# HVR-HD1000U/HD1000N/HD1000E/ HD1000P/HD1000C

# SERVICE MANUAL

Ver. 1.1 2007.12
Revision History

Revised-1

Replace the previously issued SERVICE MANUAL 9-852-240-11 with this manual.

*US Model*
*Canadian Model*
*AEP Model*
*E Model*
*Chinese Model*

N MECHANISM (MDX-N220)

**Link**


- SPECIFICATIONS
- BLOCK DIAGRAMS
- REPAIR PARTS LIST
- MODEL INFORMATION TABLE
- FRAME SCHEMATIC DIAGRAMS
- ADJUSTMENTS
- SERVICE NOTE
- SCHEMATIC DIAGRAMS
- INSTRUCTION MANUAL
- DISASSEMBLY
- PRINTED WIRING BOARDS


| | |
|---|---|
| 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. |

Mini DV Digital Video Cassette

## DIGITAL HD VIDEO CAMERA RECORDER

SONY®


HVR-HD1000U/HD1000N/HD1000E/HD1000P/HD1000C
9-852-240-12

Sony EMCS Co.

2007L0500-1


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Published by Kohda TEC

These specifications are extracted from instruction manual of HVR-HD1000E/HD1000P.

# SPECIFICATIONS

## System

**Video recording system (HDV)**
2 rotary heads, Helical scanning system
**Video recording system (DV)**
2 rotary heads, Helical scanning system
**Still image recording system**
Exif Ver. 2.2*1
**Audio recording system (HDV)**
Rotary heads, MPEG-1 Audio Layer -2,
Quantization: 16 bits (Fs 48 kHz, stereo)
transfer rate: 384 kbps
**Audio recording system (DV)**
Rotary heads, PCM system
Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits (Fs 48 kHz, stereo)
**Video signal**
PAL color, CCIR standards
1080/50i specification
**Usable cassette**
Mini DV cassette with the mini DV mark printed
**Tape speed (HDV)**
Approx. 18.81 mm/s
**Tape speed (DV)**
SP: Approx. 18.81 mm/s
LP: Approx. 12.56 mm/s
**Recording/playback time (HDV)**
60 min (using a DVM60 cassette)
**Recording/playback time (DV)**
SP: 60 min (using a DVM60 cassette)
LP: 90 min (using a DVM60 cassette)
**Fast forward/rewind time**
Approx. 2 min 40 s (using a DVM60 cassette and rechargeable battery pack)
Approx. 1 min 45 s (using a DVM60 cassette and AC Adaptor)
**Viewfinder**
Electric viewfinder (color)
**Image device**
6.3 mm (1/2.9 type) CMOS sensor
Recording pixels (still, 4:3):
Max. 6.1 mega (2 848 × 2 136) pixels *2
Gross: Approx. 3 200 000 pixels
Effective (movie, 16:9):
Approx. 2 280 000 pixels
Effective (movie, 4:3):
Approx. 1 710 000 pixels
Effective (still, 16:9):
Approx. 2 280 000 pixels
Effective (still, 4:3):
Approx. 3 040 000 pixels
**Lens**
Carl Zeiss Vario-Sonnar T∗
10 × (Optical), 20 × (Digital)
**Focal length**
f=5.4 ~ 54 mm (7/32 ~ 2 1/4 in.)
When converted to a 35 mm still camera
In TAPE: 40 ~ 400 mm (1 5/8 ~ 15 3/4 in.) (16:9), 49 ~ 490 mm (1 15/16 ~ 19 3/8 in.) (4:3)
In MEMORY: 40 ~ 400 mm (1 5/8 ~ 15 3/4 in.) (16:9), 37 ~ 370 mm (1 1/2 ~ 14 5/8 in.) (4:3)
F1.8 ~ 2.9
Filter diameter: 37 mm (1 1/2 in.)
**Color temperature**
[AUTO], [ONE PUSH], [INDOOR] (3 200 K),
[OUTDOOR] (5 800 K)
**Minimum illumination**
5 lx (lux) ([AUTOSLW SHTR] [ON], Shutter speed 1/25 sec)
0 lx (lux) (during NightShot function)

*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.

*2 The unique pixel array of Sony's ClearVid CMOS sensor and image processing system (new Enhanced Imaging Processor) allows for still image resolution equivalent to the sizes described.

## Input/Output connectors

**VIDEO OUT jack**
Pin jack
1 Vp-p, 75 Ω (ohms)
**S VIDEO OUT jack**
4pin mini DIN
Luminance signal: 1 Vp-p, 75 Ω (ohms)
Chrominance signal: 0.3 Vp-p, 75 Ω (ohms)
**AUDIO OUT jack**
Pin jack
Audio signal: 327 mV (at load impedance 47 kΩ (kilohms)), Output impedance with less than 2.2 kΩ (kilohms)
**COMPONENT OUT jack**
Y: 1 Vp-p, 75 Ω (ohms)
PB/PR, CB/CR: ± 350 mV, 75 Ω (ohms)
**HDMI OUT jack**
Type A (19-pin)
**Headphone jack**
Stereo minijack (Ø 3.5 mm)
**LANC jack**
Stereo mini-minijack (Ø 2.5 mm)
**USB jack**
B
**MIC (PLUG IN POWER) jack**
Stereo minijack (Ø 3.5 mm)
**i.LINK HDV/DV jack**
i.LINK Interface (IEEE1394, 4-pin connector S100)

## LCD screen

**Picture**
6.7 cm (2.7 type, aspect ratio 16:9)
**Total dot number**
211 200 (960 × 220)

## General

**Power requirements**
DC 7.2 V (battery pack)
DC 8.4 V (AC Adaptor)
**Average power consumption**
During camera recording using the viewfinder with normal brightness:
HDV recording 4.4 W
DV recording 4.2 W
During camera recording using the LCD & viewfinder with normal brightness:
HDV recording 4.8 W
DV recording 4.6 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.)**
265 × 231 × 460 mm (10 4/8 × 9 1/8 × 18 1/8 in.) (w/h/d) including the projecting parts
265 × 231 × 460 mm (10 4/8 × 9 1/8 × 18 1/8 in.) (w/h/d) including the projecting parts with the supplied battery pack NP-F570 attached
**Mass (approx.)**
2.7 kg (6 lb 0 oz) main unit only
3.0 kg (6 lb 10 oz) including the NP-F570 rechargeable battery pack and cassette (PHDVM-63DM), and lens hood with lens cover, microphone.
**Supplied accessories**
See page 5-35.

## AC Adaptor AC-L100

**Power requirements**
AC 100 V - 240 V, 50/60 Hz
**Current consumption**
0.35 - 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-F570)

**Maximum output voltage**
DC 8.4 V
**Output voltage**
DC 7.2 V
**Capacity**
15.8 Wh (2 200 mAh)
**Dimensions (approx.)**
38.4 × 20.6 × 70.8 mm (1 9/16 × 13/16 × 2 7/8 in.)
**Mass (approx.)**
100 g (3.5 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.

These specifications are extracted from instruction manual of HVR-HD1000U/HD1000N.

# SPECIFICATIONS

## System

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2 rotary heads, Helical scanning system
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Approx. 2 min 40 s (using a DVM60 cassette and rechargeable battery pack)
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**Lens**
Carl Zeiss Vario-Sonnar T*
10 × (Optical), 20 × (Digital)
**Focal length**
f=5.4 ~ 54 mm (7/32 ~ 2 1/4 in.)
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F1.8 ~ 2.9
Filter diameter: 37 mm (1 1/2 in.)
**Color temperature**
[AUTO], [ONE PUSH], [INDOOR] (3 200 K),
[OUTDOOR] (5 800 K)
**Minimum illumination**
5 lx (lux) ([AUTOSLW SHTR] [ON], Shutter speed 1/30 sec)
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**S VIDEO OUT jack**
4pin mini DIN
Luminance signal: 1 Vp-p, 75 Ω (ohms)
Chrominance signal: 0.286 Vp-p, 75 Ω (ohms)
**AUDIO OUT jack**
Pin jack
Audio signal: 327 mV (at load impedance 47 kΩ (kilohms)), Output impedance with less than 2.2 kΩ (kilohms)

**COMPONENT OUT jack**
Y: 1 Vp-p, 75 Ω (ohms)
PB/PR, CB/CR: ± 350 mV, 75 Ω (ohms)
**HDMI OUT jack**
Type A (19-pin)
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HDV recording 4.6 W
DV recording 4.4 W
During camera recording using the LCD & viewfinder with normal brightness:
HDV recording 5.0 W
DV recording 4.8 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.)**
265 × 231 × 460 mm
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**Current consumption**
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**Power consumption**
18 W
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DC 8.4 V*
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**Maximum output voltage**
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**Output voltage**
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**Capacity**
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**Mass (approx.)**
100 g (3.5 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.

## Model information table

| Model | HVR-HD1000U | HVR-HD1000N | HVR-HD1000E | HVR-HD1000P | HVR-HD1000C |
|---|---|---|---|---|---|
| Destination | US, CND | E | AEP | E | CH |
| Color system | NTSC | NTSC | PAL | PAL | PAL |

- Abbreviation
  AR : Argentine model
  AUS : Australian model
  BR : Brazilian model
  CH : Chinese model
  CND : Canadian model
  EE : East European model
  HK : Hong Kong model
  J : Japanese model
  JE : Tourist 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.

**SAFETY-RELATED COMPONENT WARNING!!**

**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ 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 IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS 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 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.

# 1. SERVICE NOTE

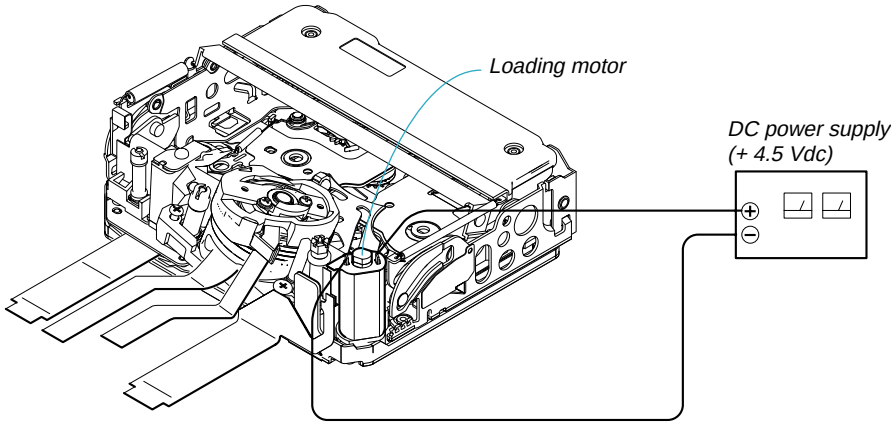
## 1-1. POWER SUPPLY DURING REPAIRS

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

**Method:**
Use the AC power adaptor (AC-L100).

## 1-2. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

① Refer to "2. DISASSEMBLY" to remove the mechanism deck block.
② Supply +4.5 V from the DC power supply to the loading motor and unload with a pressing the cassette compartment.




## 1-3. SETTING THE "FORCED POWER ON" MODE

It is possible to turn on power by adjustment remote commander (RM-95 or NEW LANC JIG).
Operate the VTR function using the adjustment remote commander.

### 1-3-1. Setting the "Forced Camera Power ON" Mode

1) Select page: 0, address: 01, and set data:01.
2) Select page: A, address: 10, set data:01 and press the "PAUSE (Write) " button of the adjustment remote commander.

### 1-3-2. Setting the "Forced VTR Power ON" Mode

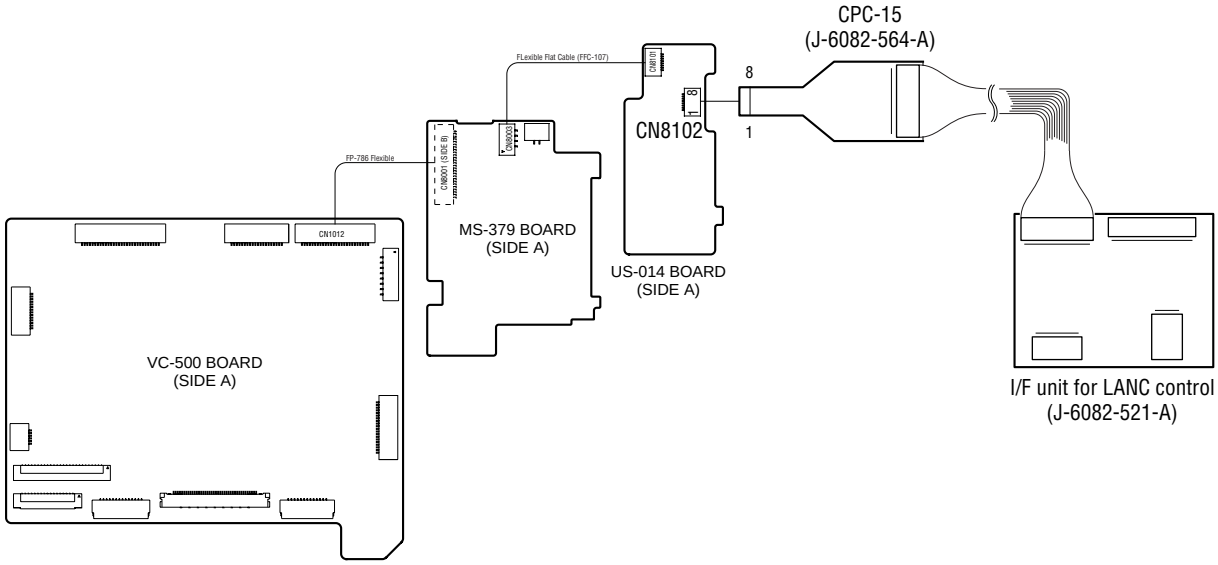
1) Select page: 0, address: 01, and set data:01.
2) Select page: A, address: 10, set data:02 and press the "PAUSE (Write) " button of the adjustment remote commander.

### 1-3-3. Exiting the "Forced Power ON" Mode

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

## 1-4. USING SERVICE JIG

Connect the CPC-15 jig connector (J-6082-564-A) and I/F unit for LANC control (J-6082-521 A) to the CN8102 on the US-014 board.




## 1-5. SELF-DIAGNOSIS FUNCTION

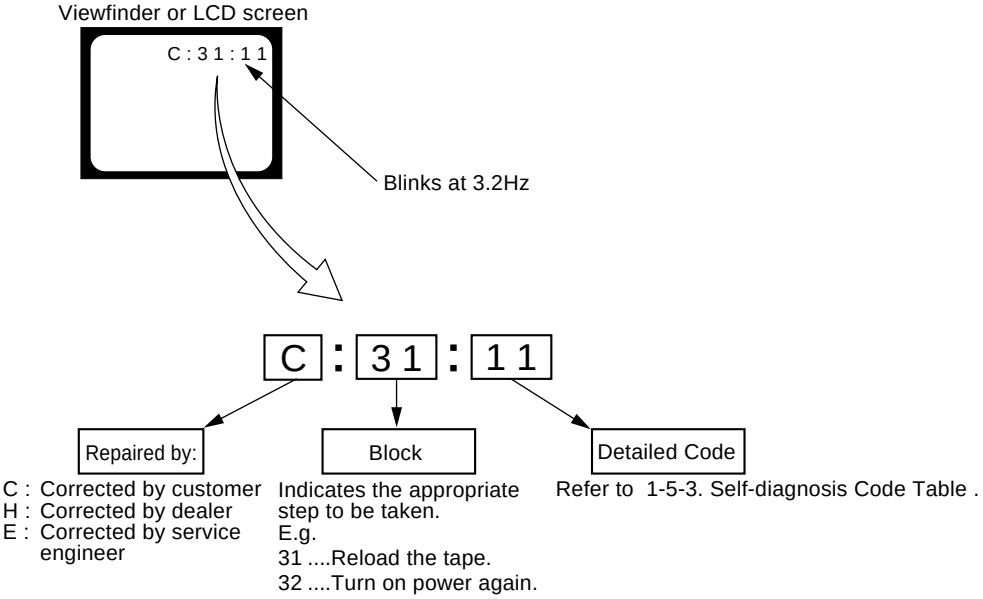
### 1-5-1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or LCD screen what to do.

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

### 1-5-2. Self-diagnosis Display

When problems occur while the unit is operating, the counter of the viewfinder or 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.



### 1-5-3. 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 | 2 | 1 | 0 0 | Condensation. | Remove the cassette, and insert it again after one hour. |
| C | 2 | 2 | 0 0 | Video head is dirty. | Clean with the optional cleaning cassette. |
| C | 3 | 1 | 1 0 | LOAD direction. Loading does not complete within specified time | Load the tape again, and perform operations from the beginning. |
| C | 3 | 1 | 1 1 | UNLOAD direction. Loading does not complete within specified time | Load the tape again, and perform operations from the beginning. |
| C | 3 | 1 | 2 0 | T reel side tape slacking when unloading. | Load the tape again, and perform operations from the beginning. |
| C | 3 | 1 | 2 1 | S reel side tape slacking when unloading. | Load the tape again, and perform operations from the beginning. |
| C | 3 | 1 | 2 2 | T reel fault. | Load the tape again, and perform operations from the beginning. |
| C | 3 | 1 | 2 3 | S reel fault. | Load the tape again, and perform operations from the beginning. |
| C | 3 | 1 | 3 0 | FG fault when starting capstan. | Load the tape again, and perform operations from the beginning. |
| C | 3 | 1 | 3 1 | FG fault during normal capstan operations. | Load the tape again, and perform operations from the beginning. |
| C | 3 | 1 | 4 0 | FG fault when starting drum. | Load the tape again, and perform operations from the beginning. |
| C | 3 | 1 | 4 1 | PG fault when starting drum. | Load the tape again, and perform operations from the beginning. |
| C | 3 | 1 | 4 2 | FG fault during normal drum operations. | Load the tape again, and perform operations from the beginning. |
| C | 3 | 1 | 4 3 | PG fault during normal drum operations. | Load the tape again, and perform operations from the beginning. |
| C | 3 | 1 | 4 4 | Phase fault during normal drum operations. | Load the tape again, and perform operations from the beginning. |
| C | 3 | 2 | 1 0 | LOAD direction loading motor time-out. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 1 1 | UNLOAD direction loading motor time-out. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 2 0 | T reel side tape slacking when unloading. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 2 1 | S reel side tape slacking when unloading. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 2 2 | T reel fault. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 2 3 | S reel fault. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 3 0 | FG fault when starting capstan. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 3 1 | FG fault during normal capstan operations. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 4 0 | FG fault when starting drum. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 4 1 | PG fault when starting drum. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 4 2 | FG fault during normal drum operations. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 4 3 | PG fault during normal drum operations. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 4 4 | Phase fault during normal drum operations. | Remove the battery or power cable, connect, and perform operations from the beginning. |
| C | 3 | 2 | 6 0 | Difficult to adjust focus.<br>(Cannot initialize focus.) | Remove the battery or power cable, connect, and perform operations from the beginning.<br>If it does not recover, inspect the focus MR sensor of lens block (Pin ⑯, ⑱ of CN5301 on the LD-229 board).<br>If not faulty, inspect the focus motor drive circuit (IC5404 on the LD-229 board). |

| Self-diagnosis Code | | | | Symptom/State | Correction |
|---|---|---|---|---|---|
| Repaired by: | Block Function | | Detailed Code | | |
| E | 6 | 1 | 1 0 | Zoom operations fault.<br>(Cannot initialize zoom lens.) | Inspect the zoom MR sensor of lens block (Pin ⑳, ㉑ of CN5301 on the LD-229 board) when zooming is performed when the zoom switch is operated and the zoom motor drive circuit (IC5404 on the LD-229 board) when zooming is not performed. |
| E | 6 | 1 | 1 1 | Focus lens initializing failure and zoom lens initializing failure occur simultaneously. | Check both C: 32: 60 and E: 61: 10 of the self-diagnosis code. |
| E | 6 | 2 | 0 0 | Steadyshot function does not work well.<br>(With pitch angular velocity sensor output stopped.) | Inspect pitch angular velocity sensor (SE7202 on the CM-077 board) peripheral circuits. |
| E | 6 | 2 | 0 1 | Steadyshot function does not work well.<br>(With yaw angular velocity sensor output stopped.) | Inspect yaw angular velocity sensor (SE7201 on the CM-077 board) peripheral circuits. |
| E | 6 | 2 | 0 2 | Abnormality of IC for steadyshot. | Refer to [1-7-1. E : 62 : 02 (Abnormality of IC for Steadyshot) Occurred]. |
| E | 6 | 2 | 0 3 | IC for steadyshot and micro controller communication abnormality among. | Inspect the steadyshot circuit (IC5703 on the LD-229 board). |
| E | 6 | 2 | 1 0 | Shift lens initializing failure. | Refer to [1-7-2. E : 62 : 10 (Shift Lens Initializing Failure) Occurred]. |
| E | 6 | 2 | 1 1 | Shift lens overheating (Pitch). | Refer to [1-7-3. E : 62 : 11 (Shift Lens Overheating (Pitch)) Occurred]. |
| E | 6 | 2 | 1 2 | Shift lens overheating (Yaw). | Refer to [1-7-4. E : 62 : 12 (Shift Lens Overheating (Yaw)) Occurred]. |
| E | 6 | 2 | 2 0 | Abnormality of thermistor. | Refer to [1-7-5. E : 62 : 20 (Abnormality of Thermistor) Occurred]. |

