

# DCR-SX33E/SX34E/SX43/SX43E/SX44/ SX44E/SX53E/SX63/SX63E

## SERVICE MANUAL

Ver. 1.3 2010.06

### Revised-2

Replace the previously issued  
SERVICE MANUAL 9-852-734-33  
with this Manual.



Photo: DCR-SX43/Silver

### LEVEL 2

*US Model  
Canadian Model  
AEP Model  
UK Model  
North European Model  
E Model  
Australian Model  
Chinese Model  
Korea Model  
Argentine Model  
Brazilian Model*

### SERVICE NOTE (Check the following note before the service.)

- 1-1. POWER SUPPLY DURING REPAIRS
- 1-2. PRECAUTION ON REPLACING THE VC-587 BOARD
- 1-3. USING SERVICE JIG
- 1-4. SELF-DIAGNOSIS FUNCTION

DIGITAL VIDEO CAMERA RECORDER

# SONY®

The components identified  
by mark  $\Delta$  or dotted line with  
mark  $\Delta$  are critical for safety.  
Replace only with part number  
specified.

Les composants identifiés par  
une marque  $\Delta$  sont critiques  
pour la sécurité.  
Ne les remplacer que par une  
pièce portant le numéro spécifié.

## Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2010.01	Official Release	—	—
1.1	2010.02	Revised-1 (A1 09-457)	<ul style="list-style-type: none"> <li>• Correction of SERVICE NOTE Page 1-2</li> <li>• Correction of EXPLODED VIEWS Page 2-3, 2-4, 2-5, 2-6, 2-7</li> <li>• Correction of Accessories Page 2-8</li> <li>• Correction of ELECTRICAL PARTS LIST MS-428 board is moved to LEVEL 3. Page 2-9</li> <li>• Correction of BLOCK DIAGRAMS Page 4-1, 4-2, 4-4</li> <li>• Correction of FRAME SCHEMATIC DIAGRAMS Page 5-1</li> <li>• Correction of SCHEMATIC DIAGRAMS MS-428 board is moved to LEVEL 3. Changes in accordance with the moving of MS-428 board. Page 6-1, 6-2, 6-3, 6-4, 6-5, 6-7</li> <li>• Correction of others Page 6-6</li> <li>• Correction of PRINTED WIRING BOARDS MS-428 board is moved to LEVEL 3. Correction of others Page 6-8</li> </ul>	Yes
1.2	2010.03	Revised-2 (A2 09-514)	<ul style="list-style-type: none"> <li>• Correction of EXPLODED VIEWS Page 2-3</li> <li>• Correction of BLOCK DIAGRAMS Page 4-4</li> </ul>	Yes
1.3	2010.06	Supplement-1 (S1 10-041)	<ul style="list-style-type: none"> <li>• Deletion of EXPLODED VIEWS</li> <li>• Revision of ACCESSORIES S. M. Revised: Page 2-7, 2-8</li> </ul>	Yes

These specifications are extracted from instruction manual of DCR-SX33E/SX34E/SX43E/SX44E/SX53E/SX63E.



HANDYCAM



## SPECIFICATIONS

**System**  
Signal format: PAL color, CCIR standards  
Movie recording format:  
Video: MPEG-2 PS  
Audio recording system:  
Dolby Digital 2ch  
Dolby Digital Stereo Creator  
Photo file format  
: DCF Ver.2.0 Compatible  
: Exif Ver.2.21 Compatible  
: MPF Baseline Compatible  
Recording media (Movie/Photo)  
Internal memory  
DCR-SX34E/SX44E: 4 GB  
DCR-SX53E/SX63E: 16 GB  
"Memory Stick PRO Duo" media  
SD memory card, SDHC memory card (Class 2, 4, 6, 10)  
When measuring media capacity, 1 GB equals 1 billion bytes, a portion of which is used for system management and/or application files.  
The capacity that a user can use is below.  
DCR-SX34E/SX44E: Approx. 3.86 GB  
DCR-SX53E/SX63E: Approx. 15.5 GB  
Image device  
2.25 mm (1/8 type) CCD (Charge Coupled Device)  
Gross: Approx. 800 000 pixels  
Effective (Movie, 16:9): Approx. 490 000 pixels  
Effective (Photo, 16:9): Approx. 310 000 pixels  
Effective (Photo, 4:3): Approx. 410 000 pixels  
Lens  
Carl Zeiss Vario-Tessar  
60 × (Optical), 2 000 × (Digital)  
F1.8 ~ 6.0  
Focal length:  
f=1.8 ~ 108 mm (3/32 ~ 4 3/8 in.)  
When converted to a 35 mm still camera  
For movies: 39 ~ 2 340 mm (1 9/16 ~ 92 1/4 in.) (16:9)  
For photos: 44 ~ 2 640 mm (1 3/4 ~ 104 in.) (4:3)  
Color temperature: [AUTO], [ONE PUSH], [INDOOR] (3 200 K), [OUTDOOR] (5 800 K)  
Minimum illumination  
3 lx (lux) ([AUTO SLW SHUTTR] is set to [ON], shutter speed 1/25 second)

**Input/Output connectors**  
A/V Remote Connector: Video/audio output jack  
USB jack: mini-AB  
(DCR-SX33E/SX34E/SX53E: output only)  
**LCD screen**  
Picture: 6.7 cm (2.7 type, aspect ratio 16:9)  
Total number of pixels: 230 400 (960 × 240)  
**General**  
Power requirements: DC 6.8 V/7.2 V (battery pack) DC 8.4 V (AC Adaptor)  
Average power consumption: During camera recording, using LCD screen at normal brightness: 1.8 W  
Operating temperature: 0 °C to 40 °C (32 °F to 104 °F)  
Storage temperature: -20 °C to + 60 °C (-4 °F to +140 °F)  
Dimensions (approx.)  
50 × 55 × 103 mm (2 × 2 1/4 × 4 1/8 in.) (w/h/d) including the projecting parts  
50 × 55 × 112 mm (2 × 2 1/4 × 4 1/2 in.) (w/h/d) including the projecting parts, and the supplied rechargeable battery pack attached  
Mass (approx.)  
190 g (6 oz) main unit only  
230 g (8 oz) including the supplied rechargeable battery pack and memory card

**AC Adaptor AC-L200C/AC-L200D**  
Power requirements: AC 100 V - 240 V, 50 Hz/60 Hz  
Current consumption: 0.35 A - 0.18 A  
Power consumption: 18 W  
Output voltage: DC 8.4 V\*  
Operating temperature: 0 °C to 40 °C (32 °F to 104 °F)  
Storage temperature: -20 °C to + 60 °C (-4 °F to +140 °F)  
Dimensions (approx.): 48 × 29 × 81 mm (1 15/16 × 1 3/16 × 3 1/4 in.) (w/h/d) excluding the projecting parts  
Mass (approx.): 170 g (6.0 oz) excluding the power cord (mains lead)  
\* See the label on the AC Adaptor for other specifications.

**Rechargeable battery pack NP-FV30**  
Maximum output voltage: DC 8.4 V  
Output voltage: DC 7.2 V  
Maximum charge voltage: DC 8.4 V  
Maximum charge current: 2.12 A  
Capacity  
typical: 3.6 Wh (500 mAh)  
minimum: 3.6 Wh (500 mAh)  
Type: Li-ion

Design and specifications of your camcorder and accessories are subject to change without notice.  
• Manufactured under license from Dolby Laboratories.

These specifications are extracted from instruction manual of DCR-SX43/SX44/SX63.



HANDYCAM



## SPECIFICATIONS

**System**  
Signal format: NTSC color, EIA standards  
Movie recording format:  
Video: MPEG-2 PS  
Audio recording system:  
Dolby Digital 2ch  
Dolby Digital Stereo Creator  
Photo file format  
: DCF Ver.2.0 Compatible  
: Exif Ver.2.21 Compatible  
: MPF Baseline Compatible  
Recording media (Movie/Photo)  
Internal memory  
DCR-SX44: 4 GB  
DCR-SX63: 16 GB  
"Memory Stick PRO Duo" media  
SD memory card, SDHC memory card (Class 2, 4, 6, 10)  
When measuring media capacity, 1 GB equals 1 billion bytes, a portion of which is used for system management and/or application files.  
The capacity that a user can use is below.  
DCR-SX44: Approx. 3.86 GB  
DCR-SX63: Approx. 15.5 GB  
Image device  
2.25 mm (1/8 type) CCD (Charge Coupled Device)  
Gross: Approx. 680 000 pixels  
Effective (Movie, 16:9): Approx. 410 000 pixels  
Effective (Photo, 16:9): Approx. 250 000 pixels  
Effective (Photo, 4:3): Approx. 340 000 pixels  
Lens  
Carl Zeiss Vario-Tessar  
60 × (Optical), 2 000 × (Digital)  
F1.8 ~ 6.0  
Focal length:  
f=1.8 ~ 108 mm (3/32 ~ 4 3/8 in.)  
When converted to a 35 mm still camera  
For movies: 39 ~ 2 340 mm (1 9/16 ~ 92 1/4 in.) (16:9)  
For photos: 44 ~ 2 640 mm (1 3/4 ~ 104 in.) (4:3)  
Color temperature: [AUTO], [ONE PUSH], [INDOOR] (3 200 K), [OUTDOOR] (5 800 K)  
Minimum illumination  
3 lx (lux) ([AUTO SLW SHUTTR] is set to [ON], shutter speed 1/30 second)

**Input/Output connectors**  
A/V Remote Connector: Video/audio output jack  
USB jack: mini-AB  
**LCD screen**  
Picture: 6.7 cm (2.7 type, aspect ratio 16:9)  
Total number of pixels: 230 400 (960 × 240)  
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Power requirements: DC 6.8 V/7.2 V (battery pack) DC 8.4 V (AC Adaptor)  
Average power consumption: During camera recording, using LCD screen at normal brightness: 1.8 W  
Operating temperature: 0 °C to 40 °C (32 °F to 104 °F)  
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Maximum charge current: 2.12 A  
Capacity  
typical: 3.6 Wh (500 mAh)  
minimum: 3.6 Wh (500 mAh)  
Type: Li-ion

Design and specifications of your camcorder and accessories are subject to change without notice.  
• Manufactured under license from Dolby Laboratories.

– ENGLISH –

**Model information table**

Model	DCR-SX33E	DCR-SX34E	DCR-SX43	DCR-SX43E
Destination	AEP, UK	AEP, UK	US, CND, E, BR, AR	NE, E, CH, AUS
Color system	PAL	PAL	NTSC	PAL
Recording media	Memory card	Internal memory + Memory card	Memory card	Memory card
Internal memory	-	4 GB	-	-
USB function	Output	Output	Input/Output	Input/Output

Model	DCR-SX44	DCR-SX44E	DCR-SX53E	DCR-SX63	DCR-SX63E
Destination	US, CND, E, BR, KR	NE, E, AUS	AEP, UK	US, CND, E, BR, AR	NE, E, CH, AUS
Color system	NTSC	PAL	PAL	NTSC	PAL
Recording media	Internal memory + Memory card				
Internal memory	4 GB	4 GB	16 GB	16 GB	16 GB
USB function	Input/Output	Input/Output	Output	Input/Output	Input/Output

- Abbreviation
- AR : Argentine model
- AUS : Australian model
- BR : Brazilian model
- CH : Chinese model
- CND : Canadian model
- KR : Korea model
- NE : North European model

**Caution**

Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type.  
Dispose of used batteries according to the instructions.

**SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\triangle$  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

**SAFETY CHECK-OUT**

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
  - Keep the temperature of the soldering iron around 270°C during repairing.
  - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
  - Be careful not to apply force on the conductor when soldering or unsoldering.

**Unleaded solder**

Boards requiring use of unleaded solder are printed with the leadfree mark (LF) indicating the solder contains no lead.  
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

**LF : LEAD FREE MARK**

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.  
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.  
Soldering irons using a temperature regulator should be set to about 350°C.  
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity  
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder  
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

# 1. SERVICE NOTE

## 1-1. POWER SUPPLY DURING REPAIRS

In this unit, about 10 seconds after power is supplied to the battery terminal using the regulated power supply (8.4V), the power is shut off so that the unit cannot operate.

These following method is available to prevent this.

### Method:

Use the genuine AC power adaptor

## 1-2. PRECAUTION ON REPLACING THE VC-587 BOARD

Turn on the set and establish a USB connection , save the USB serial data before replacing the board.

### DESTINATION DATA

When you replace to the repairing board, the written destination data of repairing board also might be changed to original setting. Start the Adjust Manual in the Adjust Station and execute the "DESTINATION DATA WRITE".

After the board replacement, the error of the built-in recording media may be displayed.

In this case, execute the [DESTINATION DATA WRITE] then the error will be cleared.

If it is not cleared with [DESTINATION DATA WRITE], format the built-in recording media.

### USB SERIAL SAVE

When you replace to the repairing board, get the data from the former one.

Start the Adjust Manual in the Adjust Station and perform "USB SERIAL SAVE" to get the data.

### USB SERIAL No.

The set is shipped with a unique ID (USB Serial No.) written in it.

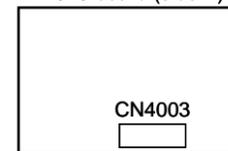
This ID has not been written in a new board for service, and therefore it must be entered after the board replacement.

Start the Adjust Manual in the Adjust Station and execute the "USB SERIAL No. INPUT".

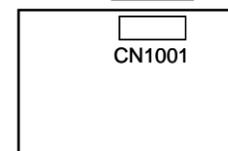
## 1-3. USING SERVICE JIG

Connect the extension cable (J-6082-578-A) between CN4003 on the DA-049 board and CN1001 on the VC-587 board.

DA-049 board (side A)



Extension cable (100P)  
(J-6082-578-A)



VC-587 board (side B)

## 1-4. SELF-DIAGNOSIS FUNCTION

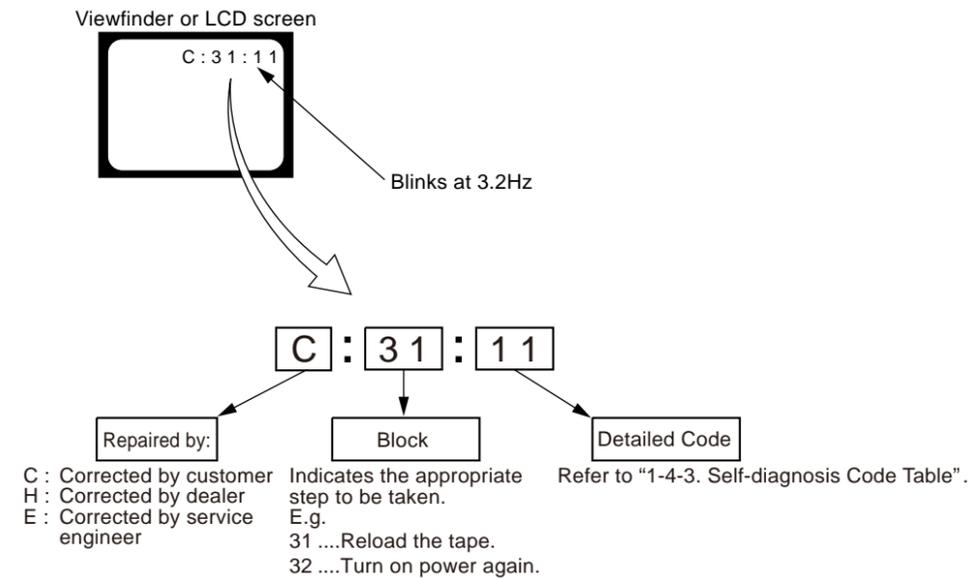
### 1-4-1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the Viewfinder or the LCD screen what to do. This function consists of two display; self-diagnosis display and service mode display.

Details of the self-diagnosis functions are provided in the Instruction manual.

### 1-4-2. Self-diagnosis Display

When problems occur while the unit is operating, the counter of the Viewfinder or the LCD screen shows a 4-digit display consisting of an alphabet and numbers, which blinks at 3.2 Hz. This 5-character display indicates the "repaired by:", "block" in which the problem occurred, and "detailed code" of the problem.



