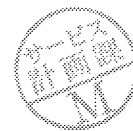


作成承認印

配布許可印



**F65**

(SILVER)FAA37001

(BLACK)FAA37051

*N65*

(SILVER)FAA37101

*U*

(SILVER)FAA37201

(BLACK)FAA37251

**F65D**

(SILVER)FAA37211

(BLACK)FAA37261

*N65QD*

(BLACK)FAA37351

REPAIR MANUAL

**Nikon** | NIKON CORPORATION  
Tokyo, Japan

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# SPECIFICATION

1 .	Outline .....	M 1
2 .	Feature .....	M 1
3 .	Viewfinder .....	M 1
4 .	Shutter .....	M 2
5 .	Metering .....	M 2
6 .	Auto Flash .....	M 2
7 .	External Speed light .....	M 2
8 .	Built-in Speed light .....	M 3
9 .	AF .....	M 3
1 0 .	Program Diagram .....	M 4
	[ 1 ] Auto-Multi Program Mode (P) and AUTO Mode .....	M 4
	[ 2 ] Portrait Mode .....	M 4
	[ 3 ] Landscape Mode .....	M 5
	[ 4 ] Close-Up Mode .....	M 5
	[ 5 ] Sports Continuous .....	M 6
	[ 6 ] Night Scene Mode .....	M 6
1 1 .	Sequence	
	Parallel Driving .....	M 7
	Sequential Driving .....	M 8
1 2 .	Mechanism Switches .....	M 9

# SPECIFICATION

(Specifications and mechanisms not described in instruction manual and catalogues are described here).

## 1. Outline

This camera offers the thorough automatization, small-size, light-weight, easy operation and low price to accord the general user's needs, and to spread widely as Nikon's most well-sold model.

## 2. Feature

- (1) Substantiality of the automatized functions by the Five-Point AF with Multi-CAM900 Auto-Focus Module and the auto pop-up of the Built-in speed light.
- (2) Light-weighted by making the parts by plastic and minimaturization.
- (3) Easy operation by the exposure mode dial and the command dial.
- (4) The useful functions as the diopter adjustment, AF assistant illuminance, AF-A mode and remote control.
- (5) The functions as the AF area selection, pre-view, multiple exposures and bracketing.
- (6) The finder of which finder field is bright (Employed the newly developed clear mat and the hollow pentagon.)

## 3. Viewfinder

Type	Hollow Pentagonal Type Single Lens Reflex Finder
Finder Screen	B-type Clear Mat Screen V
Finder Replacement	Unavailable
Screen Replacement	Unavailable
Finder Visuality Ratio	Approx. 89% both vertically and horizontally
Magnification	0.675 times at $-1.52\text{m}^{-1}$ (dpt) 0.604 times at $+0.77\text{m}^{-1}$ (dpt) (50mm lens is used, $\infty$ )
Diopter	$-1.52$ to $+0.77\text{m}^{-1}$ (dpt) Can be adjusted by the diopter adjustment lever, 4-step adjustment. The optional eyepiece correction lenses can be used together.
Eye Point	15.9mm (at $-1.52\text{m}^{-1}$ (dpt)) 23.1mm (at $+0.77\text{m}^{-1}$ (dpt)) 17.05mm (at $-1\text{m}^{-1}$ (dpt))
Eyepiece frame	Rectangular Shape (F-401 type, new-type eyepiece rubber is equipped.)
Eyepiece Lens	3 elements in 3 groups (Material: polycarbonate, polyolefine, acrylic)

## 4. Shutter

- ① Electronically controlled vertical-travel focal-plane shutter
- ② Max. Shutter Speed : 1/2000, At Synchronous Second 1/90
- ③ Curtain Speed : Approx. 8.4msec (24mm Image plane)
- ④ Traveling Direction : Vertical-travel (Up)
- ⑤ The Number of Blade: Front curtain 5 elements Rear curtain 4 elements
- ⑥ Material of Blade : Aluminum Blade and Plastic Blade are used together
- ⑦ Control Speed Range : 30sec. to 1/2000sec., Time (M mode only)

## 5. Metering

- ① System : TTL full-aperture exposure metering system by the IC integrated type six-segments sensor
- ② Control System : With D-type Nikkor Lens: 3D six-segment Matrix Metering  
Without D-type Nikkor Lens: Six-segment Matrix Metering  
When the exposure mode is M: Center-Weighted Metering
- ③ Metering Range : EV1 to 20 (ISO 100, when using F1.4 lens)
- ④ AE Lock : No lock

## 6. Auto Flash


- ① System : TTL-BL Fill-Flash by the IC integrated type sensor
- ② Range : Built-in speedlight: GN2.8 to 12 (ISO 100 m)  
External speedlight: GN2.8 to (ISO 100 m)
- ③ ISO Interlocking Range : ISO 25 to 800 (Built-in/ External in common)
- ④ Built-in Speedlight Auto Flash System :  
Exposure Mode P, S, A, AUTO, Image program : TTL-BL  
Exposure Mode M: TTL
- ⑤ Full Output Warning : Ready-light in the finder blinks. (For 3 to 4 sec.)

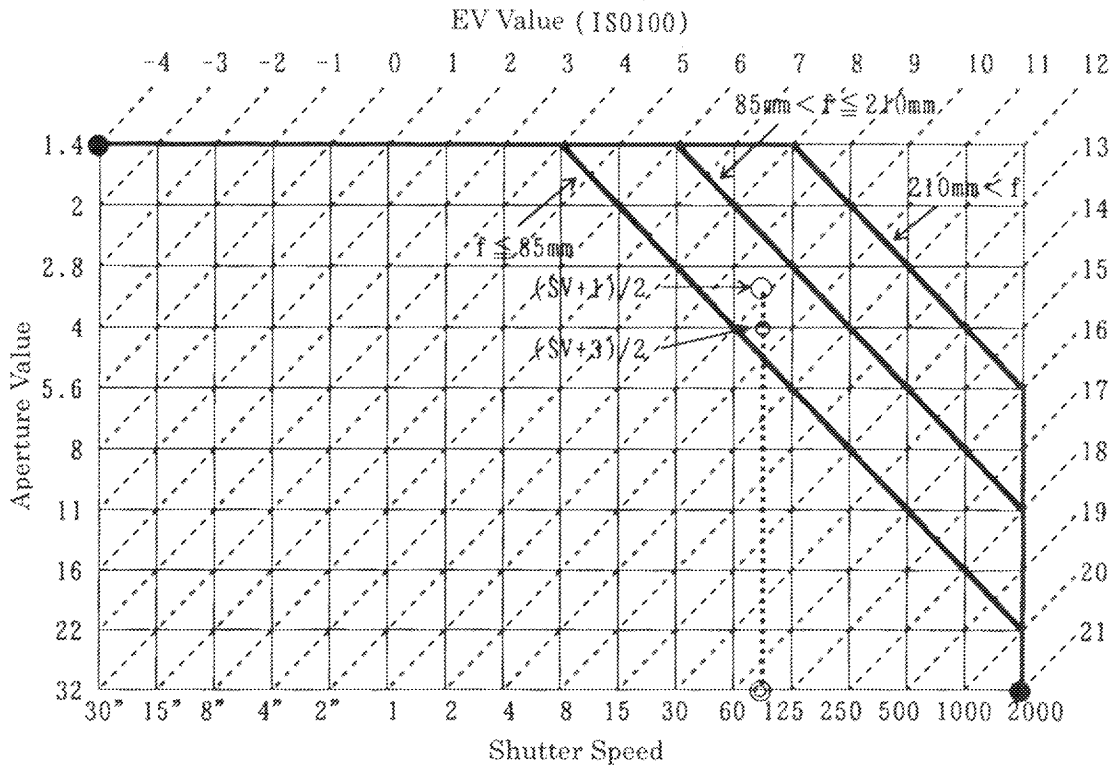
## 7. External Speedlight

- ① Communication : Serial communication is available.
- ② Group : F70 group (But, except the Matrix Balanced Fill-Flash function)
- ③ Unusable Functions with External Speed light : None
- ④ Usable Mode : Exposure Mode S, A: All modes  
Exposure Mode M: TTL, Non TTL Auto Flash, Manual Mode  
Exposure Mode P, AUTO, Image Program: TTL-BL, TTL


10. Program Diagram

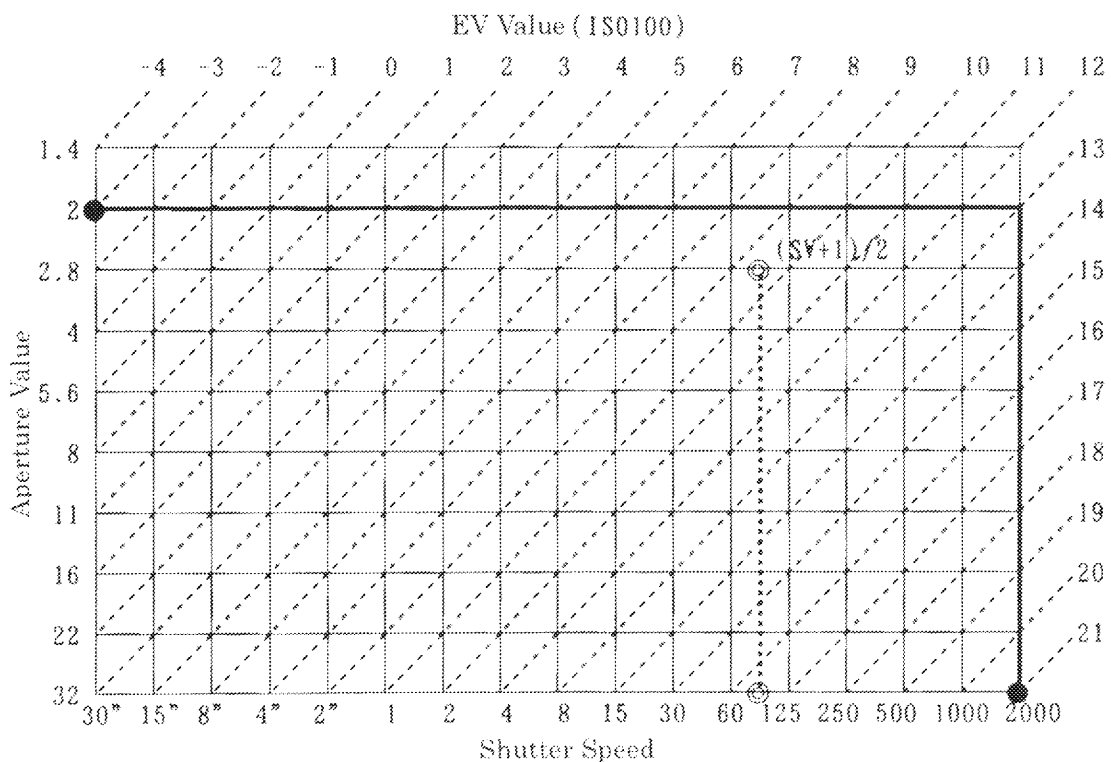
- When not using the speed light
- When using the built-in speed light
- When using the external speed light


( 1 ) Auto-Multi Program Mode (P) and AUTO Mode (  )

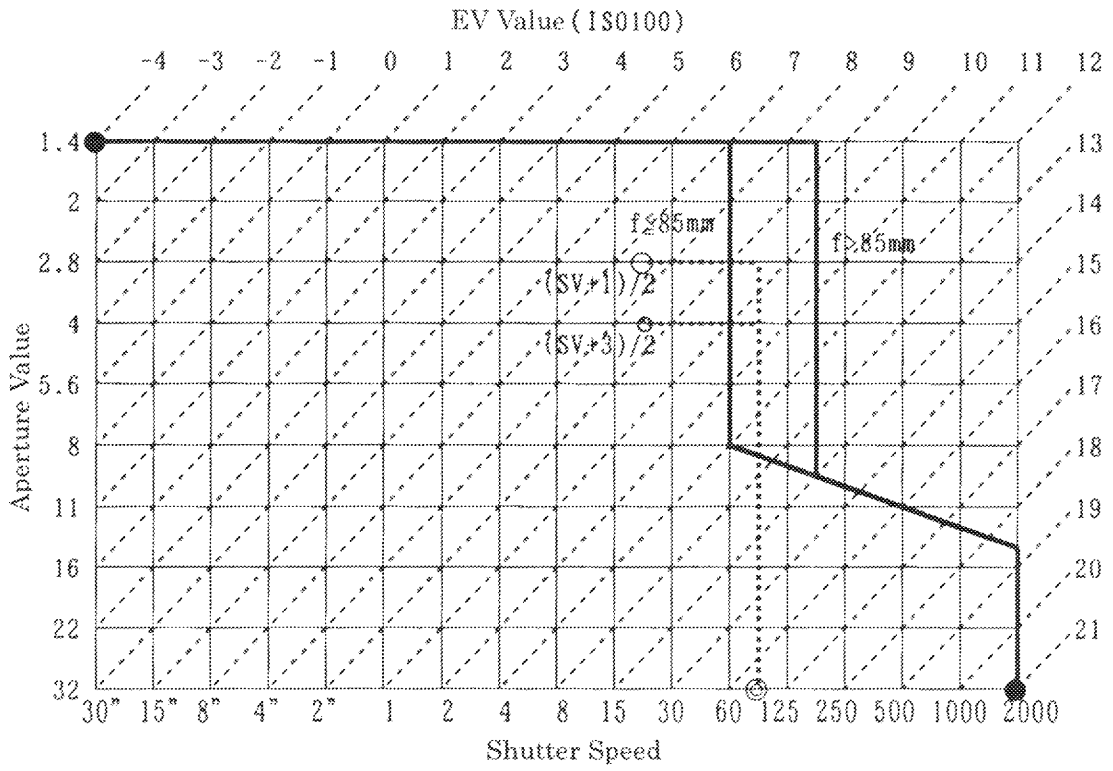



In the control diagram, the limit of the control aperture value at the aperture side is mentioned 1.4, but on the control, the aperture value is available up to 1.0 and the limit is not made. (Since no lens of which aperture value is more than 1.4 can be controlled, the aperture value more than 1.4 is not mentioned in the diagram.)

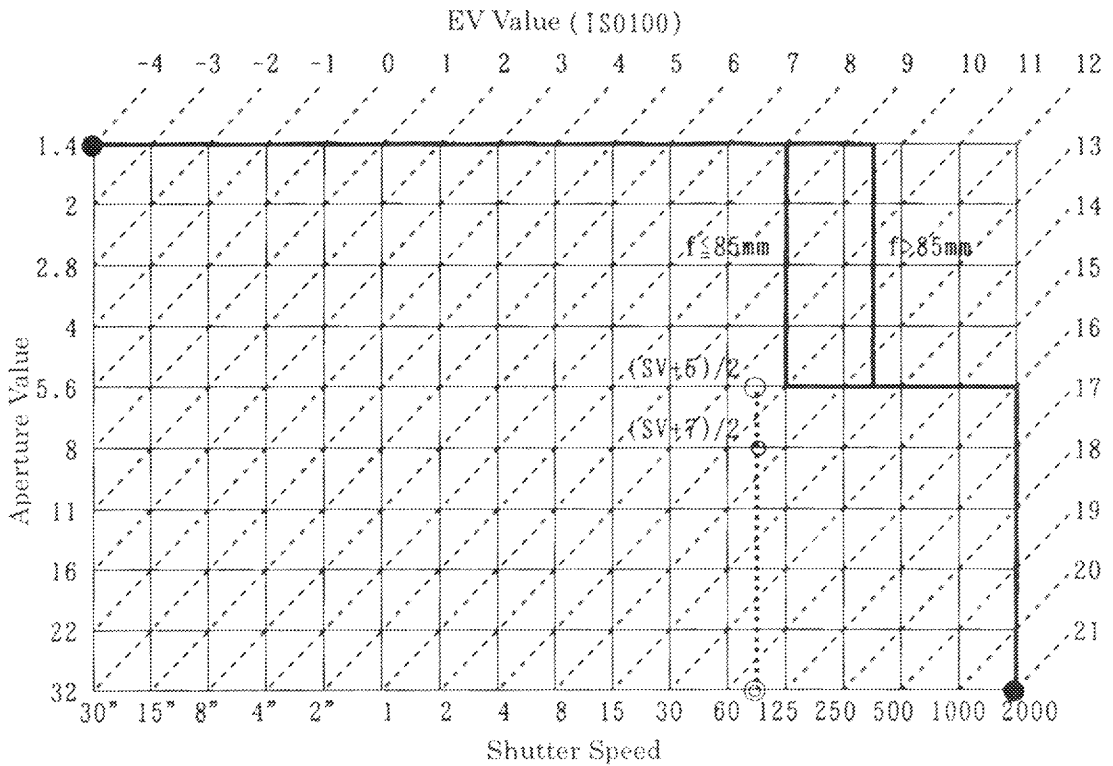
( 2 ) Portrait Mode (  )



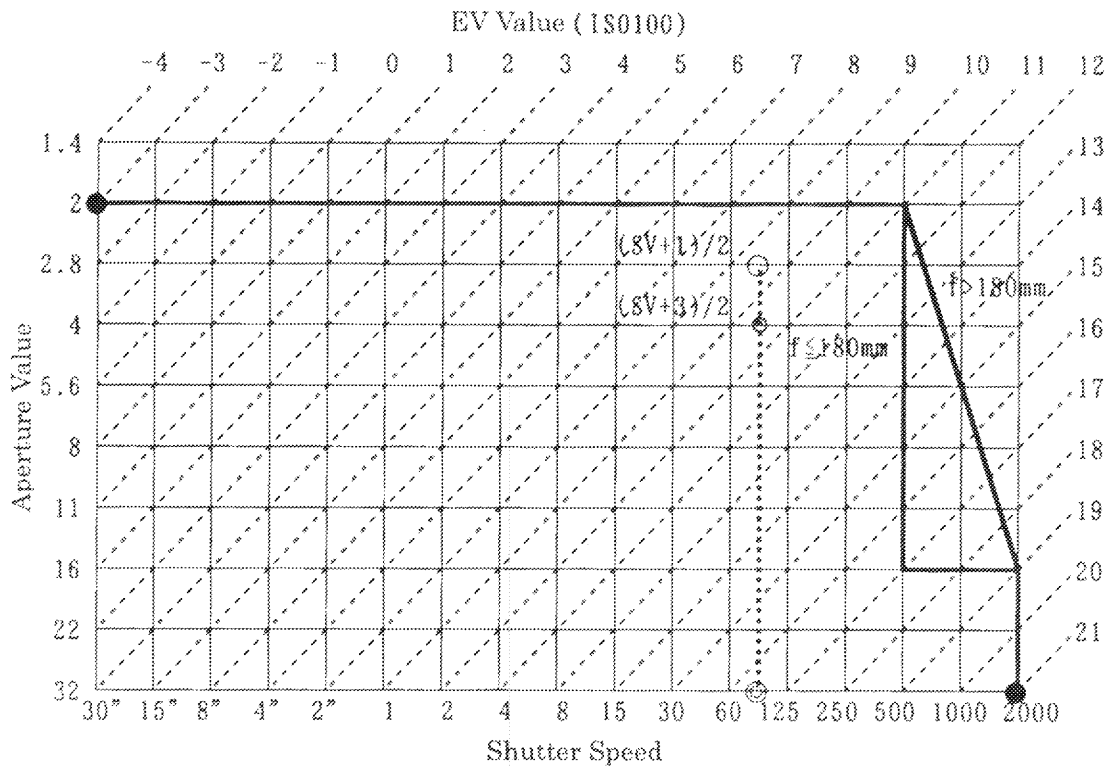
[ 3 ] Landscape Mode (  )



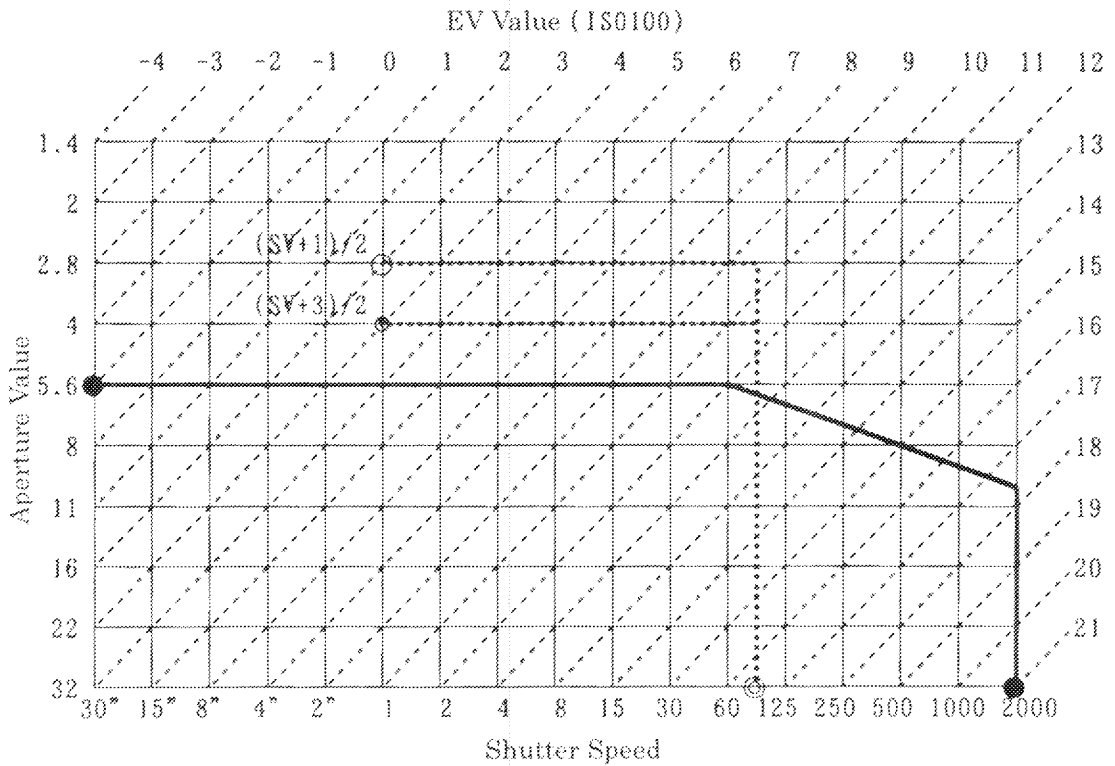
[ 4 ] Close-Up Mode (  )



(5) Sports Continuous Mode (🏆)

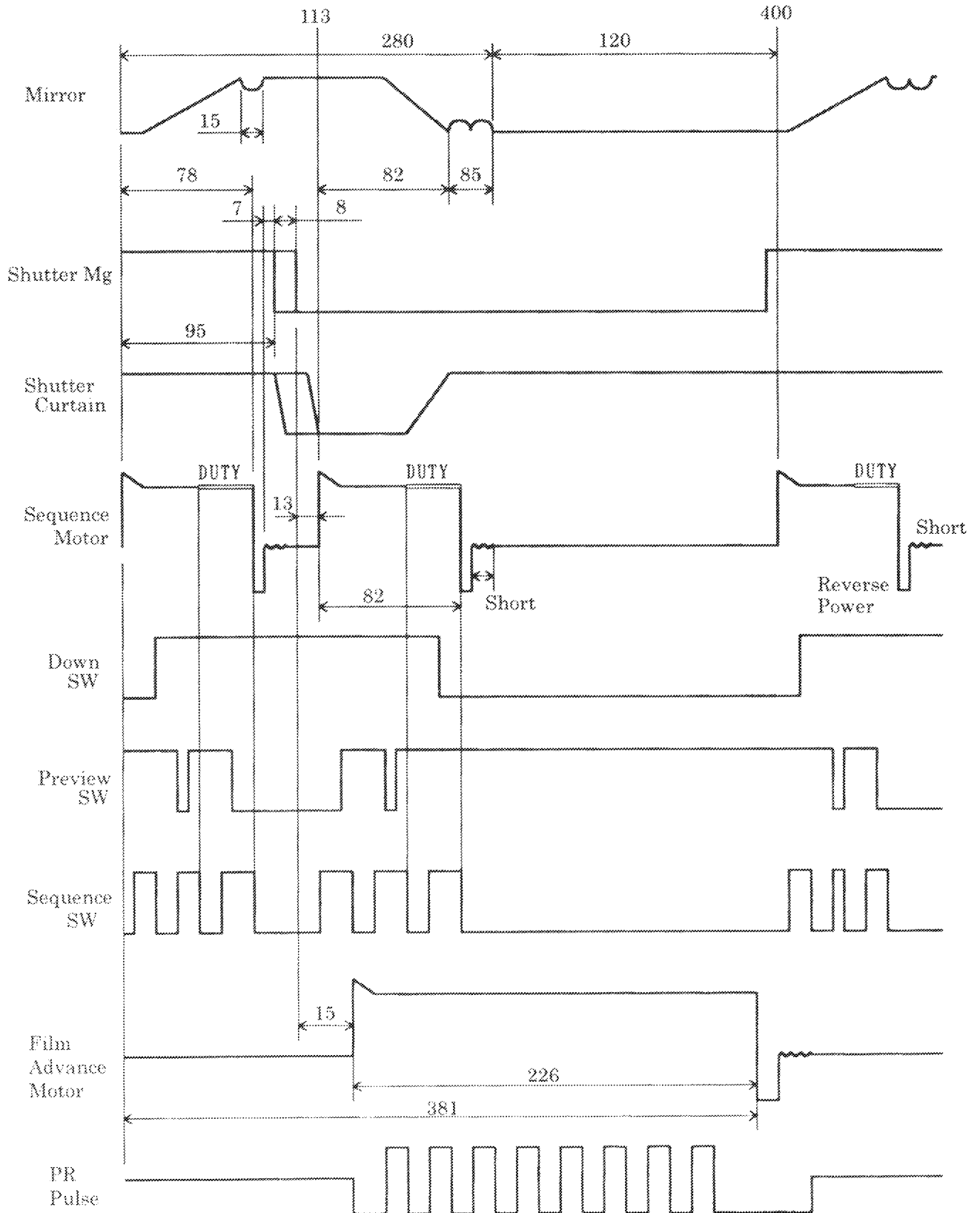


(6) Night Scene Mode (🌃)



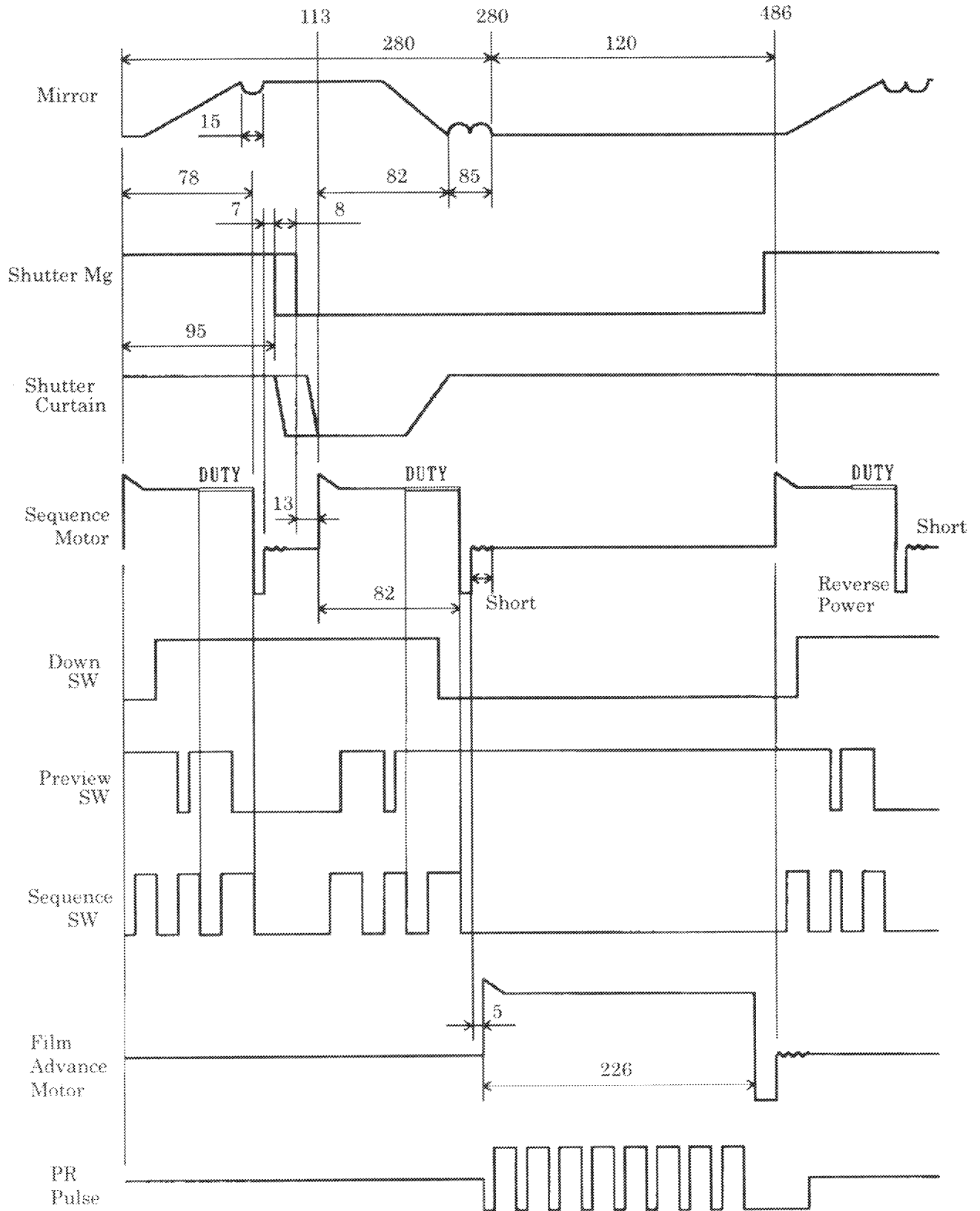
11. Sequence

Parallel Driving





Sequential Driving



## 12. Mechanism Switches

SWITCH NAME	LOCATION
Back Door Switch	Back Door Open/Close Lever
Sequence Control Switch	SQ Shutter Charge Cam and Front Body FPC ( PI BASE PLATE UNIT )
DOWN Switch	SQ Shutter Charge Cam and Front Body FPC ( PI BASE PLATE UNIT )
Preview Switch	Front Body FPC ( PI BASE PLATE UNIT )
f min Switch	Front Assembly (under the Bayonet)
SP Pop Up Switch	Top Cover FPC (Top Cover Section)

# DISASSEMBLY

## 1. SEPARATION OF THE FRONT BODY FROM THE REAR BODY

BOTTOM COVER, BACK DOOR .....	D 1
FRONT COVER, REWIND SIDE COVER, GRIP COVER .....	D 2
TOP COVER	
1. Removal each wires and solder bridge .....	D 3
2. Removal of screw(s) .....	D 3
LCD DISPLAY UNIT	
1. Removal each wires and solder bridges .....	D 4
2. Removal of screws and FPC from connector .....	D 4
SEPARATION OF THE FRONT AND REAR BODIES .....	D 5

## 2. FRONT BODY


SHUTTER .....	D 6
SQ UNIT .....	D 7
PRISM BOX UNIT	
1. Removal of solder bridge on the metering FPC .....	D 7
2. Removal of Prism box unit from the Front body .....	D 8
3. Disassembling of the Prism box unit .....	D 9
MAIN PCB .....	D 10
AF SENSOR UNIT .....	D 10
BAYONET MOUNT .....	D 11
HORIZONTAL AF LEVER UNIT .....	D 11
AM SWITCH UNIT, AF DRIVING UNIT .....	D 12
TTL FPC UNIT .....	D 12
APERTURE CONTROL BASE PLATE .....	D 13
MIRROR HOLDER .....	D 13

## 3. REAR BODY

BACK DOOR OPEN/CLOSE AREA .....	D 14
DC/DC UNIT, SB UNIT .....	D 14
COMMAND DIAL, PR BASE PLATE UNIT .....	D 15
DX CONTACT .....	D 15
BOTTOM BASE PLATE .....	D 16
FILM ADVANCE UNIT .....	D 16

SMALL PARTS OF REAR BODY ..... D 17

# DISASSEMBLING

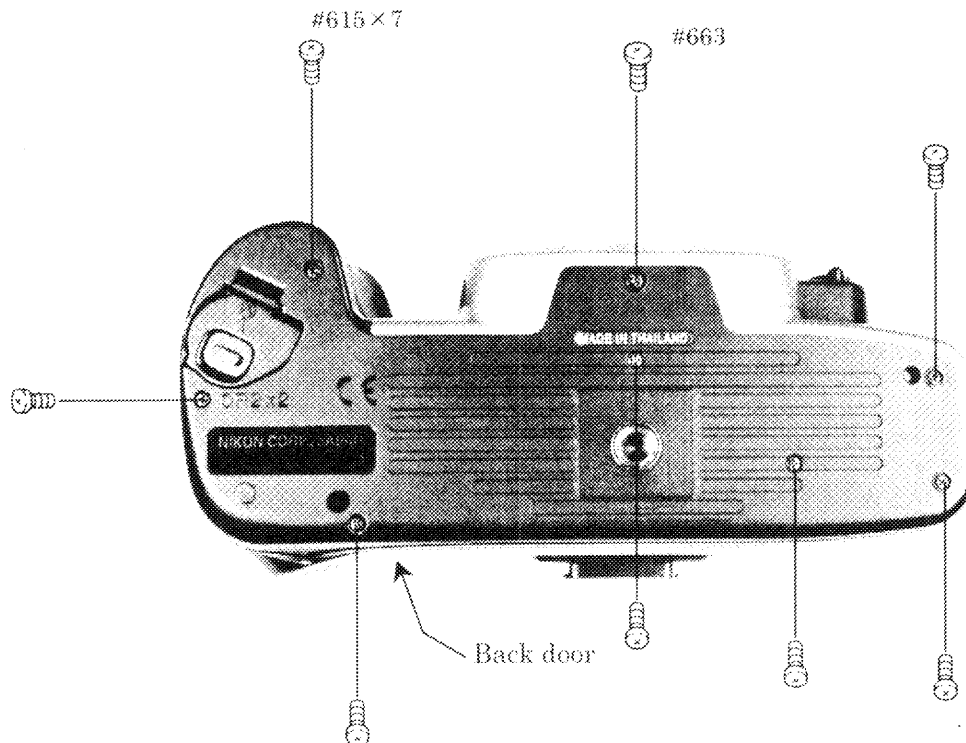
<b>⚠ WARNING</b>	
	<ul style="list-style-type: none"> <li>● Due to its internal high voltage area, make sure to check the safety when removing the cover.</li> <li>● Be sure to discharge the static electricity from the main condenser according to the instruction in the repair manual after removing the Grip cover.</li> </ul>

- Note : ① In the assembling and disassembling sections of this manual, we took an initially produced bodies as a model to explain wiring. Wiring are subject to change depending on the period of production and may not conform with the current products. Refer to the actual model.
- ② Be sure to take off the battery before disassembly.
- ③ At disassembly, make sure to memorize how to arrange the wires, how to fix the screws, and the types of used screws.
- ④ Be sure to get yourself grounded because of the static electricity which exerts any serious adverse effect to ICs.
- ⑤ When you disassemble the camera body further than described in the disassembling section, refer to the exploded drawings and assembling section, since some parts are disassembled as a unit part.


## 1. SEPARATION OF THE FRONT BODY FROM THE REAR BODY

### BOTTOMCOVER, BACK DOOR

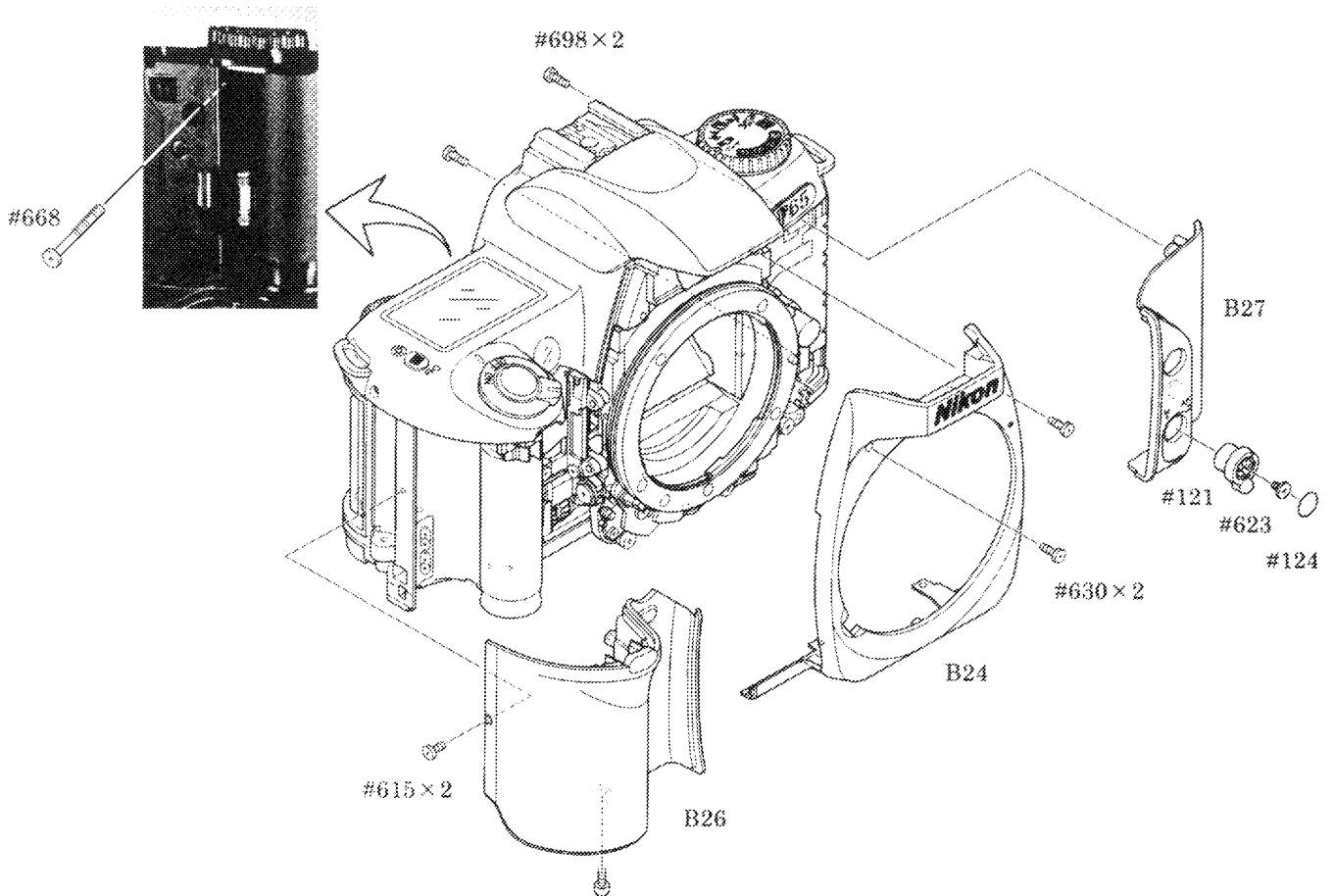
- Pull out the shaft x 1 to the bottom first, and then remove the back door.
- Notes) Never use the solvent when cleaning the pressure plate, but use the A-level dust cleaning cloth or Savina Minimax and wipe it softly because the pressure plate of this camera is coated with the special paint.



FRONT COVER, REWIND SIDE COVER, GRIP COVER

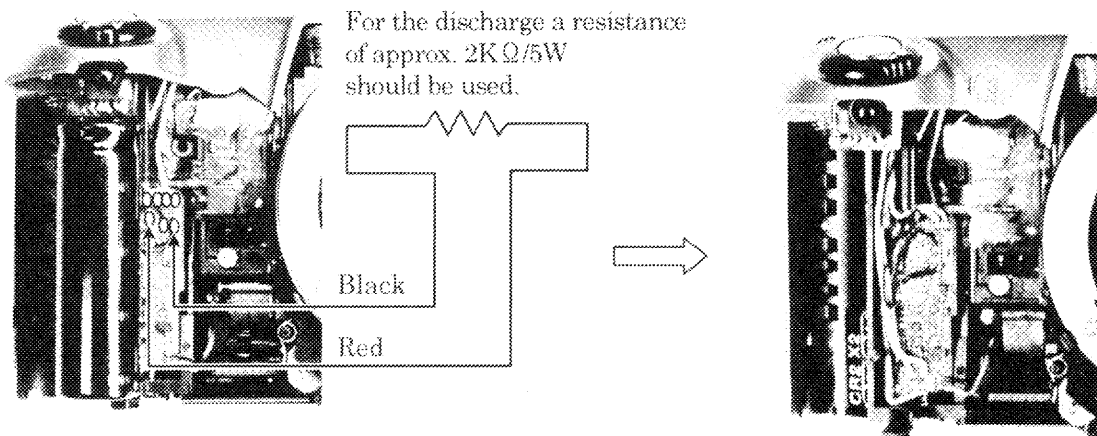
<b>⚠ WARNING</b>	
	<ul style="list-style-type: none"> <li>● Due to its internal high voltage area, make sure to check the safety when removing the cover.</li> <li>● Be sure to discharge the static electricity from the main condenser according to the instruction in the repair manual after removing the Grip cover.</li> </ul>

● The order of removal is from front cover B24 first.



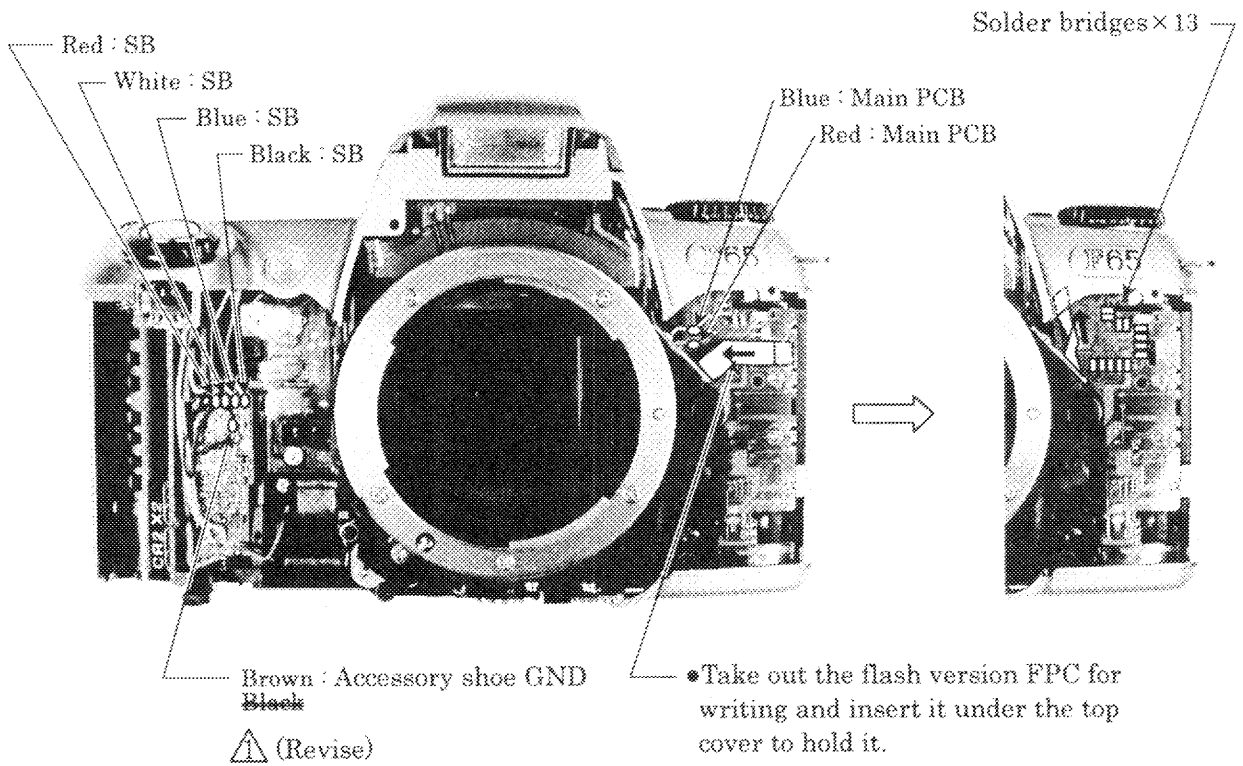
● Discharging from the main capacitor

● After discharging, unsolder the red and black wires, and then remove the main condenser.

