

DCR-HC40/HC40E

RMT-831

SERVICE MANUAL

LEVEL 2

Ver 1.0 2004.01

Revision History

How to use
Acrobat Reader



Photo : DCR-HC40E

US Model
 Canadian Model
 Brazilian Model
 Korea Model
 Japanese Model
DCR-HC40
 AEP Model
 UK Model
 East European Model
 North European Model
 Australian Model
 Chinese Model
DCR-HC40E
 E Model
 Hong Kong Model
 Tourist Model
DCR-HC40/HC40E

Z MECHANISM (MDX-Z200)

Link

SPECIFICATIONS	BLOCK DIAGRAMS	PRINTED WIRING BOARDS
SERVICE NOTE	FRAME SCHEMATIC DIAGRAMS	REPAIR PARTS LIST
DISASSEMBLY	SCHEMATIC DIAGRAMS	

- For ADJUSTMENTS (SECTION 6), refer to SERVICE MANUAL, ADJ (987670351.pdf).
- For INSTRUCTION MANUAL, refer to SERVICE MANUAL, LEVEL 1 (987670341.pdf). (EXCEPT J MODEL)
- For MECHANISM ADJUSTMENTS, refer to the "DV MECHANICAL ADJUSTMENT MANUAL VII [Z MECHANISM]" (EXCEPT J: 9-876-210-11) (J: 9-876-210-01).
- Reference No. search on printed wiring boards is available.

On the VC-352 board

This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the VC-352 board.

Therefore, schematic diagram, printed wiring board, waveforms, mounted parts location and electrical parts list of the VC-352 board are not shown.

The following pages are not shown.

Schematic diagram	Pages 4-19 to 4-60	Mounted parts location	Pages 4-83 to 4-84
Printed wiring board	Pages 4-75 to 4-78	Electrical parts list	Pages 5-17 to 5-25

Mini DV Digital Video Cassette

DIGITAL VIDEO CAMERA RECORDER

SONY®

HANDYCAM



SPECIFICATIONS

Video camera recorder

System

Video recording system

2 rotary heads, Helical scanning system

Still image recording system

Exif Ver. 2.2 *1

*1 "Exif" is a file format for still images, established by the JEITA (Japan Electronics and Information Technology Industries Association). Files in this format can have additional information such as your camcorder's setting information at the time of recording.

Audio recording system

Rotary heads, PCM system

Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits (Fs 48 kHz, stereo)

Video signal

DCR-HC40:

NTSC color, EIA standards

DCR-HC40E:

PAL color, CCIR standards

Usable cassette

Mini DV cassette with the ^{Mini}DV mark printed

Tape speed

SP: Approx. 18.81 mm/s

LP: Approx. 12.56 mm/s

Recording/playback time (using a DVM60 cassette)

SP: 60 min

LP: 90 min

Fast forward/rewind time (using a DVM60 cassette)

Approx. 2 min 40 sec.

Viewfinder

Electric viewfinder (color)

Image device

3.6 mm (1/5 type) CCD (Charge Coupled Device)

Gross: Approx. 1 070 000 pixels

Effective (still): Approx. 1 000 000 pixels

Effective (movie): Approx. 690 000 pixels

Lens

Carl Zeiss Vario-Tessar

Combined power zoom lens

Filter diameter: 25 mm (1 in.)

10 × (Optical), 120 × (Digital)

F = 1.8 ~ 2.3

Focal length

3.2 - 32 mm (5/32 - 1 5/16 in.)

When converted to a 35 mm still camera

In CAMERA-TAPE:

46 - 460 mm (1 13/16 - 18 1/8 in.)

In CAMERA-MEMORY:

38 - 380 mm (1 1/2 - 15 in.)

Color temperature

[AUTO], [ONE PUSH], [INDOOR] (3 200 K), [OUTDOOR] (5 800 K)

Minimum illumination

7 lx (lux) (F 1.8)

0 lx (lux) (during NightShot plus function)*

* Objects unable to be seen due to the dark can be shot with infrared lighting.

Input/Output connectors

Audio/Video input/output

10-pin connector

Input/output auto switch

Video signal: 1 Vp-p, 75 Ω (ohms), unbalanced

Luminance signal: 1 Vp-p, 75 Ω (ohms), unbalanced

DCR-HC40:

Chrominance signal: 0.286 Vp-p, 75 Ω (ohms), unbalanced

DCR-HC40E:

Chrominance signal: 0.3 Vp-p, 75 Ω (ohms), unbalanced

Audio signal: 327 mV (at output impedance more than 47 kΩ (kilohms)), Input impedance more than 47 kΩ (kilohms), Output impedance with less than 2.2 kΩ (kilohms)

DV input/output

4-pin connector

LANC jack

Stereo mini-minijack (Ø 2.5 mm)

USB jack

mini-B

MIC jack

Minijack, 0.388 mV low impedance with DC

2.5 to 3.0 V, output impedance 6.8 kΩ

(kilohms) (Ø 3.5 mm), Stereo type

LCD screen

Picture

6.2 cm (2.5 type)

Total dot number

123 200 (560 × 220)

General

Power requirements

DC 7.2 V (battery pack)

DC 8.4 V (AC Adaptor)

Average power consumption (when using the battery pack)

DCR-HC40:

During camera recording using the viewfinder 2.9 W

During camera recording using the LCD 3.2 W

DCR-HC40E:

During camera recording using the viewfinder 2.8 W

During camera recording using the LCD 3.1 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 × 92 × 112 mm (2 × 3 5/8 × 4 1/2 in.) (w/h/d)

Mass (approx.)

400 g (14 oz) main unit only

460 g (1 lb) including the NP-FP50 rechargeable battery pack and DVM60 cassette.

Supplied accessories

See page 5-12.

AC Adaptor AC-L25A/L25B

Power requirements

AC 100 - 240 V, 50/60 Hz

Current consumption

0.35 - 0.18 A

Power consumption

18 W

Output voltage

DC 8.4 V, 1.5 A

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.)

56 × 31 × 100 mm (2 1/4 × 1 1/4 × 4 in.) (w/h/d) excluding the projecting parts

Mass (approx.)

190 g (6.7 oz) excluding the mains lead

Rechargeable battery pack (NP-FP50)

Maximum output voltage

DC 8.4 V

Output voltage

DC 7.2 V

Capacity

4.9 Wh (680 mAh)

Dimensions (approx.)

31.8 × 18.5 × 45.0 mm

(1 5/16 × 3/4 × 1 13/16 in.) (w/h/d)

Mass (approx.)

40 g (1.5 oz)

Operating temperature

0° C to 40° C (32° F to 104° F)

Type

Lithium ion

Design and specifications are subject to change without notice.

HANDYCAM

InfoLITHIUM™ P SERIES

MEMORY STICK™

概略仕様

◆システム

録画方式	回転2ヘッドヘリカルスキャン
静止画記録方式 ^{*1}	Exif Ver.2.2
録音方式	回転2ヘッド 12ビット32kHz (ステレオ1、ステレオ2) 16ビット48kHz (ステレオ)
映像信号	NTSCカラー、EIA標準方式
使用可能カセット	Mini DV TM マークのついたミニDVカセット
テープ速度	SP: 約18.81mm /秒 LP: 約12.56mm /秒
録画・再生時間	SP: 60分 (DVM60使用時) LP: 90分 (DVM60使用時)
早送り、巻き戻し時間	約2分40秒 (DVM60使用時)
ファインダー	電子ファインダー: カラー
撮像素子	3.6mm (1/5型) CCD固体撮像素子 総画素数: 約107万画素 静止画時有効画素数: 約100万画素 動画時有効画素数: 約69万画素
ズームレンズ	カール ツァイス バリオテッサー 10倍 (光学)、120倍 (デジタル) f=3.2~32mm 35mm カメラ換算では 「撮る-テープ」時: 46~460mm 「撮る-メモリー」時: 38~380mm F1.8~2.3 フィルター径25mm
色温度切り換え	[オート]、[ワンプッシュ]、 [オクナイ] (3200K)、 [オクガイ] (5800K)
最低被写体照度	15 lx (ルクス) (F1.8) 0 lx (ルクス) (NightShot plus時)

*1 (社) 電子情報技術産業協会 (JEITA) にて制定された、撮影情報などの付帯情報を追加することができる静止画用のファイルフォーマット。

◆入・出力端子

映像・音声端子	10ピン特殊コネクター 入力/出力自動切り換え 映像: 1V _{p-p} 75Ω 不平衡 Y出力 1V _{p-p} 75Ω 不平衡 C出力 0.286V _{p-p} 75Ω 不平衡 音声: 327mV (47kΩ負荷時)、入カインピーダンス47kΩ以上、出カインピーダンス2.2kΩ以下
USB端子	mini-B
LANC端子	ステレオミニミニジャック (φ2.5)
MIC (マイク) 入力端子	ステレオミニミニジャック (φ3.5)
DV端子	i.LINK (IEEE1394.4ピンコネクター S100)

◆液晶画面

画面サイズ	6.2cm (2.5型)
総ドット数	123200ドット 横560×縦220

◆電源部、その他

電源電圧	バッテリー端子入力7.2V DC端子入力8.4V
消費電力	2.9W (ファインダー使用時、明るさ標準) 3.2W (液晶画面使用時、明るさ標準)
動作温度	0°C ~ +40°C
保存温度	-20°C ~ +60°C
外形寸法	50×92×112mm (最大突起部を除く)(幅×高さ×奥行き)
本体質量	約400g (本体のみ)
撮影時総質量	約460g (バッテリー NP-FP50、テープ (DVM60) 含む。)
付属品	5-13ページをご覧ください。

◆ACアダプター AC-L25A/L25B

電源	AC100~240V、50/60Hz
消費電力	18W
定格出力	DC8.4V、1.5A
動作温度	0°C ~ +40°C
保存温度	-20°C ~ +60°C
外形寸法	約56×31×100mm (最大突起部をのぞく) (幅×高さ×奥行き)
質量	約190g (本体のみ)

◆リチャージャブルバッテリーパック NP-FP50

最大電圧	DC8.4V
公称電圧	DC7.2V
容量	4.9wh (680mAh)
最大外形寸法	約31.8×18.5×45.0mm (幅×高さ×奥行き)
質量	約40g
使用温度	0°C ~ +40°C
使用電池	Li-bn

本機の仕様および外観は、改良のため予告なく変更することがありますが、ご了承ください。

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 lead-free 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.)



: 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.

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.

CAUTION :

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

サービス、点検時には次のことにご注意下さい。

1. 注意事項をお守り下さい。

サービスのとき特に注意を要する箇所については、キャビネット、シャーシ、部品などにラベルや捺印で注意事項を表示しています。これらの注意書きおよび取扱説明書等の注意事項を必ずお守り下さい。

2. 指定部品のご使用を

セットの部品は難燃性や耐電圧など安全上の特性を持ったものとなっています。従って交換部品は、使用されていたものと同じ特性の部品を使用して下さい。特に回路図、部品表に△印で指定されている安全上重要な部品は必ず指定のものをご使用下さい。

3. 部品の取付けや配線の引きまわしは

もとおりに

安全上、チューブやテープなどの絶縁材料を使用したり、プリント基板から浮かして取付けた部品があります。また内部配線は引きまわしやクランプによって発熱部品や高圧部品に接近しないよう配慮されていますので、これらは必ずもとおりにして下さい。

4. サービス後は安全点検を

サービスのために取外したネジ、部品、配線がもとおりになっているか、またサービスした箇所の周辺を劣化させてしまったところがないかなどを点検し、安全性が確保されていることを確認して下さい。

5. チップ部品交換時の注意

- ・取り外した部品は再使用しないで下さい。
- ・タンタルコンデンサのマイナス側は熱に弱いため交換時は注意して下さい。

6. フレキシブルプリント基板の取扱について

- ・コテ先温度を270℃前後にして行なって下さい。
- ・同一パターンに何度もコテ先を当てないで下さい。
(3回以内)
- ・パターンに力が加わらないよう注意して下さい。

無鉛半田について

無鉛半田を使用している基板には、無鉛 (Lead Free) を意味するレッドフリーマークがプリントされています。

(注意：基板サイズによっては、無鉛半田を使用していてもレッドフリーマークがプリントされていないものがあります)



：レッドフリーマーク

無鉛半田には、以下の特性があります。

- ・融点が従来の半田よりも約40℃高い。
従来の半田こてをそのまま使用することは可能ですが、少し長めにこてを当てる必要があります。
温度調節機能のついた半田こてを使用する場合、約350℃に設定して下さい。
注意：半田こてを長く当てすぎると、基板のパターン（銅箔）がはがれてしまうことがありますので、注意して下さい。
- ・粘性が強い
従来の半田よりも粘性が強いため、IC端子などが半田ブリッジしないように注意して下さい。
- ・従来の半田と混ぜて使用可能
無鉛半田には無鉛半田を追加するのが最適ですが、従来の半田を追加しても構いません。

注 意

電池の交換は、正しく行わないと破裂する可能性があります。
電池を交換する場合には必ず同じ型名の電池又は同等品と交換して下さい。

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HELP (List of caution points is shown here.)

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Shematic diagram of the VC-352 board is not shown.
Pages from 4-19 to 4-60 are not shown.

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Printed wiring board of the VC-352 board is not shown.
Pages from 4-75 to 4-78 are not shown.

• FP-228/467/826 FLEXIBLE BOARD (S/T REEL SENSOR, TAPE SENSOR)	4-79
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4-4. MOUNTED PARTS LOCATION

Mounted parts location of the VC-352 board is not shown.
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5. REPAIR PARTS LIST

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Electrical parts list of the VC-352 board is not shown.
Pages from 5-17 to 5-25 are not shown.

SECTION 1 SERVICE NOTE

ENGLISH

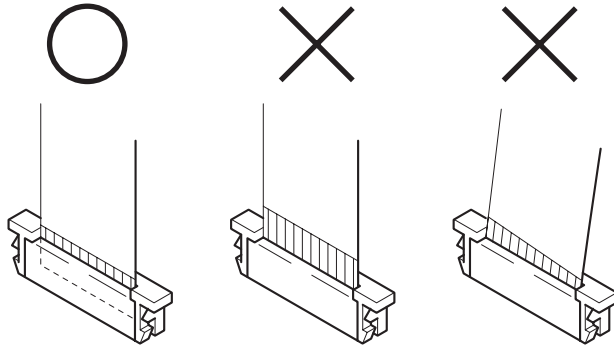
JAPANESE

1-1. SERVICE NOTE

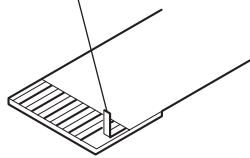
1. NOTE FOR REPAIR

Make sure that the flat cable and flexible board are not cracked or bent at the terminal.

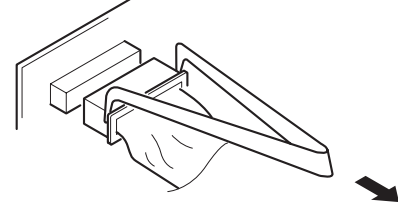
Do not insert the cable insufficiently nor crookedly.



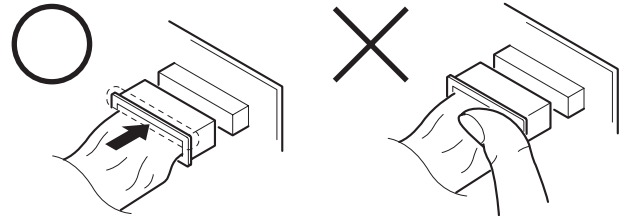
Cut and remove the part of gilt which comes off at the point.
(Take care that there are some pieces of gilt left inside)



When remove a connector, don't pull at wire of connector.
Be in danger of the snapping of a wire.



When installing a connector, don't press down at wire of connector.
Be in danger of the snapping of a wire.



2. 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.

The following two methods are available to prevent this. Take note of which to use during repairs.

Method 1.

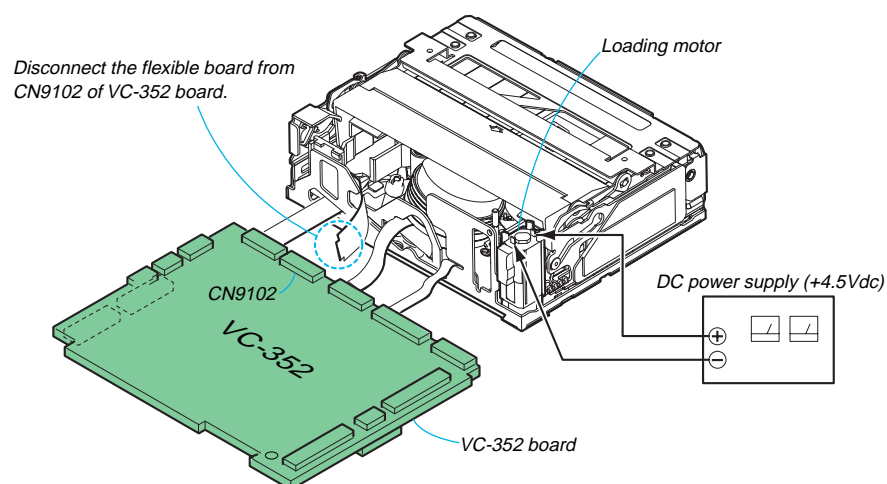
Use the AC power adaptor.

Method 2.

Connect the servicing remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the commander switch to the "ADJ" side.

3. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

- ① Remove the cabinet (R) section.
- ② Remove the front panel block assembly.
- ③ Remove the BAT, EVF block assembly.
- ④ Remove the lens block assembly.
- ⑤ Remove the mechanism deck and the VC-352 board.
- ⑥ Open the VC-352 board.
- ⑦ Disconnect CN9102 (27P, 0.3mm) of VC-352 board.
- ⑧ Supply +4.5V from the DC power supply to the loading motor and unload with pressing the cassette compartment.



SECTION 1 SERVICE NOTE

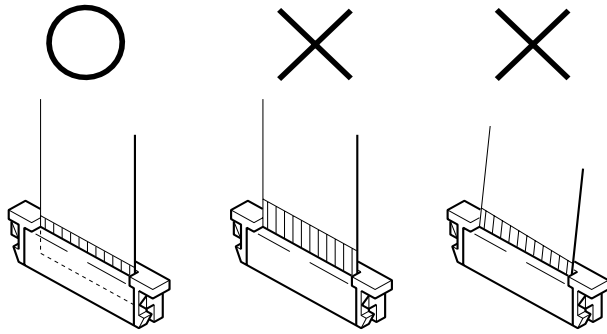
ENGLISH

JAPANESE

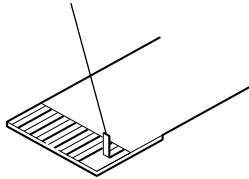
1-1. サービスノート

1. 修理時の注意

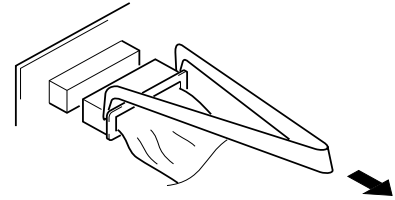
フラットケーブルおよびフレキシブル基板の端子面に欠け、折れ等がないことを確認する。
また、コネクタへの接続は、差し込み不足や斜め差しにならないように注意する。



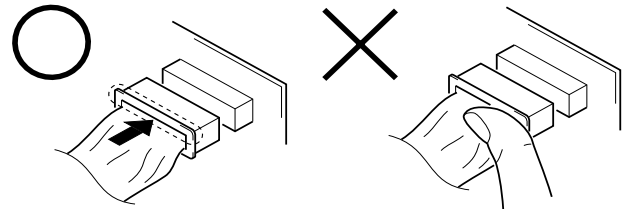
先端の剥がれたメッキ部はカットして除去する。
(メッキ破片がコネクタ内に残っている場合もあるので注意)



コネクタを取り外す時に、線材部（極細）を持って引っ張ると断線する恐れがありますので、絶対に線材部（極細）を持って引っ張らないで下さい。



線材部（極細）を押さえながらコネクタを差し込むと、線材部（極細）が断線する恐れがありますので、絶対に線材部（極細）には負担をかけないで下さい。



2. 修理／調整時の電源供給について

本機では、安定化電源（8.4Vdc）からバッテリー端子に電源を供給した場合、約10秒後にシャットオフし、動作しなくなります。

これを避けるため、下記のいずれかの方法を用いてください。

方法1：

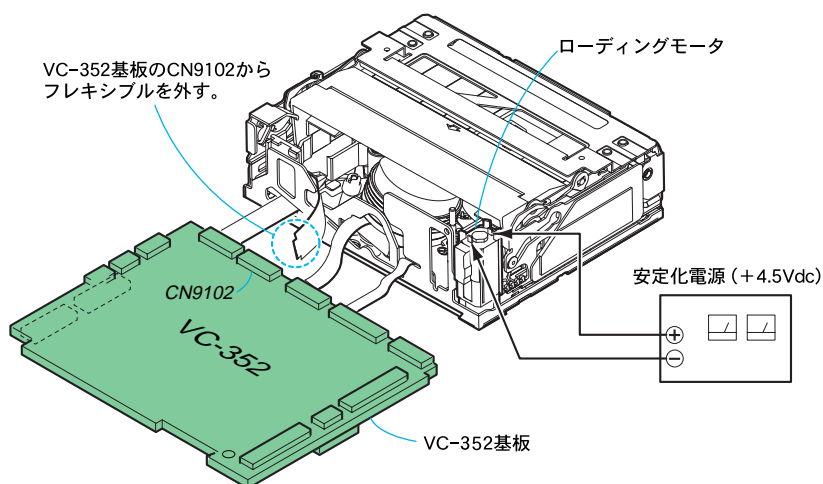
ACアダプタを使用する。

方法2：

調整リモコンRM-95（J-6082-053-B）を本機のLANCジャックに接続し、HOLDスイッチをADJ側にする。

3. イジェクトしない時のカセット取出し方法（強制イジェクト）

- ① キャビネット（R）部を外す。
- ② フロントパネル部組立を外す。
- ③ バッテリー，EVF部組立を外す。
- ④ レンズ部を外す。
- ⑤ VC-352基板とメカデッキを外す。
- ⑥ VC-352基板を開く。
- ⑦ VC-352基板のCN9102（27P，0.3mm）を外す。
- ⑧ カセコン組立を押えながら、安定化電源より+4.5Vをローディングモータに加え、アンローディングさせる。



2. DISASSEMBLY

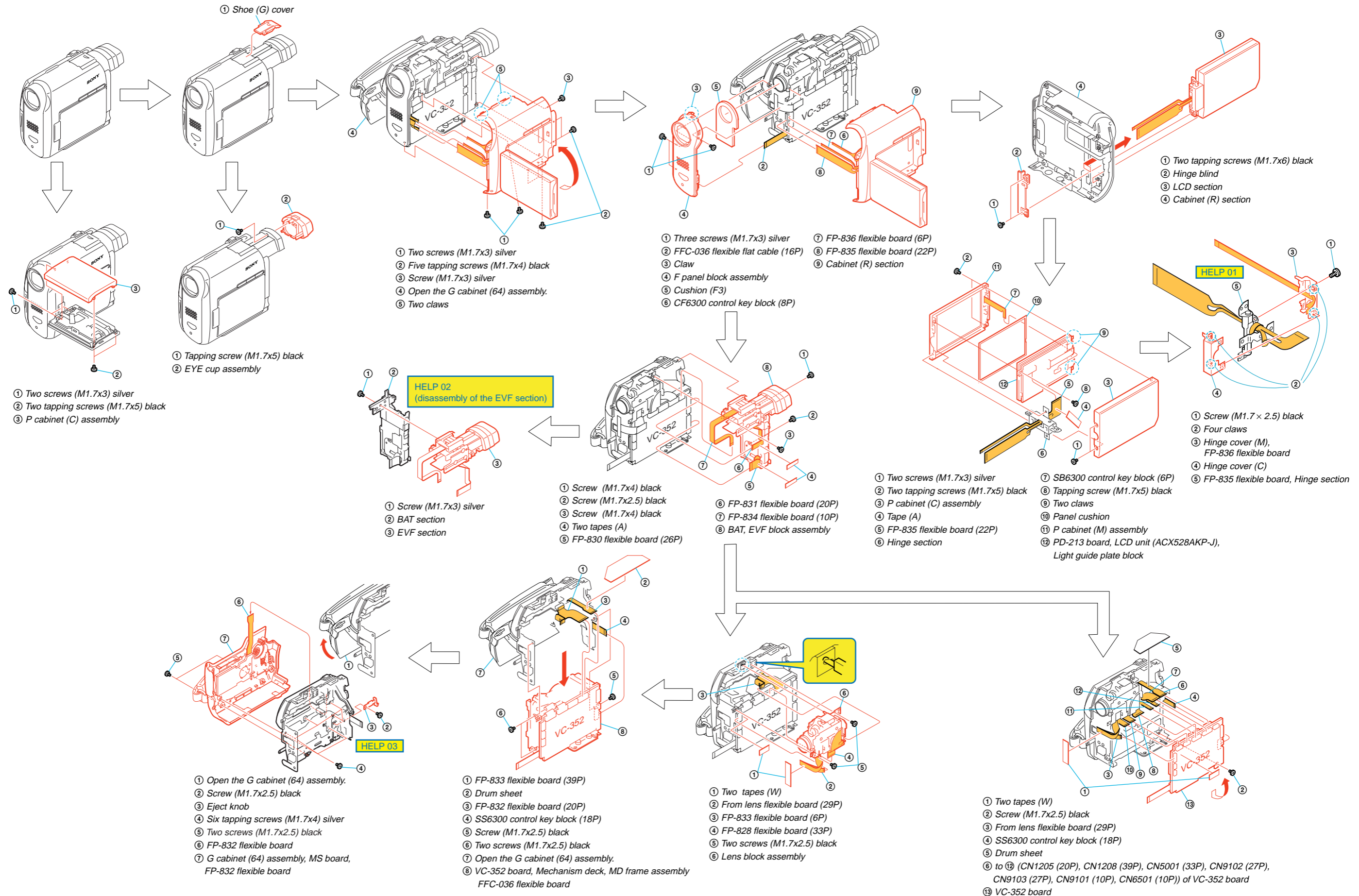
Link

[• DISASSEMBLY](#)[• CIRCUIT BOARDS LOCATION](#)[• SERVICE POSITION](#)[• FLEXIBLE BOARDS LOCATION](#)[• HELP](#)

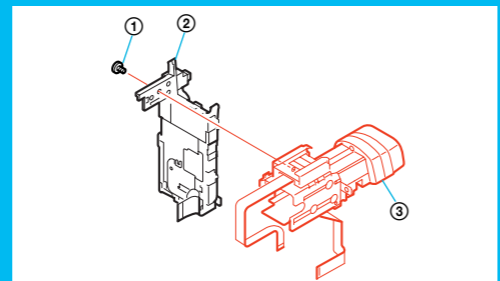
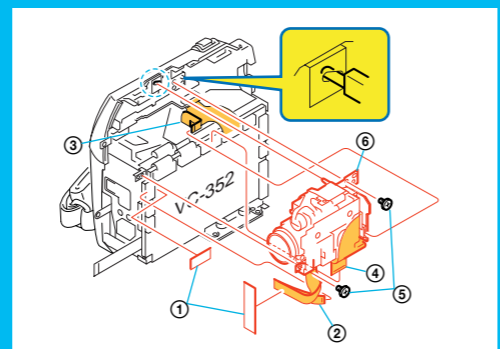
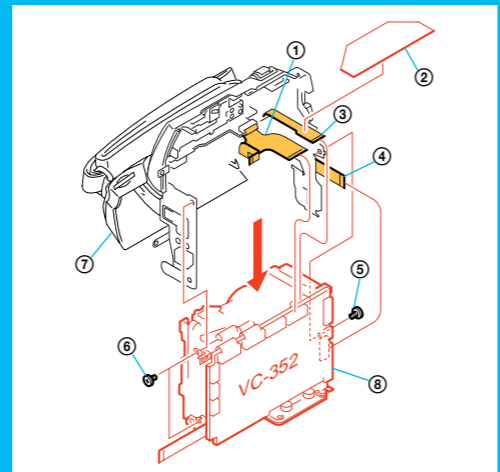
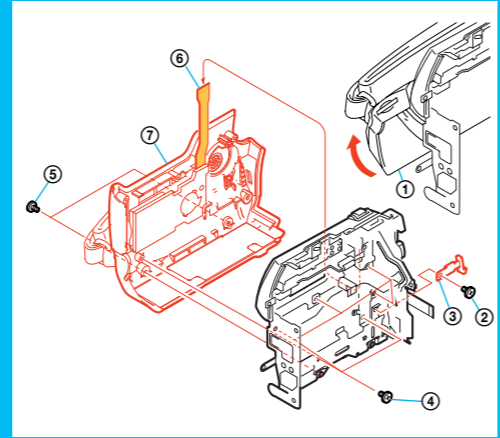
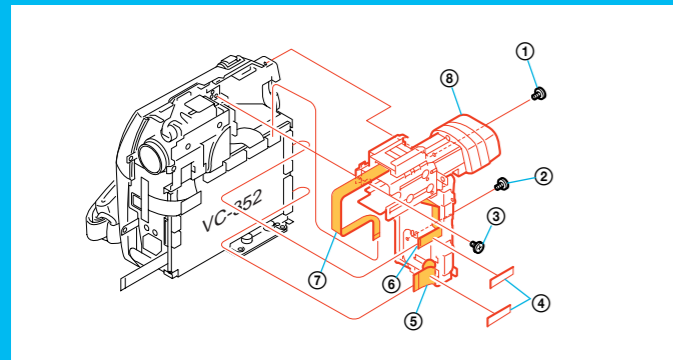
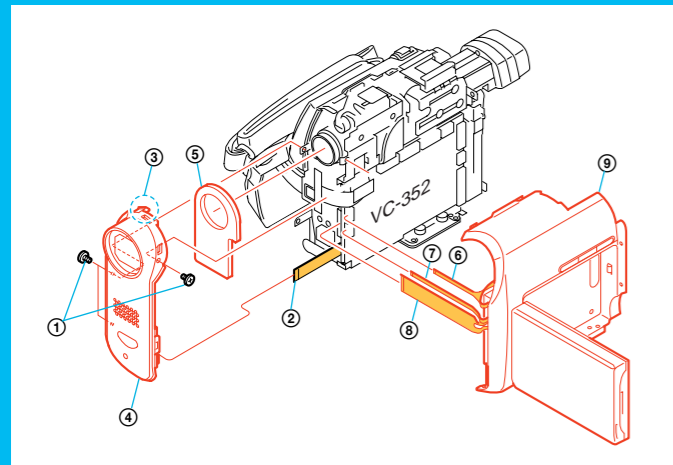
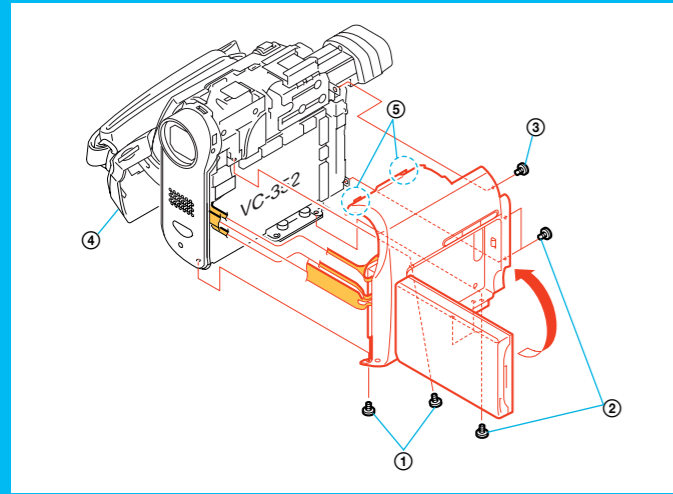
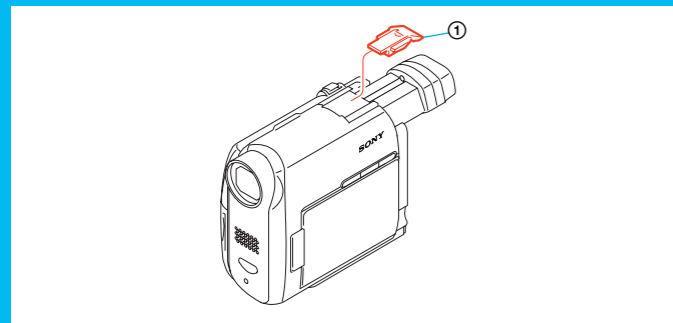
2. DISASSEMBLY

The following flow chart shows the disassembly procedure.