## 1-6. METHOD OF COPING WITH SHIFT LENS ERROR

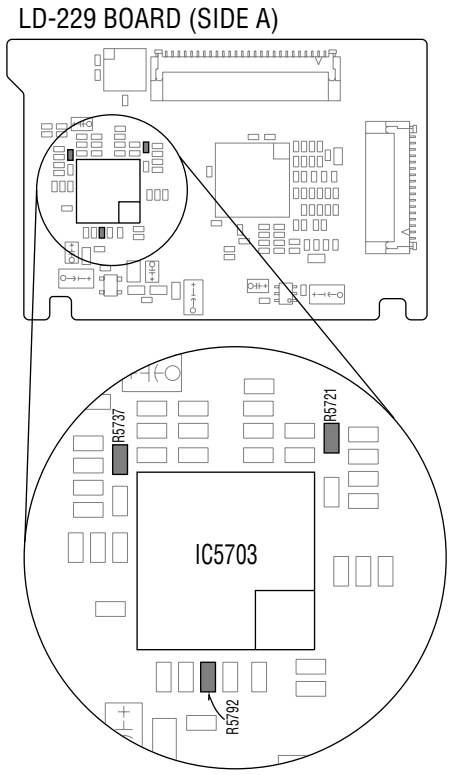



***Fig. 1***
***Measurement points on the LD-229 board***

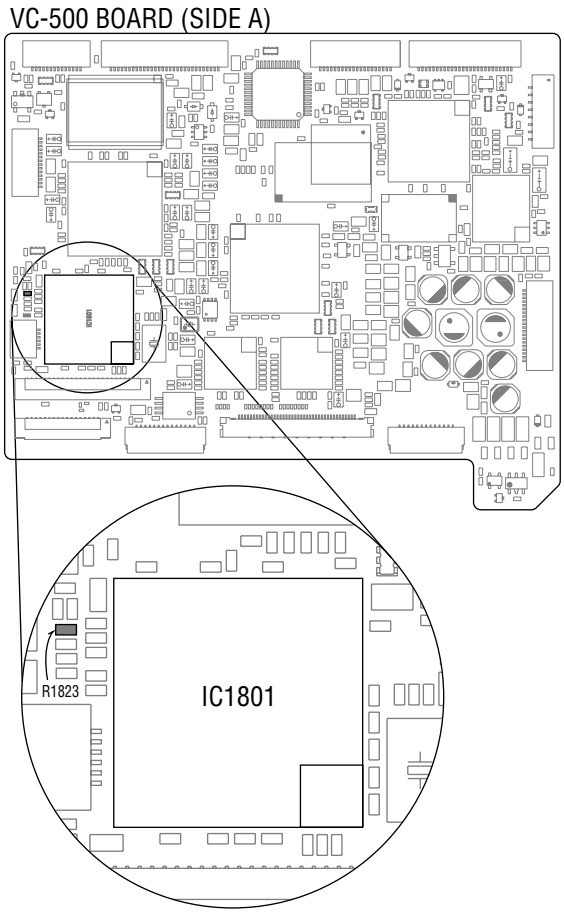
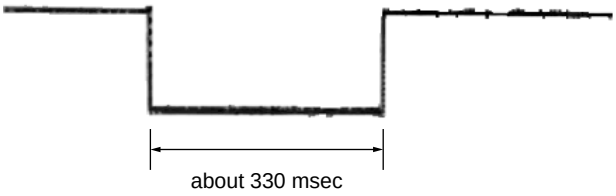



***Fig. 3***
***Measurement points on the VC-500 board***




Note: The length of low section will vary a little depending on the conditions.

***Fig. 2***
***Change in output voltage of R5792 on the LD-229 board***

### 1-6-1. E : 62 : 02 [Abnormality of IC for Steadyshot] Occurred

| Order | Procedure |
|---|---|
| 1 | Turn the power OFF. |
| 2 | While measuring with an oscilloscope the output voltage of R5792 in the periphery of IC5703 on the LD-229 board, turn the power ON to check that the output voltage immediately after the power on change as shown in Fig. 2. |
| 3 | If the output voltage change as shown in Fig. 2, replace the lens block (Note). If it does not change as shown in Fig. 2, inspect the camera control circuit (IC1801 of VC-500 board) periphery. |

Note: When the lens block was replaced, execute a necessary adjustment items referring to “6. ADJUSTMENT”.
After the adjustment, make sure with the STEADYSHOT turned ON that the steadyshot functions appropriately in the handheld operation.

### 1-6-2. E : 62 : 10 [Shift Lens Initializing Failure] Occurred

Connect the adjustment remote commander (RM-95 or NEW LANC JIG) and perform the following process.

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 07 | |
| 3 | F (7F) | 06 | | Read the data value and assume it as $D_{06}$. |
| 4 | F (7F) | 06 | | Change the data and check that it has been changed. If no value changes or if value is 00 or FF, inspect the EEPROM (IC1802 of VC-500 board). If value changes, proceed to the order 5. |
| 5 | F (7F) | 06 | $D_{06}$ | Press PAUSE (Write) button. |
| 6 | F (7F) | 07 | | Read the data value and assume it as $D_{07}$. |
| 7 | F (7F) | 07 | | Change the data and check that it has been changed. If no value changes or if value is 00 or FF, inspect the EEPROM (IC1802 of VC-500 board). If value changes, proceed to the order 8. |
| 8 | F (7F) | 07 | $D_{07}$ | Press PAUSE (Write) button. |
| 9 | 0 | 10 | 00 | |
| 10 | 0 | 01 | 00 | |
| 11 | | | | Perform “Hall Adjustment”. (Note 1)<br>If the lens does not move at all when adjusting it, proceed to the order 12. When the adjustment ends, proceed to the order 16. (Note 1) |
| 12 | 2 | 01 | 2D | Press PAUSE (Write) button. |
| 13 | 2 | 02 | | Read the data value. If value is not 01, inspect the EEPROM (IC1802 of VC-500 board). When value is 01, proceed to the order 14. |
| 14 | 2 | 01 | 00 | Press PAUSE (Write) button. |
| 15 | | | | Turn the power OFF and ON again. |
| 16 | | | | Check that no error occurs. If an error occurs, replace the lens block (Note 2). |

Note 1: Perform adjustment by referring to “Hall Adjustment” in “6. ADJUSTMENT”. After the adjustment, be sure to perform “Angular Velocity Sensor Sensitivity Adjustment”.

Note 2: When the lens block was replaced, execute the necessary adjustment items referring to “6. ADJUSTMENT”. After the adjustment, make sure with the STEADYSHOT turned ON that the steadyshot functions appropriately in the handheld operation.

### 1-6-3. E : 62 : 11 [Shift Lens Overheating (Pitch)] Occurred

Connect the adjustment remote commander (RM-95 or NEW LANC JIG) and perform the following process.

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 06 | |
| 3 | B (6B) | B2 | 01 | Press PAUSE (Write) button. |
| 4 | 0 | 10 | 07 | |
| 5 | D (7D) | 46 | F0 | Press PAUSE (Write) button. |
| 6 | D (7D) | 48 | 01 | Press PAUSE (Write) button. (Note 1) |
| 7 | D (7D) | 48 | 00 | Press PAUSE (Write) button. |
| 8 | D (7D) | 46 | 10 | Press PAUSE (Write) button. |
| 9 | D (7D) | 48 | 01 | Press PAUSE (Write) button. (Note 1) |
| 10 | D (7D) | 48 | 00 | Press PAUSE (Write) button. |
| 11 | 0 | 10 | 06 | |
| 12 | B (6B) | B2 | 00 | Press PAUSE (Write) button. |
| 13 | 0 | 10 | 00 | |
| 14 | 0 | 01 | 00 | |
| 15 | | | | Check if the shift lens moves while setting the order 5 to 10. If the shift lens does not move, replace the lens block (Note 2). When the shift lens moved, proceed to the order 16. |
| 16 | | | | While setting the order 5 to 10, measure with an oscilloscope the output voltage of R5721 in the periphery of IC5703 on the LD-229 board to check the output voltage varies. |
| 17 | | | | If the output voltage does not vary, replace the lens block (Note 2). When the output voltage varied, proceed to the order 18. |
| 18 | | | | Turn the power OFF. |
| 19 | | | | While measuring with an oscilloscope the output voltage of R5792 in the periphery of IC5703 on the LD-229 board, turn the power ON to check that the output voltage immediately after the power on change as shown in Fig. 2. |
| 20 | | | | If the output voltage change as shown in Fig. 2, replace the lens block (Note 2). If it does not change as shown in Fig. 2, inspect the camera control circuit (IC1801 of VC-500 board) periphery. |

Note 1: Finish this operation within 10 seconds. If it is likely to take more than 10 seconds, set page: D (7D), address: 48, data: 00, and then retry.

Note 2: When the lens block was replaced, execute the necessary adjustment items referring to “6. ADJUSTMENT”.
After the adjustment, make sure with the STEADYSHOT turned ON that the steadyshot functions appropriately in the handheld operation.

### 1-6-4. E : 62 : 12 [Shift Lens Overheating (Yaw)] Occurred

Connect the adjustment remote commander (RM-95 or NEW LANC JIG) and perform the following process.

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 06 | |
| 3 | B (6B) | B2 | 01 | Press PAUSE (Write) button. |
| 4 | 0 | 10 | 07 | |
| 5 | D (7D) | 47 | F0 | Press PAUSE (Write) button. |
| 6 | D (7D) | 49 | 01 | Press PAUSE (Write) button. (Note 1) |
| 7 | D (7D) | 49 | 00 | Press PAUSE (Write) button. |
| 8 | D (7D) | 47 | 10 | Press PAUSE (Write) button. |
| 9 | D (7D) | 49 | 01 | Press PAUSE (Write) button. (Note 1) |
| 10 | D (7D) | 49 | 00 | Press PAUSE (Write) button. |
| 11 | 0 | 10 | 06 | |
| 12 | B (6B) | B2 | 00 | Press PAUSE (Write) button. |
| 13 | 0 | 10 | 00 | |
| 14 | 0 | 01 | 00 | |
| 15 | | | | Check if the shift lens moves while setting the order 5 to 10. If the shift lens does not move, replace the lens block (Note 2). When the shift lens moved, proceed to the order 16. |
| 16 | | | | While setting the order 5 to 10, measure with an oscilloscope the output voltage of R5737 in the periphery of IC5703 on the LD-229 board to check the output voltage varies. |
| 17 | | | | If the output voltage does not vary, replace the lens block (Note 2). When the output voltage varied, proceed to the order 18. |
| 18 | | | | Turn the power OFF. |
| 19 | | | | While measuring with an oscilloscope the output voltage of R5792 in the periphery of IC5703 on the LD-229 board, turn the power ON to check that the output voltage immediately after the power on change as shown in Fig. 2. |
| 20 | | | | If the output voltage change as shown in Fig. 2, replace the lens block (Note 2). If it does not change as shown in Fig. 2, inspect the camera control circuit (IC1801 of VC-500 board) periphery. |

Note 1: Finish this operation within 10 seconds. If it is likely to take more than 10 seconds, set page: D (7D), address: 49, data: 00, and then retry.

Note 2: When the lens block was replaced, execute the necessary adjustment items referring to “6. ADJUSTMENT”.
After the adjustment, make sure with the STEADYSHOT turned ON that the steadyshot functions appropriately in the handheld operation.

### 1-6-5. E : 62 : 20 [Abnormality of Thermistor] Occurred

| Order | Procedure |
|---|---|
| 1 | Turn the power ON. |
| 2 | Check that R1823 in the periphery of IC1801 on the VC-500 board is 0 Ω and energizes. If it is not energizes, replace the R1823. When R1823 is 0 Ω and energizes, replace the lens block (Note). |
| 3 | Check that no error occurs, after replacing the lens block and performing the necessary adjustment. If an error occurs, inspect the camera control circuit (IC1801 of VC-500 board) periphery. |

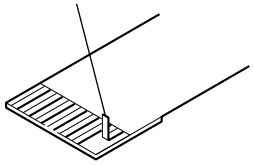
Note: When the lens block was replaced, execute the necessary adjustment items referring to “6. ADJUSTMENT”.
After the adjustment, make sure with the STEADYSHOT turned ON that the steadyshot functions appropriately in the handheld operation.

# 2. DISASSEMBLY

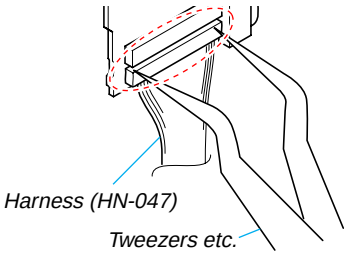
## NOTE FOR REPAIR

- Make sure that the flat cable and flexible board are not cracked of 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.

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

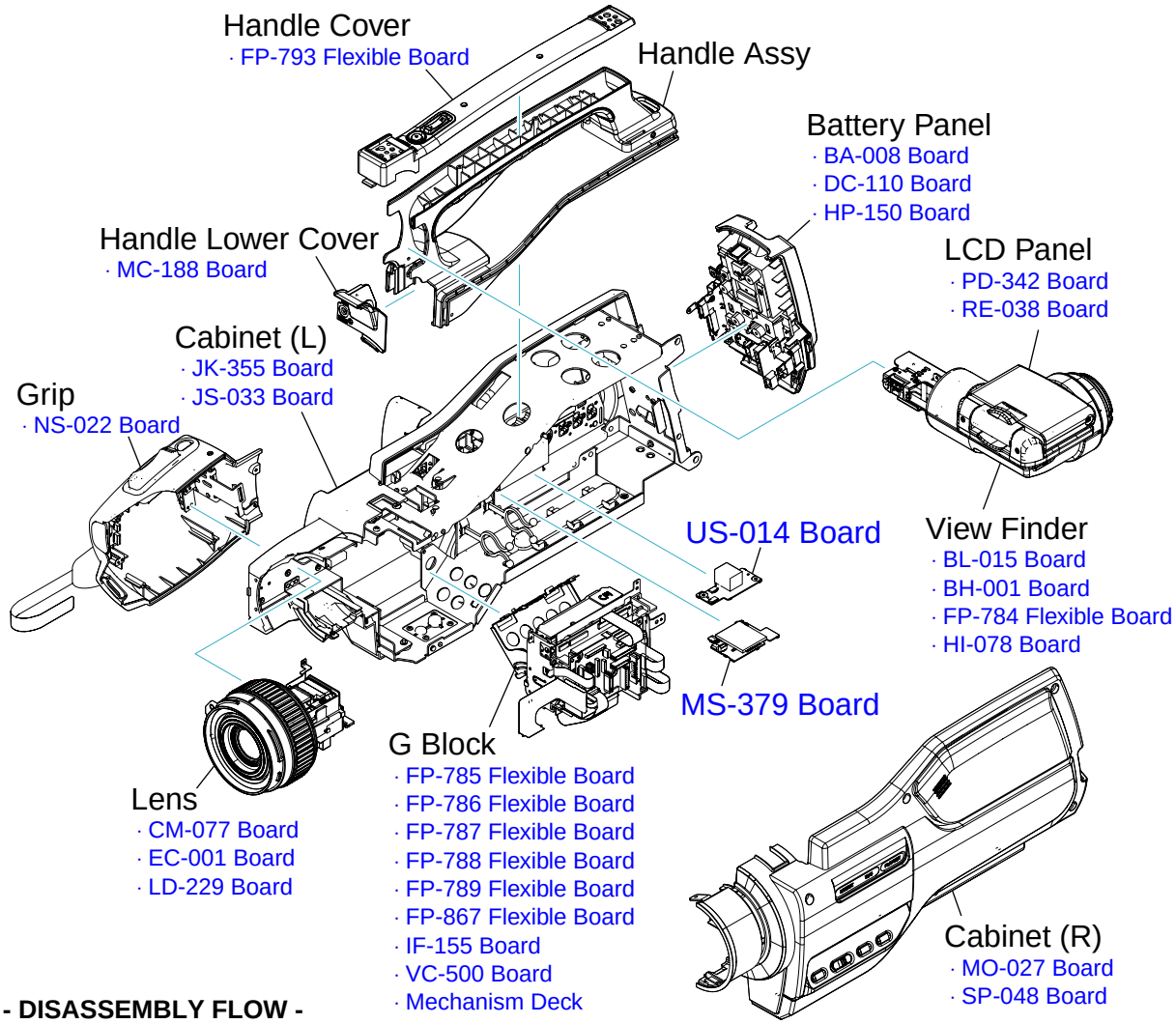


## NOTE FOR DISCONNECTING THE HARNESS (HN-047)




When disconnecting the harness (HN-047), do not pull the harness part but pull off the connector body with tweezers etc.

## 2-1. IDENTIFYING PARTS




**- DISASSEMBLY FLOW -**

2-2-1. OVERALL SECTION-1
- Grip
- Cabinet (R)

2-2-2. OVERALL SECTION-2
- Lens

2-2-3. HANDLE (TALLY) SECTION
- View Finder

2-2-4. VIEW FINDER SECTION
- LCD Panel
- VF Hinge
- EVF Panel

2-2-5. HANDLE (COVER) SECTION
- Handle Cover
- Handle Lower Cover
- Handle Assy

2-2-6. OVERALL SECTION-3
- Battery Panel
- G Block
- Cabinet (L)

2-2-7. G BLOCK SECTION
- IF-155 Board
- VC-500 Board
- Mechanism Deck

## 2-2. DISASSEMBLY

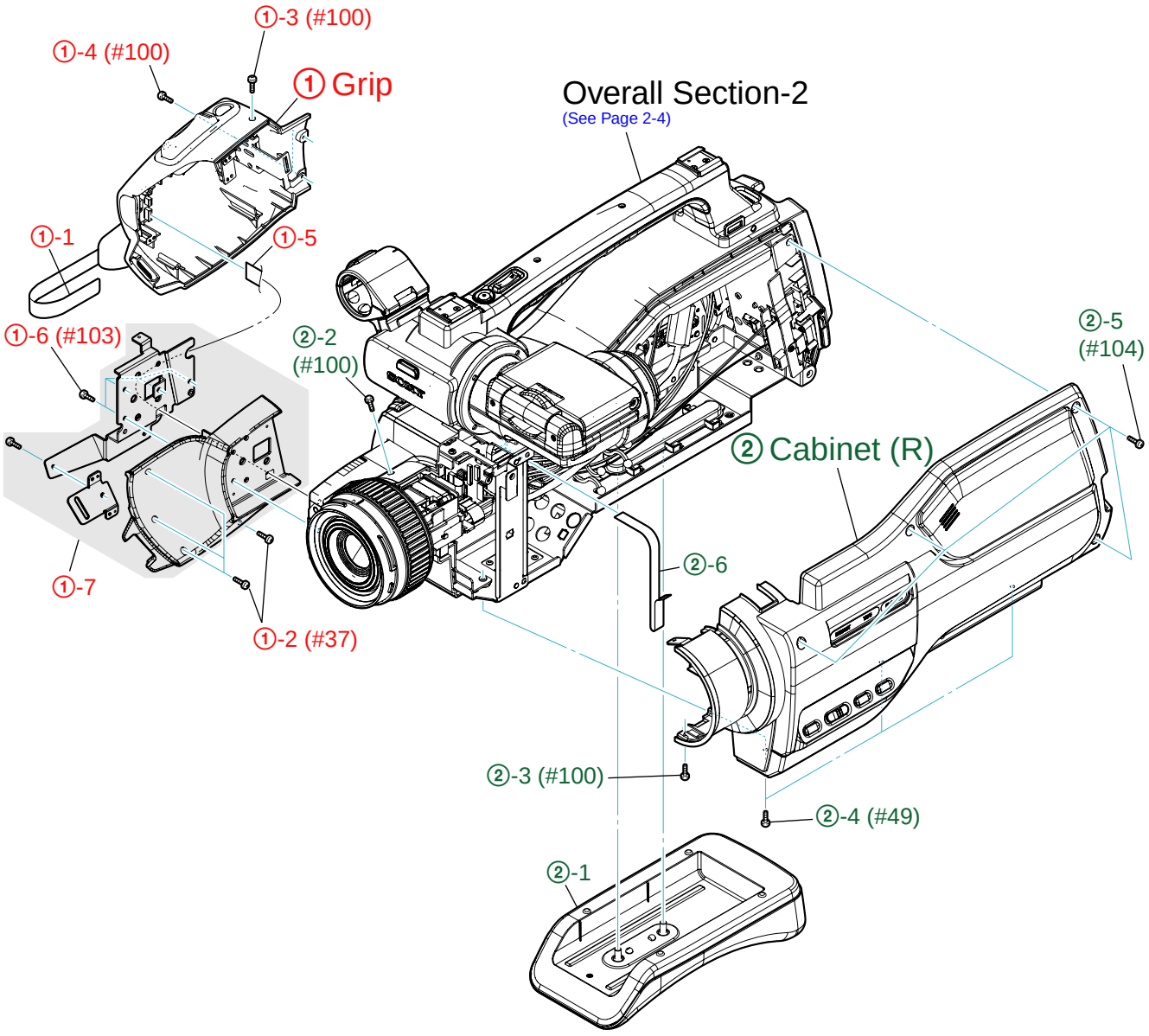
EXPLODED VIEW HARDWARE LIST

### 2-2-1. OVERALL SECTION-1

Follow the disassembly in the numerical order given.