## 1-4-3. Self-diagnosis Code Table

Self-diagnosis Code				Symptom/State	Correction
Repaired by:	Block Function	Detailed Code			
C	0 4	0 0		Non-standard battery is used.	Use the InfoLITHIUM battery.
C	0 6	0 0		The battery pack temperature is high.	Change the battery pack or replace it in a cool place.
C	1 3	0 1		Memory card is unformatted. Memory card is broken.	Format the memory card. Insert a new memory card.
C	1 3	0 2		Access error (SX34/SX44/SX44E/SX53/SX63/ SX63E)	Remove the power source. Reconnect it again and operate your camcorder again.
E	2 0	0 0		Flash memory data are rewritten.	Make flash memory data correct value. (Note 1)
E	6 1	0 0		Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (pin ⑧ of CN5401 on the VC-587 board) when focusing is performed when the focus buttons of the touch panel are pressed in the focus manual mode, and the focus motor driver circuit (IC5401 on the VC-587 board) when focusing is not performed.
E	6 1	1 0		Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom MR sensor (pin ⑩ of CN5401 on the VC-587 board) when zooming is performed when the zoom lever is operated, or the zoom motor drive circuit (IC5401 on the VC-587 board) when zooming is not performed.
E	6 1	1 1		The abnormalities in initialization of the focus lens and the abnormalities in initialization of the zoom lens occurred simultaneously.	Check E: 61: 00 and E: 61: 10 of the self-diagnosis code.
E	9 2	0 1		Battery current value goes over the max discharge current	Check the remaining battery power because this symptom may be depended on the remaining battery level, and confirm whether or not the symptom is occurred after replacing the battery. If the symptom is still occurred, overhaul inspection is needed. Check each output of DC/DC converter (IC4701) on VC-587 board connected to DA-049 board with extension cable (100P), and connect DC/Batt harness (the minimum connection to periphery) to DA-049 board.
E	9 4	0 0		Fault of writing or erasing the flash memory	Inspect the flash memory (IC7301 on the MS-428 board).
E	9 4	0 1		Internal memory fault	Format the internal memory (IC7301 on the MS-428 board). Inspect or replacement of the internal memory (IC7301 on the MS-428 board). (Note 2)

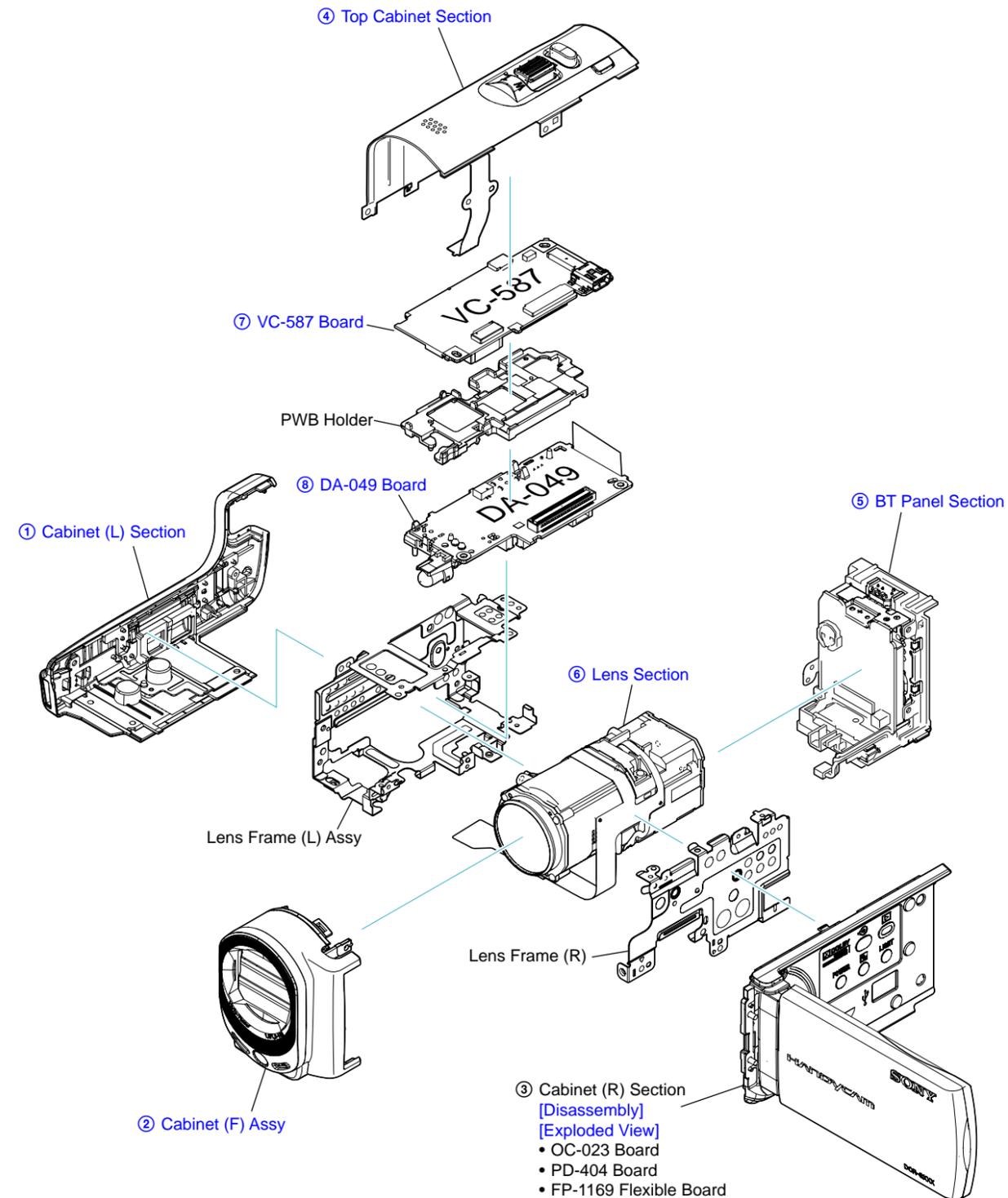
**Note1:** Start the Adjust Manual in the Adjust Station and refer to the "Destination data write".

**Note2:** Start the Adjust Manual in the Adjust Station and refer to the "INTERNAL MEMORY ADJUSTMENTS".

## 2. REPAIR PARTS LIST

### IDENTIFYING PARTS

Follow the disassembly in the numerical order given.



### (ENGLISH)

#### NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

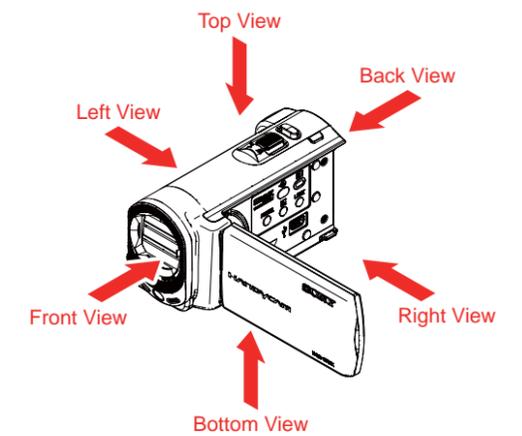
Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Color Indication of Appearance Parts  
Example:  
(SILVER) : Cabinet's Color  
(Silver) : Parts Color

#### Abbreviation

- AR : Argentine model
- AUS : Australian model
- BR : Brazilian model
- CH : Chinese model
- CND : Canadian model
- KR : Korea model
- NE : North European model

### View Position



Link

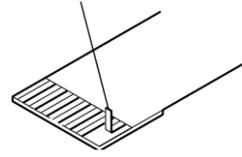
ACCESSORIES

ASSEMBLY

## NOTE FOR REPAIR

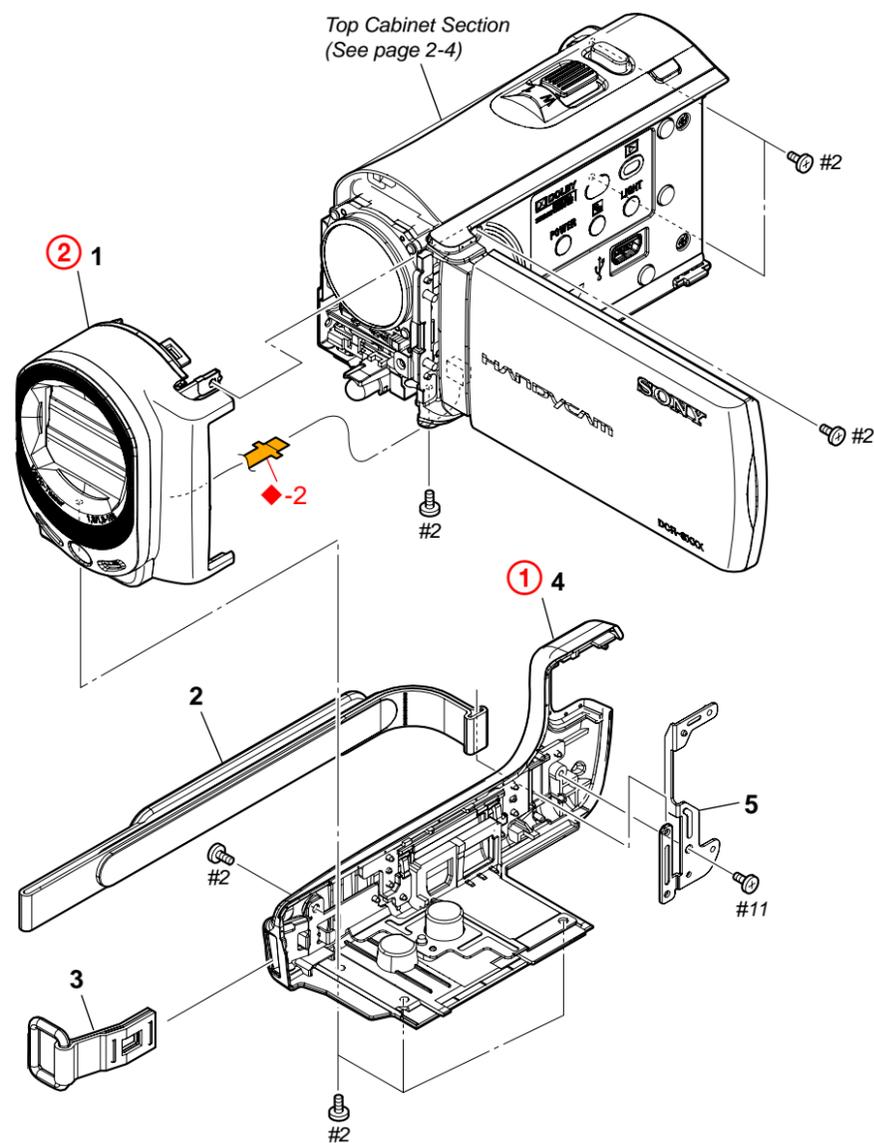
- Make sure that the flat cable and flexible board are not cracked or bent at the terminal.  
Do not insert the cable insufficiently nor crookedly.
- When remove a connector, don't pull at wire of connector. It is possible that a wire is snapped.
- When installing a connector, don't press down at wire of connector.  
It is possible that a wire is snapped.
- Do not apply excessive load to the gilded flexible board.

Cut and remove the part of gilt which comes off at the point.  
(Be careful or some pieces of gilt may be left inside)



## 2-1. EXPLODED VIEWS

### 2-1-1. CABINET (L) SECTION



Ref. No.	Part No.	Description
1	A-1750-021-A	CABINET (F 331S) ASSY (SILVER)
1	A-1750-065-A	CABINET (F 331L) ASSY (BLUE)
1	A-1750-066-A	CABINET (F 331R) ASSY (RED)
2	4-166-606-01	BELT, GRIP (10) (SILVER)
2	4-166-606-11	BELT, GRIP (10) (BLUE)

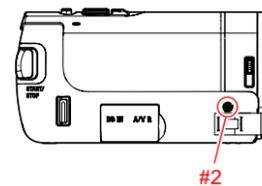
Ref. No.	Part No.	Description
2	4-166-606-21	BELT, GRIP (10) (RED)
3	4-173-827-01	BELT (FRONT (10)), GRIP
4	A-1759-824-A	CABINET (L) ASSY, SERVICE (SERVICE)
* 5	4-166-394-01	PLATE (REAR), GB
#2	2-635-562-31	SCREW (M1.7)
#11	3-078-890-11	SCREW, TAPPING

## DISASSEMBLY

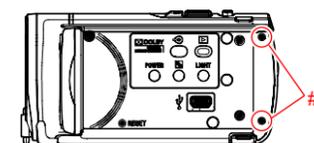
1. Remove to numerical order (① to ②) in the left figure.
2. The meaning of the sign in left figure is as follows. Be careful when it removes.  
 ◆-X: Flexible Board, Flat Cable, Harness

### ① #2 X 6

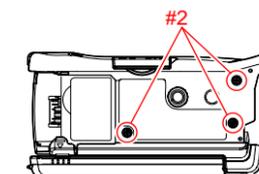
Left View



Right View

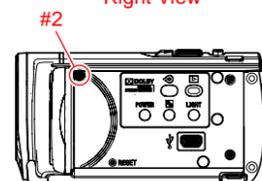


Bottom View

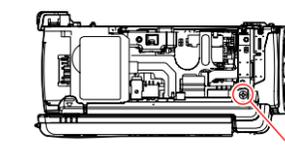


### ② #2 X 2

Right View

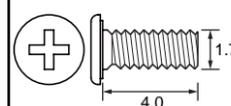


Bottom View

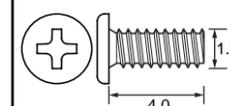


## Screw

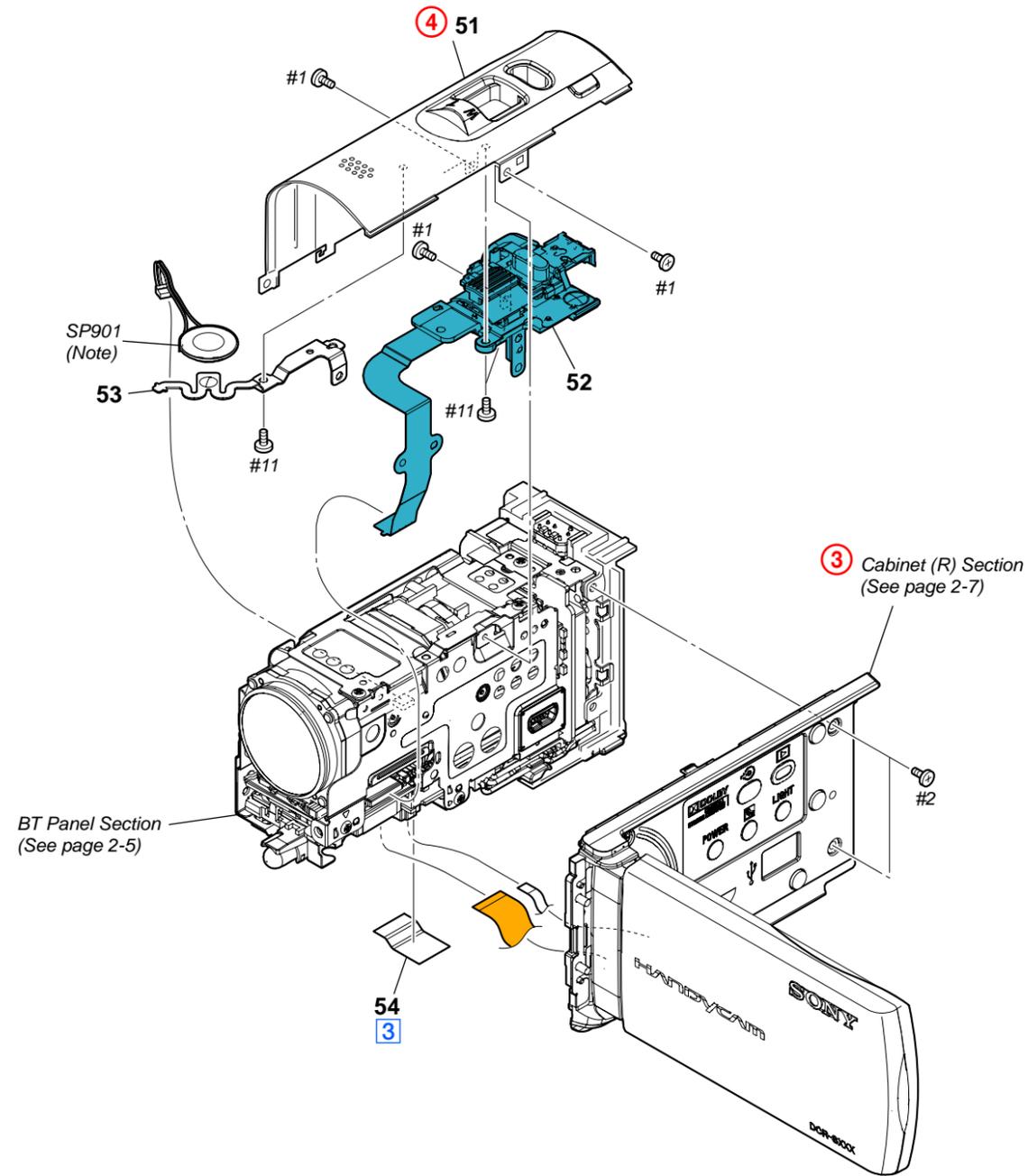
#2: M1.7 X 4.0  
 (Black)  
 2-635-562-31



#11: M1.7 X 4.0 (Tapping)  
 (Silver)  
 3-078-890-11



2-1-2.TOP CABINET SECTION



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
51	A-1750-019-A	CABINET TOP (331S) ASSY (SILVER)	SP901	1-826-837-41	SPEAKER (1.3CM) (SERVICE) (Note)
51	A-1750-060-A	CABINET TOP (331L) ASSY (BLUE)	#1	2-635-562-11	SCREW (M1.7)
51	A-1750-061-A	CABINET TOP (331R) ASSY (RED)	#2	2-635-562-31	SCREW (M1.7)
52	1-487-527-11	SWITCH BLOCK, CONTROL (PS33100)	#11	3-078-890-11	SCREW, TAPPING
* 53	4-166-380-01	RETAINER, SPEAKER			
* 54	4-166-383-01	INSULATING SHEET (BM)			

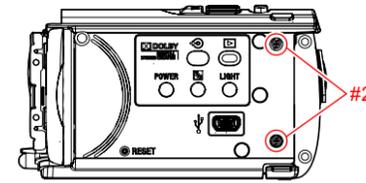
DCR-SX33E/SX34E/SX43/SX43E/SX44/SX44E/SX53E/SX63/SX63E\_L2