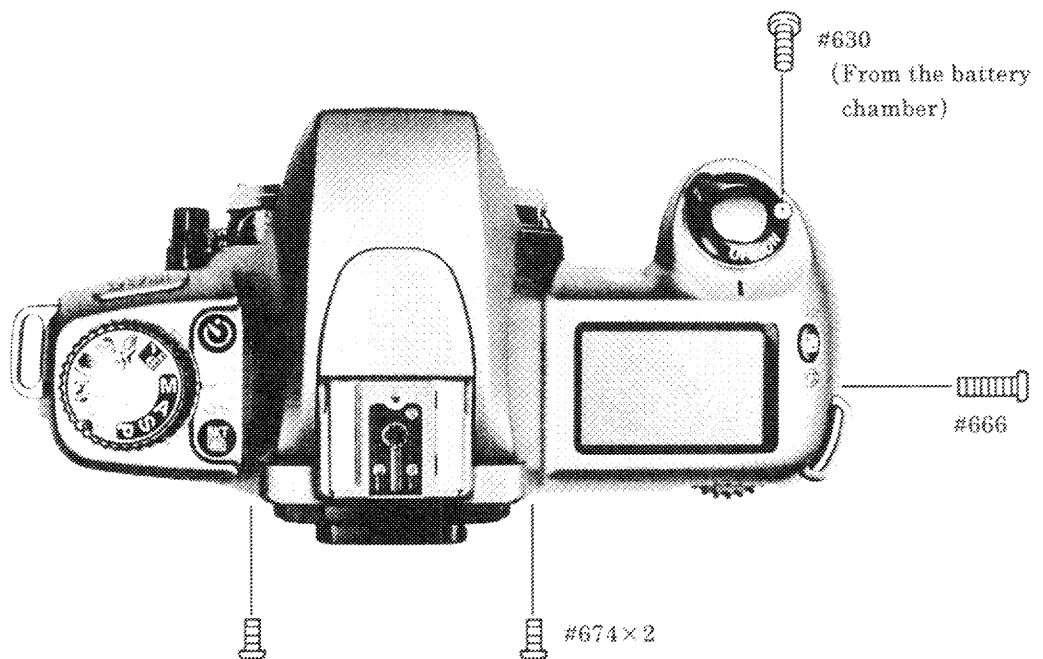


**TOP COVER**

1. Removal each wires and solder bridges.

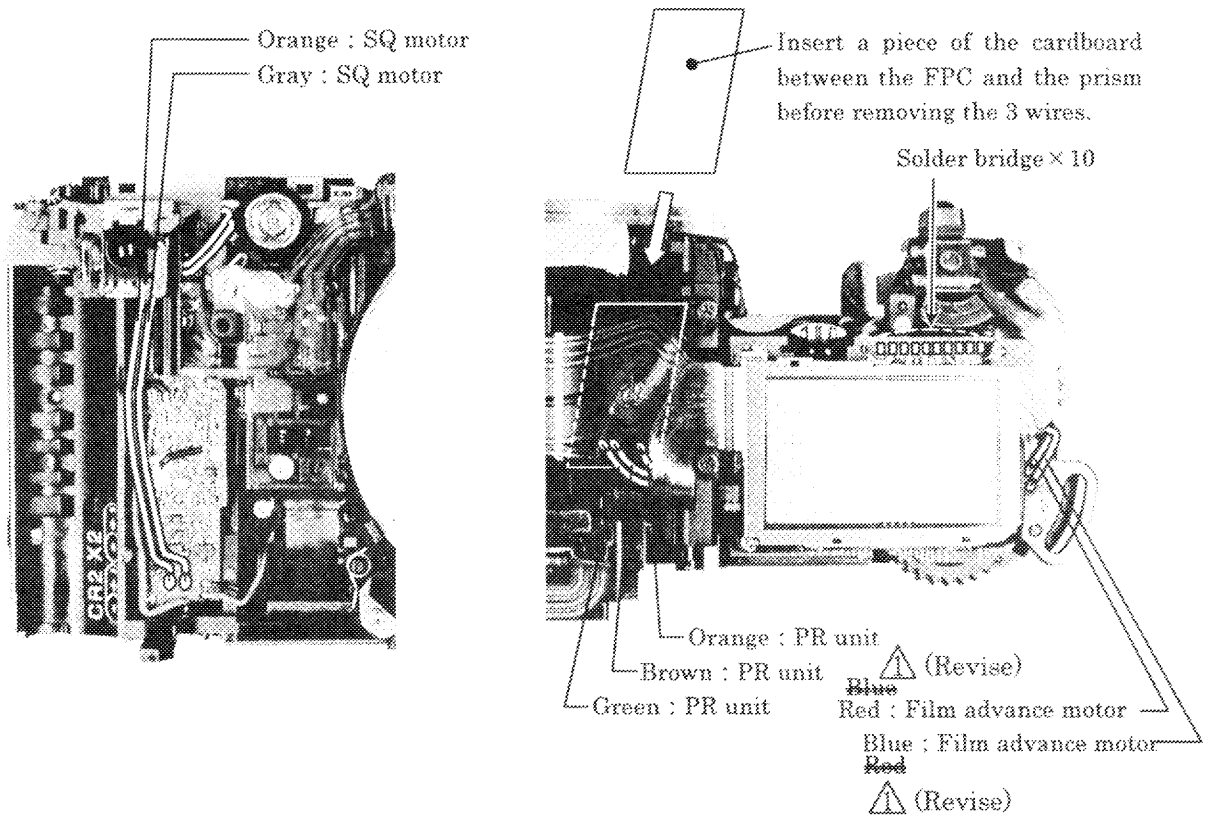


2. Removal of screw(s).

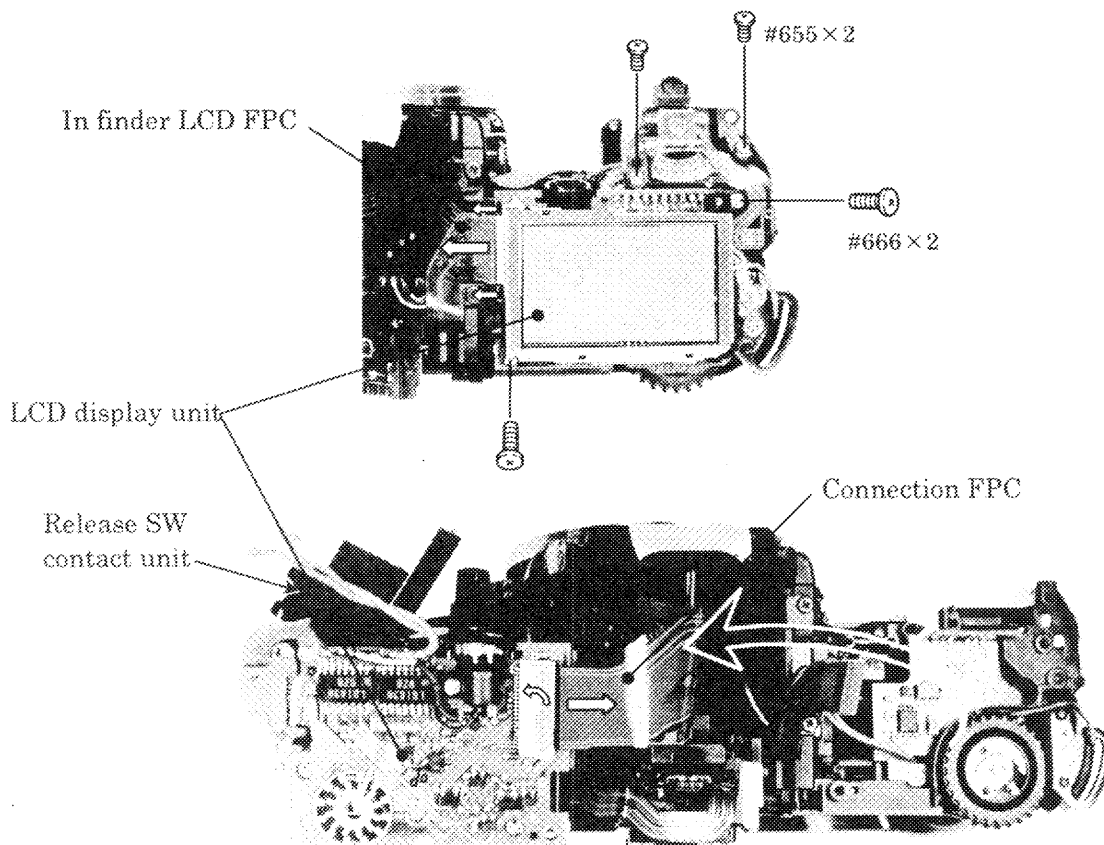


**LCD DISPLAY UNIT**

1. Removal each wires and solder bridges

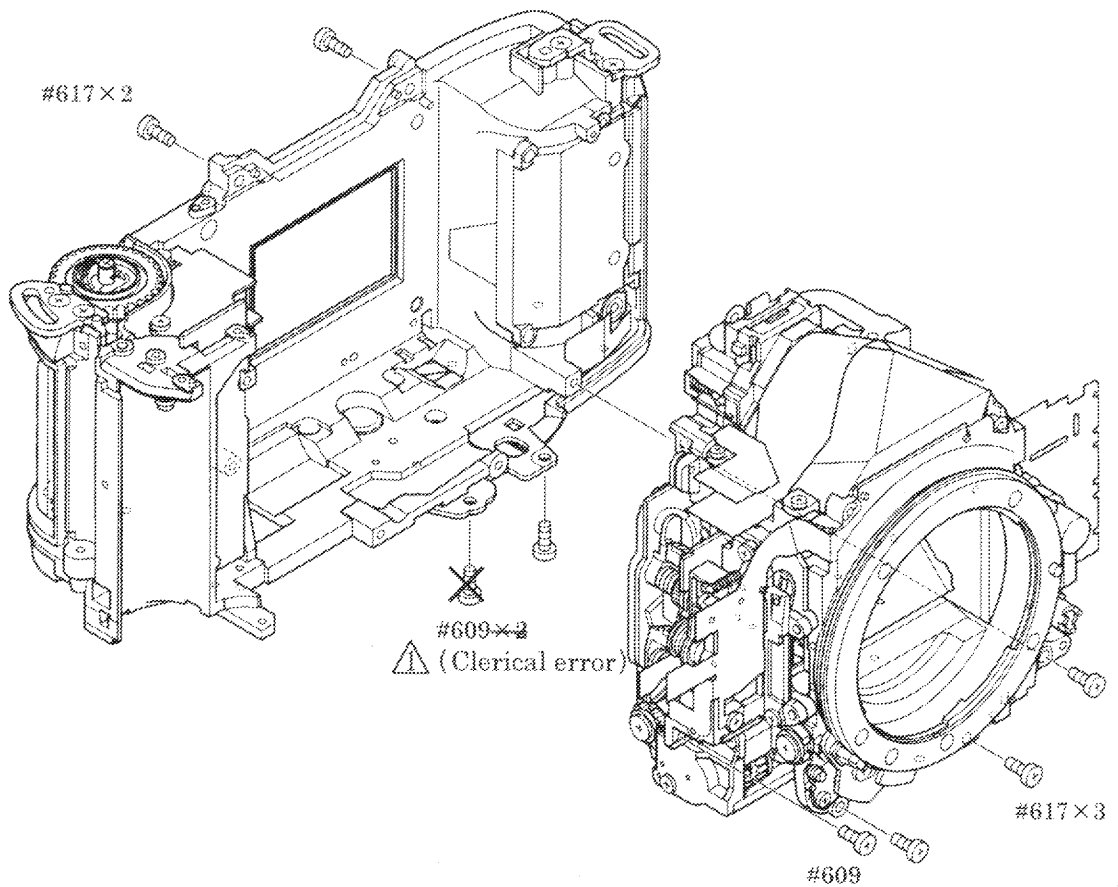
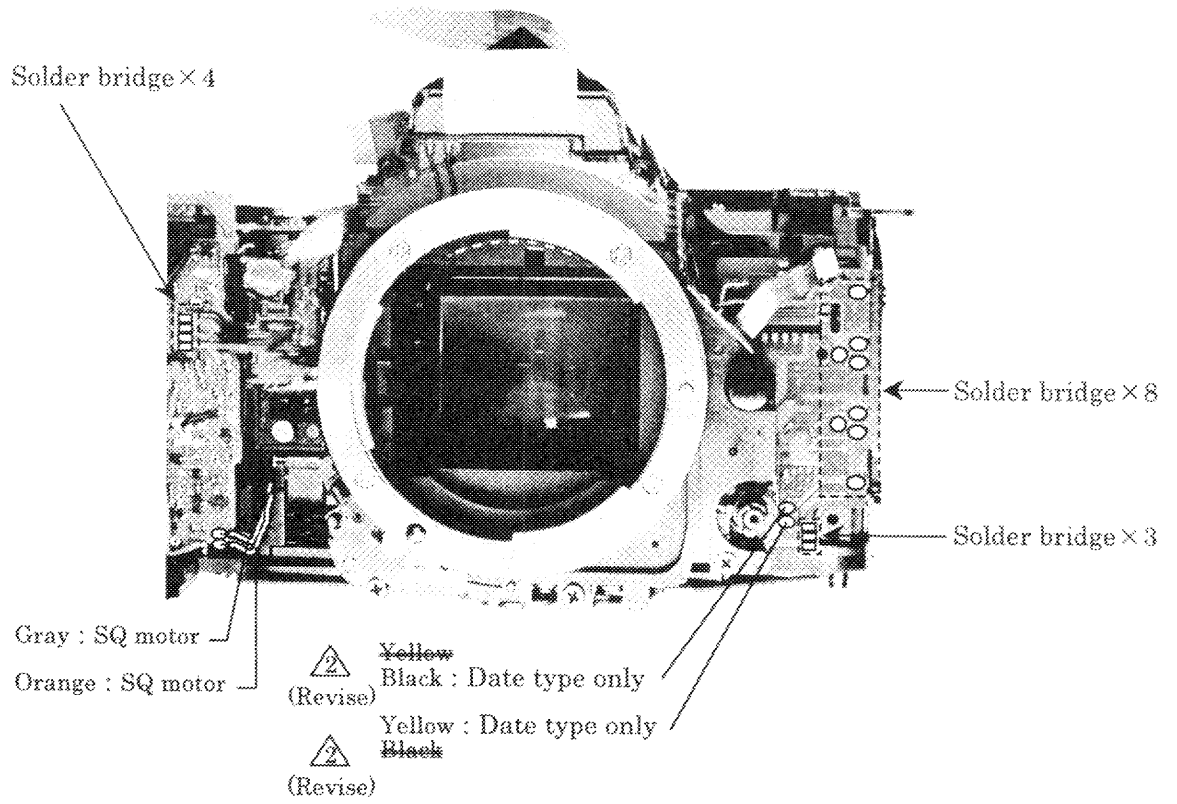


2. Removal of screws and FPC from connector





SEPARATION OF THE FRONT AND REAR BODIES



Change page △ × 1

Change page △ × 2

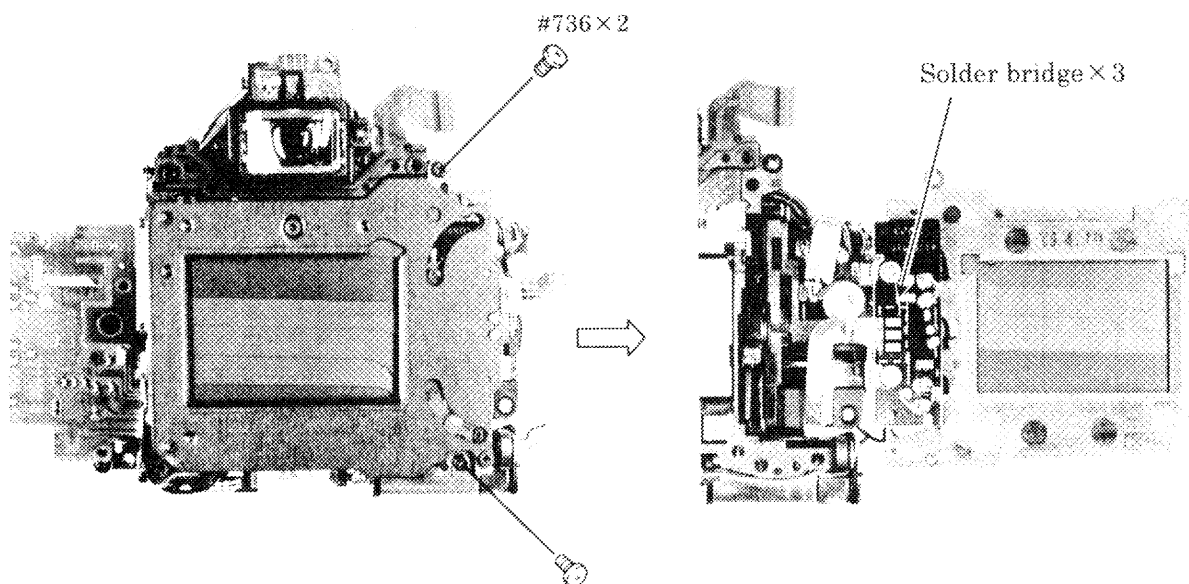
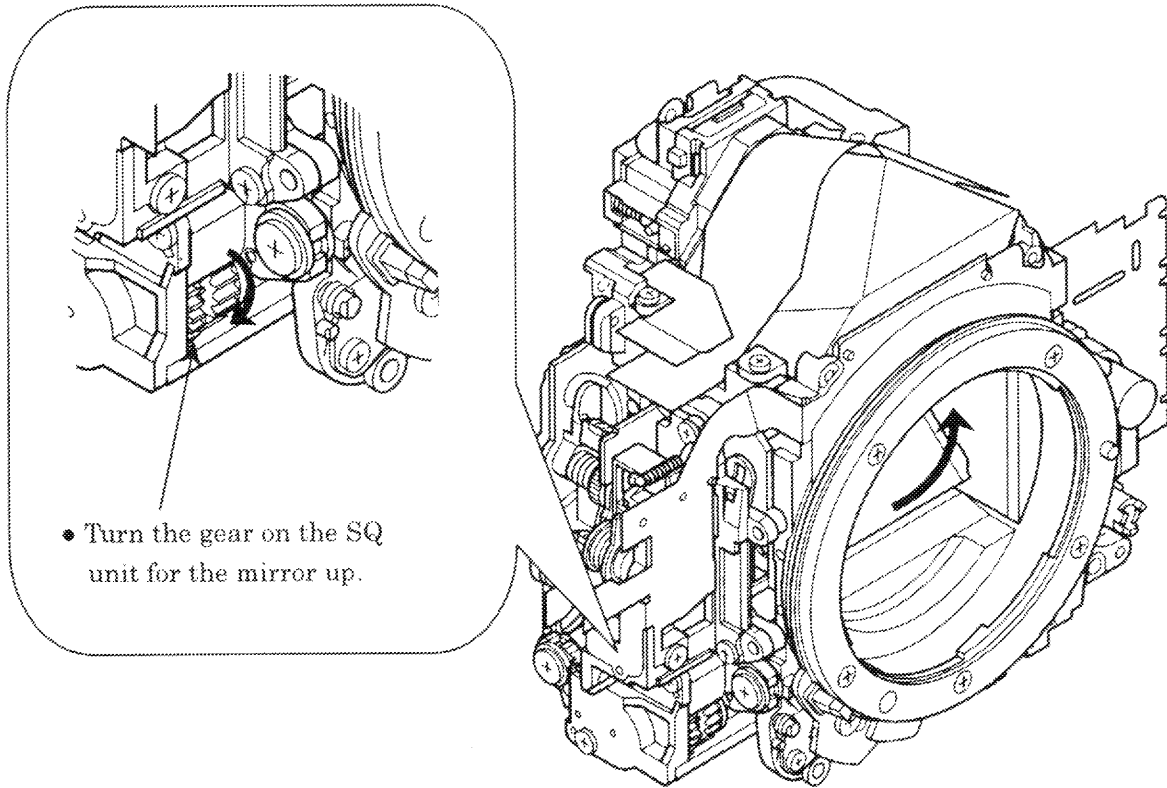
October. 26. 2000

May. 10. 2001



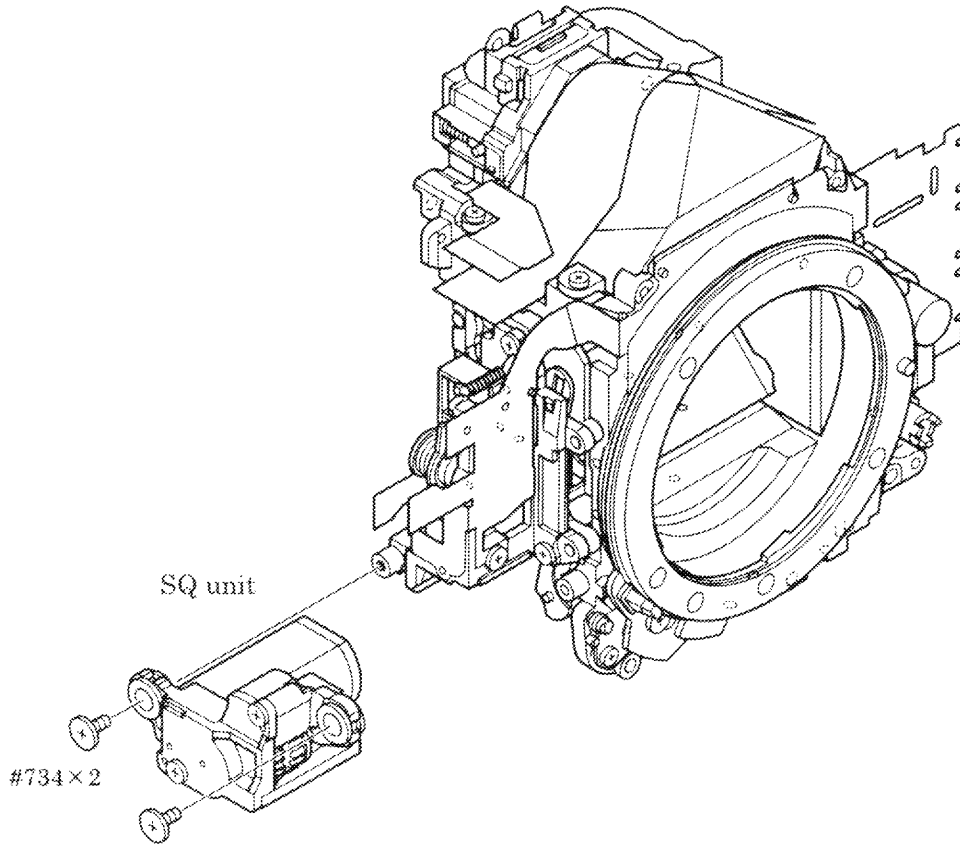
## 2. FRONT BODY

### SHUTTER



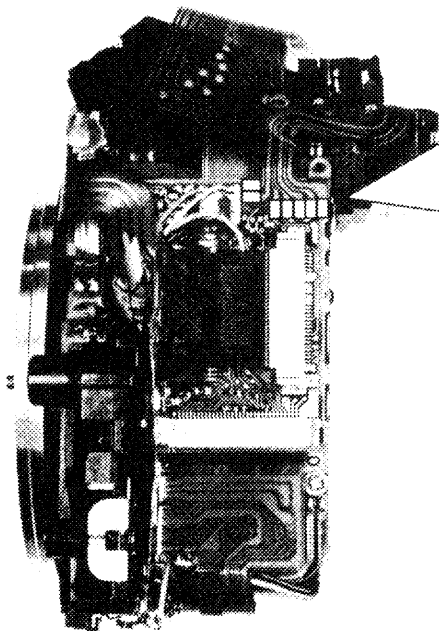
- Rotate the above SQ gear more to make the mirror down after removing the shutter.

**SQ UNIT**



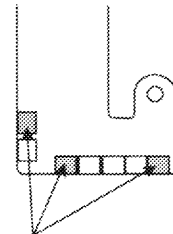
**PRISM BOX UNIT**

1. Removal of solder bridges on the metering FPC



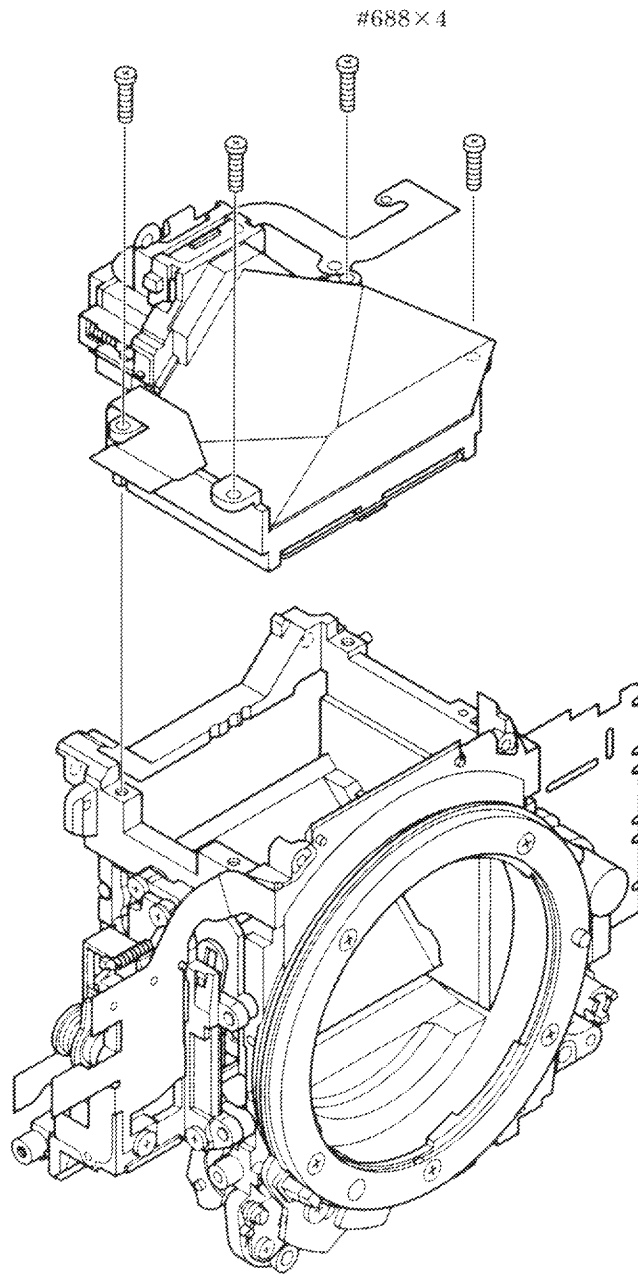
Notes: 3 places of the patterns in Figure below have the soldering bridges on the reverse side.

Solder bridge x 7



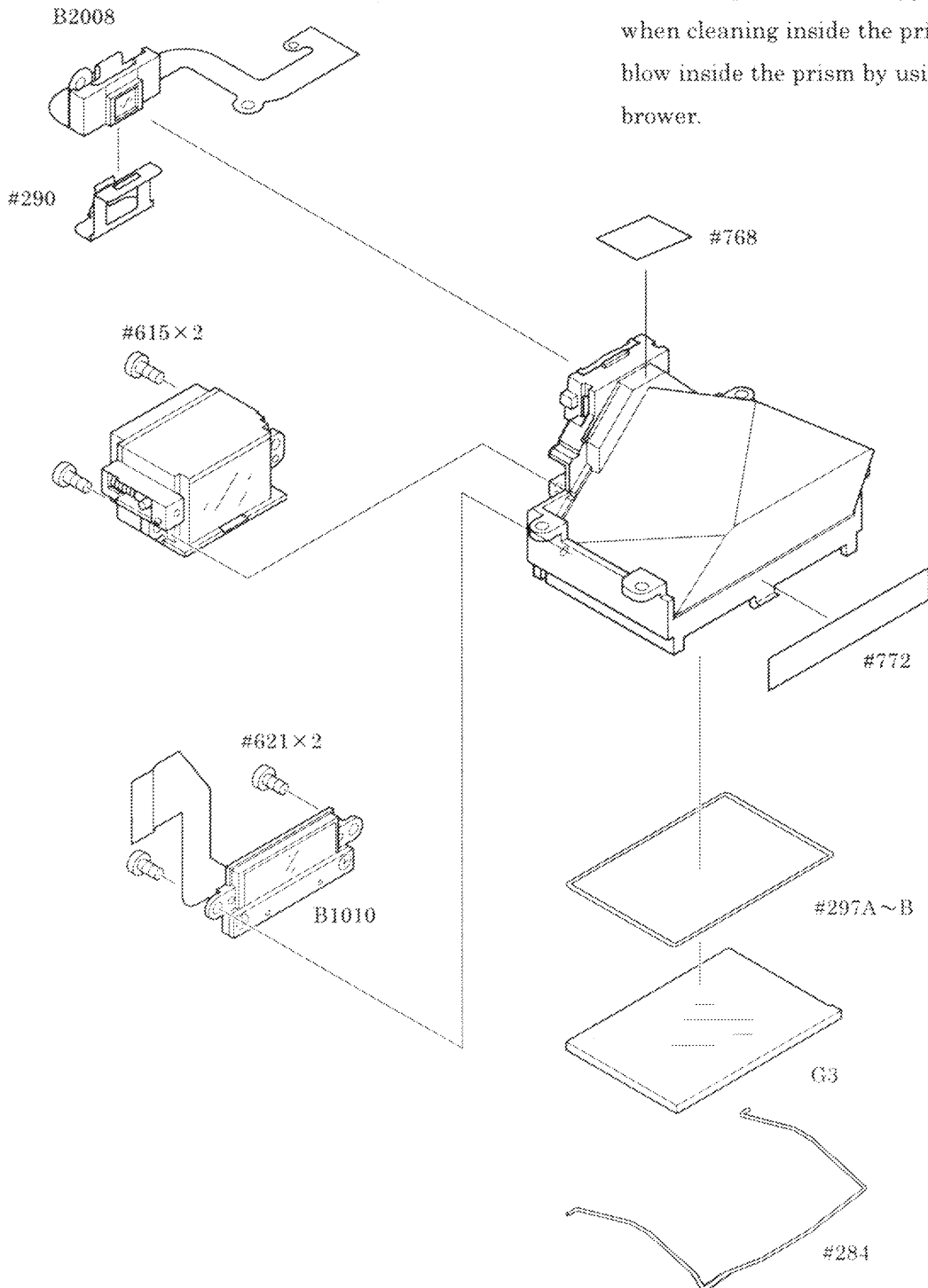
The soldering bridges x 3 on the reverse side.

2. Removal of Prism box unit from the Front body

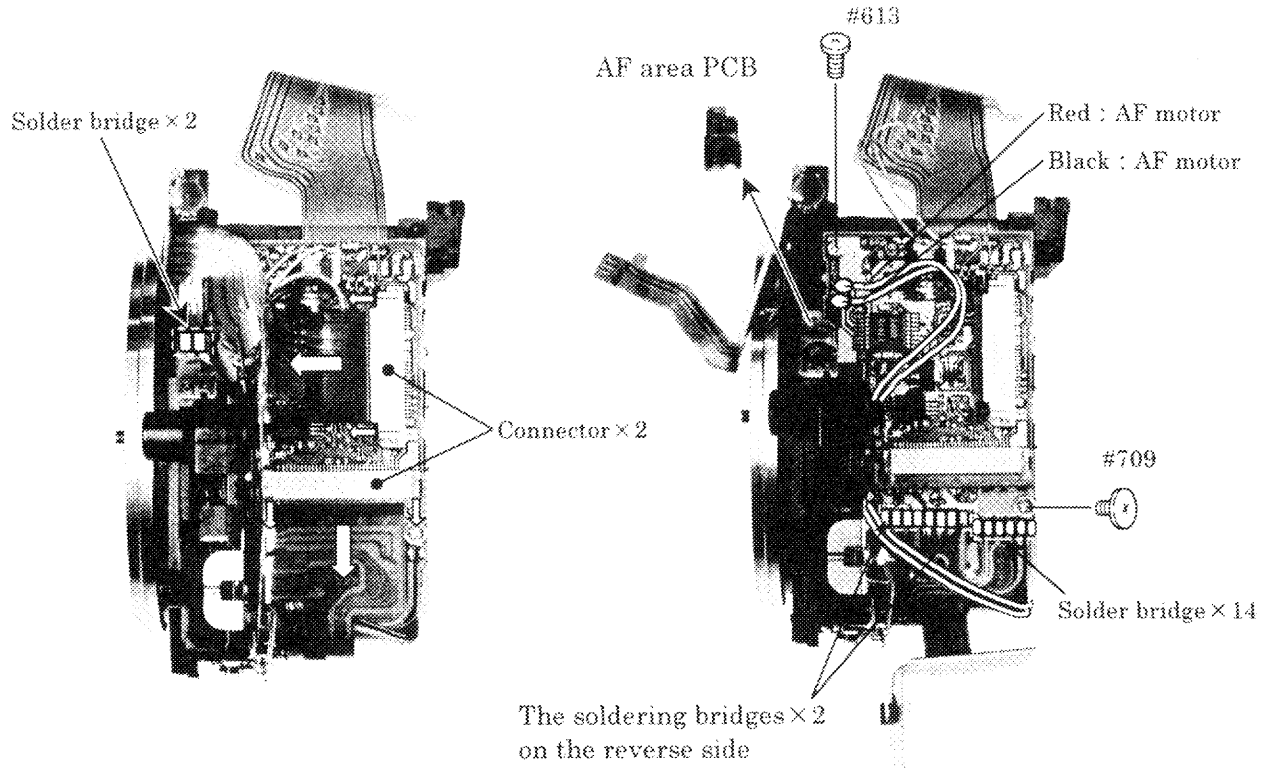


3. Disassembling of the Prism box unit.

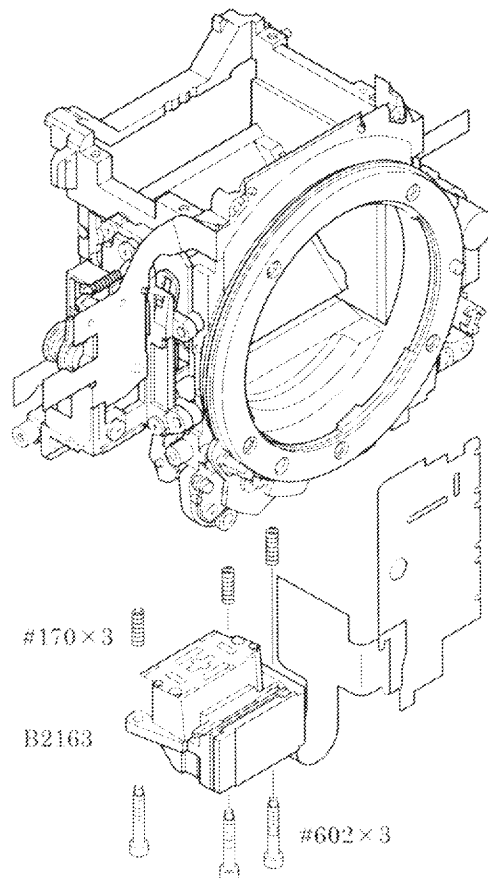
Notes) Since the prism of this camera is plastic hollow type, when cleaning inside the prism, blow inside the prism by using the blower.



MAIN PCB

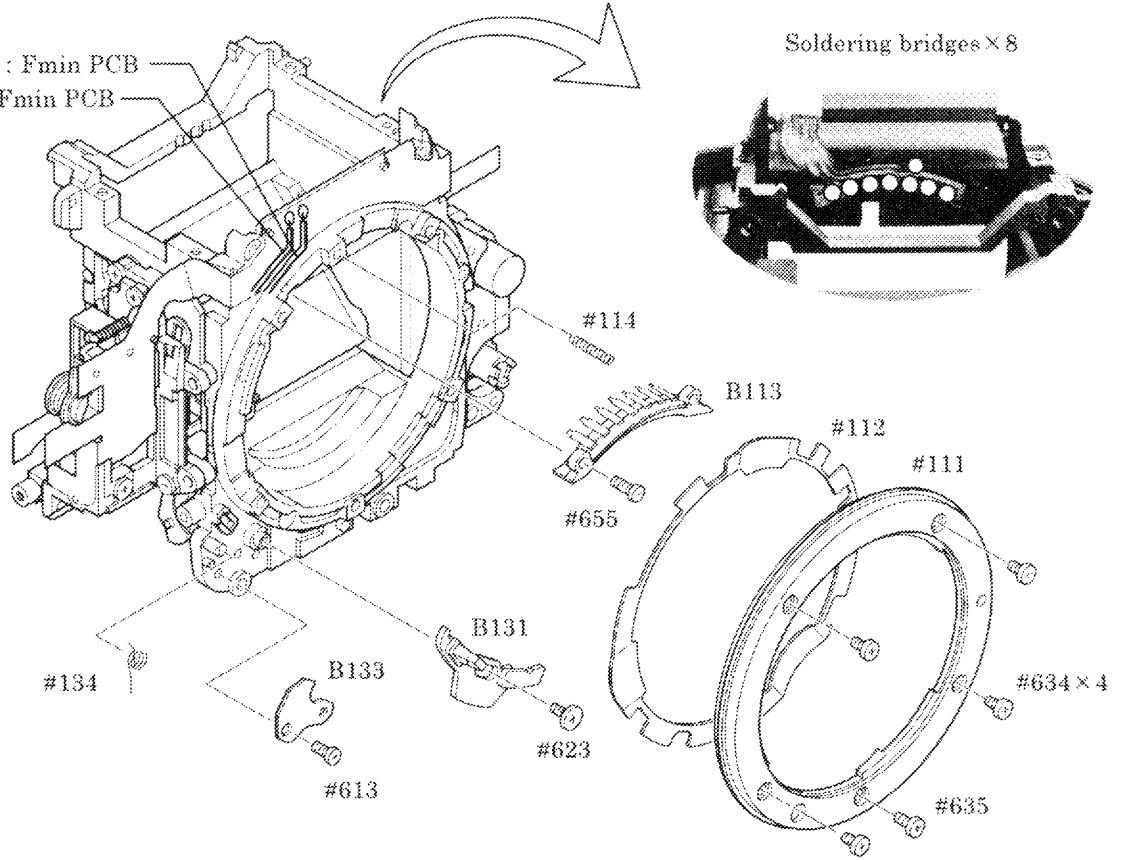


AF SENSOR UNIT

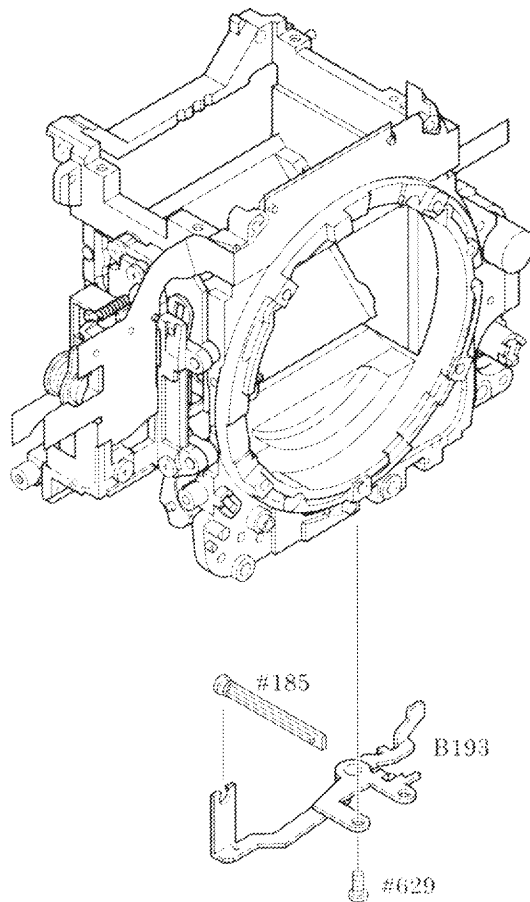


**BAYONET MOUNT**

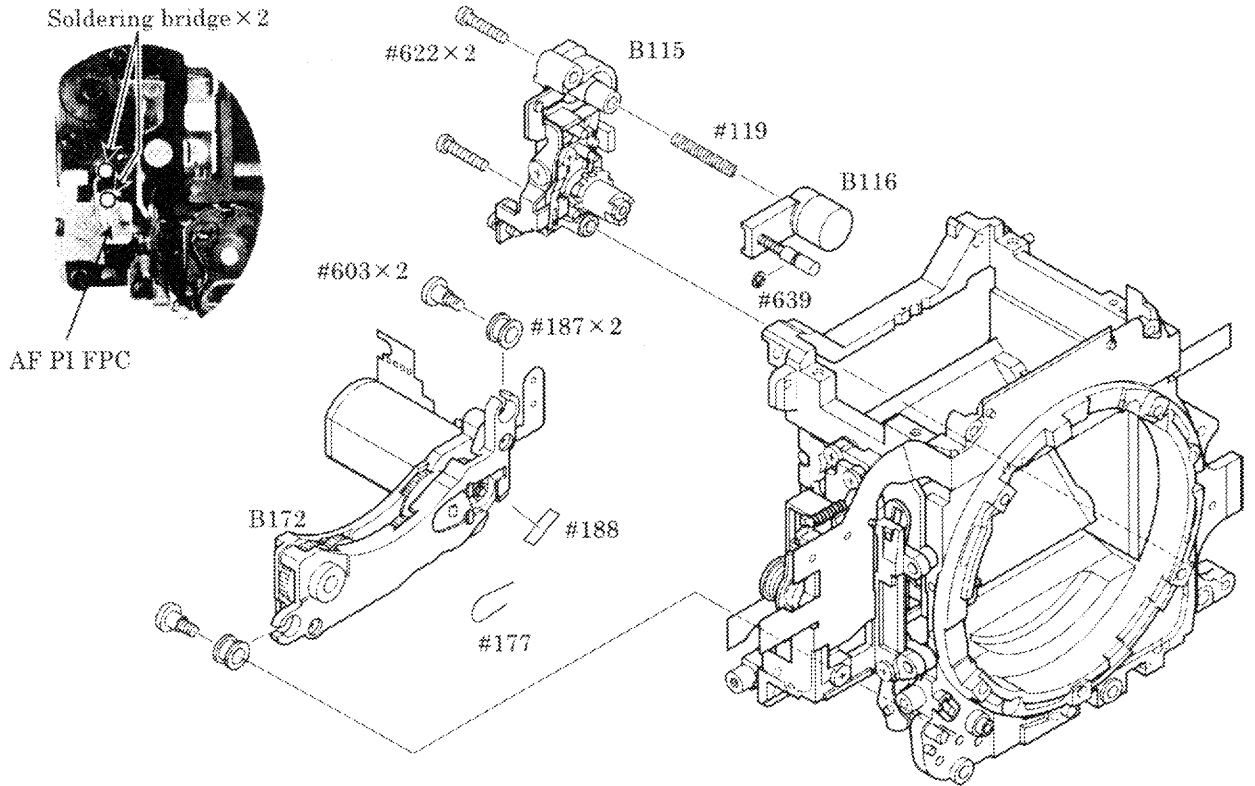
Black : Fmin PCB  
 Black : Fmin PCB



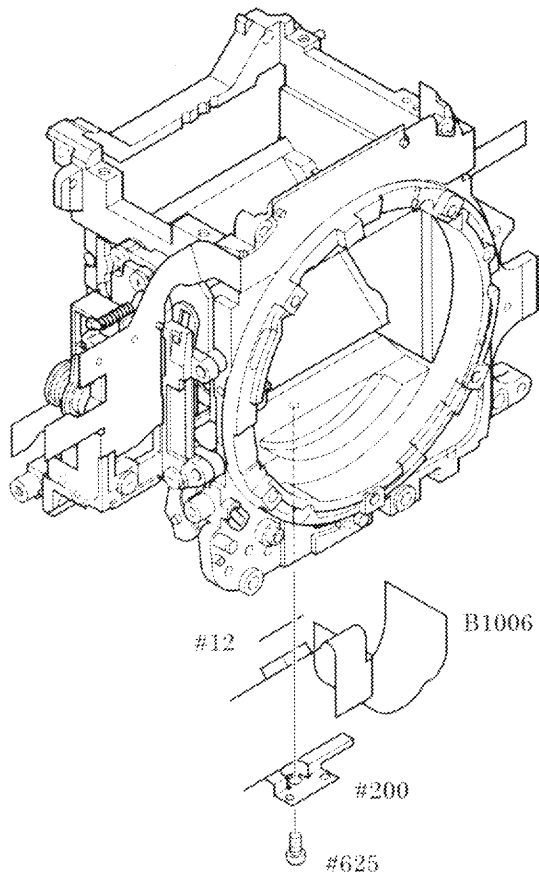
**HORIZONTAL AF LEVER UNIT**



AM SWITCH UNIT, AF DRIVING UNIT



TTL FPC UNIT

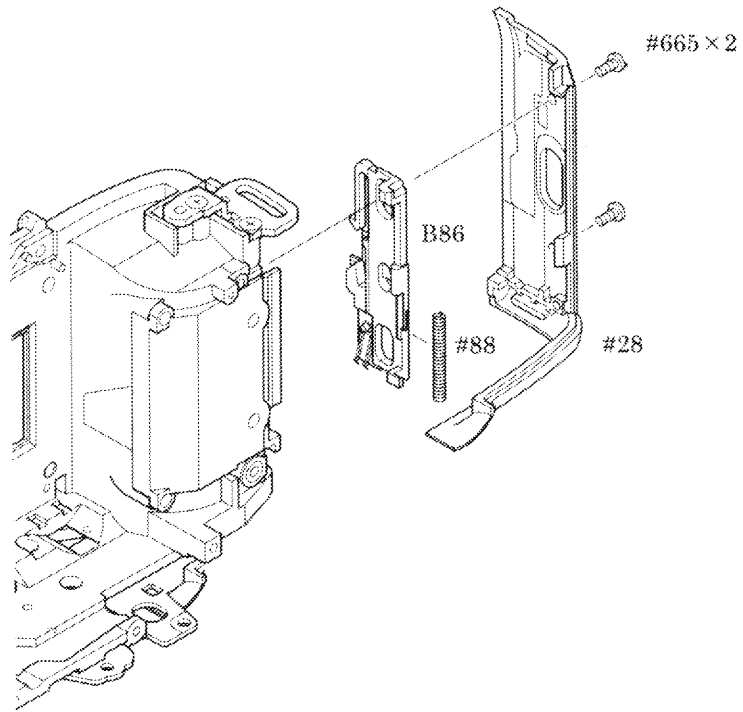






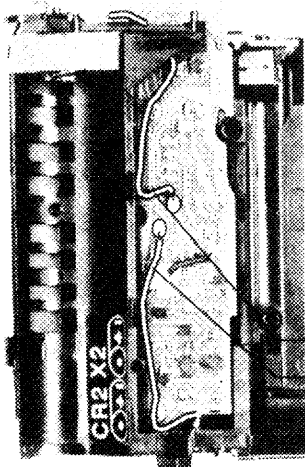
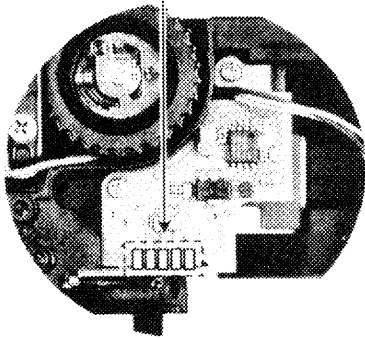
### 3. REAR BODY