① Grip (①-1 to ①-7)

② Cabinet (R) (②-1 to ②-6)

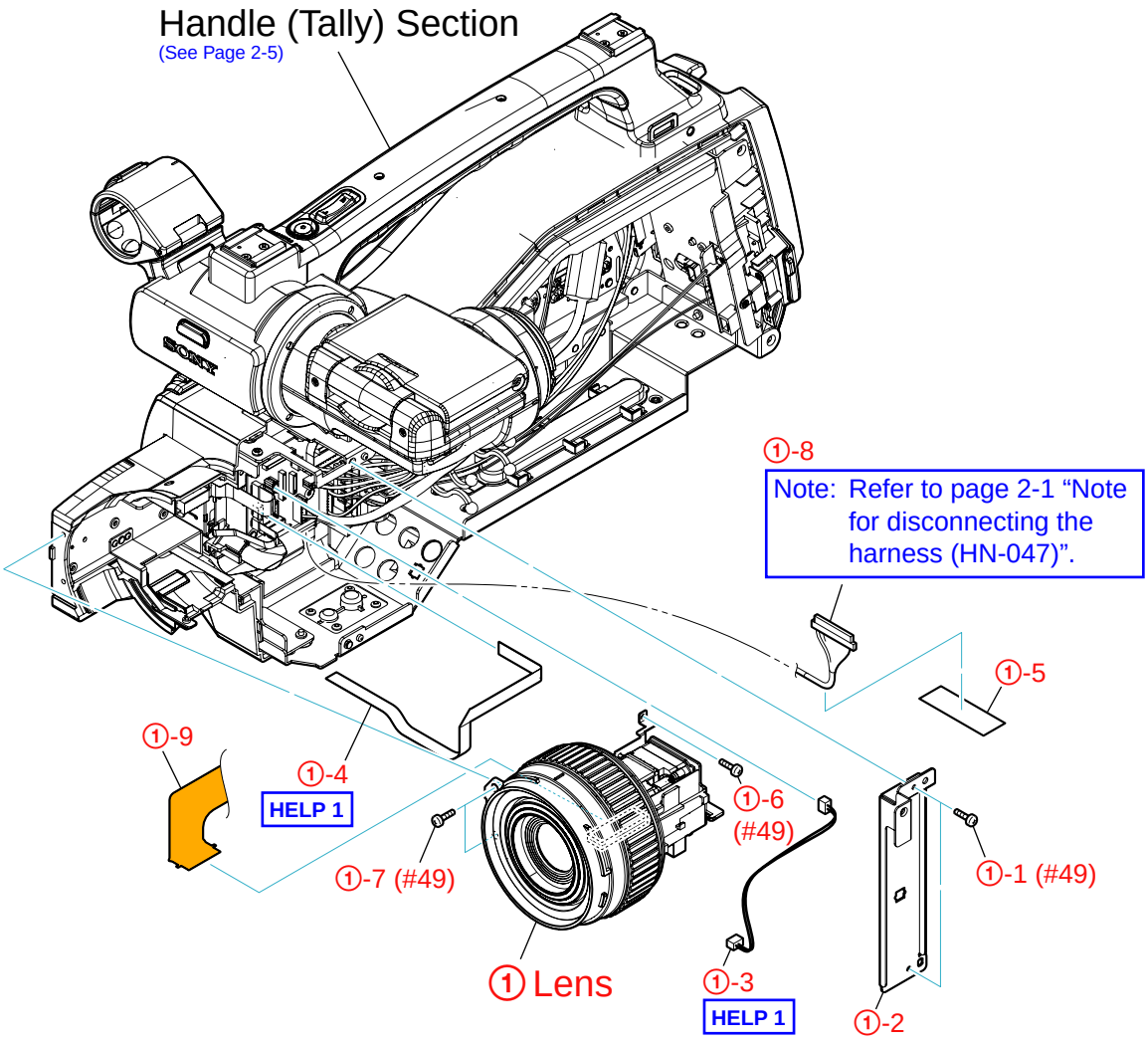


## 2-2-2. OVERALL SECTION-2

Follow the disassembly in the numerical order given.

① Lens (①-1 to ①-9)

EXPLODED VIEW HARDWARE LIST

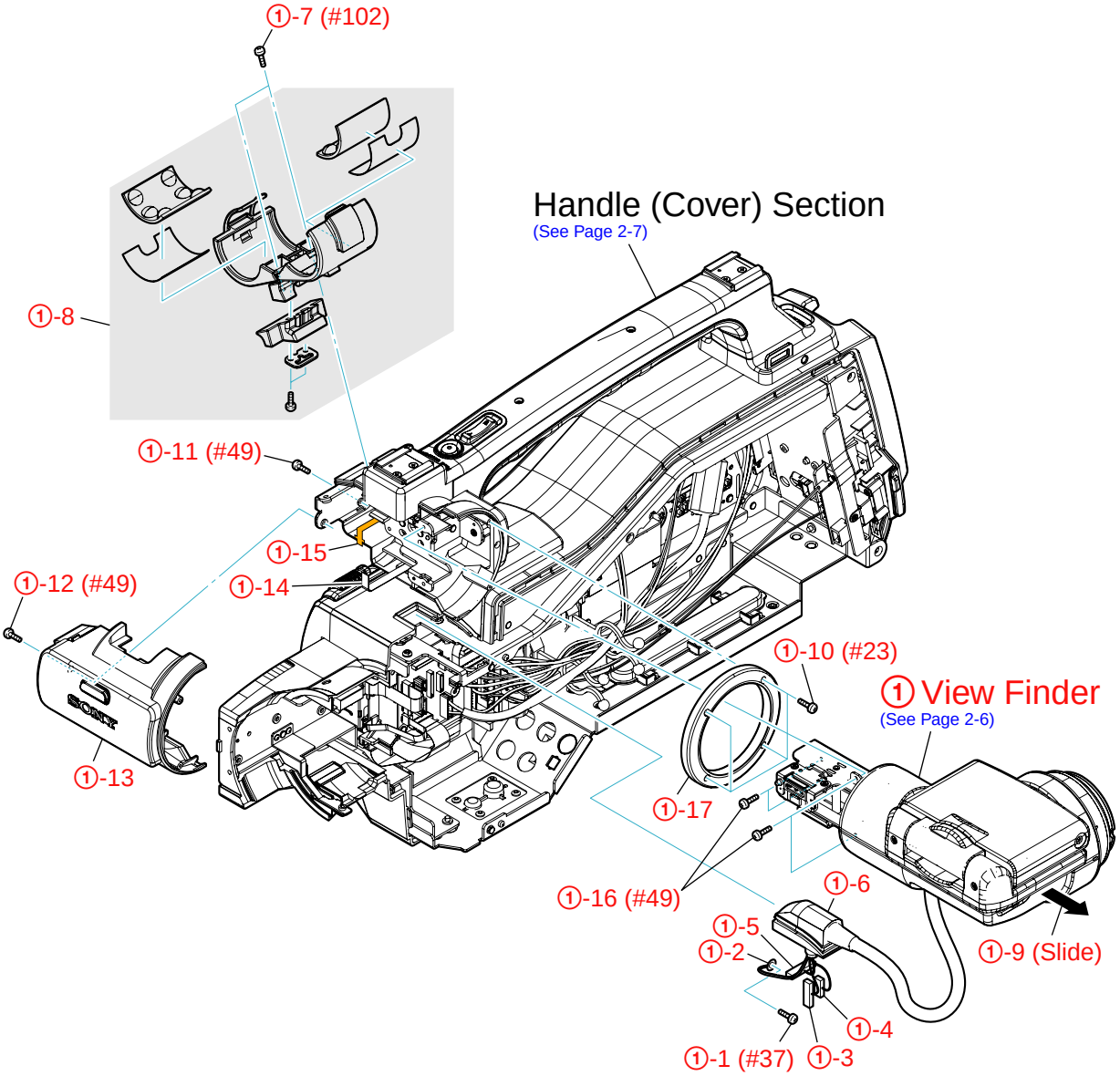


## 2-2-3. HANDLE (TALLY) SECTION

Follow the disassembly in the numerical order given.

① View Finder (①-1 to ①-17)

EXPLODED VIEW HARDWARE LIST

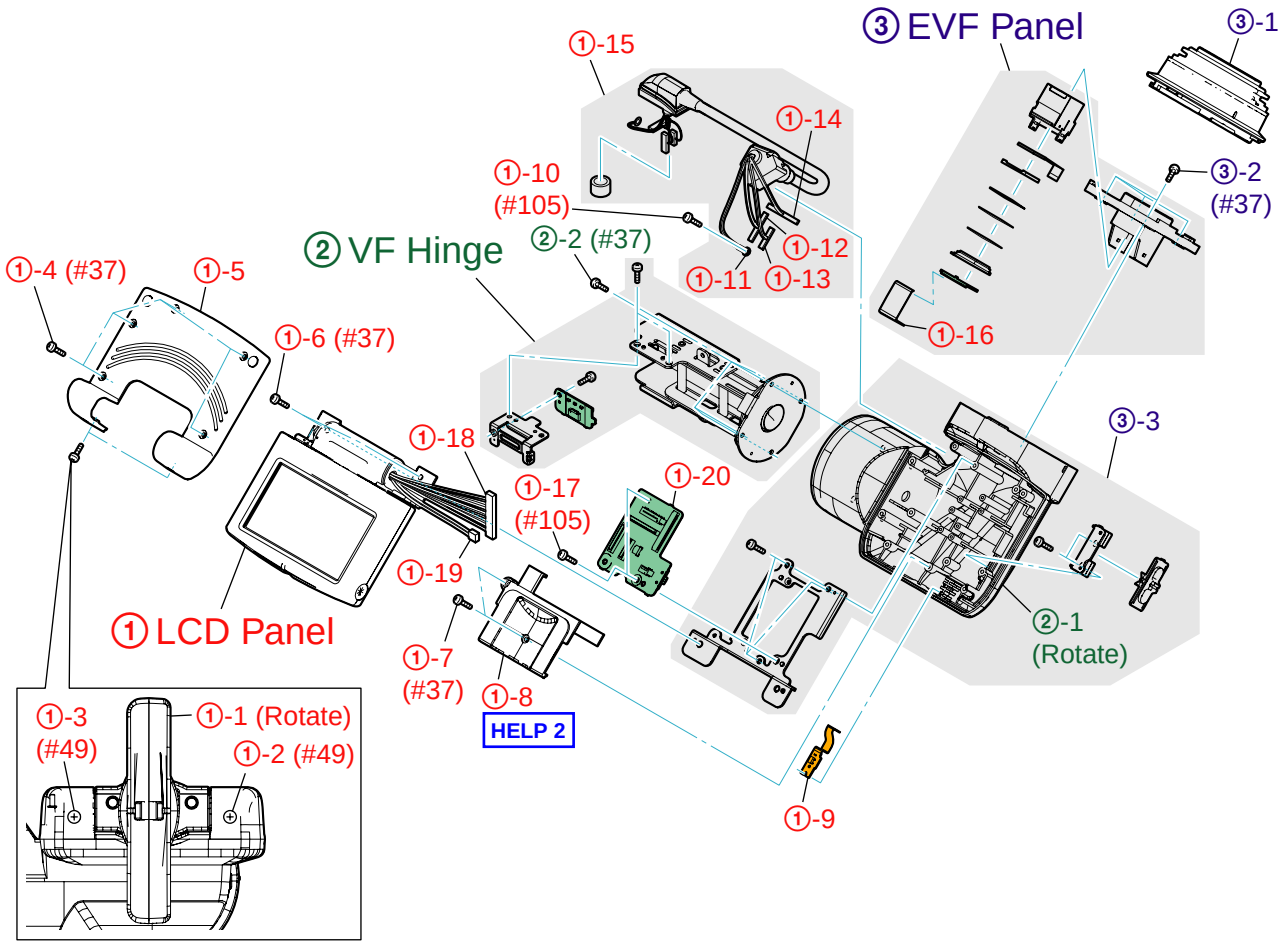


## 2-2-4. VIEW FINDER SECTION

EXPLODED VIEW HARDWARE LIST

Follow the disassembly in the numerical order given.

① LCD Panel (①-1 to ①-20)
② VF Hinge (②-1 to ②-2)
③ EVF Panel (③-1 to ③-3)

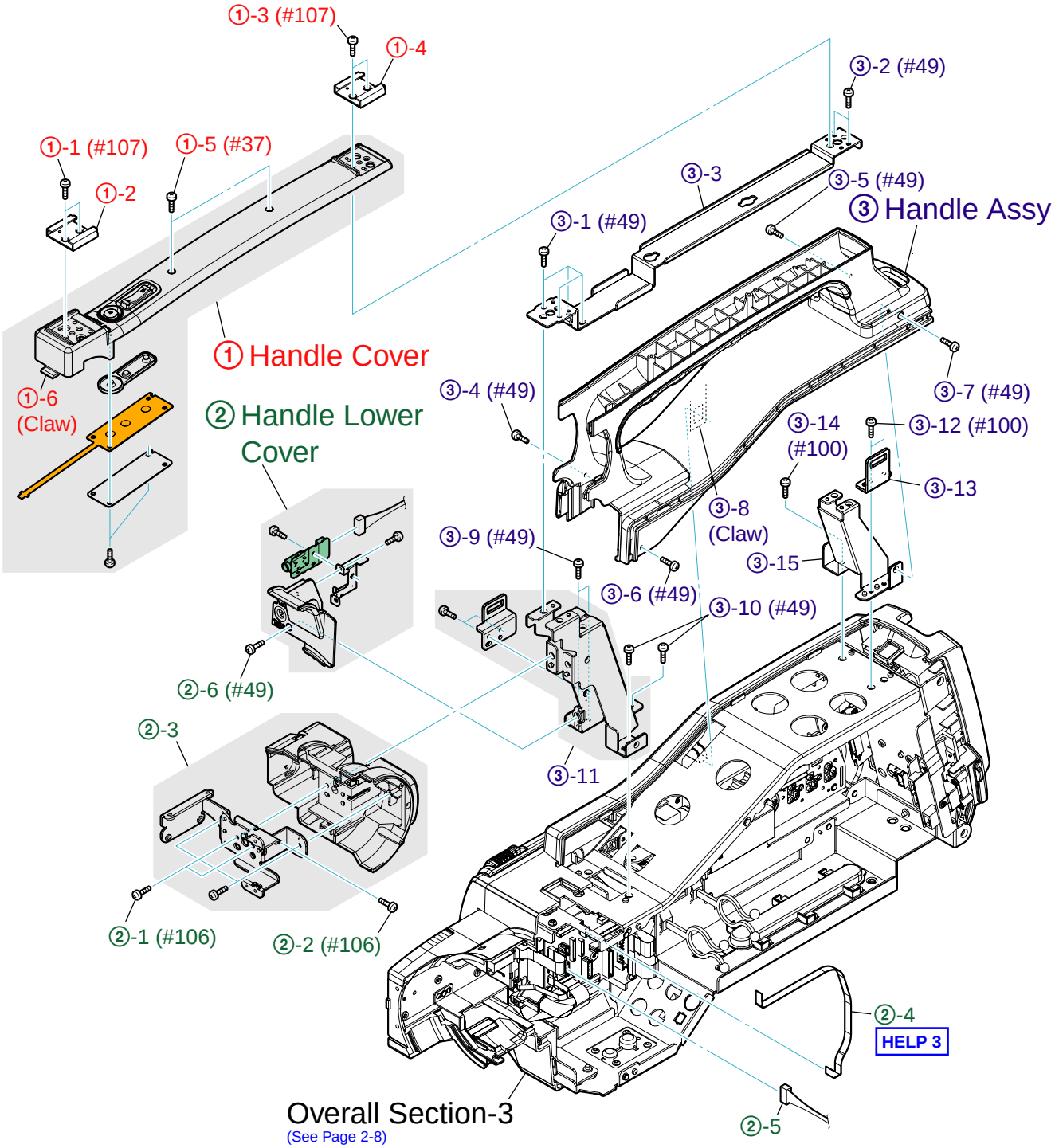


## 2-2-5. HANDLE (COVER) SECTION

EXPLODED VIEW HARDWARE LIST

Follow the disassembly in the numerical order given.

① Handle Cover (①-1 to ①-6)
② Handle Lower Cover (②-1 to ②-6)
③ Handle Assy (③-1 to ③-15)



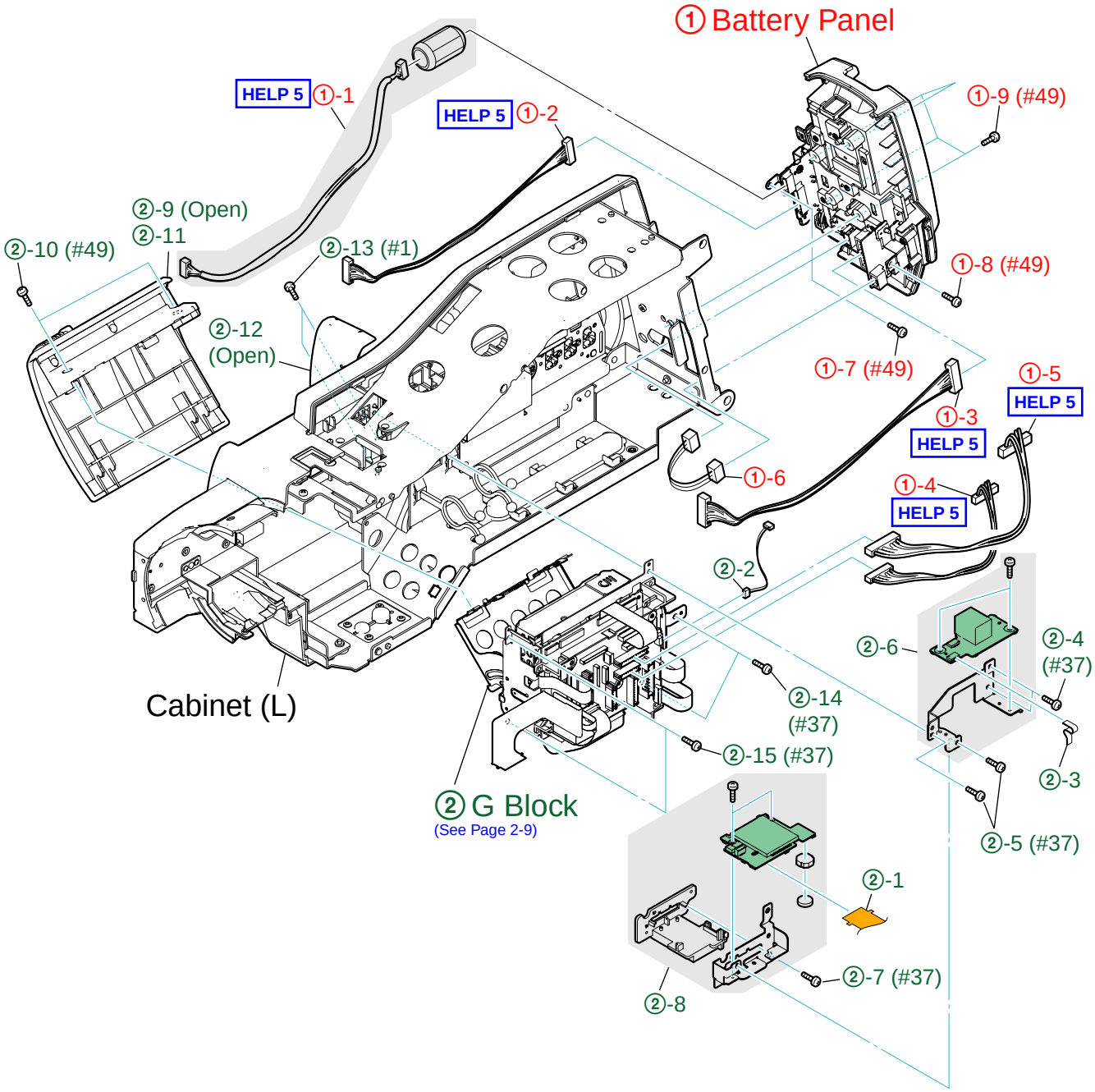
## 2-2-6. OVERALL SECTION-3

Follow the disassembly in the numerical order given.

① Battery Panel (①-1 to ①-9)

② G Block (②-1 to ②-15)

EXPLODED VIEW HARDWARE LIST

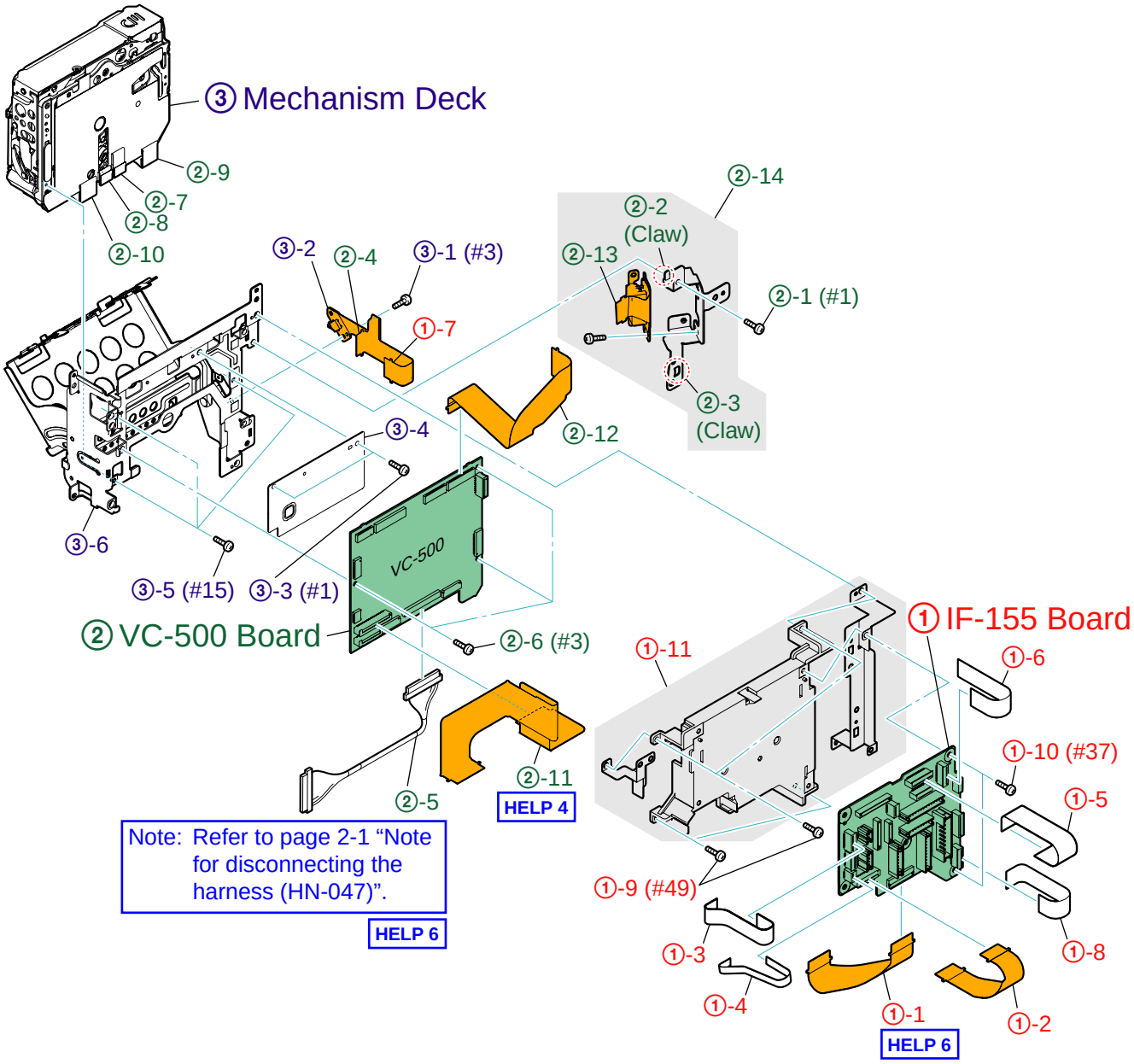


## 2-2-7. G BLOCK SECTION

EXPLODED VIEW HARDWARE LIST

Follow the disassembly in the numerical order given.