DISASSEMBLY

1. Remove to numerical order (3 to 4) in the left figure.

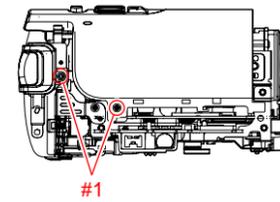
3 Insulating Sheet (BM) (3) → #2 X 2

Right View

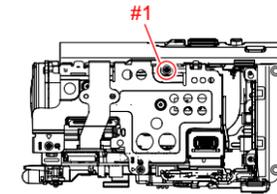


4 #1 X 3

Left View

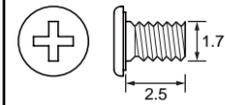


Right View

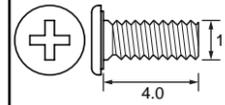


Screw

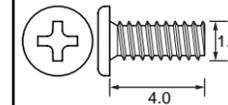
#1: M1.7 X 2.5  
(Black)  
2-635-562-11



#2: M1.7 X 4.0  
(Black)  
2-635-562-31



#11: M1.7 X 4.0 (Tapping)  
(Silver)  
3-078-890-11

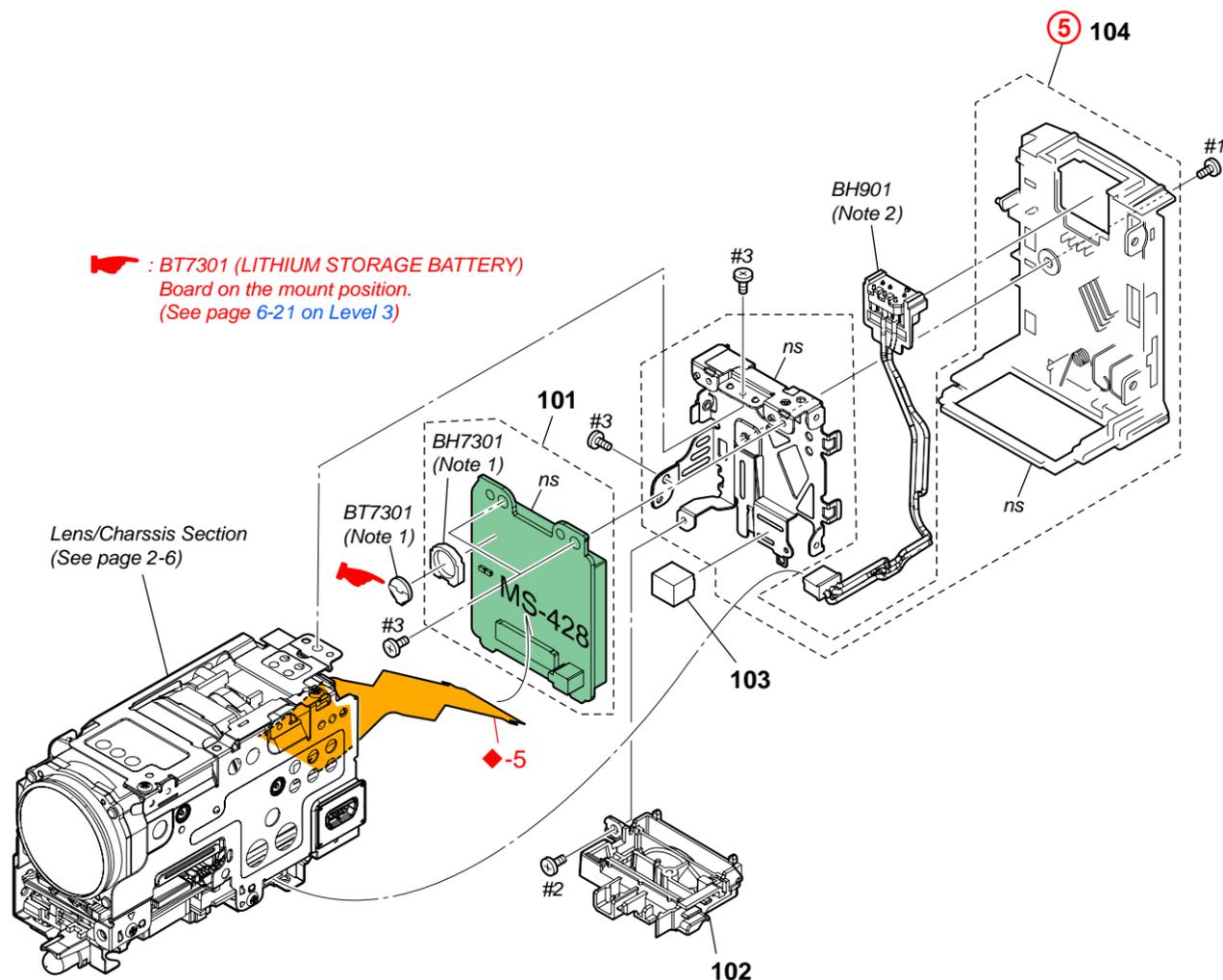


Note

Note : Refer to "Assembly-4:Installation Caution of the Speaker Herness".

### 2-1-3. BT PANEL SECTION

ns: not supplied



Ref. No.	Part No.	Description
101	A-1751-592-A	MS-428 BOARD, COMPLETE (SX33E/SX43/SX43E)
101	A-1751-593-A	MS-428 BOARD, COMPLETE (SX53E/SX63/SX63E)
101	A-1751-594-A	MS-428 BOARD, COMPLETE (SX34E/SX44/SX44E)
102	A-1759-823-A	HOLDER ASSY, SERVICE (MS) (SERVICE)
* 103	4-166-442-01	GASKET BT

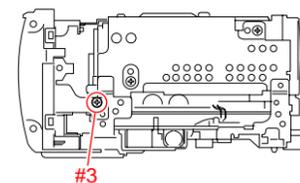
Ref. No.	Part No.	Description
104	A-1761-277-A	PANEL ASSY, SERVICE (BT) (SERVICE)
△	BH7301	1-756-615-61 HOLDER, BATTERY (Note 1)
△	BH901	1-780-820-11 BATTERY CONNECTOR HARNESS (Note 2)
△	BT7301	1-756-134-12 BATTERY, STORAGE, LITHIUM (Note 1)
#1	2-635-562-11	SCREW (M1.7)
#2	2-635-562-31	SCREW (M1.7)
#3	2-660-401-01	SCREW (M1.7), NEW TRU-STAR, P2

### DISASSEMBLY

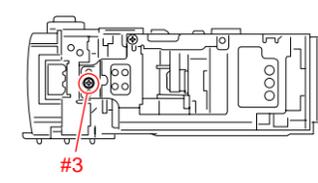
1. Remove to numerical order (5) in the left figure.
2. The meaning of the sign in left figure is as follows. Be careful when it removes.  
 ◆-X: Flexible Board, Flat Cable, Harness

5 #3 X 2

Left View

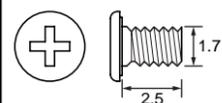


Top View

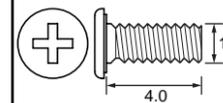


### Screw

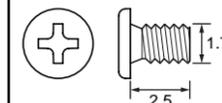
#1: M1.7 X 2.5 (Black) 2-635-562-11



#2: M1.7 X 4.0 (Black) 2-635-562-31



#3: M1.7 X 2.5 (Red) 2-660-401-01



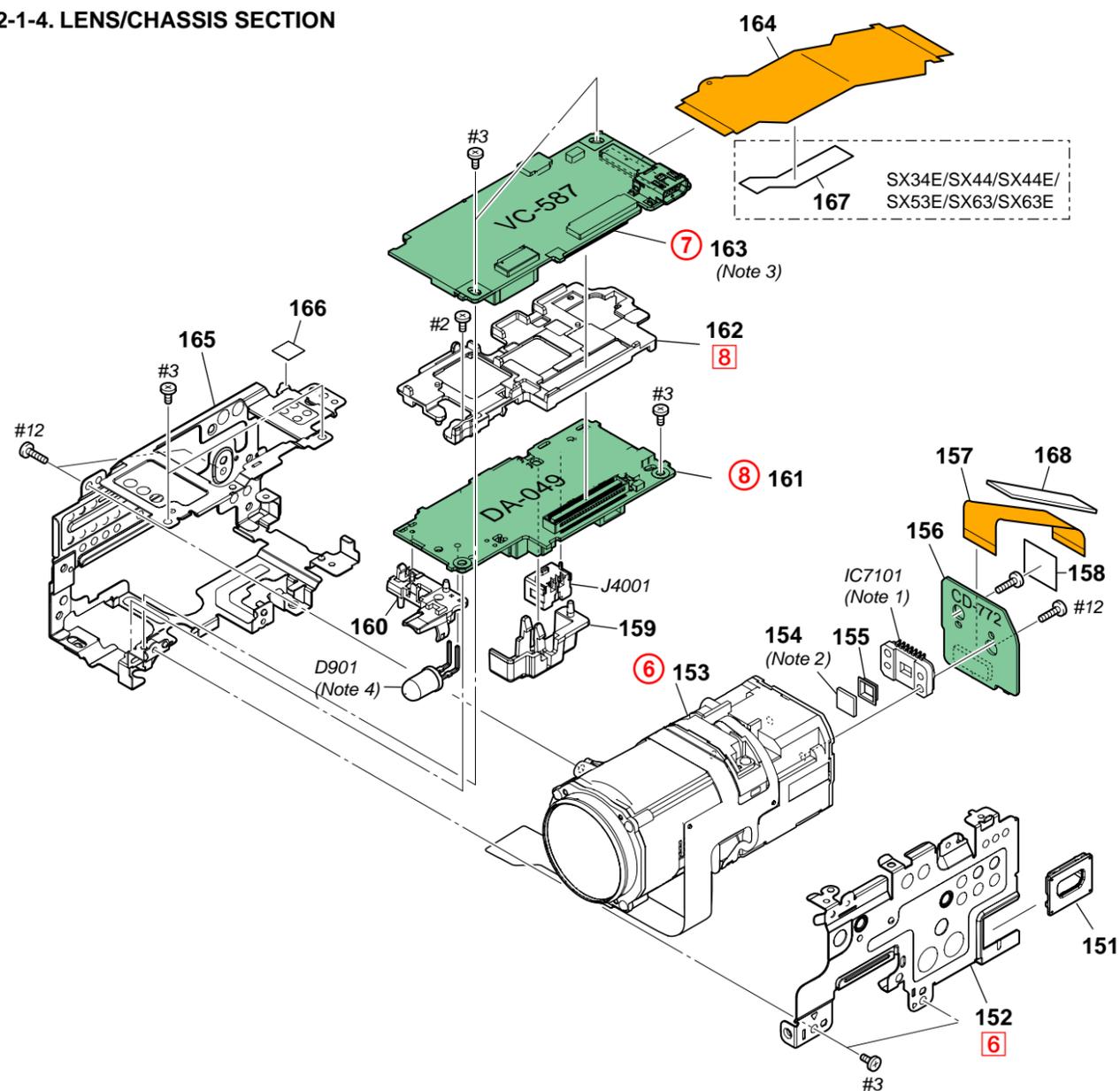
### Note

**Caution :**  
 Danger of explosion if battery is incorrectly replaced.  
 Replace only with the same or equivalent type.  
 Dispose of used batteries according to the instructions.

**Note 1:** Replace the battery holder (BH7301) together when replacing the lithium storage battery (BT7301) on the MS-428 board.  
 (The battery holder removed once cannot be used again.)  
 When mounting these parts, mount new battery holder first and attach new lithium storage battery next.

**Note 2:** Refer to "Assembly-3:Installation Caution of the Battery Harness".

2-1-4. LENS/CHASSIS SECTION



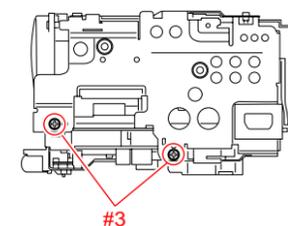
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
* 151	4-166-377-01	HOLDER, USB	164	1-881-148-11	FP-1241 FLEXIBLE BOARD
* 152	4-166-376-01	FRAME (R), LENS	* 165	X-2541-565-1	FRAME (L) ASSY, LENS
153	1-788-861-11	OPTICAL UNIT (CK001)	* 166	4-177-008-01	INSULATING SHEET (PS)
154	1-788-870-11	OPTICAL FILTER BLOCK (Note 2)	167	4-181-801-01	SHEET (FP1241), RADIATION (SX34E/SX44/SX44E/SX53E/SX63/SX63E)
155	3-878-748-01	RUBBER (1340), SEAL	* 168	4-183-614-01	SHEET (CD), RADIATION
156	A-1751-596-A	CD-772 BOARD, COMPLETE	△ J4001	1-815-792-11	CONNECTOR, DC-IN (7.2V)
157	1-880-150-11	FP-1168 FLEXIBLE BOARD	* D901	6-502-954-01	DI NSPL500DS (Note 4)
* 158	4-183-780-01	SHEET (CD772), RADIATION	IC7101	8-753-331-34	ICX690NKF-H (SX43/SX44/SX63) (Note 1)
* 159	4-166-378-01	HOLDER, JK	IC7101	8-753-331-35	ICX691NKF-H (SX33E/SX34E/SX43E/SX44E/SX53E/SX63E) (Note 1)
* 160	4-166-412-01	HOLDER, LED	#2	2-635-562-31	SCREW (M1.7)
161	A-1751-652-A	DA-049 BOARD, COMPLETE (SERVICE) (SX43/SX43E/SX44/SX44E/SX63/SX63E)	#3	2-660-401-01	SCREW (M1.7), NEW TRU-STAR, P2
161	A-1760-126-A	DA-049 BOARD, COMPLETE (SERVICE) (SX33E/SX34E/SX53E)	#12	3-080-204-21	SCREW, TAPPING, P2
* 162	4-166-379-01	HOLDER, PWB			
163	A-1751-646-A	VC-587 BOARD, COMPLETE (SERVICE) (SX33E/SX43/SX43E) (Note 3)			
163	A-1751-647-A	VC-587 BOARD, COMPLETE (SERVICE) (SX34E/SX44/SX44E/SX53E/SX63/SX63E) (Note 3)			

DISASSEMBLY

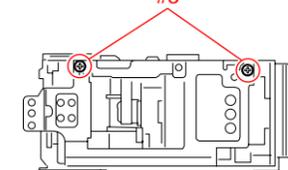
1. Remove to numerical order (6 to 8) in the left figure.

⑥ #3 X 4 → #12 X 2

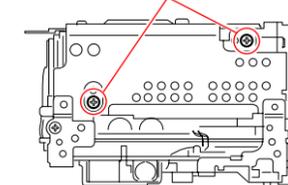
Right View



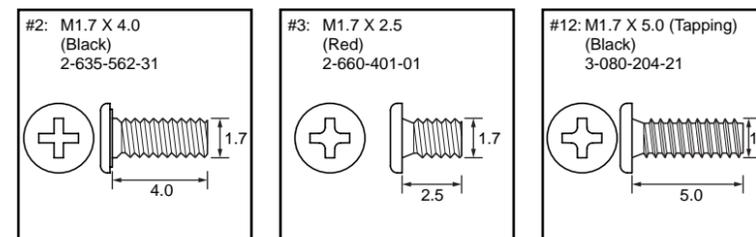
Top View



Left View



Screw



Note

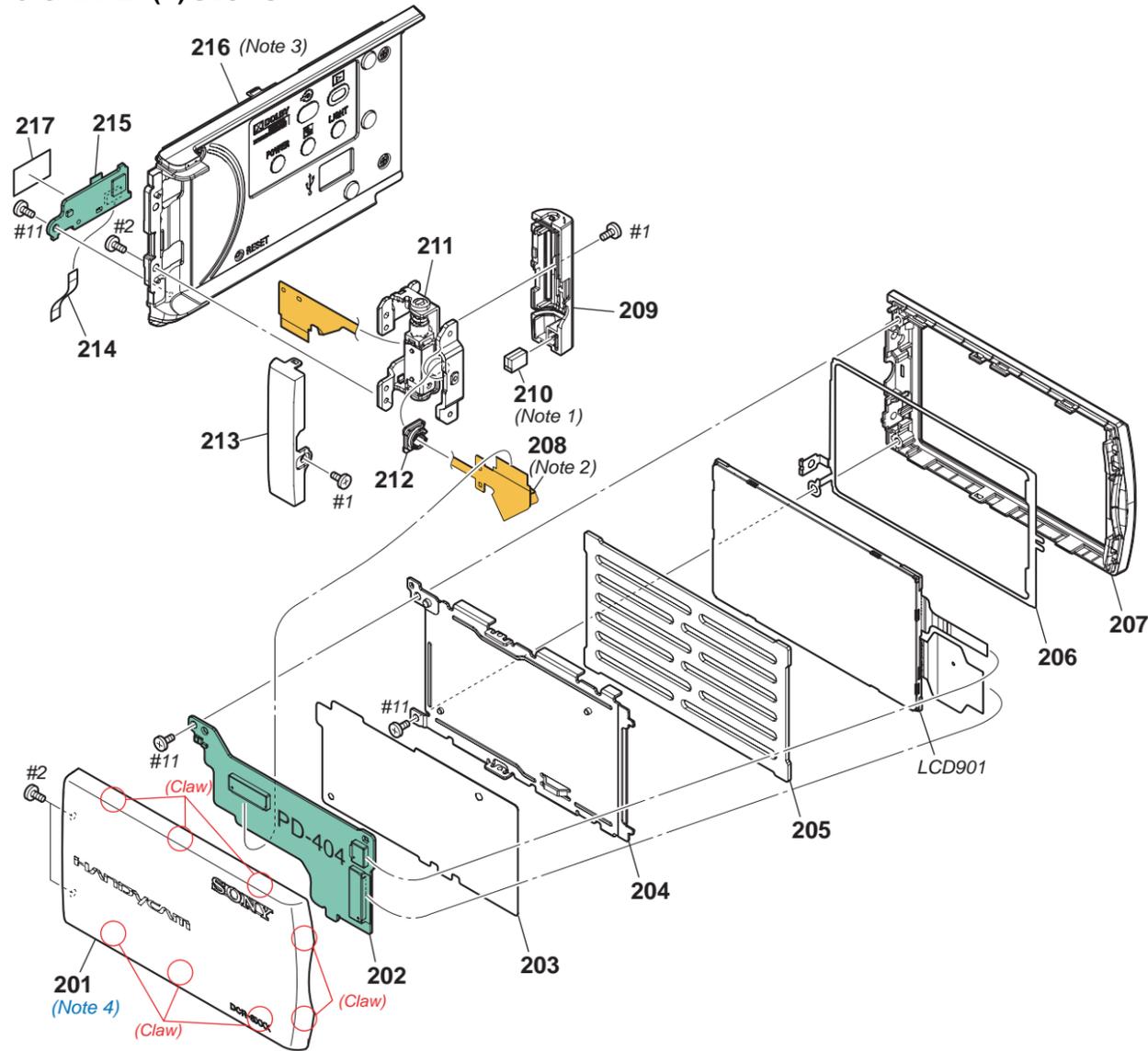
**Note 1:** Be sure to read "Precautions for Replacement of Imager" on page 6-1 when changing the imager.