BACK DOOR OPEN/CLOSE AREA

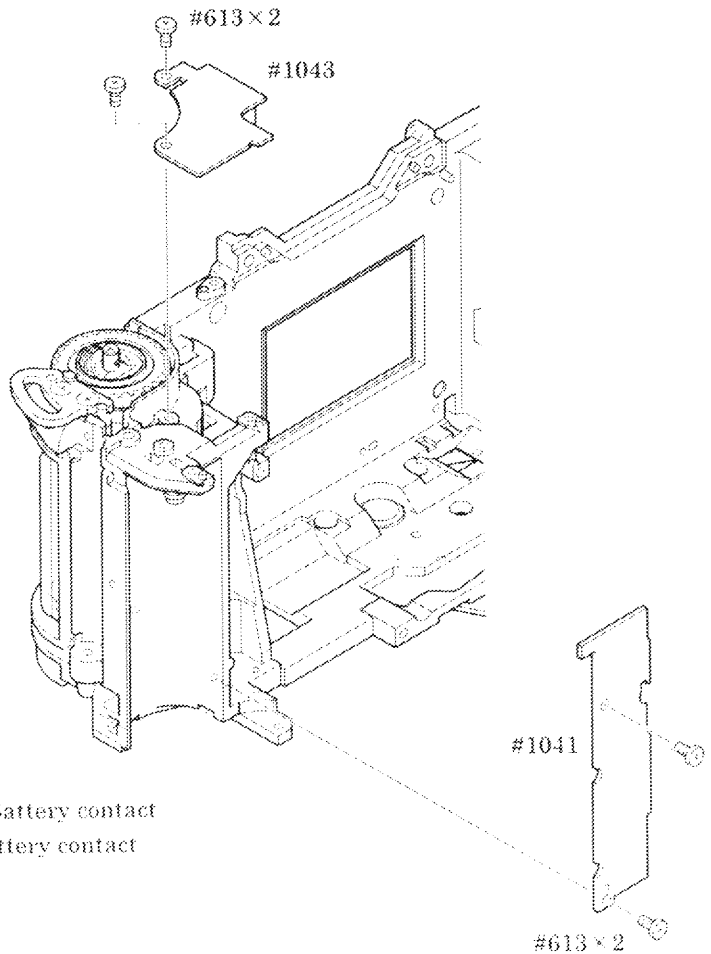


DC/DC UNIT, SB UNIT

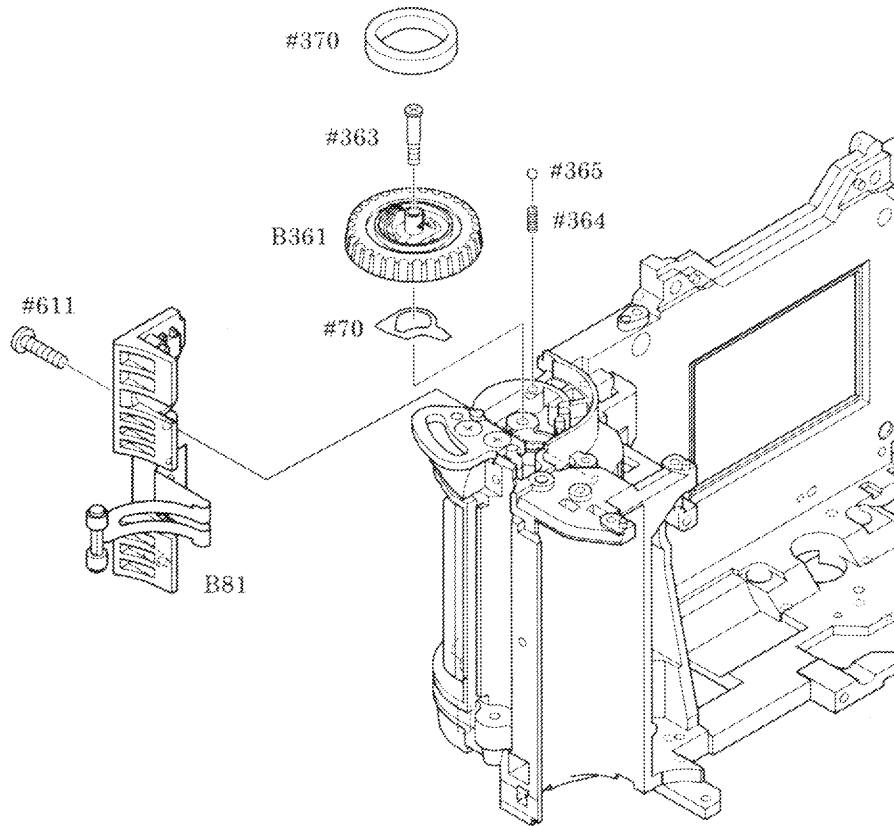
Soldering bridge x 5



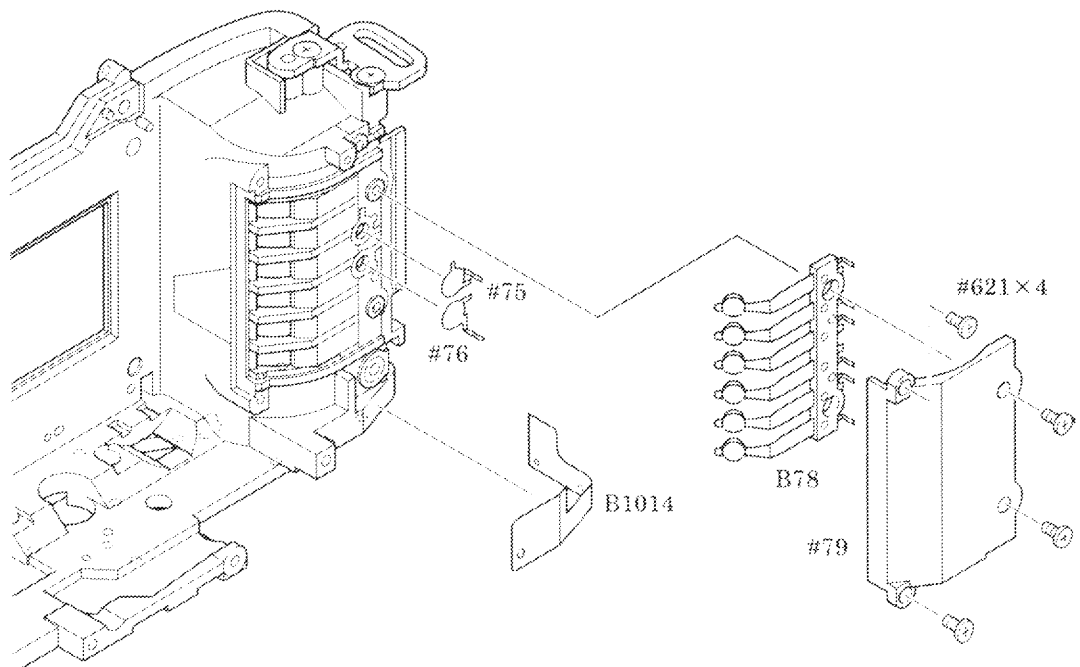
Black : Battery contact  
Red : Battery contact



COMMAND DIAL, PR BASE PLATE UNIT

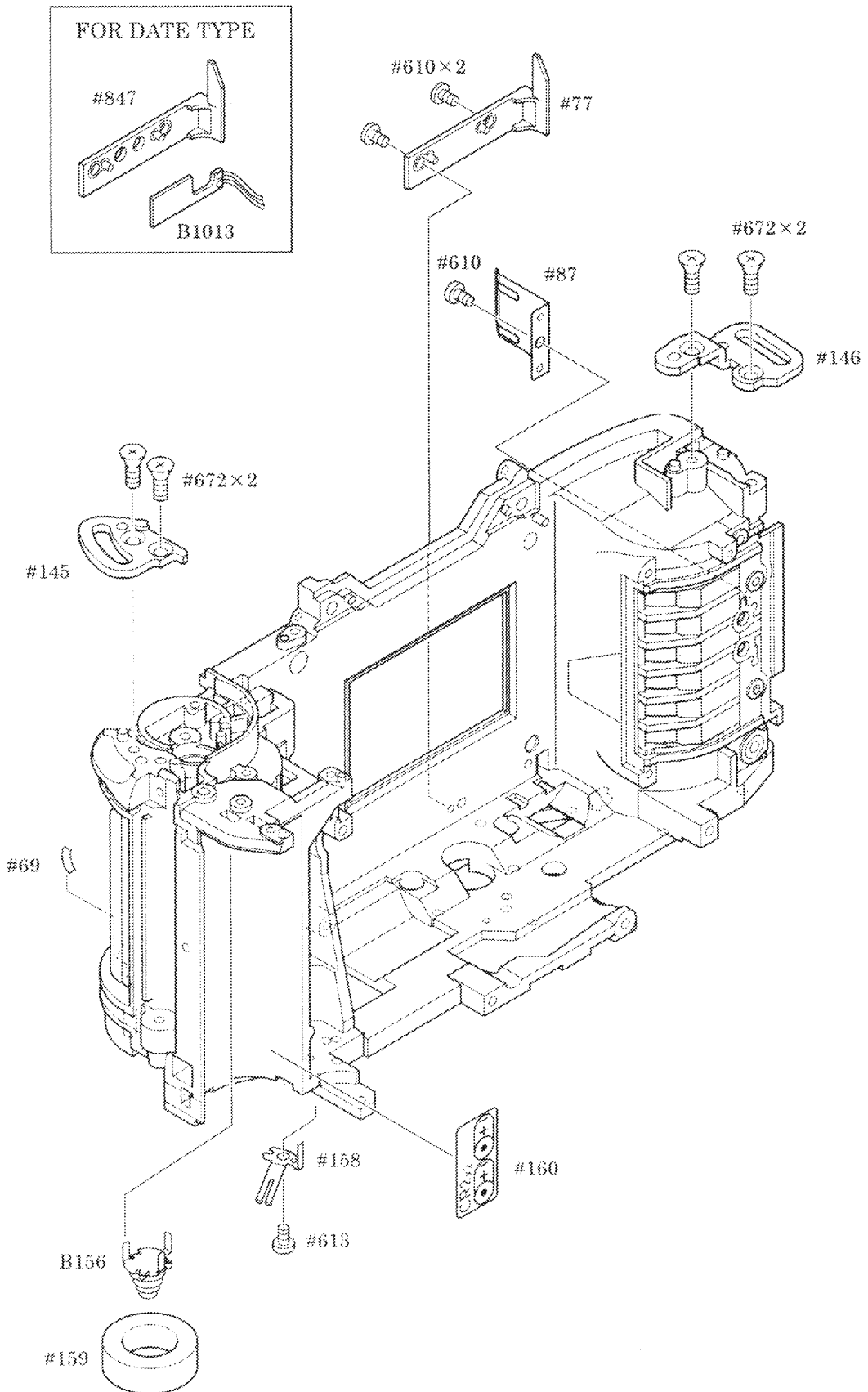


DX CONTACT





SMALL PARTS OF REAR BODY



# ASSEMBLY AND ADJUSTMENT

## 1. FRONT BODY

MIRROR HOLDER .....	A 1
MIRROR UP LEVER .....	A 2
APERTURE CONTROL UNIT	
1. Assembly of Aperture Upper and Lower Base Plates .....	A 3
2. Aperture Lever Installation .....	A 4
3. Hook the spring .....	A 4
4. Adjustment for the aperture Mg position .....	A 5
5. Installation of the Aperture Control unit on the Front Body .....	A 6
TTL FPC UNIT .....	A 6
AF DRIVING UNIT, AM SWITCH UNIT .....	A 7
HORIZONTAL AF LEVER UNIT .....	A 7
BAYONET MOUNT .....	A 8
HIGHT ADJUSTMENT OF AF COUPLING SHAFT #185 .....	A 9
ADJUSTMENT OF APERTURE LEVER POSITION .....	A 9
AF SENSOR UNIT .....	A 10
MAIN PCB .....	A 10
PRISM BOX UNIT	
1. Assemble of Prism box section .....	A 11
2. Mount prism box on front body .....	A 12
3. Soldering bridges on the metering FPC .....	A 12
ANGLE ADJUSTMENT OF MAIN MIRROR AND SUB MIRROR TO 45° .....	A 13
ADJUSTMENT OF INFINITY ( $\infty$ ) .....	A 14
AE SPD POSITION ADJUSTMENT .....	A 14
SQ UNIT .....	A 15
SHUTTER	
1. Mirror up .....	A 15
2. Mount the Shutter unit to Front body .....	A 16

## 2. REAR BODY

SMALL PARTS OF REAR BODY .....	A 16
FILM ADVANCE UNIT	
1. Assembling of each gear .....	A 17
2. Mount the Film Advance Unit to the Rear Body .....	A 17
BOTTOM BASE PLATE .....	A 18

DX CONTACT .....	A 1 8
COMMAND DIAL, PR BASE PLATE UNIT .....	A 1 9
SB UNIT, DC/DC UNIT .....	A 1 9
BACK DOOR OPEN/CLOSE AREA .....	A 2 0

### 3. MOUNTING BOTH THE FRONT AND THE REAR BODIES

MOUNT THE FRONT BODY TO THE REAR BODY .....	A 2 0
LCD DISPLAY UNIT	
1. Connector, Mount of screw(s) .....	A 2 1
2. Connector, each wires .....	A 2 2
TOP COVER	
1. Accessory shoe, Mode dial unit .....	A 2 3
2. SB area, Small parts .....	A 2 4
3. Mount the Top cover to the Body .....	A 2 5
4. Each wires, Soldering bridges .....	A 2 5
GRIP COVER, REWIND SIDE COVER, FRONT COVER .....	A 2 6
INSPECTION & ADJUSTMENT OF BODY BACK .....	A 2 7
ADJUSTMENT THROUGH PC .....	A 2 7
AF ADJUSTMENT .....	A 2 8
BACK DOOR, BOTTOM COVER .....	A 2 9

# ASSEMBLY AND ADJUSTMENT

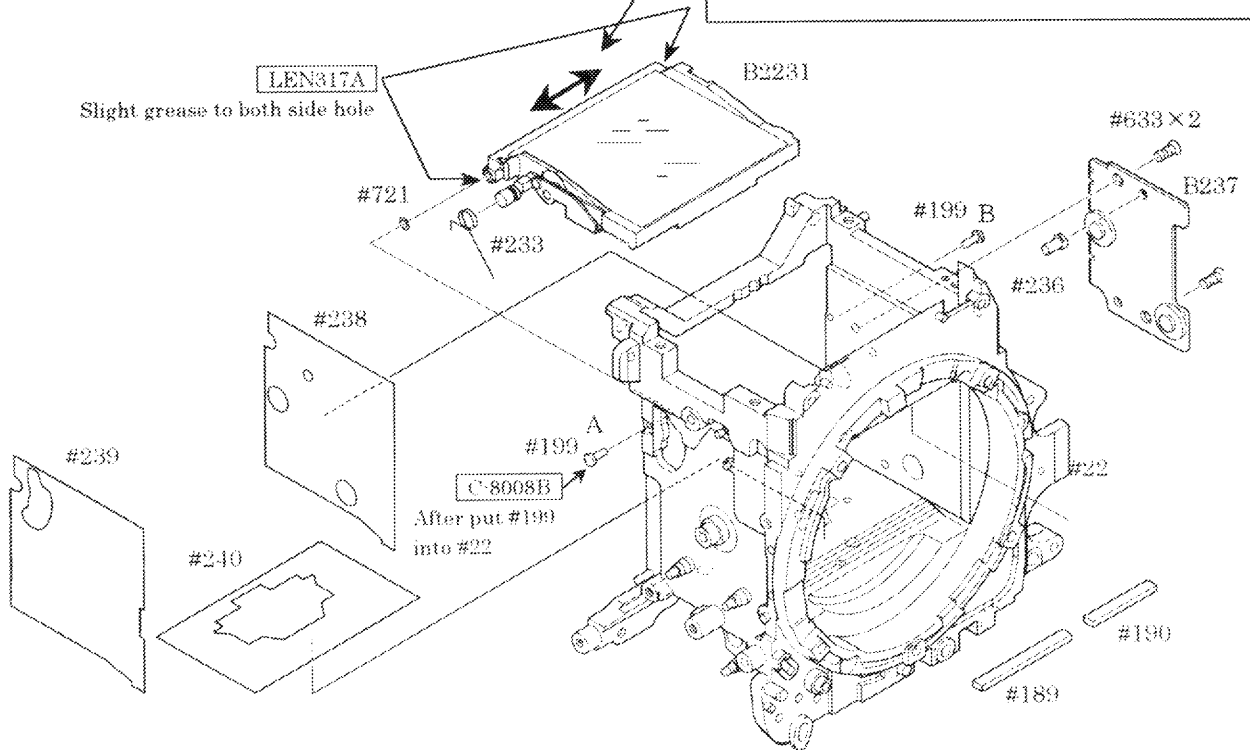
## 1. FRONT BODY

### MIRROR HOLDER

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

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

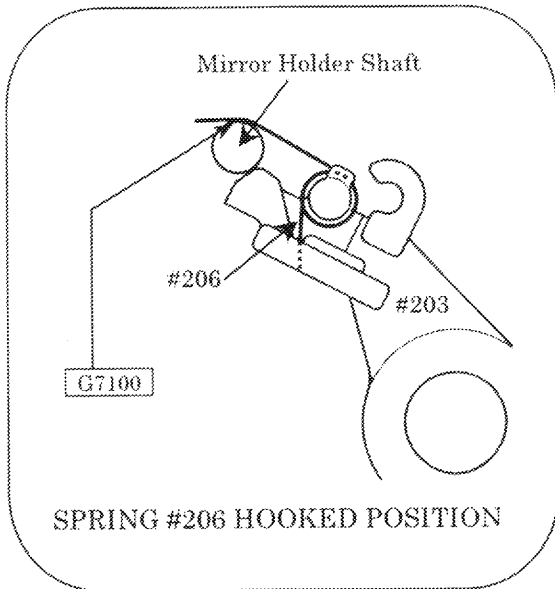
Backlash Standard: 0.02 mm or less (0 is not allowed)



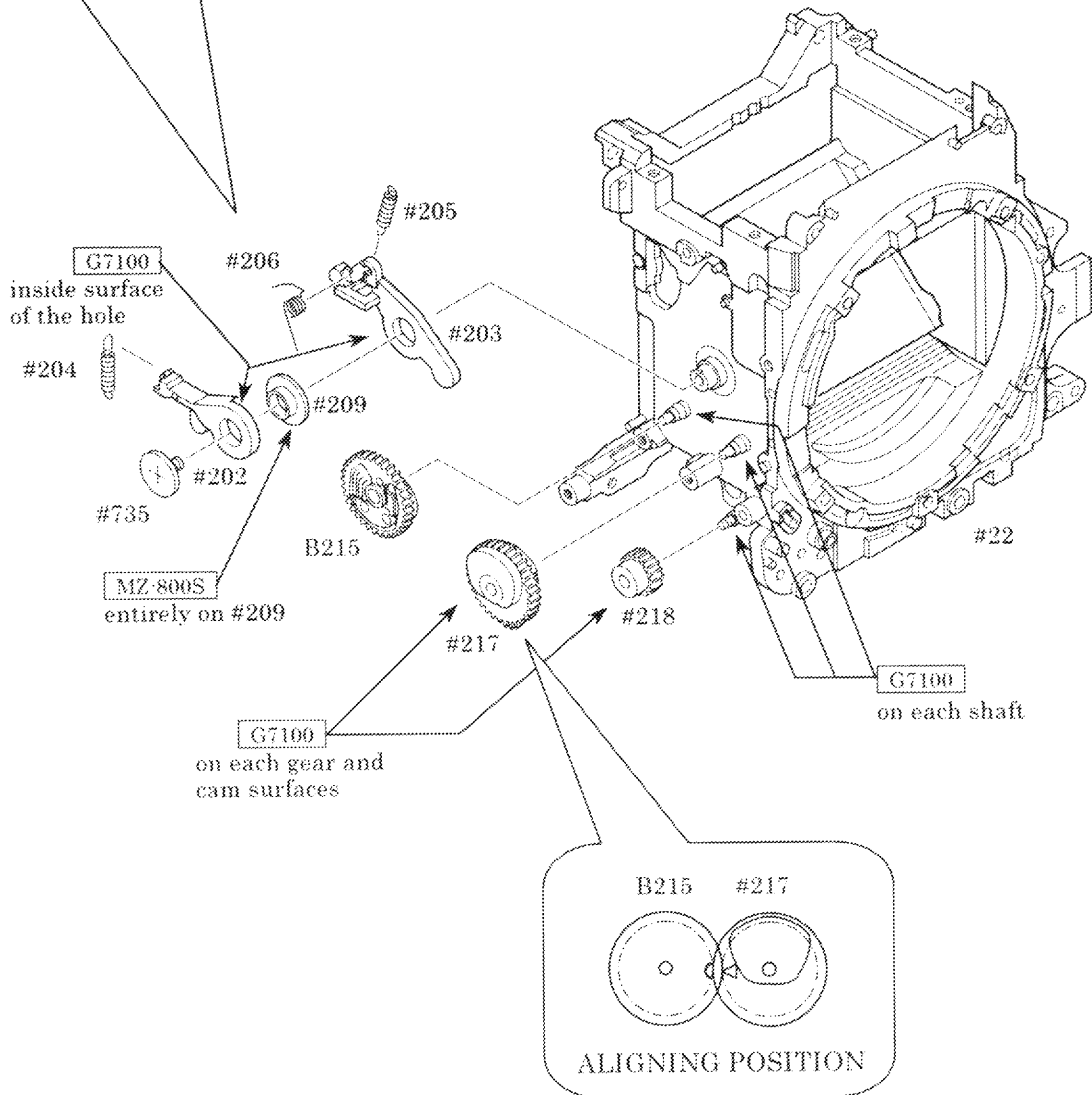
- ⑤ Stand the mirror up and assemble the sub-mirror deflection pin #236 into the front body #22.
- ⑥ Align the hole on the mirror box PCB B237 with the boss on the front body #22, and assemble and fix them using the screw #633 x 2.



MIRROR UP LEVER



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



**APERTURE CONTROL UNIT**

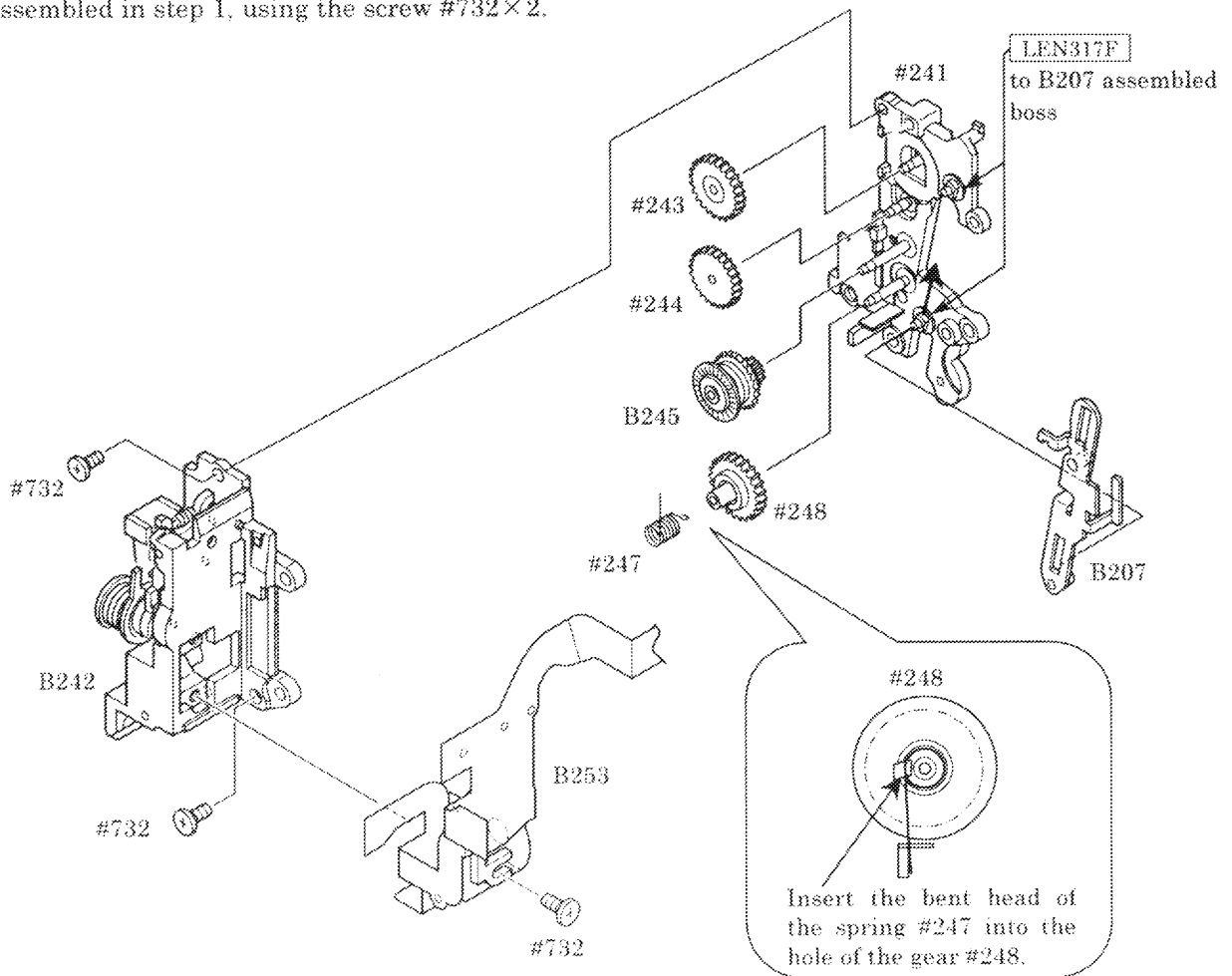
1. Assembly of Aperture Upper and Lower Base plates.

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

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

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

● Oil the four gear shafts using "Oil: **CFD-005.5H**".

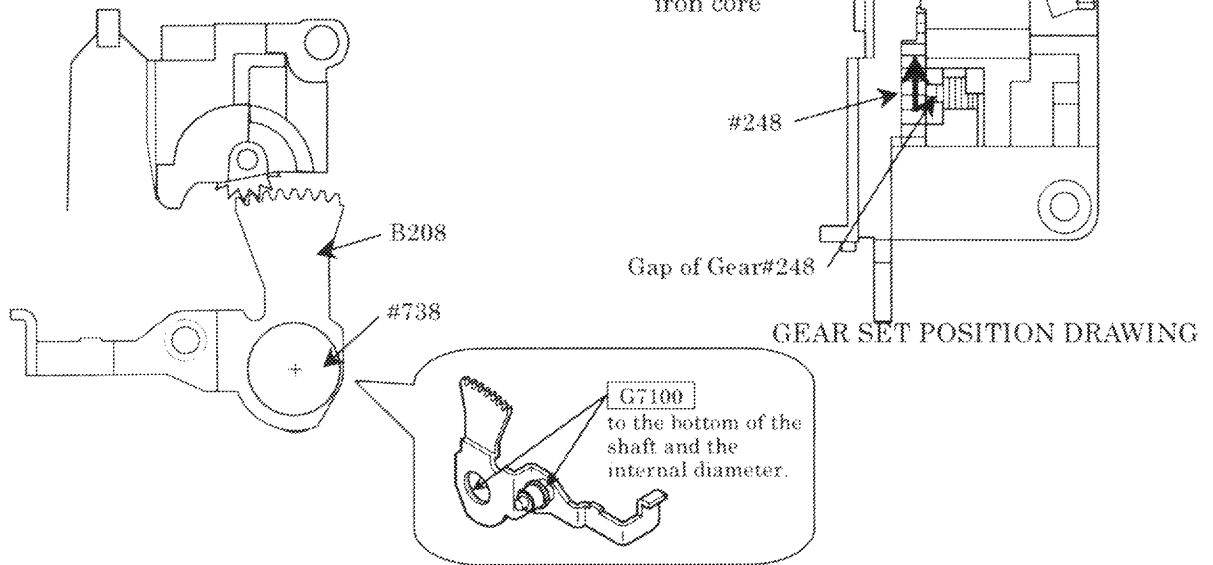


- ③ Attach the PI base plate unit B253 to the aperture control base unit assembled at Process ② by the both-sided adhesive tape on B253.

- ④ Fix the PI section of the Aperture PI FPC unit B253 using the screw #732.

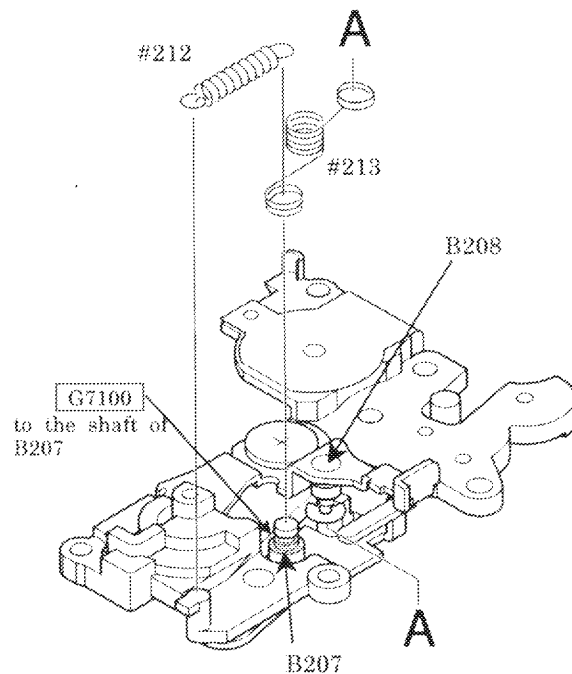
2. Aperture Lever Installation

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



3. Hook the spring

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

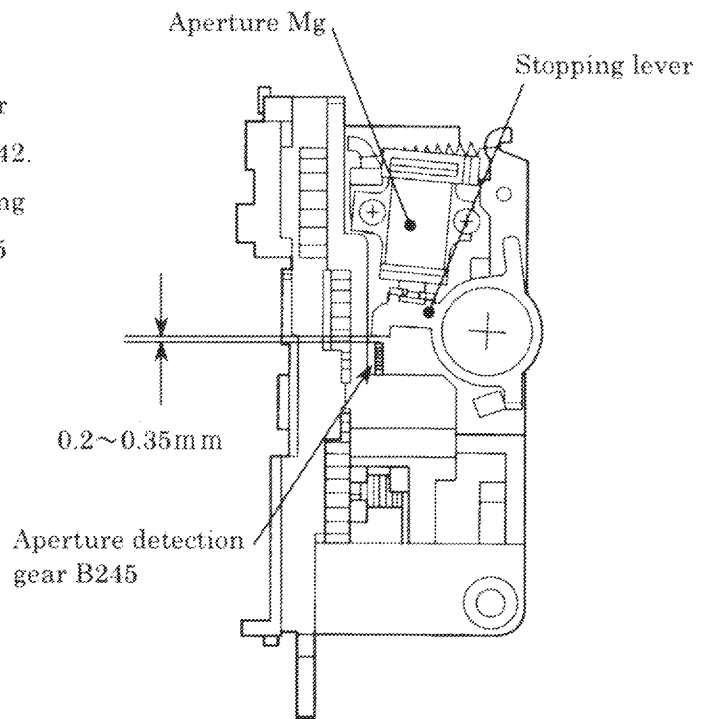


**Check:** Push down the Mg iron core which has been projected in the procedure of "2. Aperture Lever Installation" and make sure that when the Aperture lever B208 is pushed down with a finger it securely returns to the upward (installed position) when finger is released.

4. Adjustment for the aperture Mg position

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

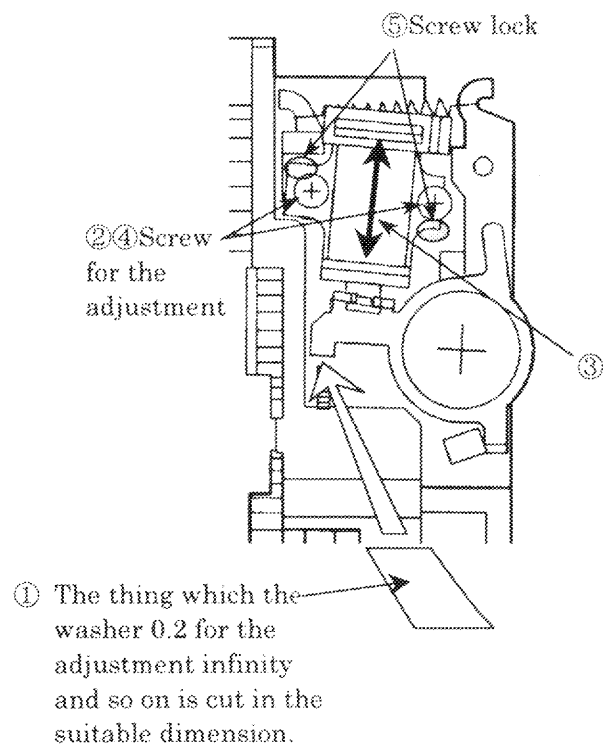
STANDARD : 0.2~0.35mm



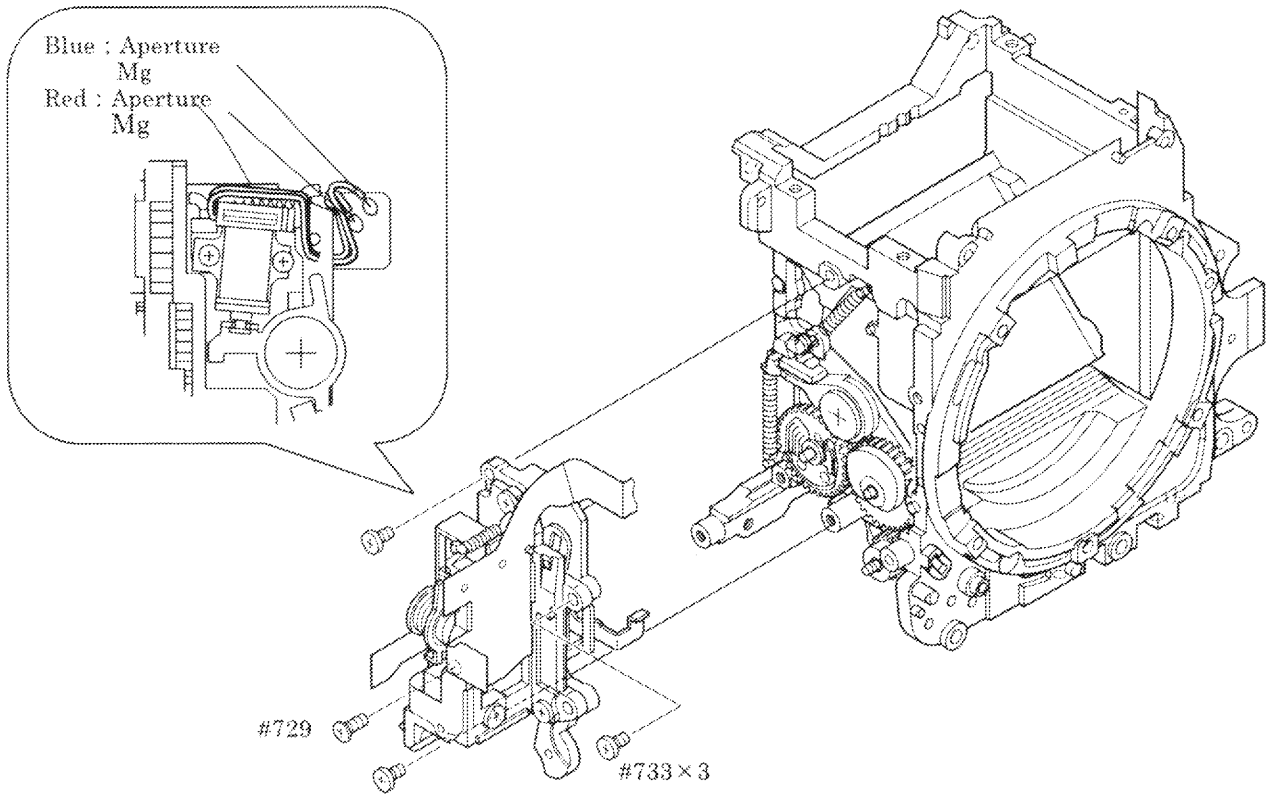
• Adjustment procedure

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

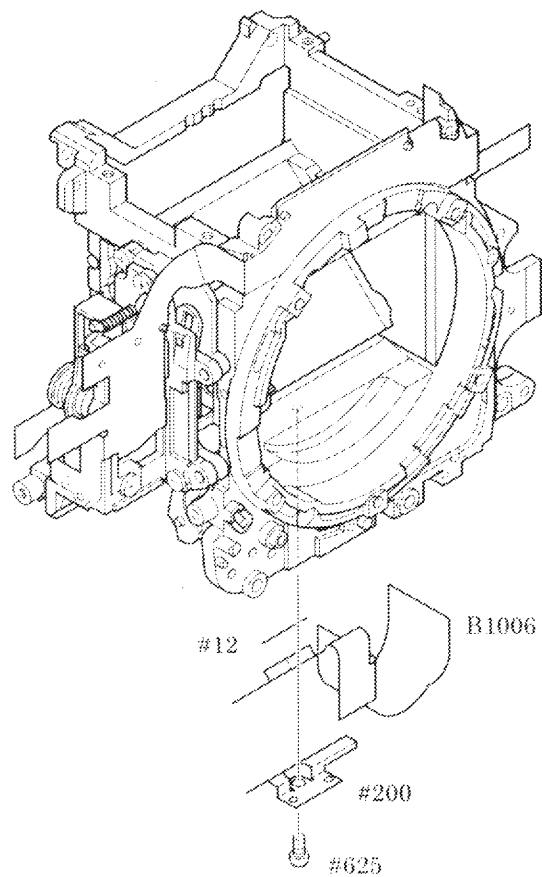
- ① Put the washer of 0.2 mm into the clearance to be adjusted.
- ② Loosen the screw for the adjustment.
- ③ Move the aperture Mg to make the above clearance be the same thickness as the washer.
- ④ Drive the screw for the adjustment and fix the aperture Mg.
- ⑤ Fix the Mg by the screw lock.



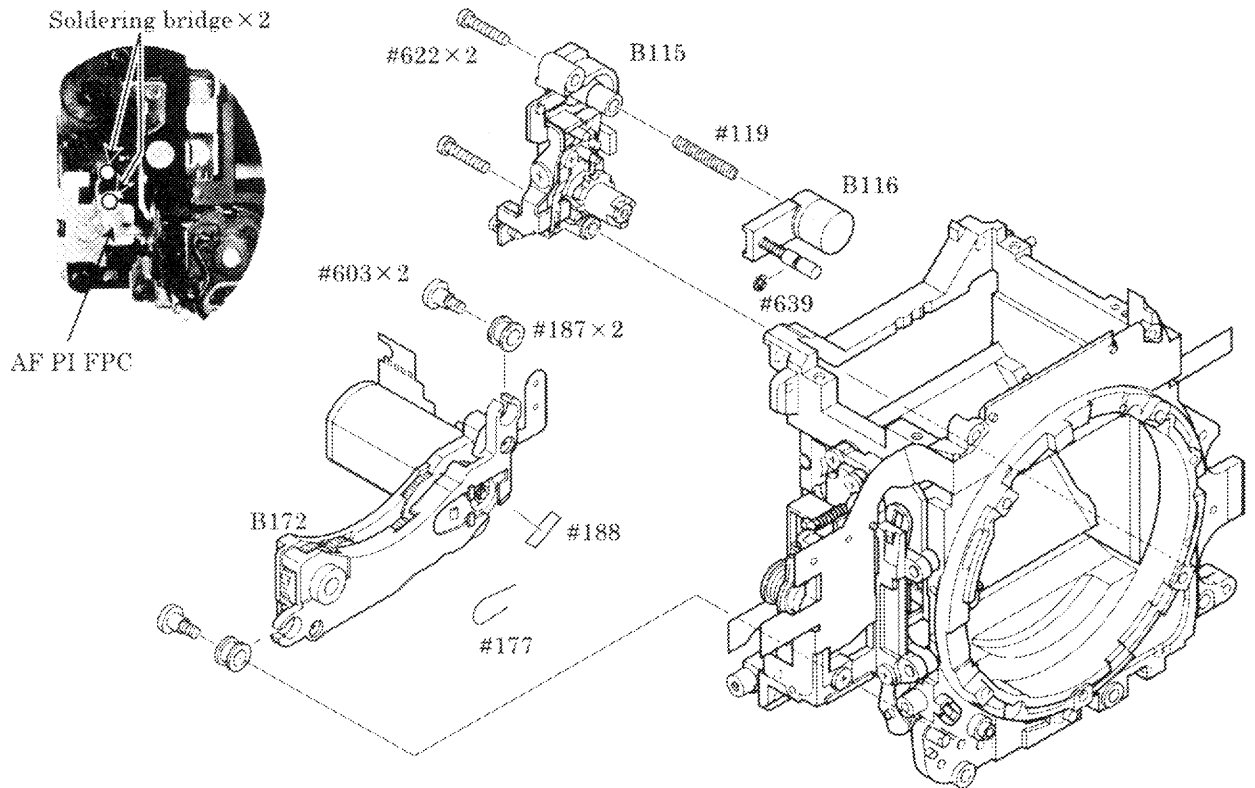
5. Installation of the Aperture Control unit on the Front Body



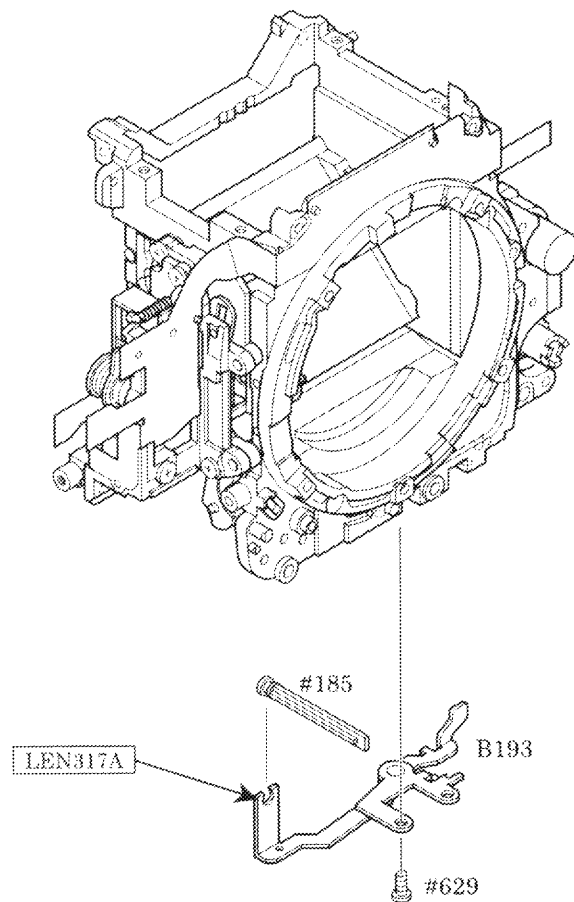
TTL FPC UNIT



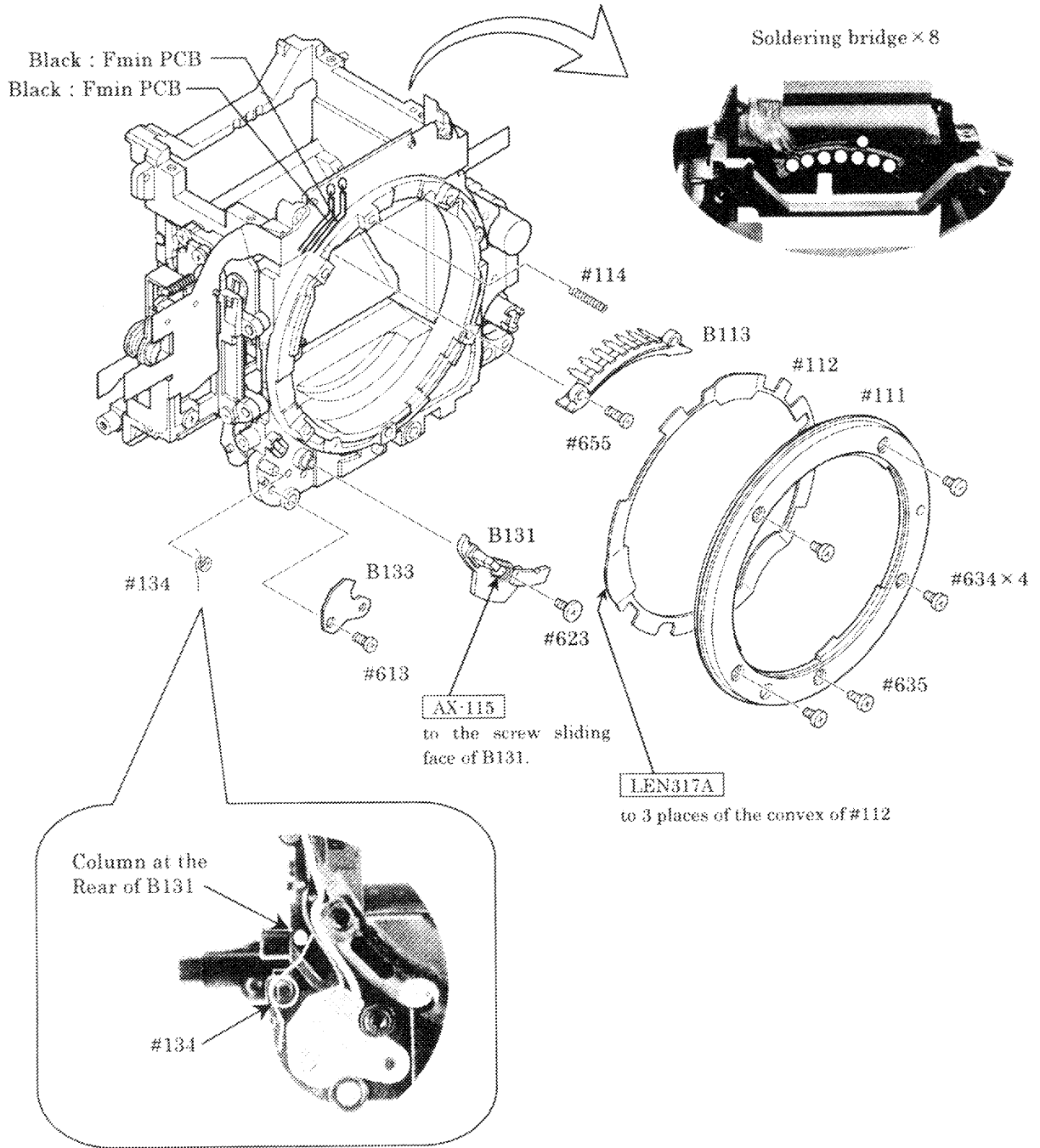
AF DRIVING UNIT, AM SWITCH UNIT



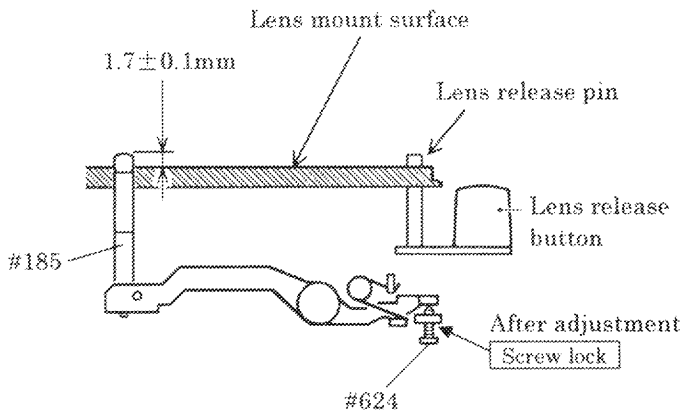
HORIZONTAL AF LEVER UNIT



**BAYONET MOUNT**

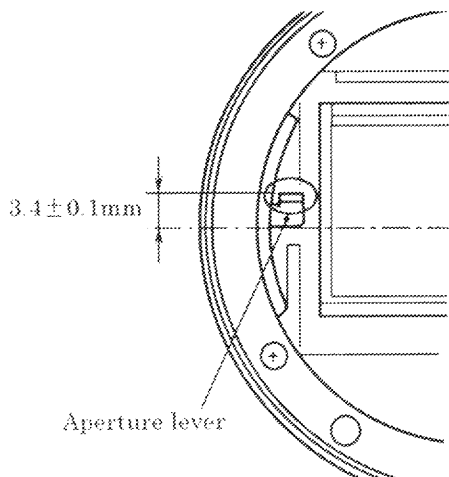


**HIGHT ADJUSTMENT OF AF COUPLING SHAFT #185**



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

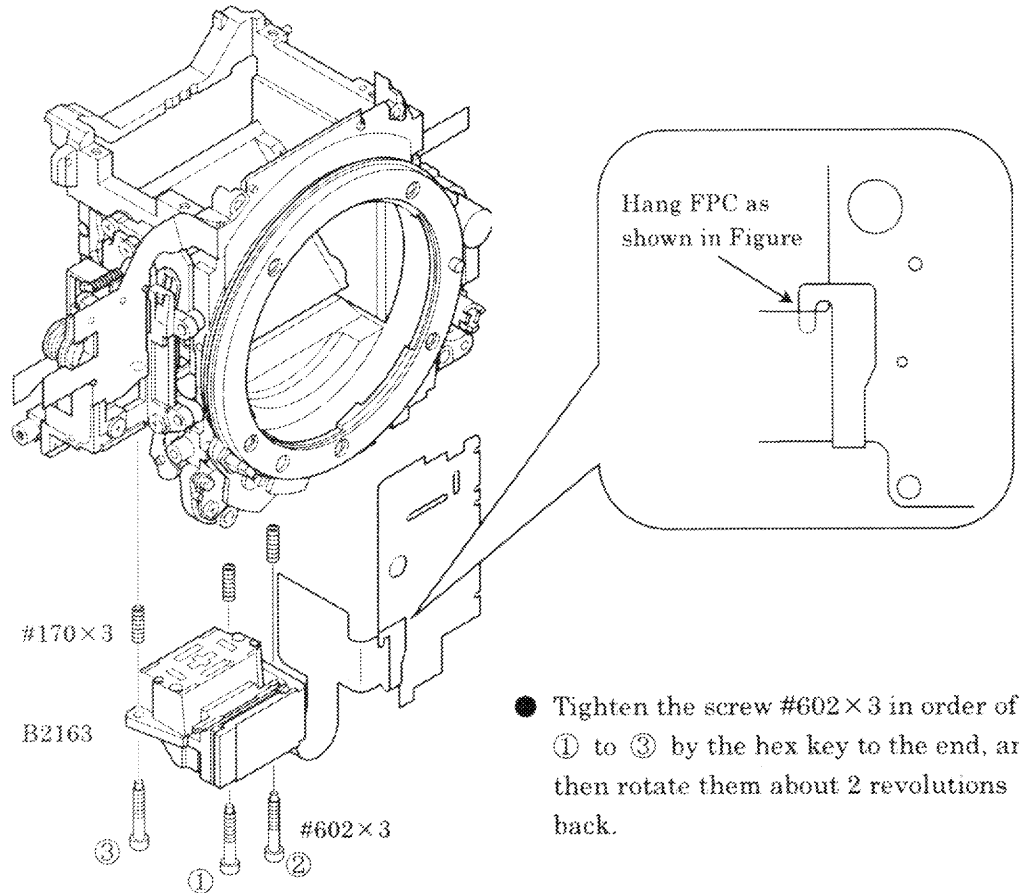
**ADJUSTMENT OF APERTURE LEVER POSITION**



- Measure the height of the aperture lever using tool J18004.  
**Standard Value :  $3.4 \pm 0.1\text{mm}$**   
 If the height of the aperture lever is out of the standard value, bend the circled position to adjust. While adjusting, take care not to bend the inside lever and stopper portion.