2-1. DISASSEMBLY



2-2. SERVICE POSITION



[SERVICE POSITION TO CHECK THE VTR SECTION]

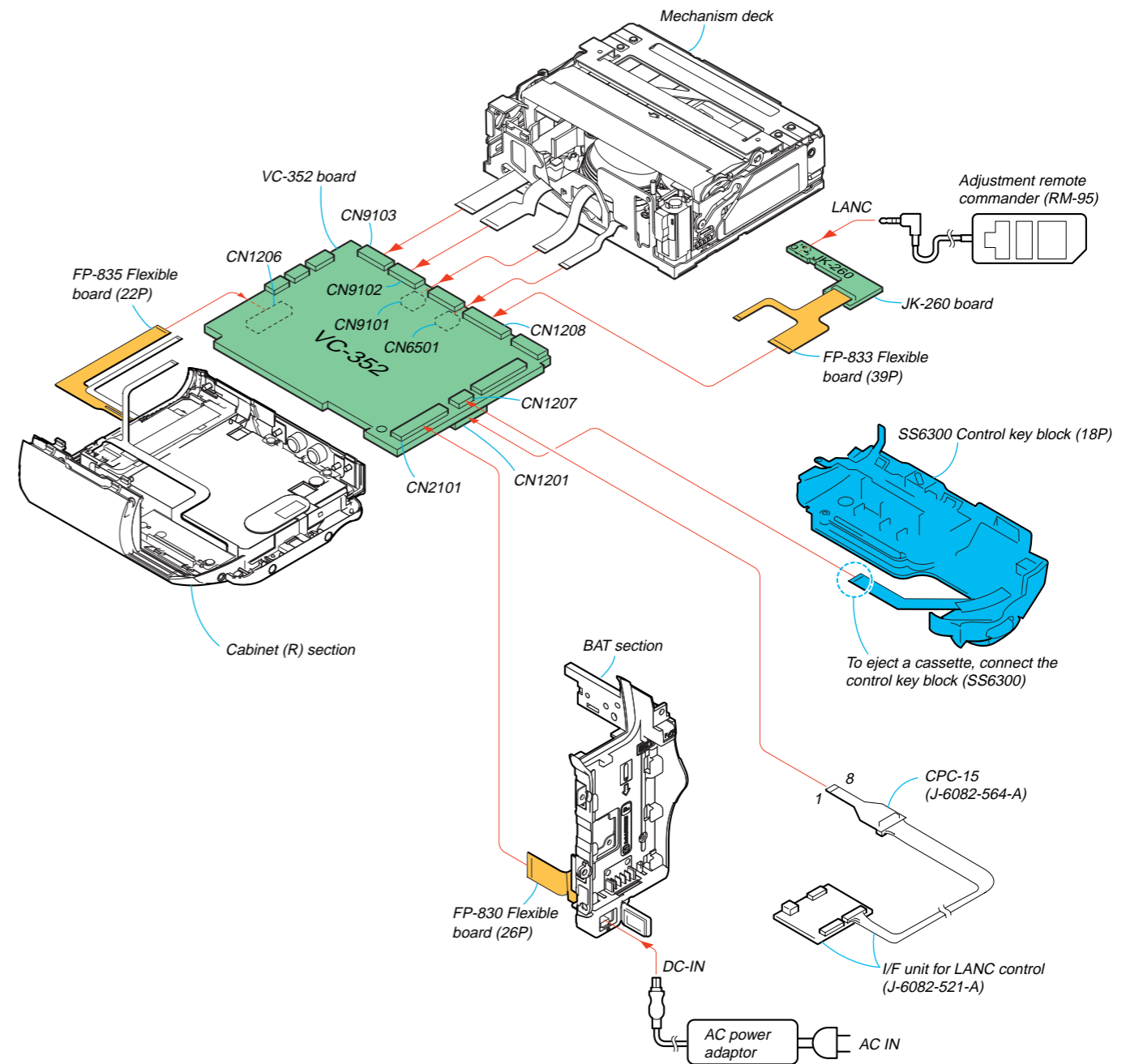
Connection to Check the VTR Section
 To check the VTR section, set the VTR to the "Forced VTR power ON" mode.
 Operate the VTR functions using the touch panel. (When the control key block (SS6300) is removed, the function buttons of the adjustment remote commander are not effective even if the HOLD switch of the adjustment remote commander is set to the OFF position.)

Setting the "Forced VTR Power ON" mode

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 0, address: 10, and set data: 00.
- 3) Select page: A, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.

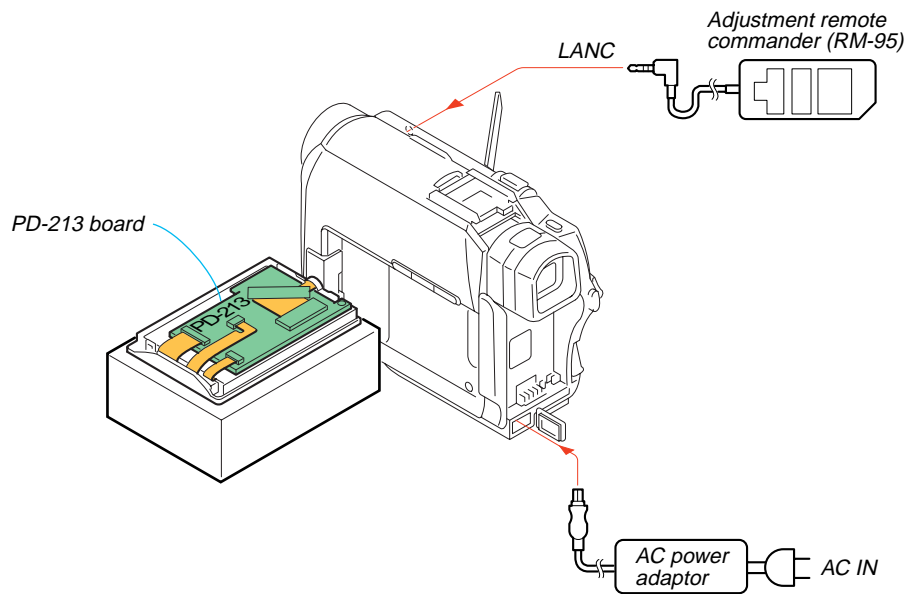
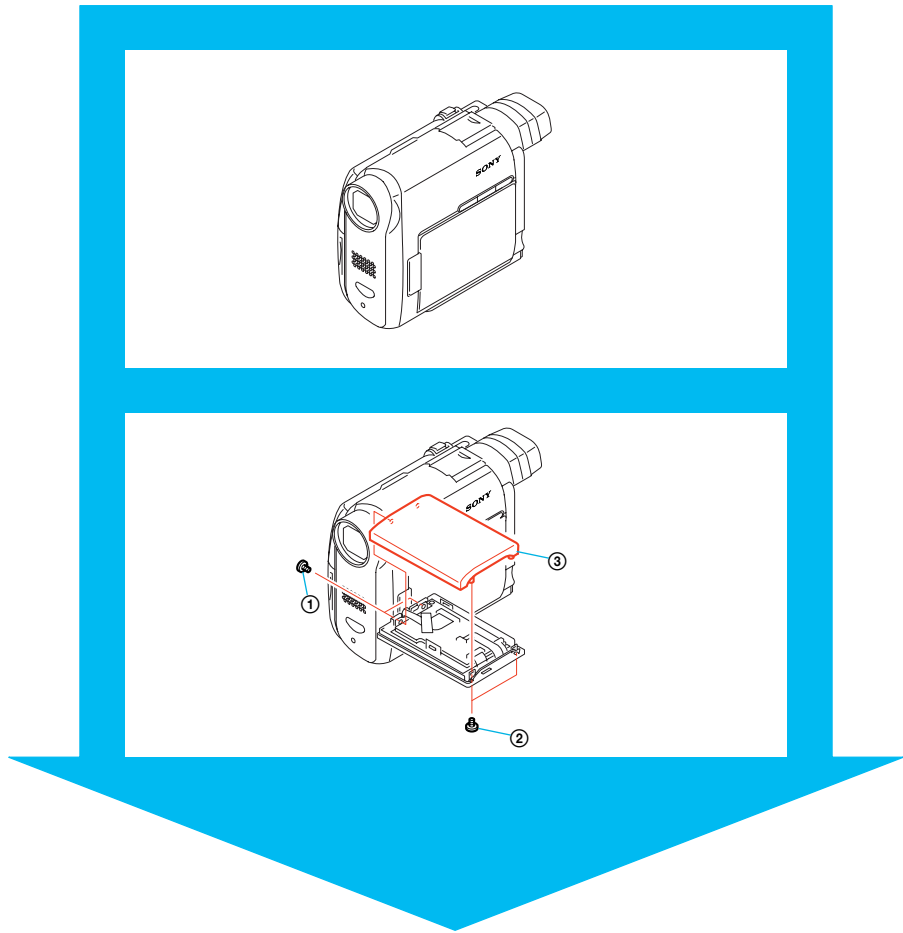
Exiting the "Forced VTR Power ON" mode

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 0, address: 10, and set data: 00.
- 3) Select page: A, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.



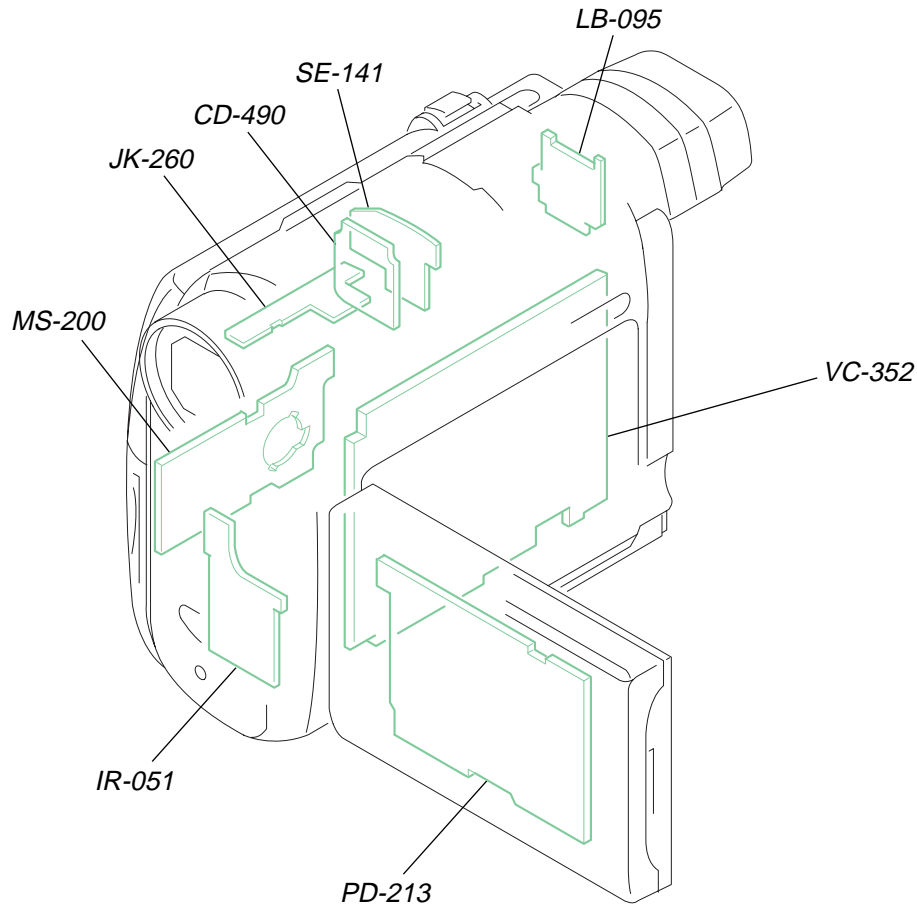
2. DISASSEMBLY

[PD-213 BOARD SERVICE POSITION]



2. DISASSEMBLY

2-3. CIRCUIT BOARDS LOCATION

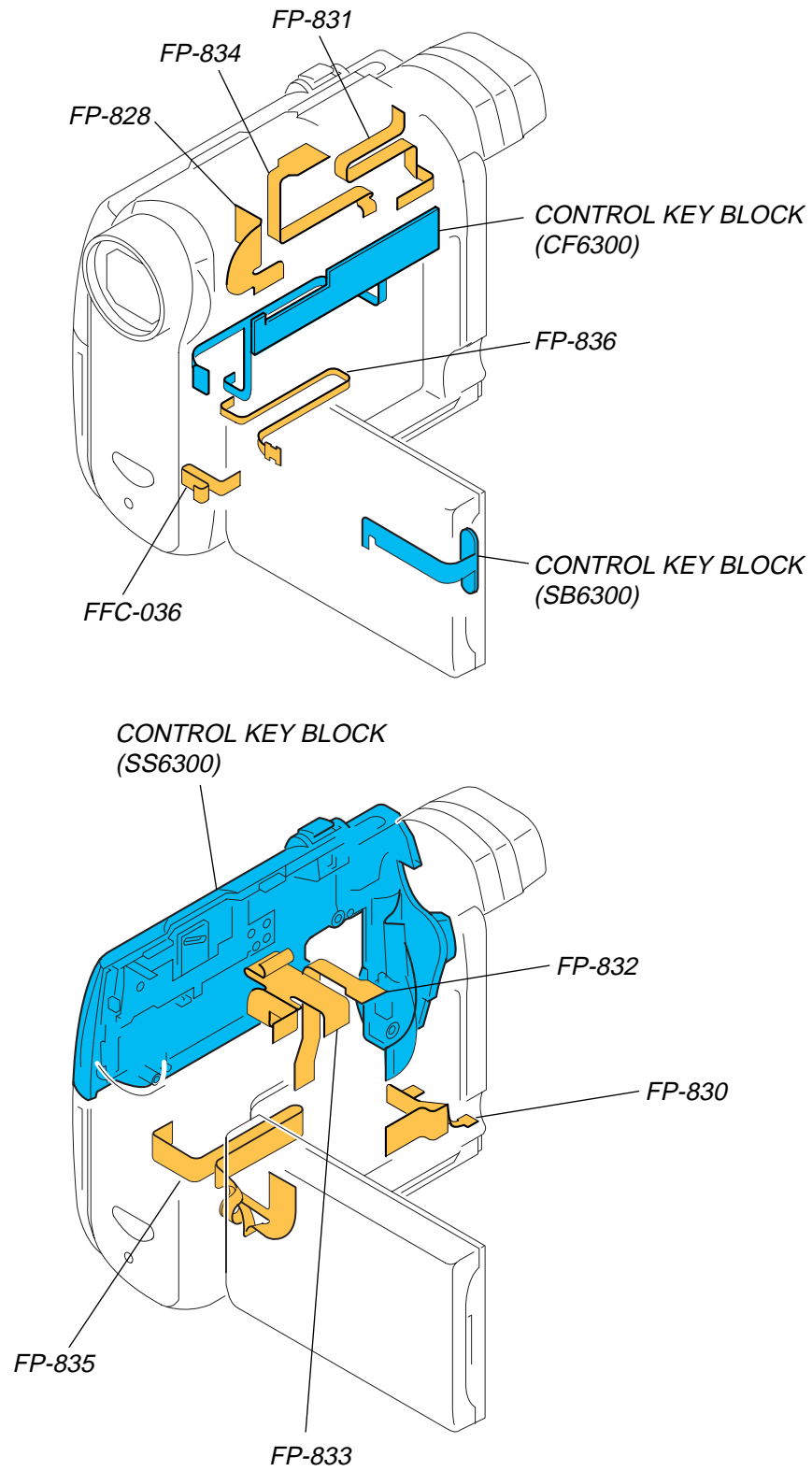


NAME	FUNCTION
CD-490	CCD IMAGER
IR-051	REMOTE COMMANDER RECEIVER, MIC IN
JK-260	JACK
LB-095	EVF RELAY
MS-200	MS CONNECTOR, INDICATOR
PD-213	LCD RGB DRIVE, BACKLIGHT
SE-141	PITCH/YAW SENSOR AMP
VC-352	TIMING GENERATOR, S/H, AGC, A/D CONV., LENS DRIVE, CAMERA PROCESS, MPEG MOVIE/DIGITAL STILL PROCESS, 64Mbit SDRAM, BUFFER, HI/DIGITAL STILL CONTROL, 32Mbit FLASH, 16Mbit SDRAM, DV SIGNAL PROCESS, DV INTERFACE, REC/PB AMP, VIDEO I/O, DRUM/CAPSTAN/LOADING DRIVE, CAMERA/MECHA CONTROL, HI CONTROL, EVF VIDEO, AUDIO I/O, MIC AMP, DC IN, CHARGE, DC/DC CONVERTER, CONNECTOR

2. DISASSEMBLY

2-4. FLEXIBLE BOARDS LOCATION

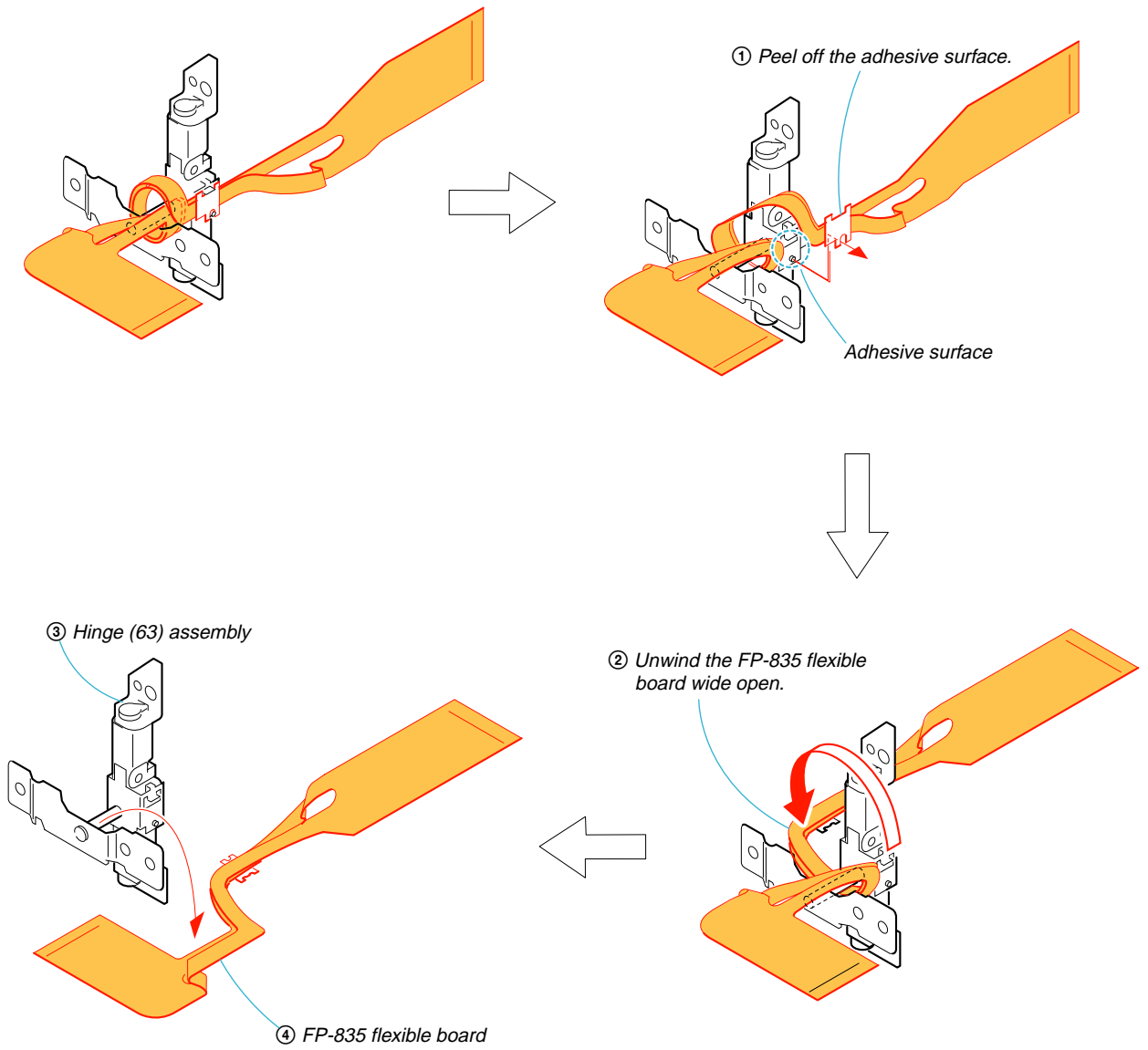
The flexible boards contained in the lens block is not shown.



HELP

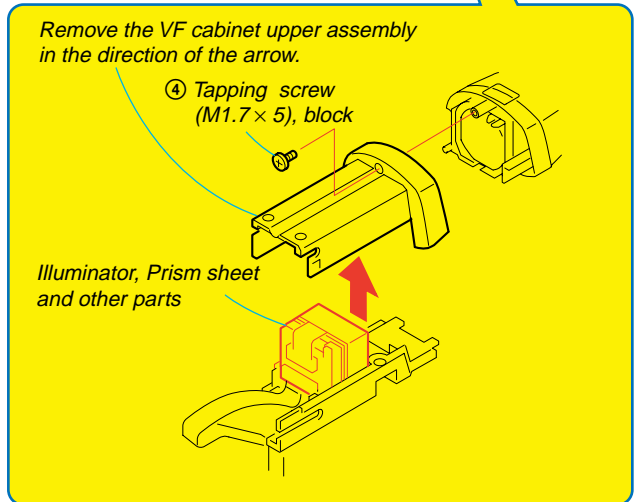
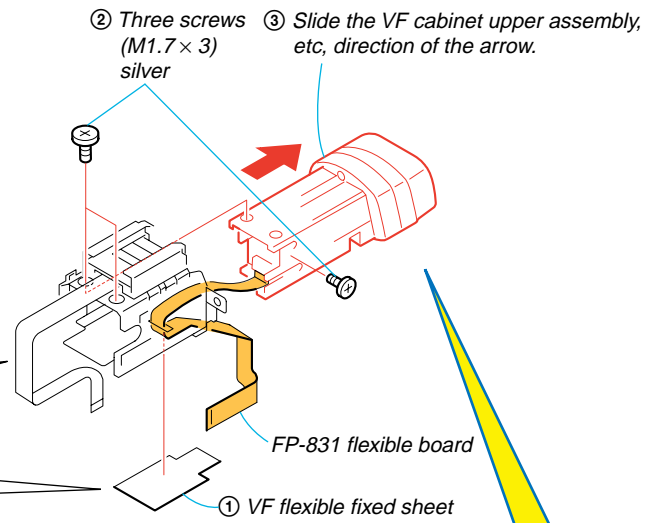
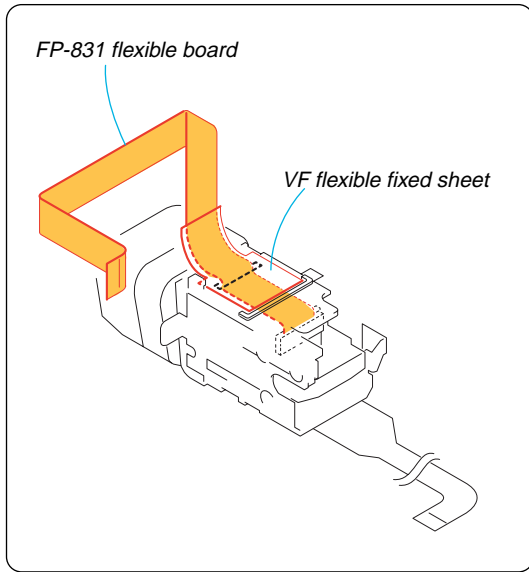
Sheet attachment positions and procedures of processing the flexible boards/harnesses are shown.

HELP 01
(disassembly of the Hinge section)

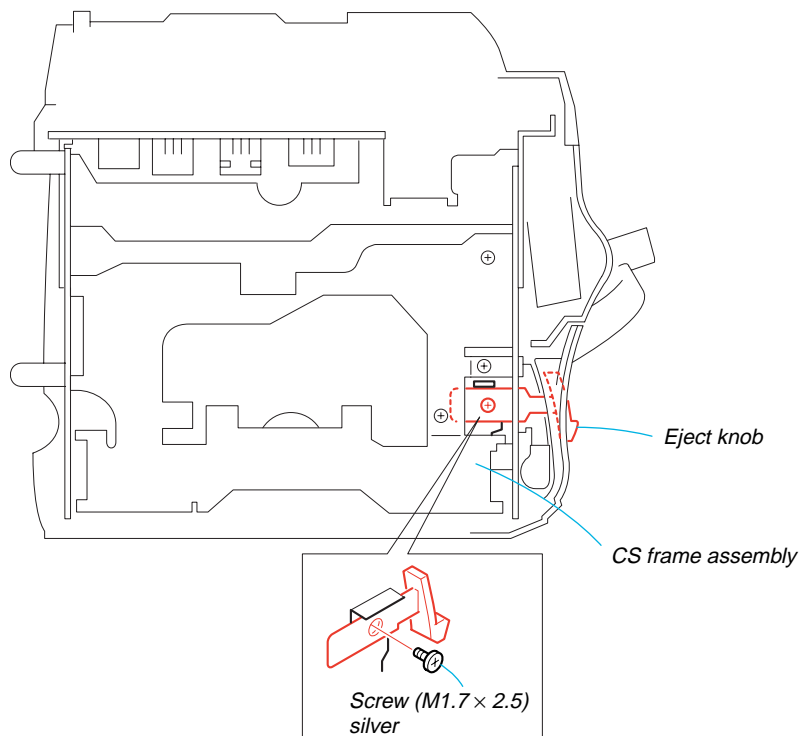


DCR-HC40/HC40E

HELP 02 (disassembly of the EVF section)



HELP 03



3. BLOCK DIAGRAMS

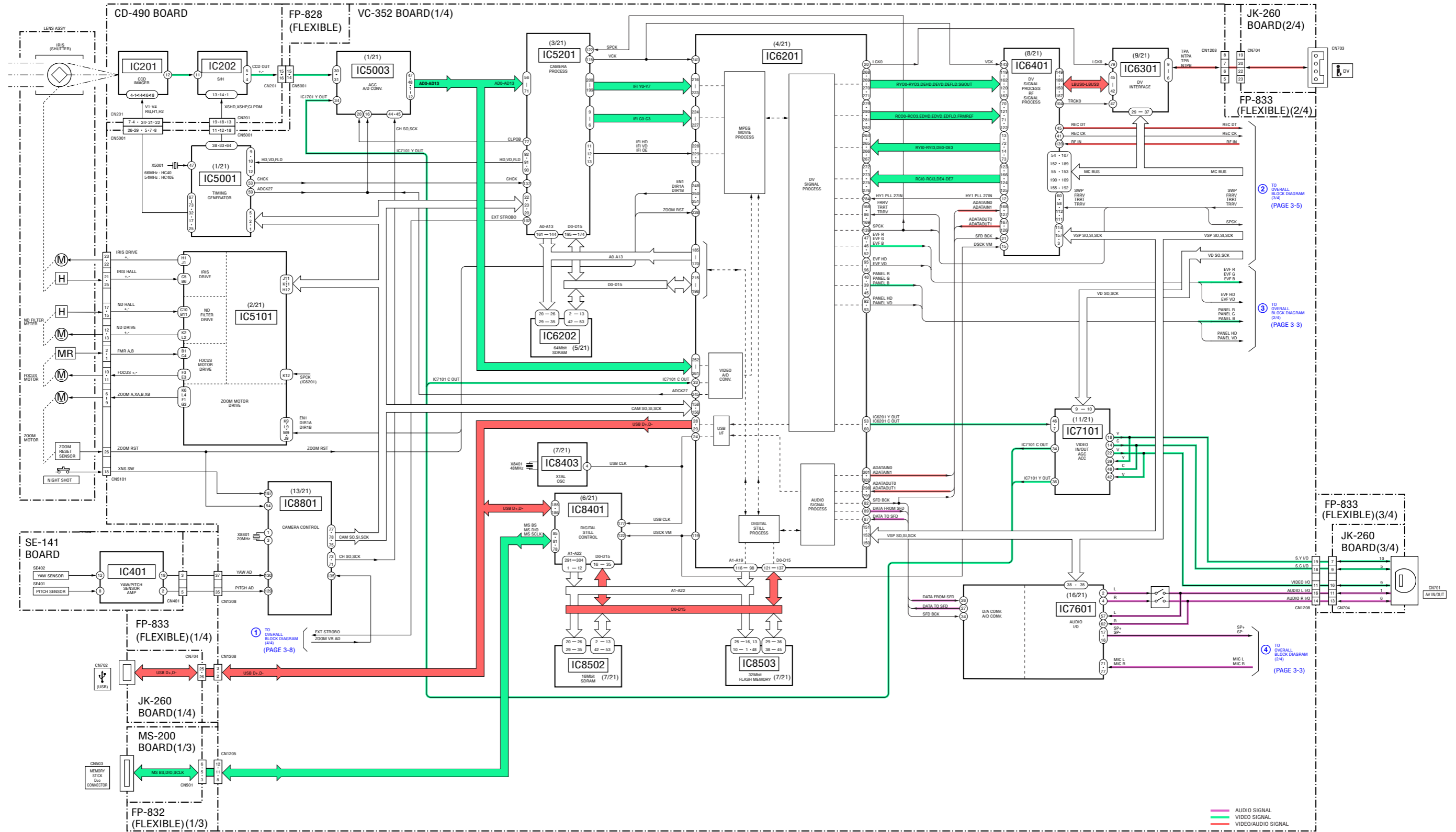
Link

OVERALL BLOCK DIAGRAM (1/4)	POWER BLOCK DIAGRAM (1/2)
OVERALL BLOCK DIAGRAM (2/4)	POWER BLOCK DIAGRAM (2/2)
OVERALL BLOCK DIAGRAM (3/4)	
OVERALL BLOCK DIAGRAM (4/4)	