**Note 2:** Be sure to read "Assembly-1: How to Distinguish The Side of Optical Filter Block Facing to Lens Device" when changing the optical filter block.

**Note 3:** When replacing the VC-587 board, start the Adjust Manual in the Adjust Station and refer to the "INTERNAL MEMORY ADJUSTMENTS".

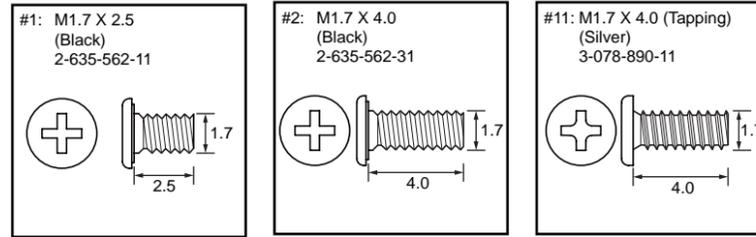
**Note 4:** Refer to "Assembly-2:Precaution Mounting Method of D901 (LED video light)".

2-1-5. CABINET (R) SECTION



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
201	A-1750-023-A	CABINET (C (43S)) ASSY, P (SX43(SILVER)/SX43E(SILVER)) (Note 4)	* 203	4-166-447-01	INSULATING SHEET, PD
201	A-1750-073-A	CABINET (C (33S)) ASSY, P (SX33E(SILVER))	* 204	4-166-448-01	PLATE, LCD
201	A-1750-074-A	CABINET (C (63S)) ASSY, P (SX63/SX63E)	205	4-166-446-01	CUSHION, LCD
201	A-1750-075-A	CABINET (C (53S)) ASSY (SX53E)	206	4-166-445-01	PLATE, P GROUND
201	A-1750-076-A	CABINET (C (44S)) ASSY (SX44(SILVER)/SX44E(SILVER))	207	4-166-444-01	CABINET (M), P
201	A-1750-077-A	CABINET (C (34S)) ASSY, P (SX34E(SILVER))	208	1-880-151-11	FP-1169 FLEXIBLE BOARD (Note 2)
201	A-1750-887-A	CABINET (C (43L)) ASSY, P (SX43(BLUE)/SX43E(BLUE))	* 209	4-166-449-01	COVER (U), HINGE
201	A-1750-888-A	CABINET (C (33L)) ASSY, P (SX33E(BLUE))	210	1-471-504-11	MAGNET (ND5X3.5X2.4-B) (Note 1)
201	A-1750-889-A	CABINET (C (44L)) ASSY, P (SX44(BLUE)/SX44E(BLUE))	211	X-2541-568-1	HINGE Y (A) ASSY, 10 STYLE
201	A-1750-890-A	CABINET (C (34L)) ASSY, P (SX34E(BLUE))	* 212	4-166-451-01	CLAMP, FLEXIBLE
201	A-1750-891-A	CABINET (C (43R)) ASSY, P (SX43(RED)/SX43E(RED))	* 213	4-166-450-01	COVER (O), HINGE (SILVER)
201	A-1750-892-A	CABINET (C (33R)) ASSY, P (SX33E(RED))	* 213	4-166-450-11	COVER (O), HINGE (BLUE)
201	A-1750-893-A	CABINET (C (44R)) ASSY, P (SX44(RED)/SX44E(RED))	* 213	4-166-450-21	COVER (O), HINGE (RED)
201	A-1750-894-A	CABINET (C (34R)) ASSY, P (SX34E(RED))	214	1-837-061-11	FLEXIBLE FLAT CABLE (FFC-226)
202	A-1751-597-A	PD-404 BOARD, COMPLETE	215	A-1751-649-A	OC-023 BOARD, COMPLETE (SERVICE)
			216	A-1750-022-A	CABINET (R (331)) ASSY (Note 3)
			217	4-178-725-01	SHEET (OC)
			LCD901	A-1748-996-A	FTS BLOCK ASSY 27STMG10 (SERVICE)
			#1	2-635-562-11	SCREW (M1.7)
			#2	2-635-562-31	SCREW (M1.7)
			#11	3-078-890-11	SCREW, TAPPING

Screw



Note

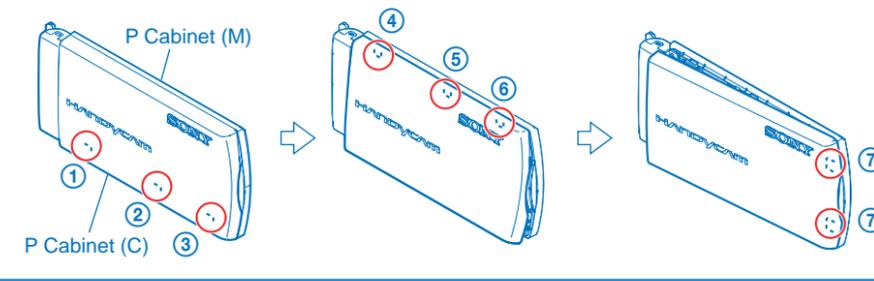
Note 1: Put the marking side together on the position of figure when you install the magnet.



Note 2: Refer to "Assembly-5: The method of attachment of FP-1169 Flexible Board".

Note 3: CONTROL SWITCH BLOCK (SK33100) is supplied in CABINET (R (331)) ASSY.

Note 4: When remove the P Cabinet (C), remove the claws in the order of numbers, in order to prevent being damaged of the claws of P Cabinet (M).



Checking supplied accessories.



AC Adaptor  
(AC-L200C/L200D)  
(EXCEPT BR)  
\* Compatible in  
L200C and L200D  
△ 1-487-150-51



Power cord (Mains lead)  
(EXCEPT BR)  
△ 1-783-952-71 (AR)  
△ 1-832-121-41 (CH)  
△ 1-832-169-41 (UK, E: PAL (Saudi))  
△ 1-833-892-41 (KR)  
△ 1-834-482-21  
(AEP, NE, E:NTSC (Latin America), E:PAL (EXCEPT Saudi))  
△ 1-834-484-31 (US, CND)  
△ 1-834-852-11 (E:NTSC (EXCEPT Latin America), BR)  
△ 1-835-983-11 (AUS)



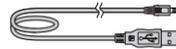
Conversion (2P) Adaptor  
△ 1-569-008-33  
(E:NTSC (Latin America))



Conversion (2P) Adaptor  
△ 1-569-007-12 (E:NTSC (EXCEPT Latin America))



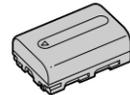
A/V connecting cable  
1-823-156-61



USB cable  
1-835-993-31



Operating Guide



Rechargeable battery pack  
(NP-FV30)  
△ A-1738-740-A (US, CND)  
△ A-1738-741-A (EXCEPT US, CND, CH)  
△ A-1738-742-A (CH)

- 4-170-098-11 (ENGLISH, SPANISH)
- \* 4-170-098-21 (FRENCH)
- \* 4-170-098-41 (TRADITIONAL CHINESE)
- 4-170-098-51 (KOREAN)
- \* 4-170-099-11 (ENGLISH)
- \* 4-170-099-21 (FRENCH, DUTCH, GERMAN, ITALIAN)
- \* 4-170-099-31 (SPANISH, PORTUGUESE, GREEK, TURKISH)
- \* 4-170-099-41 (POLISH, CZECH, HUNGARIAN, SLOVAK)
- \* 4-170-099-51 (DANISH, FINNISH, SWEDISH, ROMANIAN)
- \* 4-170-099-61 (RUSSIAN, UKRAINIAN)
- \* 4-170-099-81 (SIMPLIFIED CHINESE) (E: PAL (EXPECT middle east))
- \* 4-170-099-91 (ARABIC, PERSIAN)
- 4-170-101-12 (SIMPLIFIED CHINESE) (CH)



CD-ROM "Handycam  
Application Software"  
- "PMB" (software) including "PMB Guide"  
- "Handycam Handbook" (PDF)  
4-169-512-01



Handycam Handbook (PDF)

- \* 4-170-094-11 (ENGLISH)
- \* 4-170-094-21 (FRENCH)
- \* 4-170-094-31 (SPANISH)
- \* 4-170-094-41 (PORTUGUESE)
- \* 4-170-094-51 (TRADITIONAL CHINESE)
- \* 4-170-094-61 (KOREAN)
- \* 4-170-095-11 (ENGLISH)
- \* 4-170-095-21 (FRENCH)
- \* 4-170-095-31 (GERMAN)
- \* 4-170-095-41 (ITALIAN)
- \* 4-170-095-51 (DUTCH)
- \* 4-170-095-61 (SPANISH)
- \* 4-170-095-71 (PORTUGUESE)
- \* 4-170-095-81 (TRUKISH)
- \* 4-170-095-91 (GREEK)
- \* 4-170-096-11 (CZECH)
- \* 4-170-096-21 (HUNGARIAN)
- \* 4-170-096-31 (SLOVAK)
- \* 4-170-096-41 (POLISH)
- \* 4-170-096-51 (SWEDISH)
- \* 4-170-096-61 (DANISH)
- \* 4-170-096-71 (FINNISH)
- \* 4-170-096-81 (ROMANIAN)
- \* 4-170-096-91 (RUSSIAN)
- \* 4-170-097-11 (UKRAINIAN)
- \* 4-170-097-21 (TRADITIONAL CHINESE)
- \* 4-170-097-31 (SIMPLIFIED CHINESE)
- \* 4-170-097-41 (ARABIC)
- \* 4-170-097-51 (PERSIAN)
- \* 4-170-097-61 (MALAY)
- \* 4-170-097-71 (INDONESIAN)
- \* 4-170-097-81 (THAI)

The CD-ROM supplied contains all of language version of the Instruction Manual in pdf (Handycam Handbook.pdf) for printing.

- The printed matter is not supplied. If required, please order it with the part number below.

2-2. ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
	A-1751-596-A	CD-772 BOARD, COMPLETE *****
(IC7101 (CCD IMAGER) is not included in CD-772 complete board.)		
< CAPACITOR >		
C7101	1-127-820-11	CERAMIC CHIP 4.7uF 10% 16V
C7103	1-100-567-81	CERAMIC CHIP 0.01uF 10% 25V
C7104	1-127-820-11	CERAMIC CHIP 4.7uF 10% 16V
C7105	1-164-854-11	CERAMIC CHIP 15PF 5% 50V
C7108	1-100-597-91	CERAMIC CHIP 0.1uF 10% 25V
< IC >		
IC7101	8-753-331-34	ICX690NKF-H (SX43/SX44/SX63) (Note)
IC7101	8-753-331-35	ICX691NKF-H (SX33E/SX34E/SX43E/SX44E/SX53E/SX63E) (Note)
< CONNECTOR >		
* CN7101	1-818-516-71	CONNECTOR, FFC/FPC (ZIF) 20P
< COIL >		
* L7101	1-481-425-21	INDUCTOR 10uH
< TRANSISTOR >		
Q7101	8-729-923-27	TRANSISTOR 2SC4082-T106P
< RESISTOR >		
R7101	1-218-959-11	METAL CHIP 3.3K 5% 1/16W
*****		
	1-880-150-11	FP-1168 FLEXIBLE BOARD *****
*****		
	1-880-151-11	FP-1169 FLEXIBLE BOARD *****
*****		
	1-881-148-11	FP-1241 FLEXIBLE BOARD *****
*****		
	A-1751-649-A	OC-023 BOARD, COMPLETE (SERVICE) *****
< CAPACITOR >		
C8601	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
< CONNECTOR >		
CN8601	1-816-654-61	FFC/FPC CONNECTOR (LIF) 6P
CN8602	1-816-654-61	FFC/FPC CONNECTOR (LIF) 6P
< RESISTOR >		
R8601	1-218-957-11	METAL CHIP 2.2K 5% 1/16W
R8602	1-218-955-11	METAL CHIP 1.5K 5% 1/16W
R8603	1-218-954-11	METAL CHIP 1.2K 5% 1/16W

Ref. No.	Part No.	Description
		< SWITCH >
S8601	1-786-914-31	SWITCH, TACTILE
< SENSOR >		
* SE8601	1-487-118-11	GMR SENSOR (PANEL OPEN/CLOSE DETECT)
*****		
	A-1751-597-A	PD-404 BOARD, COMPLETE *****
(SE6401 is not supplied, but it is included in PD-404 complete board.)		
< CAPACITOR >		
C6401	1-100-567-81	CERAMIC CHIP 0.01uF 10% 25V
C6402	1-100-581-81	CERAMIC CHIP 0.0047uF 10% 50V
* C6403	1-114-582-11	CERAMIC CHIP 0.1uF 10% 16V
C6404	1-165-884-11	CERAMIC CHIP 2.2uF 10% 6.3V
C6405	1-112-746-11	CERAMIC CHIP 4.7uF 10% 6.3V
C6406	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C6408	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C6409	1-112-300-91	CERAMIC CHIP 4.7uF 10% 10V
C6410	1-112-300-91	CERAMIC CHIP 4.7uF 10% 10V
C6411	1-112-300-91	CERAMIC CHIP 4.7uF 10% 10V
C6412	1-125-889-11	CERAMIC CHIP 2.2uF 10% 10V
C6414	1-100-591-91	CERAMIC CHIP 1uF 10% 25V
C6415	1-125-889-11	CERAMIC CHIP 2.2uF 10% 10V
* C6416	1-112-298-91	CERAMIC CHIP 1uF 10% 16V
* C6417	1-112-298-91	CERAMIC CHIP 1uF 10% 16V
< CONNECTOR >		
CN6401	1-822-378-11	CONNECTOR, FPC (ZIF) 33P
* CN6402	1-821-503-11	CONNECTOR, FPC (ZIF) 39P
CN6403	1-816-654-61	FFC/FPC CONNECTOR (LIF) 6P
< COIL >		
* L6401	1-481-102-21	INDUCTOR 10uH
* L6402	1-481-102-21	INDUCTOR 10uH
< TRANSISTOR >		
* Q6401	6-552-337-01	TRANSISTOR DMG9640N0L
* Q6402	6-552-337-01	TRANSISTOR DMG9640N0L
< RESISTOR >		
R6402	1-218-953-11	METAL CHIP 1K 5% 1/16W
R6403	1-218-953-11	METAL CHIP 1K 5% 1/16W
R6405	1-218-985-11	METAL CHIP 470K 5% 1/16W
< SENSOR >		
SE6401	(Not supplied)	AMR SENSOR (PANEL NORMAL/REVERSE DETECT)
(SE6401 is supplied included in PD-404 complete board.)		
*****		

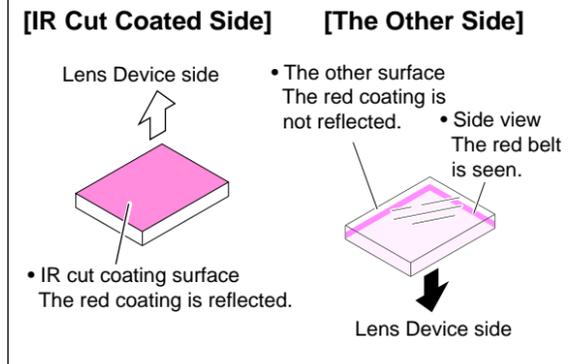
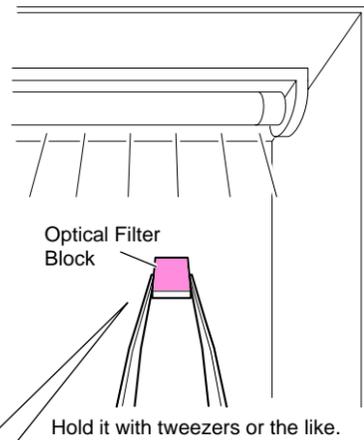
Note: Be sure to read "Precautions for Replacement of Imager" on page 6-1 when changing the imager.

Please refer to LEVEL 3 about the ELECTRICAL PARTS LIST of DA-049, MS-428 and VC-587.