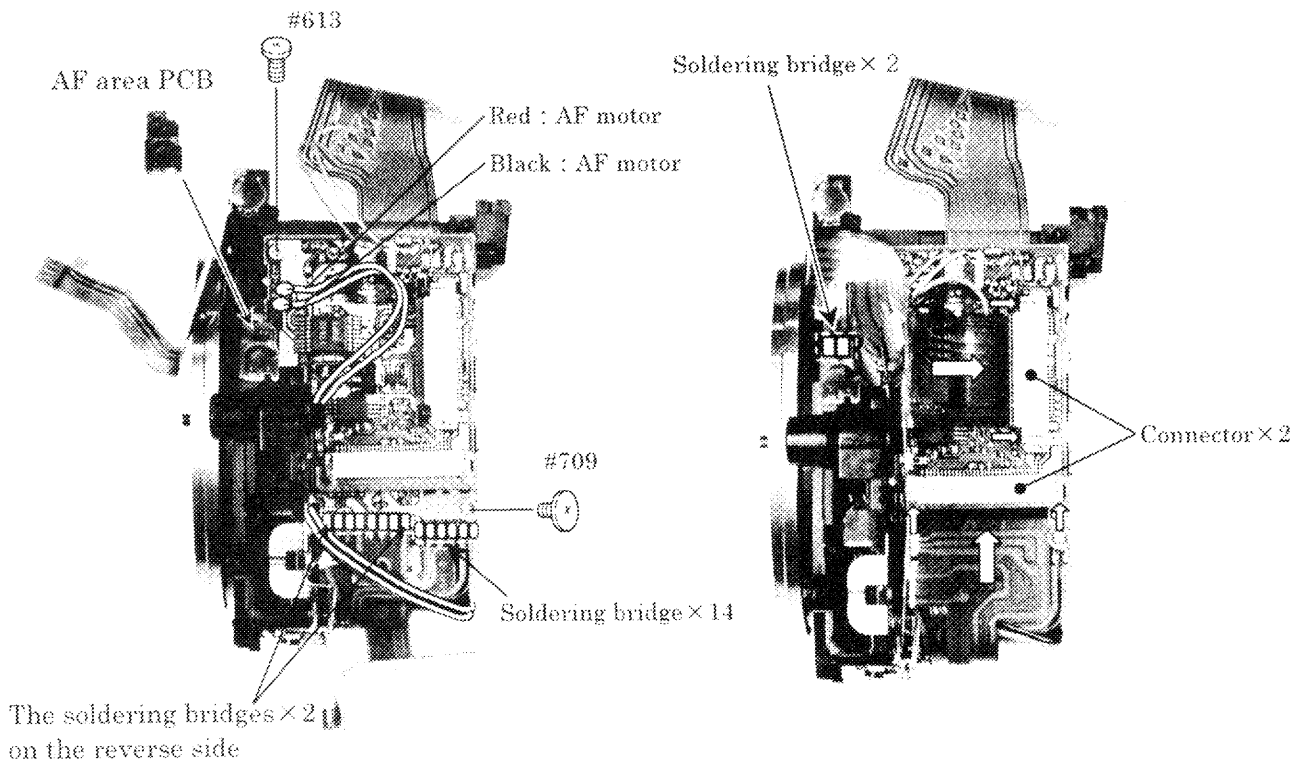


AF SENSOR UNIT



● Tighten the screw #602×3 in order of ① to ③ by the hex key to the end, and then rotate them about 2 revolutions back.

MAIN PCB

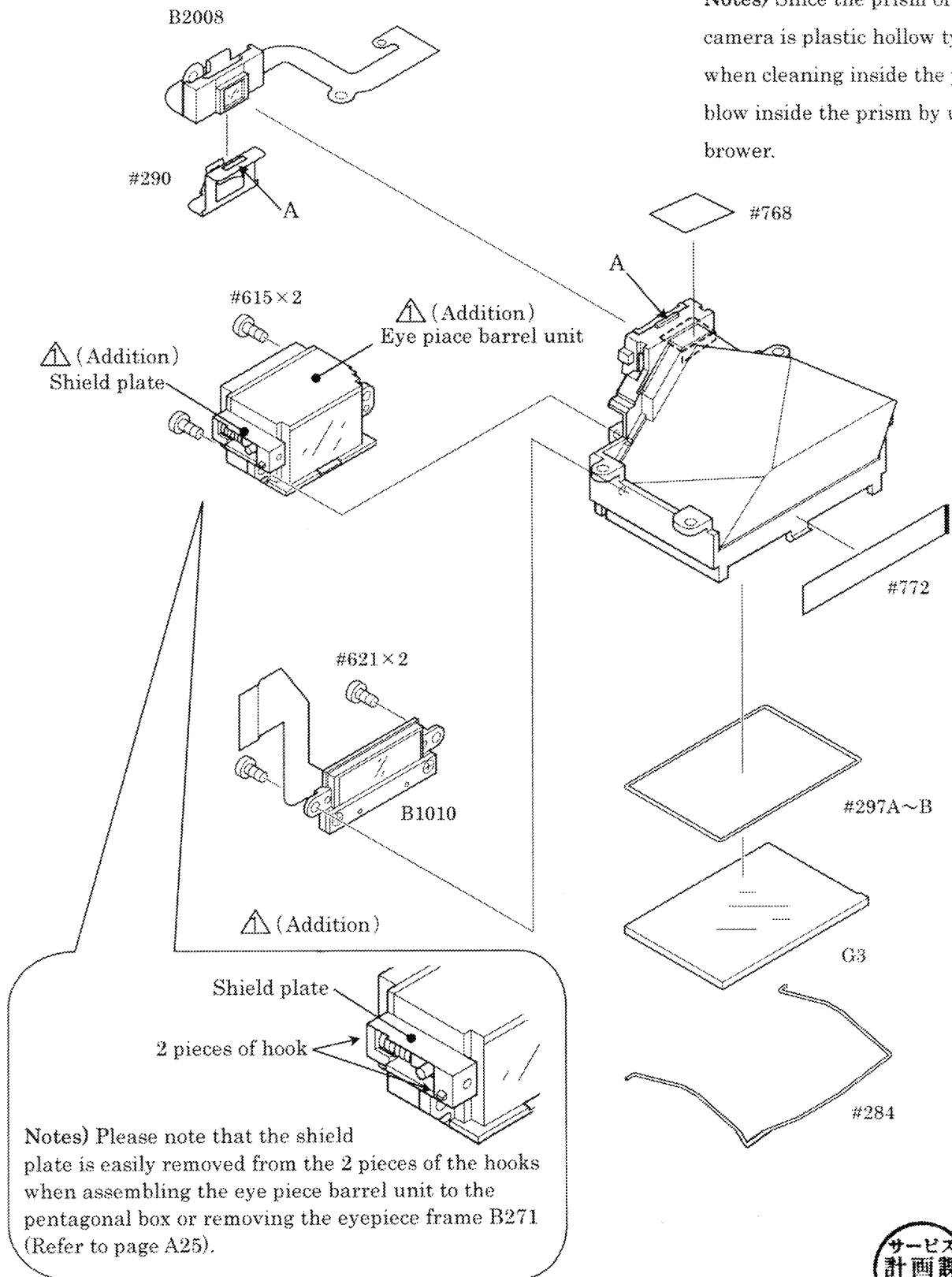


**PRISM BOX UNIT**

1. Assemble of Prism box section

- Set the AE SPD retainer #290 after putting the metering FPC unit which is fold double as shown in Figure and fitting the concave A and the convex A in Figure. (Fix it temporarily)

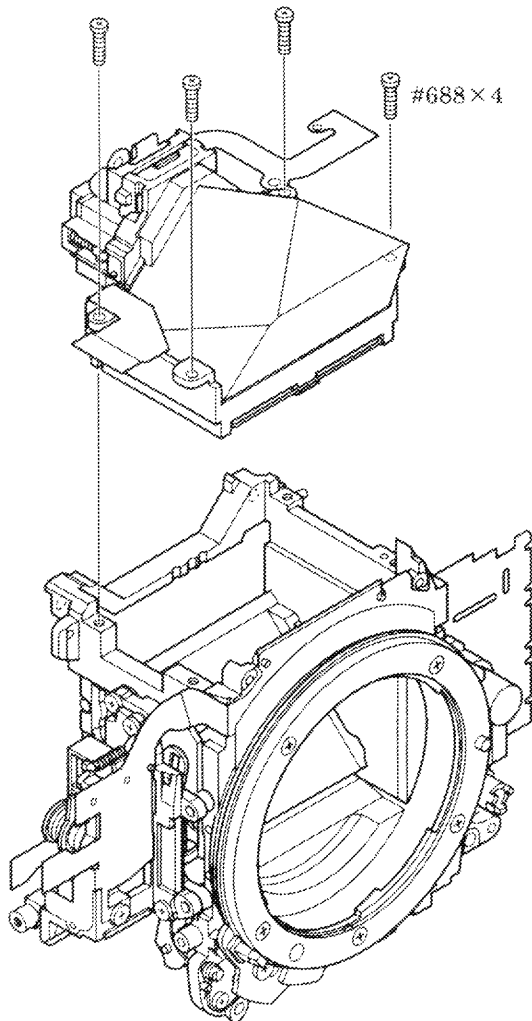
Notes) Since the prism of this camera is plastic hollow type, when cleaning inside the prism, blow inside the prism by using the blower.



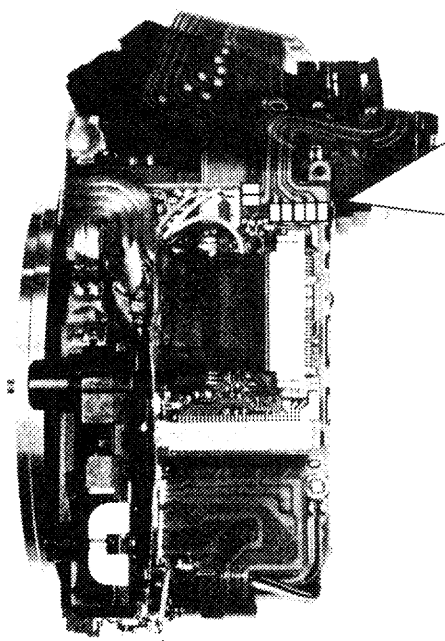
Notes) Please note that the shield plate is easily removed from the 2 pieces of the hooks when assembling the eye piece barrel unit to the pentagonal box or removing the eyepiece frame B271 (Refer to page A25).



2. Mount prism box on front body

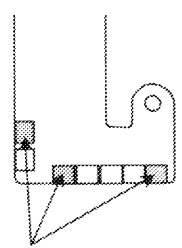


3. Soldering bridges on the metering FPC



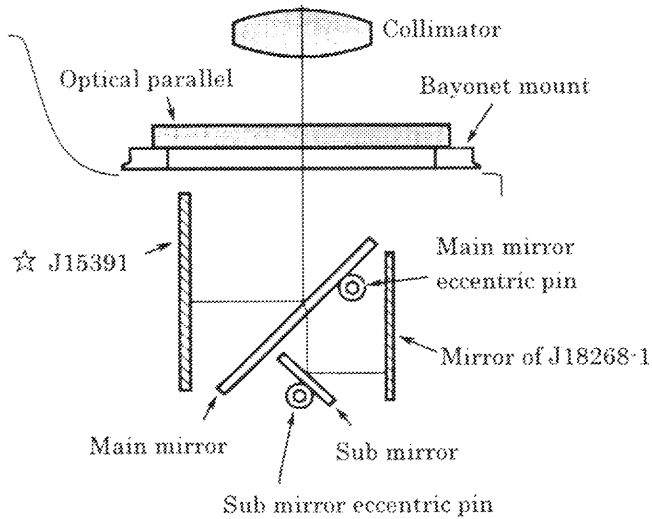
Notes: 3 places of the patterns in Figure below have the soldering bridges on the reverse side.

Solder bridge x 7



The soldering bridges x 3 on the reverse side.

**ANGLE ADJUSTMENT OF MAIN MIRROR AND SUB MIRROR TO 45°**



**\*Use tools**

1. Angle adjustment of main mirror
  - ① Collimator (J19002)
  - ② Mirror angle inspection mirror ☆ (J15391)
  - ③ Optical parallel (J18037)
  - ④ Hexagonal wrench
2. Angle adjustment of sub mirror
  - ① Collimator (J19002)
  - ② Sub mirror angle adjustment tool (J18268-1)
  - ③ Hexagonal Wrench

☆ : NEW TOOL

● Angle adjustment of main mirror to 45°

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

① Checking the discrepancy (right/left)

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

② Checking the discrepancy (up/down)

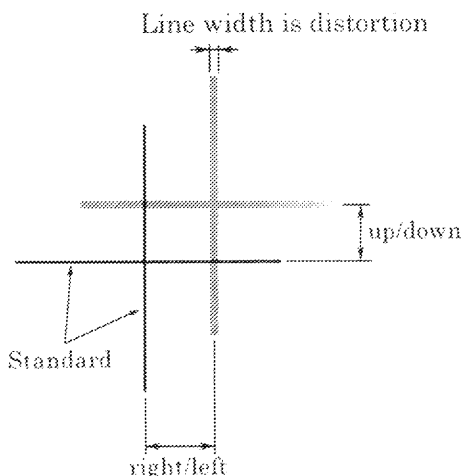
If the amount of the discrepancy is out of the standard value, rotate the main mirror eccentric pin to adjust.

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

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

① Checking the discrepancy (up/down)

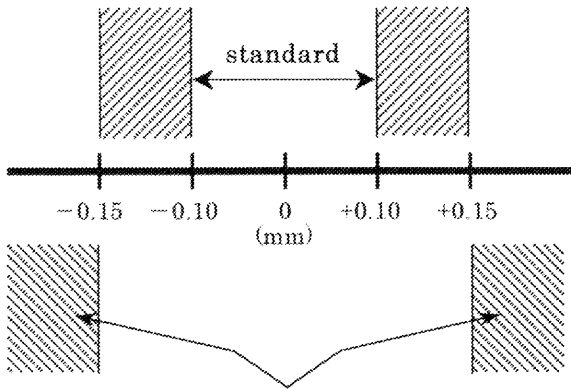
If the amount of the discrepancy is out of the standard value, rotate the sub mirror eccentric pin to adjust.



**Standard :**

	Main mirror	Sub mirror
Discrepancy (right/left)	Within ±25'	/
Discrepancy (up/down)	Within ±5'	
Distortion	Within ±8'	Within ±8'

ADJUSTMENT OF INFINITY ( $\infty$ )

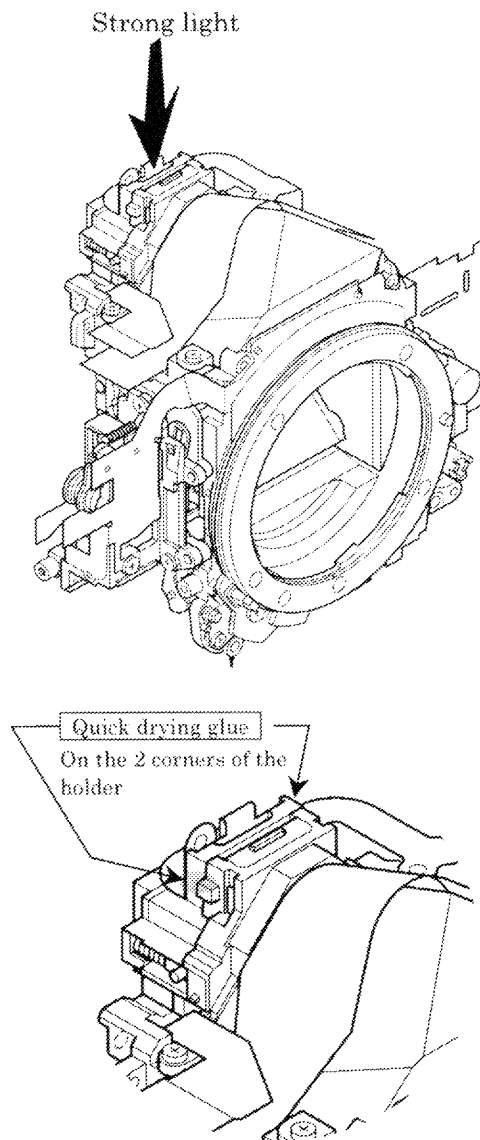


Check for the deformation of the front body or Prism box.

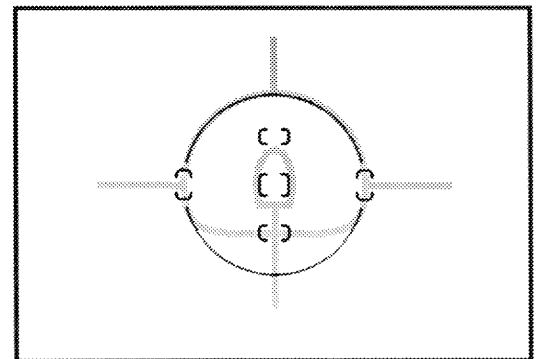
△(Addition)

- Replace the finder screen to the infinity focus check screen J15394 and then set the reference lens J18010 and read the value.
- In the case of  $-0.10 \sim +0.10$   
As it is within the standard range, adjustment is not required.
- In the case of  $-0.15 \sim -0.10$  or  $+0.10 \sim +0.15$   
Replace the G3 washer #297.
- In the case of  $-0.15$  or less or  $+0.15$  or more  
Check for the deformation of the front body or Prism box.

AE SPD POSITION ADJUSTMENT



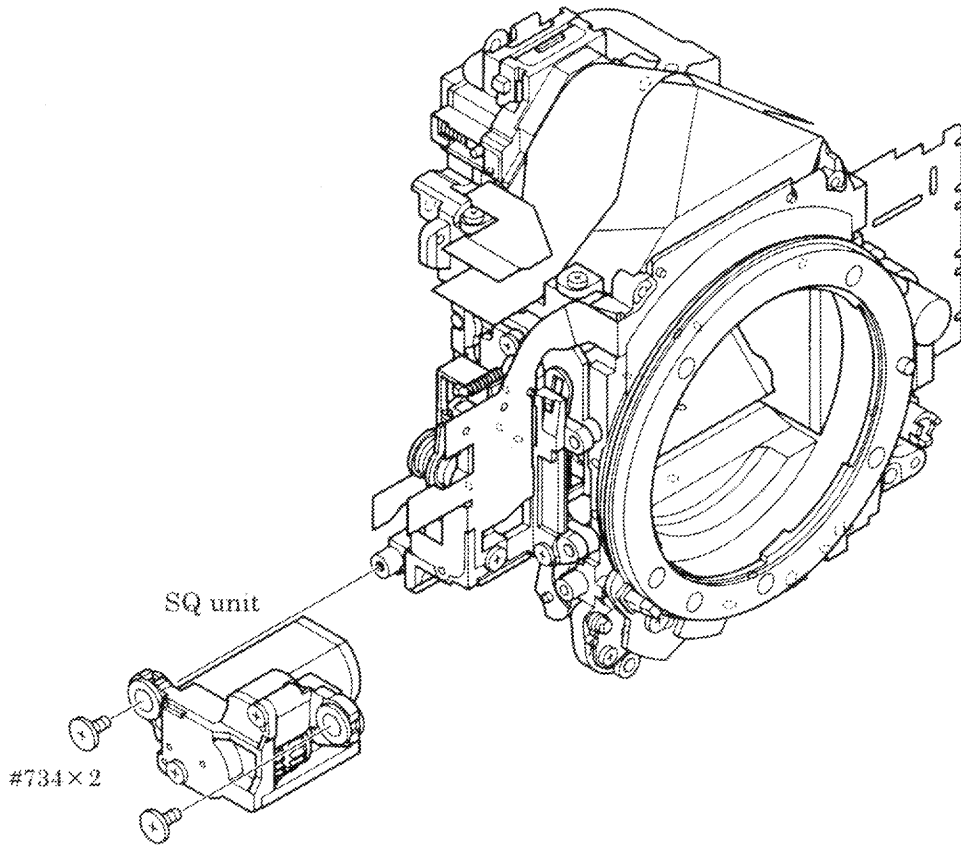
- ① Shade the eyepiece and Mirror box using a black tape.
- ② As shown in the left figure, project strong light from the top of the AE SPE so that the AE SPD pattern is reflected on the main mirror.
- ③ As shown the figure below, align the center of the AE SPD with both the focus frame and the  $\phi 12$ mm circle. The AE SPD should be parallel to the main mirror.



- ④ Fix the AE SPD holder on the prism box using Quick drying glue.

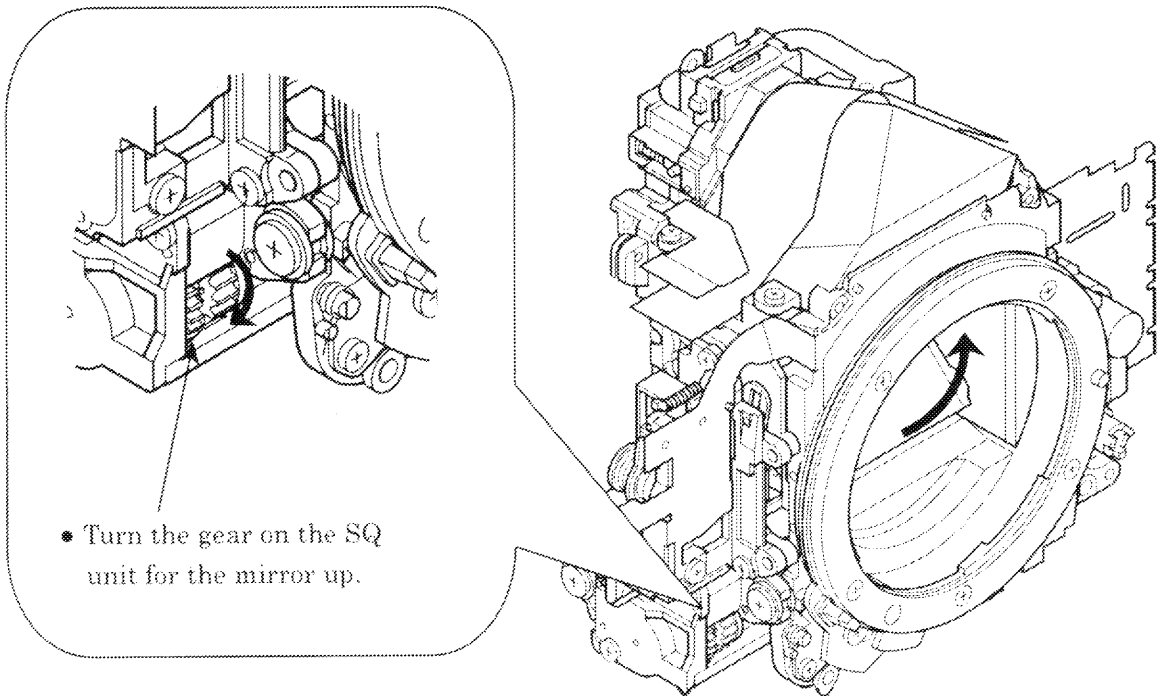


SQ UNIT

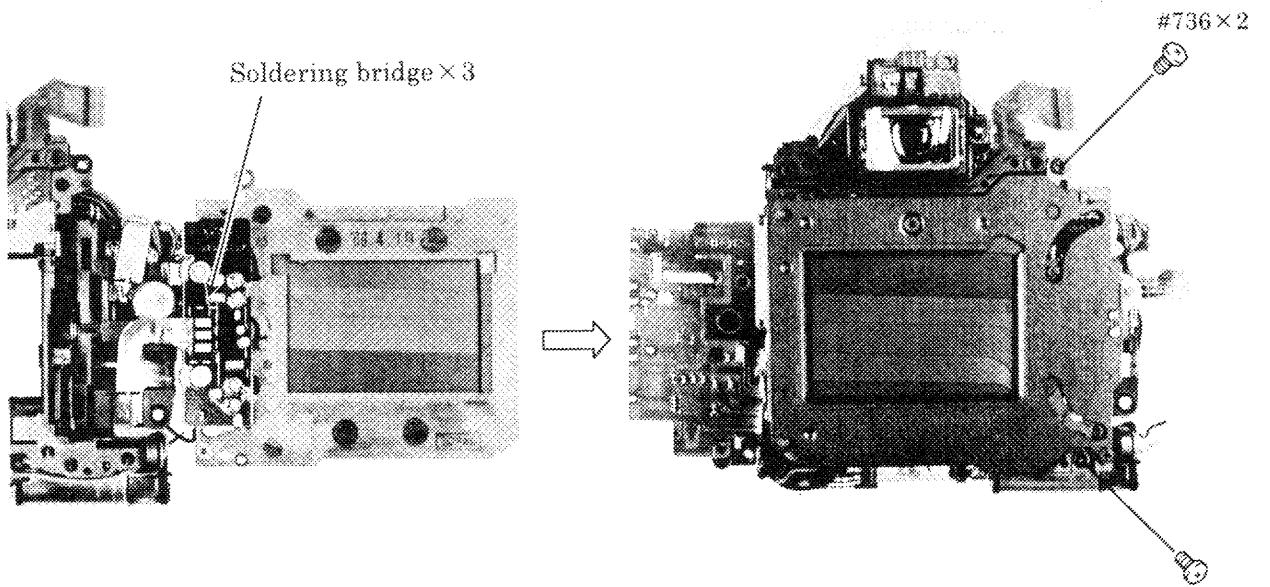


SHUTTER

1. Mirror up.



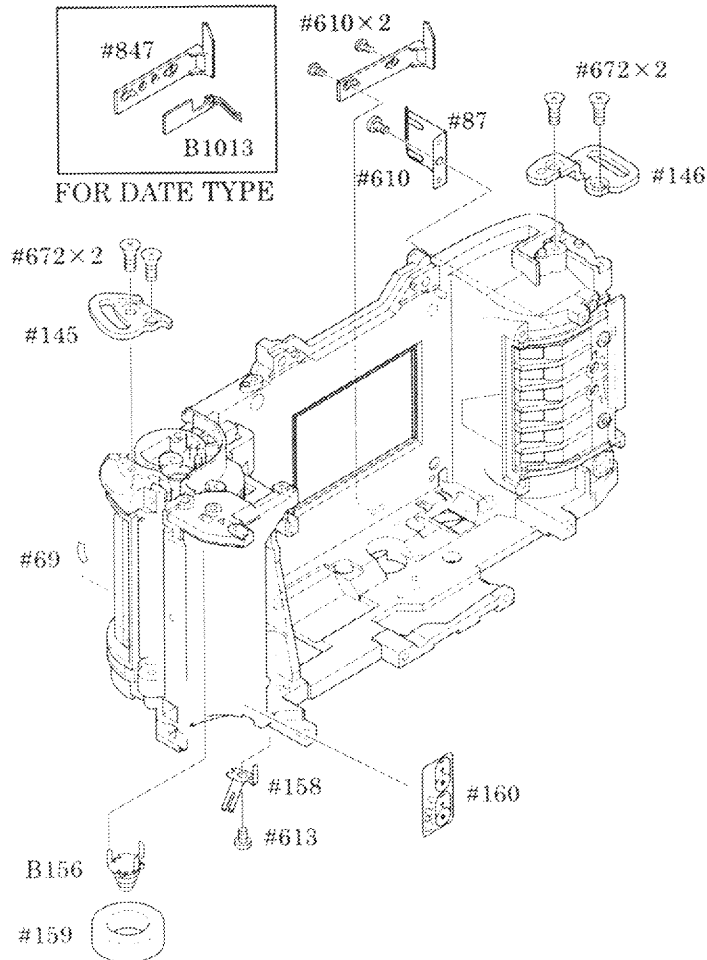
2. Mount the Shutter unit to Front body



- After attaching the shutter, rotate the SQ gear more and make the mirror down.