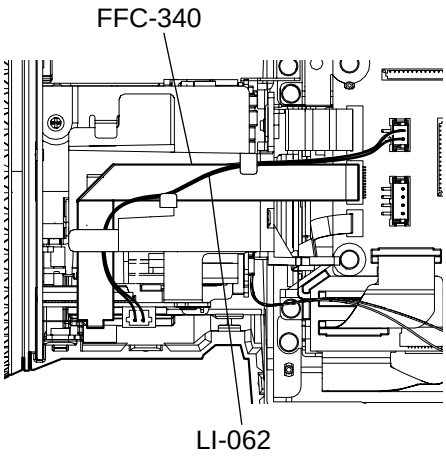
① IF-155 Board (①-1 to ①-11)
② VC-500 Board (②-1 to ②-14)
③ Mechanism Deck (③-1 to ③-6)



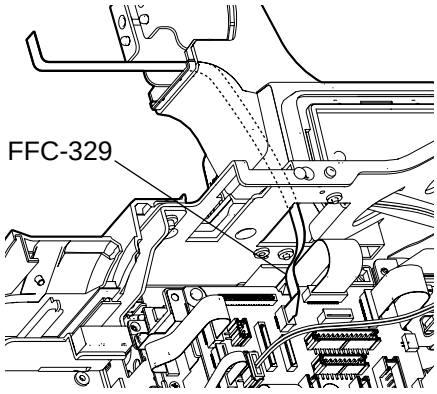
# HELP

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

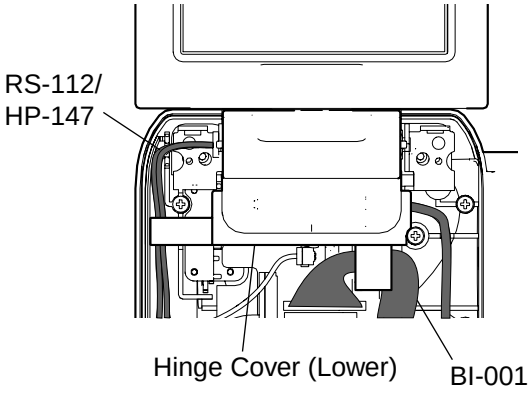
**HELP 1:** LI-062/FFC-340



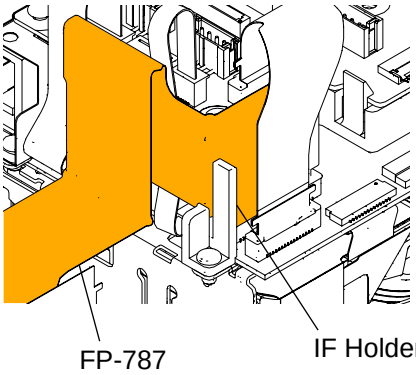

**HELP 3:** FFC-329



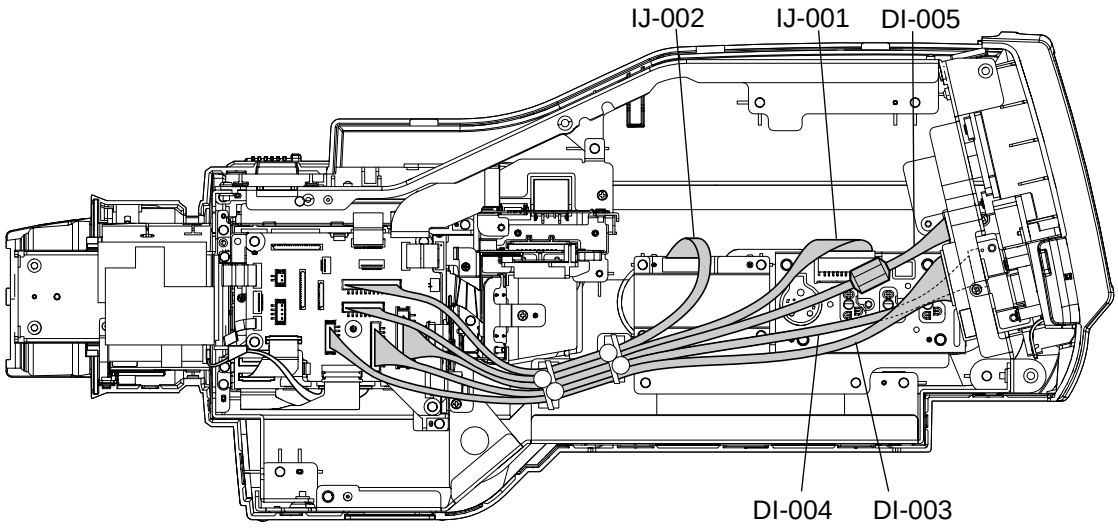

**HELP 2:** Hinge Cover (Lower)



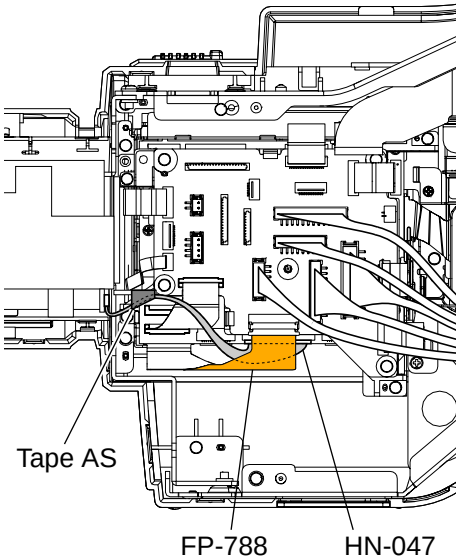

**HELP 4:** FP-787



**HELP 5:** IJ-001/IJ-002/DI-003/DI-004/DI-005




**HELP 6:** HN-047/FP-788



# 3. BLOCK DIAGRAMS

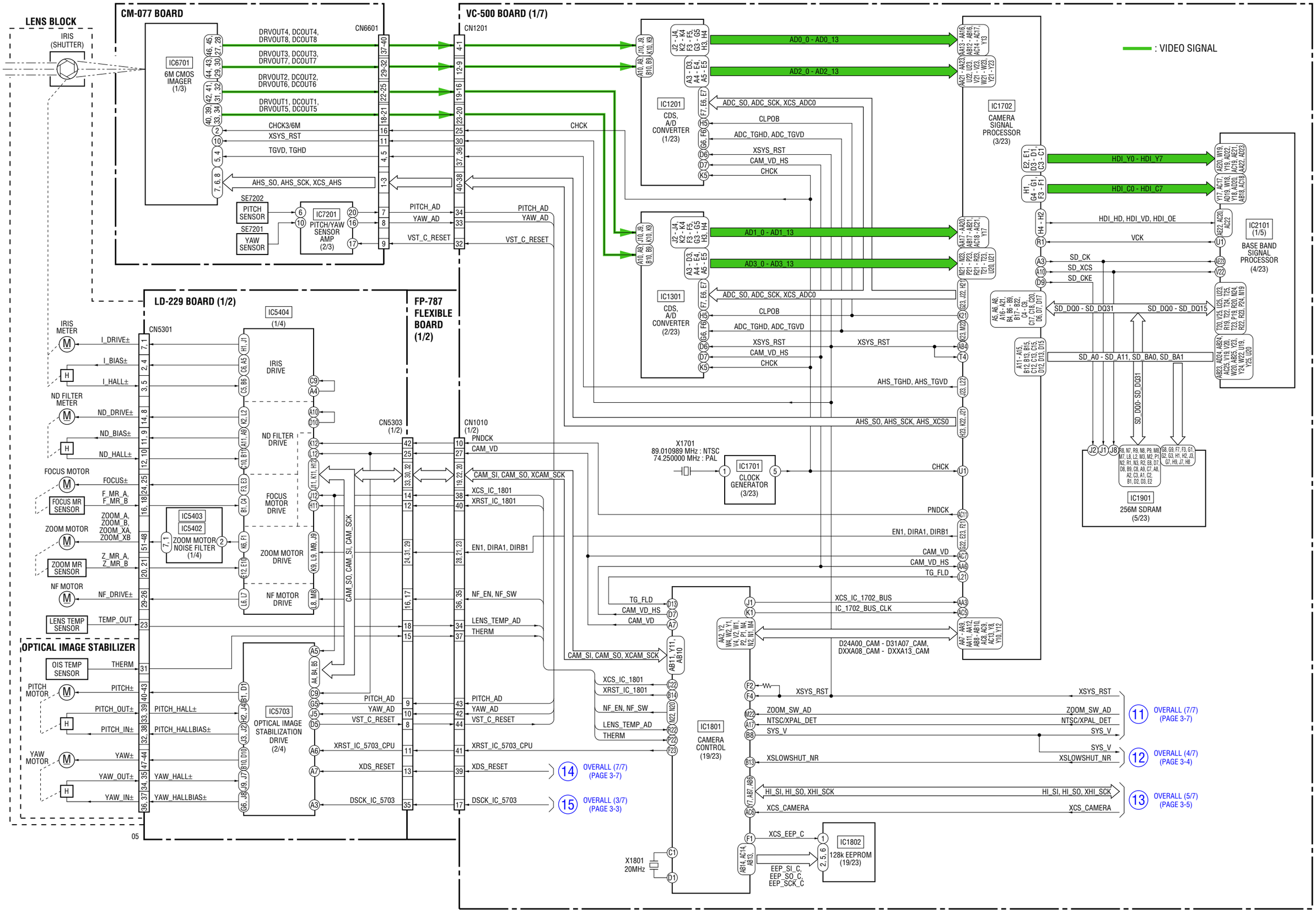
**Link**


- OVERALL BLOCK DIAGRAM (1/7)
- OVERALL BLOCK DIAGRAM (2/7)
- OVERALL BLOCK DIAGRAM (3/7)
- OVERALL BLOCK DIAGRAM (4/7)
- OVERALL BLOCK DIAGRAM (5/7)
- OVERALL BLOCK DIAGRAM (6/7)
- OVERALL BLOCK DIAGRAM (7/7)
- POWER BLOCK DIAGRAM (1/4)
- POWER BLOCK DIAGRAM (2/4)
- POWER BLOCK DIAGRAM (3/4)
- POWER BLOCK DIAGRAM (4/4)

# 3. BLOCK DIAGRAMS

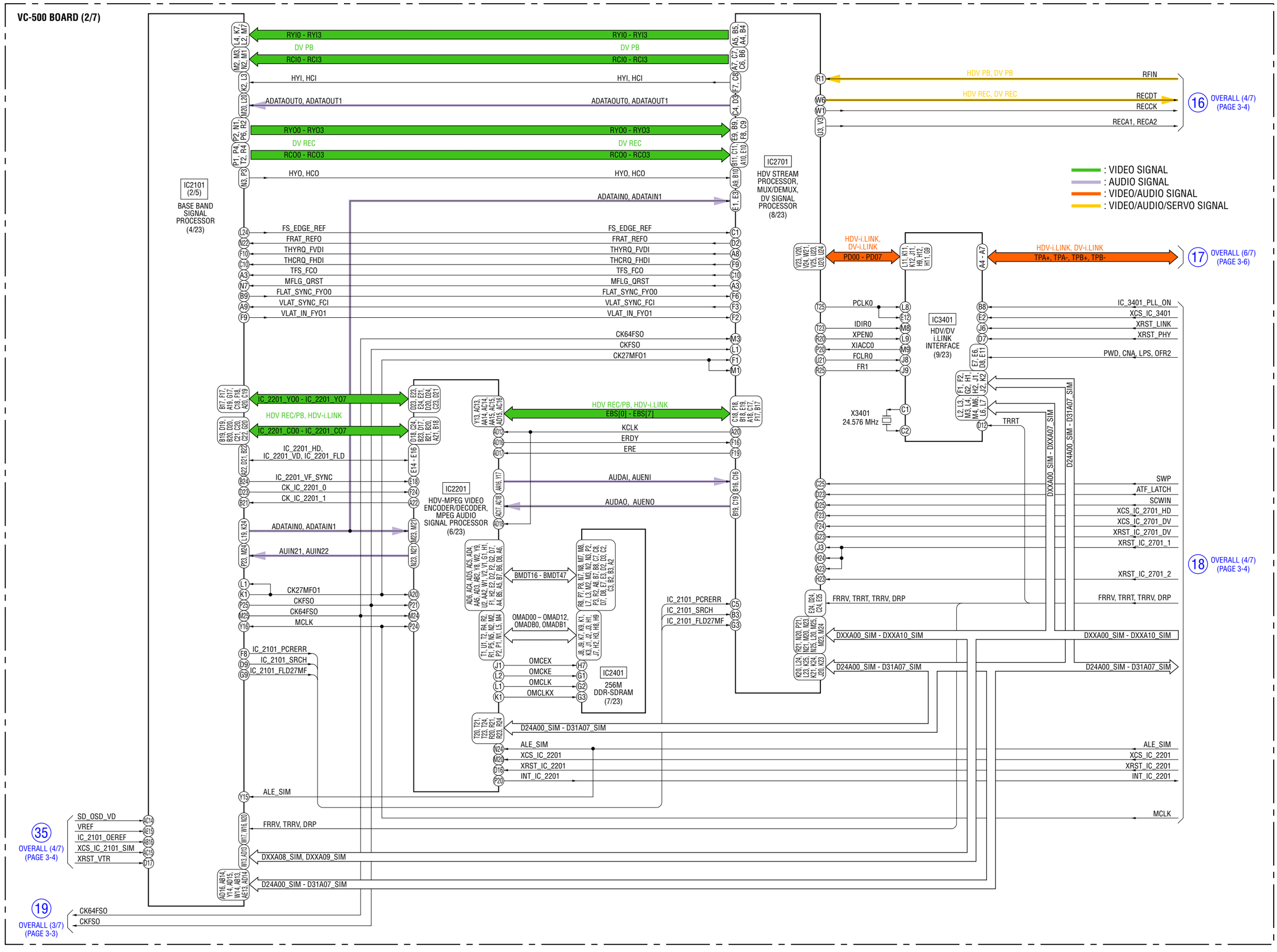
## 3-1. OVERALL BLOCK DIAGRAM (1/7)

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



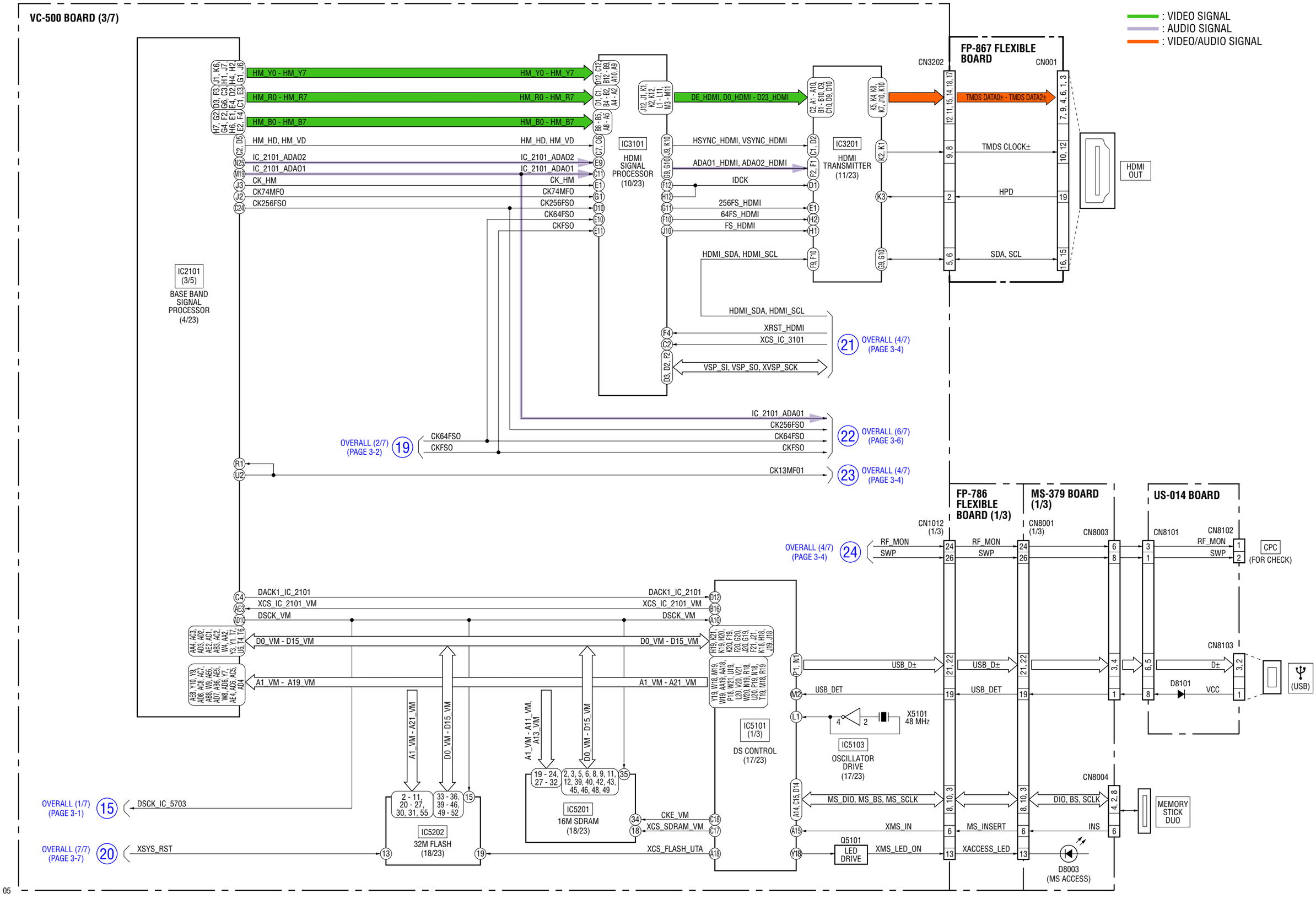
## 3-2. OVERALL BLOCK DIAGRAM (2/7)