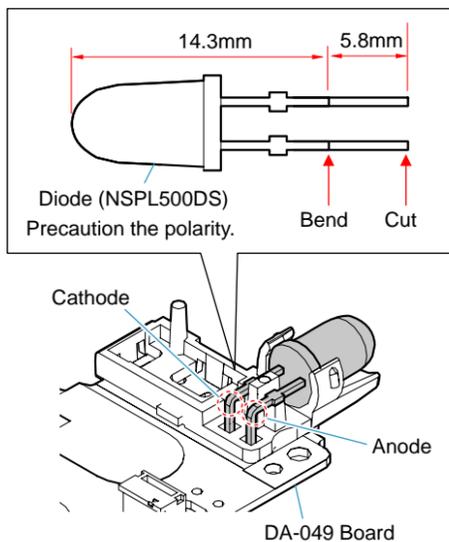
### 3. ASSEMBLY

#### Assembly-1: How to distinguish the side of Optical Filter Block facing to Lens Device

The one side of the Optical Filter Block has treated with IR cut coating.  
Mount the Optical Filter Block facing the IR cut Coated side to the lens device.  
Distinguish the IR cut coated side from the other by applying the fluorescent light to the Optical Filter Block in the dark place (cut off the outside light).

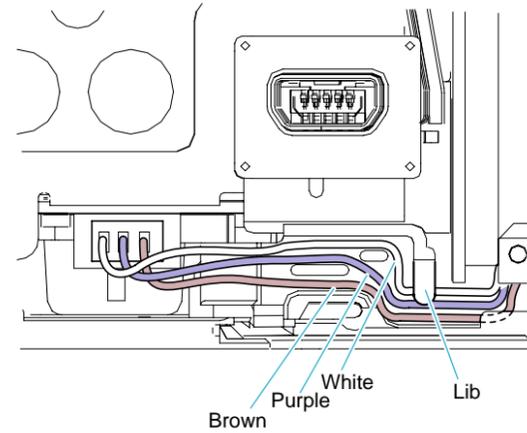


#### Assembly-2: Precaution Mounting method of D901 (LED video light)



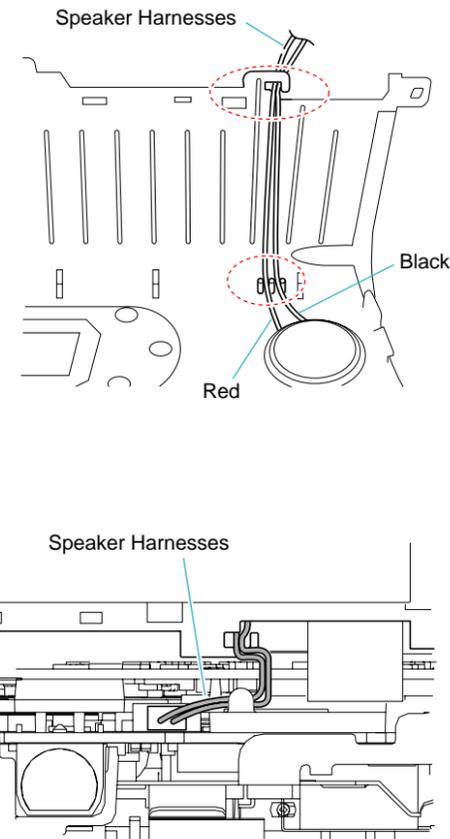
#### Assembly-3: Installation Caution of the Battery Harness

Pass three Battery Harnesses in lib.  
Be careful about the overlaps of harnesses.



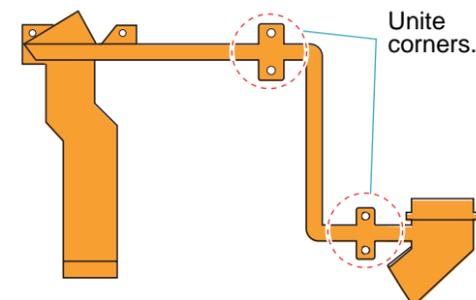
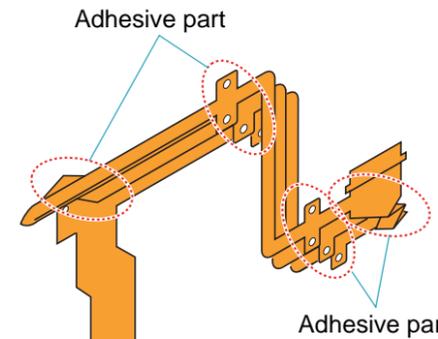
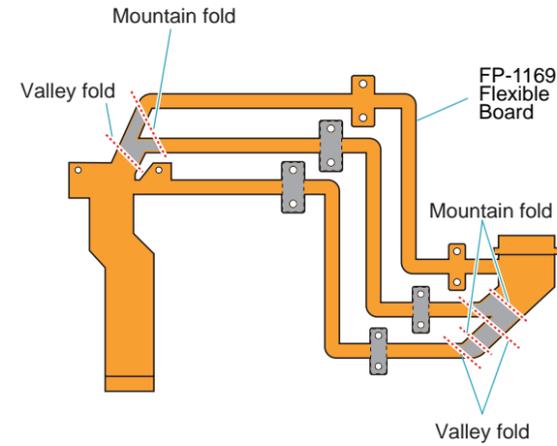
#### Assembly-4: Installation Caution of the Speaker Harness

Pass two Speaker Harnesses as shown in the figure.

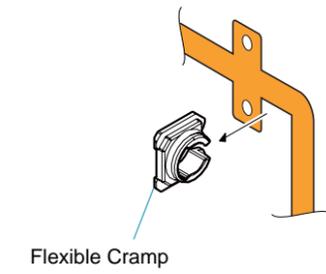


#### Assembly-5: The Method of attachment of FP-1169 Flexible Board

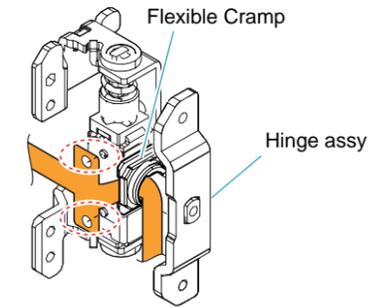
① Fold dotted line parts of the FP-1169 flexible board as shown in figure.



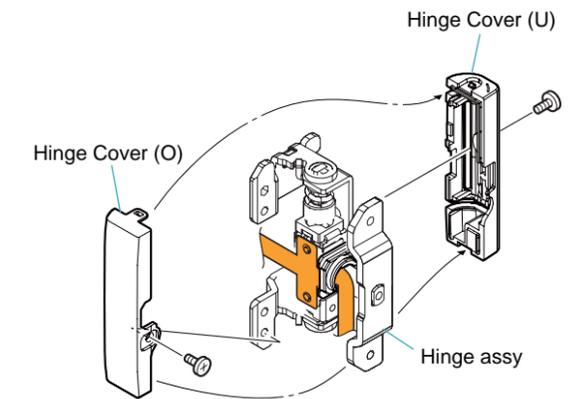
② Install the Flexible clamp.



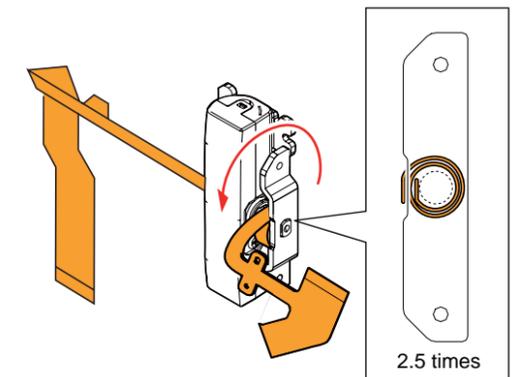
③ Install the flexible clamp in the hinge assy as shown in figure.



⑤ Install the hinge cover (U) and Hinge cover (O).

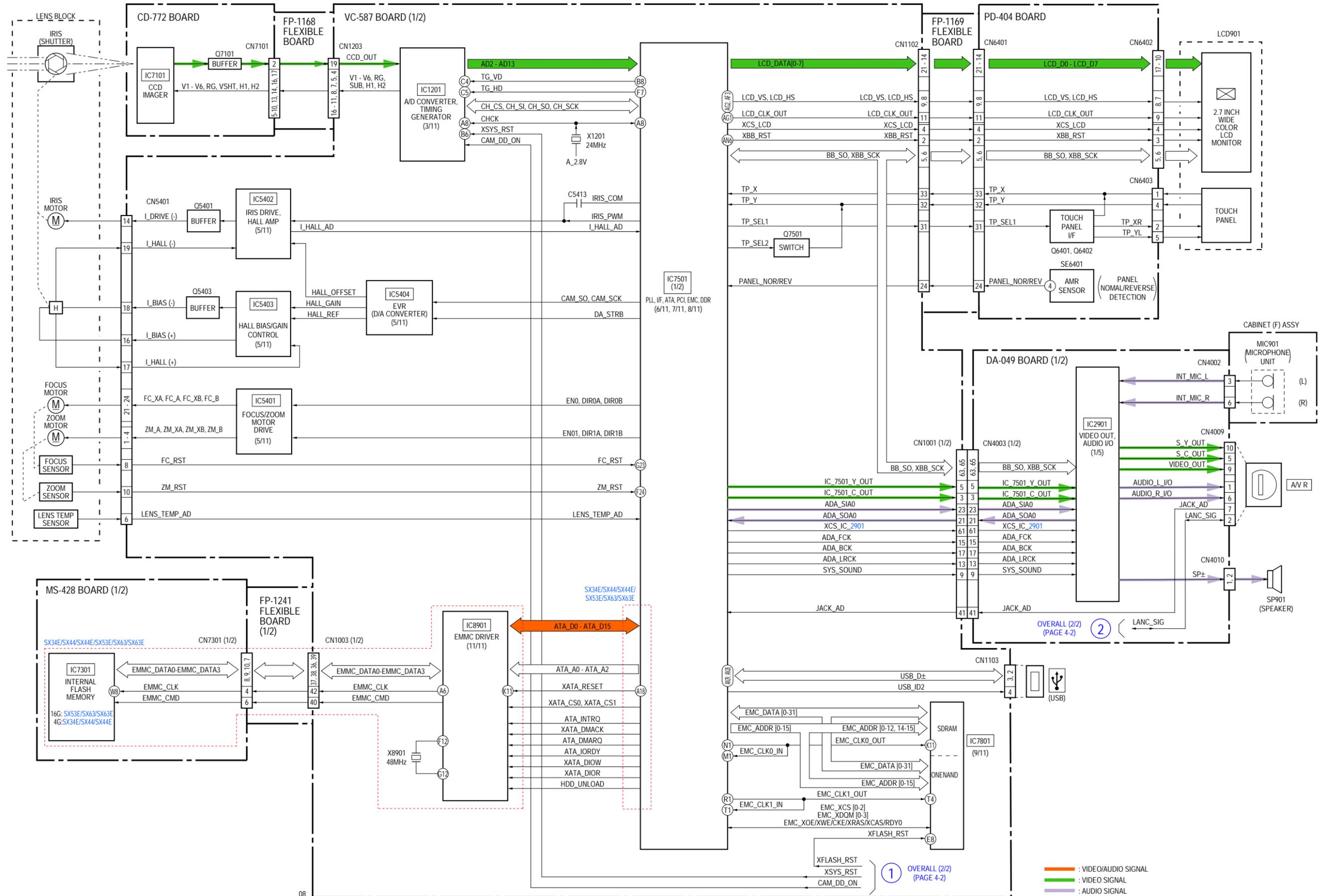


⑥ Roll the FP-1169 flexible board 2.5 times in the hinge assy as shown in figure.

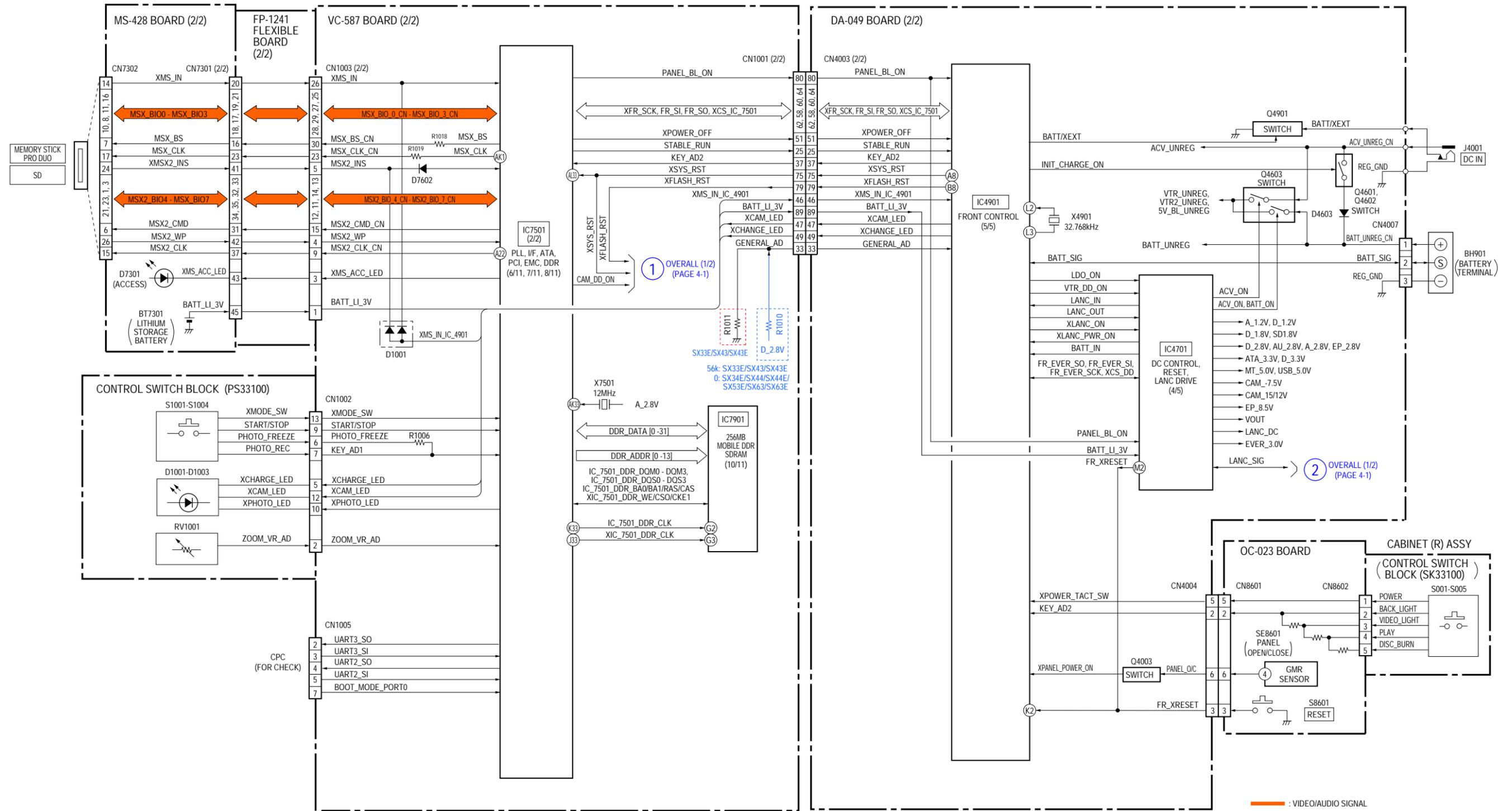


### 4. BLOCK DIAGRAMS

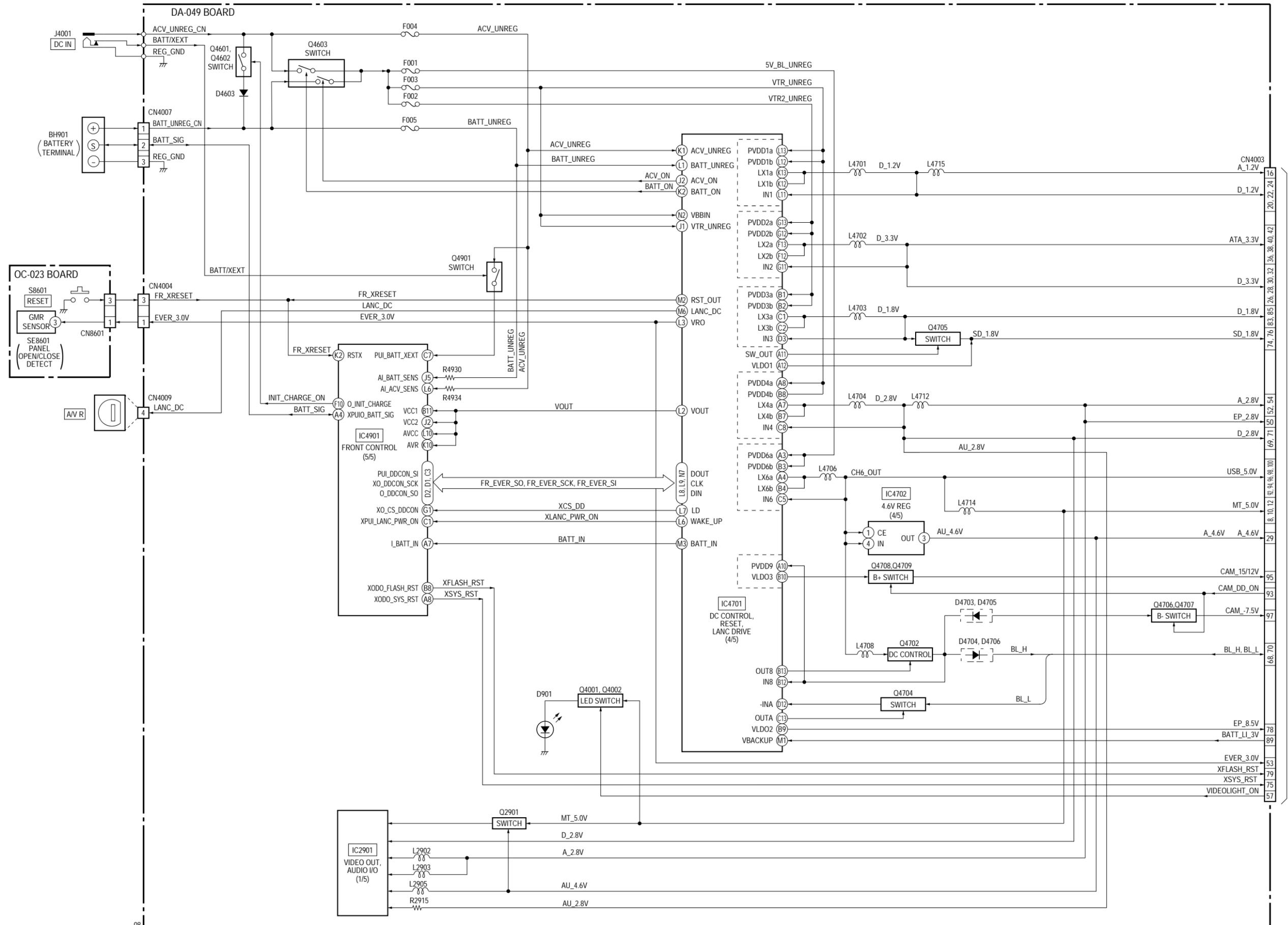
4-1. OVERALL BLOCK DIAGRAM (1/2) ( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