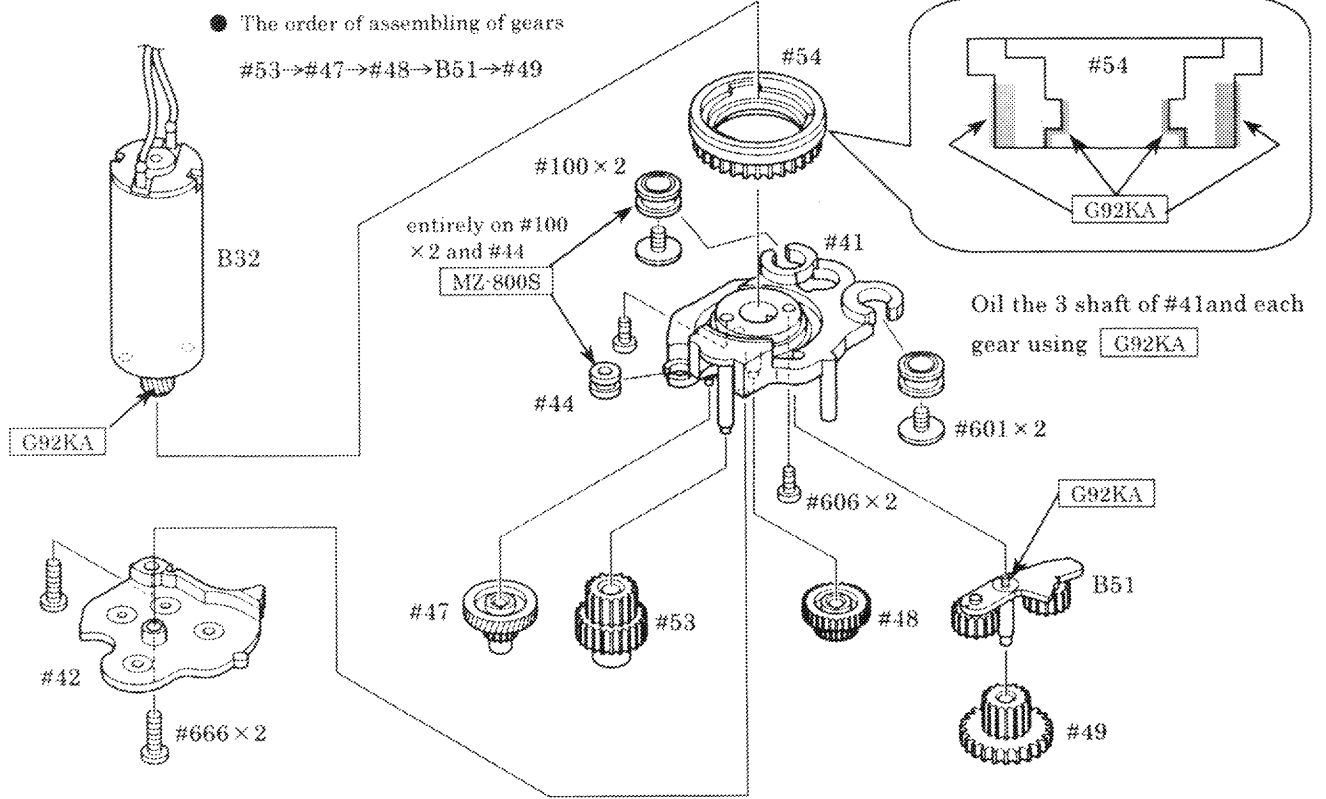
## 2. REAR BODY

SMALL PARTS OF REAR BODY

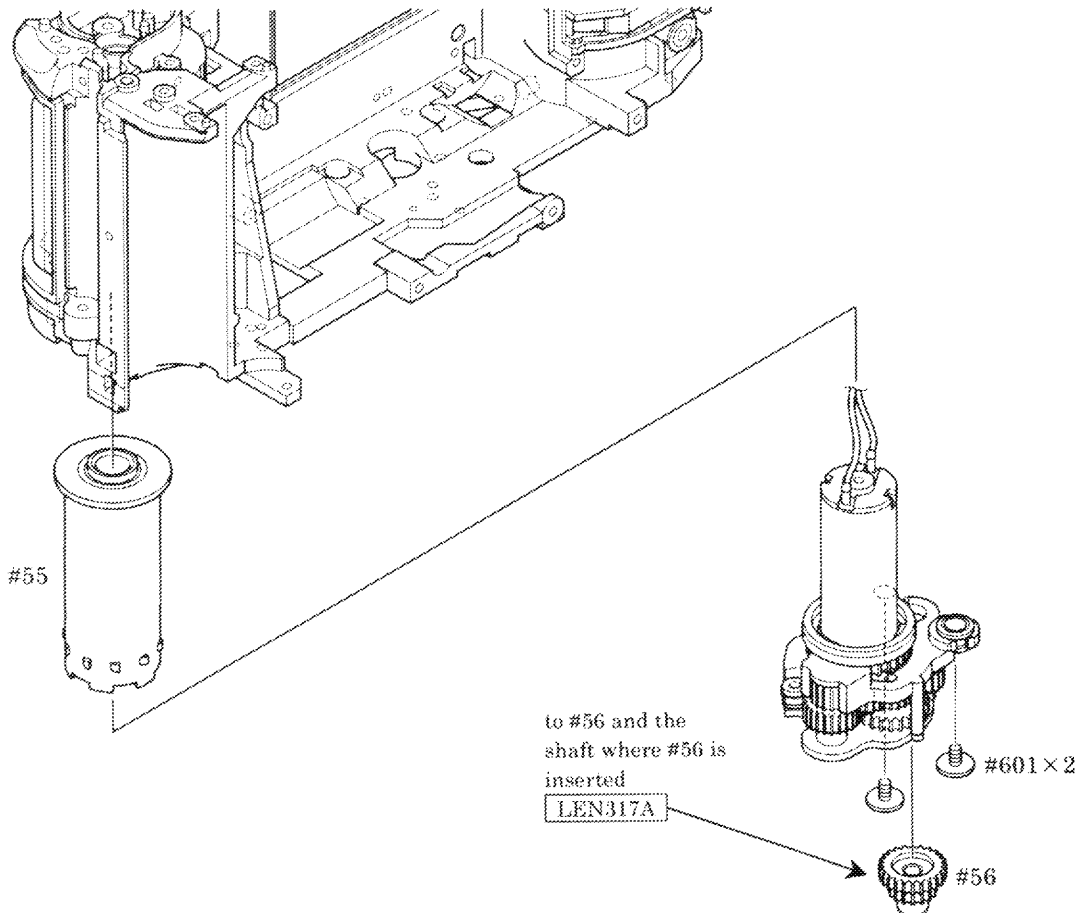


**FILM ADVANCE UNIT**

1. Assembling of each gear

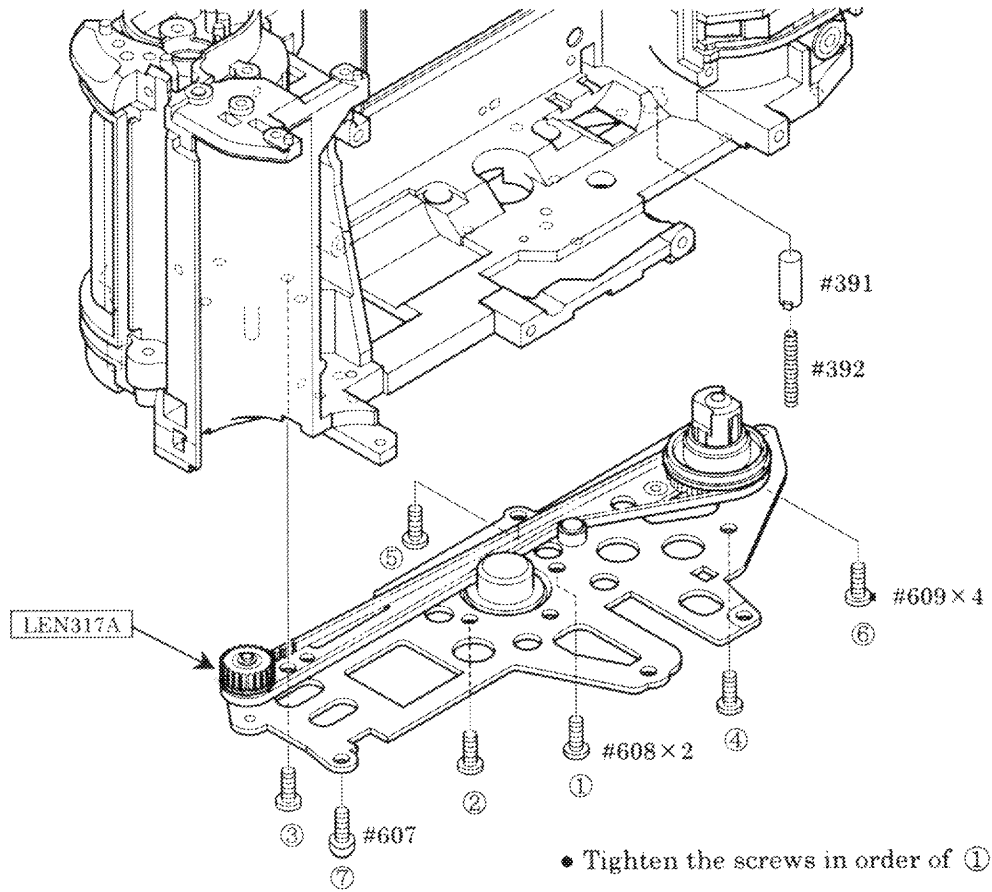


2. Mount the Film Advance Unit to the Rear Body

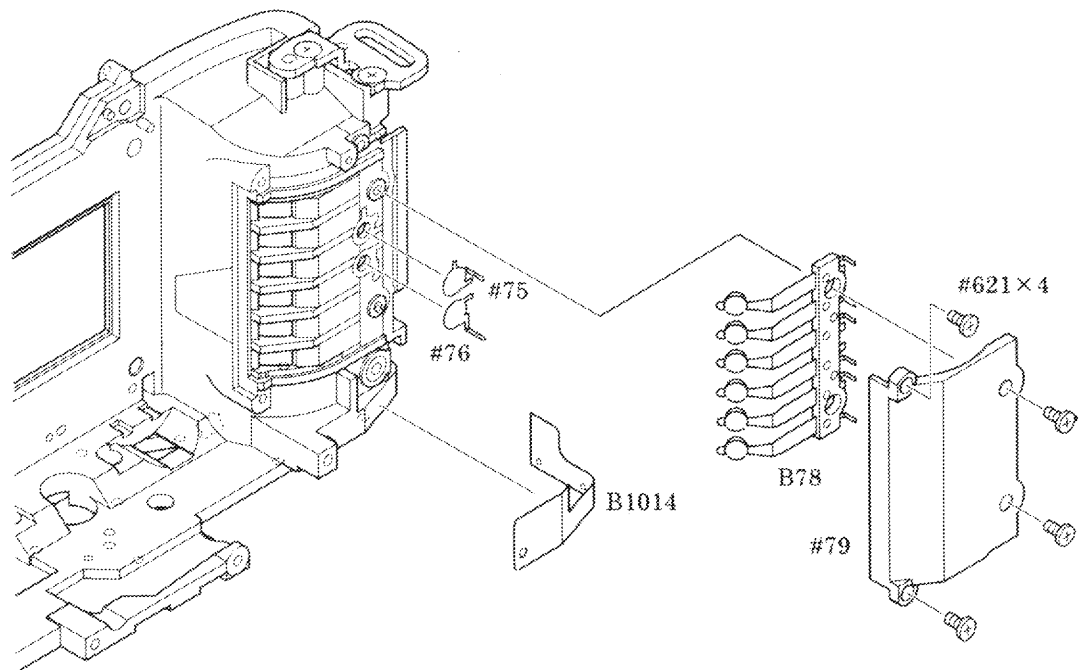




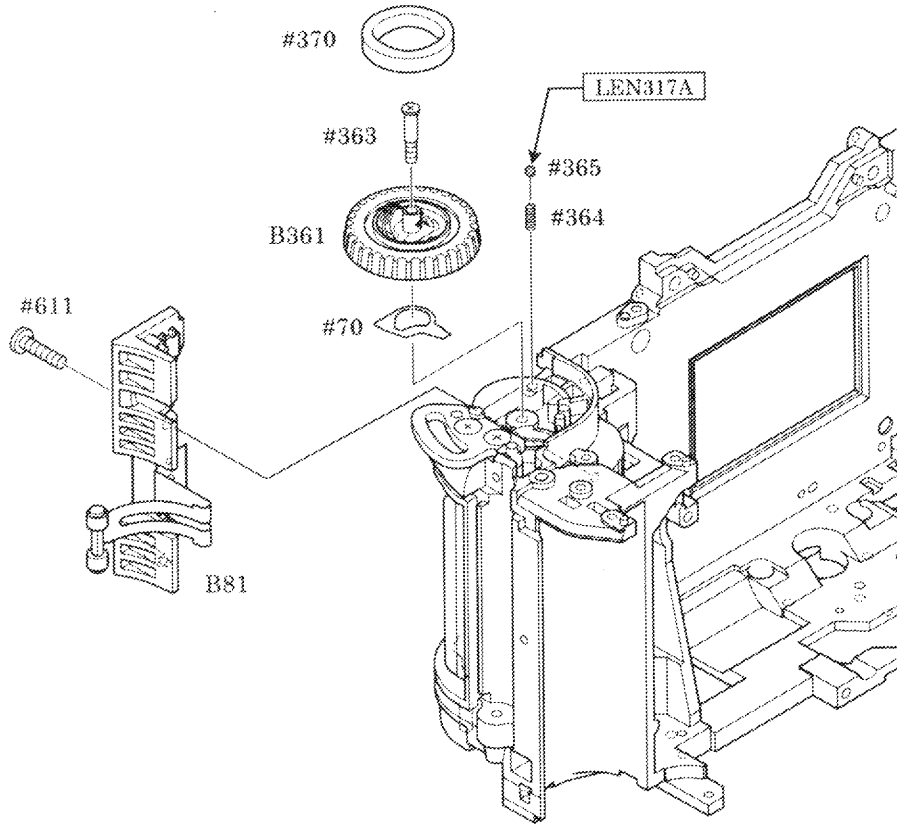
**BOTTOM BASE PLATE**



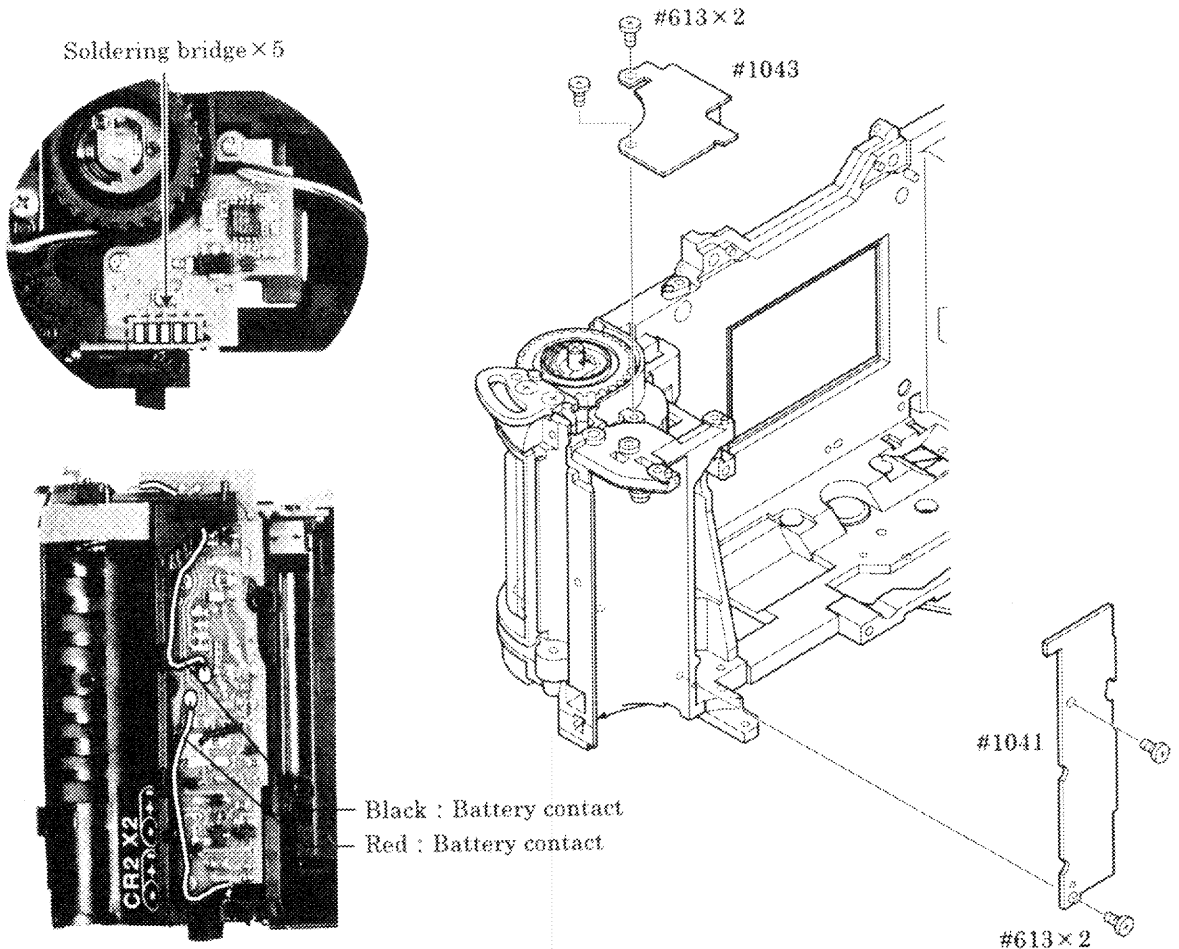
**DX CONTACT**



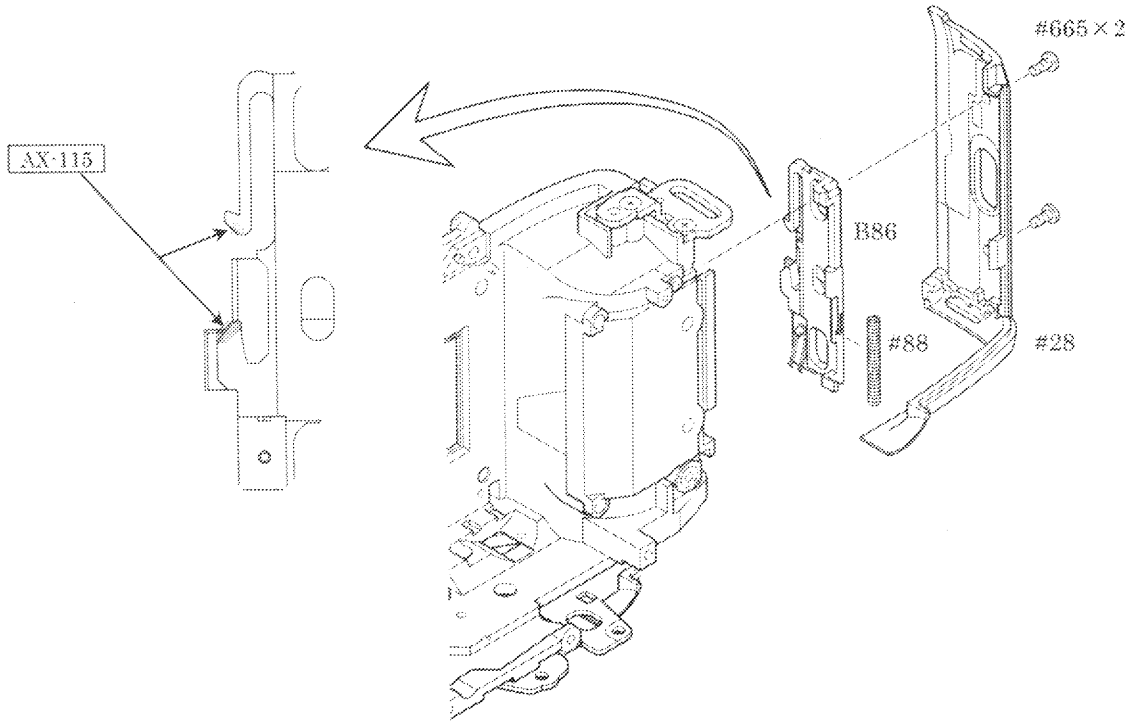
COMMAND DIAL, PR BASE PLATE UNIT



SB UNIT, DC/DC UNIT

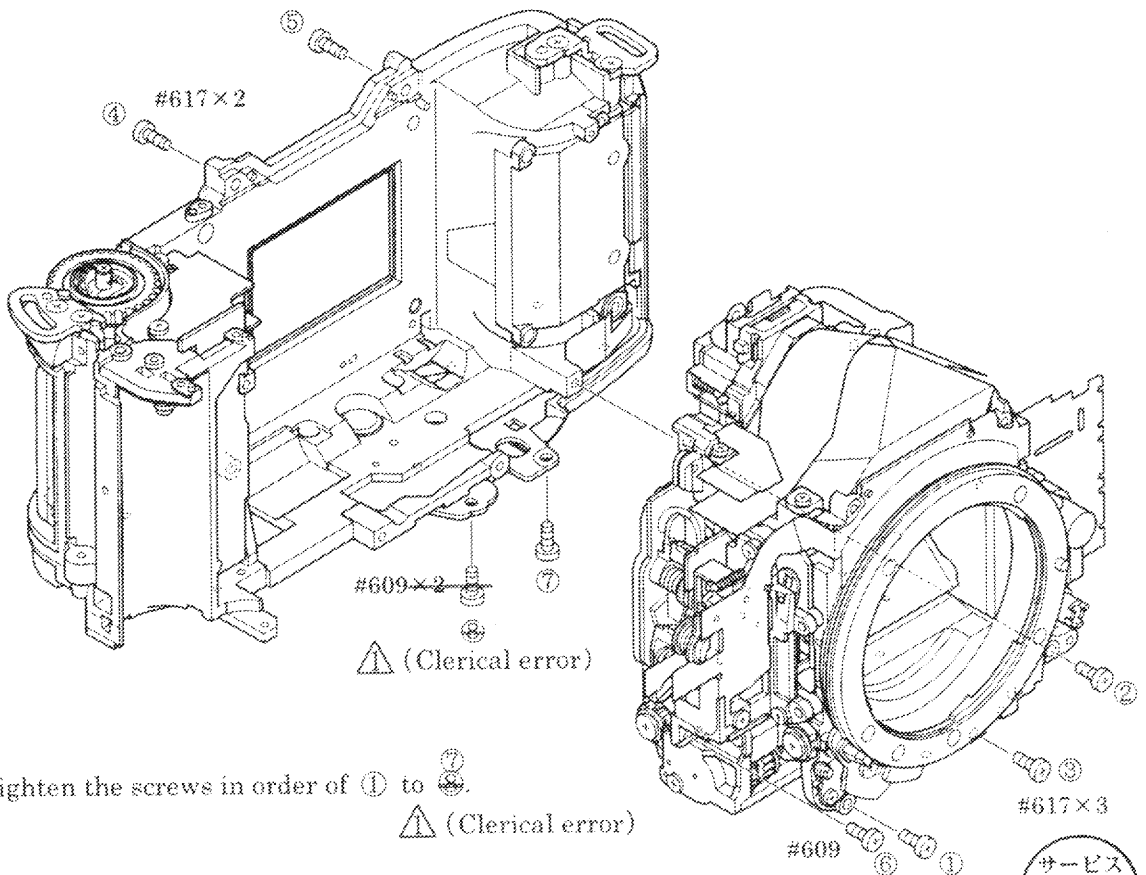


BACK DOOR OPEN/CLOSE AREA



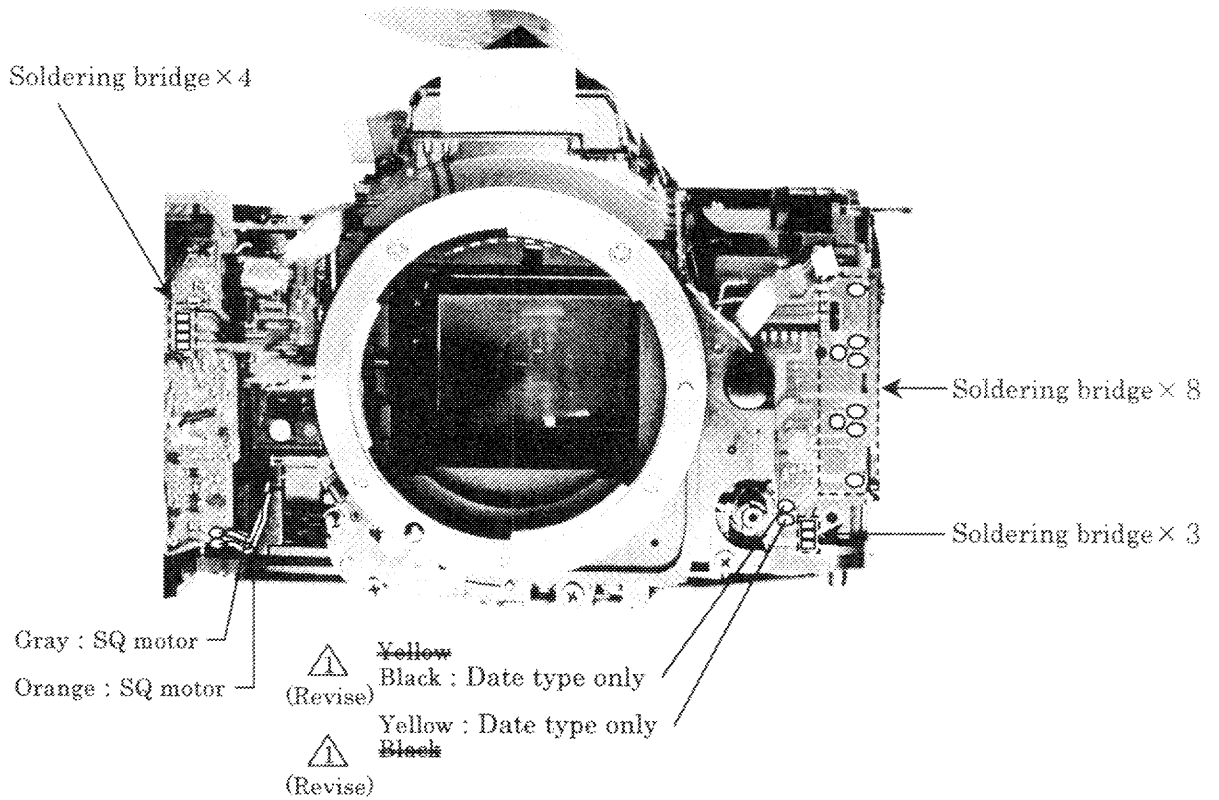
3. MOUNTING BOTH THE FRONT AND THE REAR BODIES

MOUNT THE FRONT BODY TO THE REAR BODY



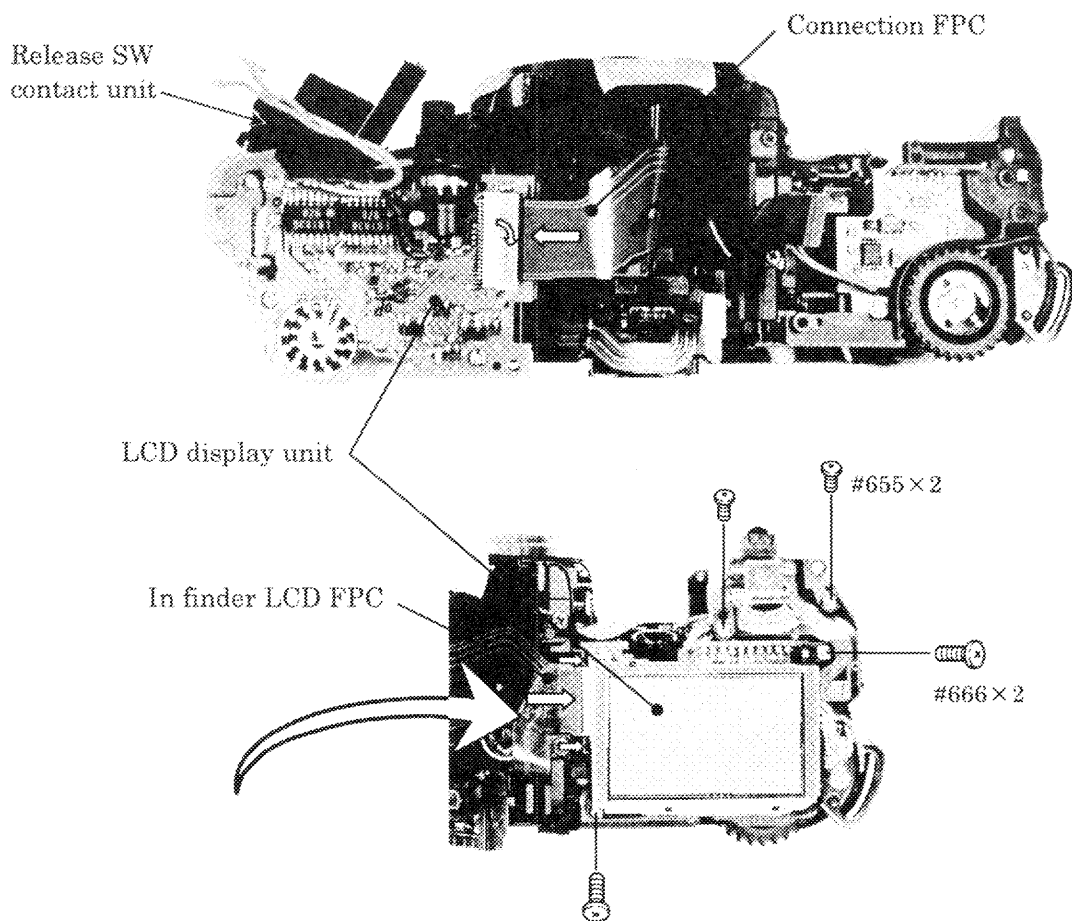
• Tighten the screws in order of ① to ⑦.

△ (Clerical error)

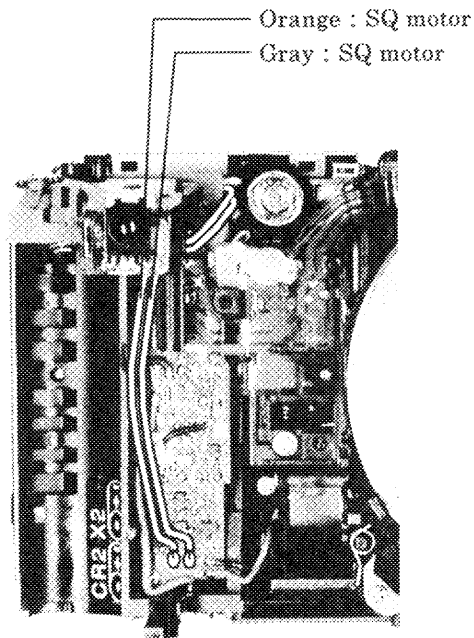
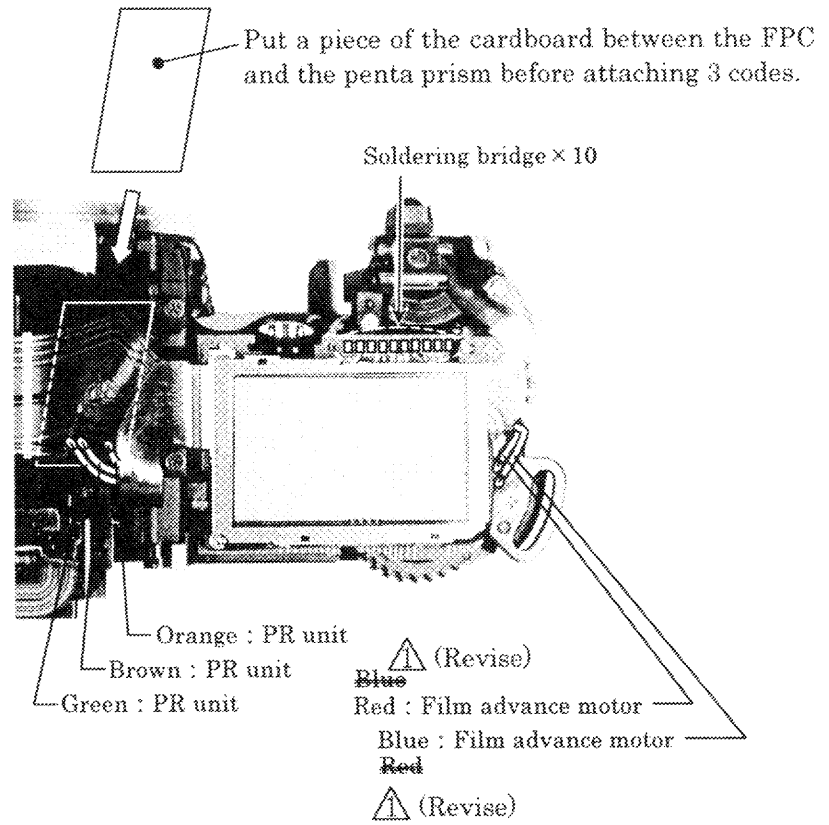


**LCD DISPLAY UNIT**

1. Connector, Mount of screw(s)

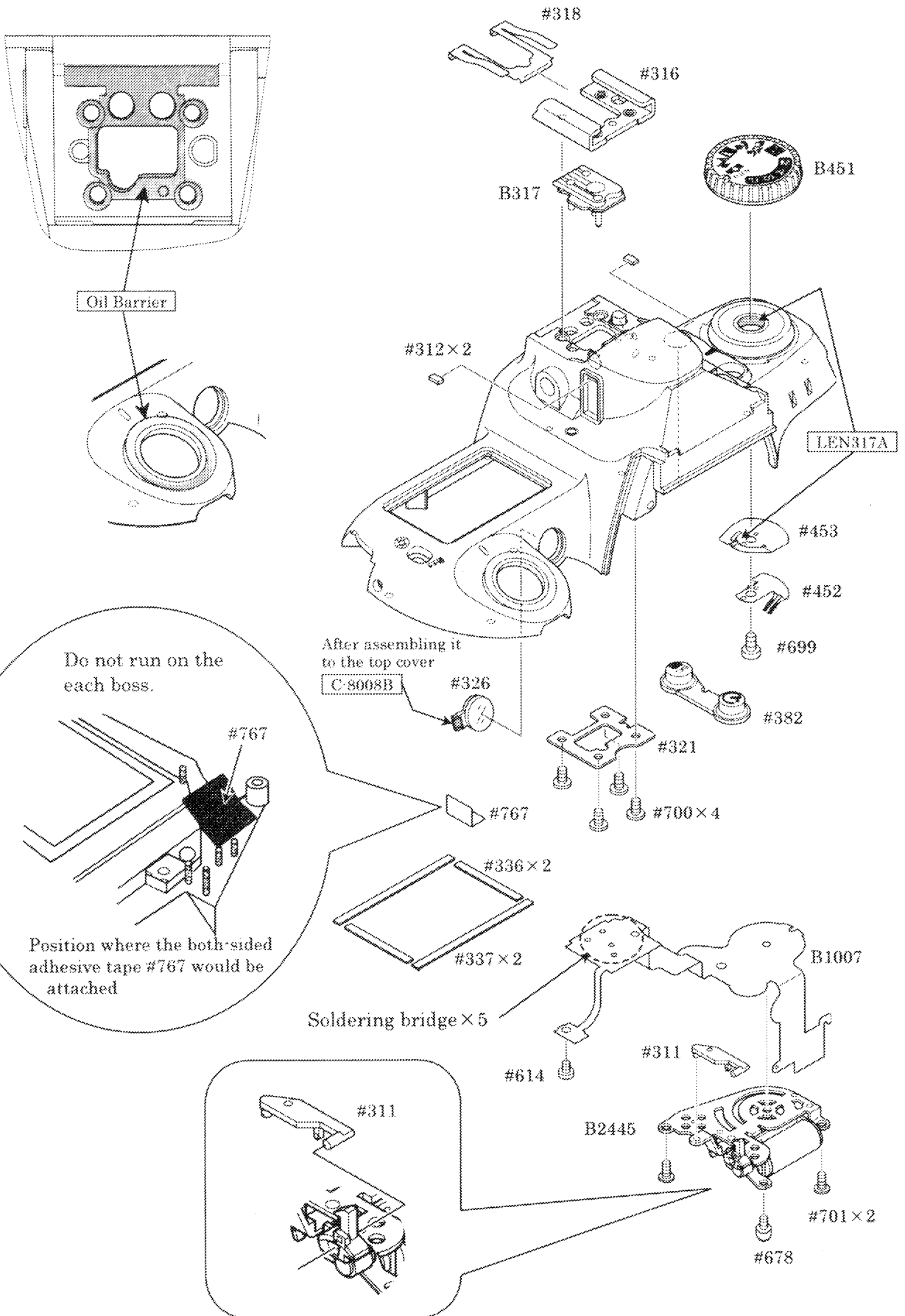


2. Connector, each wires

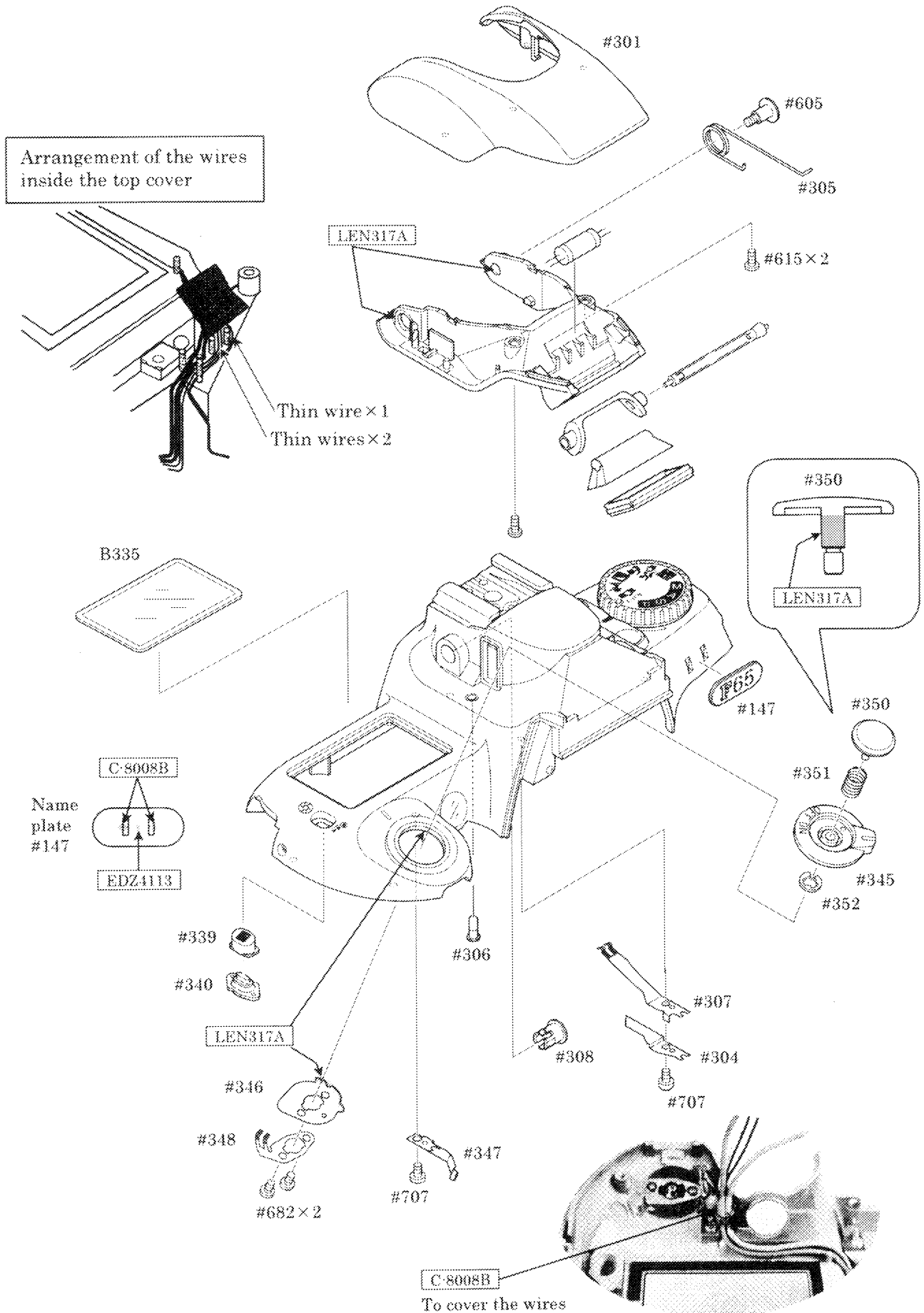


**TOP COVER**

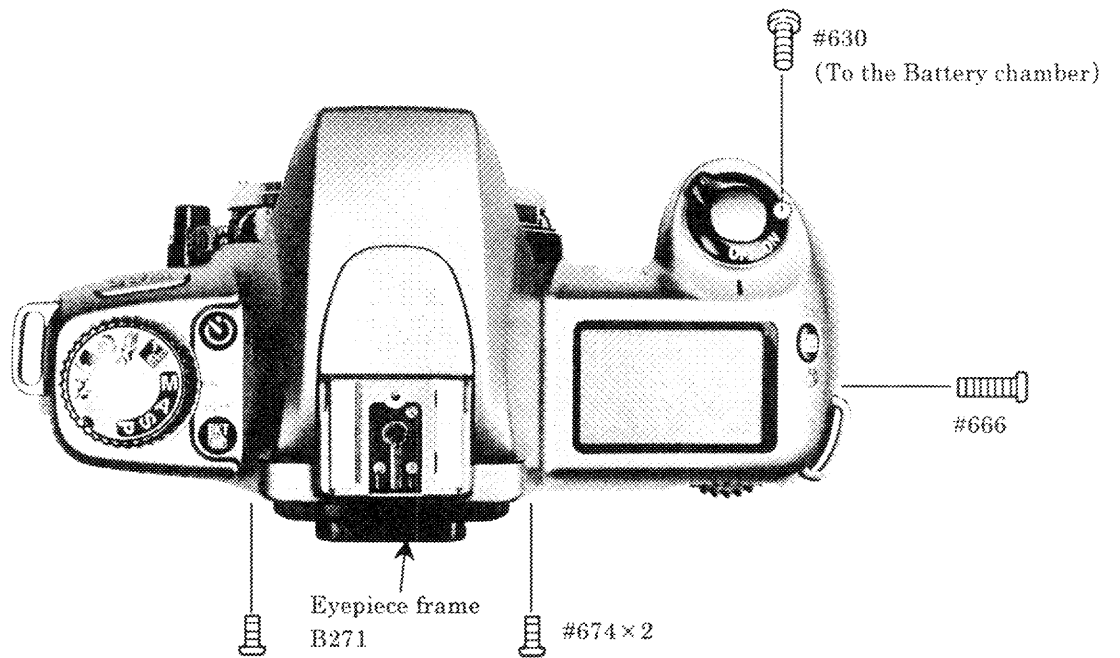
1. Accessory shoe, Mode dial unit



2. SB area, Small parts



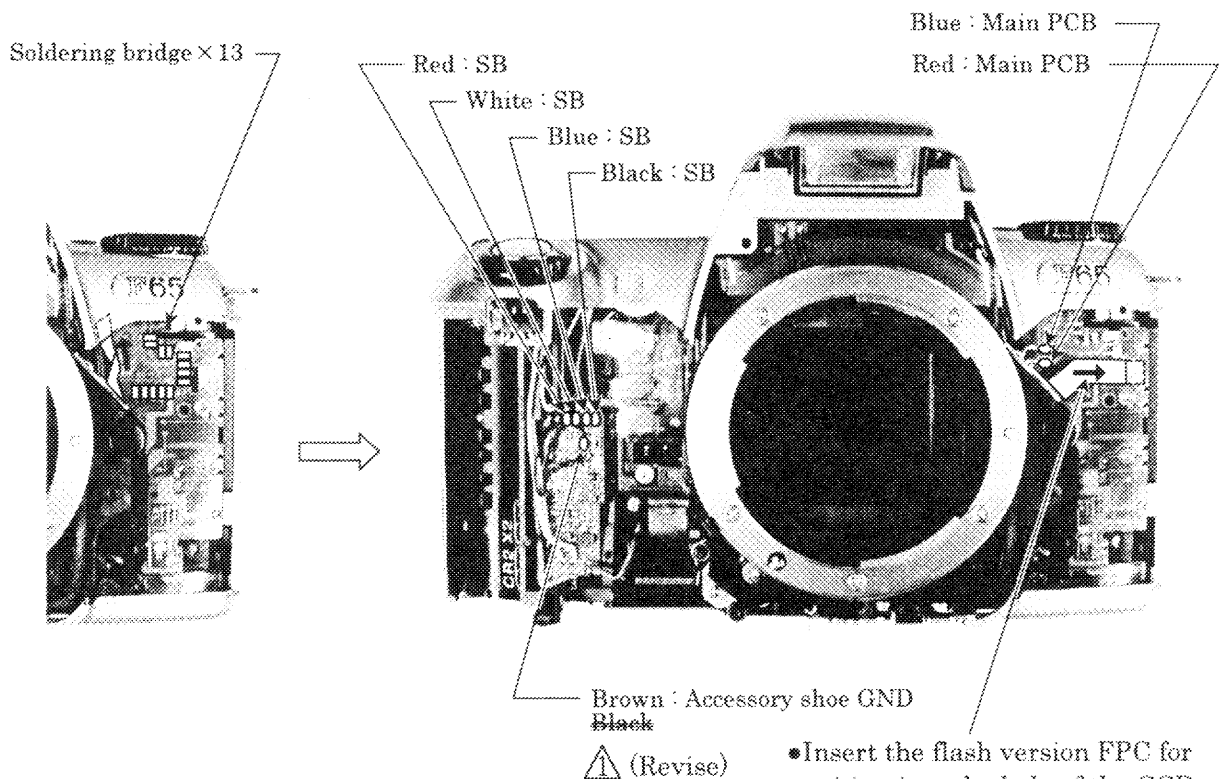
3. Mount the Top cover to the Body



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

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

4. Each wires. Soldering bridges

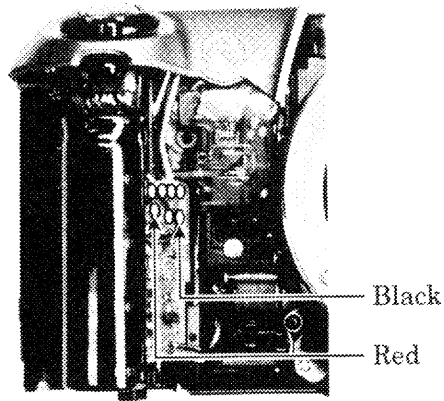


- Insert the flash version FPC for writing into the hole of the CCD FPC.

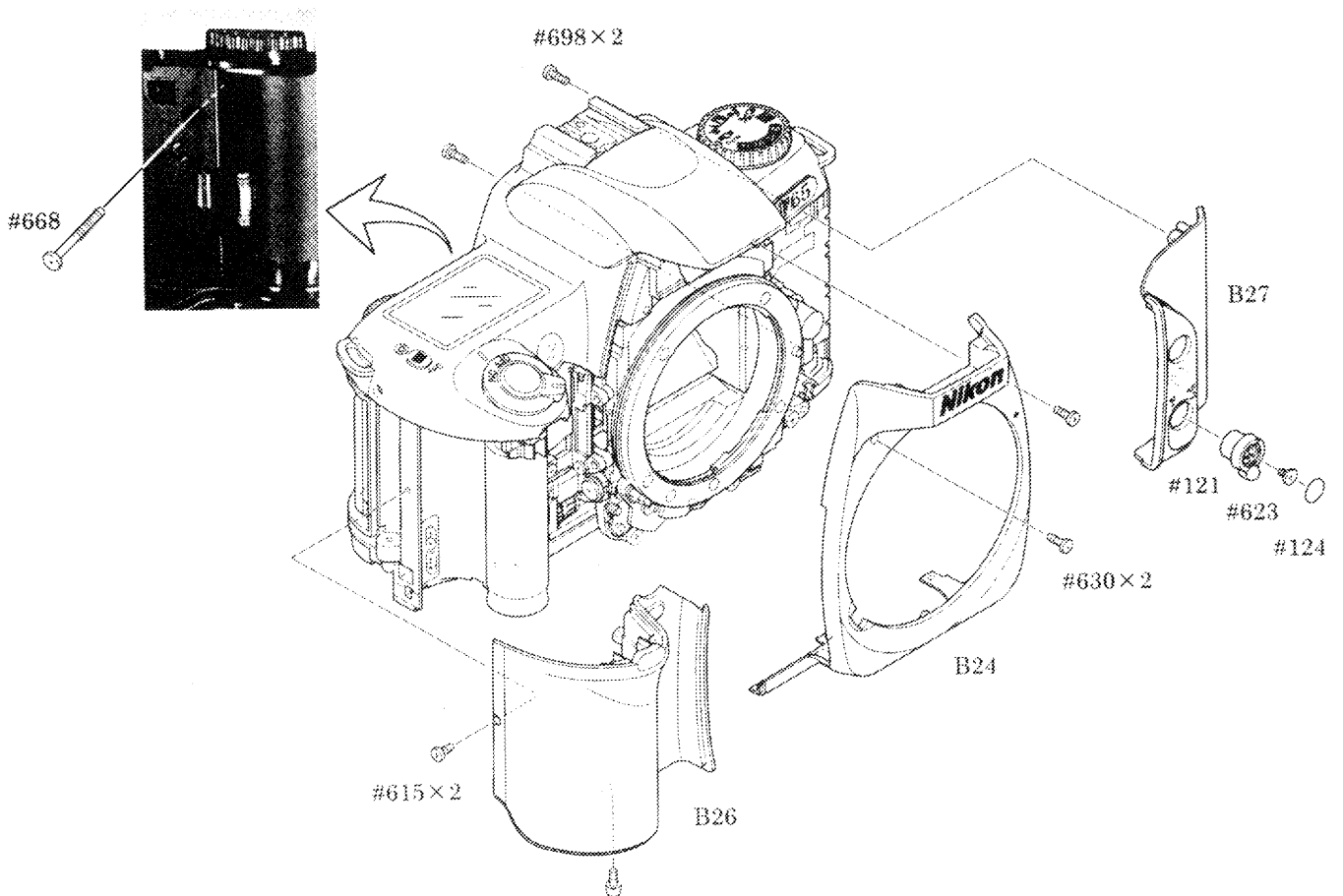


GRIP COVER, REWIND SIDE COVER, FRONT COVER

- Attachment of the main condenser

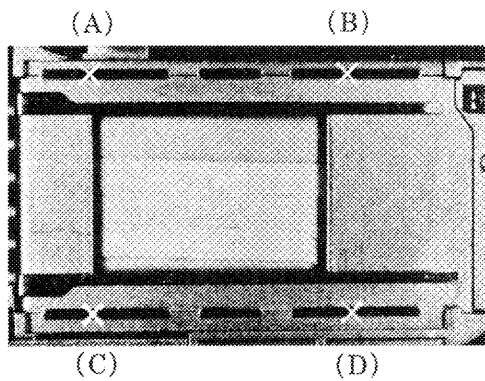


- In the last place, assemble the Front cover #24



**INSPECTION & ADJUSTMENT OF BODY BACK**

Notes) Take note (A) to (D) in order to use the difference from the standard 46.67mm at AF adjustment after inspection and adjustment.

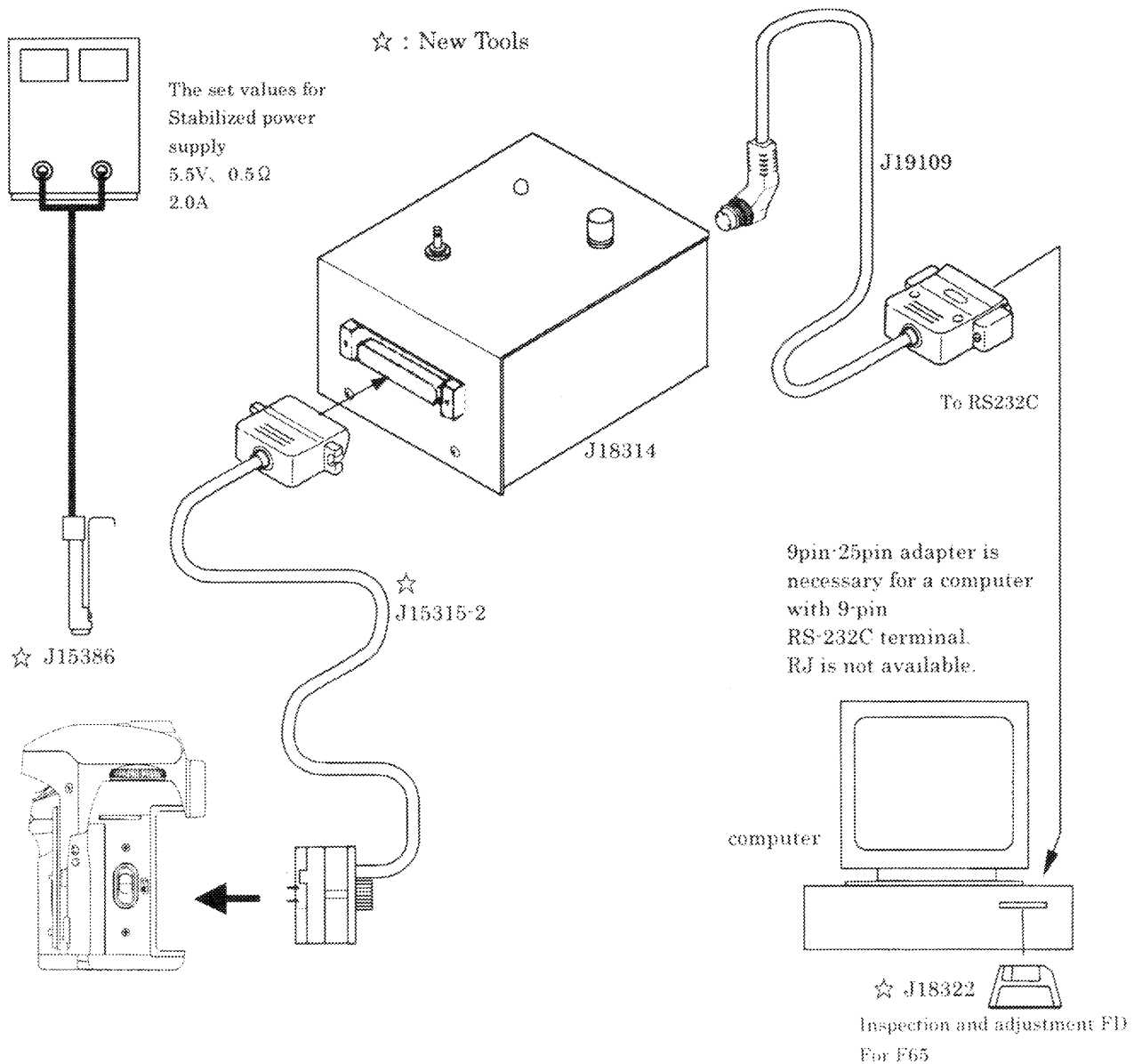


- Measure from the bayonet surface to the external rail. The X-marked positions are where to be measured.

Standard : 46.67<sup>+0.03</sup><sub>-0.09</sub> mm / Tolerance for flatness : within 0.06 mm

- If the measured value is out of the standard Value, unfasten bottom of screws #609 and #607 to move the front body back and forth. If it is within -0.05 mm, adjust it, placing the washer under the bayonet mount. If it is -0.06mm or more, adjust it placing the washer between the docking surface of front and rear bodies.

**ADJUSTMENT THROUGH PC**



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




- 1 . AE adjustment
- 2 . aperture adjustment
- 3 . M1/ 2000 adjustment
- 4 . TTL adjustment
- 5 . Battery check adjustment

NOTE : Be sure to utilize either "F90" or " N90" oriented camera's shutter curtain.

Confirmation of the Battery check display mode

After adjusting the battery check, input below-mentioned each voltage data to the camera and then check the external LCD mode.

Note : Conduct the inspection by switching each voltage in order of No.1 to 5.

External LCD mode	Set up voltage from the stabilized power supply	
	① 5.35V	⑤ 5.65±0.2V
	② 4.75±0.2V	④ 5.05±0.2V
	③ 4.45±0.2V	

**AF ADJUSTMENT**

Notes) When using this adjustment software for the first time, prepare 5 units of F65 and measure them at the Adjustment for AF. Then, input the average value of the measured 5 units at "WRITING OF AF ADJ. LENS OFFSET VALUE " in the main menu.

[Inspection and adjustment items]

- ① Inspection and adjustment for the AF accuracy ( whole item shall be adjusted)
- ② YAW. PITCH
- ③ LARK adjustment ( include CCD output )
- ④ MBF adjustment

[Tools in use]

- 1 . For adjustment of whole item:

The tool(s) used for the AE-oriented adjustment shall be utilized.

- 2 . For check of the AF accuracy

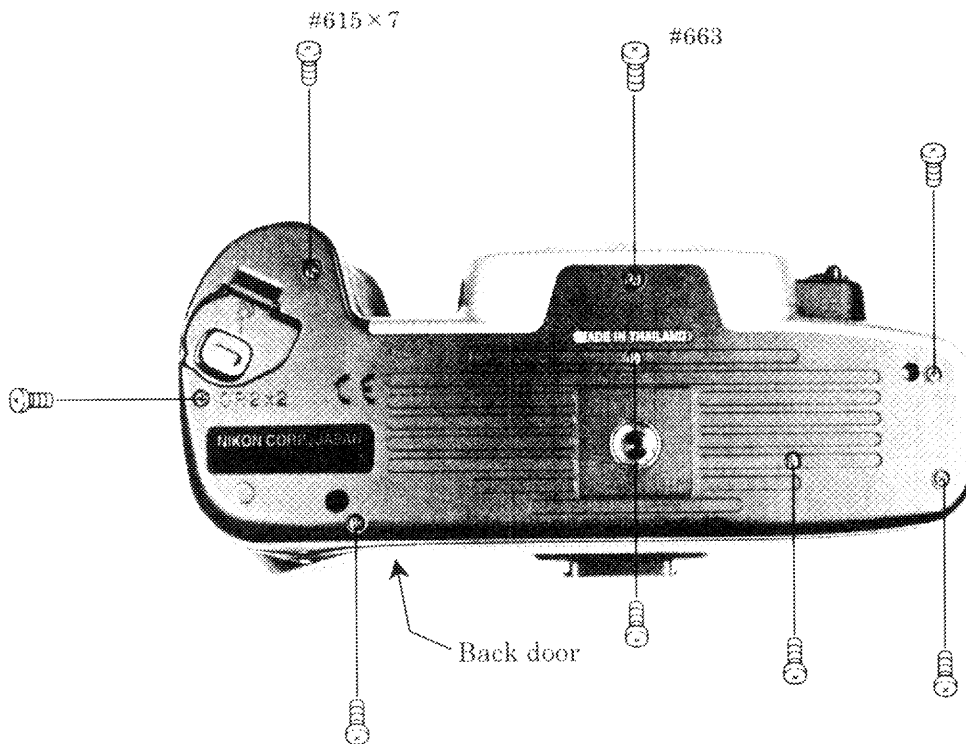
- ① Z adjustment lens (J18266) for F 5、 F 1 0 0、 F 8 0

- ② AF adjustment stand (J15259)
  - ③ Z lens holder (J15280) or position conversion adapter (J15271) for tripod socket
  - ④ AF chart (J18237) for F 5、F 1 0 0、F 8 0
  - ⑤ Lighting box (J15264) for high frequency
3. For adjustment of YAW, and PITCH
- ① The whole tool used for the check of AF accuracy just as mentioned above
  - ② Adjustment tool for YAW, and PITCH (J18230)
4. For adjustment of LARK (include CCD output adjustment)
- The whole tool used for the check of AF accuracy just as mentioned above
- AF50/1.4D lens

**BACK DOOR, BOTTOM COVER**

- ① Insert the back door from the bottom and attach it by the shaft × 1
- ② Attach the bottom cover and fix it by the screw × 8

Notes) Never use the solvent when cleaning the pressure plate, but use the A-level dust cleaning cloth or Savina Minimax and wipe it softly because the pressure plate of this camera is coated with the special paint.