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



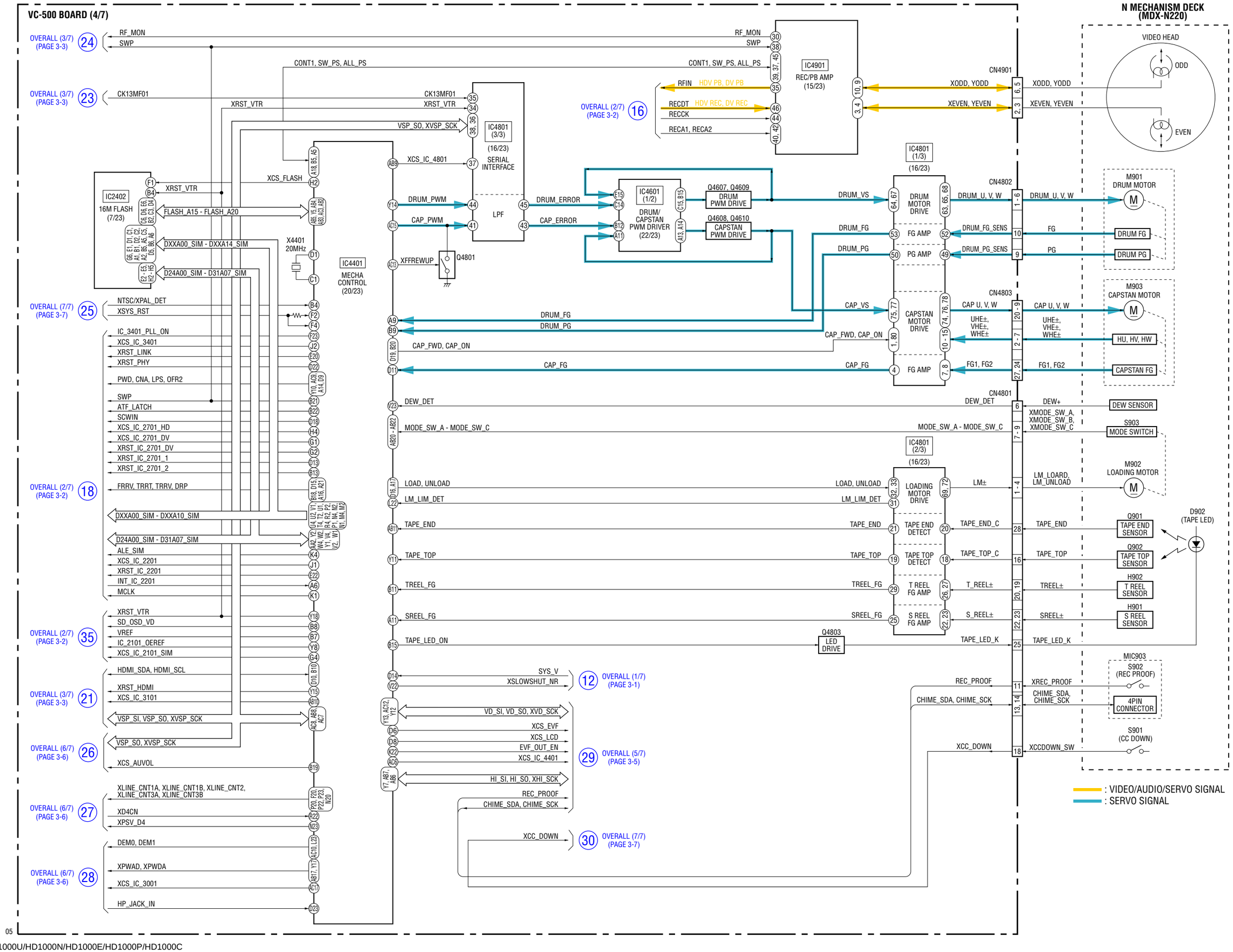
## 3-3. OVERALL BLOCK DIAGRAM (3/7)

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



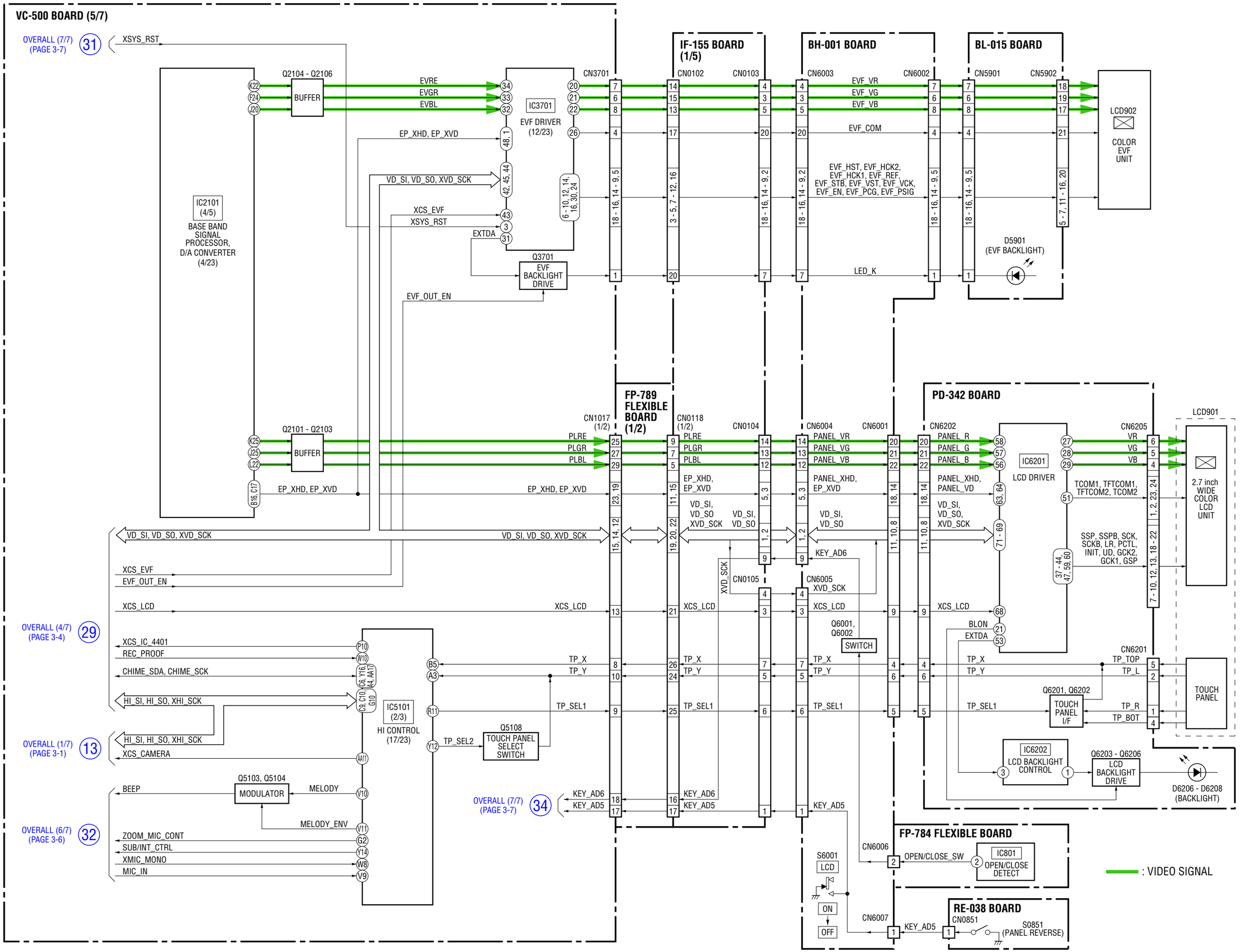
# 3-4. OVERALL BLOCK DIAGRAM (4/7)

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



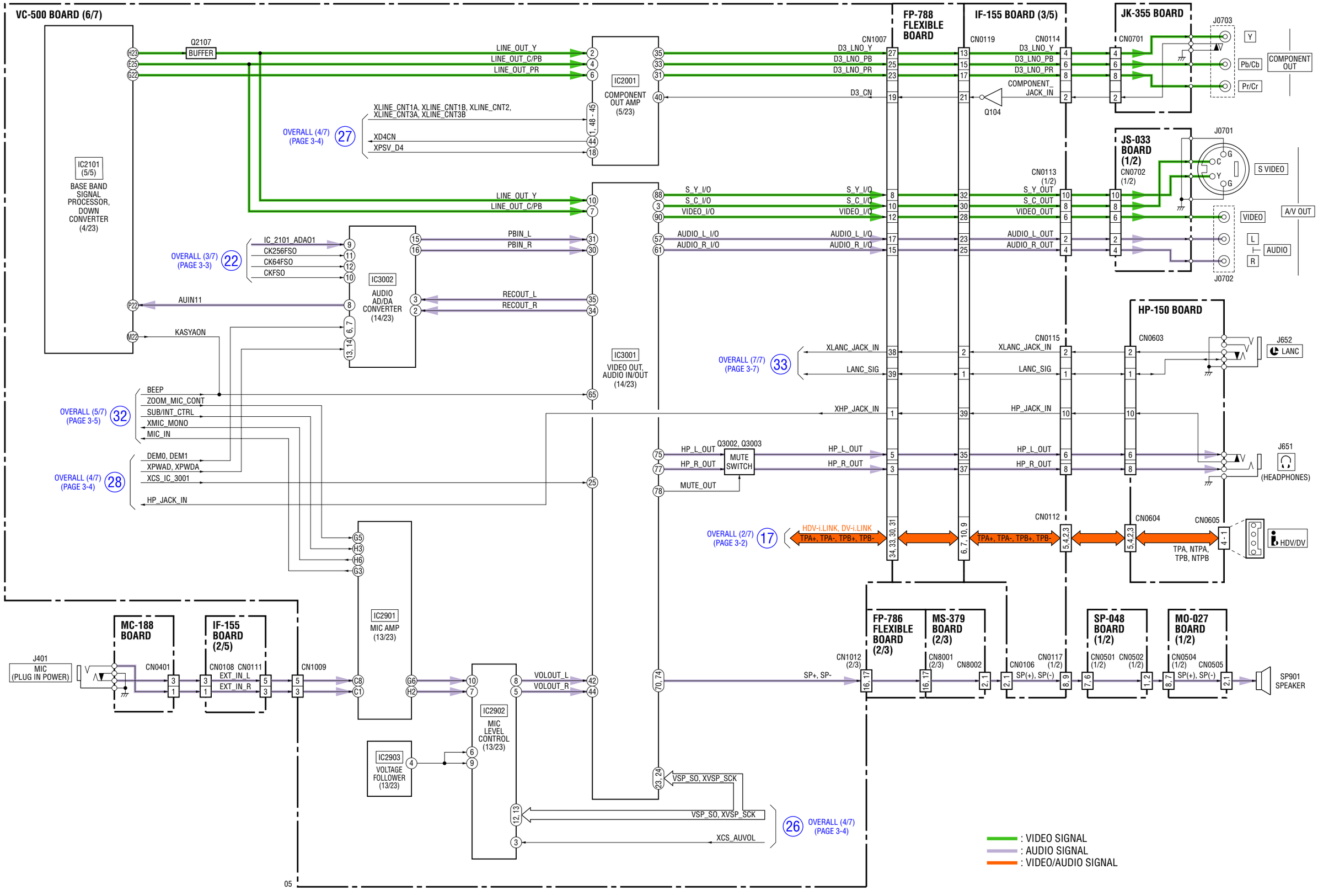
## 3-5. OVERALL BLOCK DIAGRAM (5/7)

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



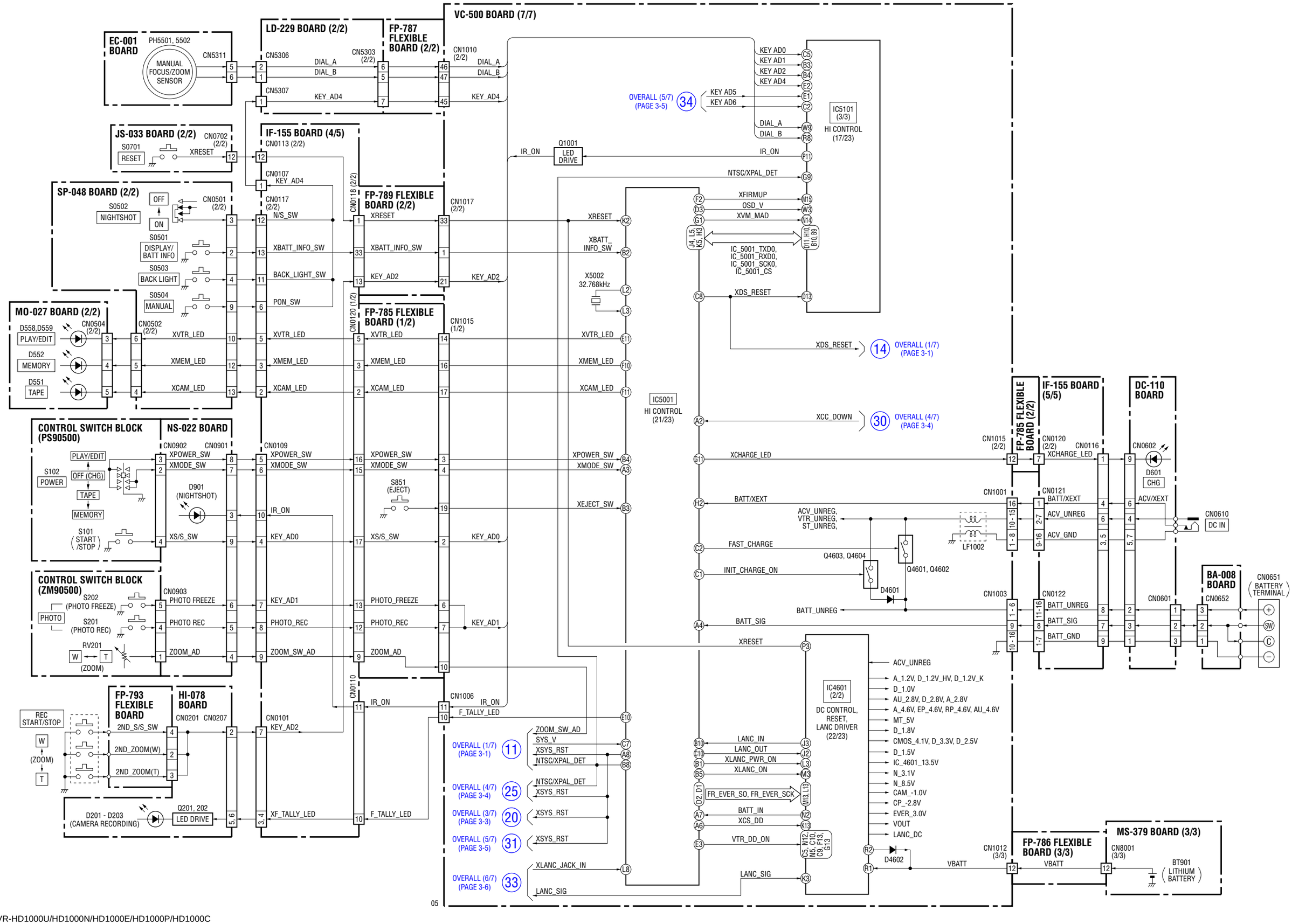
## 3-6. OVERALL BLOCK DIAGRAM (6/7)

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



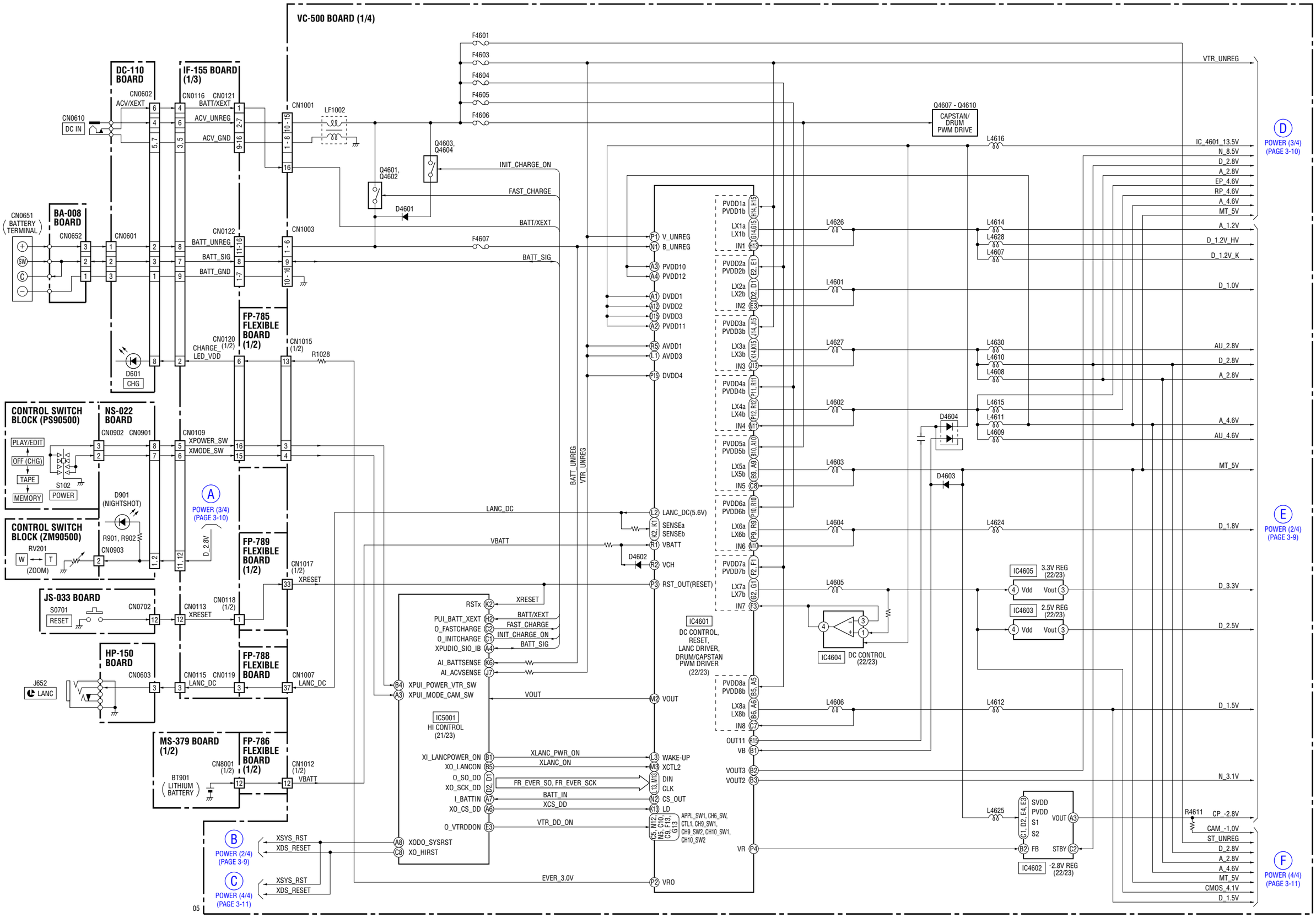
## 3-7. OVERALL BLOCK DIAGRAM (7/7)

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



## 3-8. POWER BLOCK DIAGRAM (1/4)

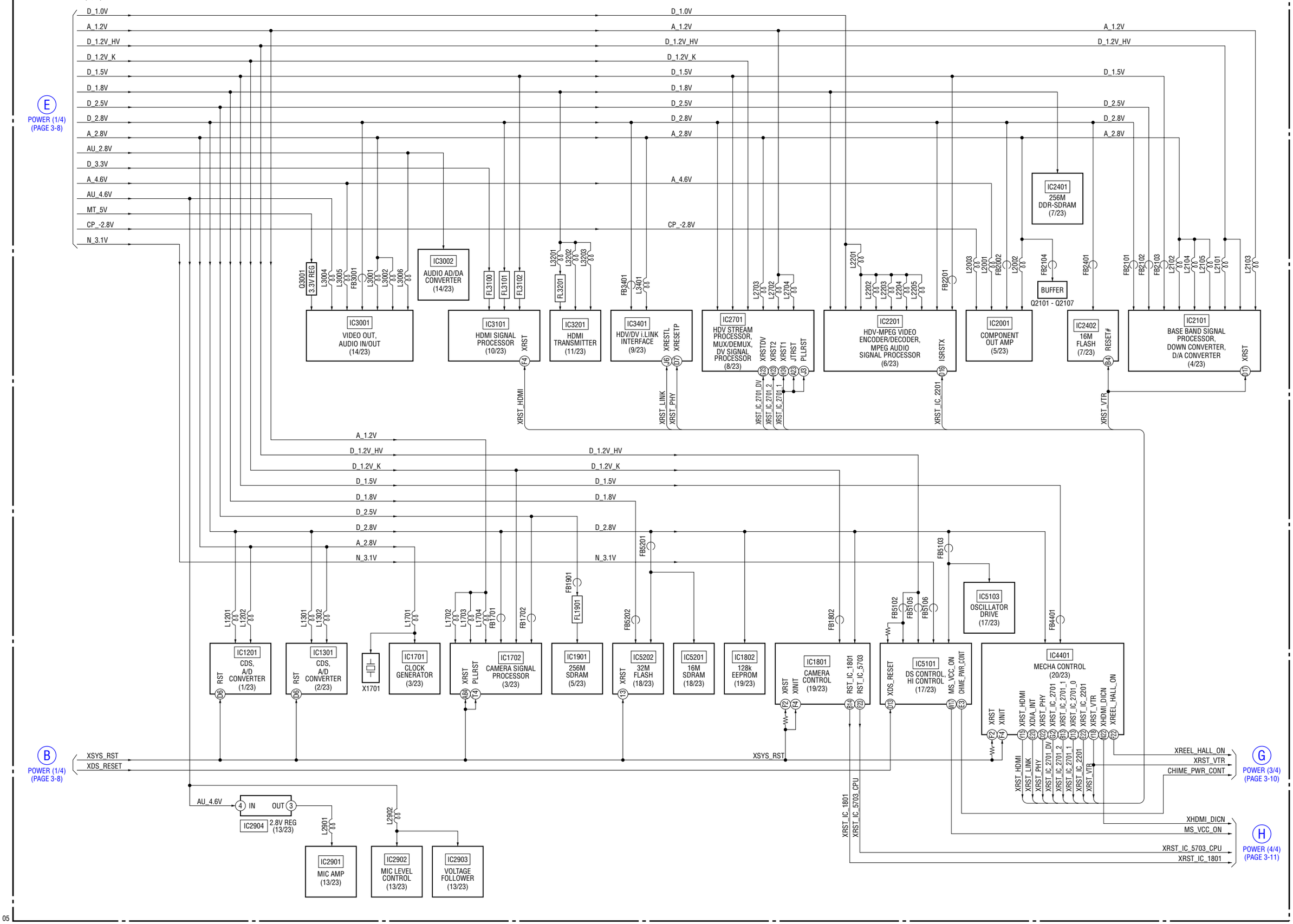
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