SECTION 3
BLOCK DIAGRAMS

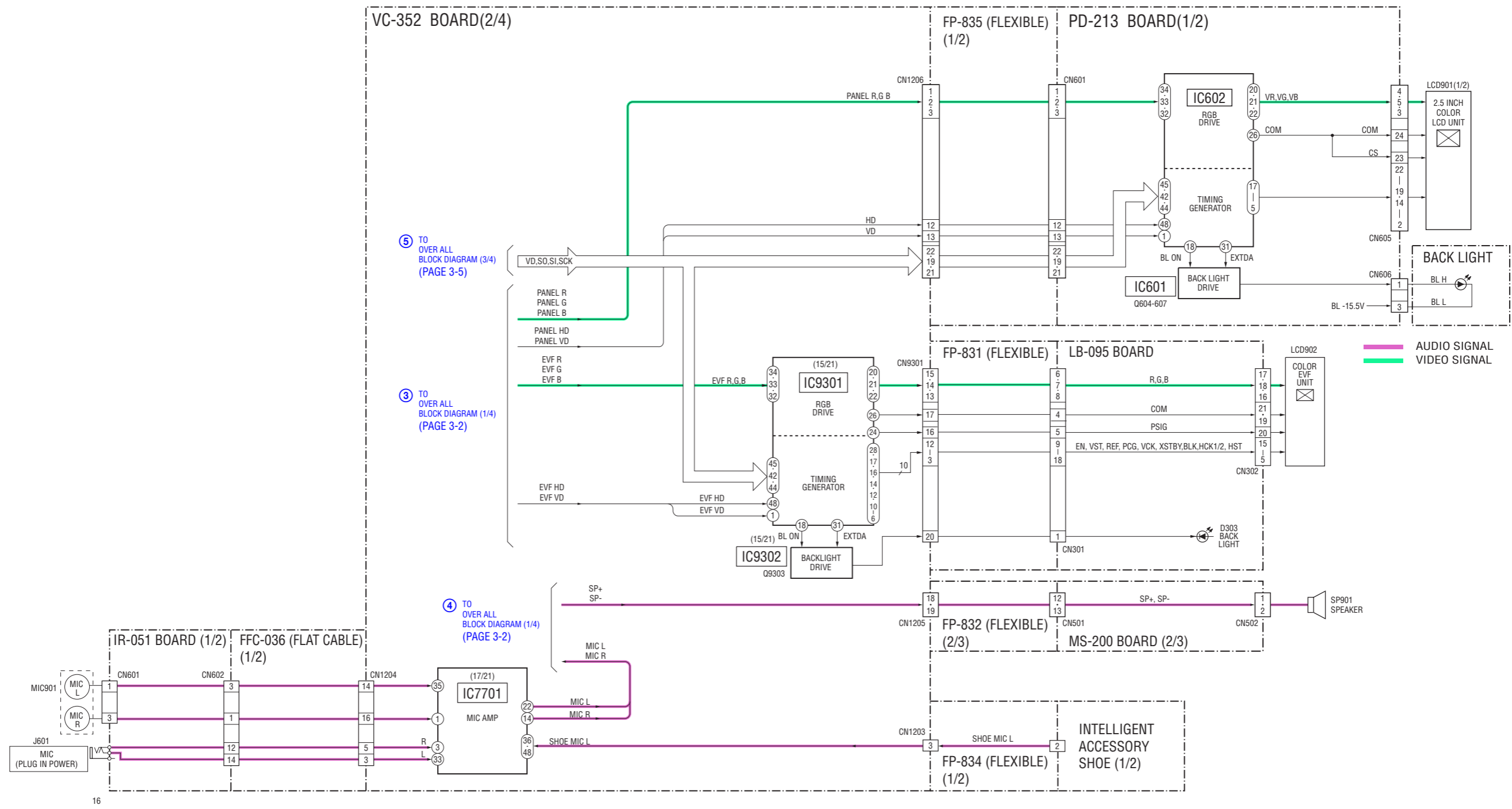
3. BLOCK DIAGRAMS

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



3. BLOCK DIAGRAMS

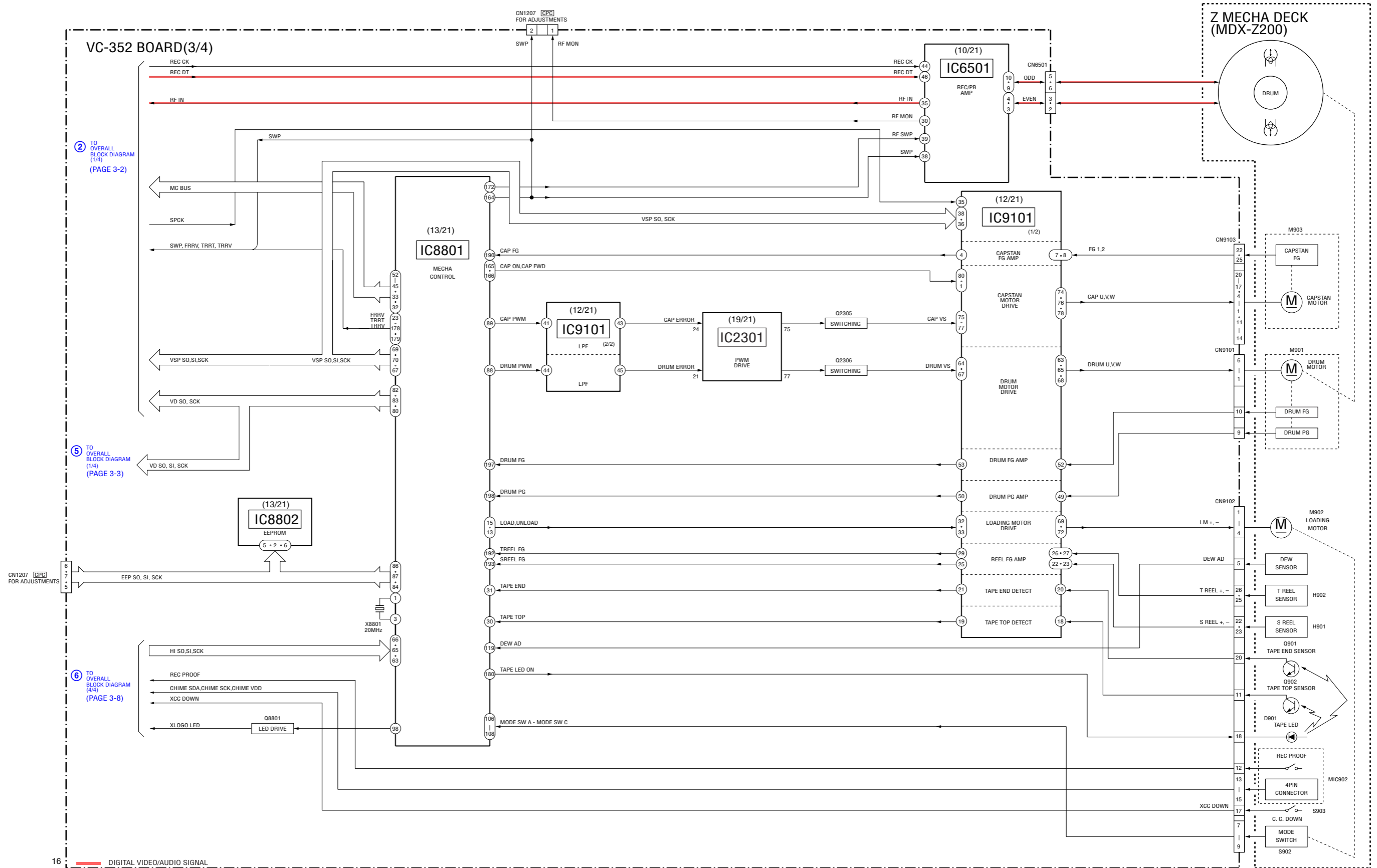
3-2. OVERALL BLOCK DIAGRAM (2/4) () : Number in parenthesis () indicates the division number of schematic diagram where the component is located.



16

3. BLOCK DIAGRAMS

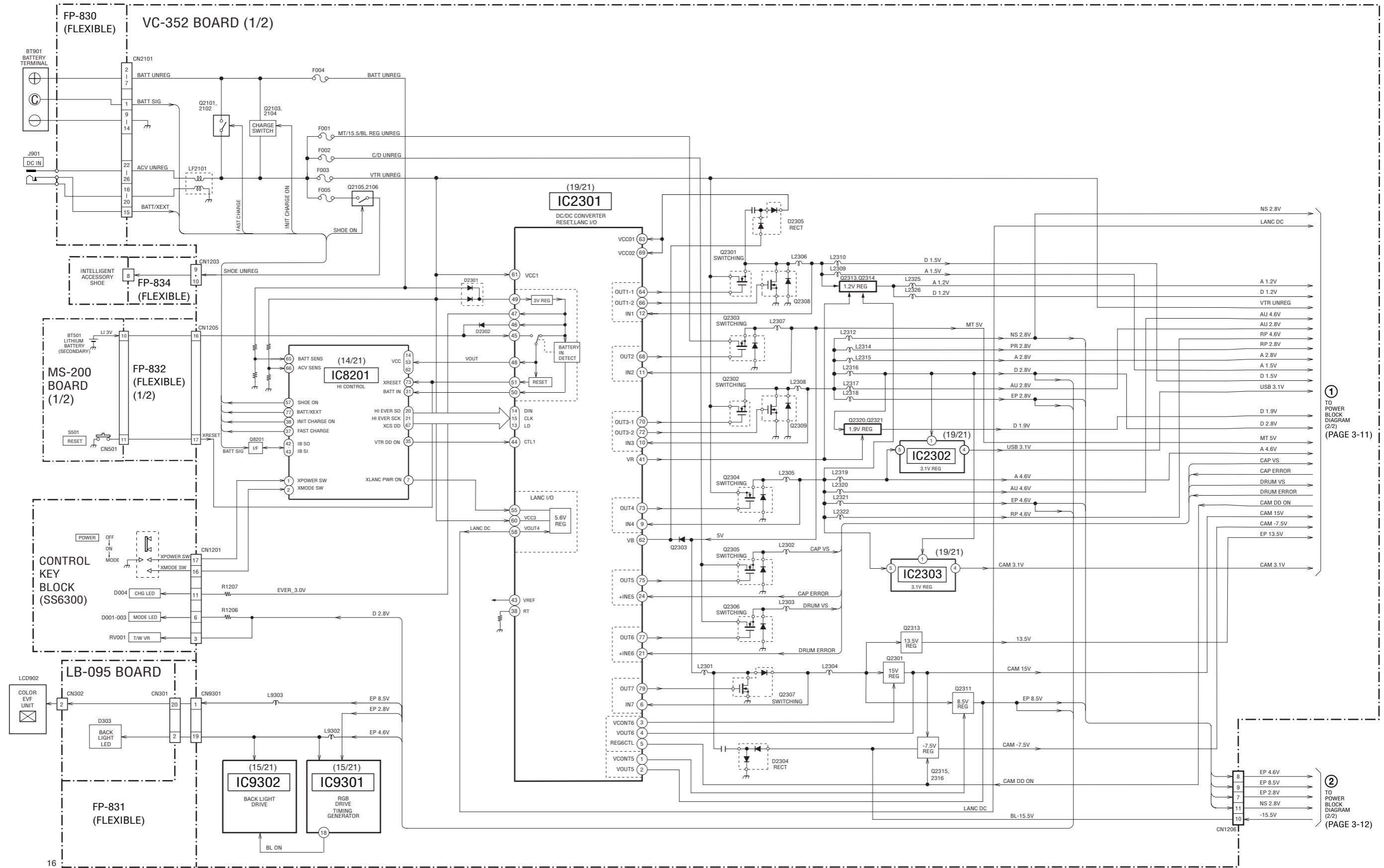
3-3. OVERALL BLOCK DIAGRAM (3/4) () : Number in parenthesis () indicates the division number of schematic diagram where the component is located.



3. BLOCK DIAGRAMS

3-5. POWER BLOCK DIAGRAM (1/2)

() : Number in parenthesis () indicates the division number of schematic diagram where the component is located.



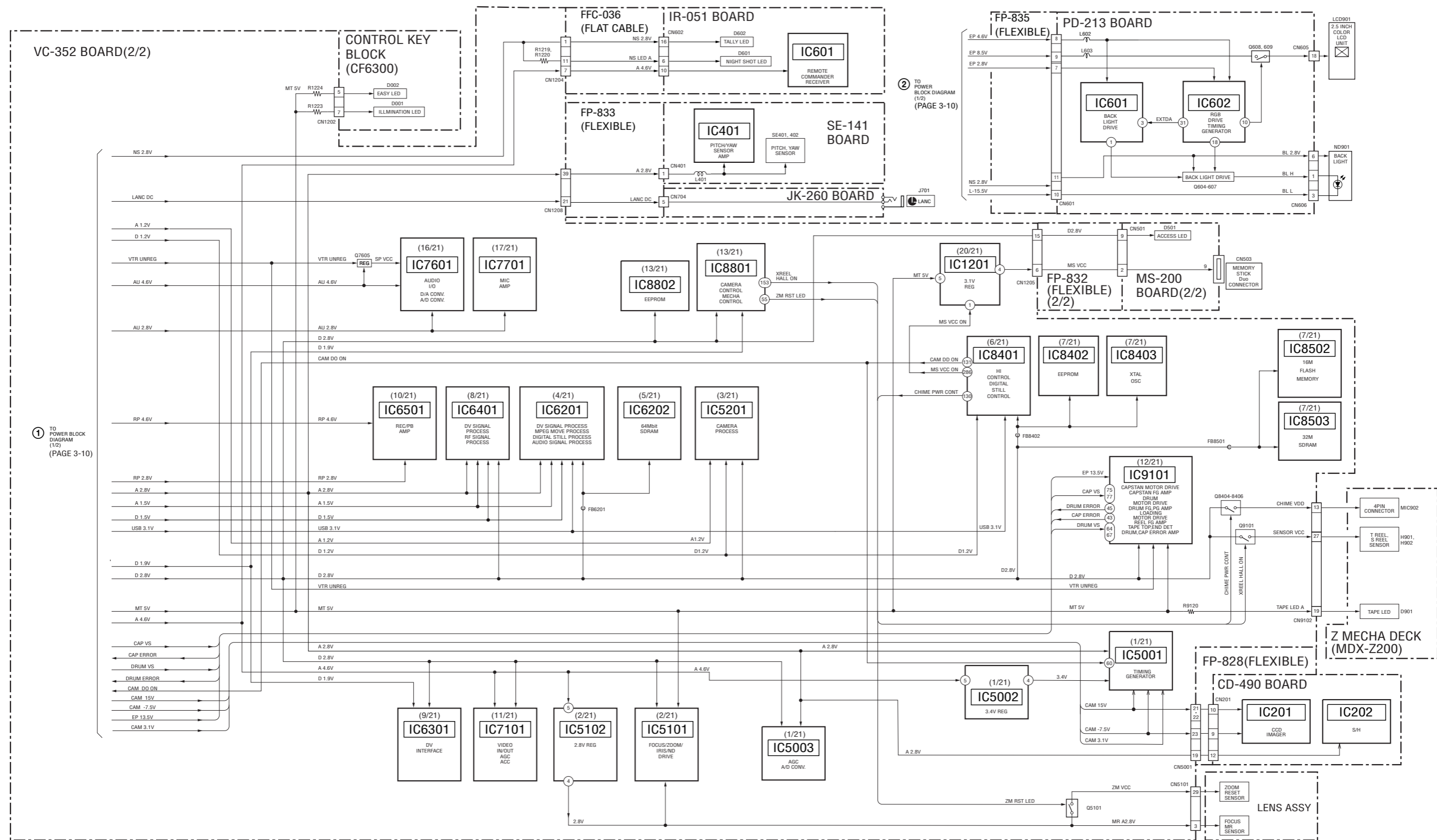
① TO POWER BLOCK DIAGRAM (2/2) (PAGE 3-11)

② TO POWER BLOCK DIAGRAM (2/2) (PAGE 3-12)

3. BLOCK DIAGRAMS

3-6. POWER BLOCK DIAGRAM (2/2)

() : Number in parenthesis () indicates the division number of schematic diagram where the component is located.

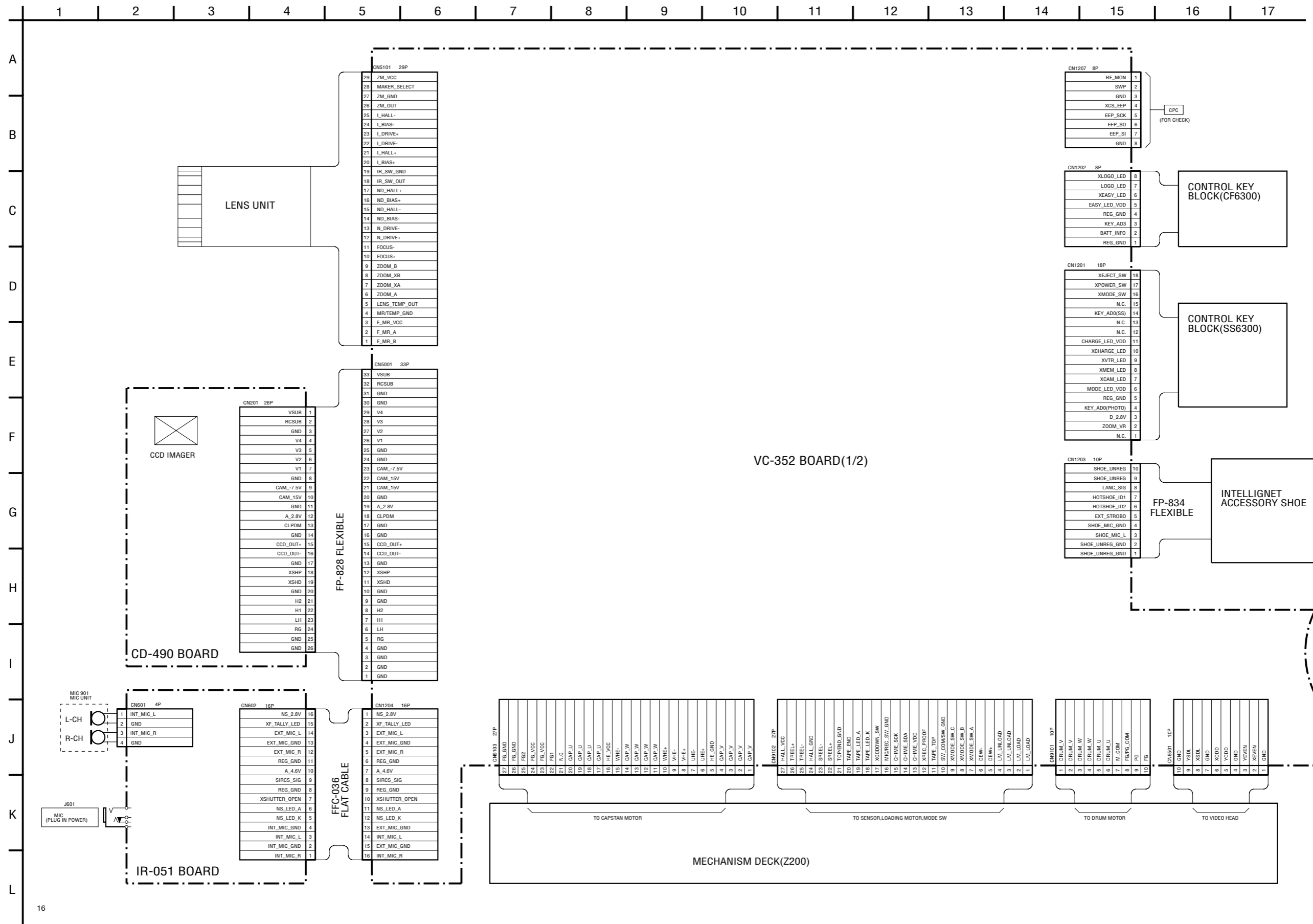


① TO POWER BLOCK DIAGRAM (1/2) (PAGE 3-10)

② TO POWER BLOCK DIAGRAM (1/2) (PAGE 3-10)

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/2)



4-2. SCHEMATIC DIAGRAMS

Link

• CD-490 BOARD (CCD IMAGER)	• IR-051 BOARD (REMOTE COMMANDER RECEIVER, MIC IN)
• PD-213 BOARD (LCD RGB DRIVE, BACKLIGHT)	• MS-200 BOARD (MS CONNECTOR, INDICATOR)
• CONTROL KEY BLOCK (SB6300)	• CONTROL KEY BLOCK (SS6300)
• LB-095 BOARD (EVF RELAY)	• CONTROL KEY BLOCK (CF6300)
• SE-141 BOARD (PITCH/YAW SENSOR AMP)	• FP-836 BOARD (PANEL REVERSE)
• JK-260 BOARD (JACK)	• FP-228/FP-467/FP-826 FLEXIBLE BOARD
• FP-830 FLEXIBLE BOARD (BAT/DC IN)	

• COMMON NOTE FOR SCHEMATIC DIAGRAMS

(ENGLISH)

THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS

(In addition to this, the necessary note is printed in each block)

(For schematic diagrams)

- All capacitors are in μF unless otherwise noted. pF : μF . 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.

Example	C541	L452
	22U	10UH
	TA A	2520
Kinds of capacitor		
	Temperature characteristics	External dimensions (mm)

- 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 \rightarrow $\overline{\text{EDIT}}$ PB/XREC \rightarrow $\overline{\text{PB/REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B- Line
- : IN/OUT direction of (+,-) B LINE.
- : adjustment for repair.
- : VIDEO SIGNAL (ANALOG)
- : AUDIO SIGNAL (ANALOG)
- : VIDEO/AUDIO SIGNAL (ANALOG)
- : VIDEO/AUDIO/SERVO SIGNAL
- : SERVO SIGNAL
- Circled numbers refer to waveforms.

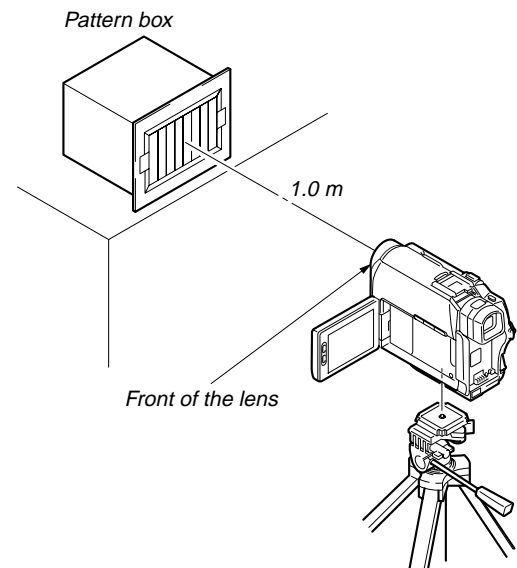
(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms.
(VOM of DC 10 M Ω input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

Precautions Upon Replacing CCD imager

- The CD-490 board mounted as a repair part is not equipped with a CCD imager.
When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD 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.

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

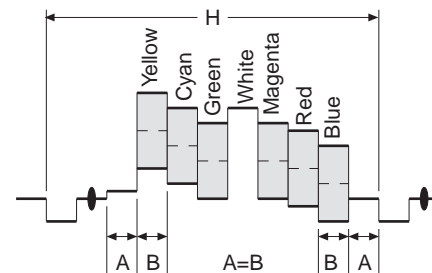


Fig. a (Video output terminal output waveform)

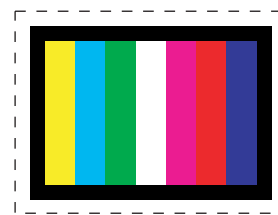


Fig.b (Picture on monitor TV)

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

Note :

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

Note :

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

(JAPANESE)

回路図共通ノート













(他に必要なノートは各ブロックに記載してあります)

【回路図ノート】

- ・ケミコン、タンタルを除くコンデンサで、耐圧50V以下のものはその耐圧を省略。単位はすべて μF (plはpF)。
- ・チップ抵抗で指示のないものは、1/10W以下。
 $\text{k}\Omega=1000\Omega$, $\text{M}\Omega=1000\text{k}\Omega$
- ・チップ部品交換時の注意
取り外した部品は再使用せず、未使用の部品をご使用ください。
タンタルコンデンサのマイナス側は熱に弱いため注意してください。

- ・チップ部品には下記のように表示したものがああります。

例	C 541	L 452
	22U	10UH
	TA A	2520
	↑	↑
	種類	温度特性
		外形寸法 (mm)

- ・抵抗、コンデンサ、ICなど定数にXXがあるものは、使用していない事を示しています。このため、使用していない回路が記載されている事があります。
- ・*印のある部品は、機種などにより異なりますので機能別マウント一覧表を参照してください。
- ・可変抵抗と半固定抵抗で、B特性の表示を省略。
- ・信号名表記について、下記のような場合があります。
XEDIT → EDIT PB/XREC → PB/REC
- ・は不燃性抵抗。
- ・はヒューズ抵抗。
- ・はパネル表示名称。
- ・はB+ライン。
- ・はB-ライン。
- ・はBライン (+, -) の入出力方向を示す。
- ・は調整名称。
- ・はビデオ信号 (アナログ)。
- ・はオーディオ信号 (アナログ)。
- ・はビデオ/オーディオ信号 (アナログ)。
- ・はビデオ/オーディオ/サーボ信号。
- ・はサーボ信号。
- ・○番号は、波形図の照合番号。

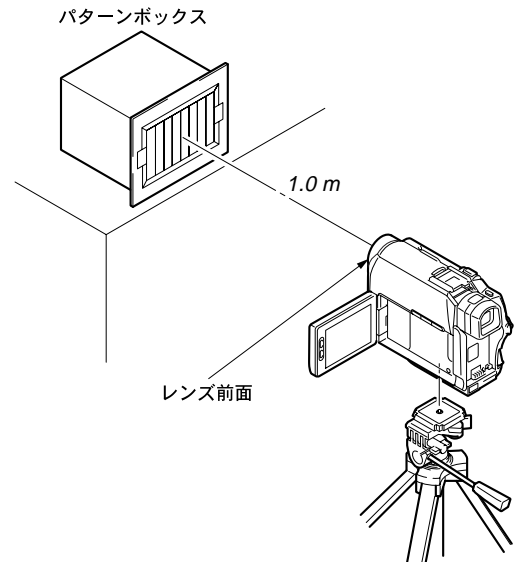
CCDイメージャ交換時の注意

- ・補修部品として供給されるCD-490基板には、CCDイメージャがマウントされていません。
CD-490基板を交換する時は、旧基板よりCCDイメージャを外し、新基板へ再度取り付けてください。
- ・CCDイメージャを交換した場合は、カメラ部の全調整を行ってください。
- ・CCDイメージャは構造上、静電気により破壊される恐れがあるため、MOS ICと同様に注意して取り扱ってください。
また、受光部にはゴミの付着、および強い光がはいることのないように注意してください。

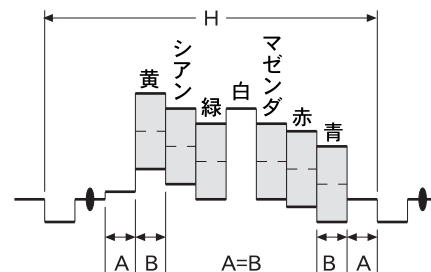
【電圧・波形測定条件ノート】

- ・電圧値及び信号波形はパターンボックスのカラーバーチャートを被写体としたときの測定点对アース間の参考値。
(デジタルマルチメータ; 入力インピーダンス DC10M Ω 使用)
- ・使用テストの入力インピーダンスにより電圧値が多少異なります。

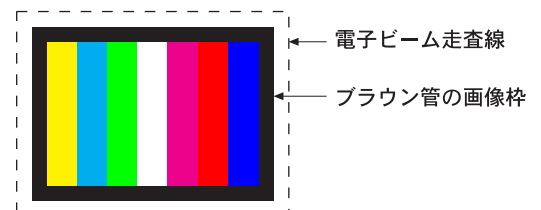
1. 接続図



2. 図a及び図bの波形が得られるように画枠調整して下さい。



図a (映像入出力端子出力波形)



図b (テレビモニタの映像)

△印の部品、または△印付きの点線で囲まれた部品は、安全性を維持するために重要な部品です。
従って交換時は、必ず指定の部品を使用して下さい。

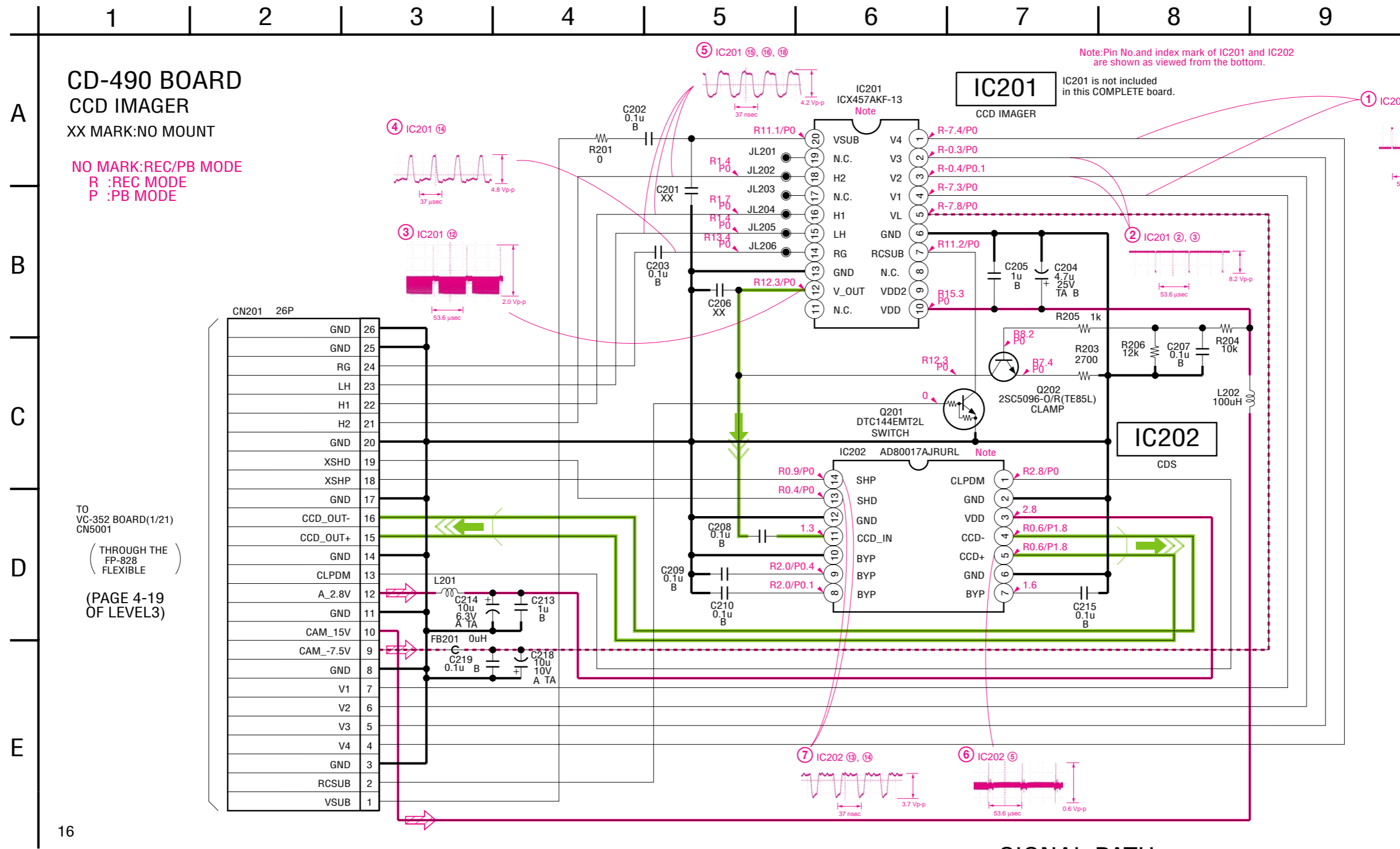
お願い
図面番号で部品を指定するときは基板名又はブロックを併せて指定して下さい。

4-2. SCHEMATIC DIAGRAMS

CD-490 PRINTED WIRING BOARD

4-2. SCHEMATIC DIAGRAMS

For Schematic Diagram
 • Refer to page 4-65 for printed wiring board.