4-2. OVERALL BLOCK DIAGRAM (2/2) ( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



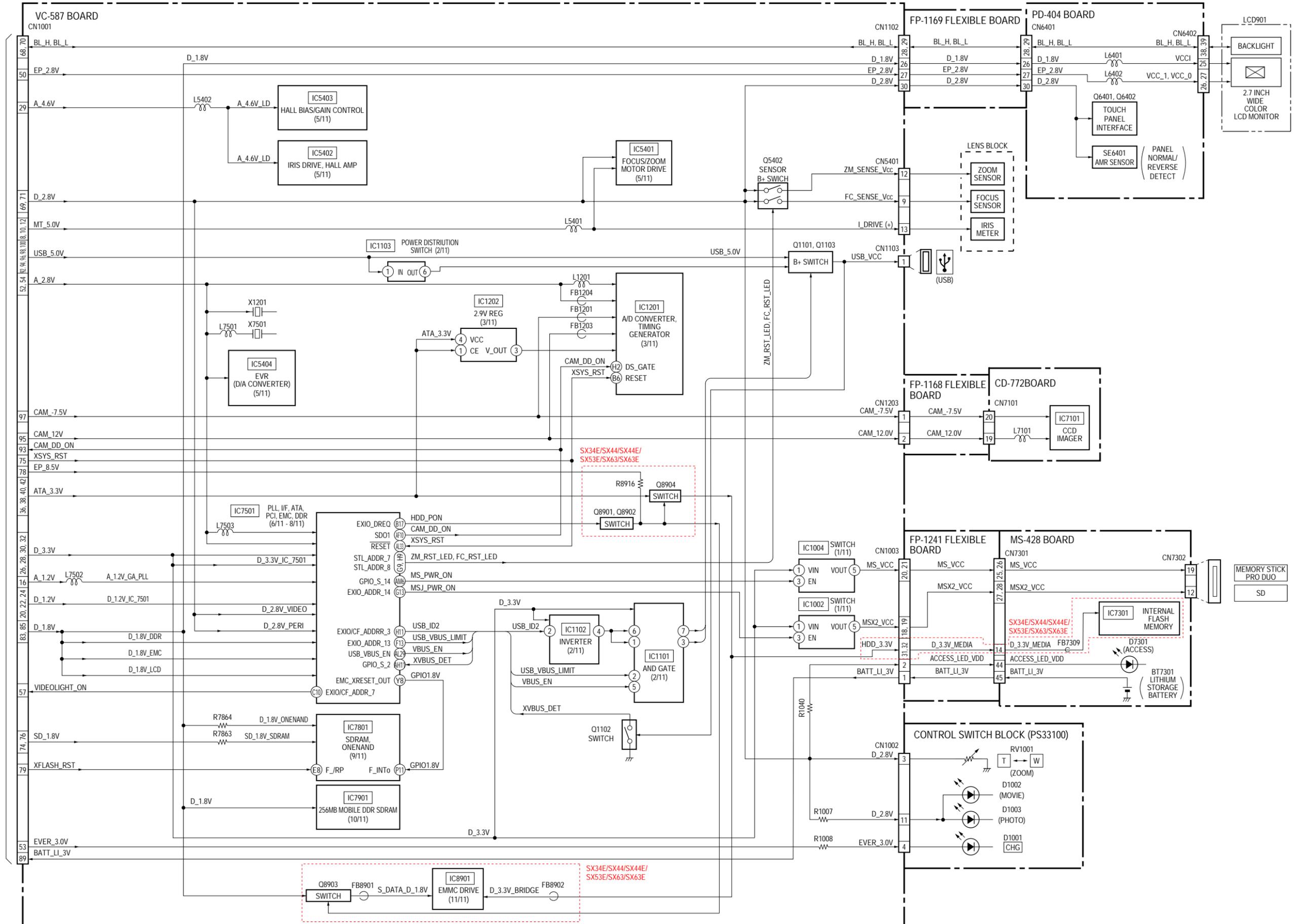
4-3. POWER BLOCK DIAGRAM (1/2) ( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



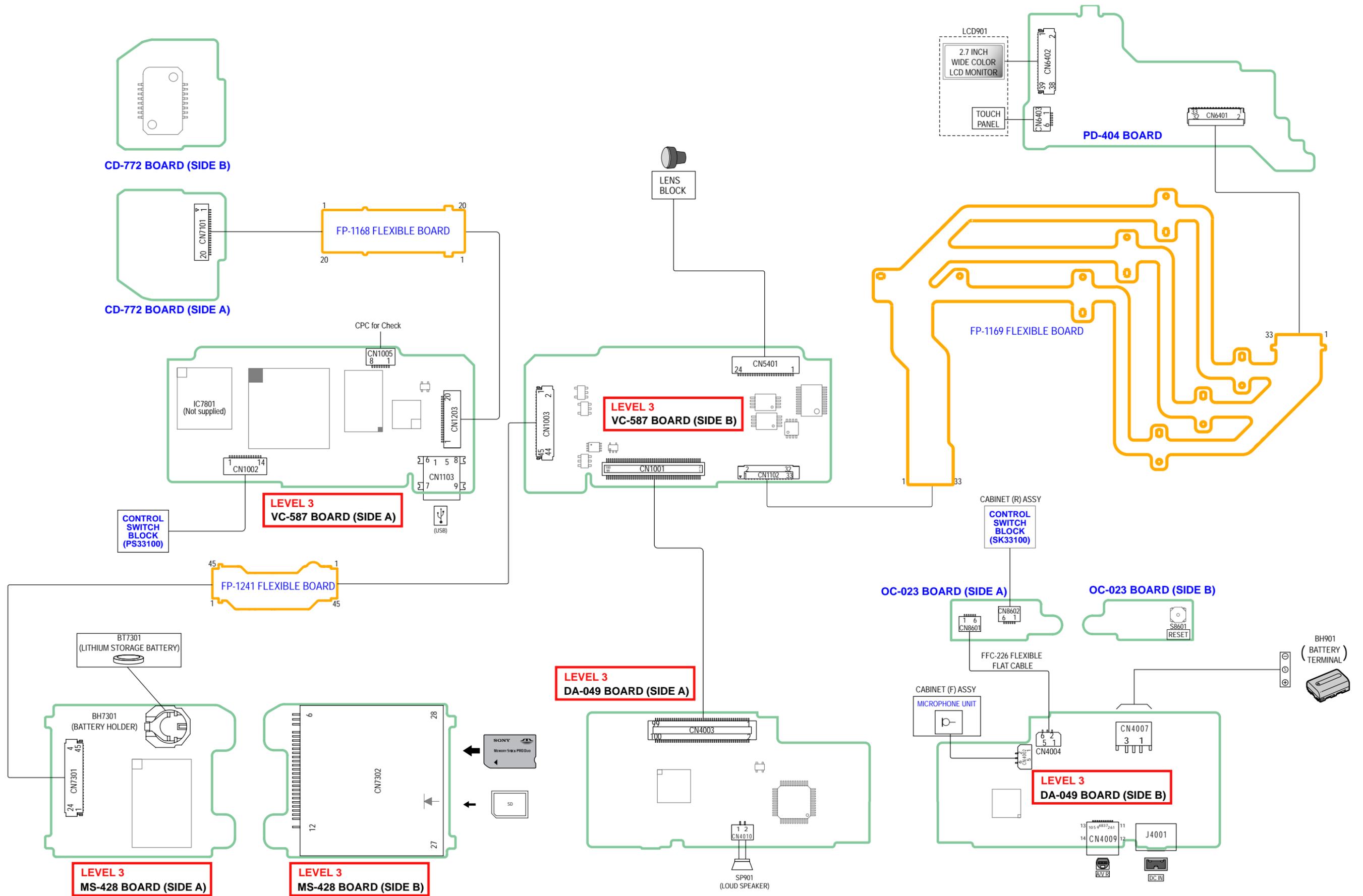
(A)  
POWER (2/2)  
(PAGE 4-4)

4-4. POWER BLOCK DIAGRAM (2/2) ( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

A  
POWER (1/2)  
PAGE 4-3



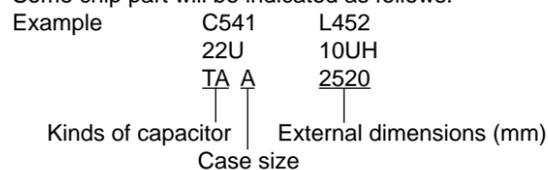
### 5. FRAME SCHEMATIC DIAGRAMS



**THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS**  
(In addition to this, the necessary note is printed in each block)

**For Schematic Diagrams**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$  :  $\mu\text{F}$ . 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted.  $\text{k}\Omega=1000 \Omega$ ,  $\text{M}\Omega=1000 \text{k}\Omega$ .
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.



- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used. In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination. Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name  
XEDIT → EDIT      PB/XREC → PB/REC
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B- Line
- : IN/OUT direction of (+, -) B LINE.
- : adjustment for repair.

**Precautions for Replacement of Imager**

- If the imager has been replaced, carry out all the adjustments for the camera section.
- As the imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC. In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

When indicating parts by reference number, please include the board name.

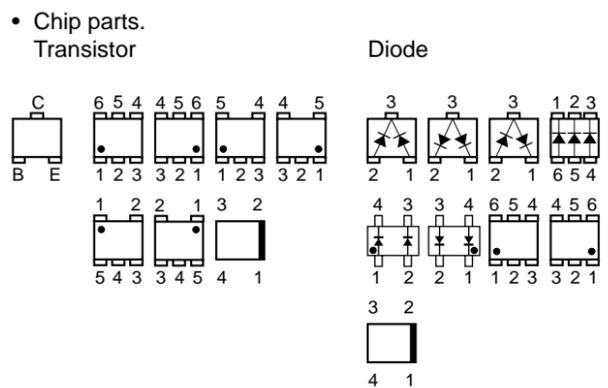
The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

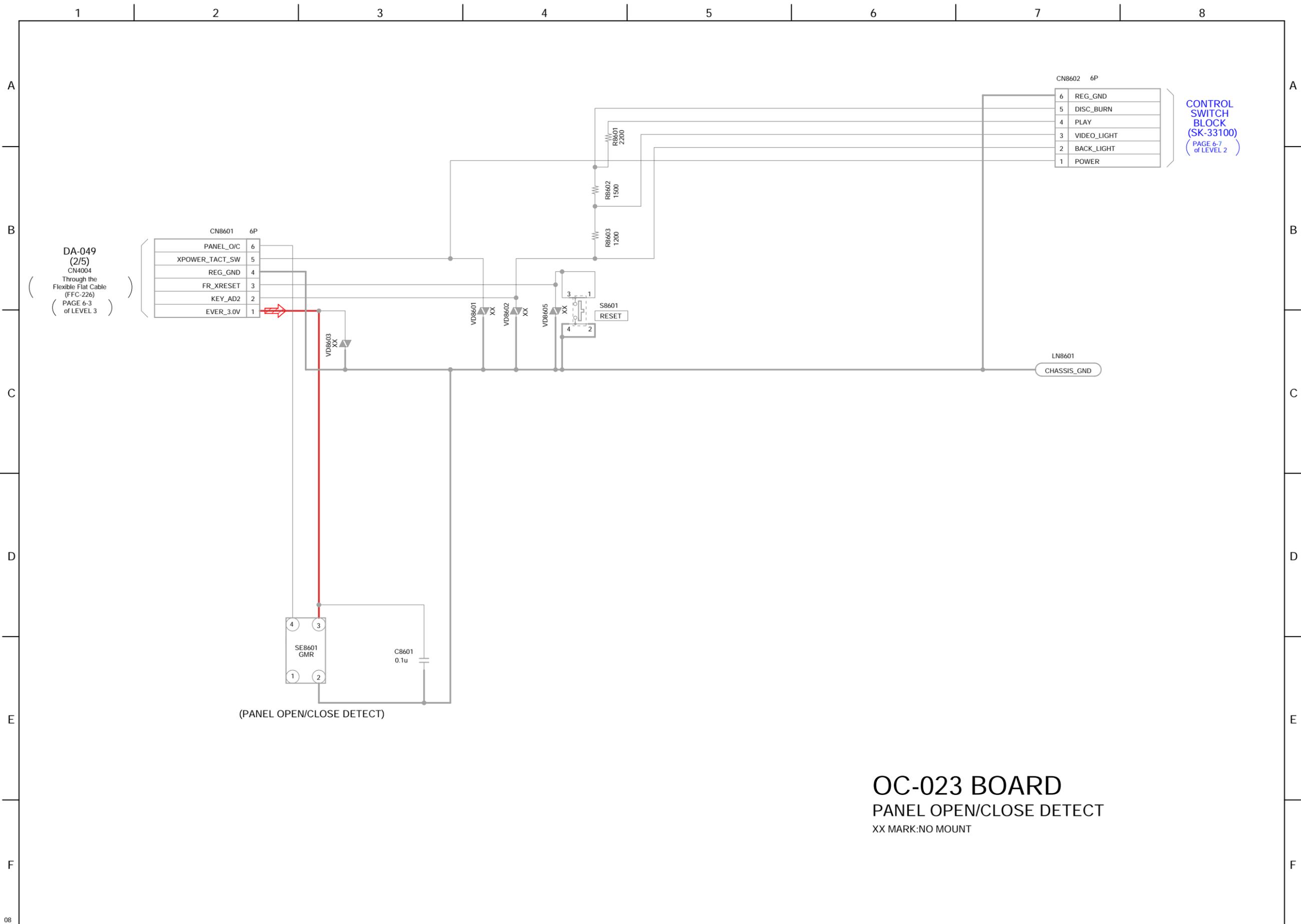
Please refer to LEVEL 3 about the SCHEMATIC DIAGRAMS and PRINTED WIRING BOARDS of DA-049, MS-428 and VC-587.