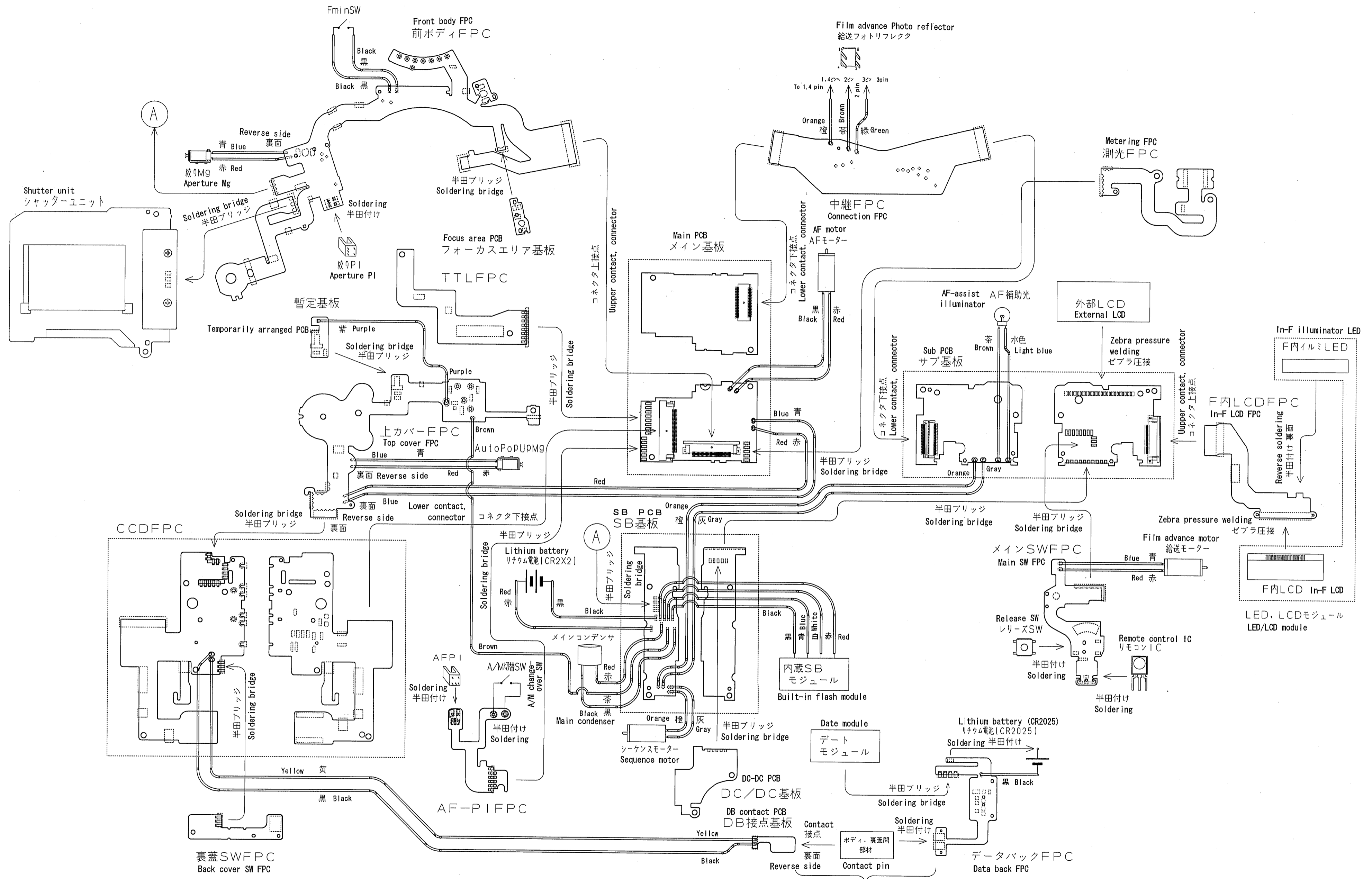


# 電気編目次

実体配線図 .....	E 1
回路図 .....	E 2
メイン基板 .....	E 3 ~ E 6
サブ基板 .....	E 7 ~ E 1 0
接続FPC .....	E 1 1
CCDFPC .....	E 1 2 ~ E 1 3
TTLFPC .....	E 1 4 ~ E 1 5
上カバー .....	E 1 6 ~ E 1 8
測光FPC .....	E 1 9 ~ E 2 0
前ボディFPC .....	E 2 1 ~ E 2 2
メインSW FPC .....	E 2 3
DB FPC .....	E 2 4 ~ E 2 5
ホットシュー暫定FPC .....	E 2 6
DC-DCコンバータ .....	E 2 7
EEPROMデータ表 .....	E 2 8 ~ E 4 2

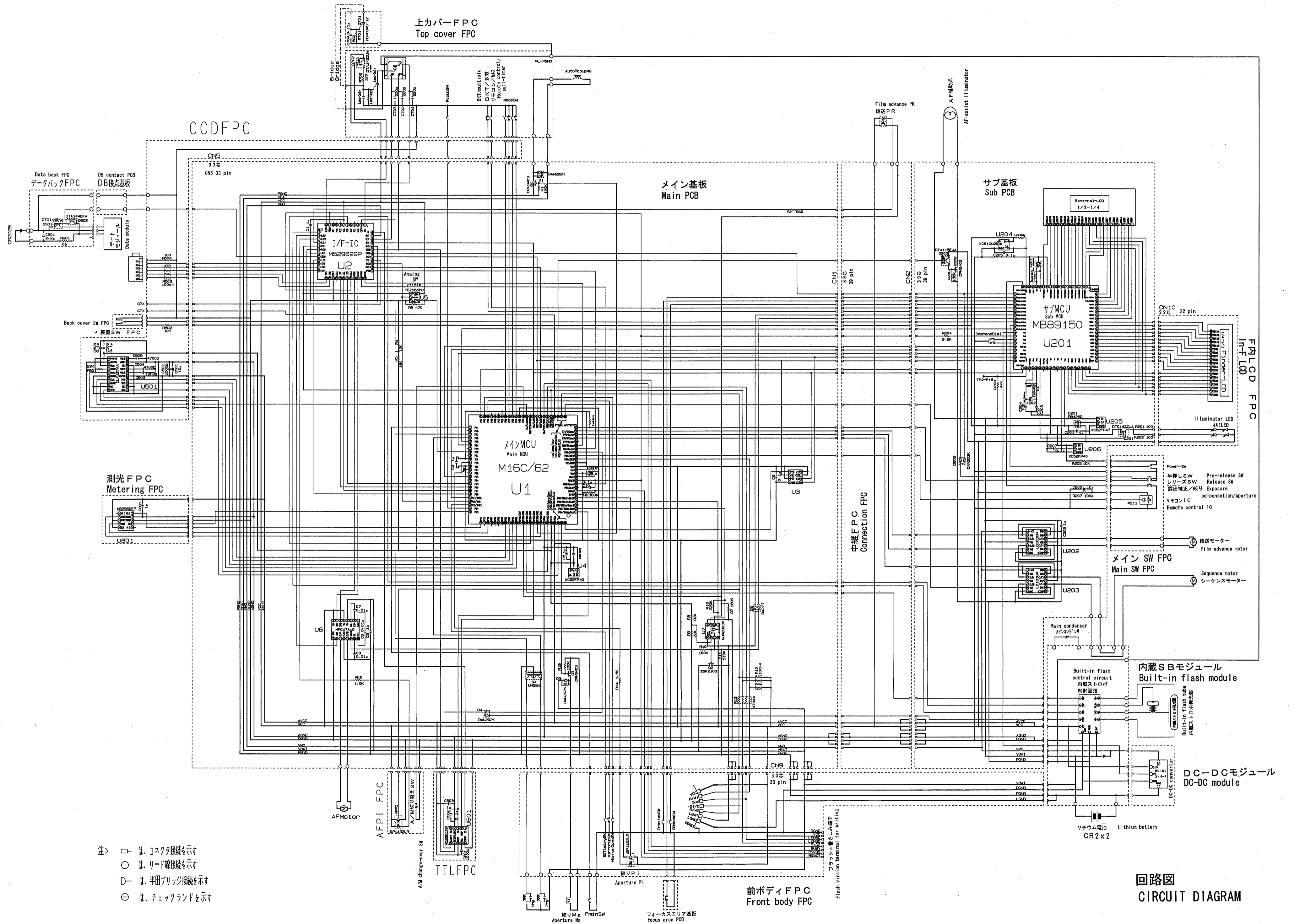
## ELECTRIC CIRCUIT

WIRING .....	E 1
CIRCUIT DIAGRAM .....	E 2
MAIN PCB .....	E 3 ~ E 6
SUB PCB .....	E 7 ~ E 1 0
CONNECTED FPC .....	E 1 1
CCD FPC .....	E 1 2 ~ E 1 3
TTL FPC .....	E 1 4 ~ E 1 5
TOP COVER FPC .....	E 1 6 ~ E 1 8
METERING FPC .....	E 1 9 ~ E 2 0
FRONT BODY FPC .....	E 2 1 ~ E 2 2
MAIN SW FPC .....	E 2 3
DB FPC .....	E 2 4 ~ E 2 5
HOT SHOE TEMPORARY FPC .....	E 2 6
DC-DC CONVERTER .....	E 2 7
EEPROM DATA .....	E 2 8 ~ E 4 2



部品を介し接続  
Connected with contact pin

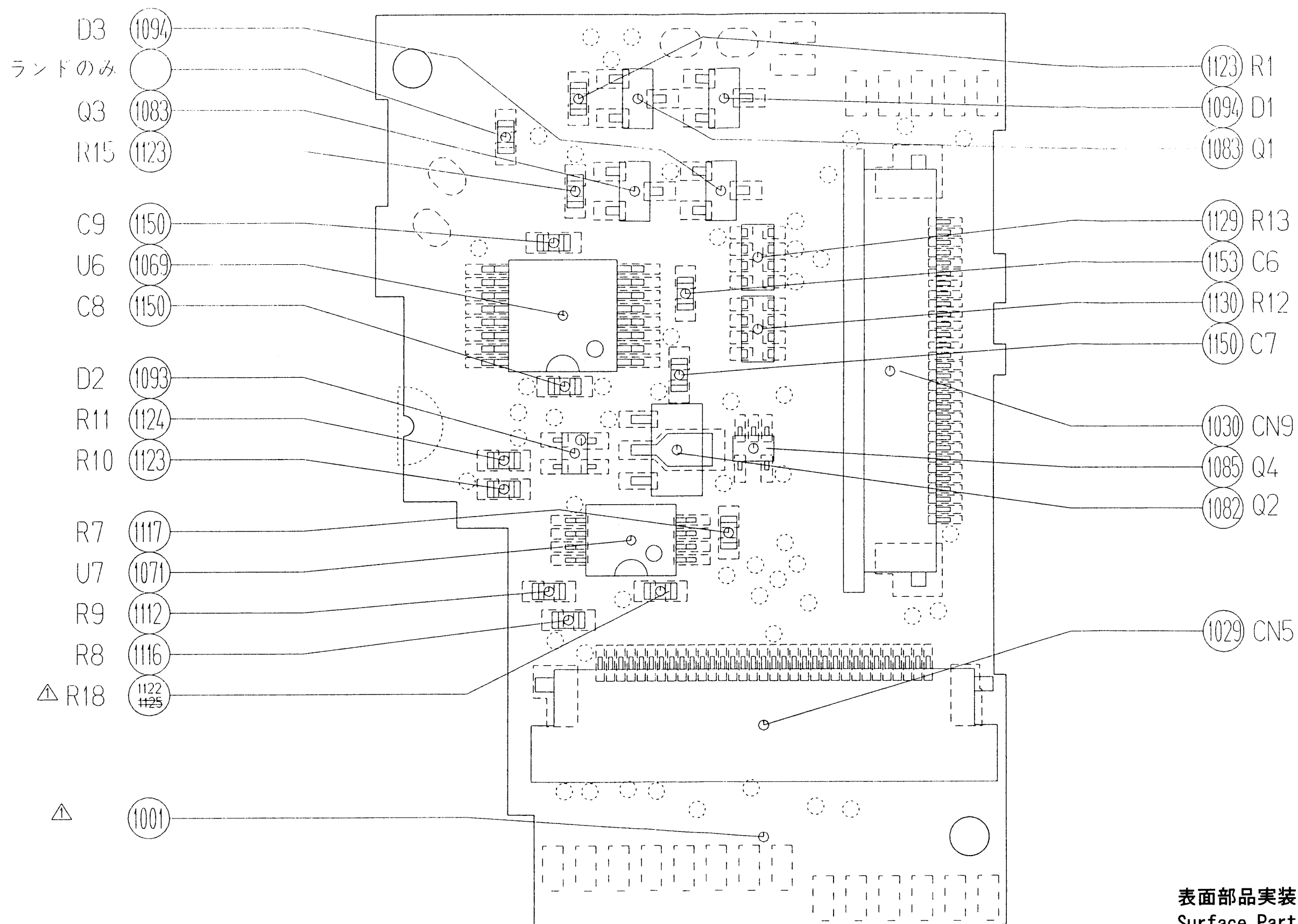
実体配線図  
WIRING



注> □ は、コネクタ接続を示す  
 ○ は、リード線接続を示す  
 D— は、半田ブリッジ接続を示す  
 ⊖ は、チェックランドを示す

回路図  
 CIRCUIT DIAGRAM

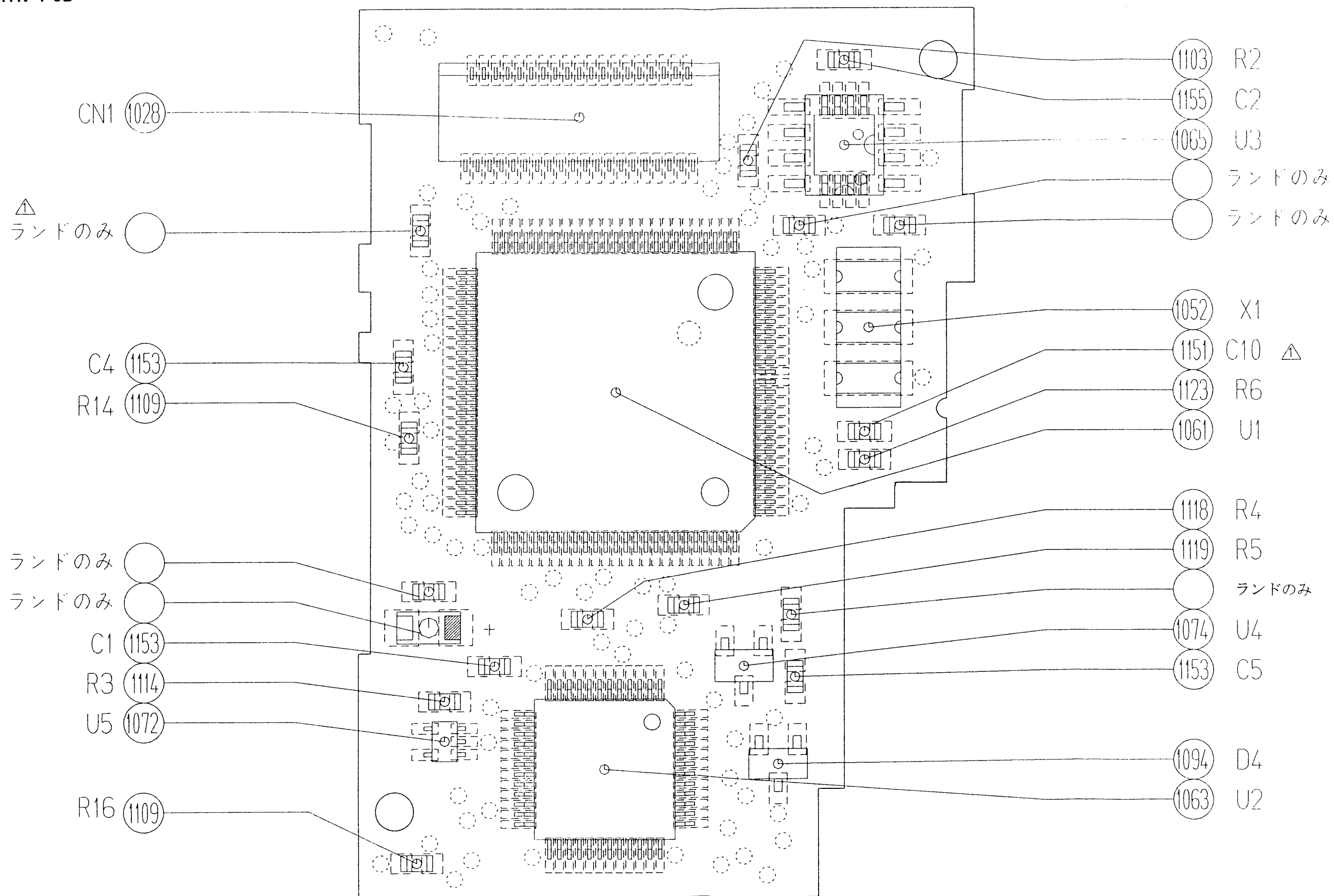
メイン基板  
MAIN PCB



表面部品実装図  
Surface Part mount figure

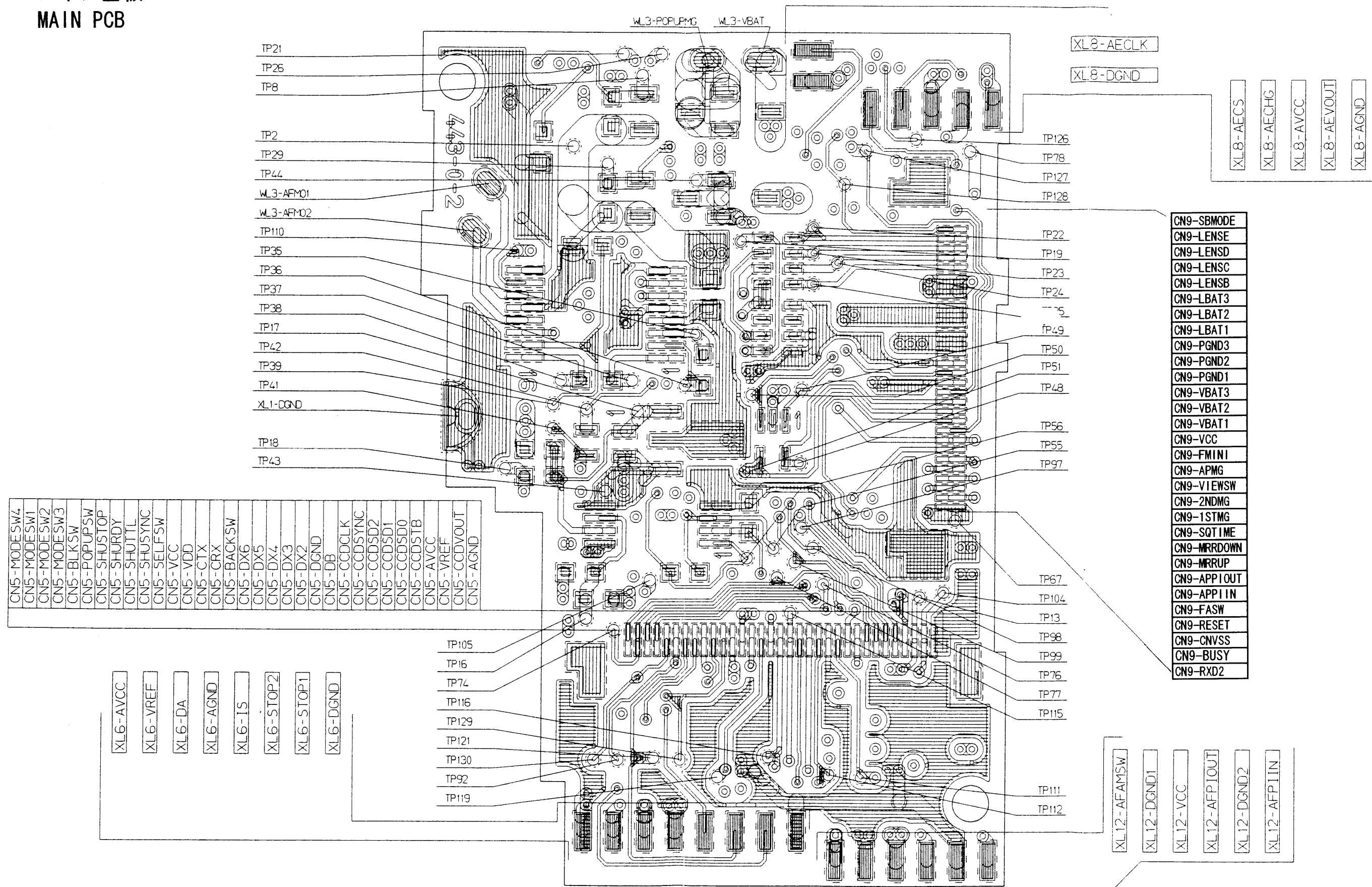


メイン基板  
MAIN PCB



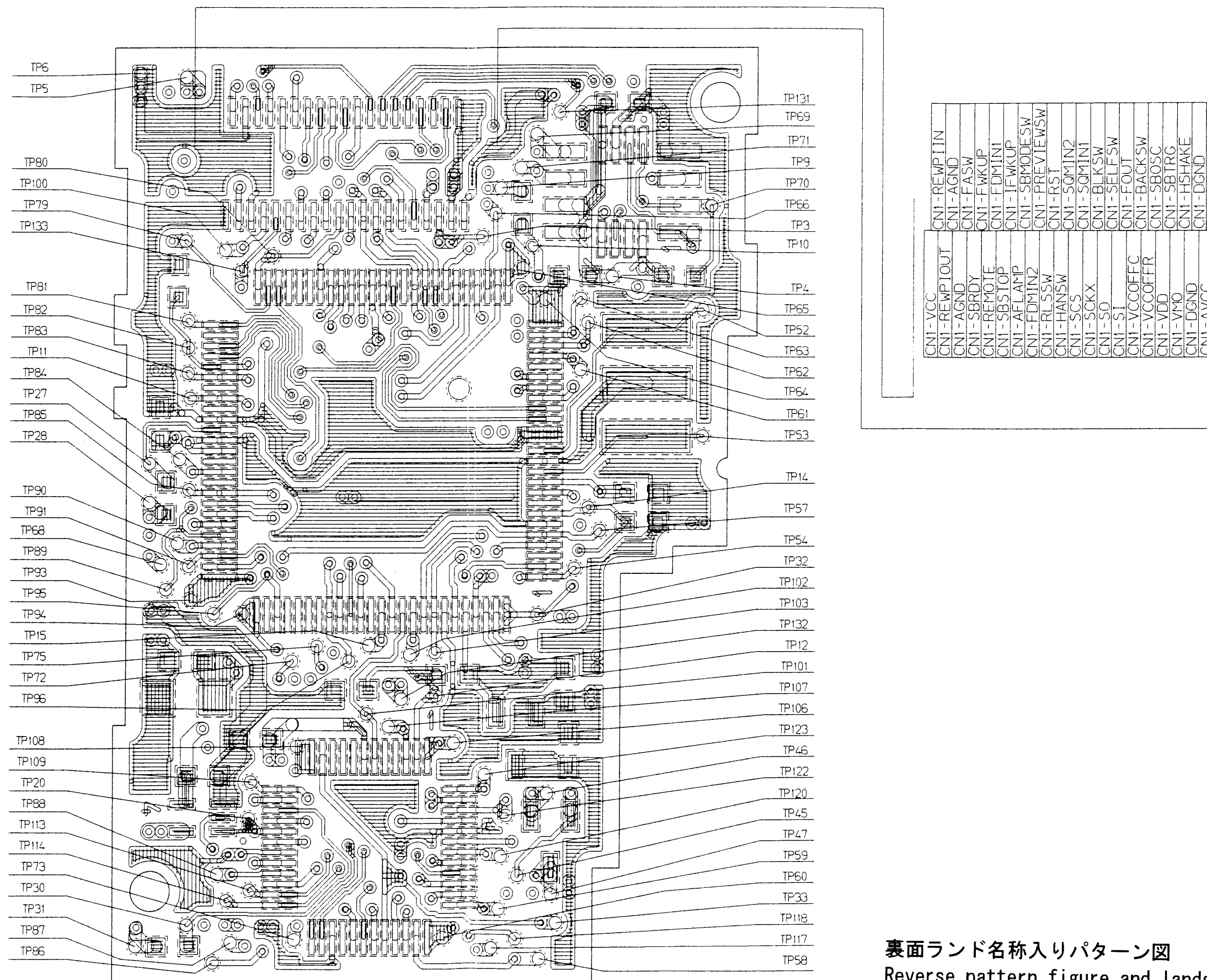
裏面部品実装図  
Reverse Parts mount figure

メイン基板  
MAIN PCB



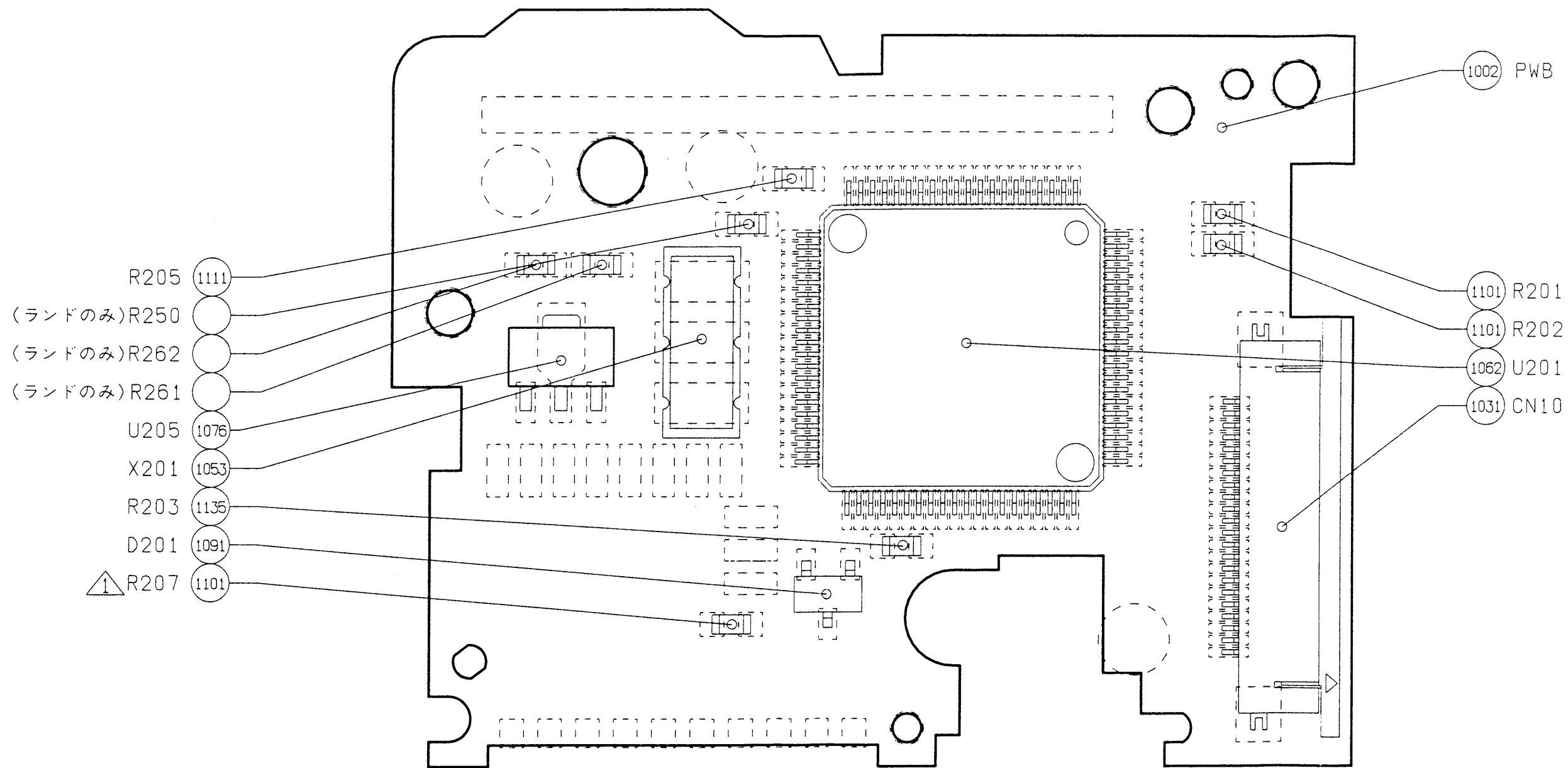
表面ランド名称入りパターン図  
Surface pattern figure and lands name

メイン基板  
MAIN PCB



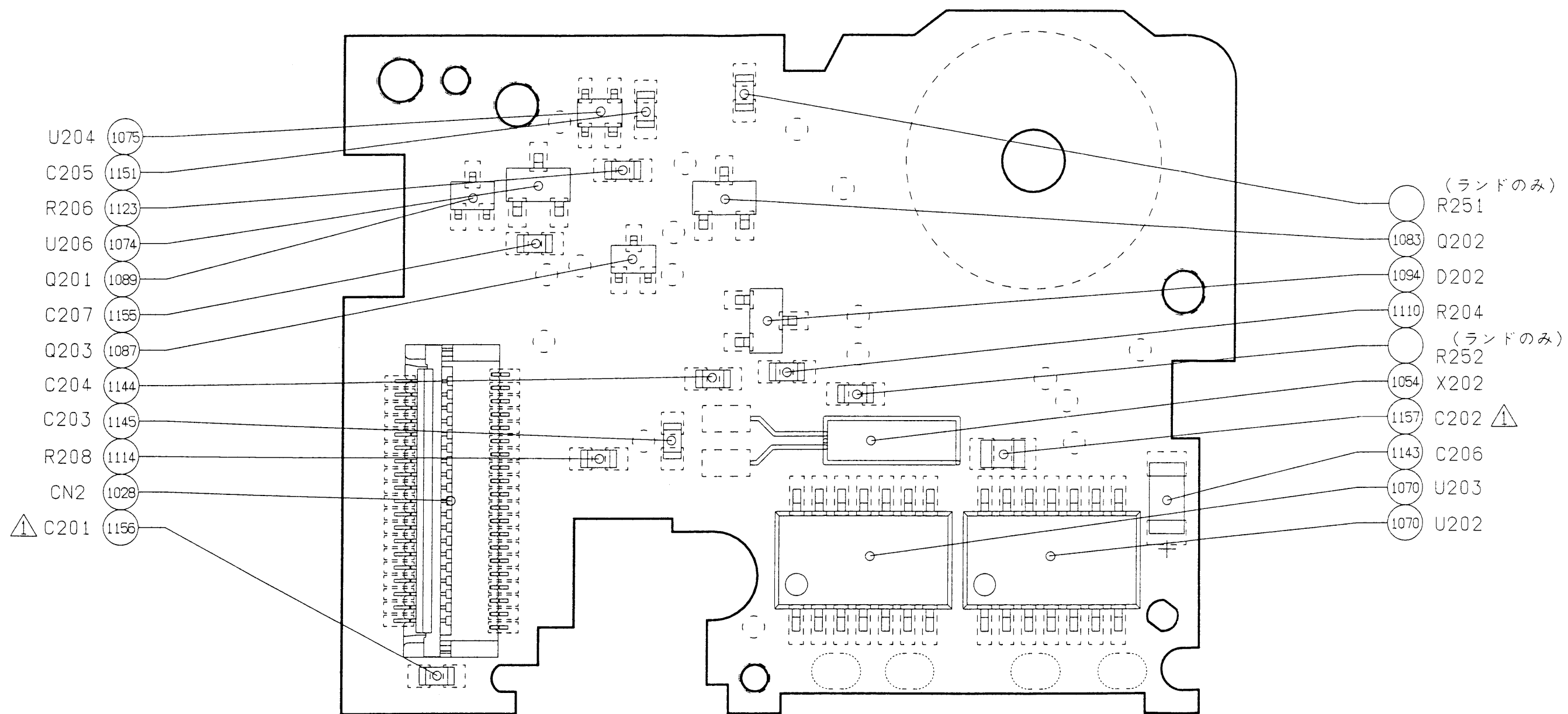
裏面ランド名称入りパターン図  
Reverse pattern figure and lands name

サブ基板  
SUB PCB



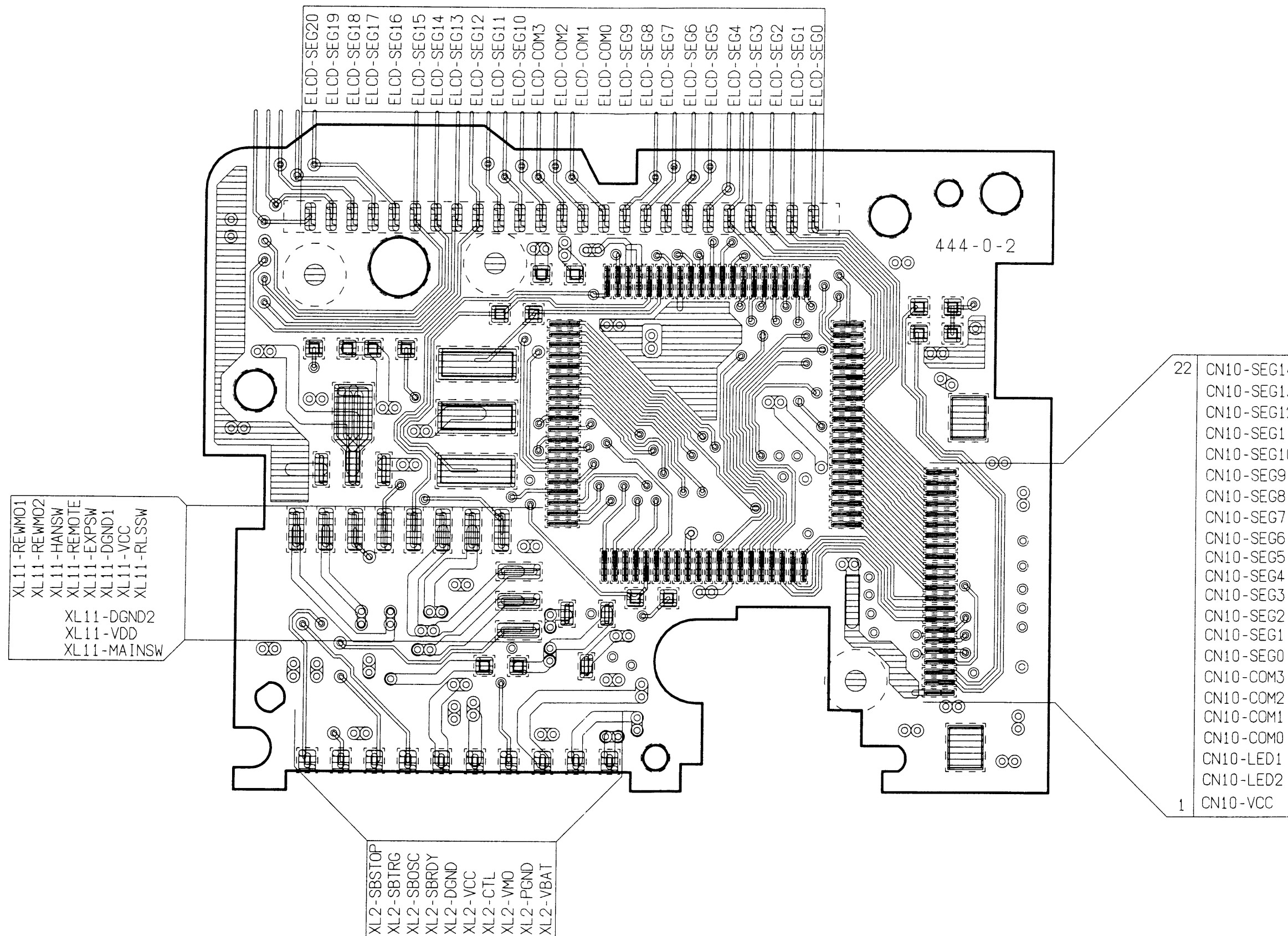
表面部品実装図  
Surface Part mount figure

サブ基板  
SUB PCB



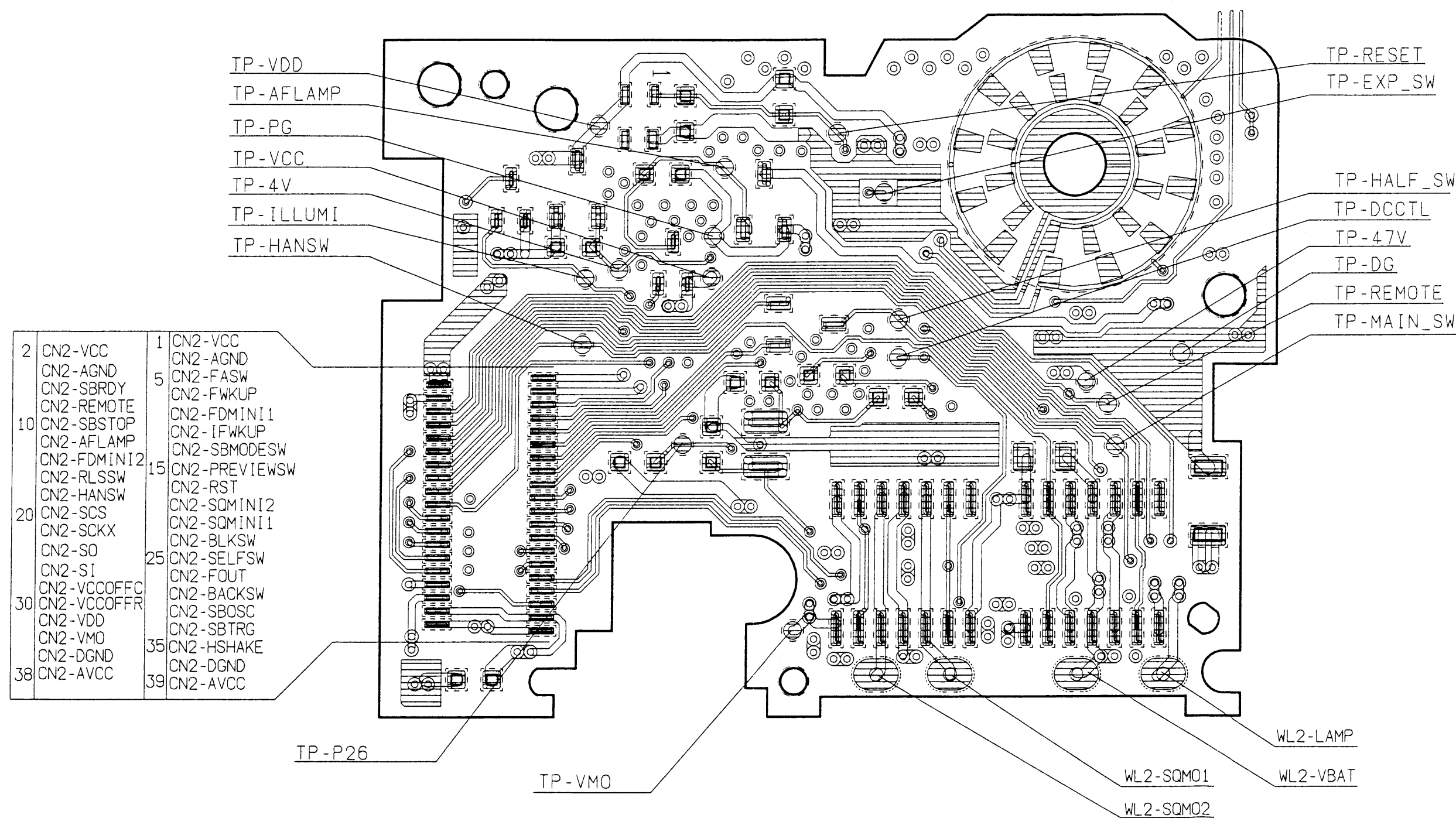
裏面部品実装図  
Reverse Parts mount figure

サブ基板  
SUB PSB



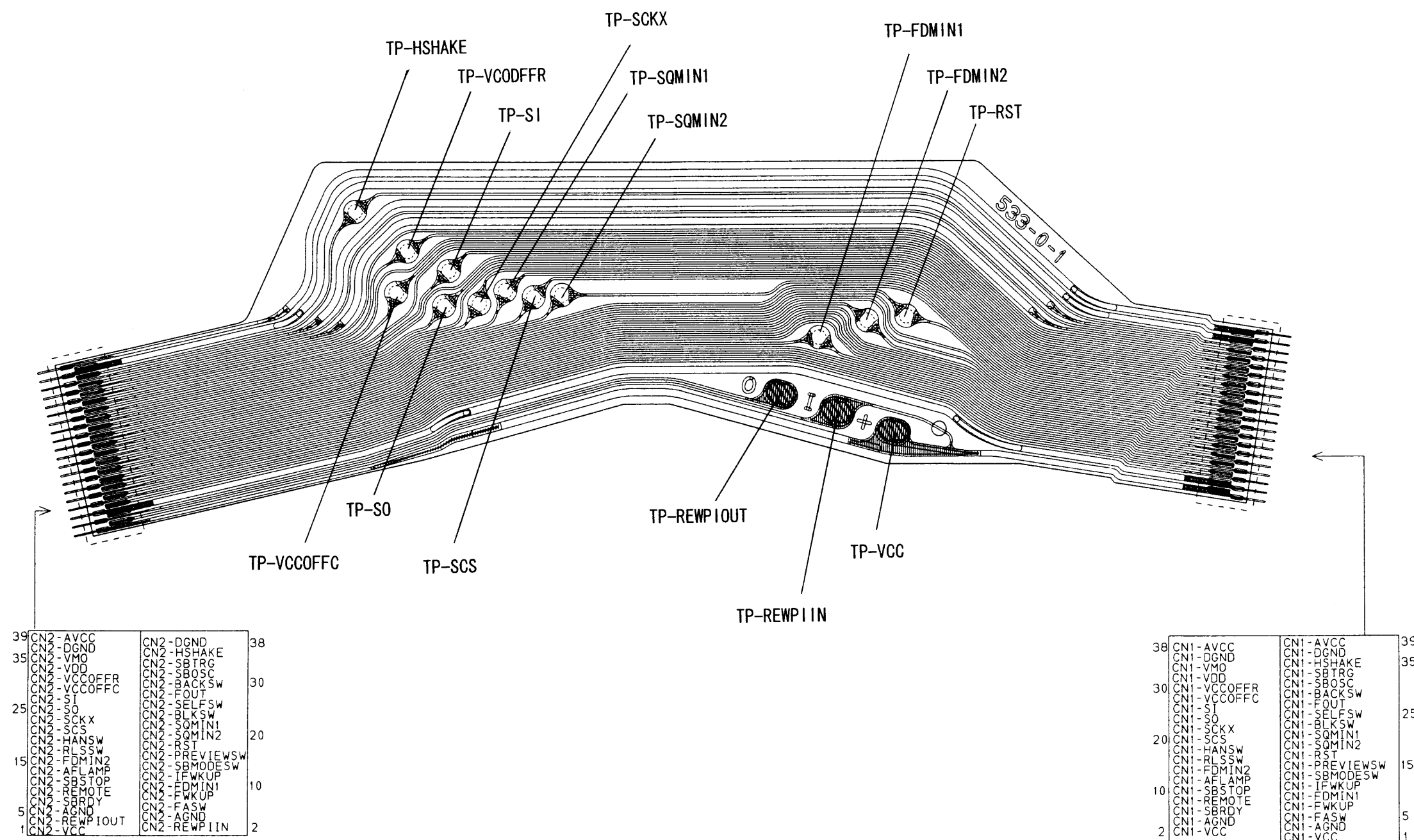
表面ランド名称入りパターン図  
Surface pattern figure and lands name