CD-490 BOARD
 CCD IMAGER
 XX MARK:NO MOUNT

NO MARK:REC/PB MODE
 R :REC MODE
 P :PB MODE

TO VC-352 BOARD(1/21)
 CN5001

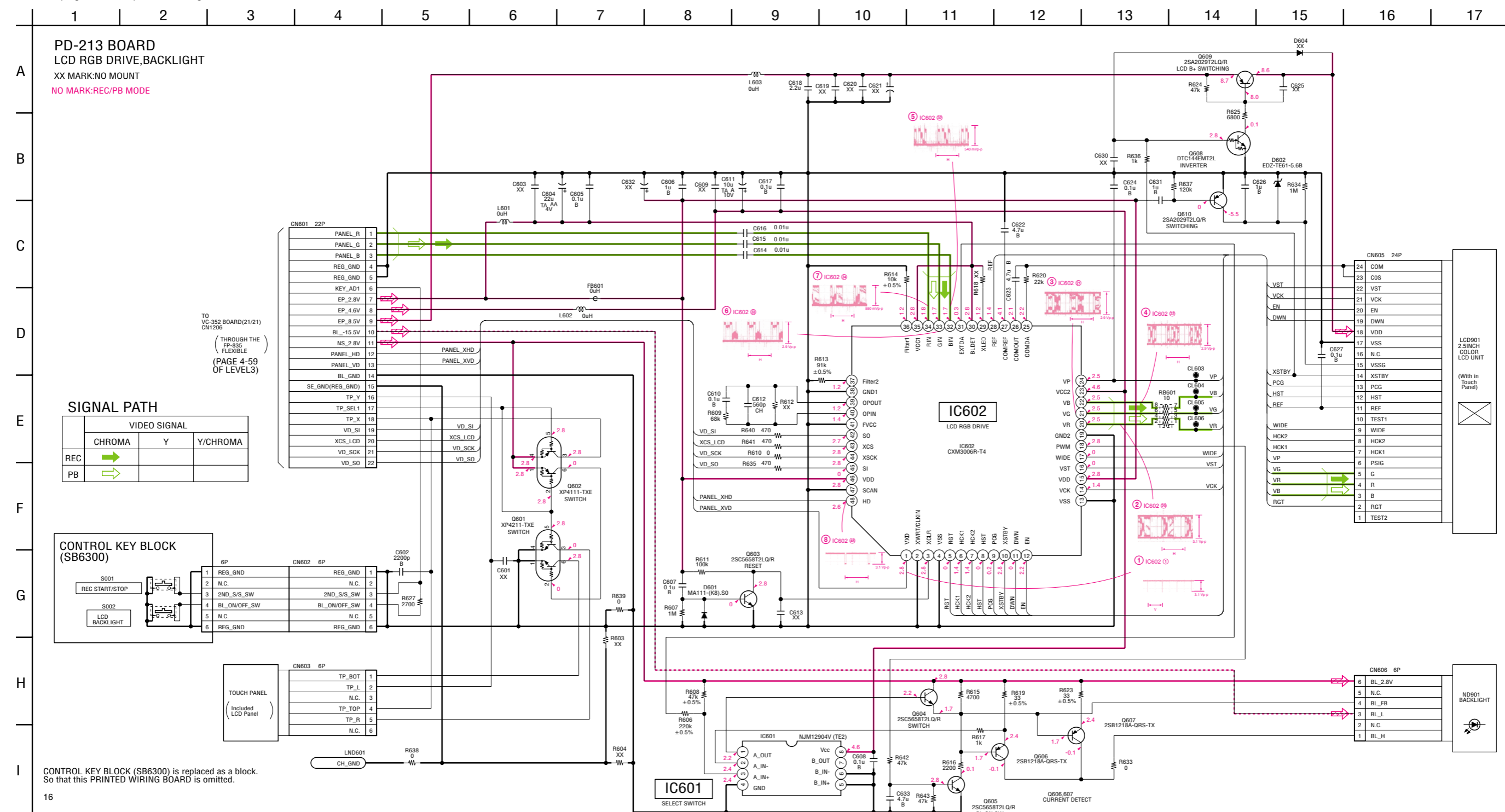
(THROUGH THE
 FP-828
 FLEXIBLE)

(PAGE 4-19
 OF LEVEL3)

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			➡➡➡
PB			

For Schematic Diagram
• Refer to page 4-71 for printed wiring board.



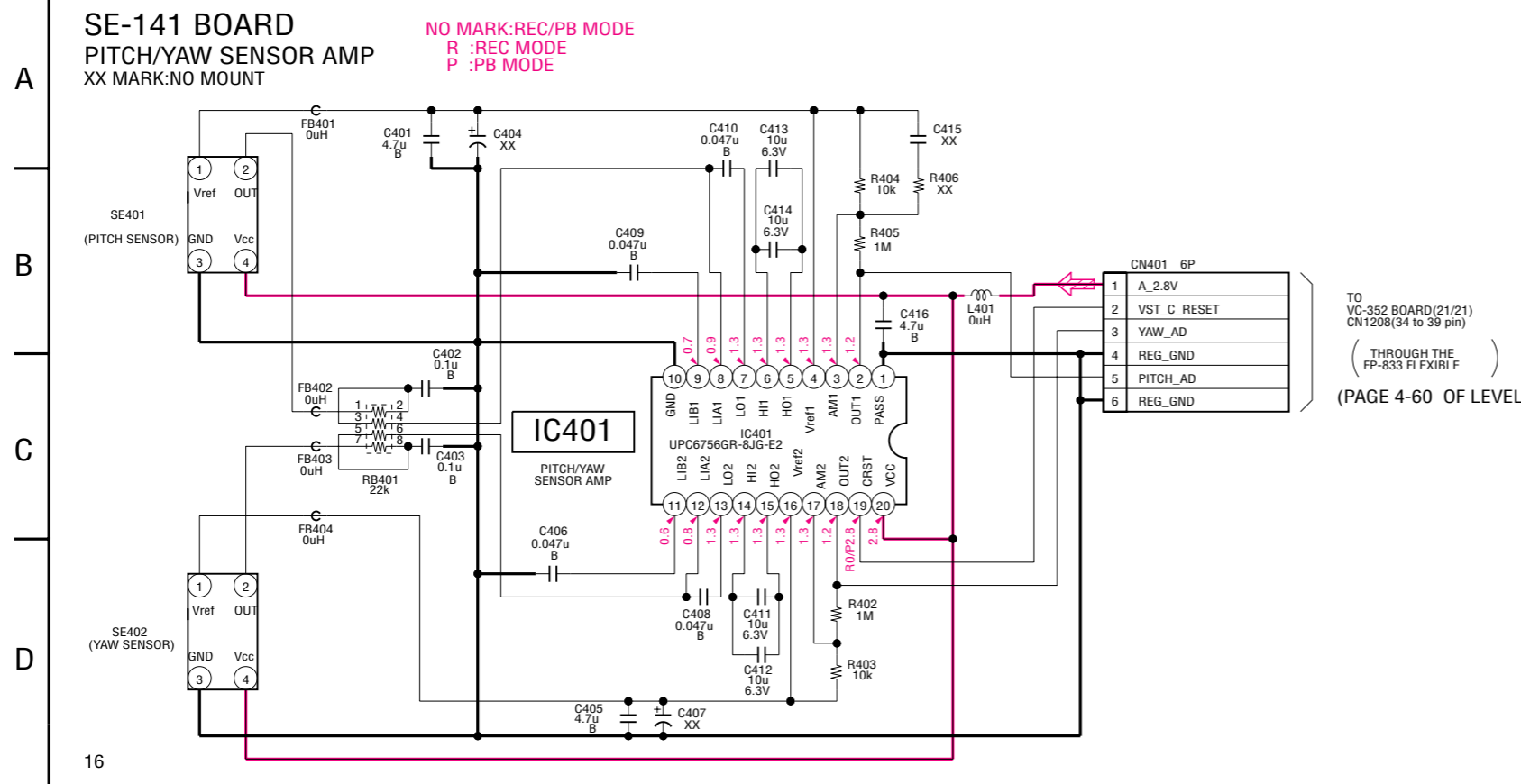
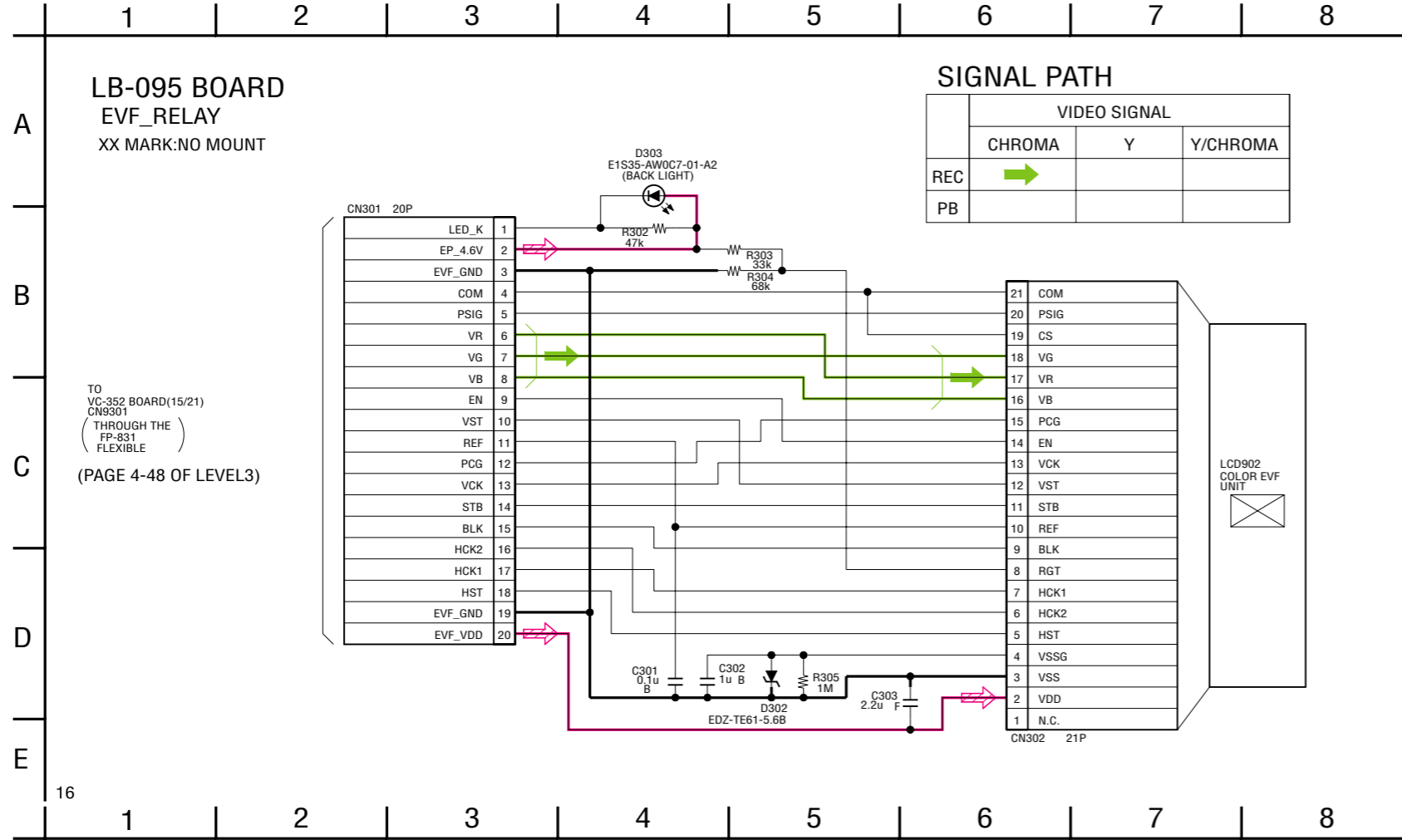
4-2. SCHEMATIC DIAGRAMS

LB-095 BOARD

SE-141 BOARD

For Schematic Diagram

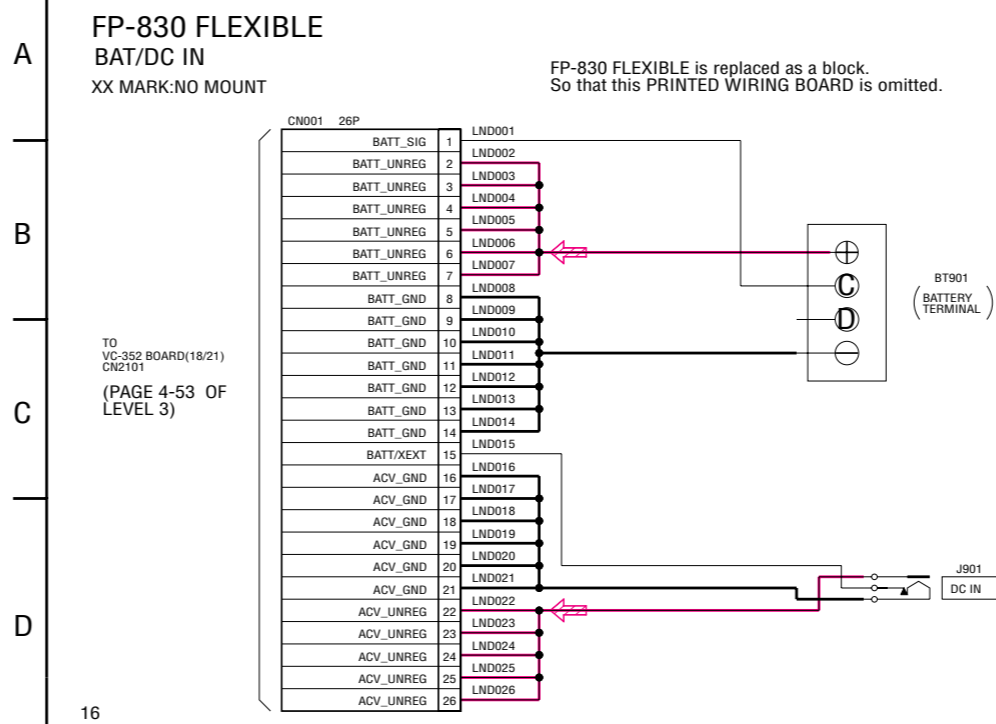
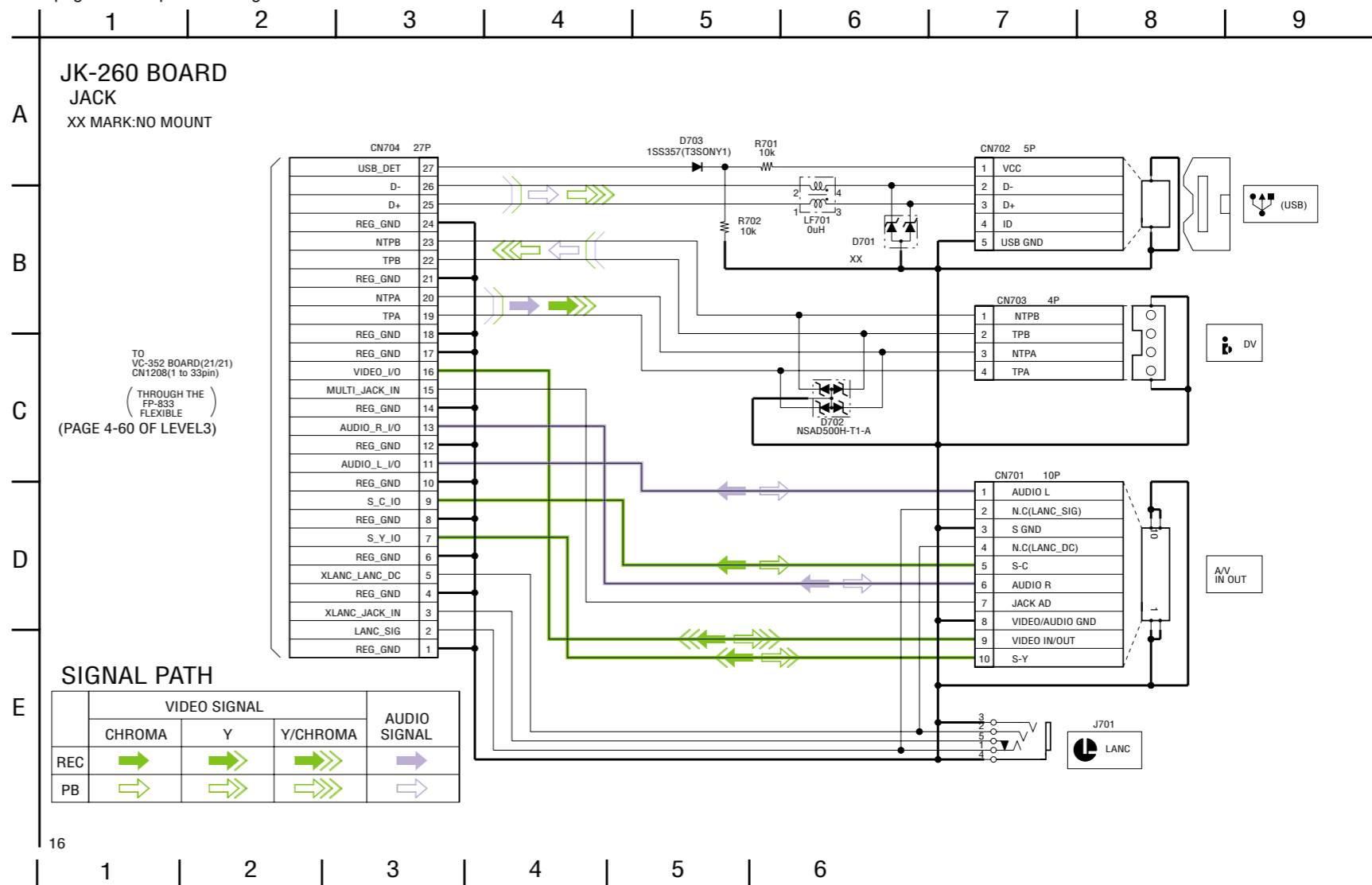
• Refer to page 4-69 for printed wiring board.



4-2. SCHEMATIC DIAGRAMS

JK-260 PRINTED WIRING BOARD

For Schematic Diagram
 • Refer to page 4-67 for printed wiring board.



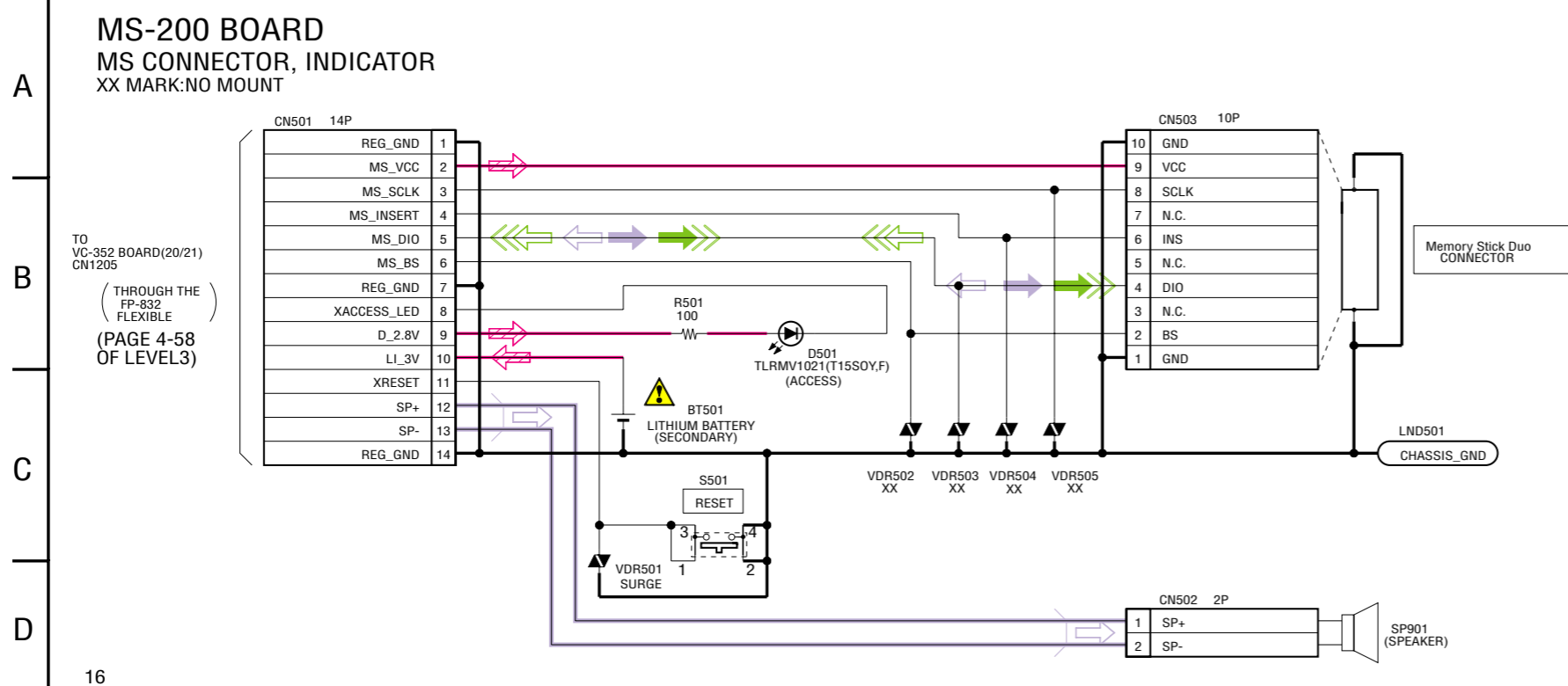
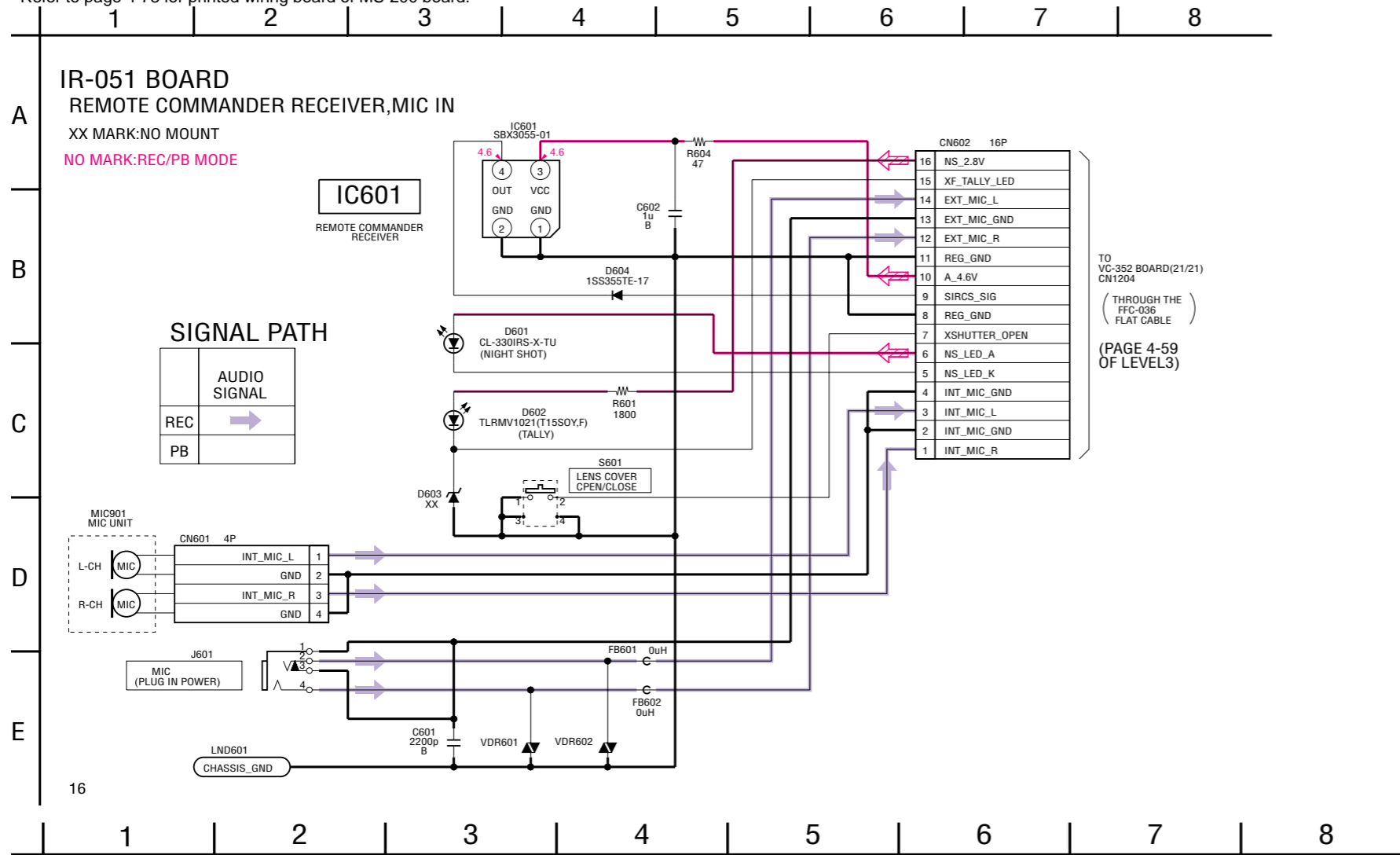
4-2. SCHEMATIC DIAGRAMS

IR-051 BOARD

MS-200 BOARD

For Schematic Diagram

- Refer to page 4-65 for printed wiring board of IR-051 board.
- Refer to page 4-73 for printed wiring board of MS-200 board.



