | |
| J19001  | 無限合致コリメーター F=600mm Collimator F=600mm | |
| J18010  | 無限大合致基準レンズ 50/1.8 Infinity Standeard Lens 50/1.8 | |
| J19042E  | T秒時測定アダプター (APS)-(EF8000用) T.V. MEASURING ADAPTER (APS) (For EF8000)-(APS) (EF8000用) | |
| J61199  | D100 AE 受光部アダプター D100 LIGHT RECEIVE ADAPTER | FOR D100, D2H, D2X |
| J19123  | シャッター試験機 EF-1 (CE) Shutter Tester EF-1 (GE) | 共立電機製 KYORITSU ELECTRIC EF-8000 usable |

★ : 新規設定工具・NEW TOOL

| 工具番号 Tool No. | 名 称 Name of tool | 備 考 Others |
|---|---|-----------------------------------|
| J18267  | A F 5 0 / 1 . 4 D Lens AF50/1.4D | |
| J61185  | 撮像関係調整用レンズ D1 Standard lens | FOR D1, D2H, D70, D70s, D50 |
| J18191  | N D フィルター 8 X ND filter 8X | FOR D2H, D70, D70s, D50 |
| J18358  | N D フィルター 4 X ND filter 4X | 1 枚使用 It uses by one pieces |
| J63070  | カラービューワー Color Viewer | |
| J63068  | 輝度計 (BM-3000) Luminance Meter BM-3000 | |
| J63085  | フィルター SP1 (75X75MM) Filter SP1 (75X75MM) | FOR D2H, D70, D70s, D50 |
| J63086  | フィルター SP2 (75X75MM) Filter SP2 (75X75MM) | FOR D2H |
| J63087  | フィルター SP3 (75X75MM) Filter SP3 (75X75MM) | FOR D2H, D70, D70s, D50 |
| ★ J15423  | 電池工具 Battery tool | |
| J19109  | MC-31 (接続コード) MC-31 (CONNECTING CORD) | |

| 工具番号 Tool No. | 名称 Name of tool | 備考 Others |
|--|--|-----------------------------|
| OS-30MF  | ドライサーフ OS-30MF DRY SURF OS-30MF (OIL BARRIER) | |
| LEN317A  | グリース LEN317A Grease LEN317A | |
| EDB0011  | ネジロック (赤) 1401C Screw lock 1401C | |
| C-8008B  | セメダイン 8008 (黒) Cemedain 8008 (BLACK) | |
| MZ-800S  | ドライサーフ MZ-800S DRY SURF MZ-800S | |
|  | アロンアルファ Crazy glue | 汎用品 RJ is Not available |
|  | フラッシュメーター Flash Meter | 汎用品 RJ is Not available |
|  | デジタルマルチメータ Digital meter | 汎用品 RJ is Not available |
|  | ACアダプター EH-6 AC adapter EH-6 | 製品転用 RJ is Not available |
|  | USBケーブル UC-E4 USB cable UC-E4 | 製品転用 RJ is Not available |
|  | パーソナルコンピュータ Personal computer | 汎用品 RJ is Not available |
|  | 安定化電源 (10V 5A) Power supply (10V 5A) | 汎用品 RJ is Not available |
|  | ヘクスキー (φ 1.5mm) HEX. KEY WRENCH (φ 1.5mm) | 汎用品 RJ is Not available |
| ★  | ヘクスキー (φ 5.0mm) HEX. KEY WRENCH (φ 5.0mm) | 汎用品 RJ is Not available |
| ★  | AF28/2.8D Lens AF28/2.8D | 製品転用 RJ is Not available |