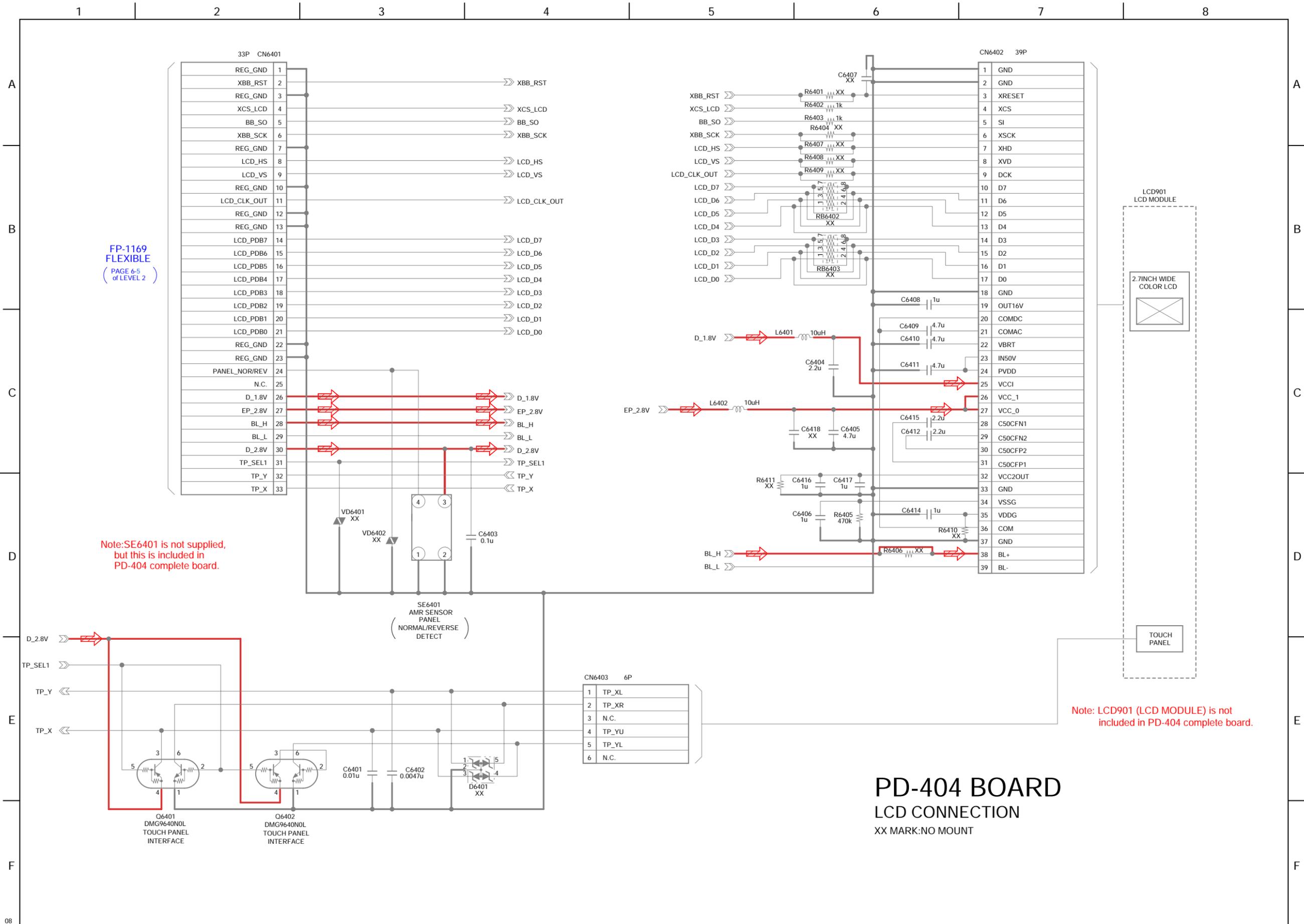
**For Printed Wiring Boards**

- : Uses unleaded solder.
- : Circuit board
- : Flexible board
- : Pattern from the side which enables seeing.
- : pattern of the rear side (The other layers' patterns are not indicated)
- Through hole is omitted.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- : panel designation



6-1. SCHEMATIC DIAGRAMS





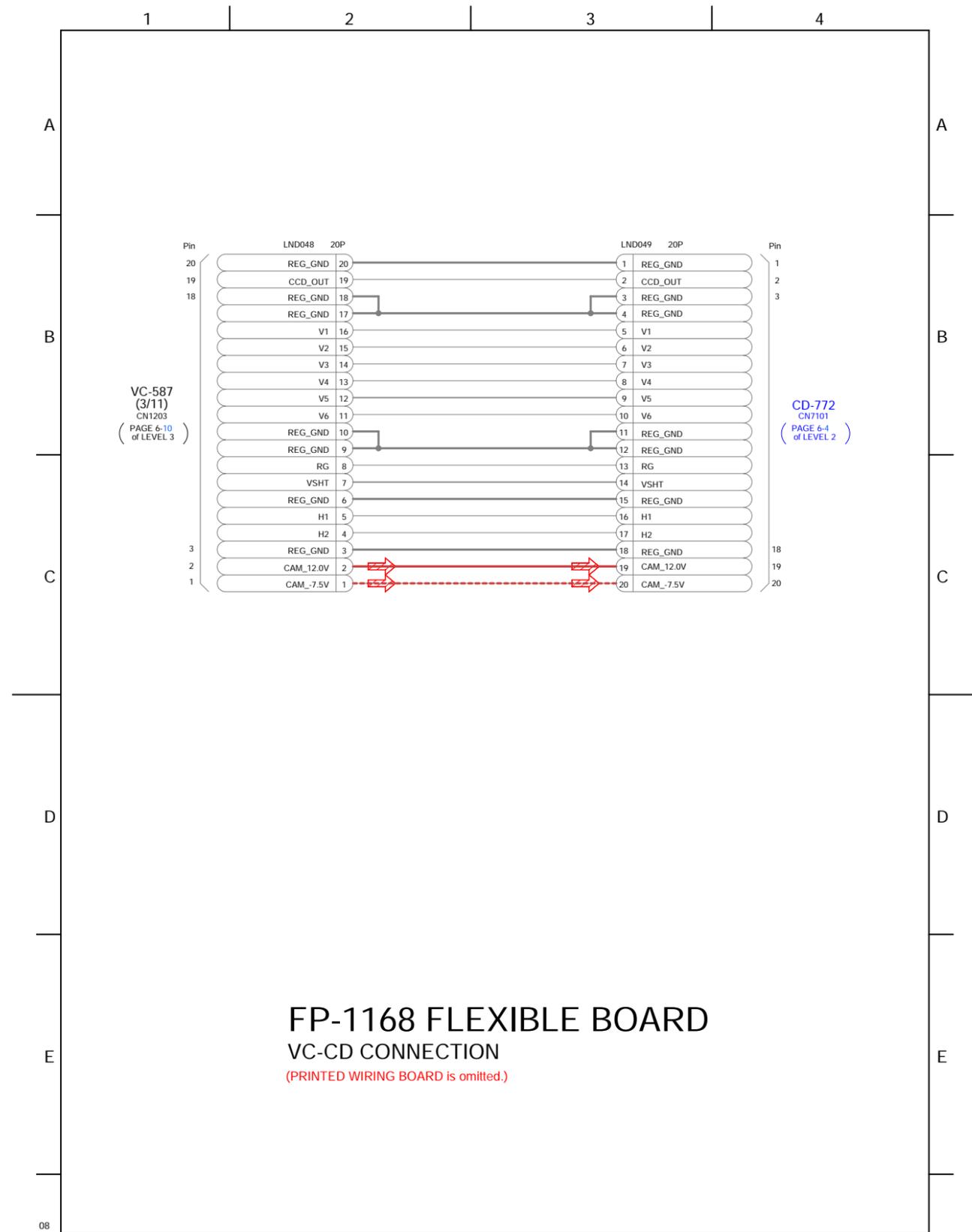
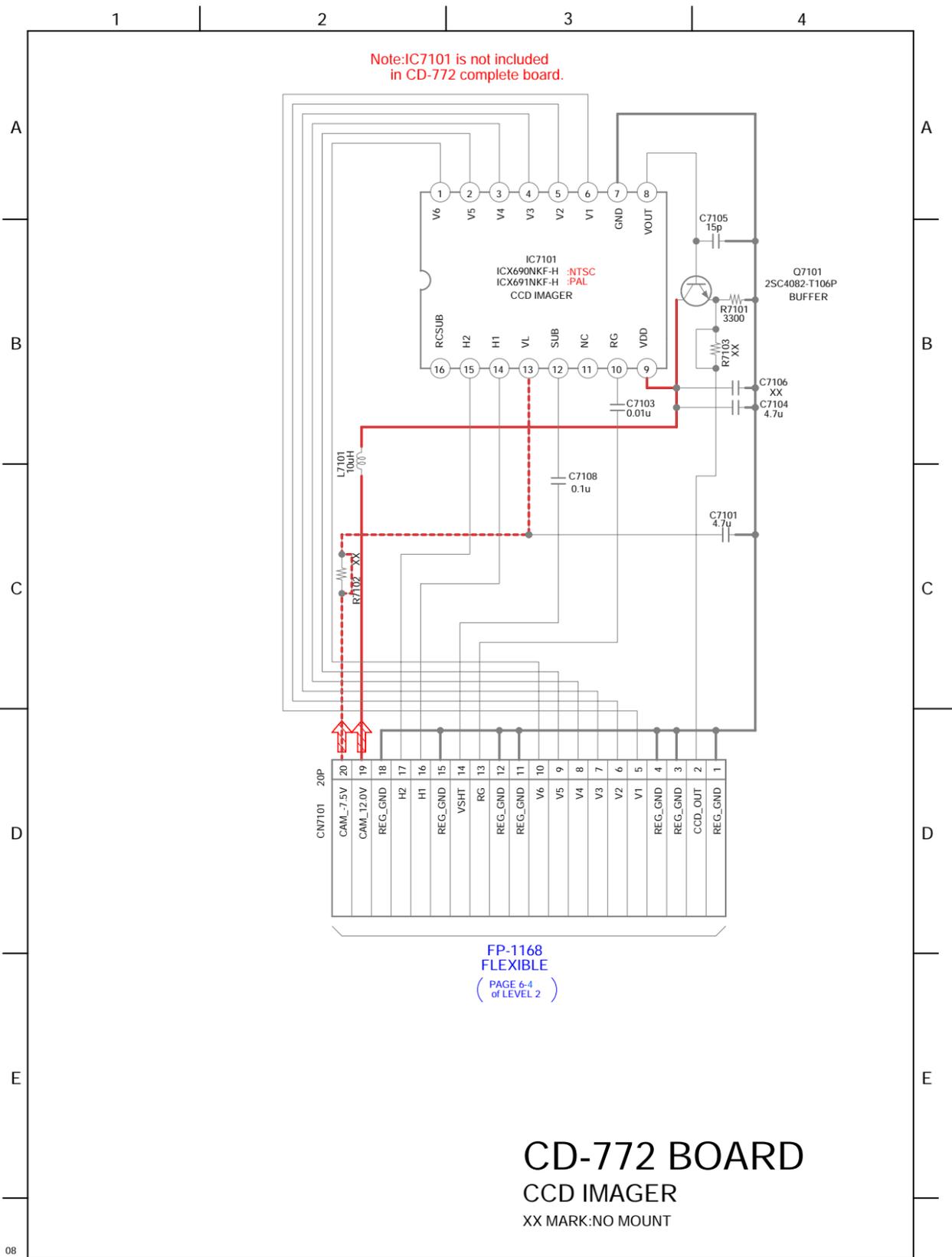
FP-1169  
 FLEXIBLE  
 (PAGE 6-5  
 of LEVEL 2)

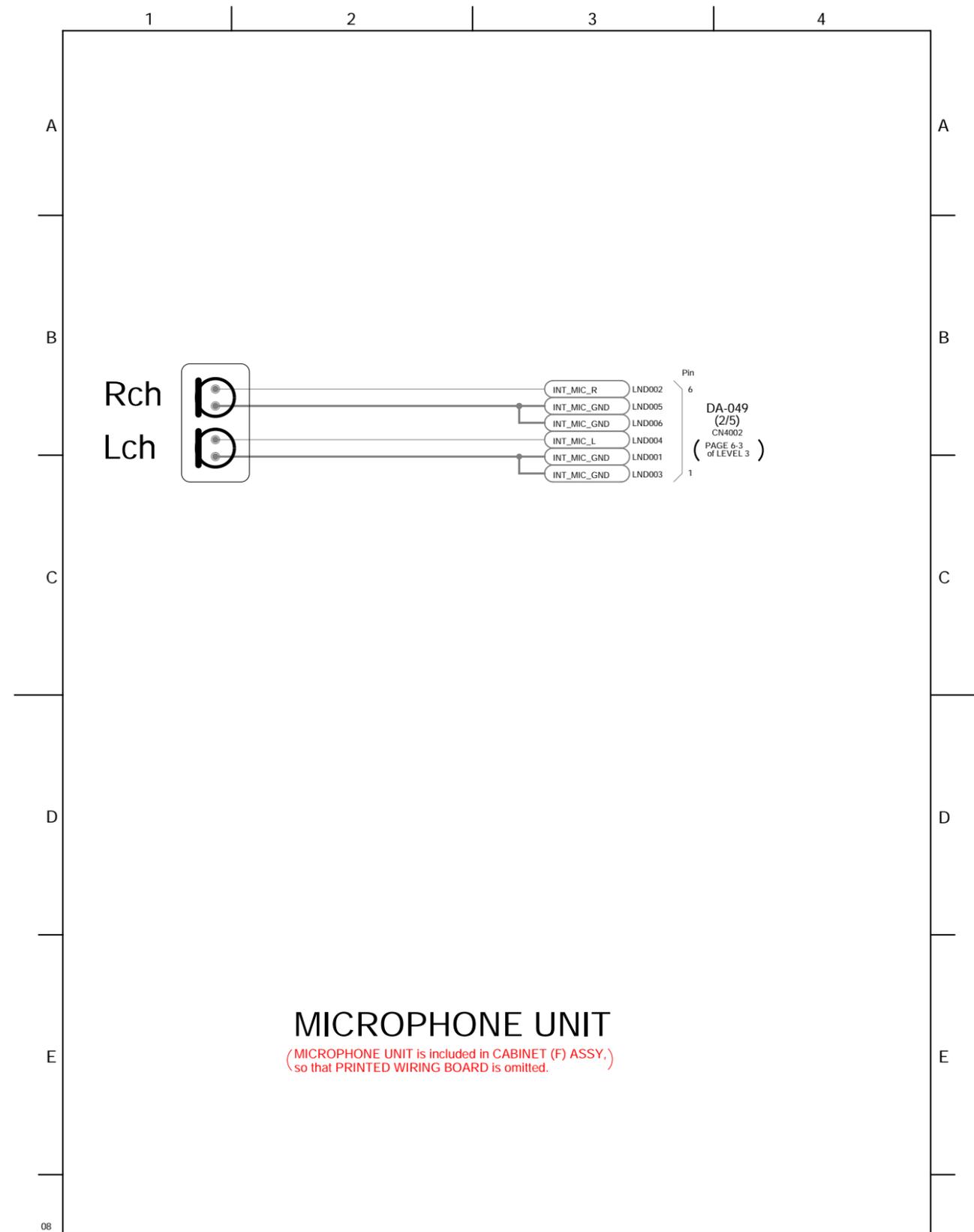
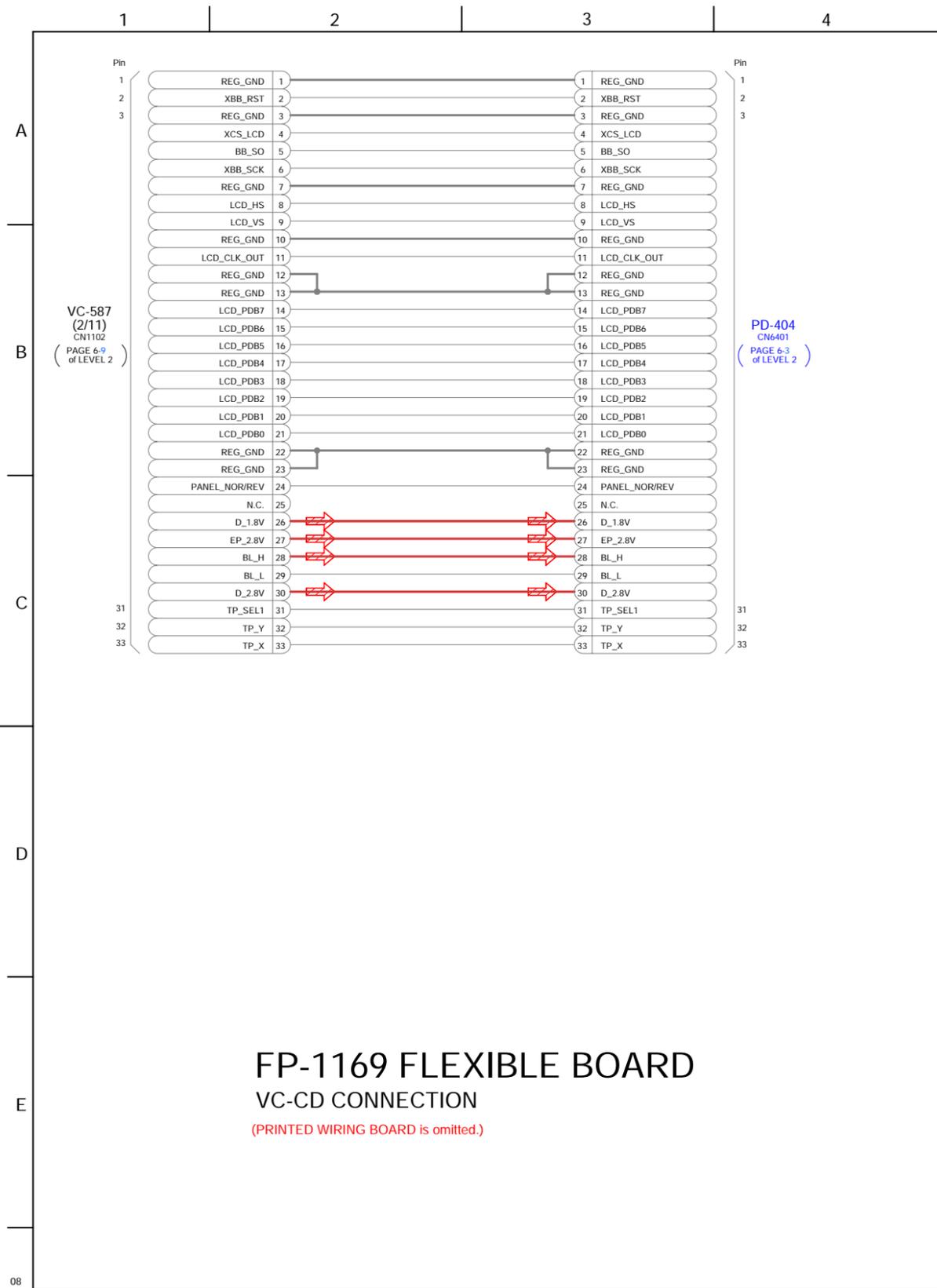
Note: SE6401 is not supplied,  
 but this is included in  
 PD-404 complete board.