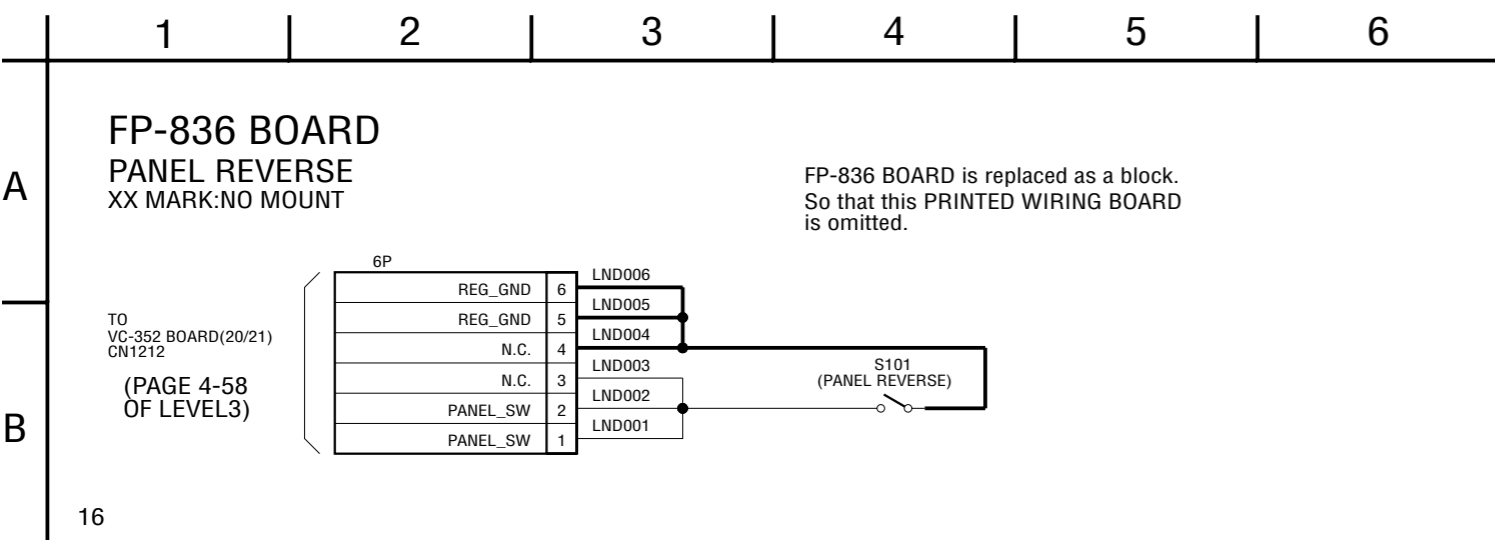
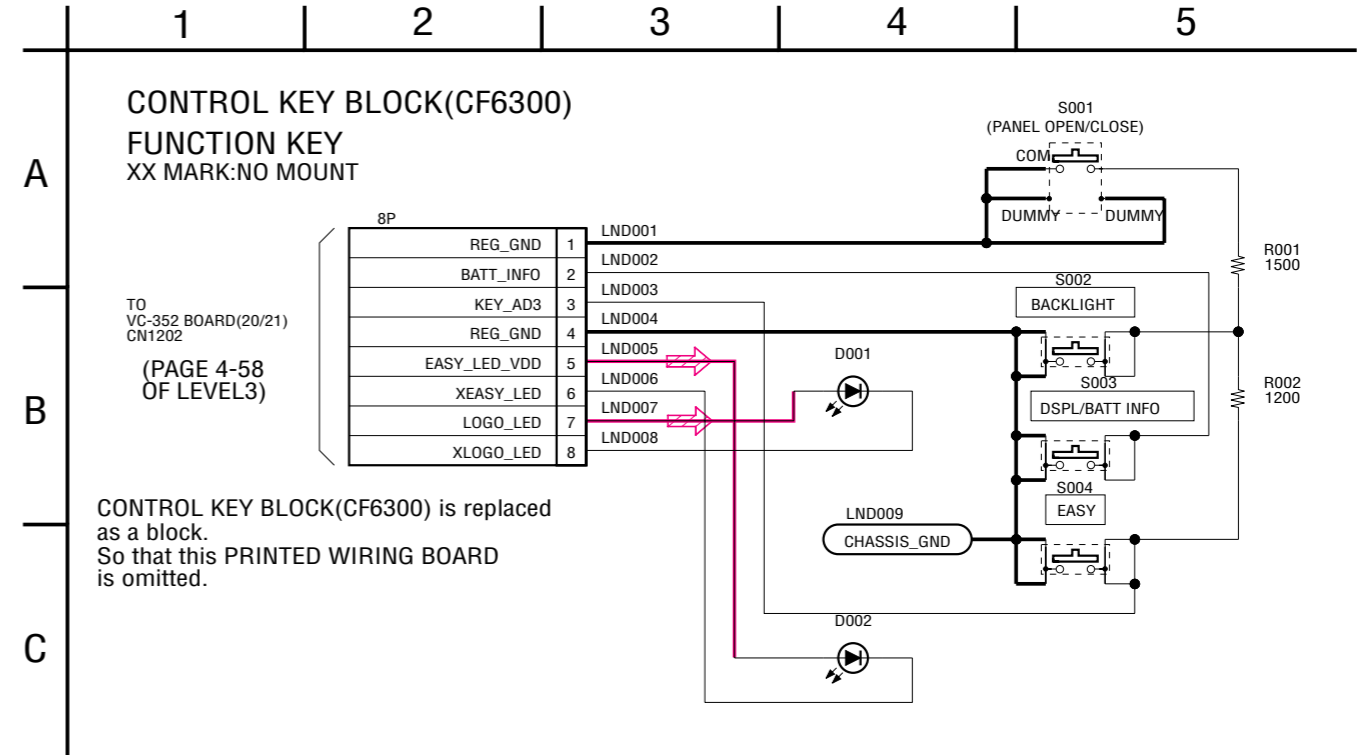
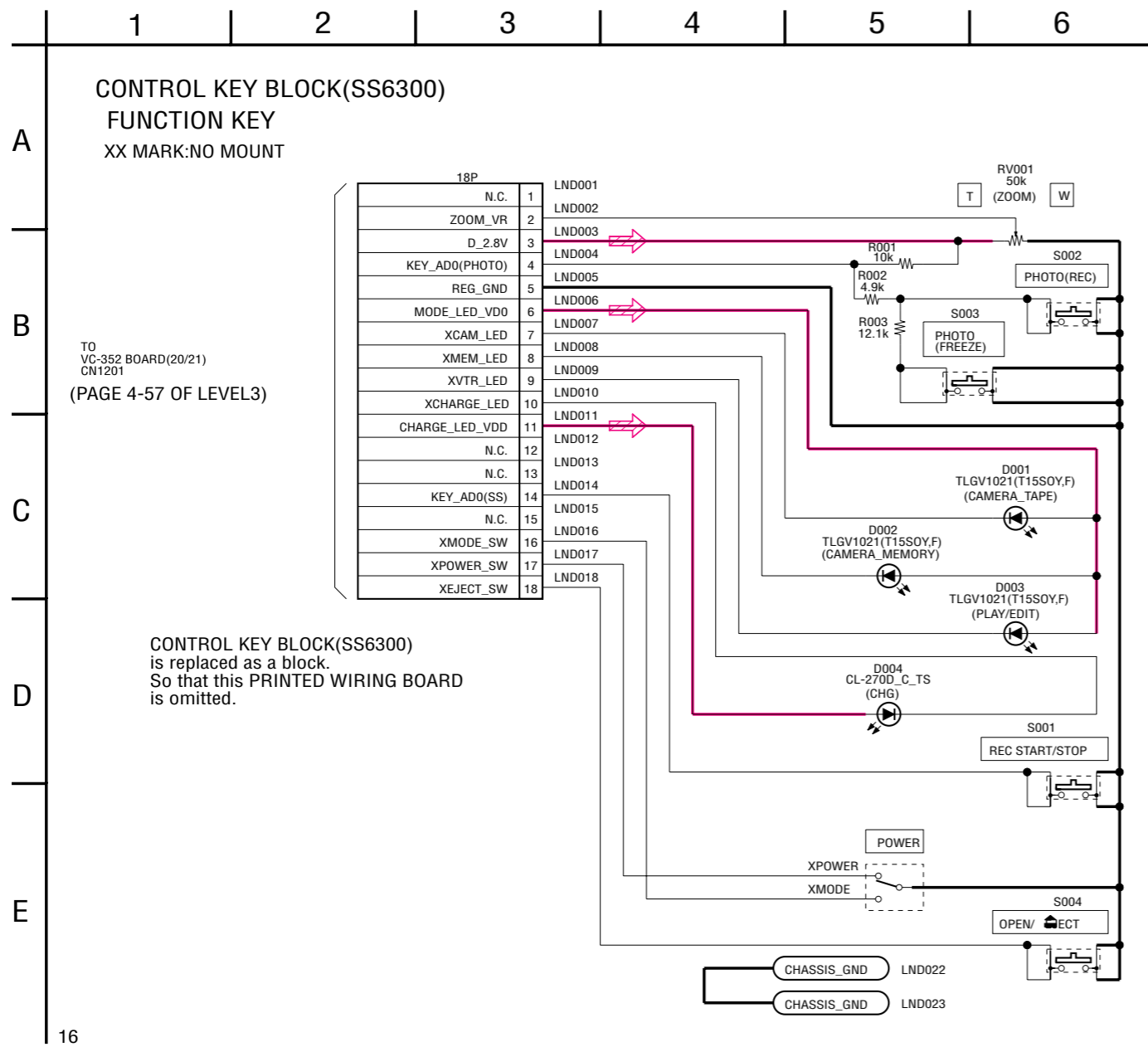
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

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

△印の部品、または△印付の点線で囲まれた部品は、安全性を維持するために、重要な部品です。従って交換時は、必ず指定の部品を使用してください。

4-2. SCHEMATIC DIAGRAMS

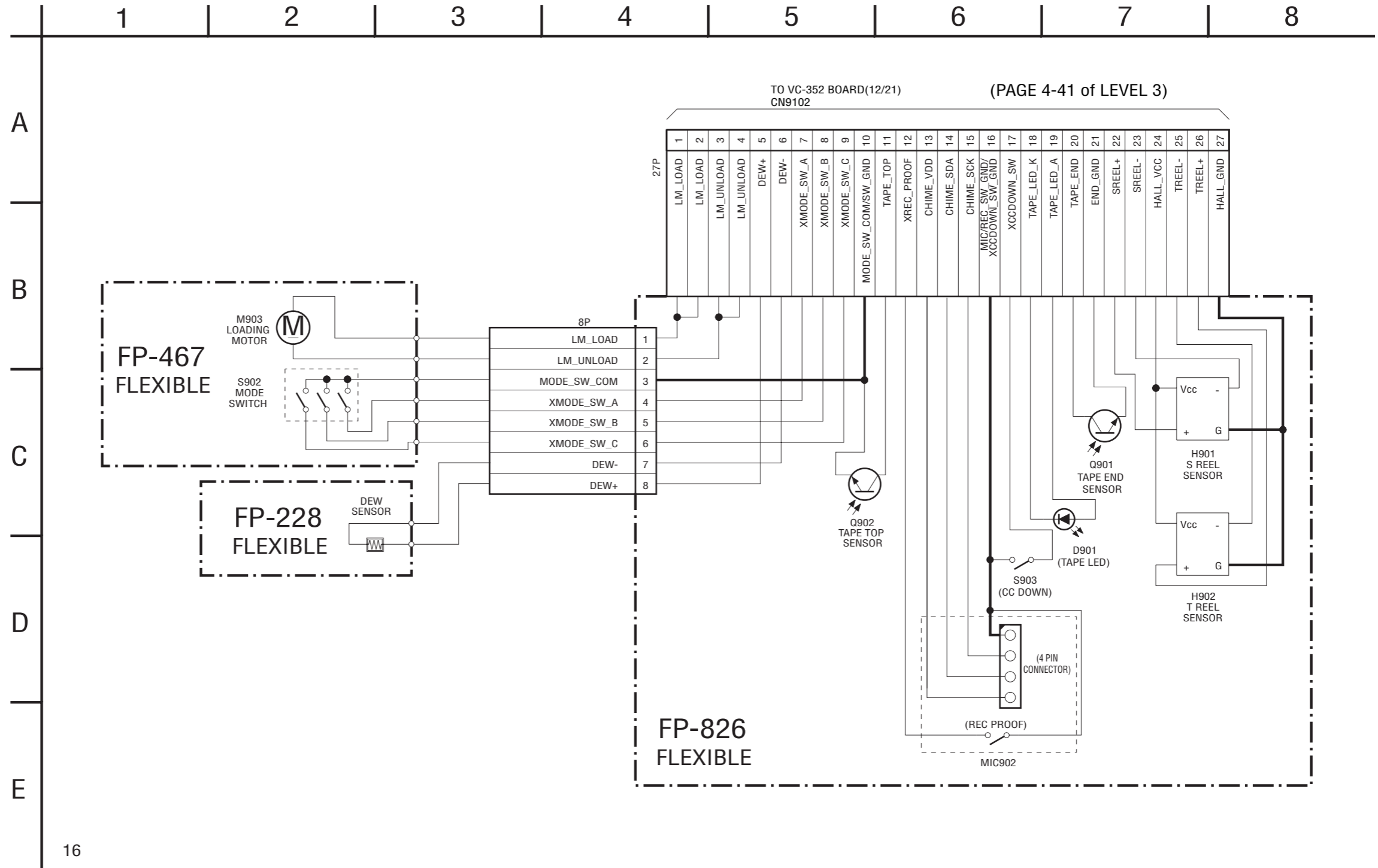
4-3. PRINTED WIRING BOARDS



Schematic diagram of the VC-352 board are not shown.
Pages from 4-19 to 4-60 are not shown.

4-2. SCHEMATIC DIAGRAMS FP-467/FP-228/FP-826 FLEXIBLE BOARD

For Schematic Diagram
 • Refer to page 4-79 for flexible wiring board.



4-3. PRINTED WIRING BOARDS

Link

• CD-490 BOARD	• SE-141 BOARD
• IR-051 BOARD	• PD-213 BOARD
• JK-260 BOARD	• MS-200 BOARD
• LB-095 BOARD	• FP-228/FP-467/FP-826 BOARD

• COMMON NOTE FOR PRINTED WIRING BOARDS	• MOUNTED PARTS LOCATION
• CIRCUIT BOARDS LOCATION	• FLEXIBLE BOARDS LOCATION




NAME	FUNCTION
CD-490	CCD IMAGER
IR-051	REMOTE COMMANDER RECEIVER, MIC IN
JK-260	JACK
LB-095	EVF RELAY
MS-200	MS CONNECTOR, INDICATOR
PD-213	LCD RGB DRIVE, BACKLIGHT
SE-141	PITCH/YAW SENSOR AMP
VC-352	TIMING GENERATOR, S/H, AGC, A/D CONV., LENS DRIVE, CAMERA PROCESS, MPEG MOVIE/DIGITAL STILL PROCESS, 64Mbit SDRAM, BUFFER, HI/DIGITAL STILL CONTROL, 32Mbit FLASH, 16Mbit SDRAM, DV SIGNAL PROCESS, DV INTERFACE, REC/PB AMP, VIDEO I/O, DRUM/CAPSTAN/LOADING DRIVE, CAMERA/MECHA CONTROL, HI CONTROL, EVF VIDEO, AUDIO I/O, MIC AMP, DC IN, CHARGE, DC/DC CONVERTER, CONNECTOR

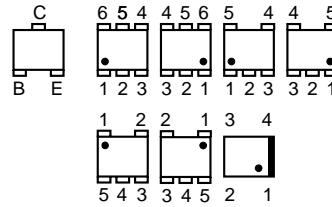
4-3. PRINTED WIRING BOARDS

(ENGLISH)**THIS NOTE IS COMMON FOR WIRING BOARDS**

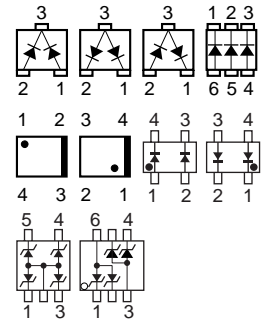
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

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

• Chip parts
Transistor




Diode

**(JAPANESE)**

プリント図共通ノート

(他に必要なノートは各ブロックに記載してあります)


【プリント図ノート】

-  : 無鉛半田を使用しています。
-  は見ている面側のパターン。
(他のパターンについては表示されていません)
- スルーホールは省略。
- ○番号は波形図の照合番号。
- プリント図には、本機で使用していない部品が記載されている場合があります。
-  はパネル表示名称。

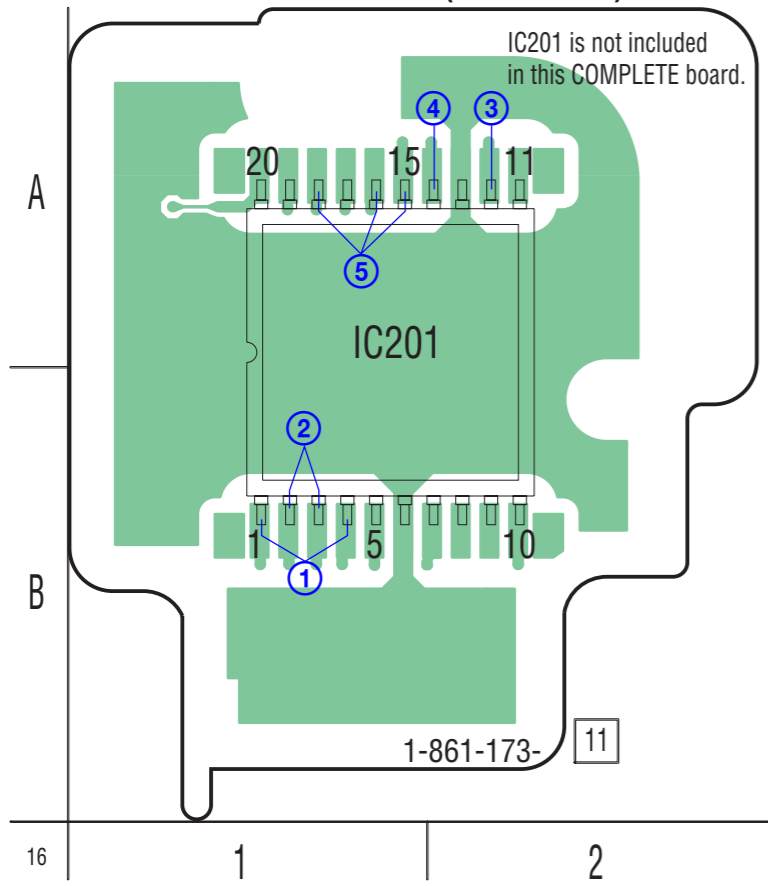
BOARD INFORMATION

board name	parts location (shown on page)	pattern		CSP IC
		number of layers	layers not shown	
CD-490	4-81	2	—	—
IR-051	4-81	2	—	—
JK-260	4-81	2	—	—
LB-095	—	2	—	—
SE-141	4-81	2	—	—
PD-213	4-82	2	—	—
MS-200	4-82	2	—	—
VC-352	4-83	8	2 to 7	IC2301, IC5001, IC5101, IC5201, IC6201, IC6202, IC6301, IC6401, IC7601, IC8201, IC8401, IC8502, IC8503, IC8801, IC9101

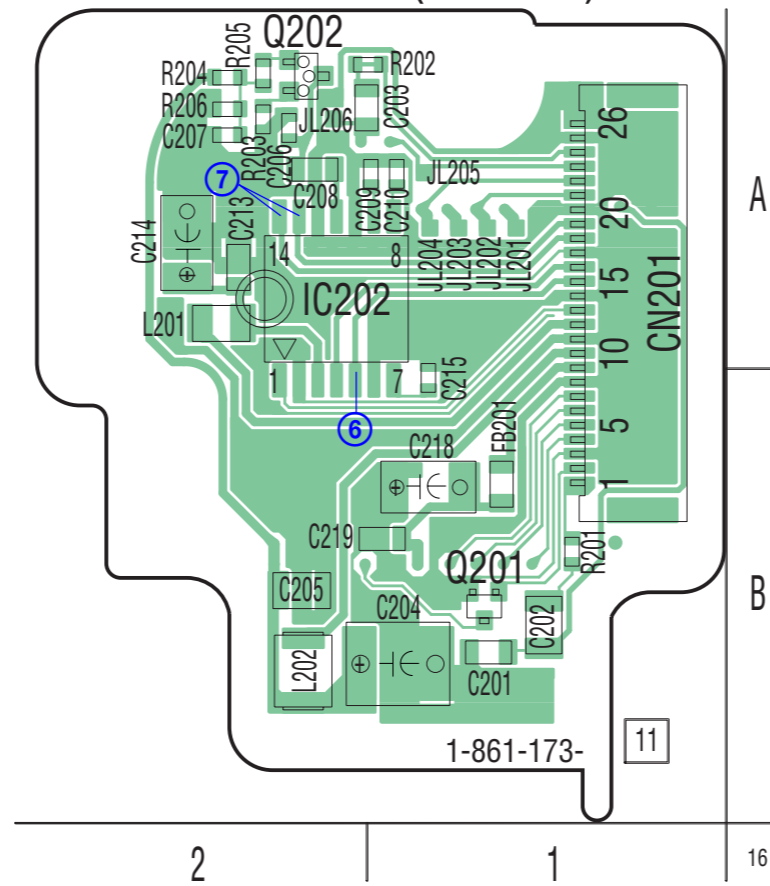
4-3. PRINTED WIRING BOARDS

• Refer to page 4-63 for common note for printed wiring board. •  : Uses unleaded solder.

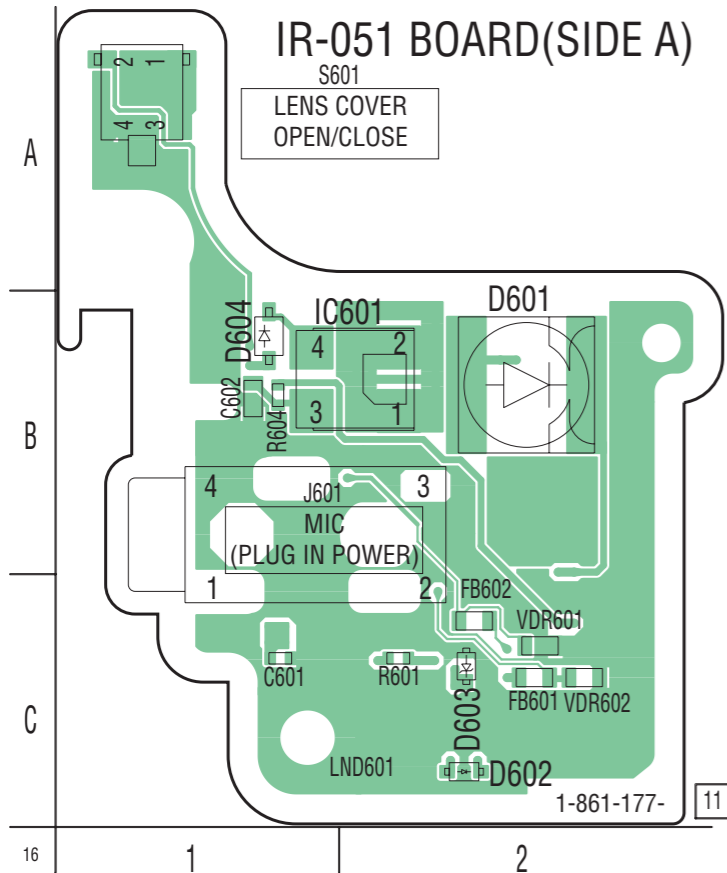
CD-490 BOARD(SIDE A)



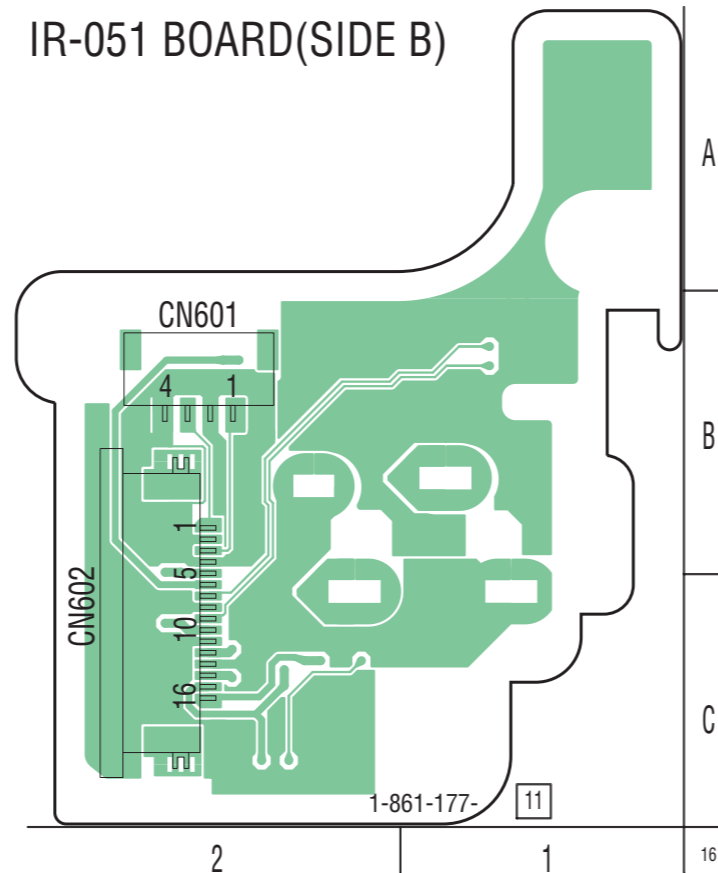
CD-490 BOARD(SIDE B)



IR-051 BOARD(SIDE A)




IR-051 BOARD(SIDE B)

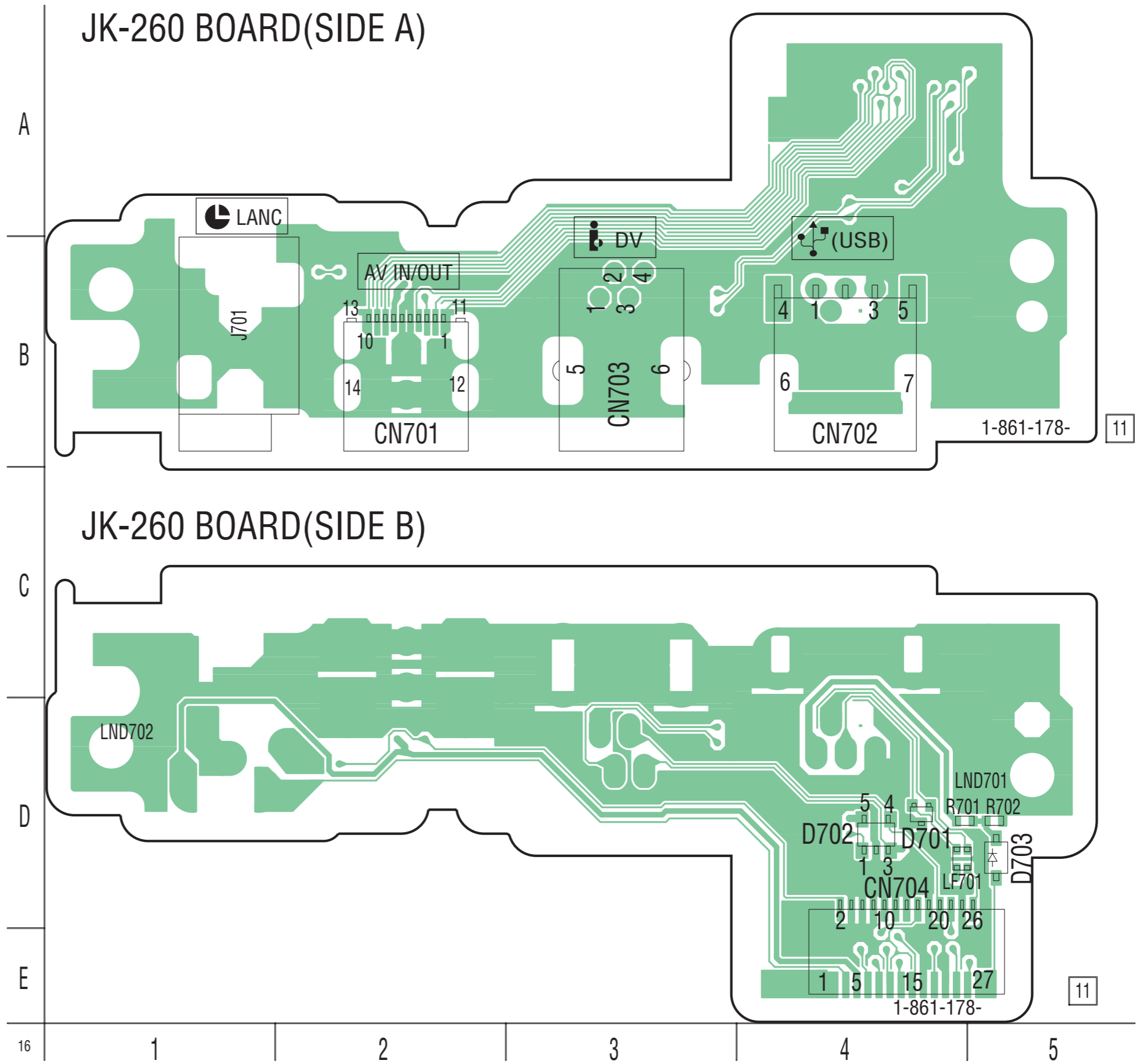


4-2. SCHEMATIC DIAGRAMS

4-3. PRINTED WIRING BOARDS

MOUNTED PARTS LOCATION

• Refer to page 4-63 for common note for printed wiring board. •  : Uses unleaded solder.




4-2. SCHEMATIC DIAGRAMS

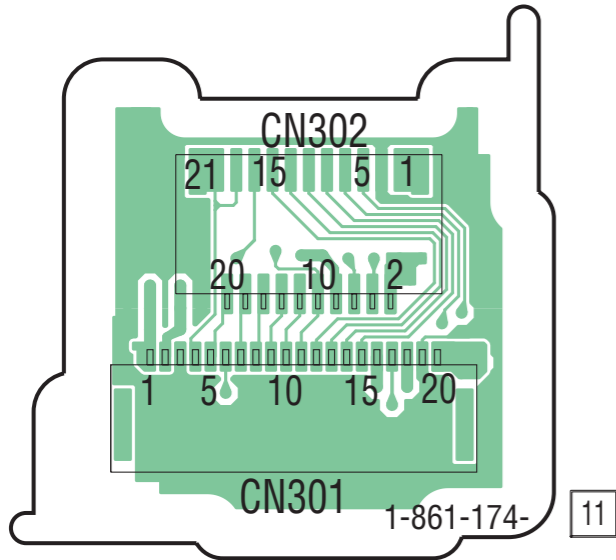
4-3. PRINTED WIRING BOARDS

MOUNTED PARTS LOCATION

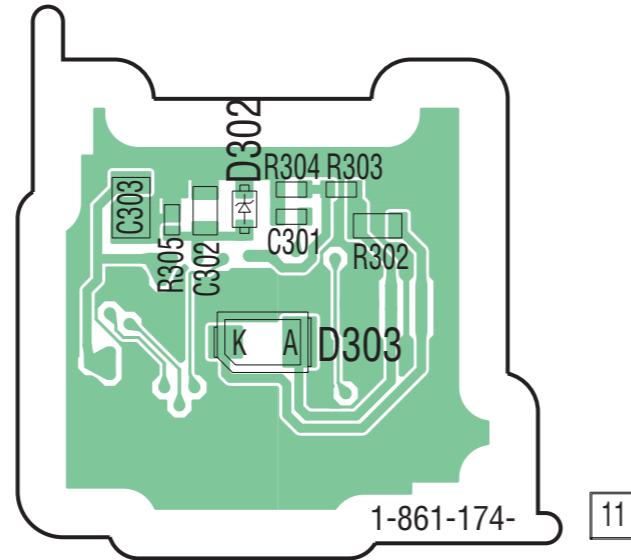
• Refer to page 4-63 for common note for printed wiring board.

•  : Uses unleaded solder.