サブ基板  
SUB PCB



裏面ランド名称入りパターン図  
Reverse pattern figure and lands name

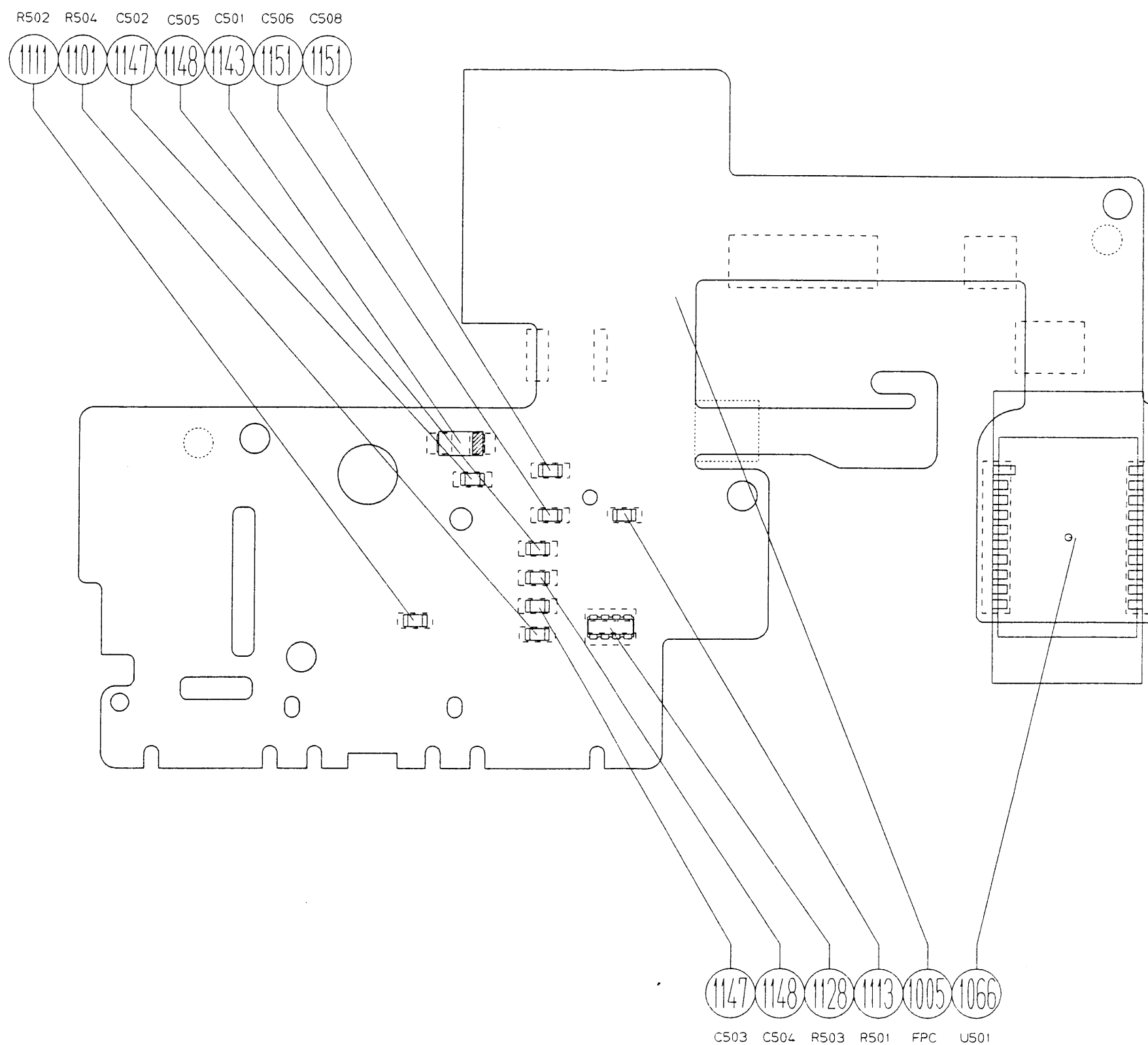
接続 F P C  
CONNECTED FPC



表面ランド名称入りパターン図  
Surface pattern figure and lands name

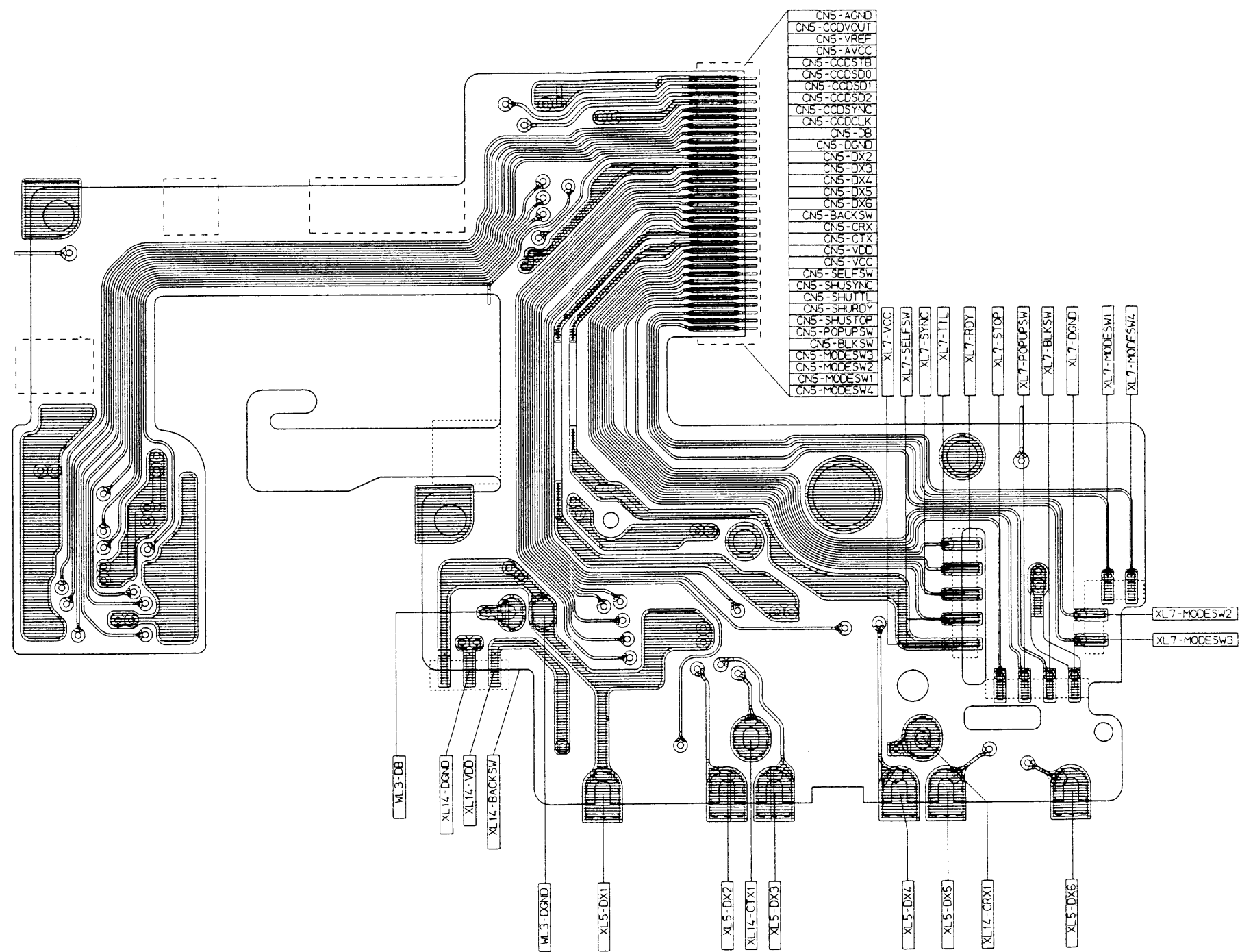


# CCD FPC



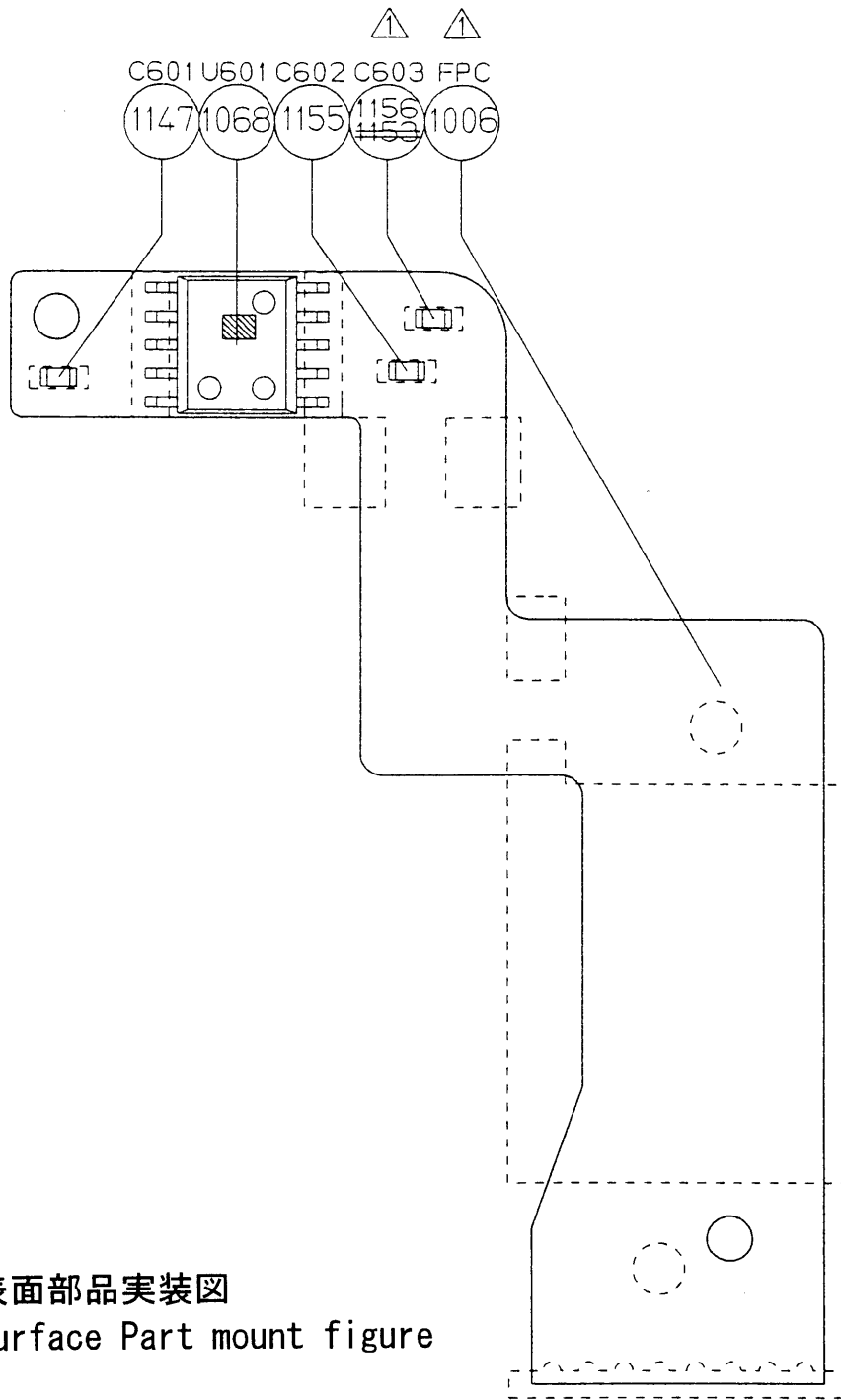
表面部品実装図  
Surface Part mount figure

CCD FPC



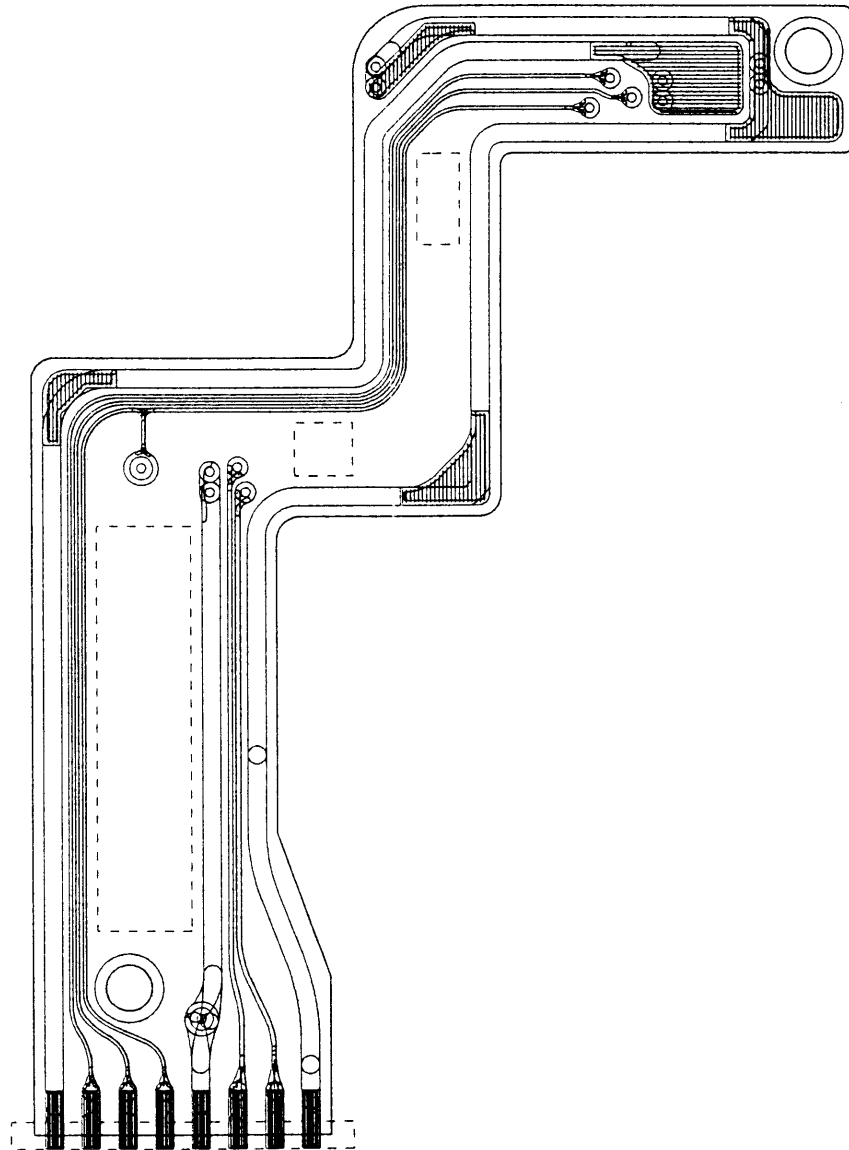
裏面ランド名称入りパターン図  
Reverse pattern figure and lands name

# T T L F P C



表面部品実装図  
Surface Part mount figure

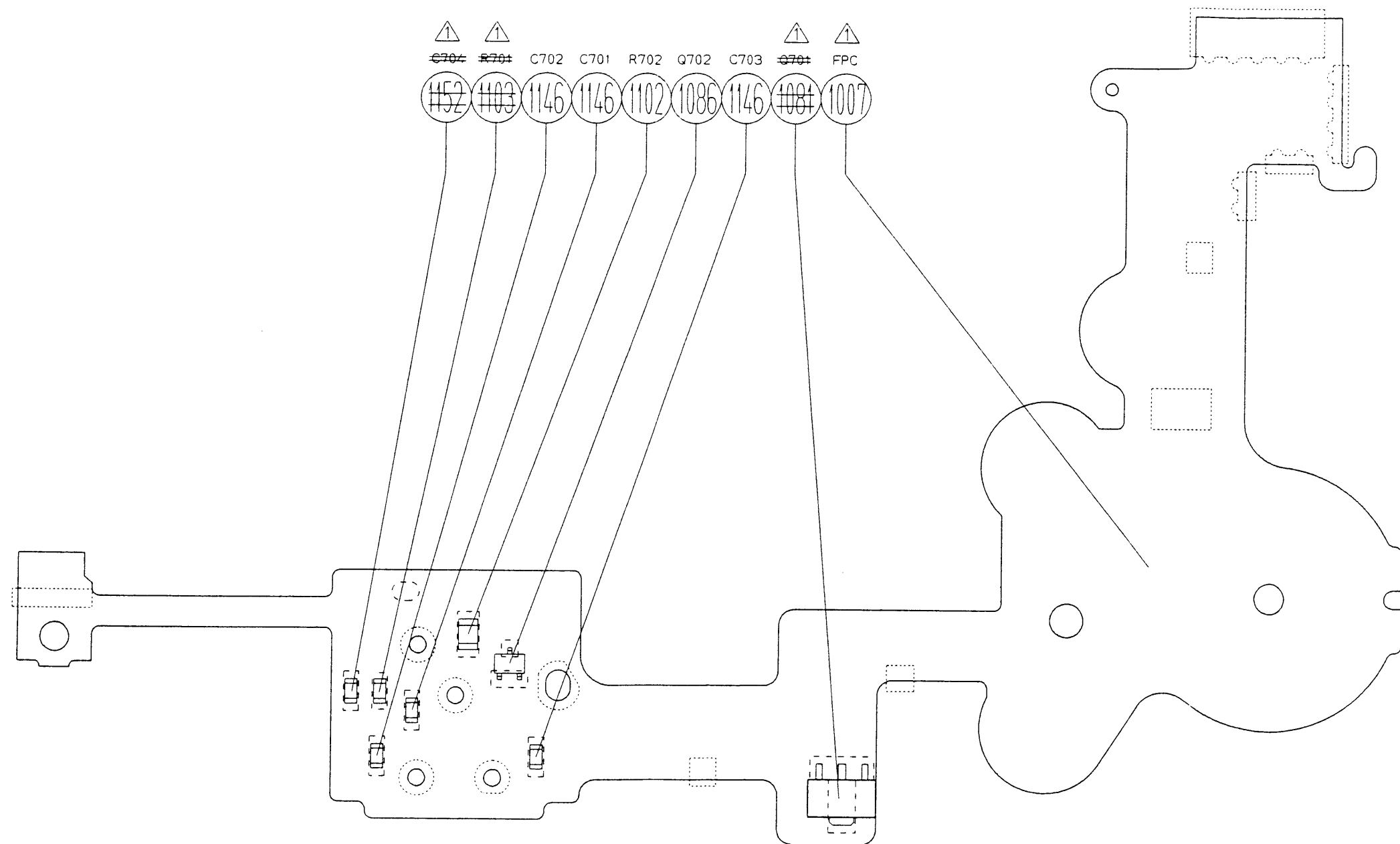
T T L F P C



- CN6-AVCC
- CN6-VREF
- CN6-DA
- CN6-ASND
- CN6-LS
- CN6-STOP2
- CN6-STOP1
- CN6-DSND

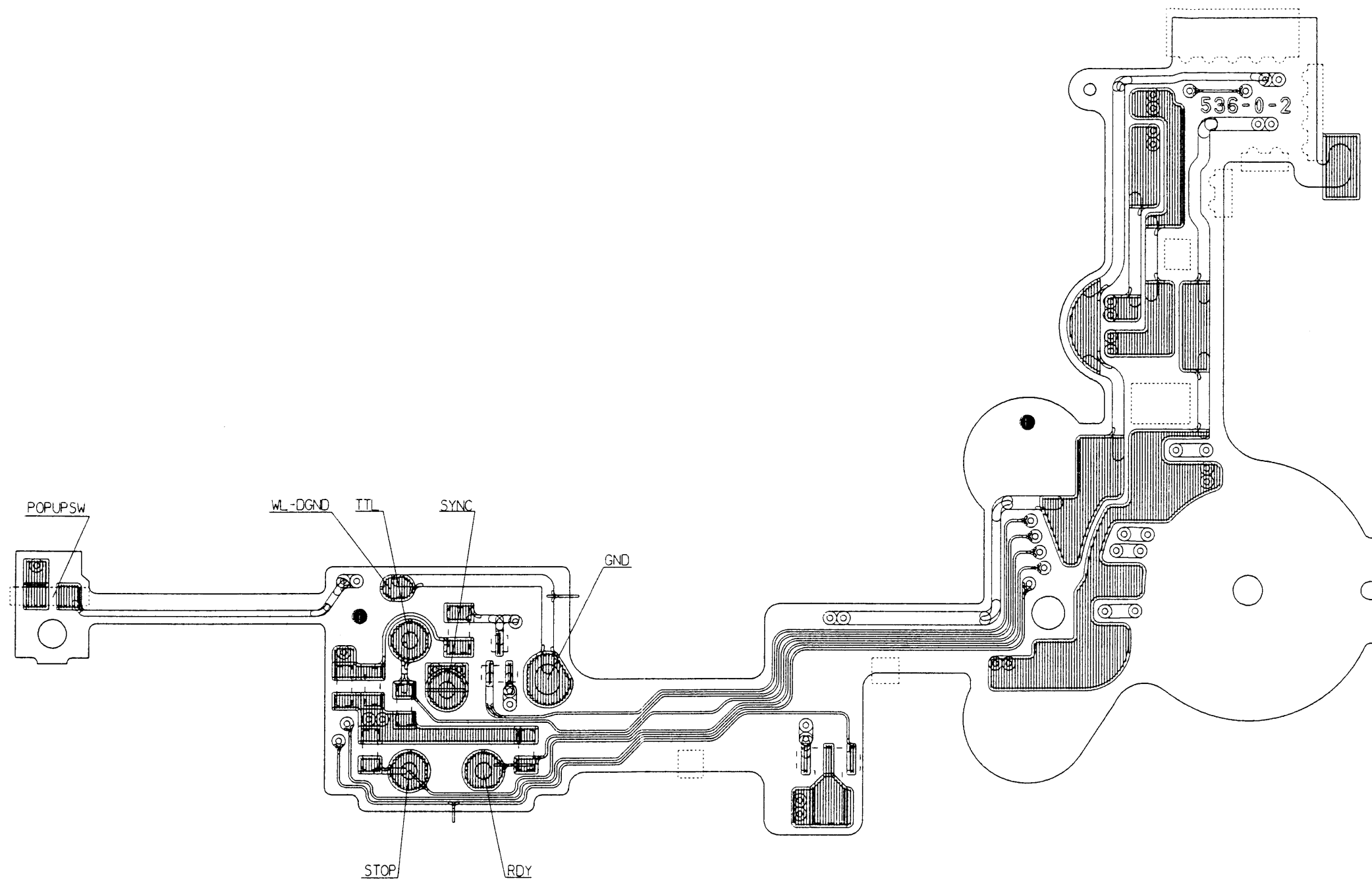
裏面ランド名称入りパターン図  
Reverse pattern figure and lands name

上カバーFPC  
TOP COVER FPC



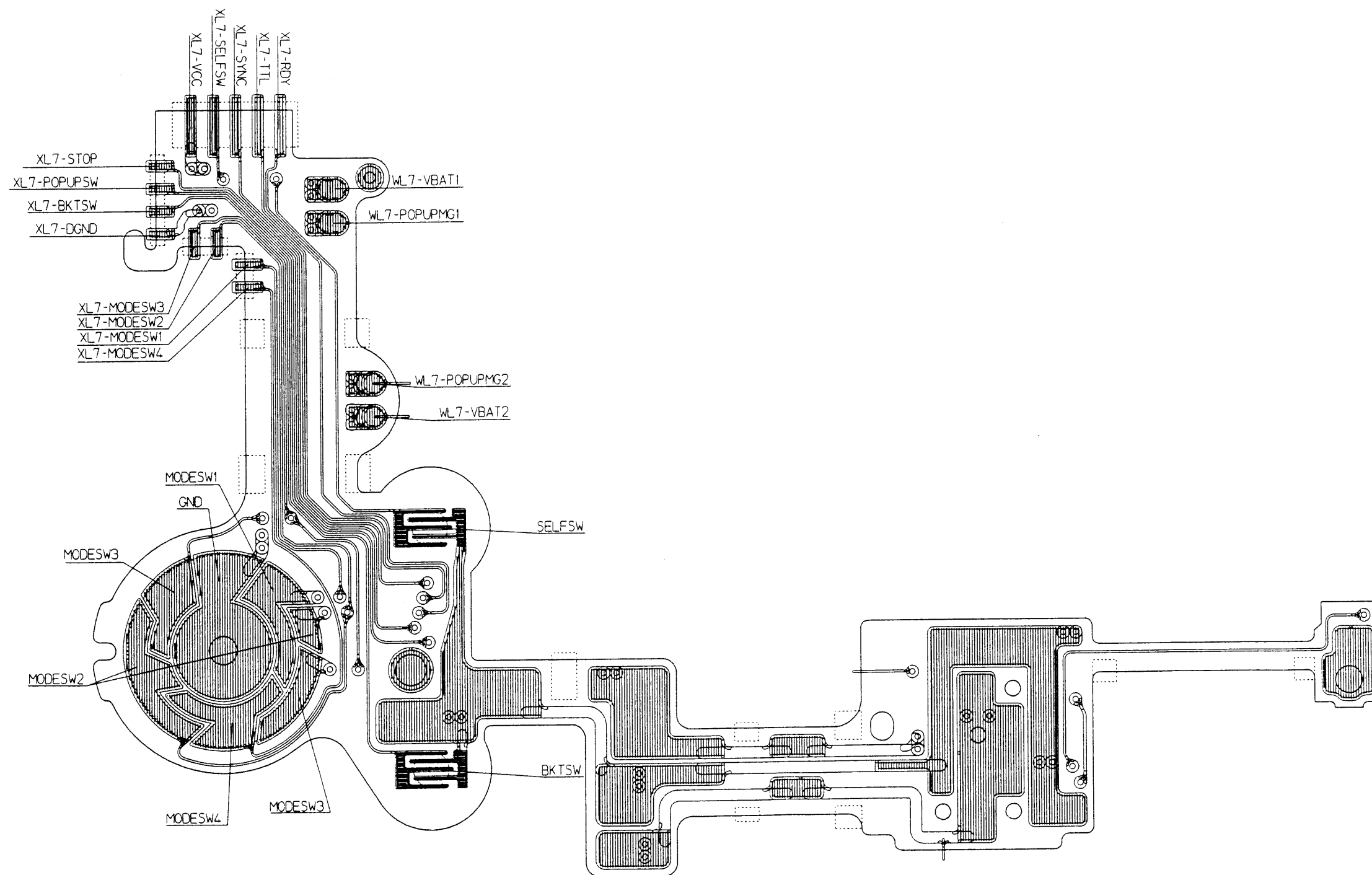
表面部品実装図  
Surface Part mount figure

上カバーFPC  
TOP COVER FPC



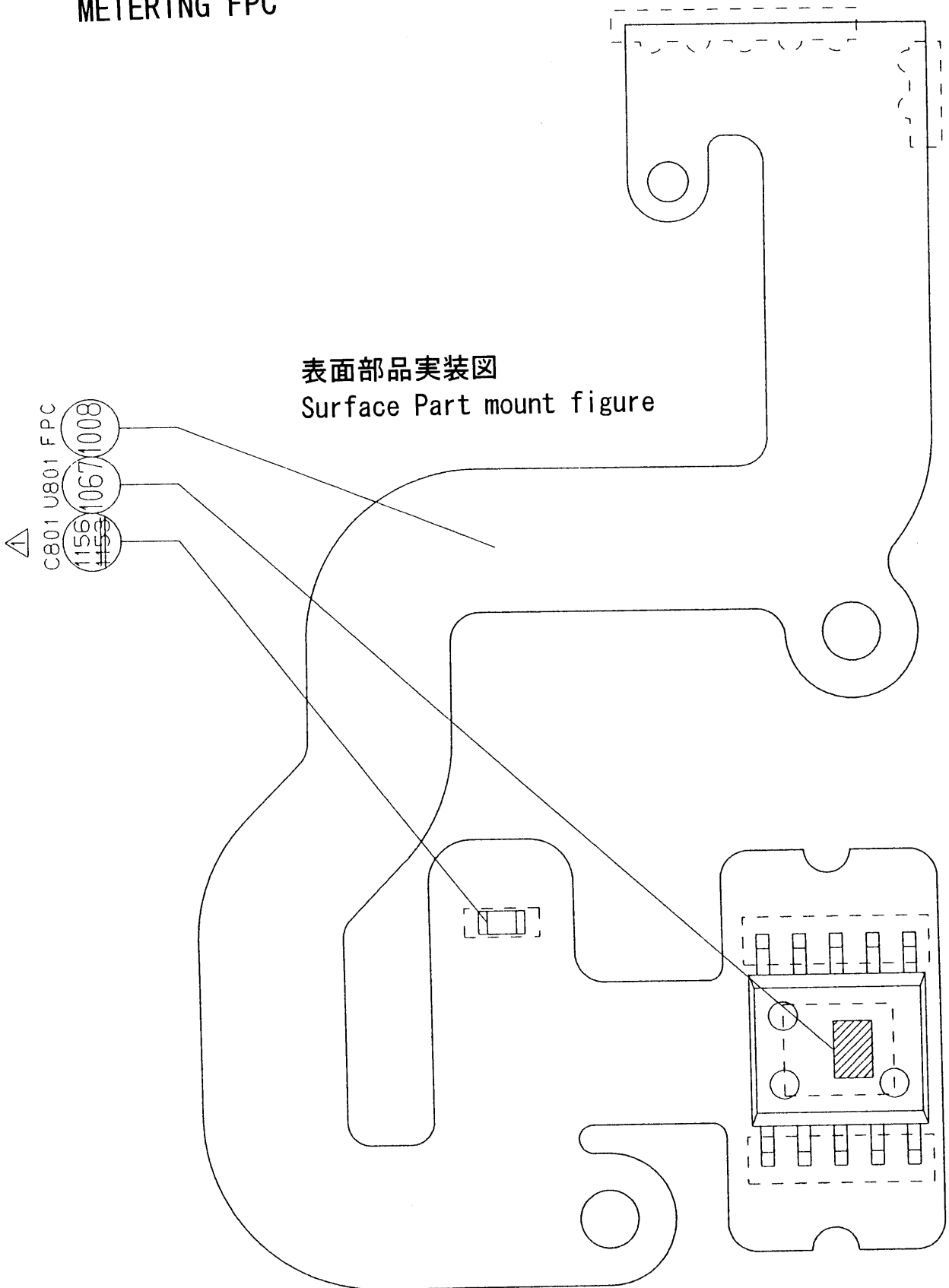
表面ランド名称入りパターン図  
Surface pattern figure and lands name

上カバーFPC  
TOP COVER FPC



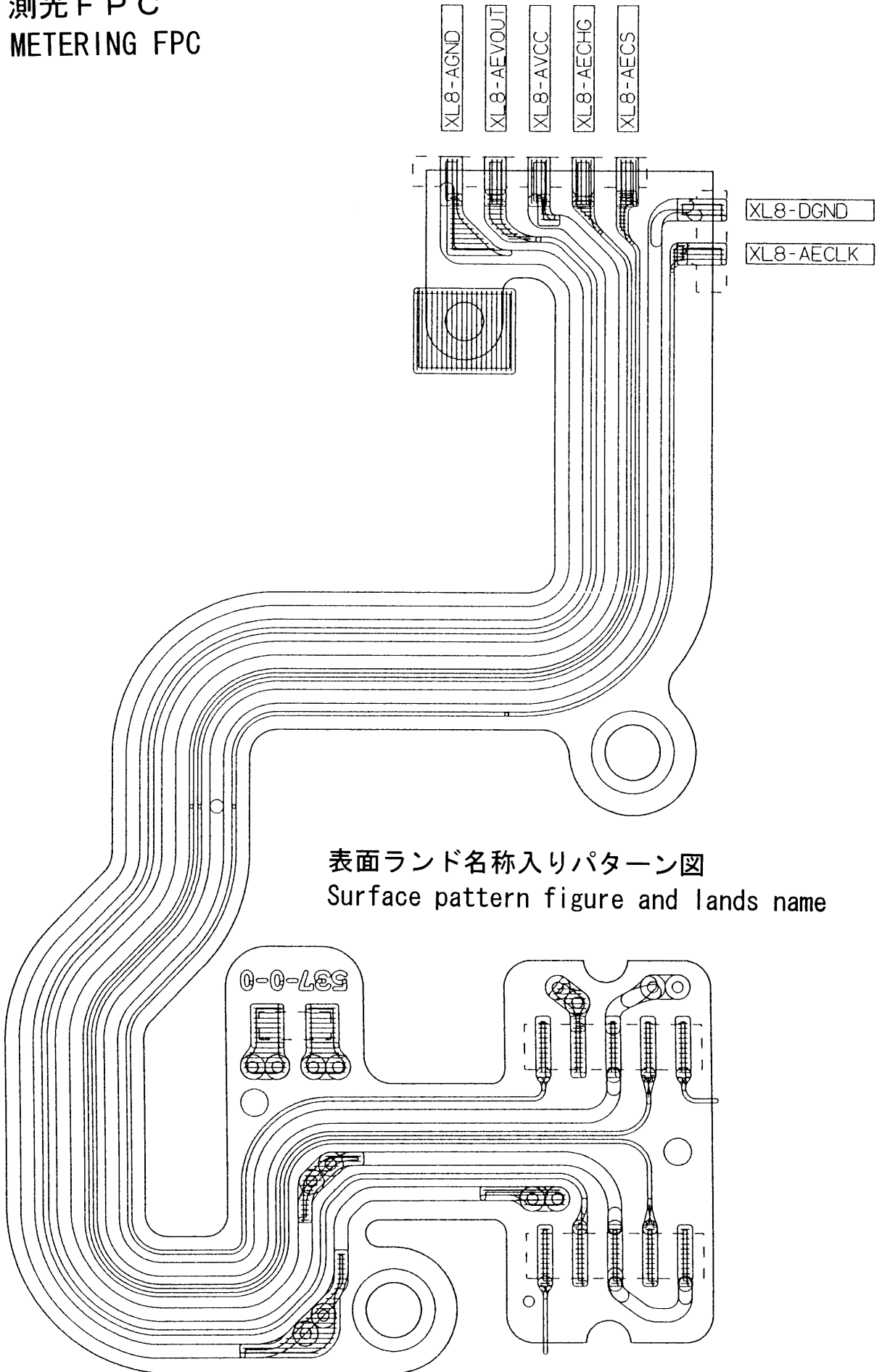
裏面ランド名称入りパターン図  
Reverse pattern figure and lands name

測光 F P C  
METERING FPC

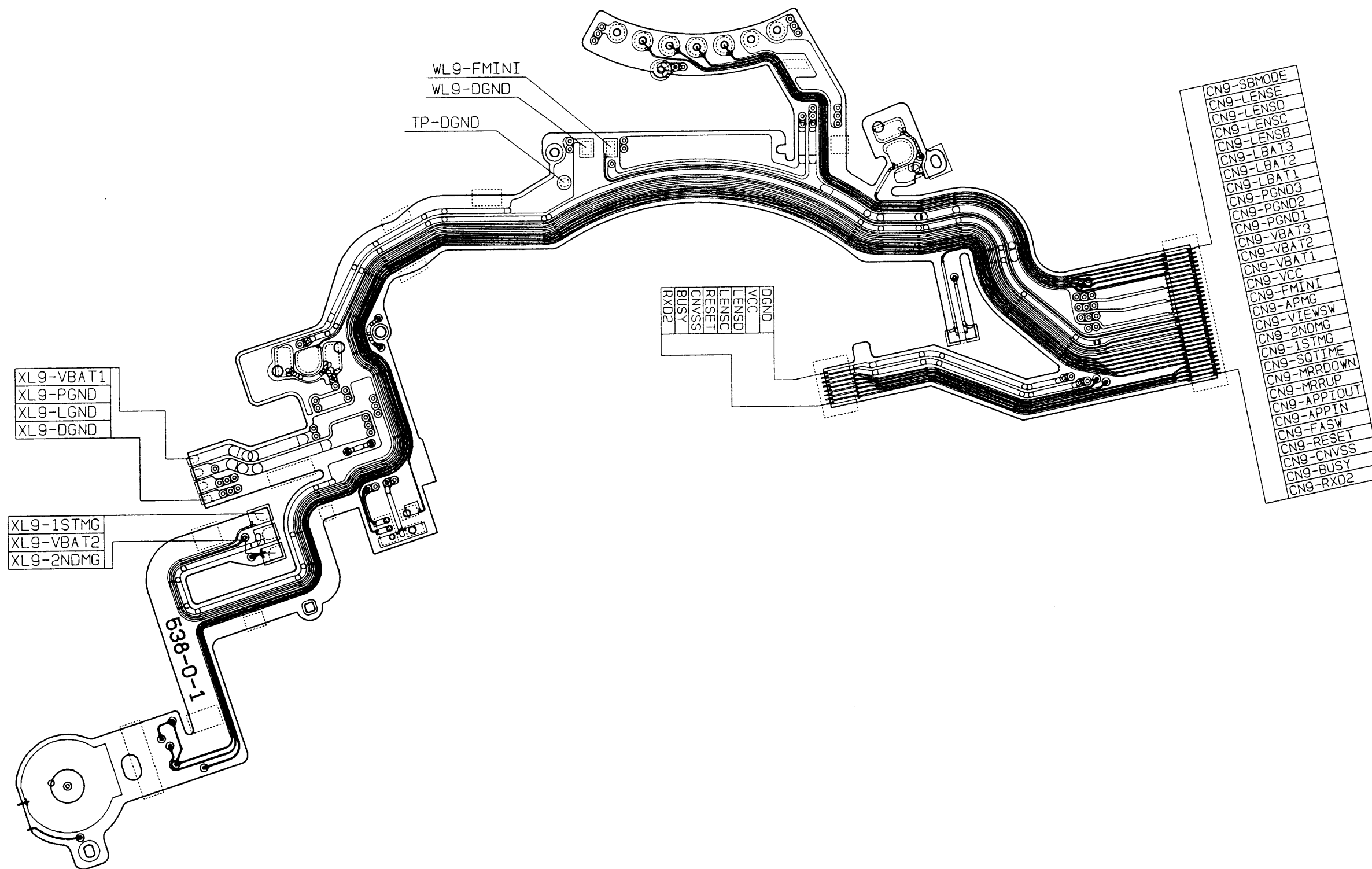




測光 F P C  
METERING FPC

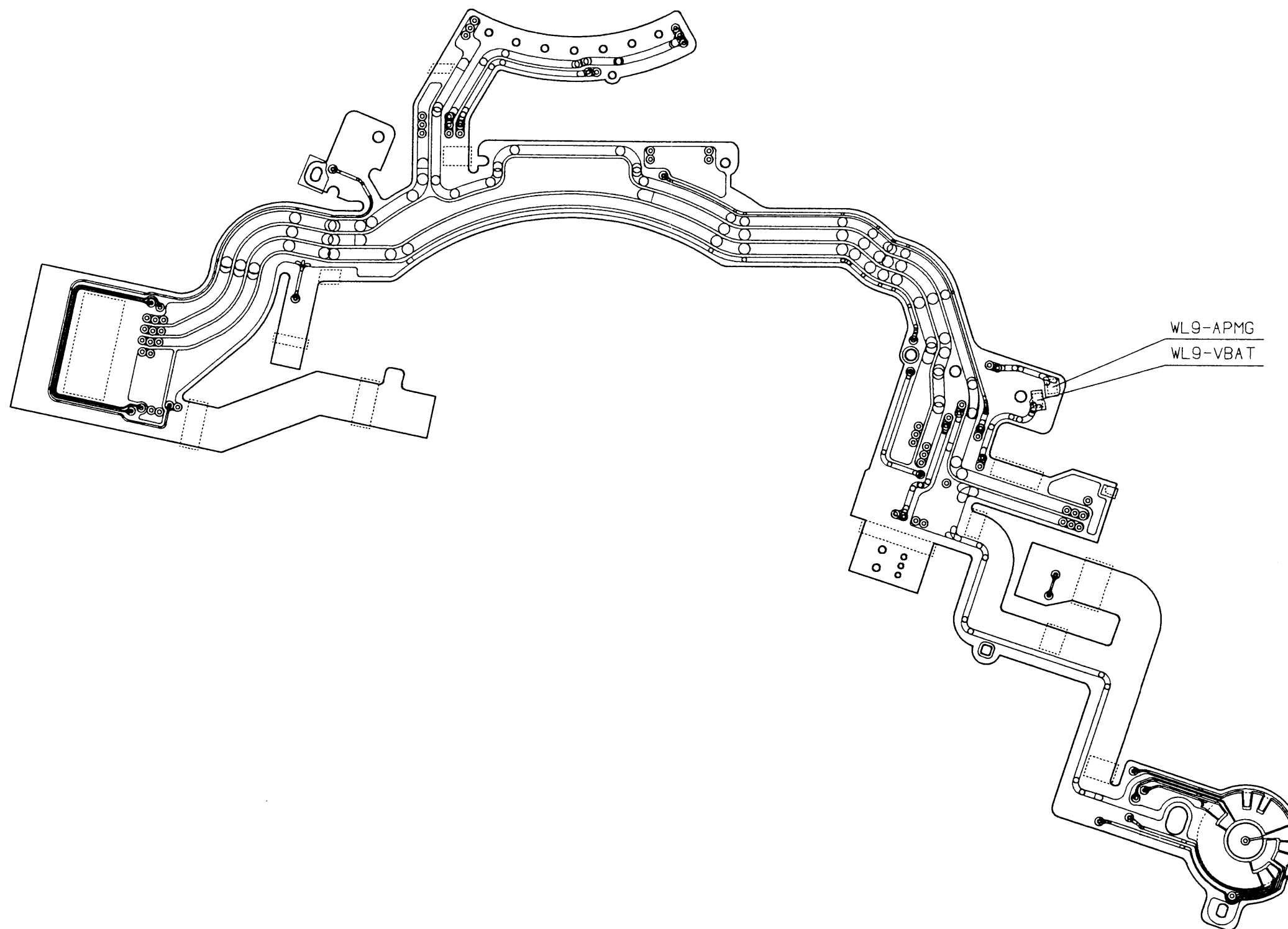


前ボディFPC  
FRONT BODY FPC



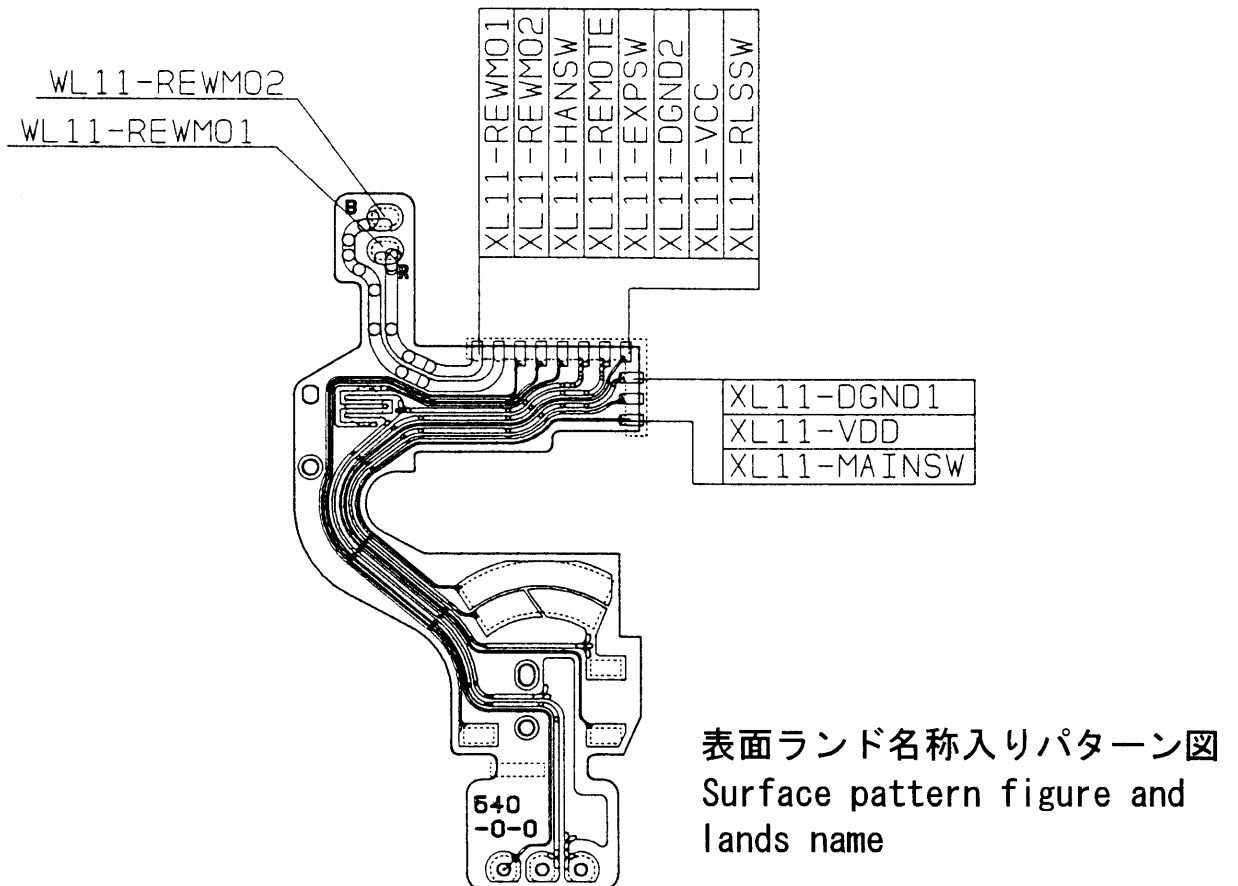
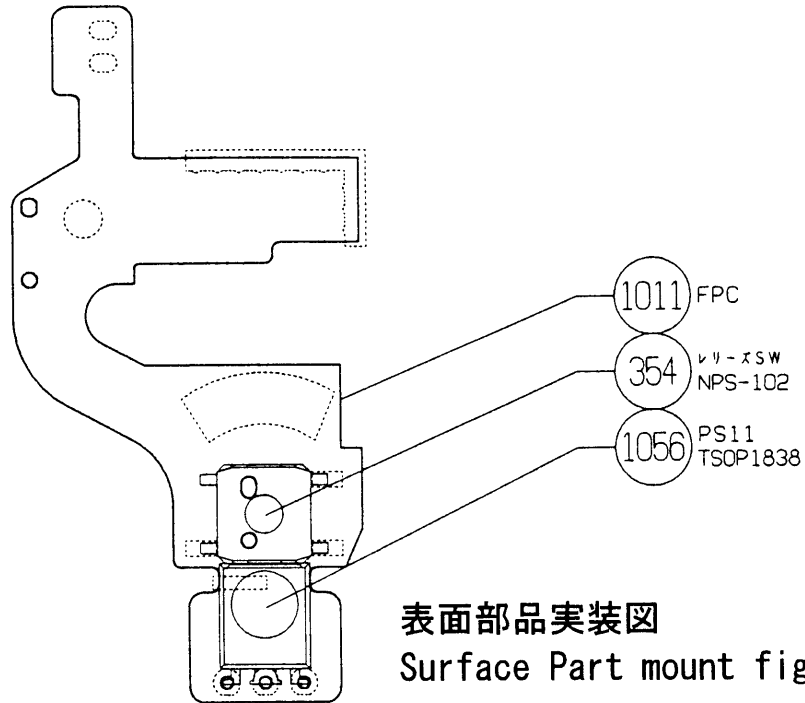
表面ランド名称図  
Surface lands name figure