## 3-9. POWER BLOCK DIAGRAM (2/4)

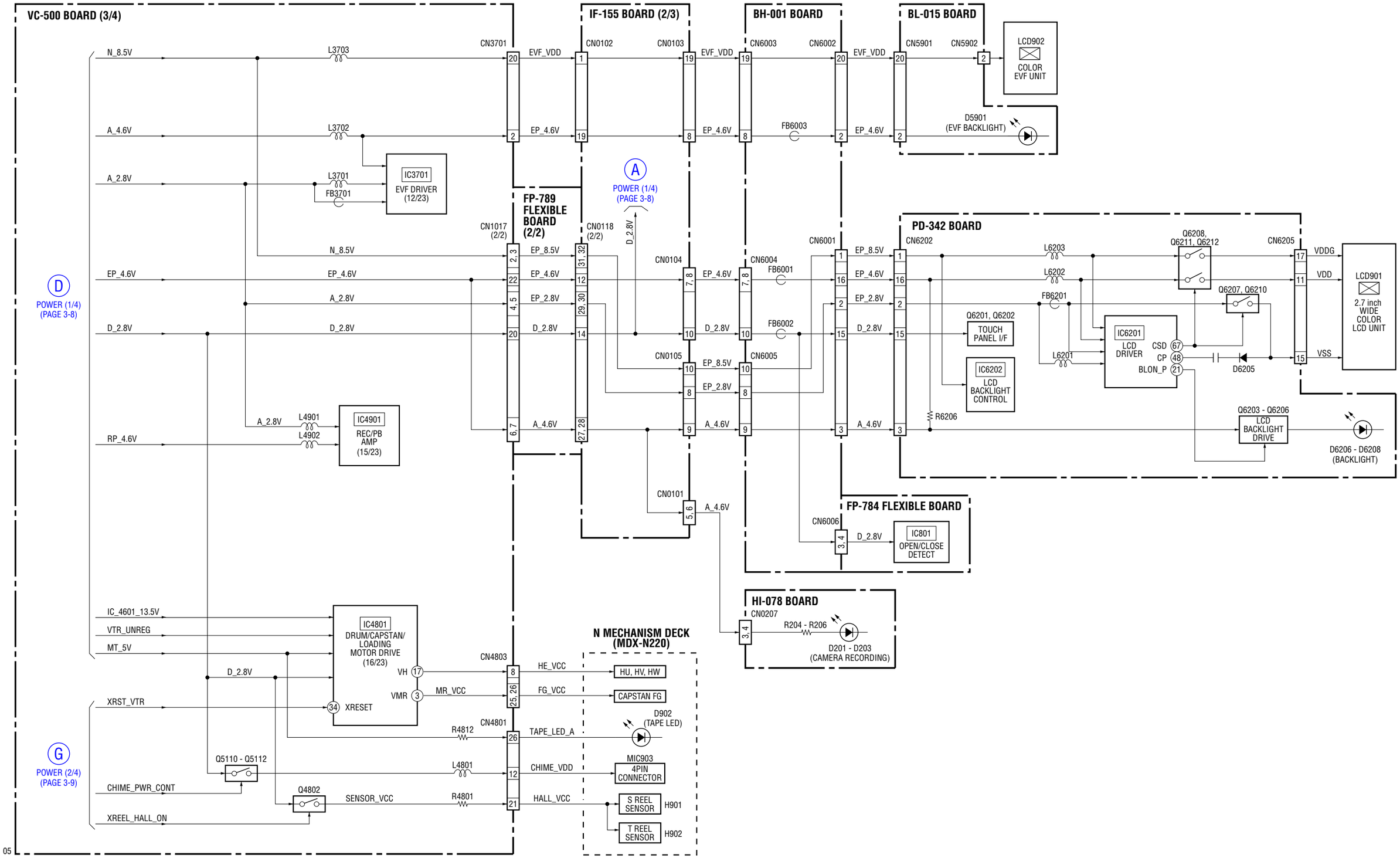
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

**VC-500 BOARD (2/4)**



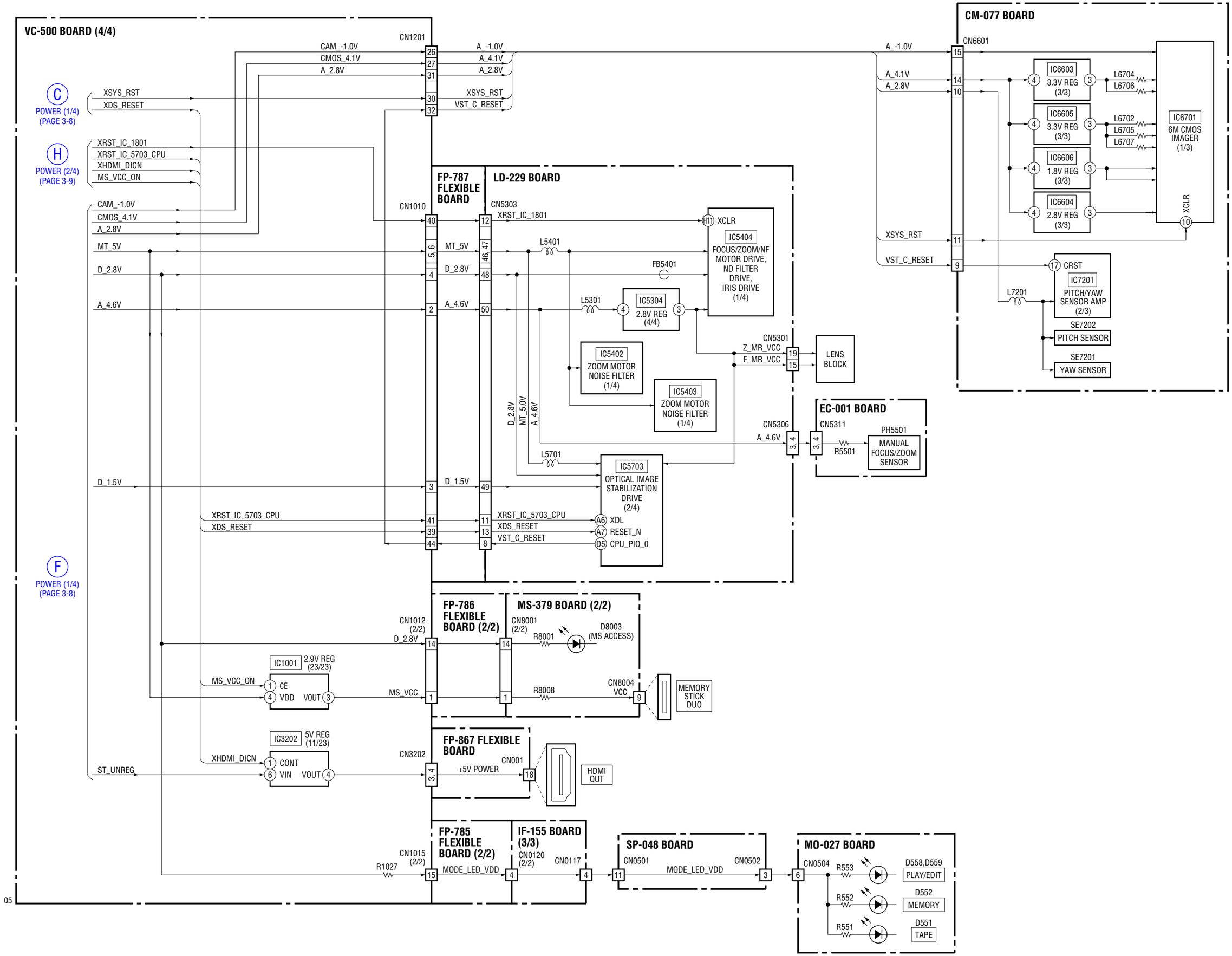
## 3-10. POWER BLOCK DIAGRAM (3/4)

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



## 3-11. POWER BLOCK DIAGRAM (4/4)

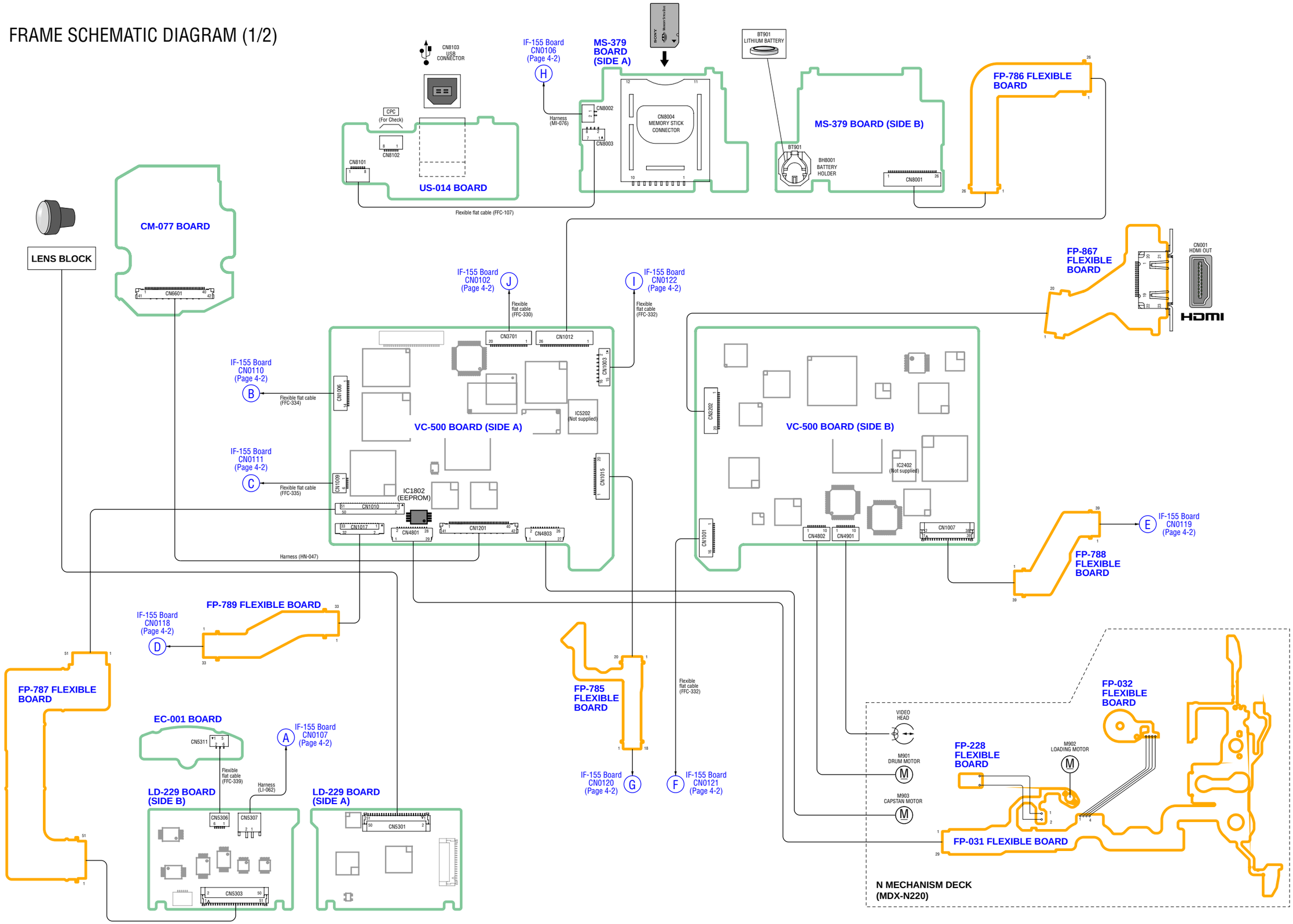
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



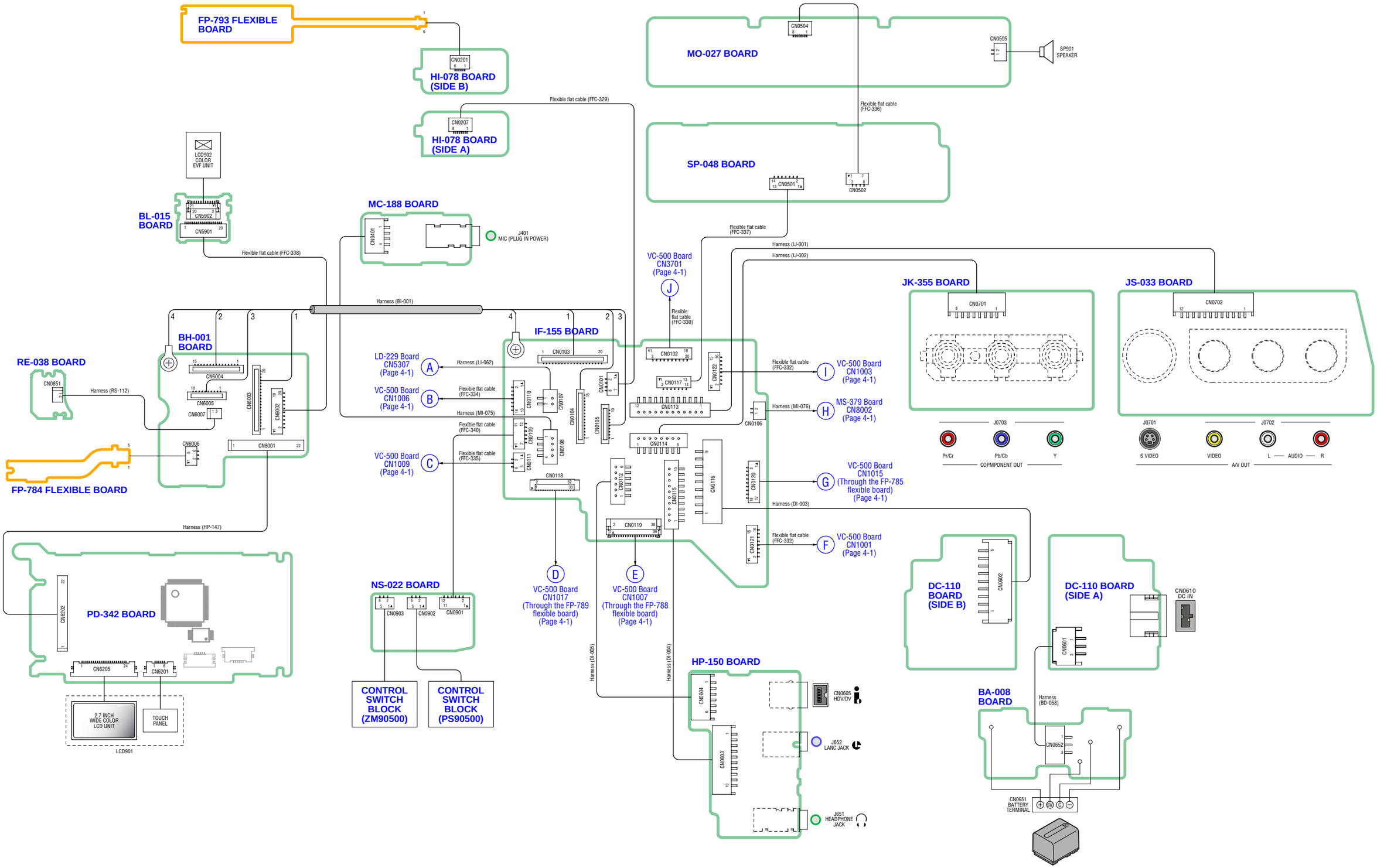
# 4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

## 4-1. FRAME SCHEMATIC DIAGRAMS

FRAME SCHEMATIC DIAGRAM (1/2)



# FRAME SCHEMATIC DIAGRAM (2/2)



# 4-2. SCHEMATIC DIAGRAMS (1/2)

**Link** TO (2/2)

| | |
|---|---|
| CM-077 BOARD (1/3) (CMOS IMAGER) | VC-500 BOARD (14/23) (VIDEO OUT, AUDIO IN/OUT) |
| CM-077 BOARD (2/3) (PITCH/YAW SENSOR) | VC-500 BOARD (15/23) (REC/PB AMP) |
| CM-077 BOARD (3/3) (CONNECTOR, REG) | VC-500 BOARD (16/23) (SERVO) |
| VC-500 BOARD (1/23) (A/D CONVERTER 1) | VC-500 BOARD (17/23) (DS CONTROL, HI CONTROL) |
| VC-500 BOARD (2/23) (A/D CONVERTER 2) | VC-500 BOARD (18/23) (SDRAM, FLASH) |
| VC-500 BOARD (3/23) (CAMERA SIGNAL PROCESS) | VC-500 BOARD (19/23) (CAMERA CONTROL) |
| VC-500 BOARD (4/23) (BASE BAND SIGNAL PROCESS) | VC-500 BOARD (20/23) (MECHA CONTROL) |
| VC-500 BOARD (5/23) (SDRAM 1) | VC-500 BOARD (21/23) (HI CONTROL) |
| VC-500 BOARD (6/23) (HDV-MPEG VIDEO ENCODE/DECODE) | VC-500 BOARD (22/23) (DC/DC CONVERTER) |
| VC-500 BOARD (7/23) (SDRAM 2) | VC-500 BOARD (23/23) (CONNECTOR) |
| VC-500 BOARD (8/23) (HDV STREAM PROCESS) | LD-229 BOARD (1/4) (LENS DRIVE) |
| VC-500 BOARD (9/23) (HDV/DV i.LINK INTERFACE) | LD-229 BOARD (2/4) (OIS DRIVE) |
| VC-500 BOARD (10/23) (HDMI SIGNAL PROCESSOR) | LD-229 BOARD (3/4) (Not Used) |
| VC-500 BOARD (11/23) (HDMI TRANSMITTER) | LD-229 BOARD (4/4) (REGULATOR, CONNECTOR) |
| VC-500 BOARD (12/23) (EVF DRIVE) | IF-155 BOARD (CONNECTOR) |
| VC-500 BOARD (13/23) (MIC AMP) | BH-001 BOARD (LCD SWITCH, CONNECTOR) |

COMMON NOTE FOR SCHEMATIC DIAGRAMS

# 4-2. SCHEMATIC DIAGRAMS (2/2)

TO (1/2)

- PD-342 BOARD (LCD DRIVE)
- US-014 BOARD (USB CONNECTOR)
- BL-015 BOARD (EVF BACKLIGHT)
- RE-038 BOARD (PANEL REVERSE)
- JK-355 BOARD (COMPONENT CONNECTOR)
- JS-033 BOARD (A/V CONNECTOR)
- HP-150 BOARD (LANC, HP, i.LINK CONNECTOR)
- MC-188 BOARD (MIC JACK)
- MS-379 BOARD (MS CONNECTOR)
- SP-048 BOARD (CONTROL SWITCH)
- MO-027 BOARD (CONTROL SWITCH)
- HI-078 BOARD (TALLY LED)
- EC-001 BOARD (MANUAL FOCUS/ZOOM SENSOR)
- NS-022 BOARD (CONNECTOR)
- BA-008 BOARD (BATTERY IN)
- DC-110 BOARD (DC IN, CHARGE LED)
- FP-867 FLEXIBLE BOARD (HDMI CONNECTOR)
- FP-784 FLEXIBLE BOARD (OPEN/CLOSE DETECT)
- FP-785 FLEXIBLE BOARD (EJECT SWITCH, IF-VC CONNECTION)
- FP-786 FLEXIBLE BOARD (MS-VC CONNECTION)
- FP-787 FLEXIBLE BOARD (LD-VC CONNECTION)
- FP-788 FLEXIBLE BOARD (VC-IF CONNECTION)
- FP-789 FLEXIBLE BOARD (VC-IF CONNECTION)
- FP-793 FLEXIBLE BOARD (REC, ZOOM SWITCH)
- CONTROL SWITCH BLOCK (ZM90500)
- CONTROL SWITCH BLOCK (PS90500)
- FP-228, FP-032, FP-031 FLEXIBLE BOARD

- COMMON NOTE FOR SCHEMATIC DIAGRAMS

# 4-2. SCHEMATIC DIAGRAMS

**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 : µµF. 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. kΩ=1000 Ω, MΩ=1000 kΩ.
- 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 22U TA A — Kinds of capacitor / Case size
  L452 10UH 2520 — 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 → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B– Line
- : IN/OUT direction of (+,–) B LINE.
- : adjustment for repair.