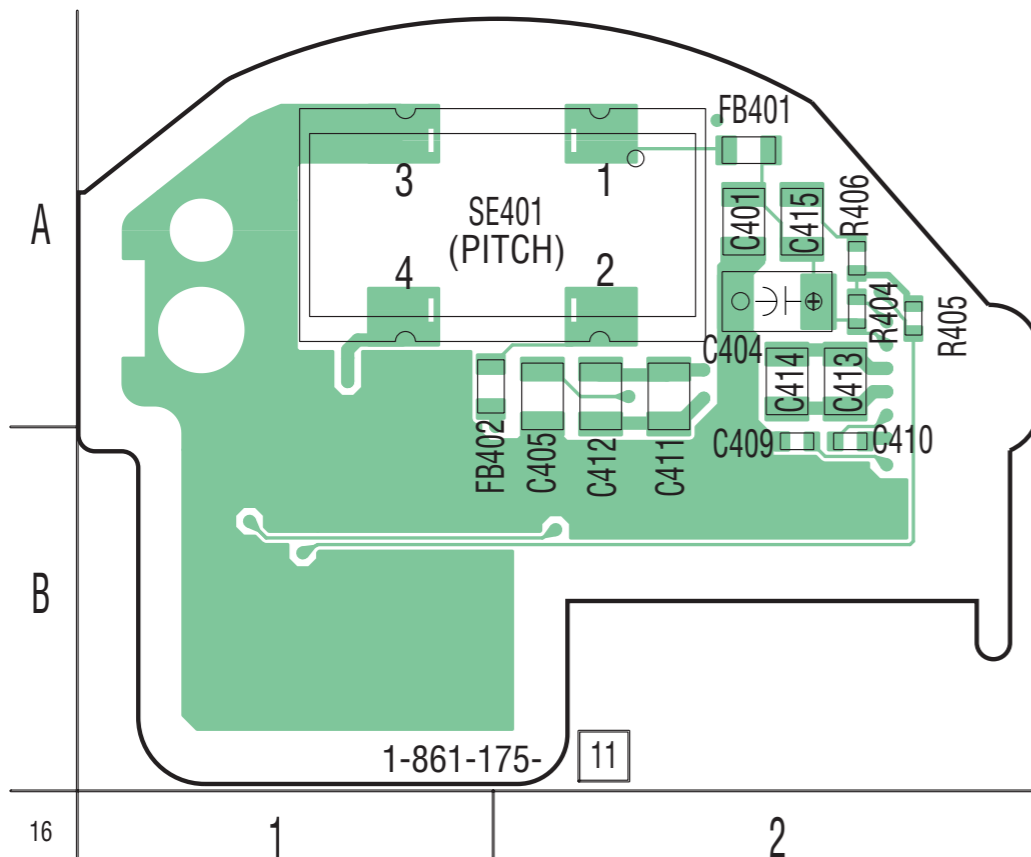
LB-095 BOARD
(SIDE A)



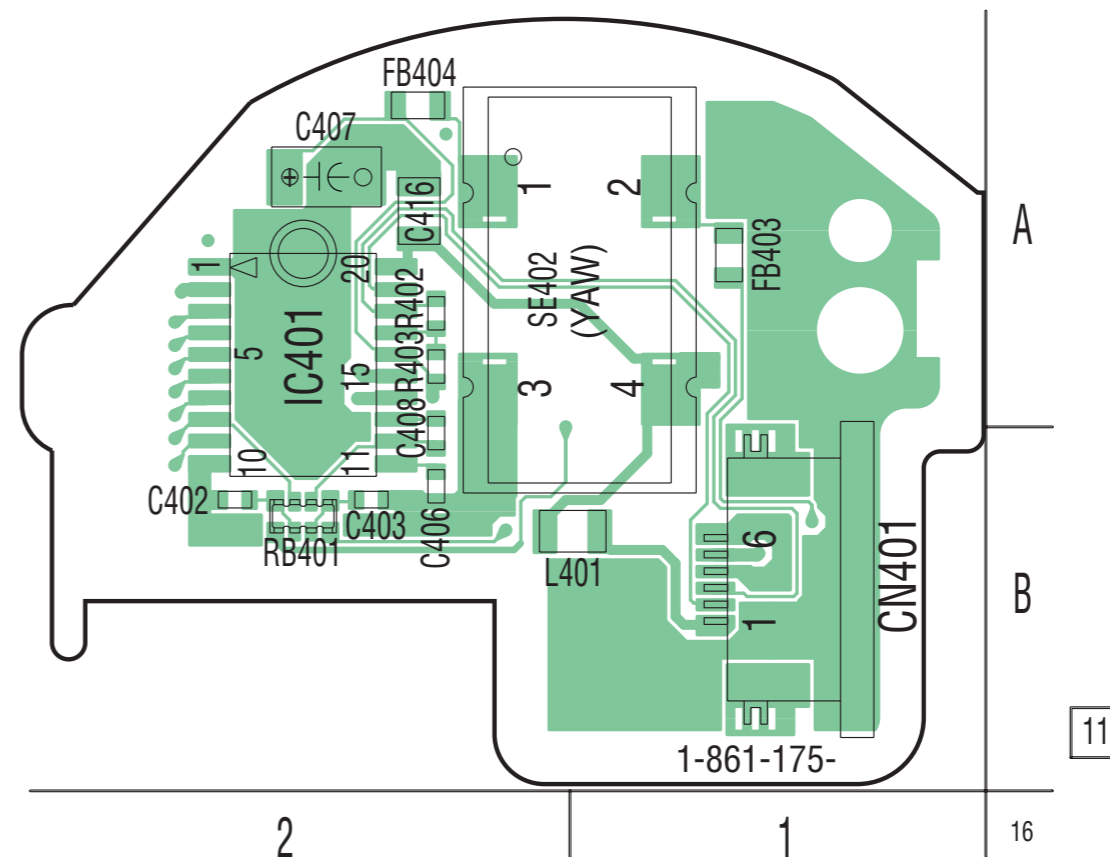
LB-095 BOARD
(SIDE B)




SE-141 BOARD(SIDE A)

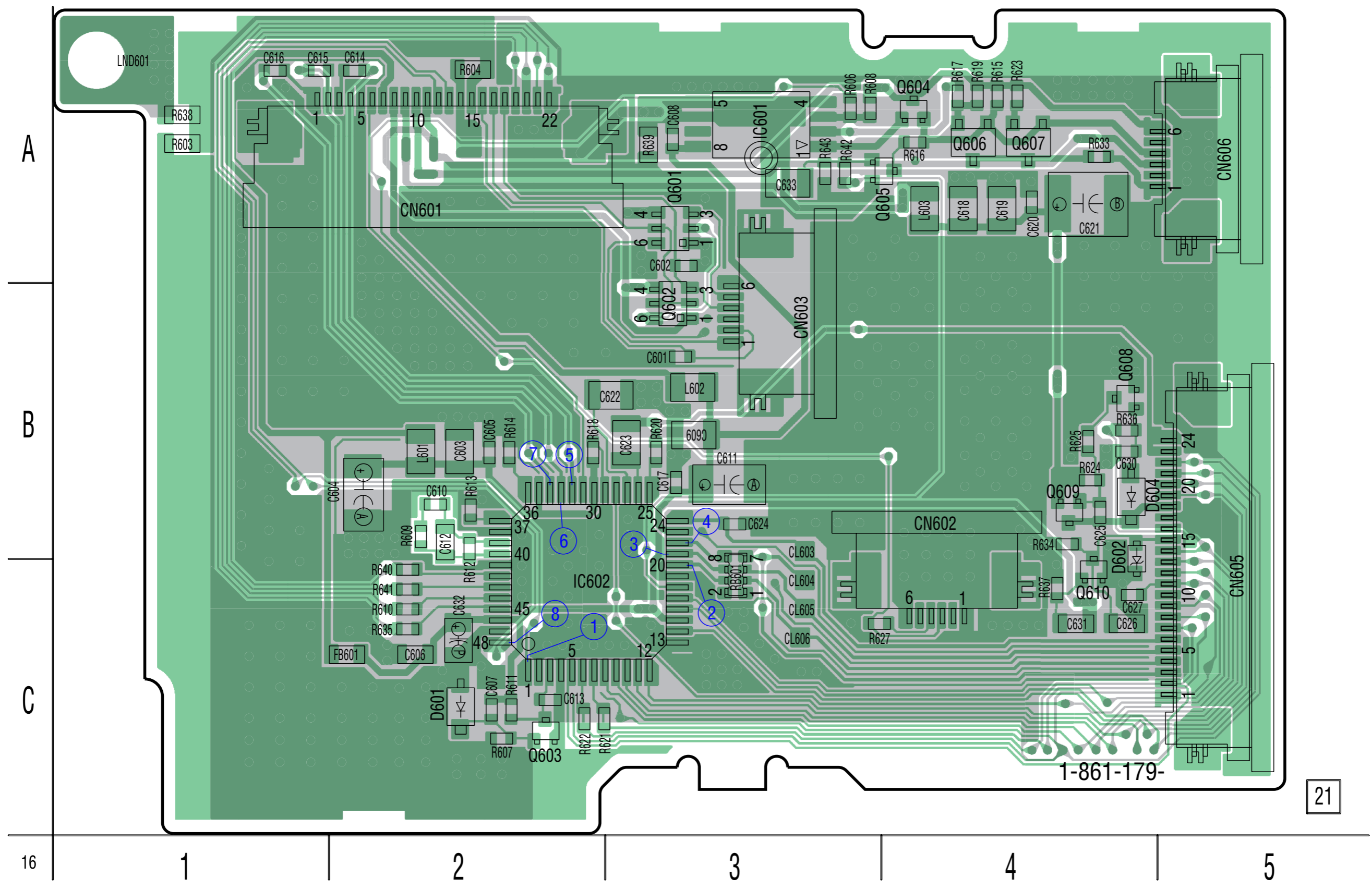


SE-141 BOARD(SIDE B)



• Refer to page 4-63 for common note for printed wiring board. •  : Uses unleaded solder.


PD-213 BOARD



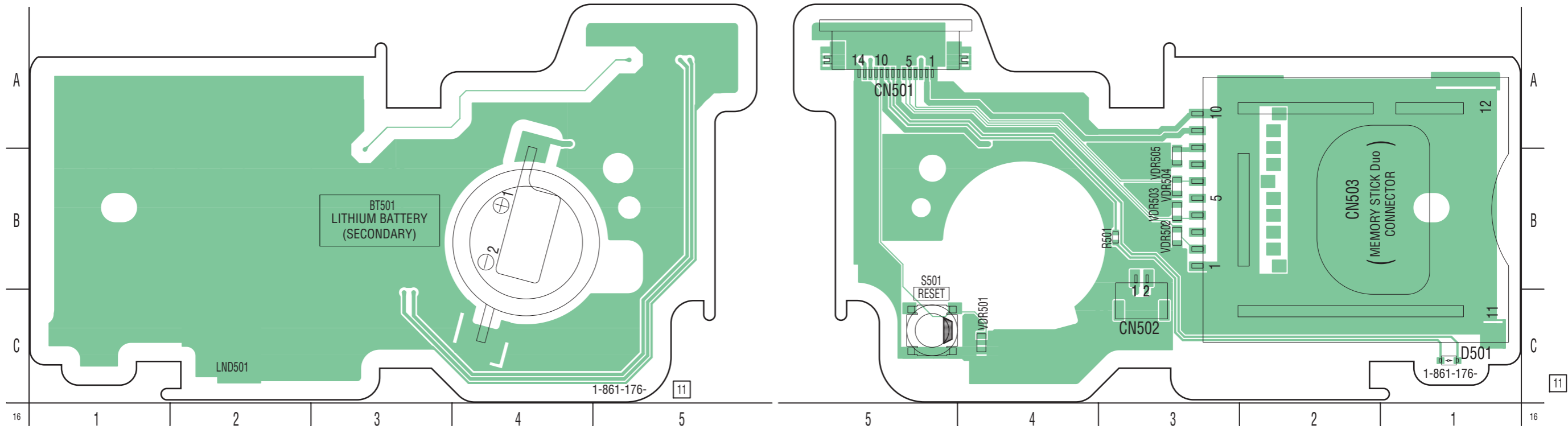
4-2. SCHEMATIC DIAGRAMS

4-3. PRINTED WIRING BOARDS

MOUNTED PARTS LOCATION

- Refer to page 4-63 for common note for printed wiring board.
 -  : Uses unleaded solder.
- MS-200 BOARD(SIDE A)

MS-200 BOARD(SIDE B)




CAUTION :
 Danger of explosion if battery is incorrectly replaced.
 Replace only with the same or equivalent type.

注意
 電池の交換は、正しく行わないと破裂する可能性があります。
 電池を交換する場合には必ず同じ型名の電池又は
 同等品と交換してください。

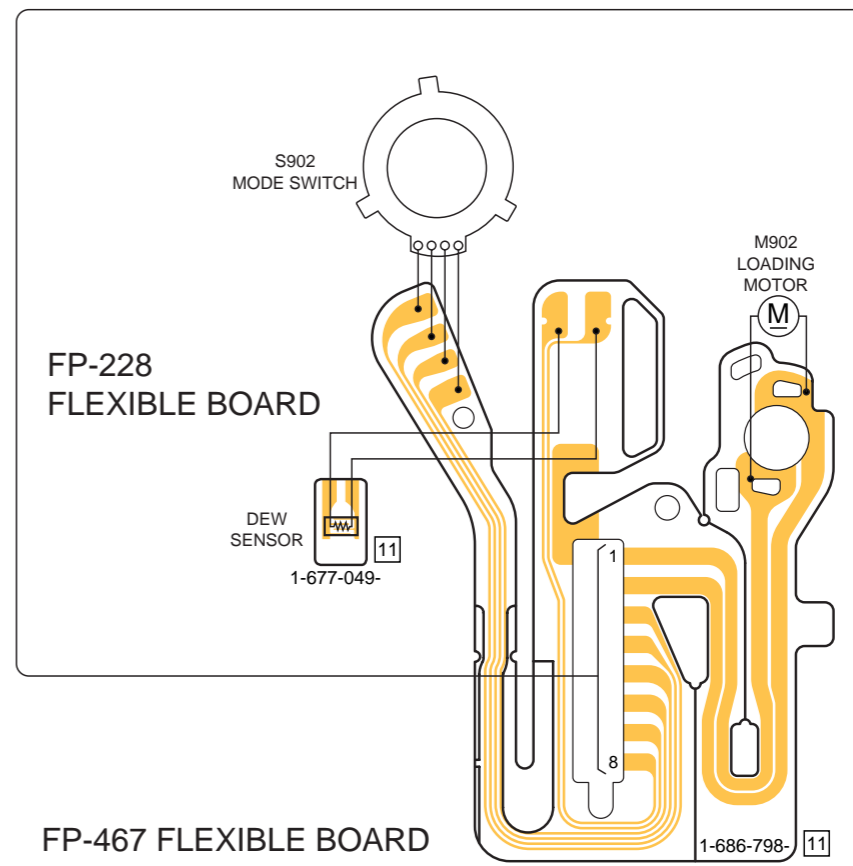
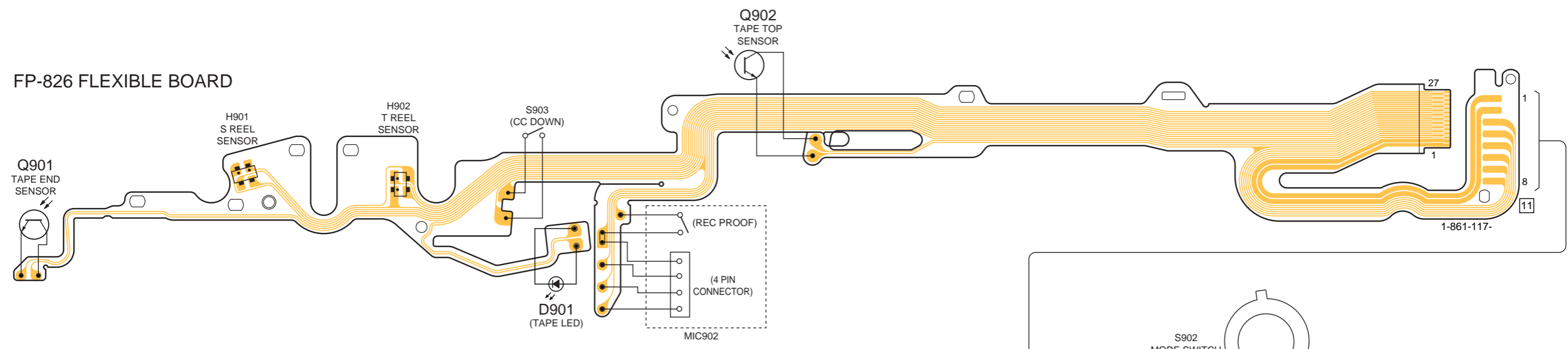
Printed wiring board of the VC-352 board are not shown.
 Pages from 4-75 to 4-78 are not shown.

4-2. SCHEMATIC DIAGRAMS

4-3. PRINTED WIRING BOARDS

• Refer to page 4-63 for common note for printed wiring board. •  : Uses unleaded solder.

FP-826 FLEXIBLE BOARD



4-3. PRINTED WIRING BOARDS

4-4. MOUNTED PARTS LOCATION

no mark : side A
 * mark : side B

CD-490 BOARD

* C201 B-1
 * C202 B-1
 * C203 A-1
 * C204 B-1
 * C205 B-2
 * C206 A-2
 * C207 A-2
 * C208 A-2
 * C209 A-1
 * C210 A-1
 * C213 A-2
 * C214 A-2
 * C215 B-1
 * C218 B-1
 * C219 B-1

 * CN201 A-1

 * FB201 B-1

 IC201 A-1
 * IC202 A-2

 * L201 A-2
 * L202 B-2

 * Q201 B-1
 * Q202 A-2

 * R201 B-1
 * R202 A-1
 * R203 A-2
 * R204 A-2
 * R205 A-2
 * R206 A-2

IR-051 BOARD

C601 C-1
 C602 B-1

 * CN602 B-2

 D601 B-2
 D602 C-2
 D603 C-2
 D604 B-1

 FB601 C-2
 FB602 C-2

 IC601 B-2

 J601 B-1

 R601 C-2
 R604 B-1

 S601 A-1

 VDR601 C-2
 VDR602 C-2

JK-260 BOARD

CN701 B-2
 CN702 B-4
 CN703 B-3
 * CN704 E-4

 * D701 D-4
 * D702 D-4
 * D703 D-5

 J701 B-1

 * LF701 D-4

 * R701 D-4
 * R702 D-5

SE-141 BOARD

C401 A-2
 * C402 B-2
 * C403 B-2
 C404 A-2
 C405 A-2
 * C406 B-2
 * C407 A-2
 * C408 A-2
 C409 B-2
 C410 B-2
 C411 A-2
 C412 A-2
 C413 A-2
 C414 A-2
 C415 A-2
 * C416 A-2

 * CN401 B-1

 FB401 A-2
 FB402 A-2
 * FB403 A-1
 * FB404 A-2

 * IC401 A-2

 * L401 B-1

 * R402 A-2
 * R403 A-2
 R404 A-2
 R405 A-2
 R406 A-2

 * RB401 B-2

 SE401 A-2
 * SE402 A-1

4-3. PRINTED WIRING BOARDS

no mark : side A

* mark : side B

PD-213 BOARD

C601	B-3	R603	A-1
C602	A-3	R604	A-2
C603	B-2	R606	A-3
C604	B-2	R607	C-2
C605	B-2	R608	A-3
C606	C-2	R609	B-2
C607	C-2	R610	C-2
C608	A-3	R611	C-2
C609	B-3	R612	B-2
C610	B-2	R613	B-2
C611	B-3	R614	B-2
C612	B-2	R615	A-4
C613	C-2	R616	A-4
C614	A-2	R617	A-4
C615	A-1	R618	B-2
C616	A-1	R619	A-4
C617	B-3	R620	B-3
C618	A-4	R621	C-2
C619	A-4	R622	C-2
C620	A-4	R623	A-4
C621	A-4	R624	B-4
C622	B-3	R625	B-4
C623	B-3	R627	C-3
C624	B-3	R633	A-4
C625	B-4	R634	B-4
C626	C-4	R635	C-2
C627	C-4	R636	B-4
C630	B-4	R637	C-4
C631	C-4	R638	A-1
C632	C-2	R639	A-3
C633	A-3	R640	C-2
		R641	C-2
CN601	A-2	R642	A-3
CN602	B-4	R643	A-3
CN603	B-3		
CN605	C-2	RB601	C-3
CN606	A-5		
D601	C-2		
D602	B-4		
D604	B-4		
FB601	C-2		
IC601	A-3		
IC602	C-2		
L601	B-2		
L602	B-3		
L603	A-4		
Q601	A-3		
Q602	B-3		
Q603	C-2		
Q604	A-4		
Q605	A-4		
Q606	A-4		
Q607	A-4		
Q608	B-4		
Q609	B-4		
Q610	C-4		

MS-200 BOARD

BT501	B-4
* CN501	A-5
* CN502	C-3
* CN503	B-2
* D501	C-1
* R501	B-3
* S501	C-5
* VDR501	C-4
* VDR502	B-3
* VDR503	B-3
* VDR504	B-3
* VDR505	B-3

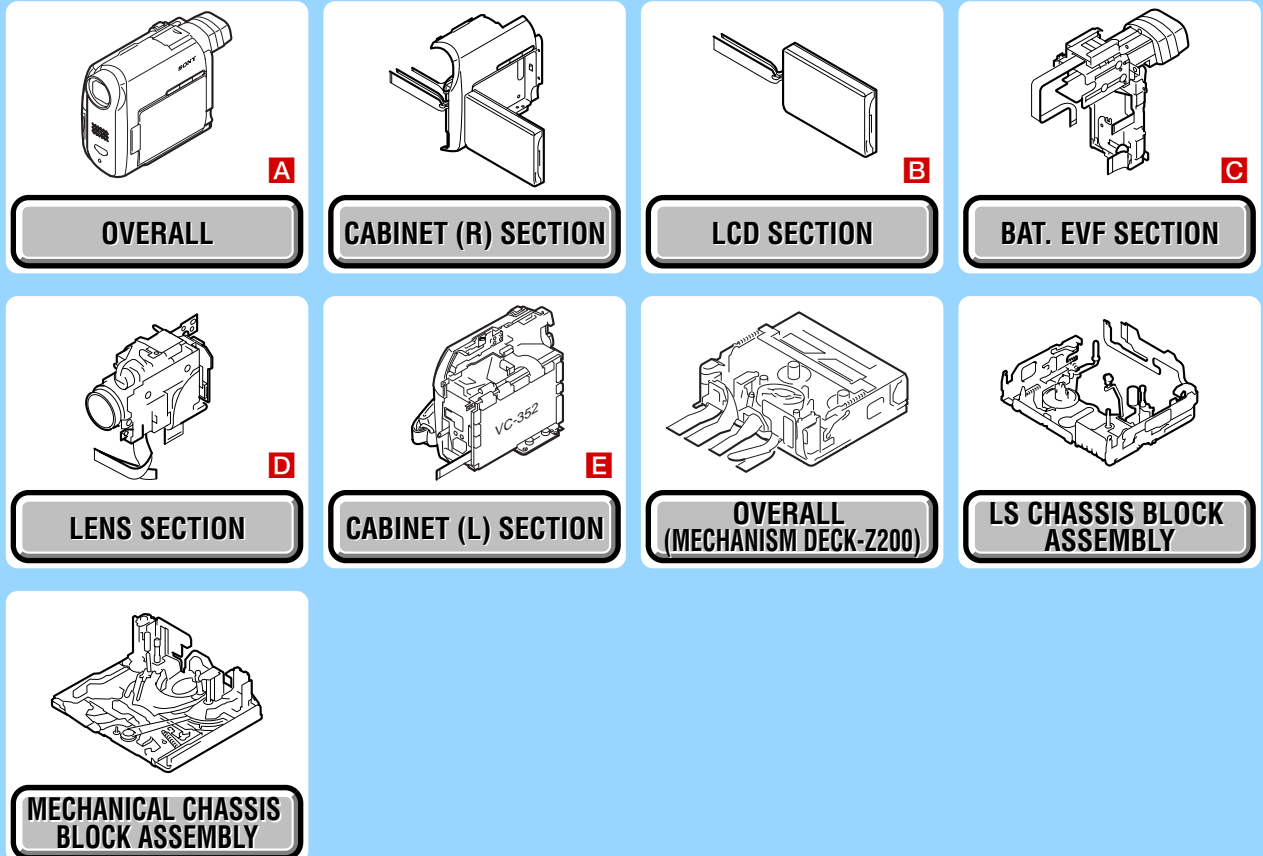
Mounted parts location of the VC-352 board is not shown.
Pages from 4-83 to 4-84 are not shown.

5. REPAIR PARTS LIST

NOTE: Characters **A** to **Z** of the electrical parts list indicate location of exploded views in which the desired part is shown.

Link

EXPLODED VIEWS



Link

ELECTRICAL PARTS LIST

ACCESSORIES

• CD-490 BOARD D	• JK-260 BOARD E	• PD-213 BOARD B
• FP-836 BOARD B	• LB-095 BOARD C	• SE-141 BOARD D
• IR-051 BOARD A	• MS-200 BOARD E	• VC-352 BOARD E

5. REPAIR PARTS LIST

(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.
- CAPACITORS:
uF: μ F
- COILS
uH: μ H
- RESISTORS
All resistors are in ohms.
METAL: metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA..., μ PA...,
uPB..., μ PB..., uPC..., μ PC...,
uPD..., μ PD...

(JAPANESE)

【使用上の注意】

- *印の部品は常備在庫しておりません。
- 分解図中の機構部品で、図面番号のない部品は供給しません。
- -XX, -Xは標準化部品のため、セットに付いている部品と異なる場合があります。
- ここに記載されている部品は、補修用部品であるため、回路図及びセットに付いている部品と異なる場合があります。
- コンデンサの単位でuFは μ Fを示します。
- 抵抗の単位 Ω は省略してあります。
金 被：金属被膜抵抗。
サンキン：酸化金属被膜抵抗。
- インダクタの単位でuHは μ Hを示します。
- 半導体の名称でuA..., uPA..., uPB..., uPC..., uPD...等はそれぞれ μ A..., μ PA..., μ PB..., μ PC..., μ PD...を示します。

(ENGLISH)

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

(JAPANESE)

— お願い —
図面番号で部品を指定するときは基板名又はブロックを併せて指定してください。

(ENGLISH/FRENCH)

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

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

(JAPANESE)

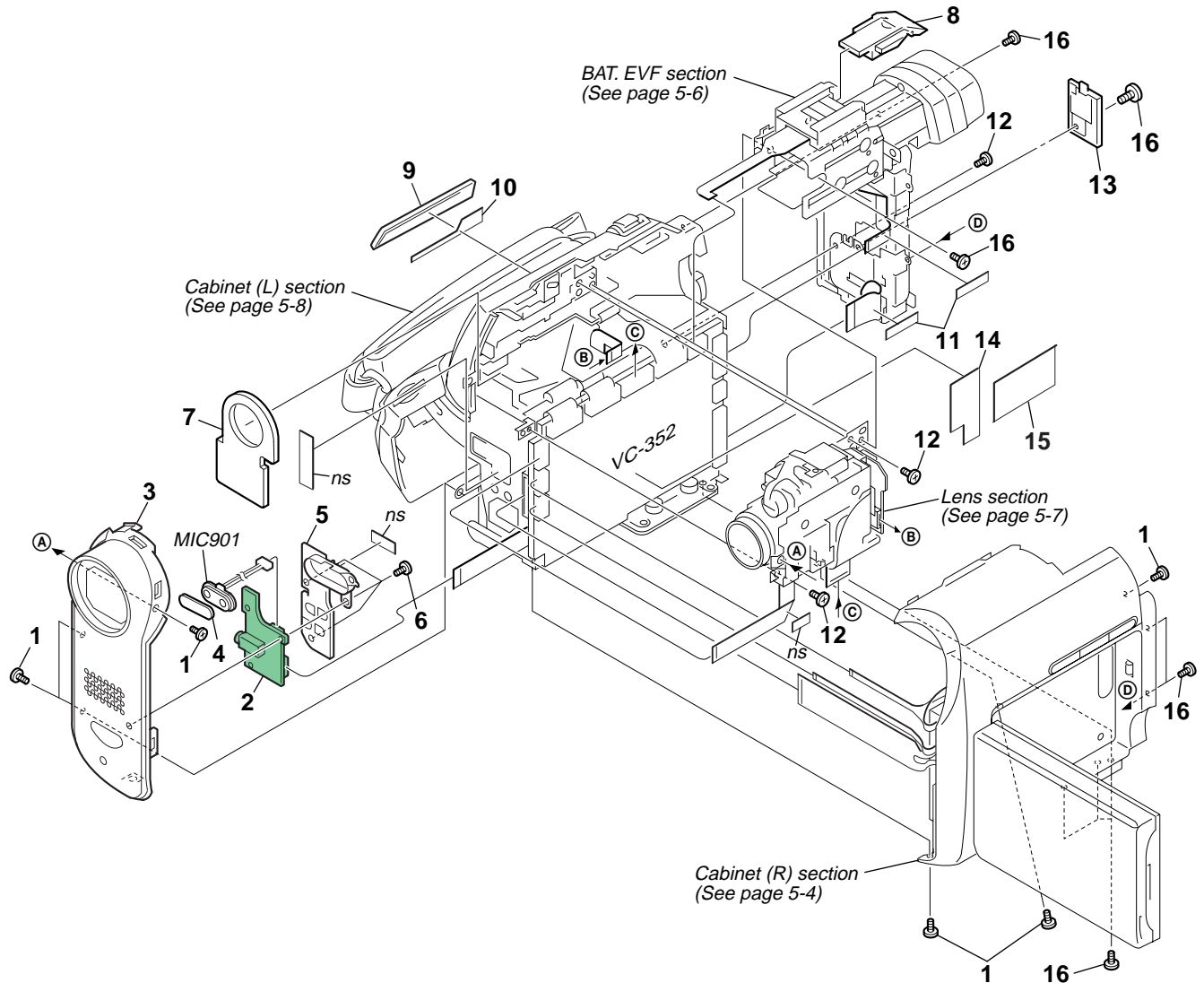
Δ 印の部品、または Δ 印付の点線で囲まれた部品は、安全性を維持するために、重要な部品です。従って交換時は、必ず指定の部品を使用してください。

5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS

5-1-1. OVERALL SECTION

ns : not supplied



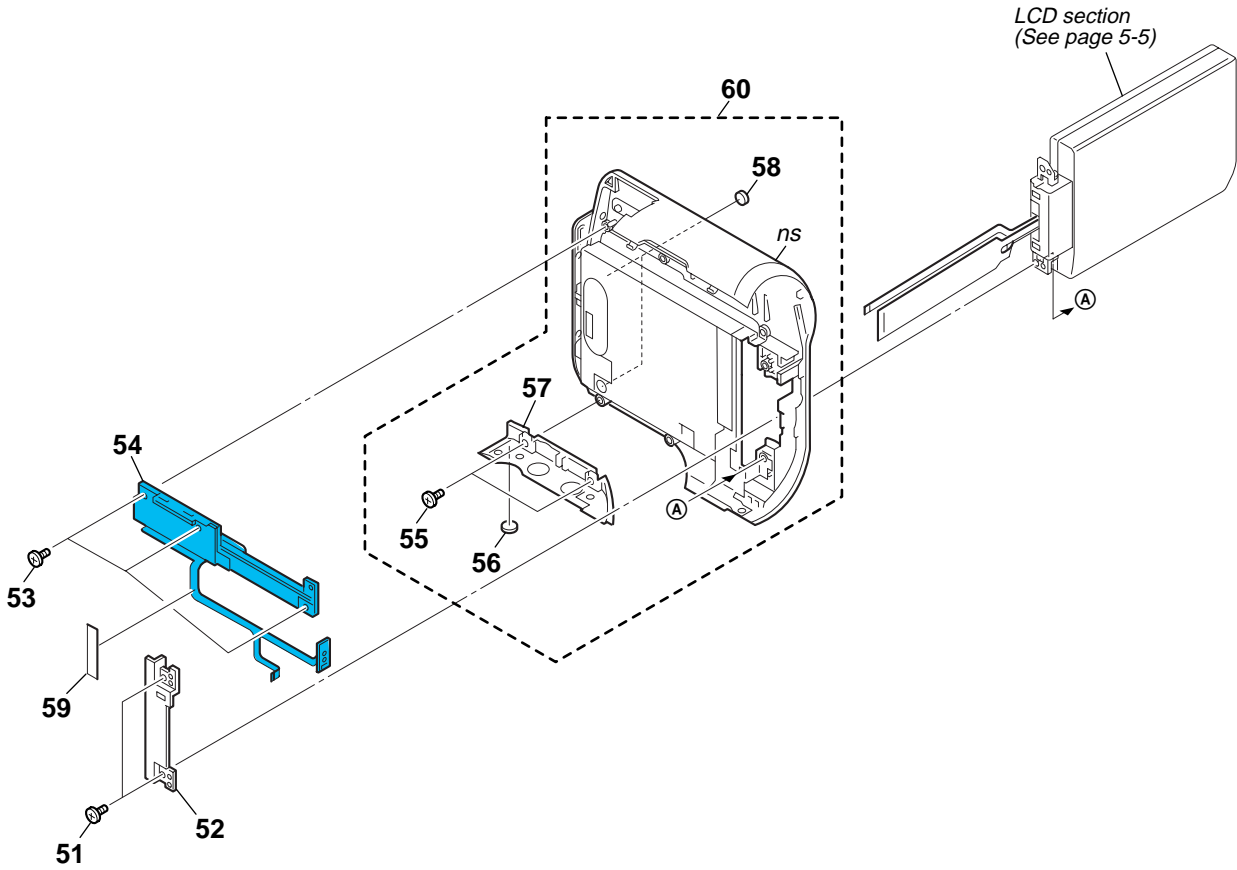
Ref. No.	Part No.	Description
1	3-057-082-21	SCREW (M1.7), P2
2	A-7112-122-A	IR-051 BOARD, COMPLETE
3	X-3954-099-1	PANEL (G) ASSY, F (SILVER)(HC40:J)
3	X-3954-100-1	PANEL (G) ASSY, F (WHITE) (HC40:J)
3	X-3954-105-1	PANEL (G) ASSY, F (SILVER)(EXCEPT HC40:J)
3	X-3954-106-1	PANEL (G) ASSY, F (WHITE) (EXCEPT HC40:J)
4	3-089-771-01	CUSHION, MICROPHONE
5	X-3954-215-1	RETAINER ASSY, IR
6	3-078-890-11	SCREW, TAPPING
7	3-089-917-01	CUSHION (F3)
8	3-089-543-02	COVER (G), SHOE