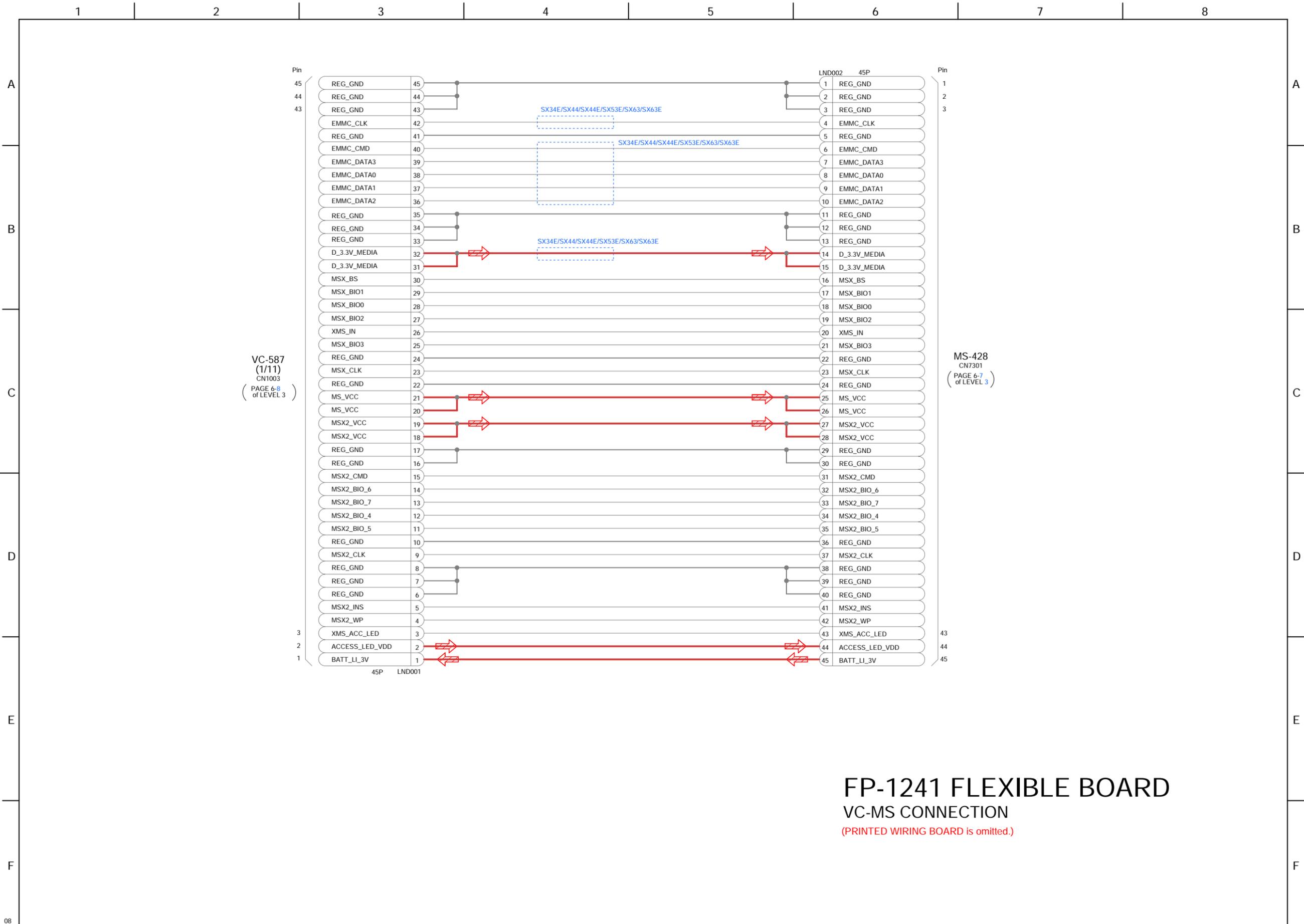
Note: LCD901 (LCD MODULE) is not  
 included in PD-404 complete board.

## PD-404 BOARD LCD CONNECTION

XX MARK: NO MOUNT







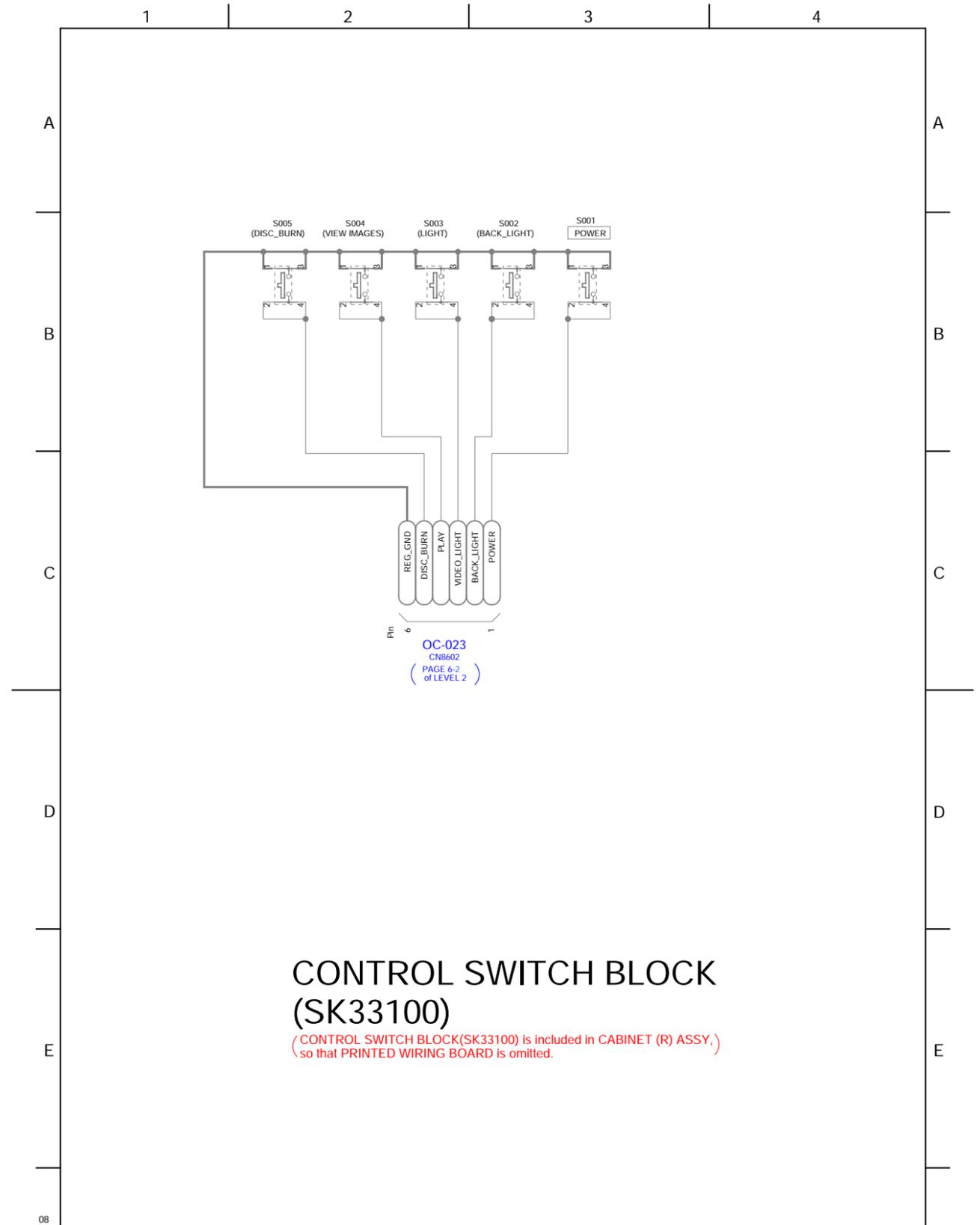
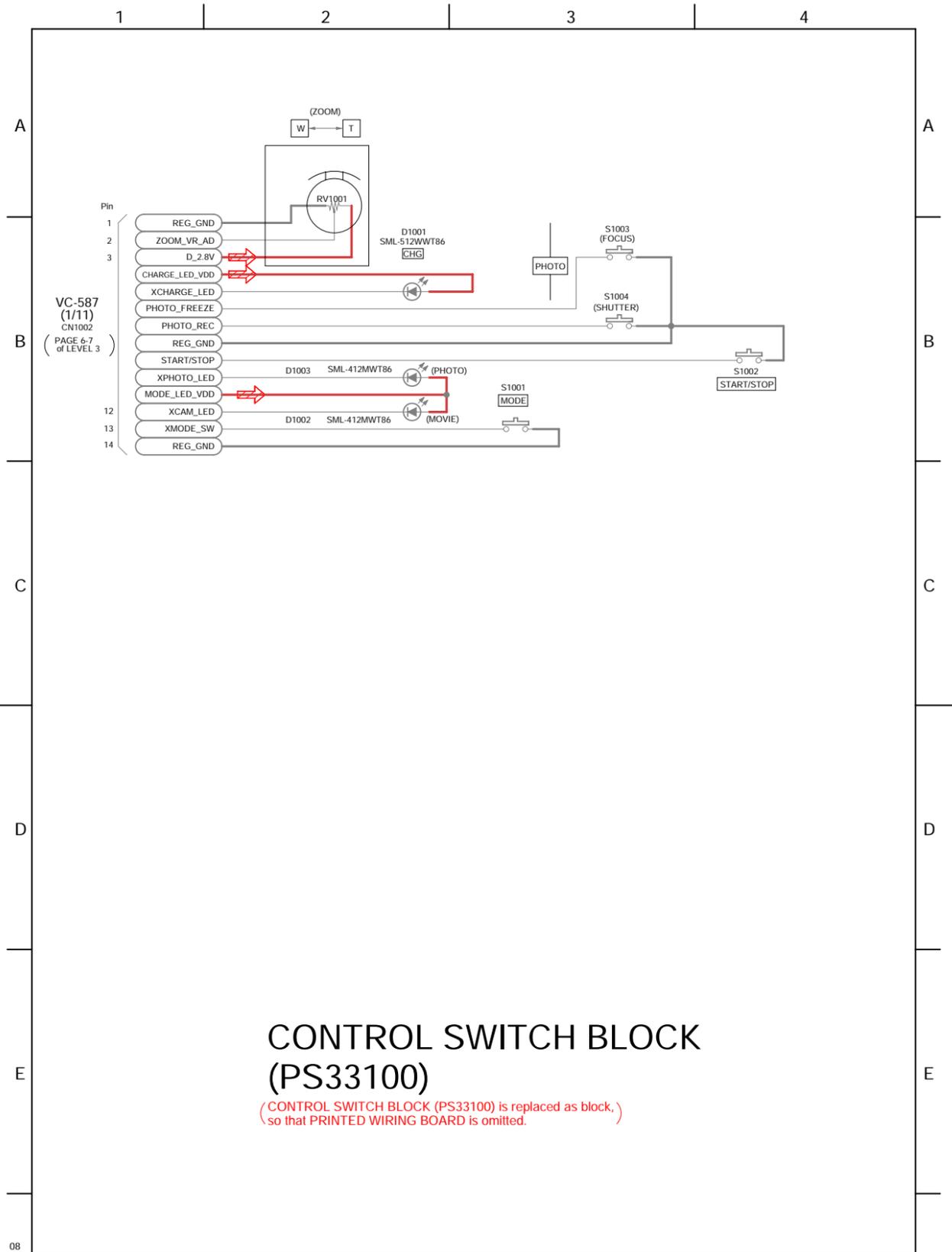
VC-587  
(1/11)  
CN1003  
(PAGE 6-8  
of LEVEL 3)

MS-428  
CN7301  
(PAGE 6-7  
of LEVEL 3)

# FP-1241 FLEXIBLE BOARD

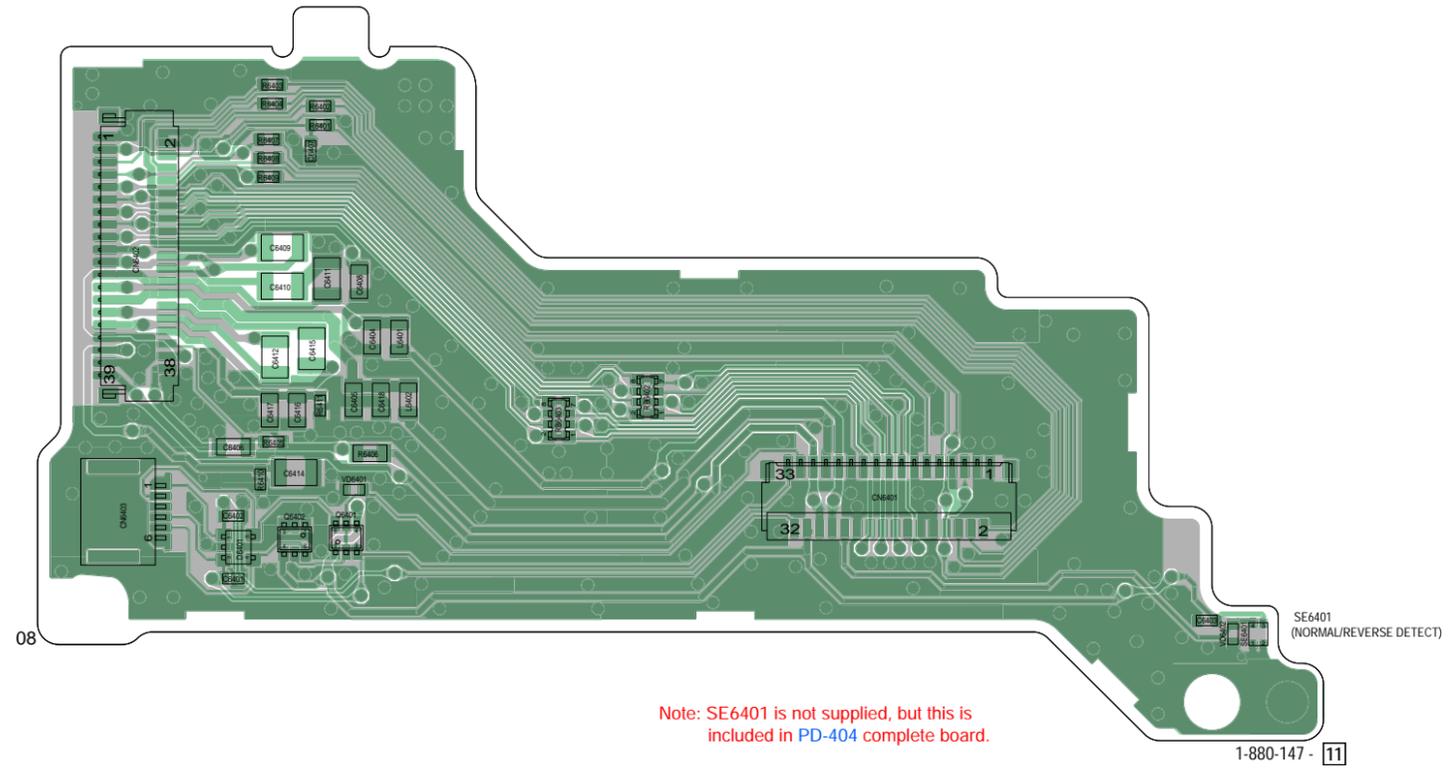
## VC-MS CONNECTION

(PRINTED WIRING BOARD is omitted.)

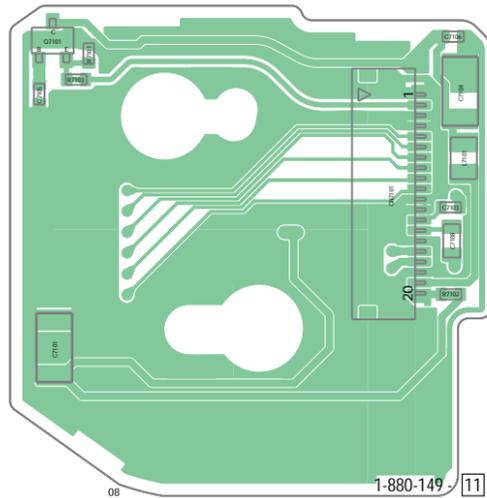


6-2. PRINTED WIRING BOARDS

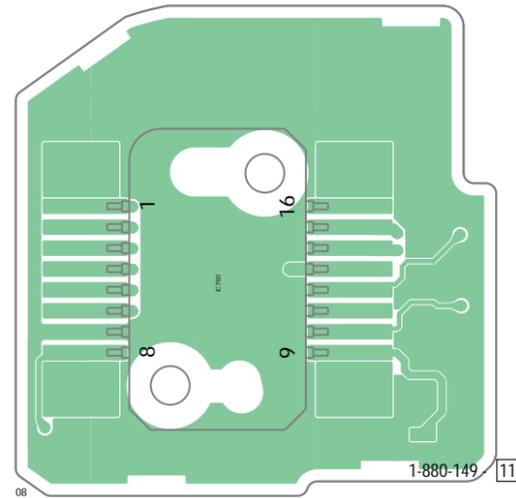
### PD-404 BOARD



### CD-772 BOARD (SIDE A)

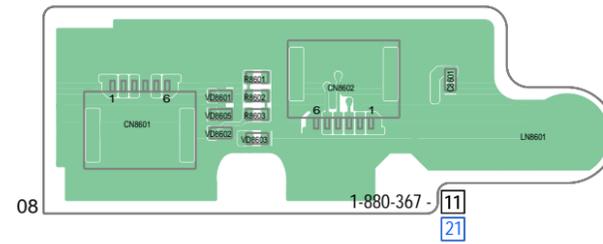


### CD-772 BOARD (SIDE B)



Note: IC7101 (CCD IMAGER) is not included in CD-772 complete board.

### OC-023 BOARD (SIDE A)



### OC-023 BOARD (SIDE B)