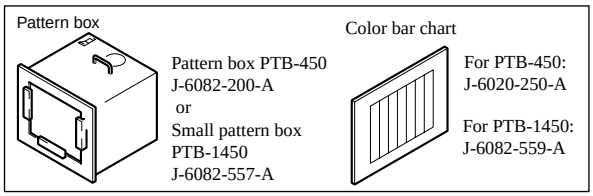
**(Measuring conditions voltage and waveform)**

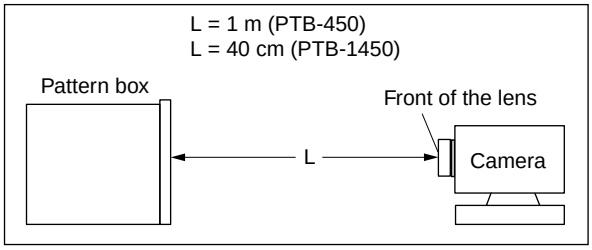
- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms.
  (VOM of DC 10 MΩ input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

**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.

1. Connection




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

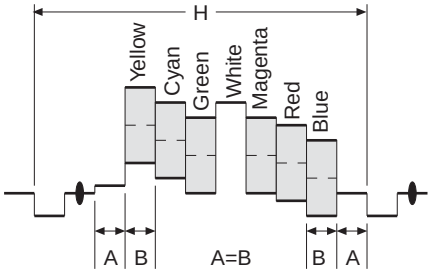



Fig. a (Video output terminal output waveform)

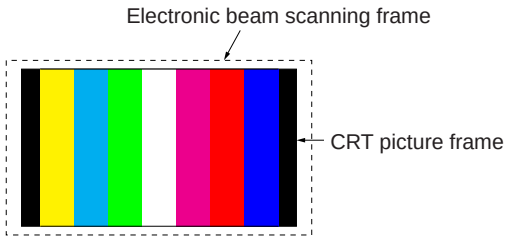


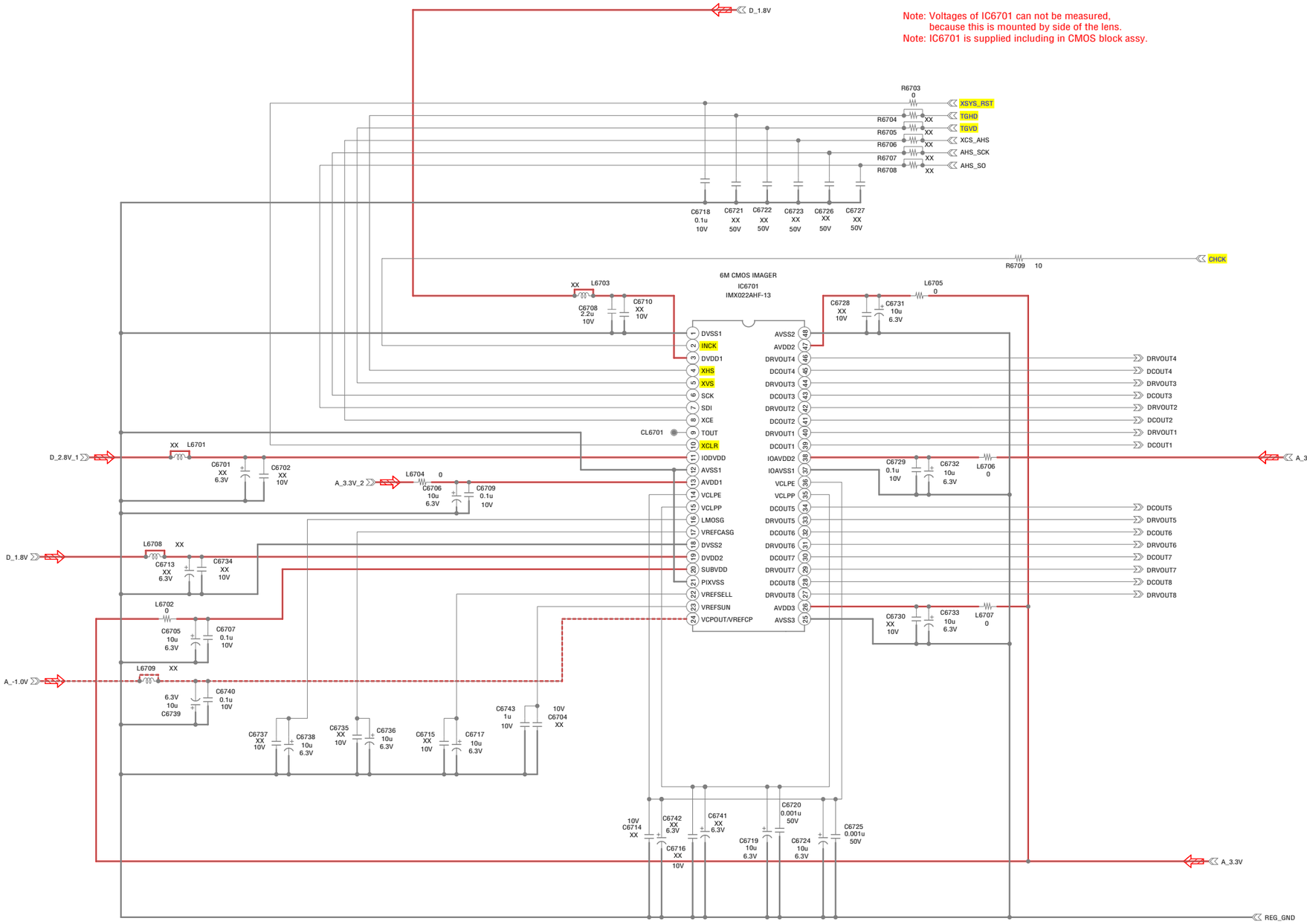

Fig.b (Picture on monitor TV)

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

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 spécifie.

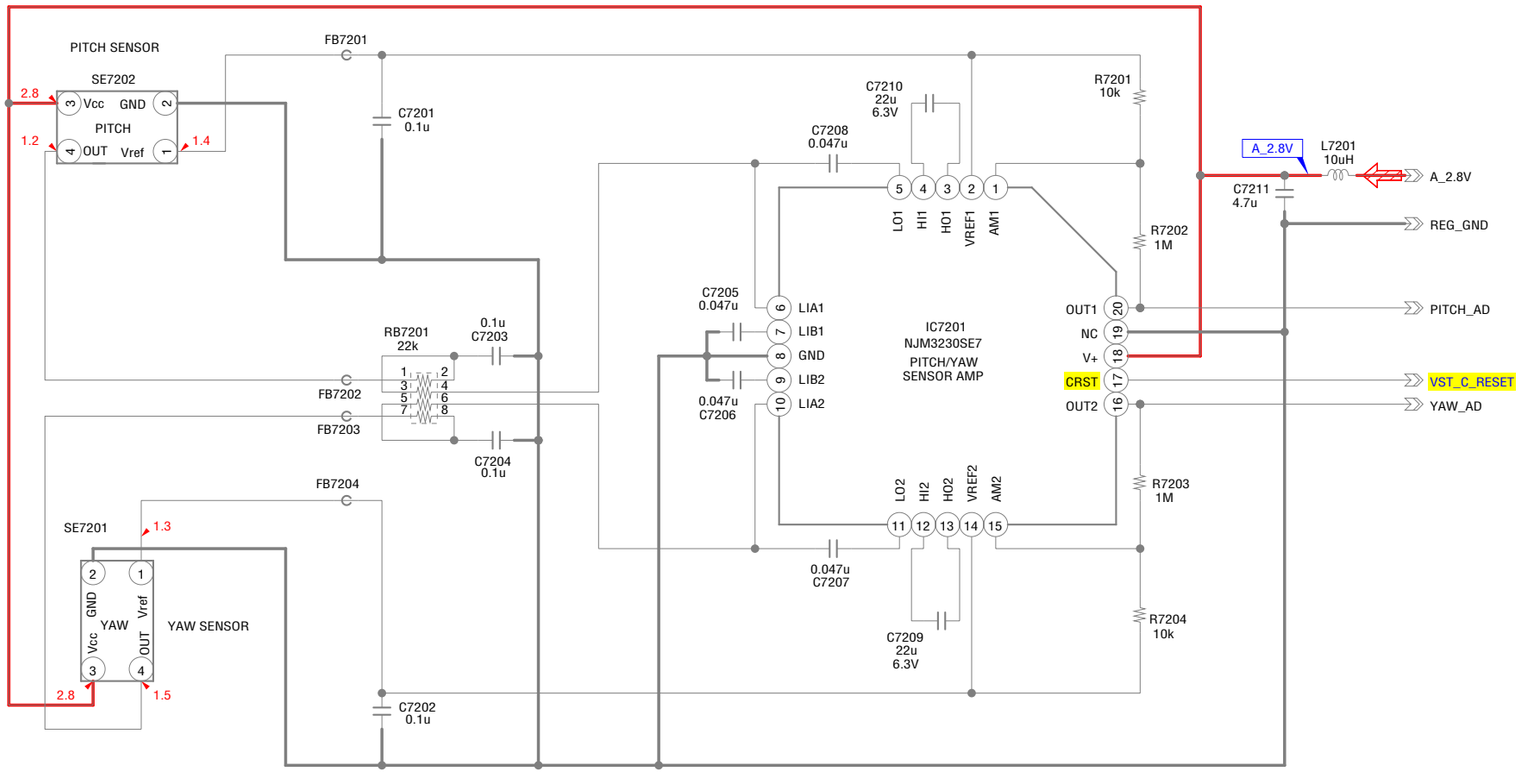
Note: Voltages of IC6701 can not be measured,
because this is mounted by side of the lens.
Note: IC6701 is supplied including in CMOS block assy.




# CM-077 BOARD (1/3)

CMOS IMAGER

XX MARK:NO MOUNT



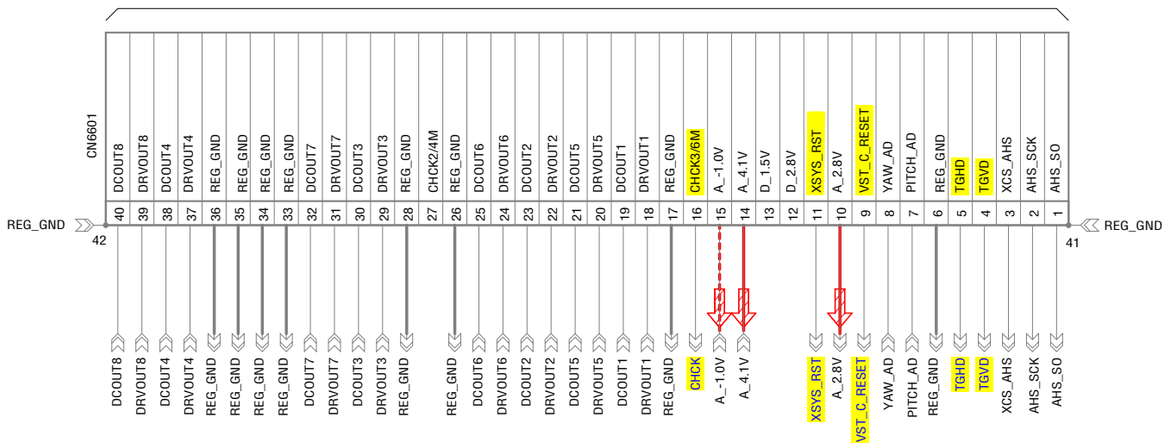

# CM-077 BOARD (2/3)

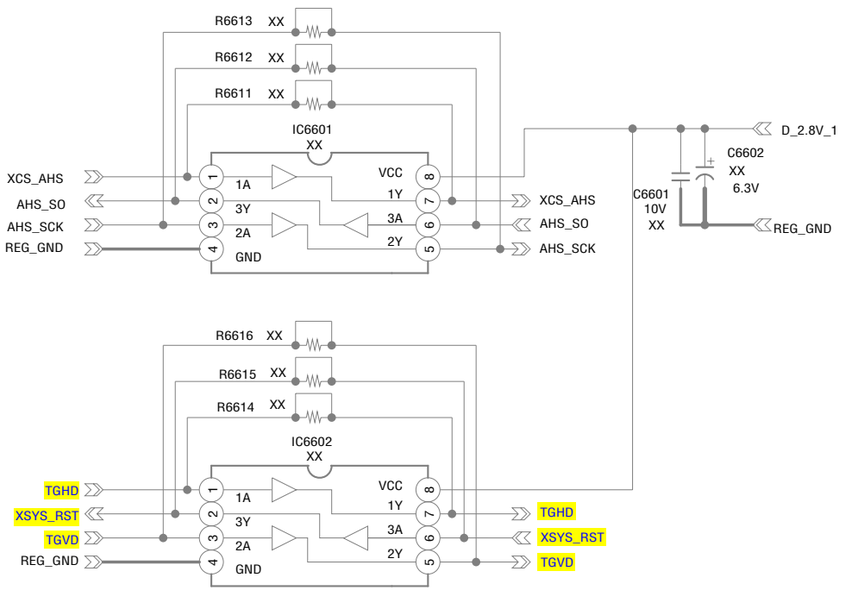
## PITCH/YAW SENSOR

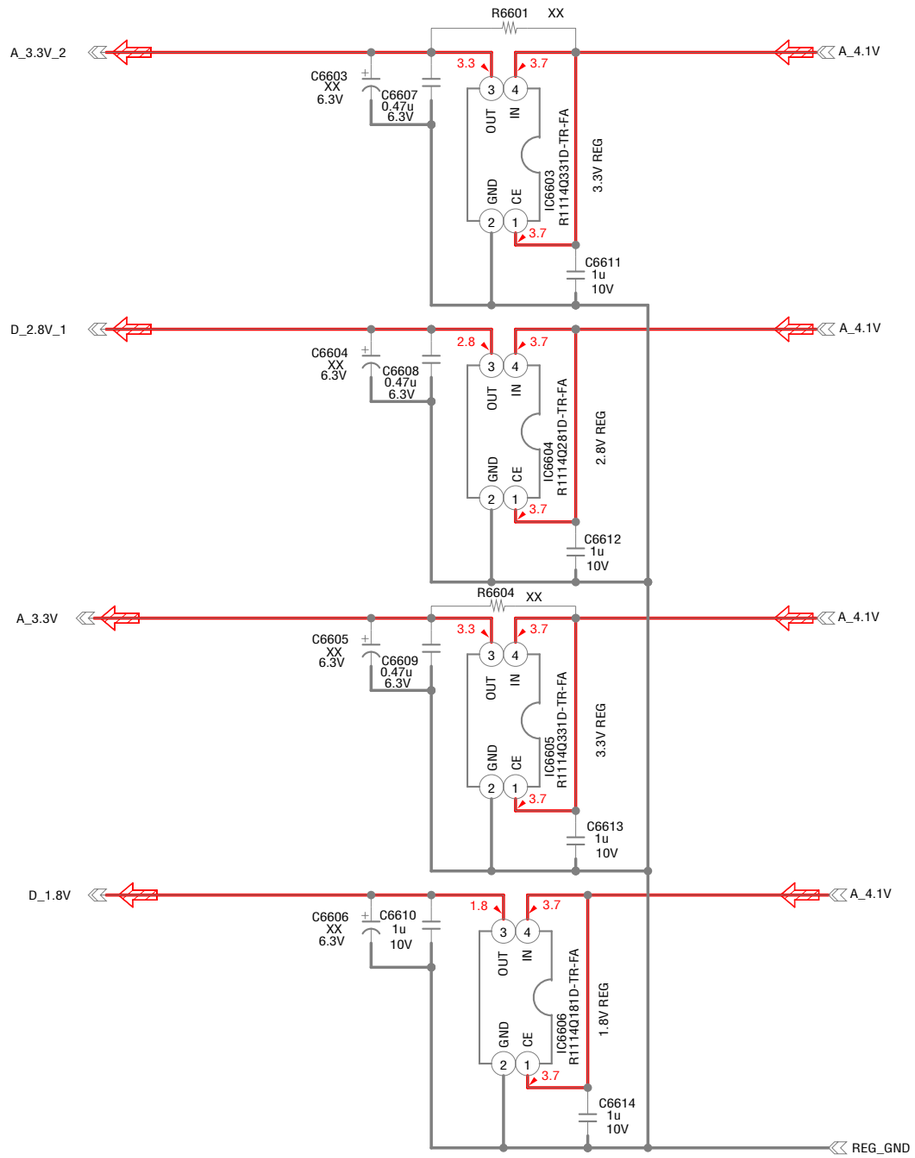
XX MARK:NO MOUNT

NO MARK:REC/PB MODE

VC-500
(1/23)
CN1201
Through the Harness (HN-047)
(Page 4-7)