Ref. No.	Part No.	Description
9	3-089-547-02	COVER (L), JACK
10	3-089-546-11	SHEET, JACK (HC40:J)
10	3-089-546-21	SHEET, JACK (EXCEPT HC40:J)
11	3-941-343-21	TAPE (A)
12	3-084-523-11	SCREW (M1.7 EG LOCK (BLACK))
13	3-089-541-01	LID, CPC
14	3-091-102-01	SHEET, VC ELECTROSTATIC
15	3-089-777-01	SHEET, SHIELD, VC
16	3-091-481-31	SCREW
MIC901	1-542-513-21	MICROPHONE

5. REPAIR PARTS LIST

5-1-2. CABINET (R) SECTION

ns : not supplied



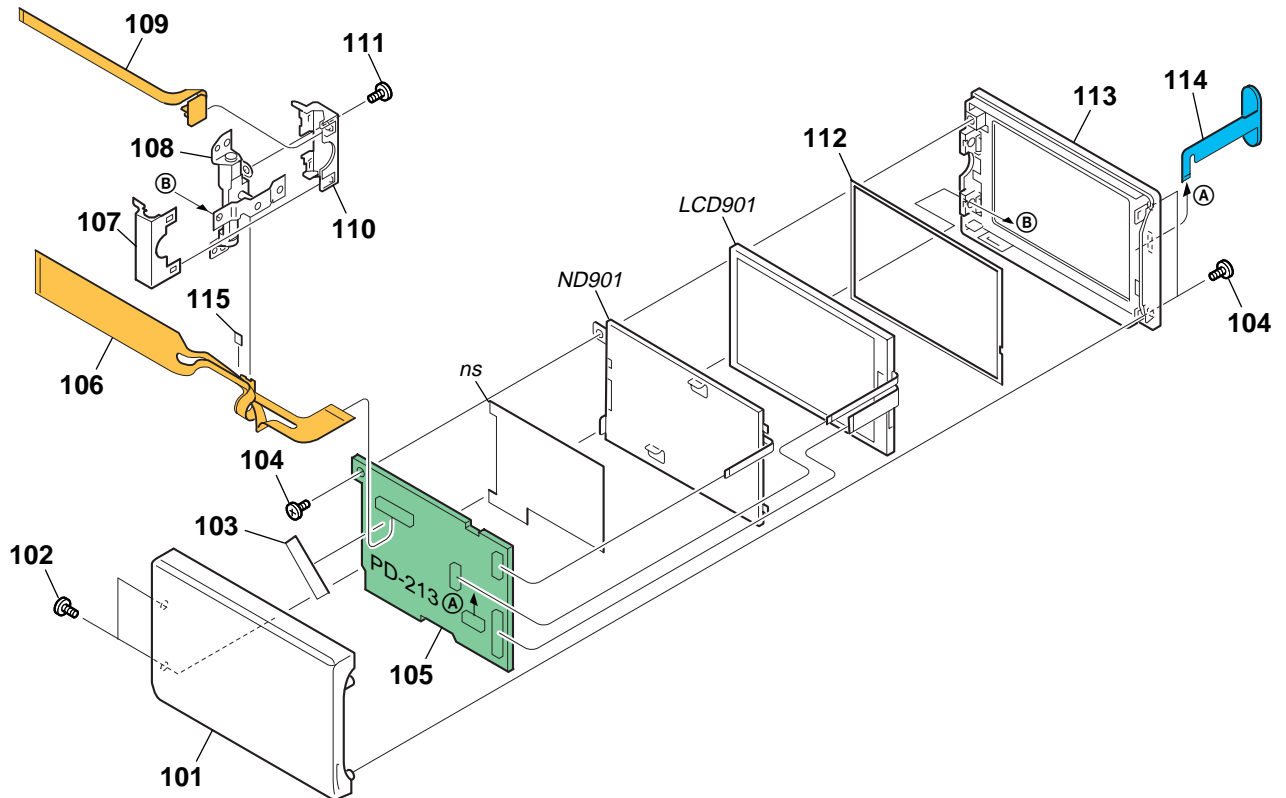
Ref. No.	Part No.	Description
51	3-080-204-31	SCREW, TAPPING, P2
52	3-089-432-01	BLIND, HINGE
53	3-078-890-11	SCREW, TAPPING
54	1-478-482-21	KEY BLOCK, CONTROL (CF6300)
55	3-080-204-01	SCREW, TAPPING, P2
56	3-082-519-01	FOOT (R), RUBBER
57	3-089-430-01	SCREW COVER

Ref. No.	Part No.	Description
58	3-089-565-01	CUSHION (R), PANEL
59	3-941-343-21	TAPE (A)
60	X-3954-101-1	CABINET R (G) ASSY (SILVER)(HC40:J)
60	X-3954-112-1	CABINET R (G) ASSY (WHITE) (HC40:J)
60	X-3954-113-1	CABINET R (G) ASSY (SILVER)(EXCEPT HC40:J)
60	X-3954-114-1	CABINET R (G) ASSY (WHITE) (EXCEPT HC40:J)

5. REPAIR PARTS LIST

5-1-3. LCD SECTION

ns : not supplied

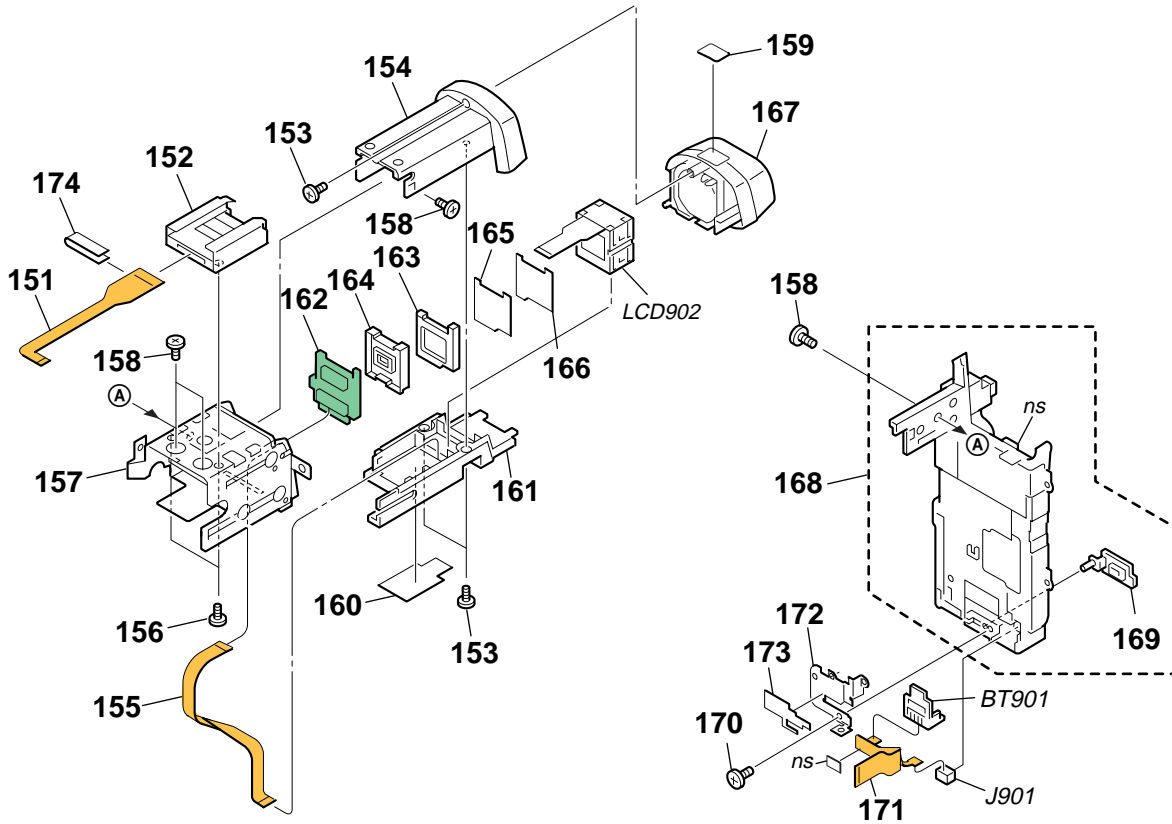


Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
101	X-3954-196-1	CABINET (C) ASSY, P (SILVER)(HC40)	108	X-3954-070-1	HINGE (63) ASSY
101	X-3954-197-1	CABINET (C) ASSY, P (WHITE) (HC40)	109	A-7112-125-A	FP-836 BOARD, COMPLETE
101	X-3954-205-1	CABINET (C) ASSY, P (SILVER)(HC40E)	110	3-089-478-01	COVER (M), HINGE
101	X-3954-206-1	CABINET (C) ASSY, P (WHITE) (HC40E)	111	3-084-523-11	SCREW (M1.7 EG LOCK (BLACK))
102	3-057-082-21	SCREW (M1.7), P2	112	3-089-483-01	CUSHION, PANEL
103	3-941-343-21	TAPE (A)	113	X-3954-069-1	CABINET (M) ASSY, P (EXCEPT HC40:J)
104	3-080-204-21	SCREW, TAPPING, P2	113	X-3954-084-1	CABINET (M) ASSY (J), P (HC40:J)
105	A-7112-124-A	PD-213 BOARD, COMPLETE	114	1-478-483-11	KEY BLOCK, CONTROL (SB6300)
106	1-861-188-11	FP-835 FLEXIBLE BOARD	115	3-091-690-01	SHEET, ADHESIVE,PANEL FLEXIBLE
107	3-089-480-41	COVER (C), HINGE (SILVER)	ND901	1-478-462-11	BLOCK, LIGHT GUIDE PLATE (2.5)
107	3-089-480-51	COVER (C), HINGE (WHITE)	LCD901	8-753-205-50	ACX528AKP-J

5. REPAIR PARTS LIST

5-1-4. BAT. EVF SECTION

ns : not supplied

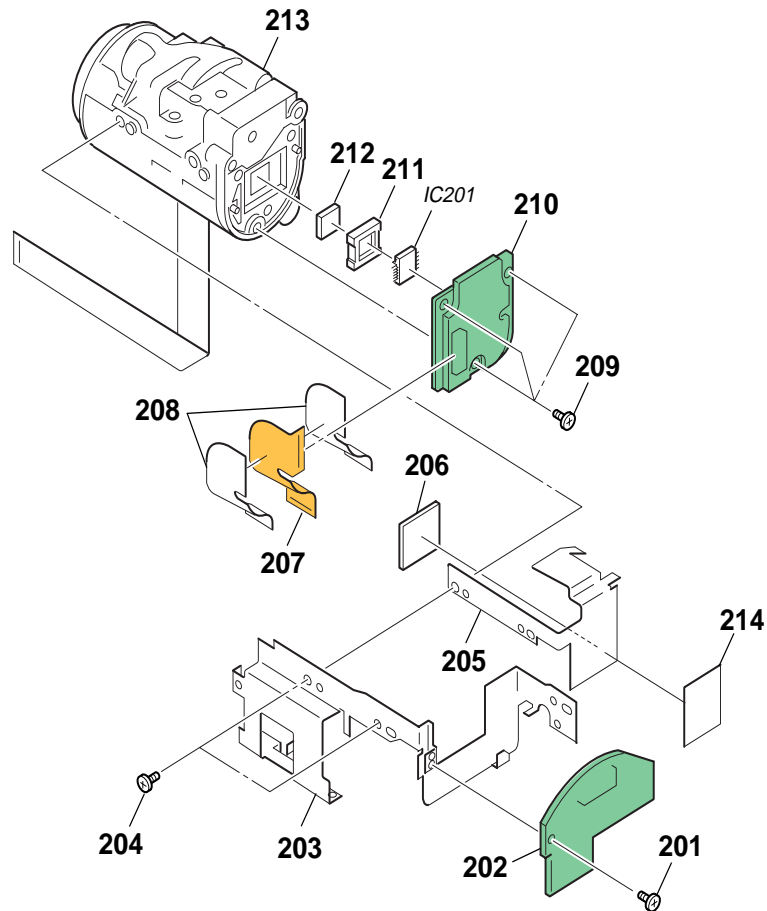


Ref. No.	Part No.	Description
151	1-861-187-11	FP-834 FLEXIBLE BOARD
152	1-793-996-11	CONNECTOR, EXTERNAL (HOT SHOR)
153	3-080-204-21	SCREW, TAPPING, P2
154	X-3954-076-1	CABINET UPPER ASSY, VF
155	1-861-184-11	FP-831 FLEXIBLE BOARD
156	3-084-523-11	SCREW (M1.7 EG LOCK (BLACK))
157	X-3954-079-1	VF SLIDE (G) ASSY
158	3-057-082-21	SCREW (M1.7), P2
159	3-089-544-01	LABEL, VF
160	3-089-418-01	SHEET, VF FLEXIBLE FIXED
161	3-089-414-02	CABINET (LOWER), VF
162	A-7112-264-A	LB-095 BOARD, COMPLETE
163	3-089-419-01	CUSHION, LCD
164	3-089-415-01	GUIDE, LAMP

Ref. No.	Part No.	Description
165	3-089-417-01	ILLUMINATOR
166	3-089-416-01	SHEET, PRISM
167	X-3954-077-1	EYE CUP ASSY
168	X-3954-075-2	PANEL ASSY, BT
169	3-089-377-01	COVER, DC-IN
170	3-078-890-11	SCREW, TAPPING
171	1-861-183-11	FP-830 FLEXIBLE BOARD
172	3-089-378-01	BT TERMINAL BOARD RETAINER
173	3-089-379-01	SHEET (BT), FLEXIBLE
174	3-091-261-01	SHEET (HS),RADIATION
BT901	1-780-064-11	BATTERY TERMINAL BOARD
J901	1-815-792-11	CONNECTOR, DC-IN (7.2V)
LCD902	8-753-208-78	LCX059AKA-J

5. REPAIR PARTS LIST

5-1-5. LENS SECTION



Be sure to read "Precautions upon replacing CCD imager" on page 4-5 when changing the CCD imager.

CCDイメージの交換時はサービスマニュアル 4-6 ページの
"CCDイメージ交換時の注意" を必ずお読みください。

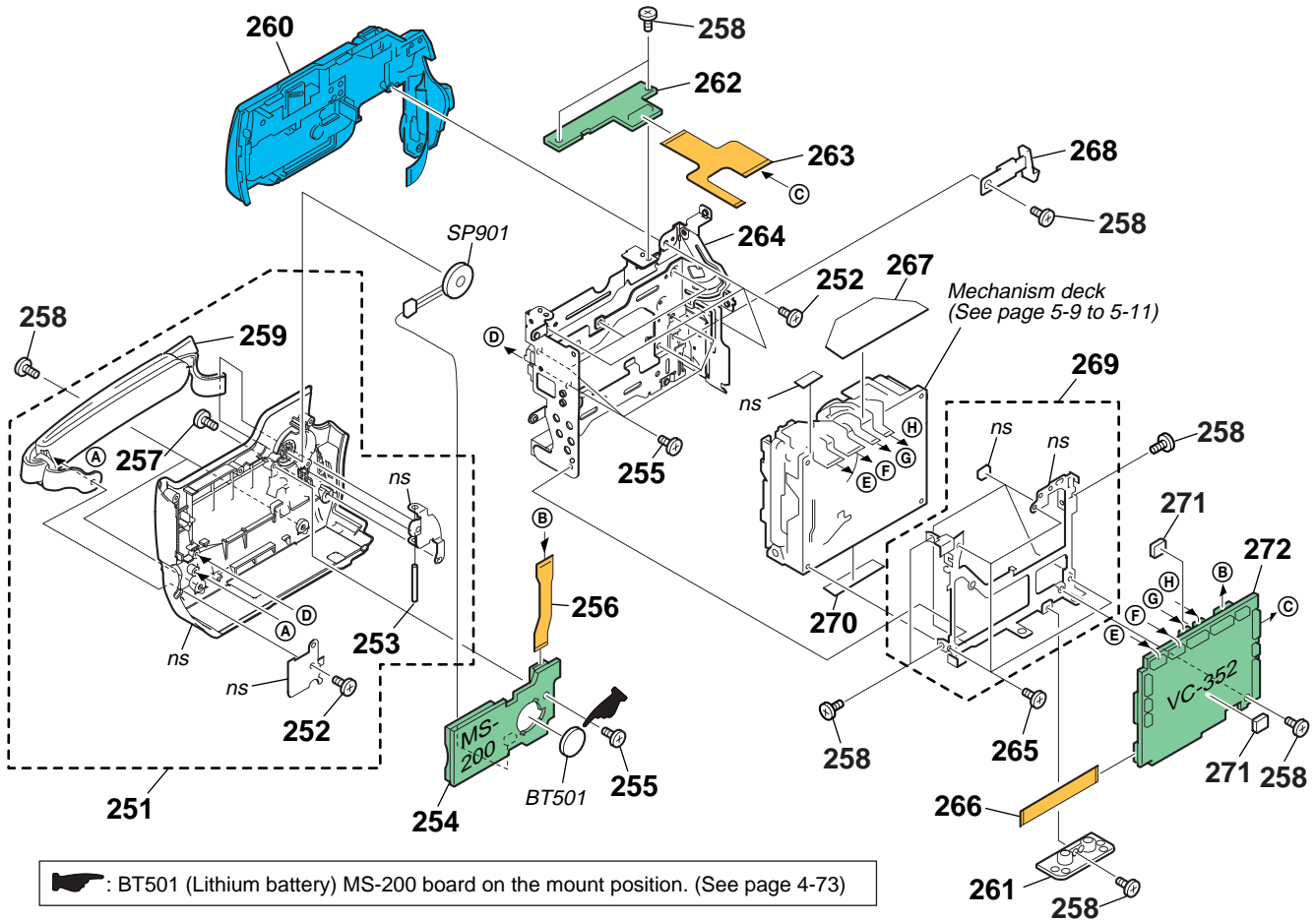
Ref. No.	Part No.	Description
201	3-084-523-11	SCREW (M1.7 EG LOCK (BLACK))
202	A-7112-151-A	SE-141 BOARD, COMPLETE
203	3-089-525-01	FRAME (G), LENS
204	3-080-204-01	SCREW, TAPPING, P2
205	3-089-527-01	HEAT SINK (G), CD
206	3-089-526-01	SHEET (G), CD RADIATION
207	1-861-181-11	FP-828 FLEXIBLE BOARD
208	3-090-165-01	SHEET, RADIATION

Ref. No.	Part No.	Description
209	3-080-204-21	SCREW, TAPPING, P2
210	A-7112-117-A	CD-490 BOARD, COMPLETE
211	3-088-645-01	RUBBER (Z), SEAL
212	1-788-061-11	FILTER BLOCK, OPTICAL
213	A-7112-105-A	841A (CZ) BLOCK ASSY
214	3-091-260-01	SHEET, INSULATING, CD
IC201	A-7112-341-A	CCD BLOCK ASSY (1M) (CCD IMAGER) (IC201 is not included in this COMPLETE board.)

5. REPAIR PARTS LIST

5-1-6. CABINET (L) SECTION

ns : not supplied



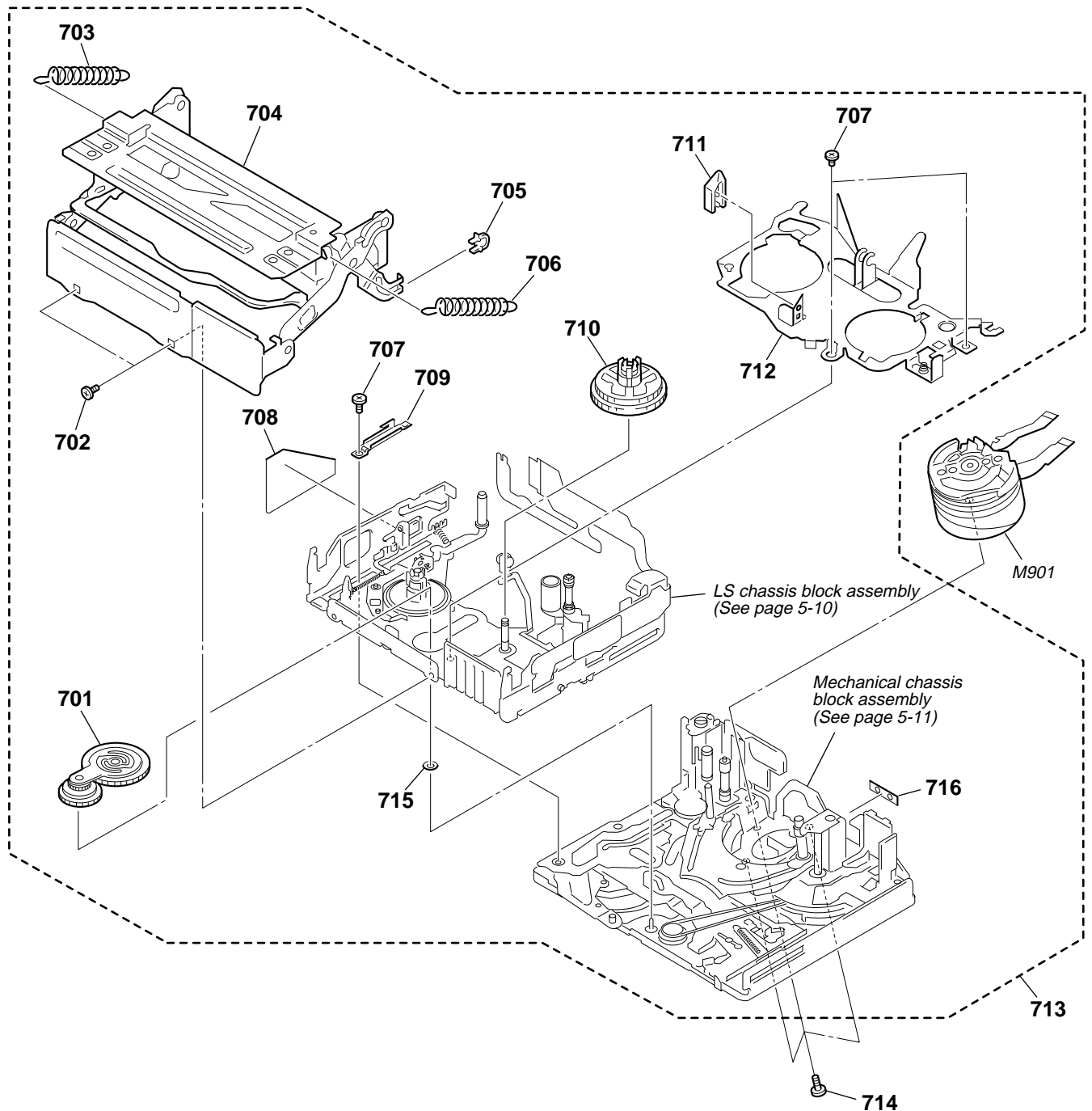
Ref. No.	Part No.	Description
251	X-3954-115-2	CABINET (64) ASSY, G (HC40:J)
251	X-3954-116-2	CABINET (64) ASSY, G (EXCEPT HC40:J)
252	3-080-204-01	SCREW, TAPPING, P2
253	3-089-513-01	SHAFT (REAR), GRIP BELT
254	A-7112-120-A	MS-200 BOARD, COMPLETE
255	3-078-890-11	SCREW, TAPPING
256	1-861-185-11	FP-832 FLEXIBLE BOARD
257	3-078-893-01	O PLATE +P2 MAIN EG GRIP M1.7
258	3-084-523-11	SCREW (M1.7 EG LOCK (BLACK))
259	3-089-510-01	BELT, GRIP
260	1-478-481-41	KEY BLOCK, CONTROL (SS6300) (EXCEPT HC40:J)
260	1-478-481-51	KEY BLOCK, CONTROL (SS6300) (HC40:J)
261	3-089-520-01	SCREW

Ref. No.	Part No.	Description
262	A-7112-123-A	JK-260 BOARD, COMPLETE
263	1-861-186-11	FP-833 FLEXIBLE BOARD
264	X-3954-072-2	FRAME ASSY, CS
265	3-062-214-01	SCREW (M1.4X1.5)
266	1-828-833-11	CABLE, FLEXIBLE FLAT (FFC-036)
267	3-089-548-01	SHEET, DRUM
268	3-089-540-01	KNOB, EJECT
269	X-3954-074-2	FRAME ASSY, MD
270	3-081-221-01	LABEL (Z) LS
271	3-089-521-01	SHEET, VC
272	A-7112-785-A	VC-352 BOARD, COMPLETE (SERVICE)(HC40)
272	A-7113-240-A	VC-352 BOARD, COMPLETE (SERVICE)(HC40E)
SP901	1-825-260-21	LOUD SPEAKER (1.6CM)

5. REPAIR PARTS LIST

5-1-7. OVERALL (MECHANISM DECK-Z200)

ns : not supplied



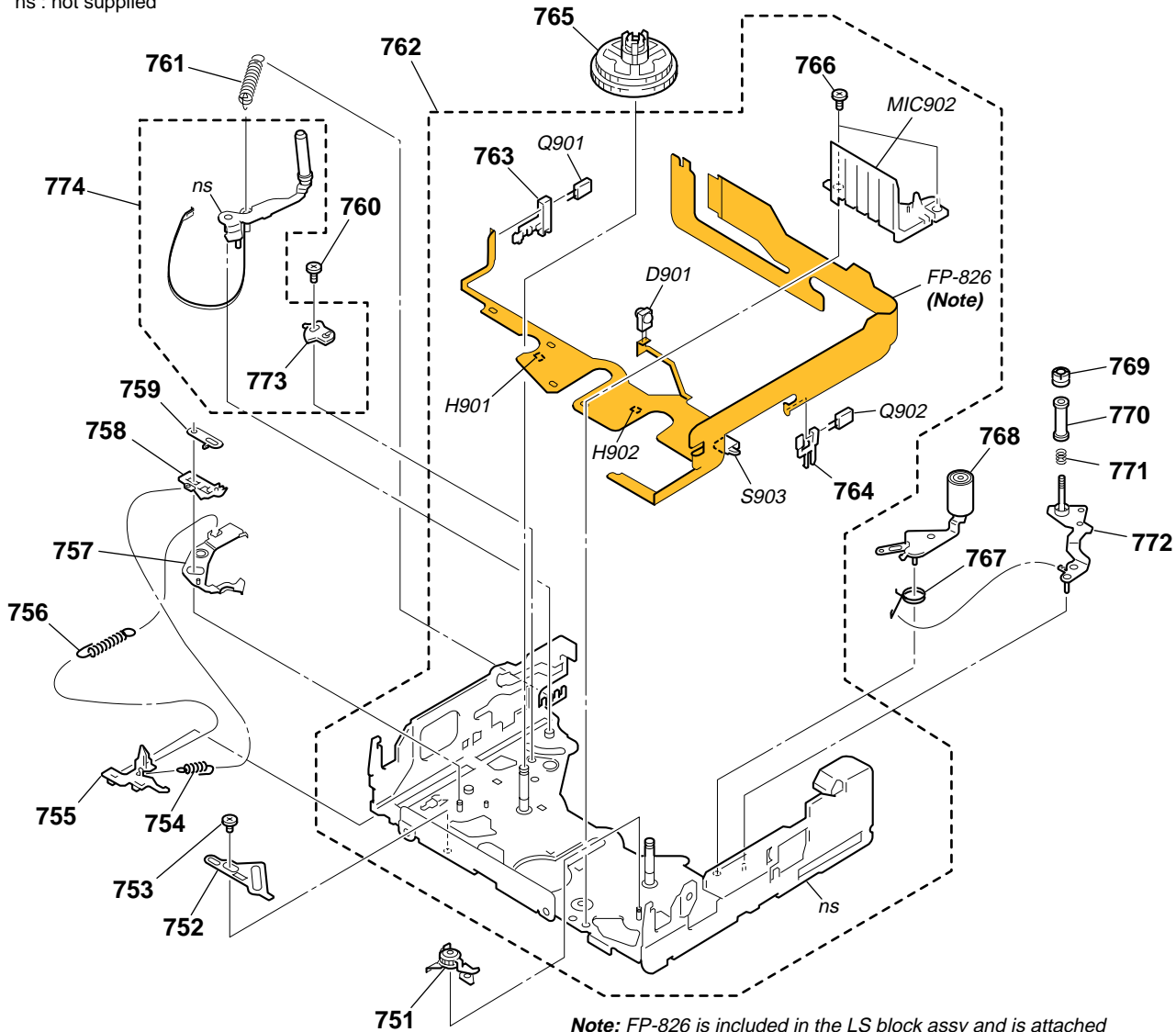
Ref. No.	Part No.	Description
701	X-3952-938-7	GEAR ASSY, GOOSENECK
702	3-075-097-11	SCREW (M1.4X1.4), SPECIAL HEAD
703	3-079-206-02	SPRING (POP UP S), TXTENSION
704	X-3952-939-8	COMPARTMENT ASSY, CASSETTE
705	3-079-367-01	DAMPER, CASSETTE COMPARTMENT
706	3-079-215-02	SPRING (POP UP T), EXTENSION
707	3-085-330-01	SCREW, SPECIAL
708	3-080-545-01	COVER, SENSOR S
709	3-079-364-01	RETAINER, LS GUIDE

Ref. No.	Part No.	Description
710	X-3952-937-1	TABLE ASSY, T REEL
711	3-079-366-01	RELEASE, REEL LOCK
712	X-3953-257-4	PLATE ASSY, RETAINER
713	A-7095-947-A	MD (Z200) SUB ASSY
714	3-079-741-02	SCREW, DRUM FIXING
715	3-748-682-01	WASHER, T
716	3-087-881-01	SHEET, ADHESIVE, FLEXIBLE
M901	A-7048-994-A	DRUM (DEH-30B-R) (SERVICE)

5. REPAIR PARTS LIST

5-1-8. LS CHASSIS BLOCK ASSEMBLY

ns : not supplied



Note: FP-826 is included in the LS block assy and is attached to chassis by hot-press.
Because installation of FP-826 requires a very high accuracy, FP-826 is not supplied as an independent service parts.