前ボディFPC  
FRONT BODY FPC

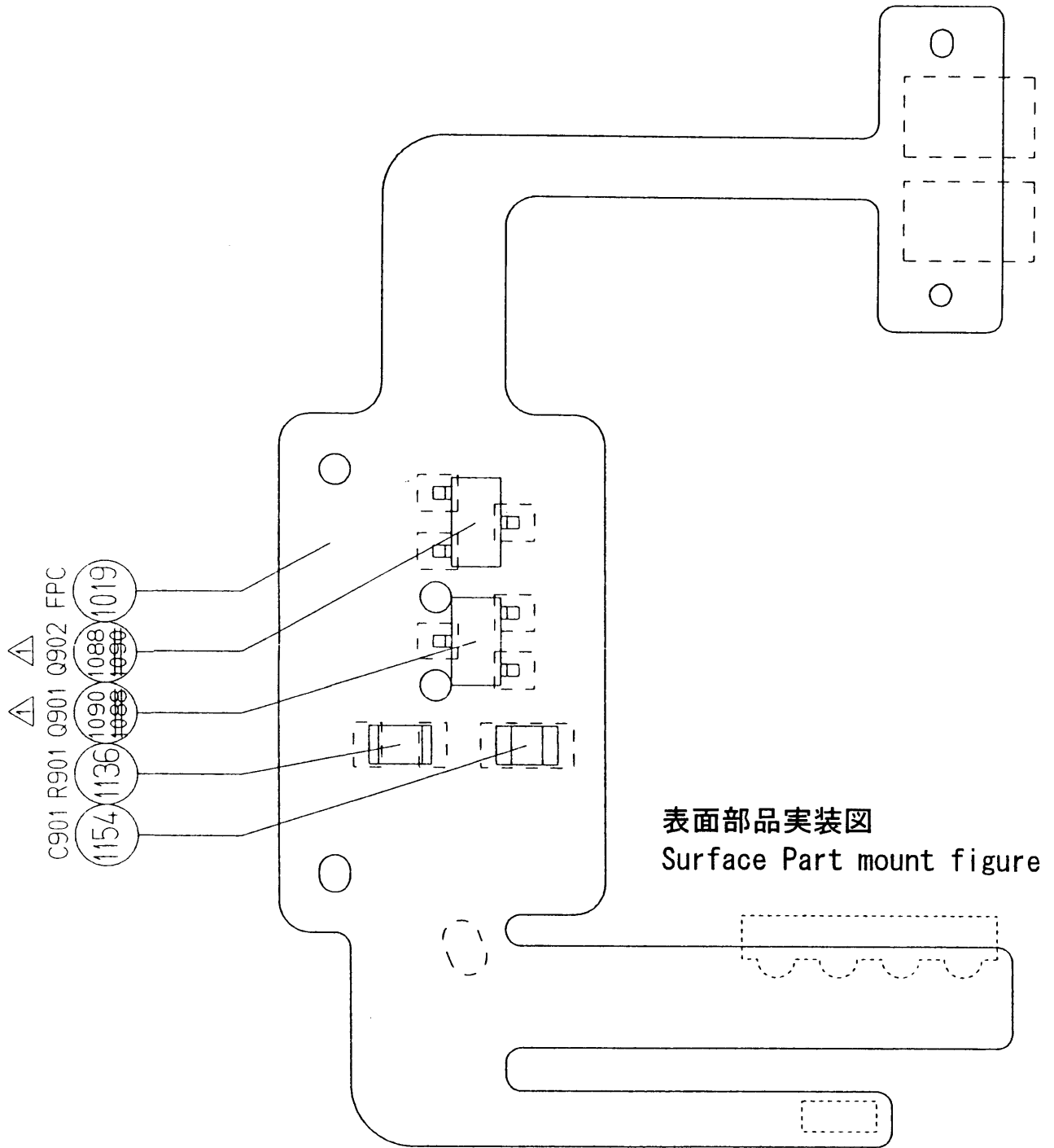


裏面ランド名称図  
Reverse land name figure

メインSW FPC  
MAIN SW FPC



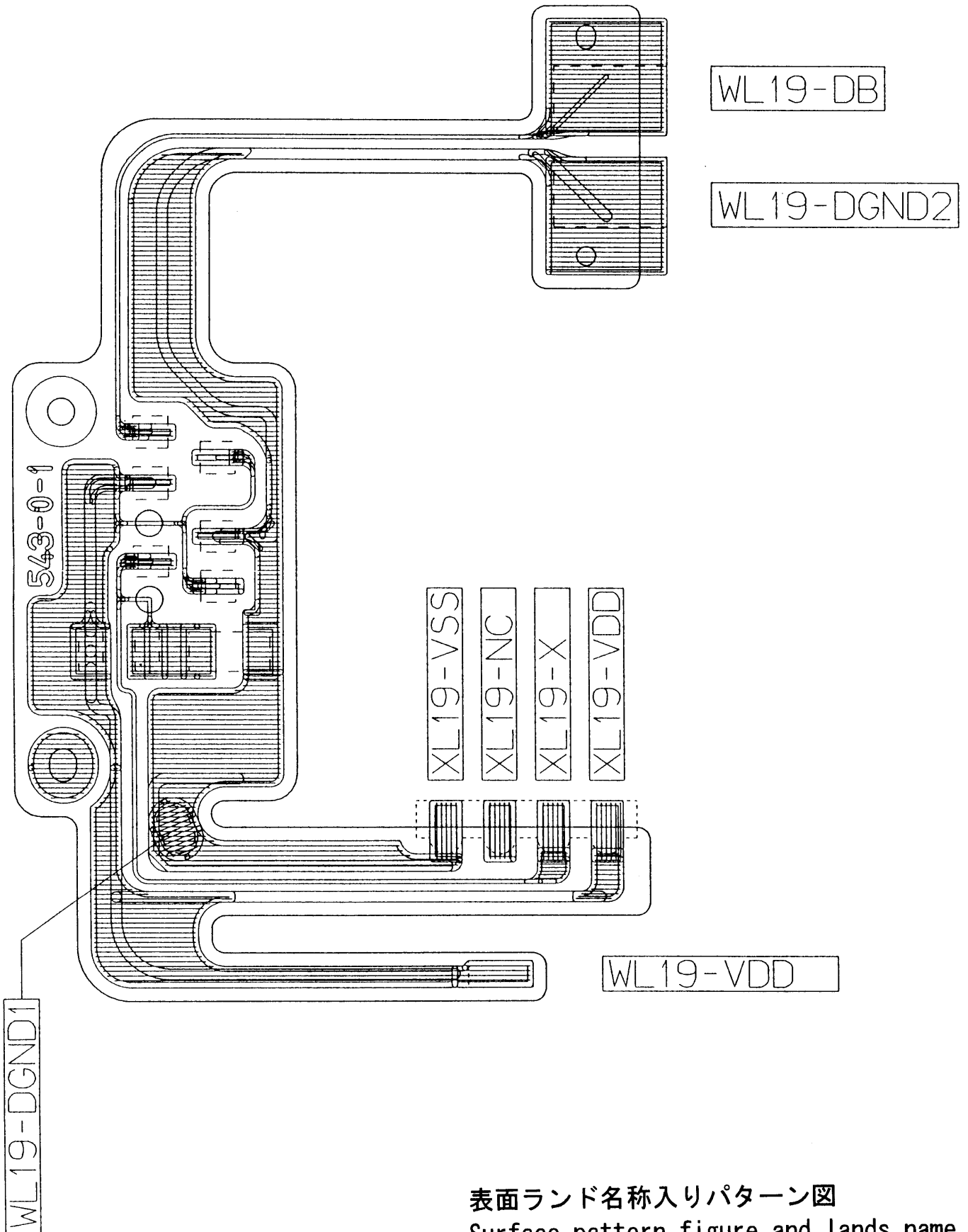
# DB FPC



表面部品実装図  
Surface Part mount figure

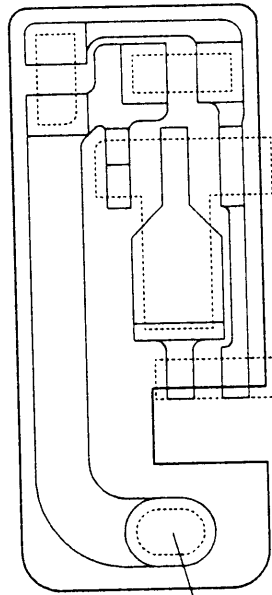


DB FPC



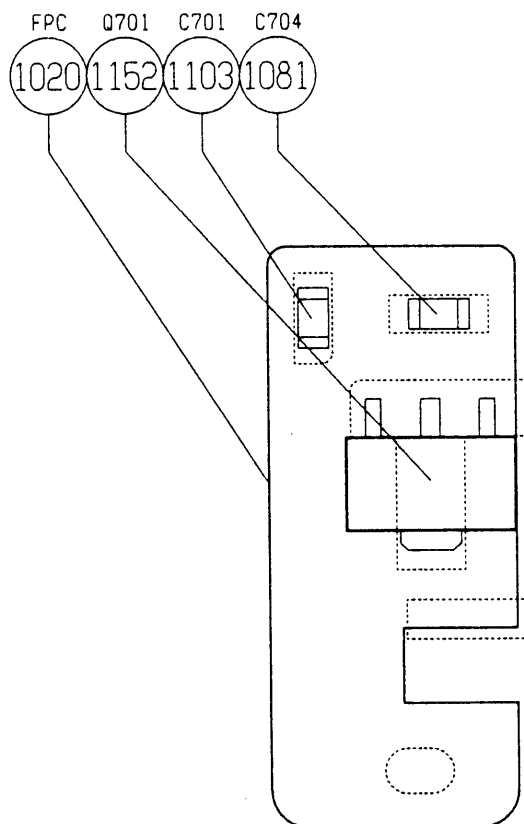
表面ランド名称入りパターン図  
Surface pattern figure and lands name

ホットシュー暫定FPC  
HOT SHOE TEMPORARILY ARRANGED FPC



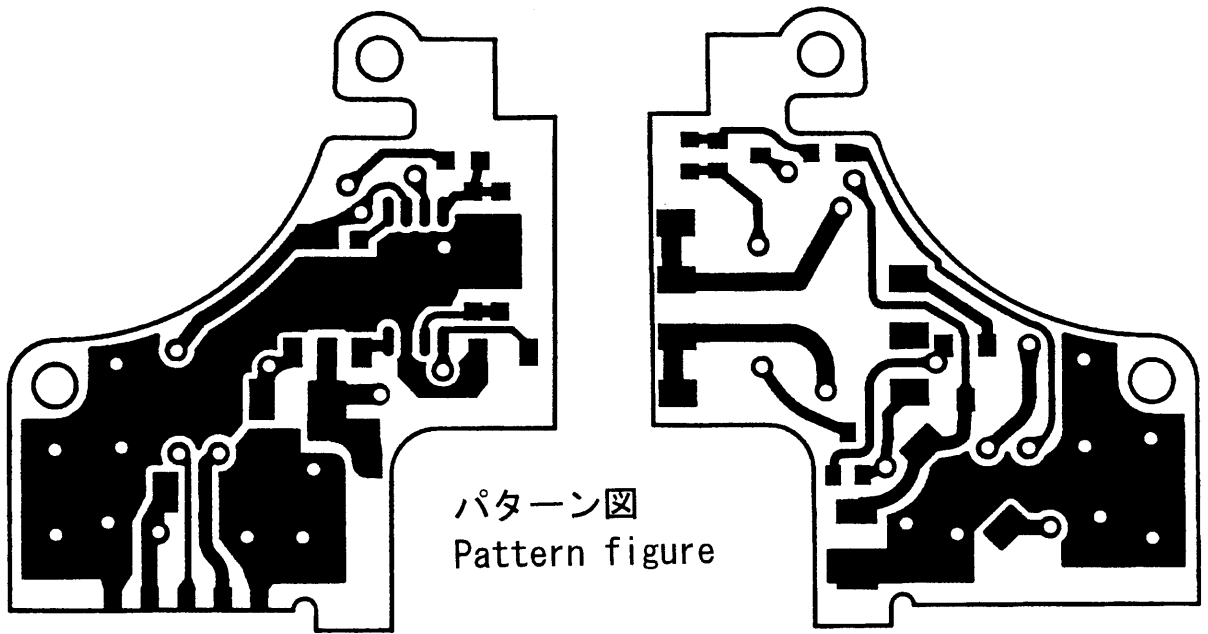
表面ランド名称図  
Surface lands name figure

WL-PGND

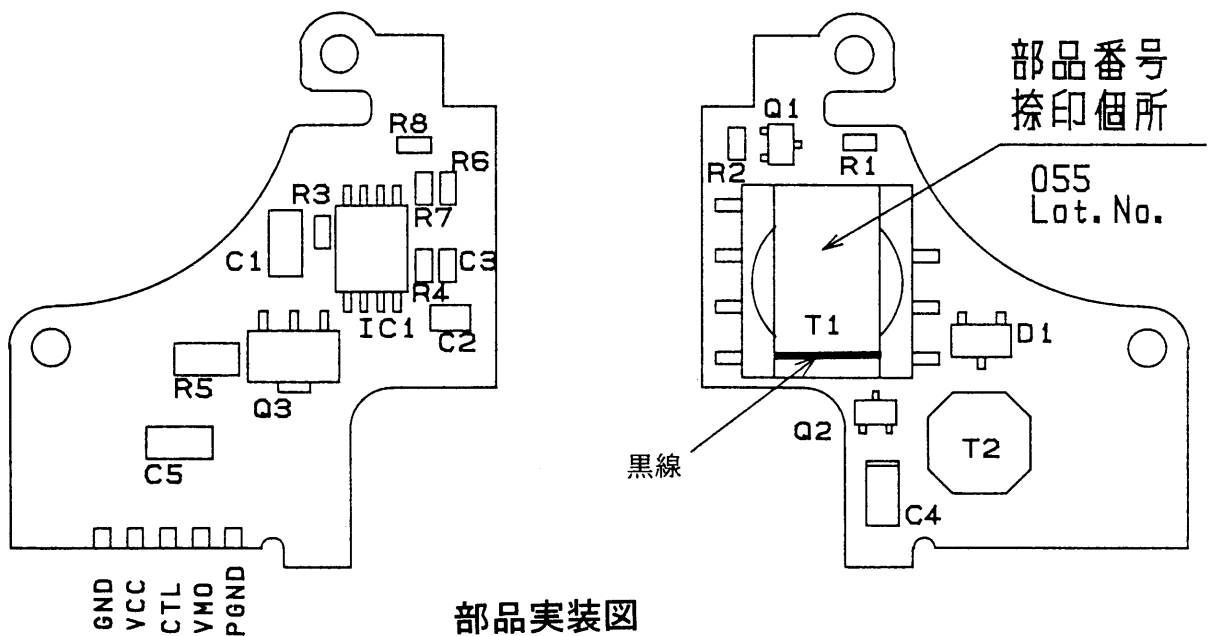


表面部品実装図  
Surface Part mount figure

DC-DCコンバーター  
DC-DC CONVERTER



パターン図  
Pattern figure



部品実装図  
Part mount figure



F65 / N65 / U EEPROM DATA

2000-10-10

ADDRESS	CONTENTS	CPU				REMARK
		MP 1				
		03.03 or later				
0	AF ADJUSTMENT DATA	4 1				
1	AF ADJUSTMENT DATA	2				
2	CAMERA CONTROL DATA	0				
3	CAMERA CONTROL DATA	2				
4	CAMERA CONTROL DATA	0				
9	CAMERA CONTROL DATA	0				
1 0	AF ADJUSTMENT DATA	0				
5 9	AF ADJUSTMENT DATA	0				
6 0	MBF ADJUSTMENT DATA	0				
6 1	MBF ADJUSTMENT DATA	0				
6 2	CAMERA CONTROL DATA	0				
6 3	CAMERA CONTROL DATA	0				
6 4	CAMERA CONTROL DATA	1 9 3				
6 5	CAMERA CONTROL DATA	1 5 3				
6 6	CAMERA CONTROL DATA	1 9 3				
6 7	CAMERA CONTROL DATA	1 0 2				
6 8	CAMERA CONTROL DATA	1 9 6				
6 9	CAMERA CONTROL DATA	1 5 3				
7 0	CAMERA CONTROL DATA	6 3				
7 1	CAMERA CONTROL DATA	5 1				
7 2	CAMERA CONTROL DATA	6 5				
7 3	CAMERA CONTROL DATA	0				
7 4	CAMERA CONTROL DATA	6 3				
7 5	CAMERA CONTROL DATA	1 0 2				
7 6	CAMERA CONTROL DATA	6 6				
7 7	CAMERA CONTROL DATA	1 2 8				
7 8	CAMERA CONTROL DATA	5 3				
7 9	CAMERA CONTROL DATA	1 3 7				
8 0	CAMERA CONTROL DATA	5 3				

ADDRESS	CONTENTS	CPU					REMARK
		MP 1					
		03.03 or later					
8 1	CAMERA CONTROL DATA	1 3 7					
8 2	CAMERA CONTROL DATA	5 3					
8 3	CAMERA CONTROL DATA	6					
8 4	CAMERA CONTROL DATA	5 5					
8 5	CAMERA CONTROL DATA	6					
8 6	CAMERA CONTROL DATA	5 9					
8 7	CAMERA CONTROL DATA	1 5 3					
8 8	CAMERA CONTROL DATA	6 0					
8 9	CAMERA CONTROL DATA	1 5 3					
9 0	CAMERA CONTROL DATA	5 9					
9 1	CAMERA CONTROL DATA	1 5 3					
9 2	CAMERA CONTROL DATA	6 3					
9 3	CAMERA CONTROL DATA	1 0 2					
9 4	CAMERA CONTROL DATA	5 4					
9 5	CAMERA CONTROL DATA	7 1					
9 6	CAMERA CONTROL DATA	0					
9 7	CAMERA CONTROL DATA	2					
9 8	CAMERA CONTROL DATA	8 0					
9 9	CAMERA CONTROL DATA	0					
1 0 0	CAMERA CONTROL DATA	8 0					
1 0 1	CAMERA CONTROL DATA	0					
1 0 2	CAMERA CONTROL DATA	2 0 0					
1 0 3	CAMERA CONTROL DATA	0					
1 0 4	CAMERA CONTROL DATA	6 3					
1 0 5	CAMERA CONTROL DATA	1 0 2					
1 0 6	CAMERA CONTROL DATA	5 4					
1 0 7	CAMERA CONTROL DATA	7 1					
1 0 8	CAMERA CONTROL DATA	5 4					
1 0 9	CAMERA CONTROL DATA	6					
1 1 0	CAMERA CONTROL DATA	5 3					
1 1 1	CAMERA CONTROL DATA	1 3 7					

ADDRESS	CONTENTS	CPU					REMARK
		MP 1					
		03.03 or later					
1 1 2	CAMERA CONTROL DATA	5 3					
1 1 3	CAMERA CONTROL DATA	1 3 7					
1 1 4	CAMERA CONTROL DATA	0					
1 1 9	CAMERA CONTROL DATA	0					
1 2 0	CAMERA CONTROL DATA	1 2 8					
1 2 1	CAMERA CONTROL DATA	0					
1 2 2	CAMERA CONTROL DATA	9 6					
1 2 3	CAMERA CONTROL DATA	0					
1 2 4	CAMERA CONTROL DATA	0					
1 2 5	CAMERA CONTROL DATA	1					
1 2 6	CAMERA CONTROL DATA	0					
1 2 9	CAMERA CONTROL DATA	0					
1 3 0	CAMERA CONTROL DATA	8 1					
1 3 1	CAMERA CONTROL DATA	2 4					
1 3 2	CAMERA CONTROL DATA	0					
1 3 3	CAMERA CONTROL DATA	5					
1 3 4	CAMERA CONTROL DATA	5 9					
1 3 5	CAMERA CONTROL DATA	0					
1 3 6	CAMERA CONTROL DATA	6 0					
1 3 7	CAMERA CONTROL DATA	1 8					
1 3 8	CAMERA CONTROL DATA	0					
1 3 9	CAMERA CONTROL DATA	0					
1 4 0	CAMERA CONTROL DATA	0					
1 4 1	CAMERA CONTROL DATA	5					
1 4 2	CAMERA CONTROL DATA	5 9					
1 4 3	CAMERA CONTROL DATA	0					
1 4 4	CAMERA CONTROL DATA	6 0					
1 4 5	CAMERA CONTROL DATA	1 8					
1 4 6	CAMERA CONTROL DATA	0					
1 4 7	CAMERA CONTROL DATA	0					

ADDRESS	CONTENTS	CPU					REMARK
		MP 1					
		03.03 or later					
1 4 8	CAMERA CONTROL DATA	2 5					
1 4 9	CAMERA CONTROL DATA	5					
1 5 0	CAMERA CONTROL DATA	5 6					
1 5 1	CAMERA CONTROL DATA	0					
1 5 2	CAMERA CONTROL DATA	3 9					
1 5 3	CAMERA CONTROL DATA	2 0					
1 5 4	CAMERA CONTROL DATA	0					
1 5 5	CAMERA CONTROL DATA	0					
1 5 6	CAMERA CONTROL DATA	2 5					
1 5 7	CAMERA CONTROL DATA	5					
1 5 8	CAMERA CONTROL DATA	5 6					
1 5 9	CAMERA CONTROL DATA	0					
1 6 0	CAMERA CONTROL DATA	3 9					
1 6 1	CAMERA CONTROL DATA	2 0					
1 6 2	CAMERA CONTROL DATA	0					
1 6 3	CAMERA CONTROL DATA	0					
1 6 4	CAMERA CONTROL DATA	6 4					
1 6 5	CAMERA CONTROL DATA	2 8					
1 6 6	CAMERA CONTROL DATA	3 2					
1 6 7	CAMERA CONTROL DATA	0					
1 6 8	CAMERA CONTROL DATA	3 9					
1 6 9	CAMERA CONTROL DATA	0					
1 7 0	CAMERA CONTROL DATA	0					
1 7 1	CAMERA CONTROL DATA	0					
1 7 2	CAMERA CONTROL DATA	7 6					
1 7 3	CAMERA CONTROL DATA	5 0					
1 7 4	CAMERA CONTROL DATA	3 2					
1 7 5	CAMERA CONTROL DATA	0					
1 7 6	CAMERA CONTROL DATA	3 9					
1 7 7	CAMERA CONTROL DATA	2 4					
1 7 8	CAMERA CONTROL DATA	0					

ADDRESS	CONTENTS	CPU					REMARK
		MP 1					
		03.03 or later					
1 7 9	CAMERA CONTROL DATA	0					
1 8 0	CAMERA CONTROL DATA	7 6					
1 8 1	CAMERA CONTROL DATA	2 4 9					
1 8 2	CAMERA CONTROL DATA	9 8					
1 8 3	CAMERA CONTROL DATA	0					
1 8 4	CAMERA CONTROL DATA	3 9					
1 8 5	CAMERA CONTROL DATA	0					
1 8 6	CAMERA CONTROL DATA	0					
1 8 7	CAMERA CONTROL DATA	0					
1 8 8	CAMERA CONTROL DATA	7 6					
1 8 9	CAMERA CONTROL DATA	1 9					
1 9 0	CAMERA CONTROL DATA	1 1 5					
1 9 1	CAMERA CONTROL DATA	0					
1 9 2	CAMERA CONTROL DATA	3 9					
1 9 3	CAMERA CONTROL DATA	2 0					
1 9 4	CAMERA CONTROL DATA	0					
1 9 5	CAMERA CONTROL DATA	0					
1 9 6	CAMERA CONTROL DATA	2 5					
1 9 7	CAMERA CONTROL DATA	2 4 0					
1 9 8	CAMERA CONTROL DATA	6 7					
1 9 9	CAMERA CONTROL DATA	0					
2 0 0	CAMERA CONTROL DATA	3 9					
2 0 1	CAMERA CONTROL DATA	1 8					
2 0 2	CAMERA CONTROL DATA	0					
2 0 3	CAMERA CONTROL DATA	0					
2 0 4	CAMERA CONTROL DATA	2 5					
2 0 5	CAMERA CONTROL DATA	2 4 0					
2 0 6	CAMERA CONTROL DATA	6 7					
2 0 7	CAMERA CONTROL DATA	0					
2 0 8	CAMERA CONTROL DATA	3 9					
2 0 9	CAMERA CONTROL DATA	1 8					
2 1 0	CAMERA CONTROL DATA	0					

ADDRESS	CONTENTS	CPU					REMARK
		MP 1					
		03.03 or later					
2 1 1	CAMERA CONTROL DATA	0					
2 1 2	M 1/2000 ADJUSTMENT DATA	0					
2 1 3	M 1/2000 ADJUSTMENT DATA	0					
2 1 4	CAMERA CONTROL DATA	2 1 0					
2 1 5	CAMERA CONTROL DATA	0					
2 1 6	LEAVING FILM LEADER	5 6					
2 1 7	LEAVING FILM LEADER	1					
2 1 8	CAMERA CONTROL DATA	0					
2 3 3	CAMERA CONTROL DATA	0					
2 3 4	CAMERA CONTROL DATA	2 5 0					
2 3 5	CAMERA CONTROL DATA	0					
2 3 6	CAMERA CONTROL DATA	5 0					
2 3 7	CAMERA CONTROL DATA	0					
2 3 8	CAMERA CONTROL DATA	2 2 6					
2 3 9	CAMERA CONTROL DATA	4					
2 4 0	CAMERA CONTROL DATA	1 4 4					
2 4 1	CAMERA CONTROL DATA	1					
2 4 2	CAMERA CONTROL DATA	1 1 6					
2 4 3	CAMERA CONTROL DATA	6 4					
2 4 4	CAMERA CONTROL DATA	2 2 0					
2 4 5	CAMERA CONTROL DATA	5					
2 4 6	CAMERA CONTROL DATA	1 9 6					
2 4 7	CAMERA CONTROL DATA	9					
2 4 8	CAMERA CONTROL DATA	1 6					
2 4 9	CAMERA CONTROL DATA	3 9					
2 5 0	CAMERA CONTROL DATA	2 5 0					
2 5 1	CAMERA CONTROL DATA	0					
2 5 2	CAMERA CONTROL DATA	2 2 0					
2 5 3	CAMERA CONTROL DATA	5					
2 5 4	CAMERA CONTROL DATA	1 8 8					

ADDRESS	CONTENTS	CPU					REMARK
		MP 1					
		03.03 or later					
2 5 5	CAMERA CONTROL DATA	5 2					
2 5 6	CAMERA CONTROL DATA	0					
2 6 1	CAMERA CONTROL DATA	0					
2 6 2	BATTERY CHECK ADJUSTMENT	1 7 0					
2 6 3	BATTERY CHECK ADJUSTMENT	1 6 0					
2 6 4	BATTERY CHECK ADJUSTMENT	1 6 0					
2 6 5	BATTERY CHECK ADJUSTMENT	1 5 0					
2 6 6	BATTERY CHECK ADJUSTMENT	1 5 0					
2 6 7	BATTERY CHECK ADJUSTMENT	1 4 1					
2 6 8	CAMERA CONTROL DATA	1 7 5					
2 6 9	CAMERA CONTROL DATA	2 0 4					
2 7 0	CAMERA CONTROL DATA	1 8 5					
2 7 1	CAMERA CONTROL DATA	2 0 0					
2 7 2	CAMERA CONTROL DATA	5					
2 7 3	CAMERA CONTROL DATA	1 0					
2 7 4	CAMERA CONTROL DATA	0					
2 8 1	CAMERA CONTROL DATA	0					
2 8 2	CAMERA CONTROL DATA	2 0					
2 8 3	CAMERA CONTROL DATA	1 6 8					
2 8 4	CAMERA CONTROL DATA	3 2					
2 8 5	CAMERA CONTROL DATA	1 7 9					
2 8 6	CAMERA CONTROL DATA	5 1					
2 8 7	CAMERA CONTROL DATA	3 8					
2 8 8	CAMERA CONTROL DATA	1 5 0					
2 8 9	CAMERA CONTROL DATA	2 5					
2 9 0	CAMERA CONTROL DATA	2 4 2					
2 9 1	CAMERA CONTROL DATA	5					
2 9 2	CAMERA CONTROL DATA	8 0					
2 9 3	CAMERA CONTROL DATA	3 7					
2 9 4	CAMERA CONTROL DATA	3 7					

ADDRESS	CONTENTS	CPU					REMARK
		MP 1					
		03.03 or later					
295	CAMERA CONTROL DATA	100					
296	CAMERA CONTROL DATA	100					
297	CAMERA CONTROL DATA	20					
298	CAMERA CONTROL DATA	5					
299	CAMERA CONTROL DATA	0					
300	AF ADJUSTMENT DATA	15					
301	AF ADJUSTMENT DATA	15					
302	AF ADJUSTMENT DATA	20					
303	AF ADJUSTMENT DATA	20					
304	AF ADJUSTMENT DATA	12					
305	AF ADJUSTMENT DATA	12					
306	AF ADJUSTMENT DATA	105					
307	AF ADJUSTMENT DATA	76					
308	AF ADJUSTMENT DATA	110					
309	AF ADJUSTMENT DATA	110					
310	AF ADJUSTMENT DATA	73					
311	AF ADJUSTMENT DATA	73					
312	AF ADJUSTMENT DATA	240					
313	AF ADJUSTMENT DATA	240					
314	AF ADJUSTMENT DATA	240					
315	AF ADJUSTMENT DATA	240					
316	AF ADJUSTMENT DATA	240					
317	AF ADJUSTMENT DATA	240					
318	AF ADJUSTMENT DATA	0					
747	AF ADJUSTMENT DATA	0					
748	CAMERA CONTROL DATA	0					
749	CAMERA CONTROL DATA	0					
750	CAMERA CONTROL DATA	128					
751	CAMERA CONTROL DATA	0					
752	CAMERA CONTROL DATA	0					



ADDRESS	CONTENTS	C P U					REMARK
		MP 1					
		03.03 or later					
7 5 3	CAMERA CONTROL DATA	0					
7 5 8	CAMERA CONTROL DATA	0					
7 5 9	CAMERA CONTROL DATA	0					
7 6 0	CAMERA CONTROL DATA	0					
7 6 1	CAMERA CONTROL DATA	3 2					
7 6 2	CAMERA CONTROL DATA	4 1					
7 6 3	CAMERA CONTROL DATA	3 2					
7 6 4	CAMERA CONTROL DATA	3 2					
7 6 5	CAMERA CONTROL DATA	5 1					
7 6 6	CAMERA CONTROL DATA	5 1					
7 6 7	CAMERA CONTROL DATA	0					
7 6 8	CAMERA CONTROL DATA	1 0 0					
7 6 9	CAMERA CONTROL DATA	1 7 9					
7 7 0	CAMERA CONTROL DATA	1 7 9					
7 7 1	CAMERA CONTROL DATA	1 7 9					
7 7 2	CAMERA CONTROL DATA	1 7 9					
7 7 3	CAMERA CONTROL DATA	1 7 9					
7 7 4	CAMERA CONTROL DATA	1 7 9					
7 7 5	CAMERA CONTROL DATA	0					
7 7 6	CAMERA CONTROL DATA	0					
7 7 7	CAMERA CONTROL DATA	1 3 5					
7 7 8	CAMERA CONTROL DATA	0					
7 8 4	CAMERA CONTROL DATA	0					
7 8 5	CAMERA CONTROL DATA	0					
7 8 6	CAMERA CONTROL DATA	8					
7 8 7	CAMERA CONTROL DATA	1 6					
7 8 8	CAMERA CONTROL DATA	1 0 4					
7 8 9	CAMERA CONTROL DATA	3 0					
7 9 0	CAMERA CONTROL DATA	8					
7 9 1	CAMERA CONTROL DATA	8					

ADDRESS	CONTENTS	CPU					REMARK
		MP 1					
		03.03 or later					
7 9 2	CAMERA CONTROL DATA	3 2					
7 9 3	CAMERA CONTROL DATA	7 5					
7 9 4	CAMERA CONTROL DATA	1 6					
7 9 5	CAMERA CONTROL DATA	1 2 8					
7 9 6	CAMERA CONTROL DATA	1 6					
7 9 7	CAMERA CONTROL DATA	6 4					
7 9 8	CAMERA CONTROL DATA	5					
7 9 9	CAMERA CONTROL DATA	3 8					
8 0 0	CAMERA CONTROL DATA	3 8					
8 0 1	CAMERA CONTROL DATA	3 8					
8 0 2	CAMERA CONTROL DATA	1 0					
8 0 3	CAMERA CONTROL DATA	2 0					
8 0 4	CAMERA CONTROL DATA	3					
8 0 5	CAMERA CONTROL DATA	0					
8 0 6	CAMERA CONTROL DATA	0					
8 0 7	CAMERA CONTROL DATA	0					
8 1 4	CAMERA CONTROL DATA	0					
8 1 5	CAMERA CONTROL DATA	6 5					
8 1 6	CAMERA CONTROL DATA	1 0 4					
8 1 7	CAMERA CONTROL DATA	1 2					
8 1 8	CAMERA CONTROL DATA	6					
8 1 9	CAMERA CONTROL DATA	8 0					
8 2 0	CAMERA CONTROL DATA	1 2					
8 2 1	CAMERA CONTROL DATA	4					
8 2 2	CAMERA CONTROL DATA	6 4					
8 2 3	CAMERA CONTROL DATA	5 1					
8 2 4	CAMERA CONTROL DATA	4 8					
8 2 5	CAMERA CONTROL DATA	1					
8 2 6	CAMERA CONTROL DATA	0					
8 2 7	CAMERA CONTROL DATA	0					

ADDRESS	CONTENTS	CPU					REMARK
		MP 1					
		03.03 or later					
8 2 8	CAMERA CONTROL DATA	0					
	CAMERA CONTROL DATA						
8 3 3	CAMERA CONTROL DATA	0					
8 3 4	AE ADJUSMENT DATA	1 2 8					
8 3 5	AE ADJUSMENT DATA	1 2 8					
8 3 6	AE ADJUSMENT DATA	1 2 8					
8 3 7	AE ADJUSMENT DATA	1 2 8					
8 3 8	AE ADJUSMENT DATA	1 2 8					
8 3 9	AE ADJUSMENT DATA	1 2 8					
8 4 0	AE ADJUSMENT DATA	1 2 8					
8 4 1	CAMERA CONTROL DATA	3 2					
8 4 2	CAMERA CONTROL DATA	0					
8 4 3	CAMERA CONTROL DATA	0					
8 5 0	CAMERA CONTROL DATA	0					
8 5 1	APERTURE ADJUSTMENT DATA	5 3					
8 5 2	CAMERA CONTROL DATA	7					
8 5 3	CAMERA CONTROL DATA	2 5					
8 5 4	CAMERA CONTROL DATA	1 6					
8 5 5	CAMERA CONTROL DATA	8					
8 5 6	CAMERA CONTROL DATA	2 5					
8 5 7	CAMERA CONTROL DATA	1 0					
8 5 8	CAMERA CONTROL DATA	6					
8 5 9	CAMERA CONTROL DATA	1 4					
8 6 0	CAMERA CONTROL DATA	1 0					
8 6 1	CAMERA CONTROL DATA	1 4					
8 6 2	CAMERA CONTROL DATA	3 3					
8 6 3	CAMERA CONTROL DATA	1 2 7					
8 6 4	CAMERA CONTROL DATA	3 5					
8 6 5	CAMERA CONTROL DATA	1 0					
8 6 6	CAMERA CONTROL DATA	2 0					
8 6 7	CAMERA CONTROL DATA	2 0					

ADDRESS	CONTENTS	CPU					REMARK
		MP 1					
		03.03 or later					
8 6 8	CAMERA CONTROL DATA	8 2					
8 6 9	CAMERA CONTROL DATA	9 2					
8 7 0	CAMERA CONTROL DATA	1 4					
8 7 1	CAMERA CONTROL DATA	0					
8 7 2	CAMERA CONTROL DATA	1 6 6					
8 7 3	CAMERA CONTROL DATA	6					
8 7 4	CAMERA CONTROL DATA	6					
8 7 5	CAMERA CONTROL DATA	0					
8 7 6	CAMERA CONTROL DATA	0					
8 7 7	CAMERA CONTROL DATA	2 4 6					
8 7 8	CAMERA CONTROL DATA	6					
8 7 9	CAMERA CONTROL DATA	4					
8 8 0	CAMERA CONTROL DATA	0					
8 8 5	CAMERA CONTROL DATA	0					
8 8 6	CAMERA CONTROL DATA	0					
8 8 7	TTL ADJUSTMENT DATA	1 1 0					
8 8 8	TTL ADJUSTMENT DATA	1 2 2					
8 8 9	TTL ADJUSTMENT DATA	2 0 0					
8 9 0	CAMERA CONTROL DATA	0					
8 9 1	CAMERA CONTROL DATA	0					
8 9 2	CAMERA CONTROL DATA	0					
8 9 3	CAMERA CONTROL DATA	1 0 0					
8 9 4	CAMERA CONTROL DATA	1 0 0					
8 9 5	CAMERA CONTROL DATA	1 0 0					
8 9 6	CAMERA CONTROL DATA	3 6					
8 9 7	CAMERA CONTROL DATA	3 6					
8 9 8	CAMERA CONTROL DATA	3 8					
8 9 9	CAMERA CONTROL DATA	2 0 4					
9 0 0	CAMERA CONTROL DATA	2 0 4					
9 0 1	CAMERA CONTROL DATA	2 0 4					

ADDRESS	CONTENTS	CPU					REMARK
		MP 1					
		03.03 or later					
9 0 2	CAMERA CONTROL DATA	3 6					
9 0 3	CAMERA CONTROL DATA	3 6					
9 0 4	CAMERA CONTROL DATA	3 8					
9 0 5	CAMERA CONTROL DATA	2 0 4					
9 0 6	CAMERA CONTROL DATA	2 0 4					
9 0 7	CAMERA CONTROL DATA	2 0 4					
9 0 8	CAMERA CONTROL DATA	1 2 8					
9 0 9	CAMERA CONTROL DATA	2 0					
9 1 0	CAMERA CONTROL DATA	1 3					
9 1 1	CAMERA CONTROL DATA	8					
9 1 2	CAMERA CONTROL DATA	1 3 0					
9 1 3	CAMERA CONTROL DATA	1 0					
9 1 4	CAMERA CONTROL DATA	0					
9 2 6	CAMERA CONTROL DATA	0					
△ (Revise) 9 2 7	CAMERA CONTROL DATA	1 2					
△ (Revise) 9 2 8	CAMERA CONTROL DATA	1 9					
9 2 9	CAMERA CONTROL DATA	1 8 0					
9 3 0	CAMERA CONTROL DATA	2 2 4					
9 3 1	CAMERA CONTROL DATA	6 0					
9 3 2	CAMERA CONTROL DATA	8 0					
9 3 3	CAMERA CONTROL DATA	7 0					
9 3 4	CAMERA CONTROL DATA	5 5					
9 3 5	CAMERA CONTROL DATA	3 5					
9 3 6	CAMERA CONTROL DATA	2 5					
9 3 7	CAMERA CONTROL DATA	2 8					
9 3 8	CAMERA CONTROL DATA	3 0					
9 3 9	CAMERA CONTROL DATA	3 6					
9 4 0	CAMERA CONTROL DATA	4 2					
9 4 1	CAMERA CONTROL DATA	4 4					
9 4 2	CAMERA CONTROL DATA	2 5 4					
9 4 3	CAMERA CONTROL DATA	1 2 7					
9 4 4	CAMERA CONTROL DATA	0					
9 4 5	CAMERA CONTROL DATA	4 8					

△ (Revise)  
△ (Revise)



ADDRESS	CONTENTS	CPU					REMARK
		MP 1					
		03.03 or later					
9 4 6	CAMERA CONTROL DATA	0					
9 4 7	CAMERA CONTROL DATA	0					
9 4 8	CAMERA CONTROL DATA	0					
9 4 9	CAMERA CONTROL DATA	2 0 7					
9 5 0	CAMERA CONTROL DATA	1 4 3					
9 5 1	CAMERA CONTROL DATA	0					
9 5 2	CAMERA CONTROL DATA	2 2 3					
9 5 3	CAMERA CONTROL DATA	0					
9 5 8	CAMERA CONTROL DATA	0					
9 5 9	CHECK SUM DATA	-					
9 6 0	CAMERA CONTROL DATA	0					
9 6 1	CAMERA CONTROL DATA	0					
9 6 2	CAMERA CONTROL DATA	0					
9 6 3	ERROR DATA	0					
9 6 4	NUMBER OF RELEASE TIMES	-					
9 6 5	NUMBER OF RELEASE TIMES	-					
9 6 6	CAMERA CONTROL DATA	0					
9 7 1	CAMERA CONTROL DATA	0					
9 7 2	CAMERA CONTROL DATA	2 5 5					
9 7 3	CAMERA CONTROL DATA	0					
9 8 2	CAMERA CONTROL DATA	0					
9 8 3	CAMERA CONTROL DATA	3					
9 8 4	CAMERA CONTROL DATA	-					
9 8 5	CAMERA CONTROL DATA	-					
9 8 6	CAMERA CONTROL DATA	0					
9 8 7	CAMERA CONTROL DATA	-					
9 8 8	CAMERA CONTROL DATA	0					
9 8 9	CAMERA CONTROL DATA	0					



# INSPECTION CRITERIA and TOOLS

[ 1 ] Inspection Criteria .....	R 1
[ 2 ] Tools .....	T 1

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## CONDITION FOR INSPECTION

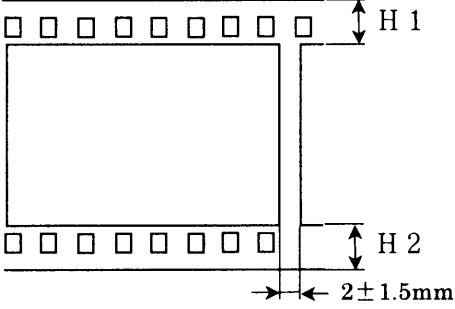
Normal temperature :  $20 \pm 5^{\circ}\text{C}$       Humidity :  $65 \pm 20\%$   
Power source :  $5.5 \pm 0.03\text{V}$     5 A or more at  $0.5\ \Omega$  load  
Light source :  $2856^{\circ}\text{K}$   
K coefficient : 1.16  
Camera : Finished Product

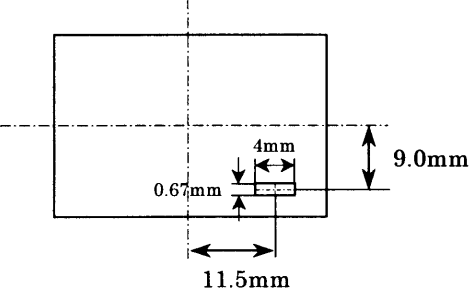


# INSPECTION CRITERIA

●When using the power supply, set the output to 5.5V with a resistance of 0.5Ω.

INSPECTION ITEM	CRITERIA	REMARKS
Shutter System (1) Tolerance  (2) Curtain Speed (3) Dispersion  (4) Curtain Bound	1/2000~1/1500" : $0 \pm 0.45EV$ 1/1500~30s : $0 \pm 0.3EV$ 6.9ms or less 1/2000~1/180 : Within 0.45EV 1/180~30s : Within 0.3EV There should be no curtain bound.	Exposure Mode: M.S Shutter tester (EF-8000)  21mm
AE Image Surface Exposure (1) Tolerance  (2) Dispersion	1/2000~1/125 : $\pm 0.65EV$ less than 1/125 : $\pm 0.5EV$	Exposure Mode: P.A.S. Shutter tester (EF-8000) AF50/1.4
AE Diaphragm Control Accuracy (1) Tolerance  (2) Dispersion	LV12 (ISO100)、1/125 From the maximum aperture to 4th stop aperture : $\pm 0.5EV$ From F8 to the minimum aperture : $\pm 0.65EV$ Within 0.5EV	Exposure Mode: S. Shutter tester (EF-8000) AF50/1.8
AF Adjustment Accuracy (1) Yaw  (2) Pitch  (3) Lark	Center : $0 \pm 4mrad$ Side : $0 \pm 10mrad$ Upper/Lower : $0 \pm 10mrad$ Center : $0 \pm 5mrad$ Side : $0 \pm 10mrad$ Upper/Lower : $0 \pm 10mrad$ $0 \pm 50\mu m$	Personal Computer and other special tools
Diaphragm Lever Height	$3.4 \pm 0.1mm$	J18004
Main Mirror 4 5° (Collimator Measured Value)	Upper/Lower : $\pm 10'$ Right/Left : $\pm 30'$ Distortion : Within 8'	When it is stood up, there should be no gap. J19002 · J15391 · J18037 Hex key Wrench
Sub-Mirror 4 7.7 5°	Upper/Lower : $-5' +20' \sim -45'$ Distortion : Within 8'	J19002 · J18268-1 Hex key Wrench
M. B. F	Outer Rail : $46.67^{+0.03}_{-0.09} mm$ Outer Rail Parallelism : Within 0.06mm Height Difference between Inner and Outer Rails : 0.21mm~0.25mm Aperture Surface Stage Difference of Inner Rail : 0.26mm or more	J18001 Dial Gauge
∞ (Infinity) Agreement	$\pm 100\mu m$	J18010

INSPECTION ITEM	CRITERIA	REMARKS
Battery Check ( 1 ) First Level  ( 2 ) Second Level	Reducing Direction : $4.9 \pm 0.2V$ Returning Direction : $5.2 \pm 0.2V$ Reducing Direction : $4.6 \pm 0.2V$ Returning Direction : $4.9 \pm 0.2V$	Power Supply
Image Plane Size (50/1.4 F5.6)  Image Plane Position	Length : $24^{+0.4}_{-0.0}mm$ / Width : $36^{+0.4}_{-0.0}mm$  [H 1 - H 2] = $\pm 0.4mm$ or less  	Calipers  ISO100 Film
Frame Interval	$2 \pm 1.5mm$	
Consumption Current Items④and later, the values are products of consumption current and operating time	①Main Switch is OFF : $100\mu A$ or less ②Main Switch is ON and Half-Push Timer is OFF : $100\mu A$ or less ③Main Switch is ON and Half-Push Timer is ON : $150mA$ or less ④AF50/1.8 Lens is driven : $500mAsec$ or less (Operating Time : $1000ms$ or less) ⑤AF70-210/4-5.6 Lens is driven : $800mAsec$ or less (Operating Time : $2000ms$ or less) ⑥Preview is Operated : $120mAsec$ or less (Operating Time : $200ms$ or less) ⑦Empty Release : $250mAsec$ or less (Operating Time : $300ms$ or less) ⑧Empty Feeding : $500mAsec$ or less (Operating Time : $1000ms$ or less) ⑨Film Winding : $350mAsec$ or less (Operating Time : $420ms$ or less) ⑩Film Rewinding : $7000mAsec$ or less (Operating Time : $15s$ or less)	
Half-Push Timer Time	After Half-Push Switch OFF : Power should be turned OFF $5 \pm 1sec$ later.	
Half-Push Timer Time	After Releasing : Power should be turned OFF $2 \pm 1sec$ later	
Half-Push Timer Time (When using the built-in and external speed light)	After Half-Push Switch OFF : Power should be turned OFF $5 \pm 1sec$ later.	
Half-Push Timer Time	After Releasing : Power should be turned OFF $5 \pm 1sec$ later	
Bulb Battery Life	4 hours or more	
Brightness for AF Assist Light turned ON	Brightness for Light turned ON (50/1.8) : It should be turned ON and equivalent to EV5 or less	

INSPECTION ITEM	CRITERIA	REMARKS
Finder	Visuality Ratio : Vertical and Horizontal $89 \pm 3\%$	
	Parallax : Upper/Lower, Right/Left : Within 0.5mm	
	Eye Point : Distance from eyepiece (In the case of $-1.52\text{m}^{-1}(\text{dpt})$ ) $15.87\text{mm} \pm 10\%$ (In the case of $+0.77\text{m}^{-1}(\text{dpt})$ ) $23.05\text{mm} \pm 10\%$	
DB Print Position <b>u</b> F 6 5 D N 6 5 Q D	 <p>The diagram shows a rectangular print with a dashed center crosshair. The overall width is 11.5mm and the overall height is 9.0mm. Inside the rectangle, there is a smaller rectangular area with a width of 4mm and a height of 0.67mm. The 4mm dimension is measured from the right edge of the inner rectangle to the right edge of the outer rectangle. The 0.67mm dimension is measured from the bottom edge of the inner rectangle to the bottom edge of the outer rectangle.</p>	Calipers I S O 1 0 0 Film

# 工具 TOOLS

## 1. TOOLS FOR F65/N65

☆ : NEW TOOL

工具番号 TOOL No.	名称 NAME	備考 Others
☆ J15315-2	カメラ通信工具 CAMERA COMMUNICATION TOOL	For F70,F50 F60,F80
☆ J15386	電池工具 F65 BATTERY TOOL	
J18314	RS232C 用電源工具 POWER SUPPLY FOR RS232C	
J19109	MC-31	For F5,F100 F80
J18266	A F 調整用 Z レンズ ( 1 m 用 ) AF TESTING LENS (For 1 m)	For F5,F100
☆ J15391	45° 出し工具 ( 反射ミラー ) TOOL MIRROR	
J18268-1	サブミラー 45° 出し工具 SUB MIRROR ANGLE ADJUSTMENT TOOL	For F5,F100
J18273	A F チャート AF ADJUSTMENT CHART	For F5,F100 F80
J18230	YAW, PITCH 工具 YAW, PITCH ADJUSTMENT TOOL	For F5,F100 F90,F90X
△ ☆ (追加) J15394	F65 用無限合致点検用スクリーン INFINITY FOCUS CHECK SCREEN FOR F65	
☆ J18322A	点検・調整ソフト NEC 5.0 インチ INSPECTION & ADJUSTMENT F.D.FOR NEC PC 5.0'	
☆ J18322B	点検・調整ソフト NEC 3.5 インチ INSPECTION & ADJUSTMENT F.D.FOR NEC PC 3.5'	
☆ J18322C	点検・調整ソフト IBM 5.0 インチ INSPECTION & ADJUSTMENT F.D.FOR IBM PC 5.0'	
☆ J18322D	点検・調整ソフト IBM 3.5 インチ INSPECTION & ADJUSTMENT F.D.FOR IBM PC 3.5'	

注) J18268-1 サブミラー 45° 出し工具は、前ボディにシャッターを取り付けた後、使用できません。

Note : Do not use J18268-1 after mounting the shutter to the front body.

2. Modification of the old communication tool (J15315-1)

It is impossible to use the old communication tool (J15315-1) as it is because the film cartridge chamber of F65 is smaller than the former cameras.

Therefore, to make the F65 series cameras communicate with the PC, use the communication tool J15315-2 which is established newly this time or use the old communication tool after cutting off a part of the tool according to the dimension of the figure below.

The new communication tool J15315-2 and the modified old tool can be used for the former cameras F50, F60, F70 and F80 etc.

Notes) When processing the old communication tool (J15315), modify the tool to J15315-1 according to the F80 Repair Manual first, and then perform the following modification.