Ref. No.	Part No.	Description
751	A-7095-402-G	BRAKE (T) BLOCK ASSY
752	3-079-241-01	PLATE, LS CAM
753	3-075-097-11	SCREW (M1.4X1.4), SPECIAL HEAD
754	3-079-246-01	SPRING(RELEASE RACK),EXTENSION
755	3-079-248-01	POSITIONING(S), CASSETTE
756	3-079-244-01	SPRING (ULE), EXTENSION
757	X-3952-932-1	BRAKE ASSY, ULE
758	3-079-245-01	RACK (S), RELEASE
759	3-079-247-01	BRAKE (S)
760	3-059-090-11	SCREW (M1.4X2.5), SPECIAL HEAD
761	3-079-242-01	SPRING, TENSION
762	A-7095-951-A	LS BLOCK ASSY
763	3-079-267-01	HOLDER (S), SENSOR
764	3-079-268-01	HOLDER (T), SENSOR
765	X-3952-936-2	TABLE ASSY, S REEL
766	3-085-330-01	SCREW, SPECIAL

Ref. No.	Part No.	Description
767	3-079-243-02	SPRING (PINCH RETURN), TORSION
768	X-3952-934-1	ARM ASSY, PINCH
769	3-052-062-02	NUT, TG7
770	3-079-219-02	TG7
771	3-081-591-01	SPRING, COMPRESSION (TG7)
772	X-3952-935-3	ARM ASSY, TG7
773	3-079-237-01	ADJUSTOR, BAND
774	A-7095-403-B	TG2 ARM BLOCK ASSY
S903	1-529-566-51	SWITCH, PUSH (1 KEY)(C.C. DOWN)
MIC902	1-817-175-12	PIN, CONNECTOR (WITH DETECTION SWITCH)
D901	6-500-652-01	DIODE GL453SE0000F (TAPE LED)
H901	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (S REEL)
H902	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (T REEL)
Q901	6-550-672-01	TRANSISTOR PT4850FJE00F (TAPE END)
Q902	6-550-672-01	TRANSISTOR PT4850FJE00F (TAPE TOP)

5. REPAIR PARTS LIST

• EXCEPT J MODEL

Checking supplied accessories.

Make sure that the following accessories are supplied with your camcorder.



Power cord (Main lead) (1)
(AUS model)

△ 1-696-819-21

Power cord (Main lead) (1)
(BR, AEP, EE, NE,
E:EXCEPT Saudi Arabia model)

△ 1-769-608-11

Power cord (Main lead) (1)
(KR model)

△ 1-776-985-11

Power cord (Main lead) (1)
(CH model)

△ 1-782-476-13

Power cord (Main lead) (1)
(UK, HK, E: Saudi Arabia model)

△ 1-783-374-11

Power cord (Main lead) (1)
(US, CND model)

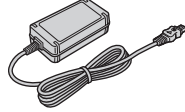
△ 1-790-107-22

Power cord (Main lead) (1)
(JE model)

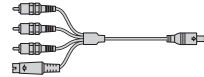
△ 1-790-732-12



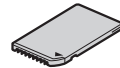
21-pin adaptor (1)
(AEP, UK, EE, NE model)
1-770-783-21



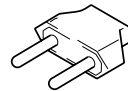
AC adaptor (1)
(AC-L25A)
(EXCEPT BR model)
△ 1-477-534-11



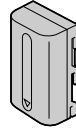
A/V connecting cable
(1.5m) (1)
1-823-156-13



"Memory Stick Duo" (1)
(not supplied)



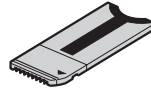
2-pin conversion adaptor (1)
(JE model)
1-569-007-12



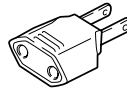
Rechargeable battery pack (1)
(NP-FP50)
(not supplied)



USB cable (1)
1-824-382-21



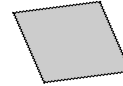
Memory Stick Duo adaptor (1)
(not supplied)



2-pin conversion adaptor (1)
(E, HK model)
1-569-008-12



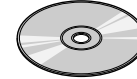
Wireless Remote Commander (1)
(RMT-831)
1-477-898-41



Cleaning cloth (1)
3-073-861-01



Shoe cover (1)
3-089-543-01



CD-ROM
(SPVD-012(V) USB Driver) (1)
(US, CND model)
3-086-790-01

CD-ROM
(SPVD-012 USB Driver) (1)
(EXCEPT US, CND model)
3-087-821-01

• Abbreviation

CND : Canadian model	CH : Chinese model
EE : East European model	JE : Tourist model
NE : North European model	KR : Korea model
HK : Hong Kong model	BR : Brazilian model
AUS : Australian model	

Note :

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

Note :

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

Other accessories

3-087-936-11	MANUAL (PC), INSTRUCTION (ENGLISH) (HC40:US,CND,E,HK,JE/HC40E:AEP,UK,E,HK,AUS,JE)	3-088-338-31	MANUAL, INSTRUCTION (HUNGARIAN/SLOVAK) (HC40E:EE)
3-087-936-21	MANUAL (PC), INSTRUCTION (FRENCH) (HC40:CND/HC40E:AEP,E,JE)	3-088-339-11	MANUAL, INSTRUCTION (ENGLISH) (HC40:US,CND,E,HK,JE)
3-087-936-31	MANUAL (PC), INSTRUCTION (GERMAN/DUTCH) (HC40E:AEP)	3-088-339-21	MANUAL, INSTRUCTION (FRENCH)(HC40:CND)
3-087-936-41	MANUAL (PC), INSTRUCTION (SPANISH/PORTUGUESE) (HC40:E,JE/HC40E:AEP)	3-088-339-31	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (HC40:E,JE)
3-087-936-51	MANUAL (PC), INSTRUCTION (ITALIAN/GREEK) (HC40E:AEP)	3-088-339-41	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (HC40:E,HK)
3-087-936-61	MANUAL (PC), INSTRUCTION (SWEDISH/RUSSIAN) (HC40E:NE,JE)	3-088-339-51	MANUAL, INSTRUCTION (KOREAN)(HC40:KR,JE)
3-087-936-71	MANUAL (PC), INSTRUCTION (DANISH/FINNISH) (HC40E:NE)	3-088-340-11	MANUAL, INSTRUCTION (ENGLISH) (HC40E:AEP,UK,E,HK,AUS,JE)
3-087-936-81	MANUAL (PC), INSTRUCTION (POLISH/CZECH) (HC40E:EE)	3-088-340-21	MANUAL, INSTRUCTION (FRENCH)(HC40E:AEP,E,JE)
3-087-936-91	MANUAL (PC), INSTRUCTION (HUNGARIAN/SLOVAK) (HC40E:EE)	3-088-340-31	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (HC40E:AEP)
3-087-937-11	MANUAL (PC), INSTRUCTION (ARABIC/PERSIAN) (HC40E:E)	3-088-340-41	MANUAL, INSTRUCTION (ITALIAN/GREEK)(HC40E:AEP)
3-087-937-21	MANUAL (PC), INSTRUCTION (TRADITIONAL) (HC40:E,HK/HC40E:HK)	3-088-340-51	MANUAL, INSTRUCTION (GERMAN/DUTCH)(HC40E:AEP)
3-087-937-31	MANUAL (PC), INSTRUCTION (SIMPLIFIED) (HC40E:E,CH,JE)	3-088-340-61	MANUAL, INSTRUCTION (SWEDISH/RUSSIAN) (HC40E:NE,JE)
3-087-937-41	MANUAL (PC), INSTRUCTION (KOREAN)(HC40:KR,JE)	3-088-340-71	MANUAL, INSTRUCTION (DANISH/FINNISH)(HC40E:NE)
3-088-338-21	MANUAL, INSTRUCTION (POLISH/CZECH)(HC40E:EE)	3-088-340-81	MANUAL, INSTRUCTION (ARABIC/PERSIAN)(HC40E:E)
		3-088-340-91	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (HC40E:HK)
		3-088-341-11	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (HC40E:E,CH,JE)

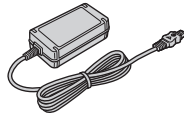
5. REPAIR PARTS LIST

• J MODEL

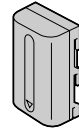
付属品



電源コード (1)
△ 1-790-732-12



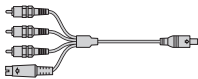
AC アダプター (1)
(AC-L25A)
△ 1-477-534-11



リチャージャブル
バッテリーパック (1)
(NP-FP50)
(供給せず)



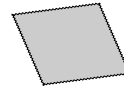
リモコン電池蓋
(3-083-973-01)
ワイヤレスリモコン (1)
(RMT-831)
1-477-898-51



AV接続ケーブル (1)
1-823-156-13



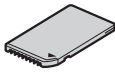
USBケーブル (1)
1-824-382-21



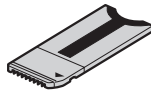
クリーニングクロス (1)
3-073-861-01



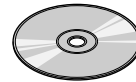
シューカバー (1)
3-089-543-01



“メモリスティック デュオ” (1)
(8MB)
(供給せず)



メモリスティック デュオ
アダプター (1)
(供給せず)



CD-ROM 「SPVD-012 (V) USBドライバ」 (1)
3-086-790-01

図面
番号

部品コード	部品名
3-087-937-01	取扱説明書 (PC)
3-088-339-01	取扱説明書

△印の部品、または△印付の点線で囲まれた部品は、安全性を維持するために、重要な部品です。従って交換時は、必ず指定の部品を使用してください。

CD-490

FP-836

IR-051

JK-260

5-2. ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
	A-7112-117-A	CD-490 BOARD, COMPLETE ***** (IC201 is not included in this COMPLETE board)
		< CAPACITOR >
C202	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V
C203	1-107-826-11	CERAMIC CHIP 0.1uF 10.00% 16V
C204	1-113-987-11	TANTAL. CHIP 4.7uF 20.00% 25V
C205	1-127-573-11	CERAMIC CHIP 1uF 10% 16V
C207	1-125-777-11	CERAMIC CHIP 0.1uF 10.00% 10V
C208	1-107-826-11	CERAMIC CHIP 0.1uF 10.00% 16V
C209	1-125-777-11	CERAMIC CHIP 0.1uF 10.00% 10V
C210	1-125-777-11	CERAMIC CHIP 0.1uF 10.00% 10V
C213	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C214	1-135-259-11	TANTAL. CHIP 10uF 20.00% 6.3V
C215	1-125-777-11	CERAMIC CHIP 0.1uF 10.00% 10V
C218	1-104-851-11	TANTAL. CHIP 10uF 20.00% 10V
C219	1-107-826-11	CERAMIC CHIP 0.1uF 10.00% 16V
		< CONNECTOR >
CN201	1-818-087-31	CONNECTOR, FFC/FPC (LIF) 26P
		< FERRITE BEAD >
FB201	1-414-760-21	FERRITE 0UH
		< IC >
IC201	A-7112-341-A	CCD BLOCK ASSY (1M) (CCD IMAGER) (IC201 is not included in this COMPLETE board)
IC202	6-701-755-01	IC AD80017AJRURL
		< COIL >
L201	1-400-588-11	INDUCTOR 0uH
L202	1-469-528-91	INDUCTOR 100uH
		< TRANSISTOR >
Q201	6-550-119-01	TRANSISTOR DTC144EMT2L
Q202	8-729-055-21	TRANSISTOR 2SC5096-O/R(TE85L)
		< RESISTOR >
R201	1-218-990-11	SHORT CHIP 0
R203	1-218-958-11	RES-CHIP 2.7K 5% 1/16W
R204	1-218-965-11	RES-CHIP 10K 5% 1/16W
R205	1-218-953-11	RES-CHIP 1K 5% 1/16W
R206	1-218-966-11	RES-CHIP 12K 5% 1/16W

A-7112-125-A FP-836 BOARD, COMPLETE

< SWITCH >

S101 1-786-179-31 SWITCH, PUSH (1KEY) (PANEL REVERSE)

Be sure to read "Precautions upon replacing CCD imager" on page 4-5 when changing the CCD imager.

CCDイメージャの交換時はサービスマニュアル 4-6 ページの "CCDイメージャ交換時の注意" を必ずお読みください。

Ref. No.	Part No.	Description
	A-7112-122-A	IR-051 BOARD, COMPLETE *****
		< CAPACITOR >
C601	1-164-939-11	CERAMIC CHIP 0.0022uF 10.00% 50V
C602	1-125-837-91	CERAMIC CHIP 1uF 10% 6.3V
		< CONNECTOR >
CN601	1-778-507-21	PIN, CONNECTOR (PC BOARD) 4P
CN602	1-766-346-21	CONNECTOR, FFC/FPC 16P
		< DIODE >
D601	6-500-512-01	DIODE CL-330IRS-X-TU
D602	6-500-506-01	DIODE TLRMV1021(T15SOY,F)
D604	8-719-988-61	DIODE 1SS355TE-17
		< FERRITE BEAD >
FB601	1-500-444-11	FERRITE 0uH
FB602	1-500-444-11	FERRITE 0uH
		< IC >
IC601	8-742-221-00	IC SBX3055-01
		< JACK >
J601	1-691-737-41	JACK (SMALL TYPE) (MIC (PLUG IN POWER))
		< RESISTOR >
R601	1-218-956-11	RES-CHIP 1.8K 5% 1/16W
R604	1-218-937-11	RES-CHIP 47 5% 1/16W
		< SWITCH >
S601	1-786-148-11	SWITCH, PUSH (1 KEY) (LENS COVER OPEN/CLOSE)
		< VARISTOR >
VDR601	1-801-862-11	VARISTOR, CHIP (1608)
VDR602	1-801-862-11	VARISTOR, CHIP (1608)

	A-7112-123-A	JK-260 BOARD, COMPLETE *****
		< CONNECTOR >
CN701	1-815-794-21	CONNECTOR (MULTIPLE) (AV IN/OUT)
CN702	1-794-962-11	CONNECTOR, SQUARE TYPE(USB 5P) (USB)
CN703	1-794-276-11	CONNECTOR, SQUARE TYPE 4P (DV)
CN704	1-784-421-11	CONNECTOR, FFC/FPC (ZIF) 27P
		< DIODE >
D702	6-500-750-01	DIODE NSAD500H-T1-A
D703	8-719-078-02	DIODE 1SS357(T3SONY1)
		< JACK >
J701	1-793-995-11	JACK, SUPER SMALL TYPE (LANC)
		< LINE FILTER >
LF701	1-456-583-11	INDUCTOR 0uH

JK-260

LB-095

MS-200

PD-213

Ref. No.	Part No.	Description
		< RESISTOR >
R701	1-218-965-11	RES-CHIP 10K 5% 1/16W
R702	1-218-965-11	RES-CHIP 10K 5% 1/16W
	A-7112-264-A	LB-095 BOARD, COMPLETE *****
		< CAPACITOR >
C301	1-125-777-11	CERAMIC CHIP 0.1uF 10.00% 10V
C302	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C303	1-164-505-11	CERAMIC CHIP 2.2uF 16V
		< CONNECTOR >
CN301	1-818-046-11	CONNECTOR, FFC/FPC 20P
CN302	1-784-420-11	CONNECTOR, FFC/FPC (ZIF) 21P
		< DIODE >
D302	8-719-074-67	DIODE EDZ-TE61-5.6B
D303	6-500-875-01	DIODE E1S35-AW0C7-01-A3
		< RESISTOR >
R302	1-216-841-11	METAL CHIP 47K 5% 1/16W
R303	1-218-971-11	RES-CHIP 33K 5% 1/16W
R304	1-218-975-11	RES-CHIP 68K 5% 1/16W
R305	1-218-989-11	RES-CHIP 1M 5% 1/16W
	A-7112-120-A	MS-200 BOARD, COMPLETE *****
		< BATTERY >
△BT501	1-756-128-11	BATTERY, LITHIUM (SECONDARY)
		< CONNECTOR >
CN501	1-691-352-21	CONNECTOR, FFC/FPC (ZIF) 14P
CN502	1-778-506-21	PIN, CONNECTOR (PC BOARD) 2P
CN503	1-817-913-11	MEMORY STICK DUO CONNECTOR
		< DIODE >
D501	6-500-506-01	DIODE TLRMV1021(T15SOY,F)
		< RESISTOR >
R501	1-218-941-81	RES-CHIP 100 5% 1/16W
		< SWITCH >
S501	1-771-138-82	SWITCH, KEY BOARD (RESET)
		< ABSORBER >
VDR501	1-805-043-11	ABSORBER, CHIP SURGE

CAUTION :

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

注意

電池の交換は、正しく行わないと破裂する可能性があります。
電池を交換する場合には必ず同じ型名の電池又は同等品と交換してください。

Ref. No.	Part No.	Description
	A-7112-124-A	PD-213 BOARD, COMPLETE *****
		< CAPACITOR >
C602	1-164-939-11	CERAMIC CHIP 0.0022uF 10.00% 50V
C604	1-125-841-91	TANTAL. CHIP 22uF 20.00% 4V
C605	1-125-777-11	CERAMIC CHIP 0.1uF 10.00% 10V
C606	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C607	1-125-777-11	CERAMIC CHIP 0.1uF 10.00% 10V
C608	1-125-777-11	CERAMIC CHIP 0.1uF 10.00% 10V
C610	1-125-777-11	CERAMIC CHIP 0.1uF 10.00% 10V
C611	1-104-851-11	TANTAL. CHIP 10uF 20.00% 10V
C612	1-164-739-11	CERAMIC CHIP 560PF 5.00% 50V
C614	1-164-943-11	CERAMIC CHIP 0.01uF 10.00% 16V
C615	1-164-943-11	CERAMIC CHIP 0.01uF 10.00% 16V
C616	1-164-943-11	CERAMIC CHIP 0.01uF 10.00% 16V
C617	1-125-777-11	CERAMIC CHIP 0.1uF 10.00% 10V
C618	1-125-889-91	CERAMIC CHIP 2.2uF 10% 10V
C622	1-127-760-11	CERAMIC CHIP 4.7uF 10% 6.3V
C623	1-127-760-11	CERAMIC CHIP 4.7uF 10% 6.3V
C624	1-125-777-11	CERAMIC CHIP 0.1uF 10.00% 10V
C626	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C627	1-125-777-11	CERAMIC CHIP 0.1uF 10.00% 10V
C631	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C633	1-127-760-11	CERAMIC CHIP 4.7uF 10% 6.3V
		< CONNECTOR >
CN601	1-816-179-11	CONNECTOR, FFC/FPC (ZIF) 22P
CN602	1-573-915-11	CONNECTOR, FFC/FPC (ZIF) 6P
CN603	1-691-344-11	CONNECTOR, FFC/FPC (ZIF) 6P
CN605	1-785-905-11	CONNECTOR, FFC/FPC (ZIF) 24P
CN606	1-691-344-11	CONNECTOR, FFC/FPC (ZIF) 6P
		< DIODE >
D601	8-719-988-61	DIODE 1SS355TE-17
D602	8-719-074-67	DIODE EDZ-TE61-5.6B
		< FERRITE BEAD >
FB601	1-414-760-21	FERRITE 0uH
		< IC >
IC601	8-759-693-13	IC NJM12904V(TE2)
IC602	8-752-109-72	IC CXM3006R-T4
		< COIL >
L601	1-400-588-11	INDUCTOR 0uH
L602	1-400-588-11	INDUCTOR 0uH
L603	1-400-588-11	INDUCTOR 0uH

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

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

△印の部品、または△印付の点線で囲まれた部品は、安全性を維持するために、重要な部品です。
従って交換時は、必ず指定の部品を使用してください。

PD-213

SE-141

VC-352

< TRANSISTOR >

Q601	8-729-427-42	TRANSISTOR	XP4211-TXE
Q602	8-729-427-12	TRANSISTOR	XP4111-TXE
Q603	6-550-237-01	TRANSISTOR	2SC5658T2LQ/R
Q604	6-550-237-01	TRANSISTOR	2SC5658T2LQ/R
Q605	6-550-237-01	TRANSISTOR	2SC5658T2LQ/R
Q606	8-729-420-24	TRANSISTOR	2SB1218A-QRS-TX
Q607	8-729-420-24	TRANSISTOR	2SB1218A-QRS-TX
Q608	6-550-119-01	TRANSISTOR	DTC144EMT2L
Q609	6-550-232-01	TRANSISTOR	2SA2029T2LQ/R
Q610	6-550-232-01	TRANSISTOR	2SA2029T2LQ/R

< RESISTOR >

R606	1-208-943-11	METAL CHIP	220K	0.5%	1/16W
R607	1-218-989-11	RES-CHIP	1M	5%	1/16W
R608	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R609	1-218-975-11	RES-CHIP	68K	5%	1/16W
R610	1-218-990-11	SHORT CHIP	0		
R611	1-218-977-11	RES-CHIP	100K	5%	1/16W
R613	1-220-206-11	METAL CHIP	91K	0.5%	1/16W
R614	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R615	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R616	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R617	1-218-953-11	RES-CHIP	1K	5%	1/16W
R619	1-208-647-11	METAL CHIP	33	0.5%	1/16W
R620	1-218-969-11	RES-CHIP	22K	5%	1/16W
R623	1-208-647-11	METAL CHIP	33	0.5%	1/16W
R624	1-218-973-11	RES-CHIP	47K	5%	1/16W
R625	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R627	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R633	1-218-990-11	SHORT CHIP	0		
R634	1-218-989-11	RES-CHIP	1M	5%	1/16W
R635	1-218-949-11	RES-CHIP	470	5%	1/16W
R636	1-218-953-11	RES-CHIP	1K	5%	1/16W
R637	1-218-978-11	RES-CHIP	120K	5%	1/16W
R638	1-216-864-11	METAL CHIP	0	5%	1/16W
R639	1-216-864-11	METAL CHIP	0	5%	1/16W
R640	1-218-949-11	RES-CHIP	470	5%	1/16W
R641	1-218-949-11	RES-CHIP	470	5%	1/16W
R642	1-218-973-11	RES-CHIP	47K	5%	1/16W
R643	1-218-973-11	RES-CHIP	47K	5%	1/16W

< COMPOSITION CIRCUIT BLOCK >

RB601	1-234-369-21	RES, NETWORK 10X4	(1005)
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A-7112-151-A SE-141 BOARD, COMPLETE

< CAPACITOR >

C401	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C402	1-125-777-11	CERAMIC CHIP	0.1uF	10.00%	10V
C403	1-125-777-11	CERAMIC CHIP	0.1uF	10.00%	10V
C405	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C406	1-119-923-11	CERAMIC CHIP	0.047uF	10.00%	10V
C408	1-119-923-11	CERAMIC CHIP	0.047uF	10.00%	10V
C409	1-119-923-11	CERAMIC CHIP	0.047uF	10.00%	10V

C410	1-119-923-11	CERAMIC CHIP	0.047uF	10.00%	10V
C411	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C412	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C413	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C414	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C416	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V

< CONNECTOR >

CN401	1-766-336-21	CONNECTOR, FFC/FPC 6P
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< FERRITE BEAD >

FB401	1-469-179-21	FERRITE	0uH
FB402	1-469-179-21	FERRITE	0uH
FB403	1-469-179-21	FERRITE	0uH
FB404	1-469-179-21	FERRITE	0uH

< IC >

IC401	8-759-489-19	IC uPC6756GR-8JG-E2
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< COIL >

L401	1-400-588-11	INDUCTOR	0uH
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< RESISTOR >

R402	1-218-989-11	RES-CHIP	1M	5%	1/16W
R403	1-218-965-11	RES-CHIP	10K	5%	1/16W
R404	1-218-965-11	RES-CHIP	10K	5%	1/16W
R405	1-218-989-11	RES-CHIP	1M	5%	1/16W

< COMPOSITION CIRCUIT BLOCK >

RB401	1-234-379-21	RES, NETWORK 22KX4	(1005)
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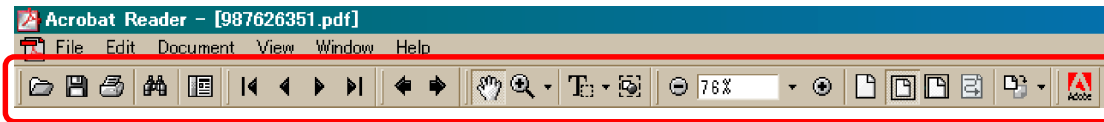
< SENSOR >

SE401	1-476-807-41	SENSOR, ANGULAR VELOCITY (PITCH)
SE402	1-476-807-31	SENSOR, ANGULAR VELOCITY (YAW)


VC-352 BOARD, COMPLETE

Electrical parts list of the VC-352 board are not shown. Pages from 5-17 to 5-25 are not shown.


[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]




Printing a text

1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:

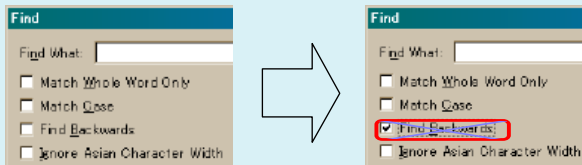
To set a range to be printed within a page, select the graphic selection tool  and drag on the page to enclose a range to be printed, and then click the Print button.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:

To execute "find" from current page toward the previous pages, select the check box "Find Backwards" and then click the "Find".







3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:



The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.

Note: The find function may not be applied to the Service Manual depending on the date of issue.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .






Reversing the screens displayed once

- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .


Application to the Service Manual:


This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

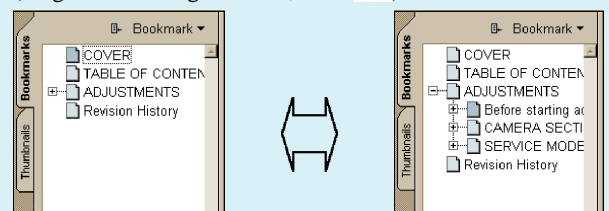
Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

Moving with bookmark:



Click an item (text) on the bookmark pallet. and you can move to the link destination. Also, clicking  can display the hidden items.

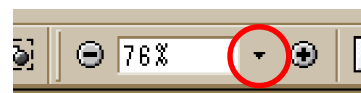
(To go back to original state, click )




Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click  or  for zooming in or out.



"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.


Application to the Service Manual:

The printed circuit board diagram you see now can be changed to the same direction as the set.


【Adobe Acrobat Reader Ver 5.0(for Windows) ツールバー内にある主なボタンの機能説明】




文章を印刷する

1. 印刷ボタンをクリックする。
2. プリンター、印刷範囲、印刷部数、および他のオプションを指定して「OK」をクリックする。

印刷の応用：

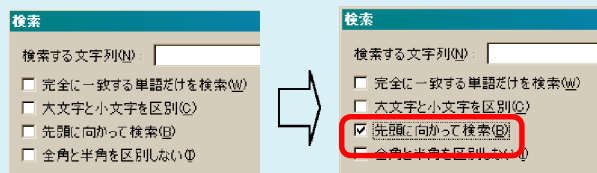
ページ内で印刷したい範囲を設定するには、グラフィック選択ツールを選択し、ページ上をドラッグして印刷したい範囲を囲ってから印刷ボタンをクリックする。

文章内を検索する

1. 検索ボタンをクリックする。
2. 検索したい文字列をテキストボックスに入力して「検索」をクリックする。(必要に応じて検索オプションを指定する)

サービスマニュアルへの応用：

現在のページから前ページに向かって検索する場合は「先頭に向かって検索」のチェックボックスを選択してから「検索」をクリックする。







3. 検索ダイアログボックスをもう一度開き、「次を検索」をクリックすると次に出てくる一致文字列を検索することができる。(前回入力した文字列が、テキストボックスにそのまま表示されている)

サービスマニュアルへの応用：



文章内にある図面ページ(ブロックダイアグラム、回路図、プリント図)および部品表ページなどは、この検索機能を使って部品検索することができる。例えば、ブロックダイアグラム上でICのRef. No.を検索し、「次を検索」を続けることによって回路図、プリント図上にあるICのRef. No.へ次々と移動する。

注意：発行年月日によって検索できない場合もあります。

ページを切り換える

- ・ 最初のページに移動する場合、をクリックする。
- ・ 最後のページに移動する場合、をクリックする。
- ・ 前のページに移動する場合、をクリックする。
- ・ 次のページに移動する場合、をクリックする。






一度表示した画面へ逆戻りする

- ・ 前の画面(操作)へ1つずつ逆戻りする場合、をクリックする。
- ・ 戻した画面(操作)を1つずつ前に進める場合、をクリックする。

サービスマニュアルへの応用：

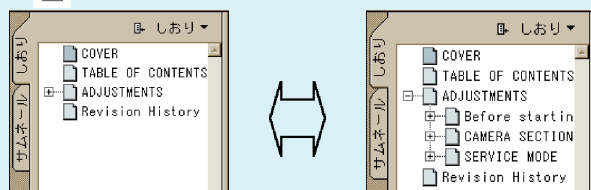
回路図とプリント図を行き来できるので電圧チェックに便利です。

リンクを使用して移動する

1. 手のひらツール、ズームツール、テキスト選択ツール、グラフィック選択ツールのいずれかを選択する。
2. 文章内のリンクのある場所(表紙および章目次ページのボタン、外し方のフローページ、図面ページでは文字が青色になっているところなど)にポインタを置くと、ポインタが人差し指の形に変わる。
3. そのままリンクをクリックする。(リンク先へ移動する)



しおりを利用して移動する：

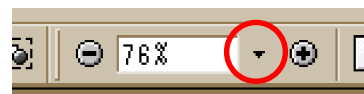
しおりパレット上の項目(テキスト)をクリックするとリンク先へ移動することができる。また、「+」をクリックすると隠れている項目を表示することができる。「-」をクリックすると元に戻る




画面の表示を拡大、縮小または回転させる

「拡大/縮小」

- ・ 倍率ボックスの三角矢印ボタンをクリックし、表示倍率を選択する。または、をクリックしても使えます。



「回転」

- ・ 回転ツールをクリックすると、ページが90度ずつ回転する。

サービスマニュアルへの応用：

見ているプリント図をセットと同じ向きに変えられます。

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2004.01	Official Release	—	—