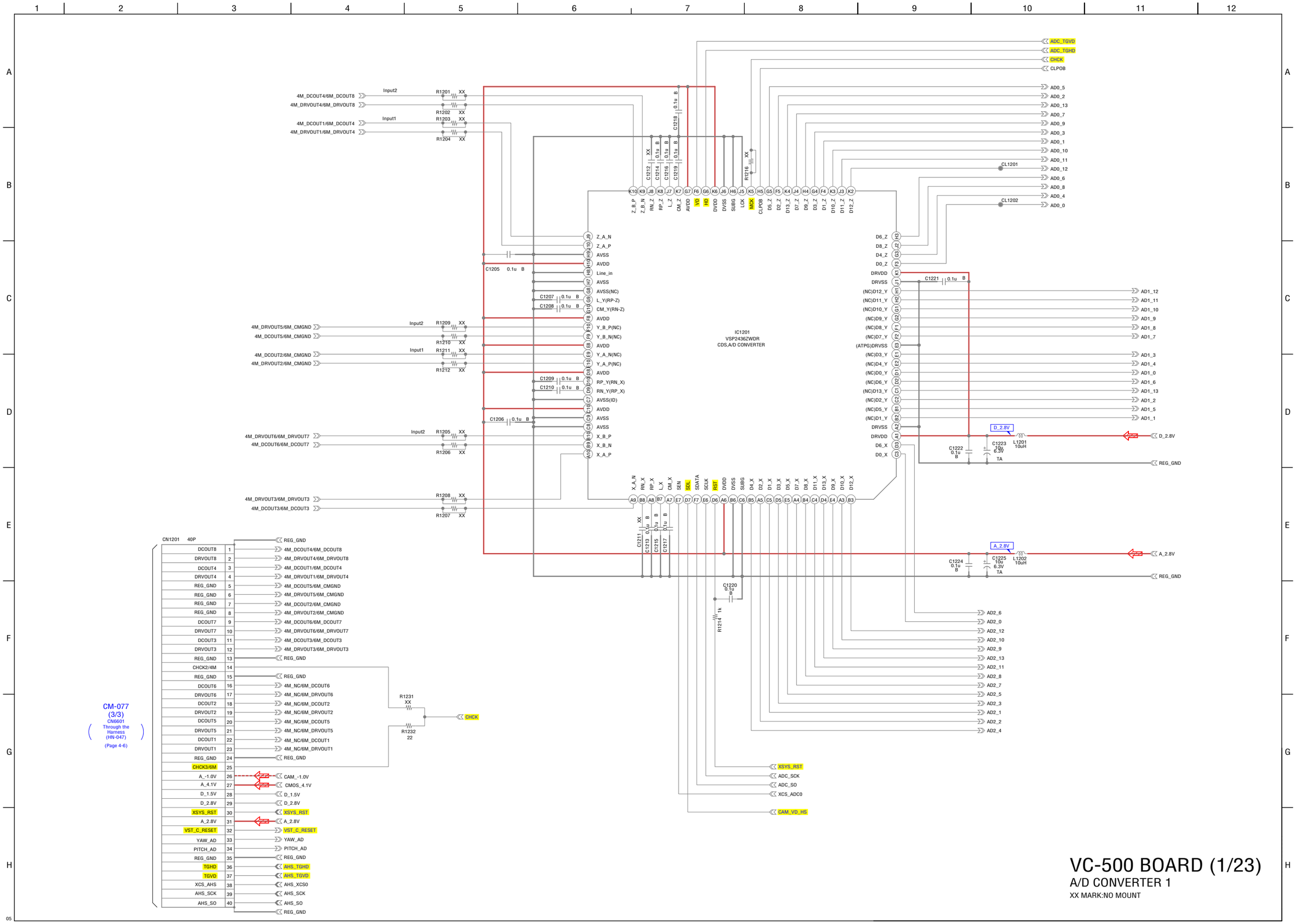



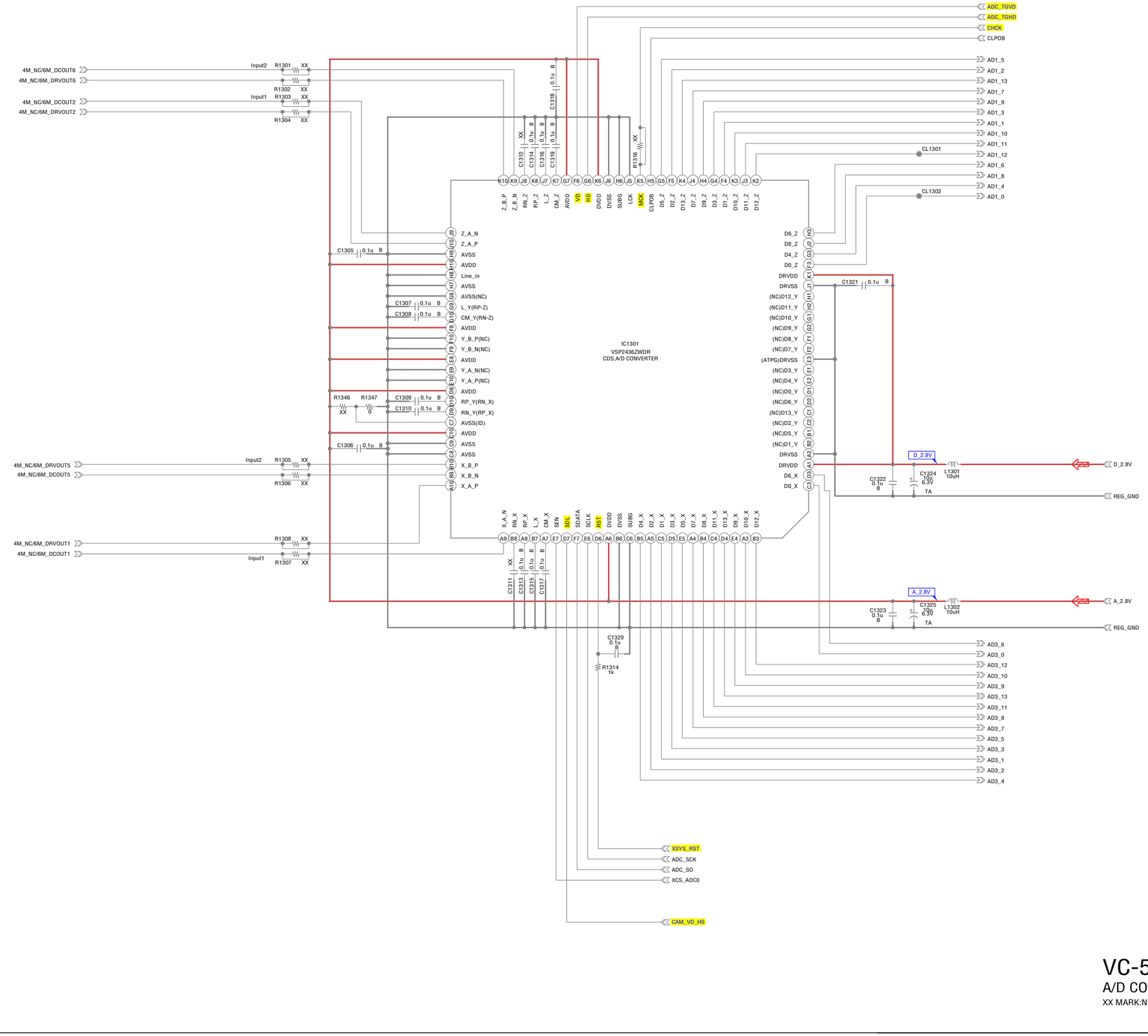




# CM-077 BOARD (3/3)

## CONNECTOR, REG

XX MARK:NO MOUNT
NO MARK:REC/PB MODE

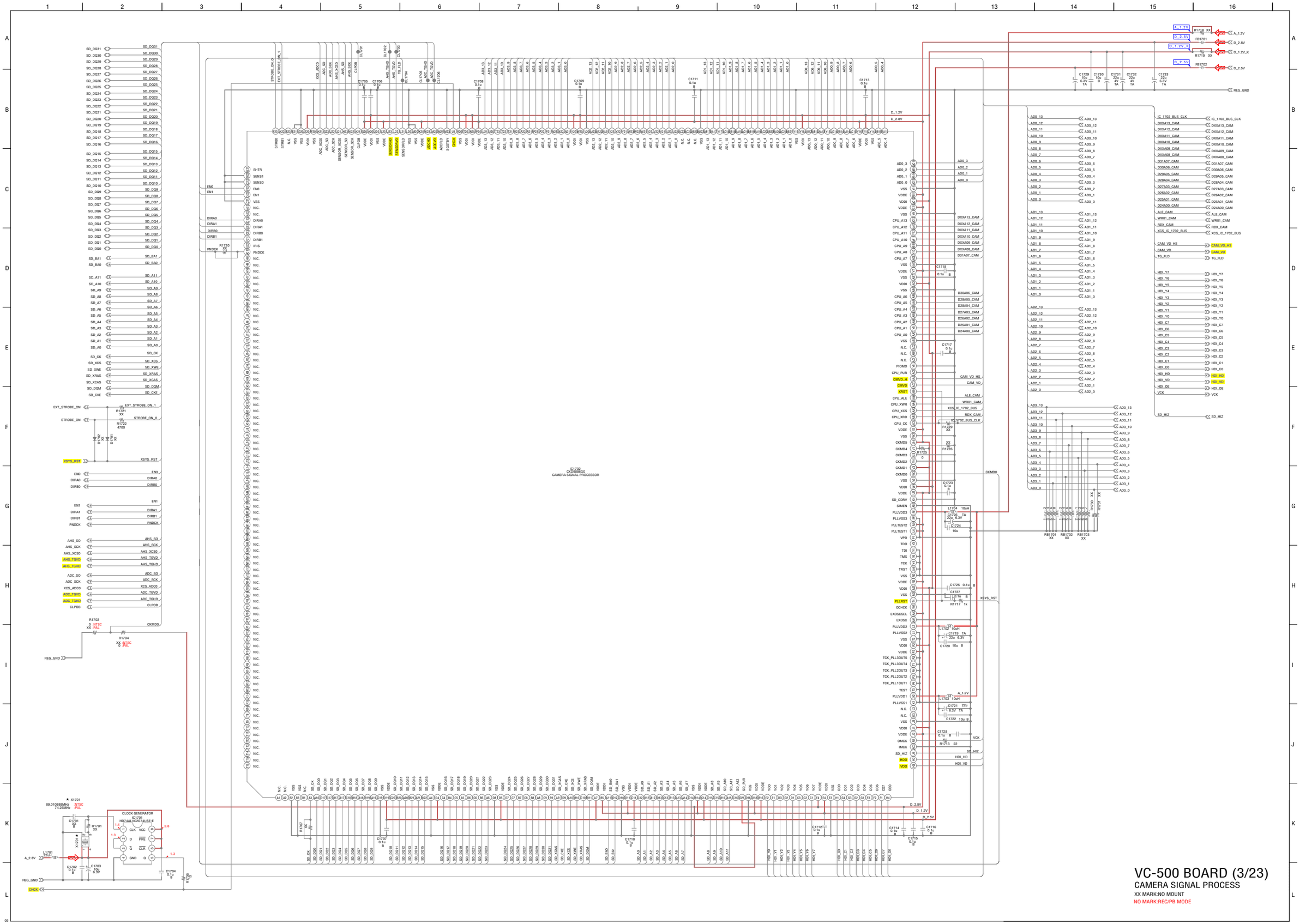

IC1201
VSP2436ZWDR
CDS,A/D CONVERTER
ADC_TGVD
ADC_TGHD
CHCK
CLPOB
AD0_5
AD0_2
AD0_13
AD0_7
AD0_9
AD0_3
AD0_1
AD0_10
AD0_11
AD0_12
AD0_6
AD0_8
AD0_4
AD0_0
CL1201
CL1202
AD1_12
AD1_11
AD1_10
AD1_9
AD1_8
AD1_7
AD1_3
AD1_4
AD1_0
AD1_6
AD1_13
AD1_2
AD1_5
AD1_1
D_2.8V
REG_GND
A_2.8V
AD2_6
AD2_0
AD2_12
AD2_10
AD2_9
AD2_13
AD2_11
AD2_8
AD2_7
AD2_5
AD2_3
AD2_1
AD2_2
AD2_4
XSYS_RST
ADC_SCK
ADC_SO
XCS_ADC0
CAM_VD_HS
CHCK
4M_DCOUT4/6M_DCOUT8
4M_DRVOUT4/6M_DRVOUT8
4M_DCOUT1/6M_DCOUT4
4M_DRVOUT1/6M_DRVOUT4
4M_DRVOUT5/6M_CMGND
4M_DCOUT5/6M_CMGND
4M_DCOUT2/6M_CMGND
4M_DRVOUT2/6M_CMGND
4M_DRVOUT6/6M_DRVOUT7
4M_DCOUT6/6M_DCOUT7
4M_DRVOUT3/6M_DRVOUT3
4M_DCOUT3/6M_DCOUT3
CN1201 40P
CM-077
(3/3)
CN6601
Through the
Harness
(HN-047)
(Page 4-6)
VC-500 BOARD (1/23)
A/D CONVERTER 1
XX MARK:NO MOUNT

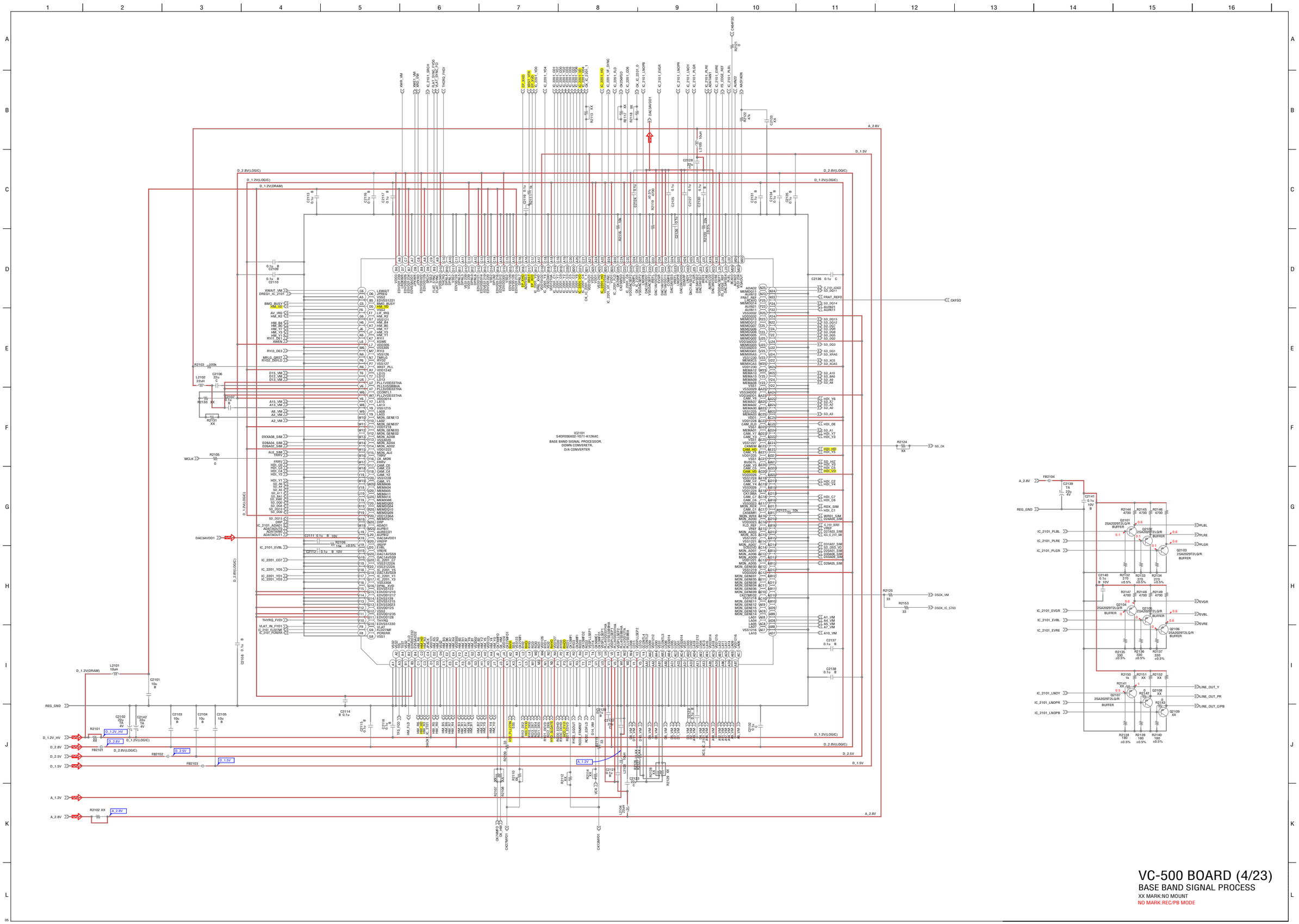


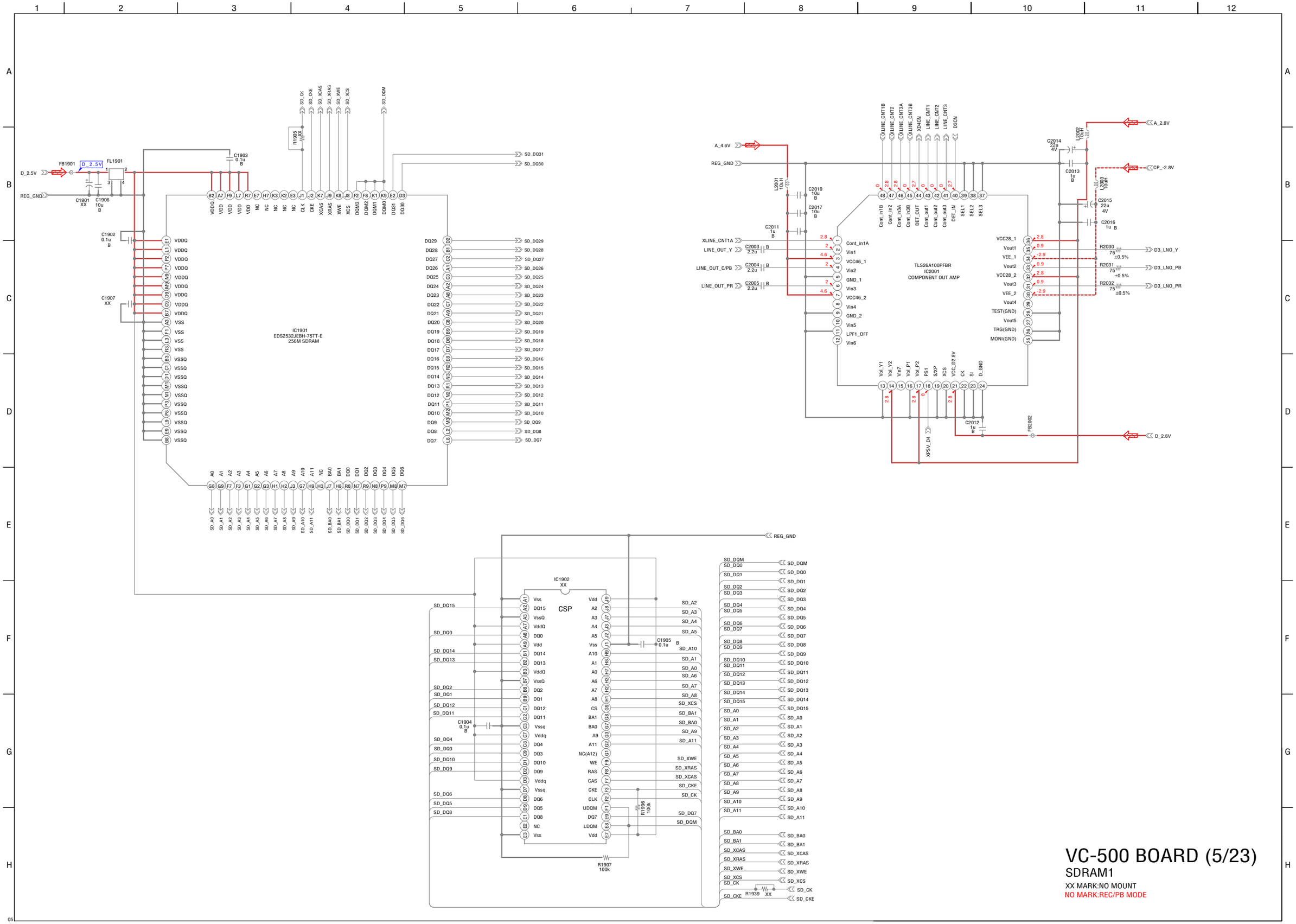

# VC-500 BOARD (2/23)

A/D CONVERTER 2

XX MARK:NO MOUNT


IC1702
CXD3868GG
CAMERA SIGNAL PROCESSOR
CLOCK GENERATOR
IC1701
HD74ALVC074USE-E
X1701
89.010989MHz NTSC
74.25MHz PAL
VC-500 BOARD (3/23)
CAMERA SIGNAL PROCESS
XX MARK:NO MOUNT
NO MARK:REC/PB MODE


IC2101
S4DF006XD0-Y071-K126XC
BASE BAND SIGNAL PROCESSOR,
DOWN CONVERTER,
D/A CONVERTER
VC-500 BOARD (4/23)
BASE BAND SIGNAL PROCESS
XX MARK:NO MOUNT
NO MARK:REC/PB MODE


IC1901
EDS2532JEBH-75TT-E
256M SDRAM
IC1902
XX
CSP
TLS26A100PFBR
IC2001
COMPONENT OUT AMP
VC-500 BOARD (5/23)
SDRAM1
XX MARK:NO MOUNT
NO MARK:REC/PB MODE

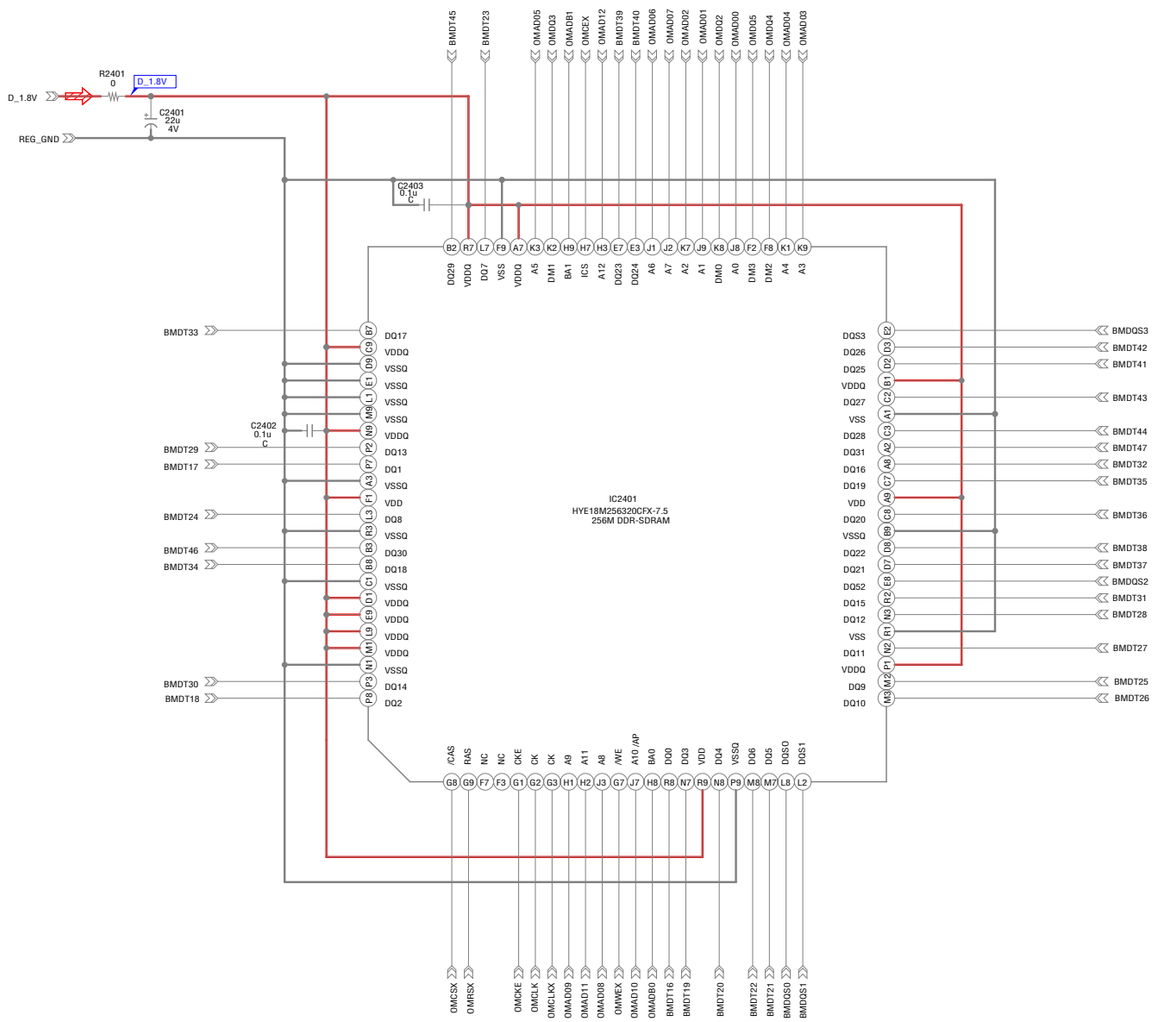
# VC-500 BOARD (6/23)

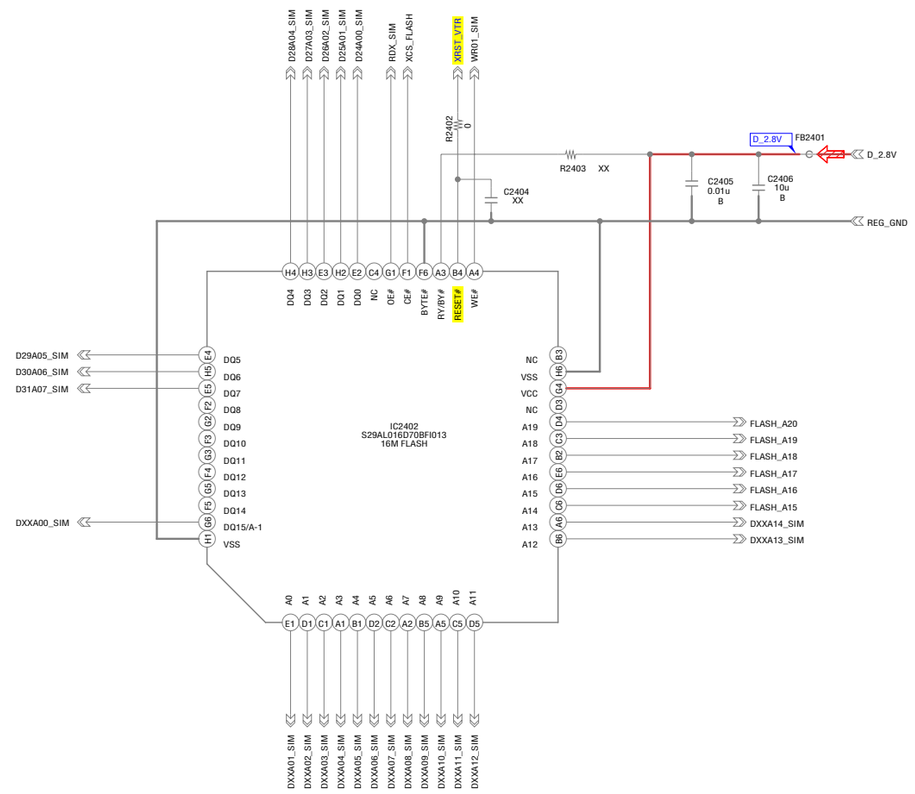
HDV-MPEG VIDEO ENCODE/DECODE

XX MARK:NO MOUNT

IC2201
CXD3190AGG-T6
HDV-MPEG VIDEO
ENCODER/DECODER,
MPEG AUDIO SIGNAL PROCESSOR

Note:IC2402 is not supplied,but this is
included in VC-500 complete board.

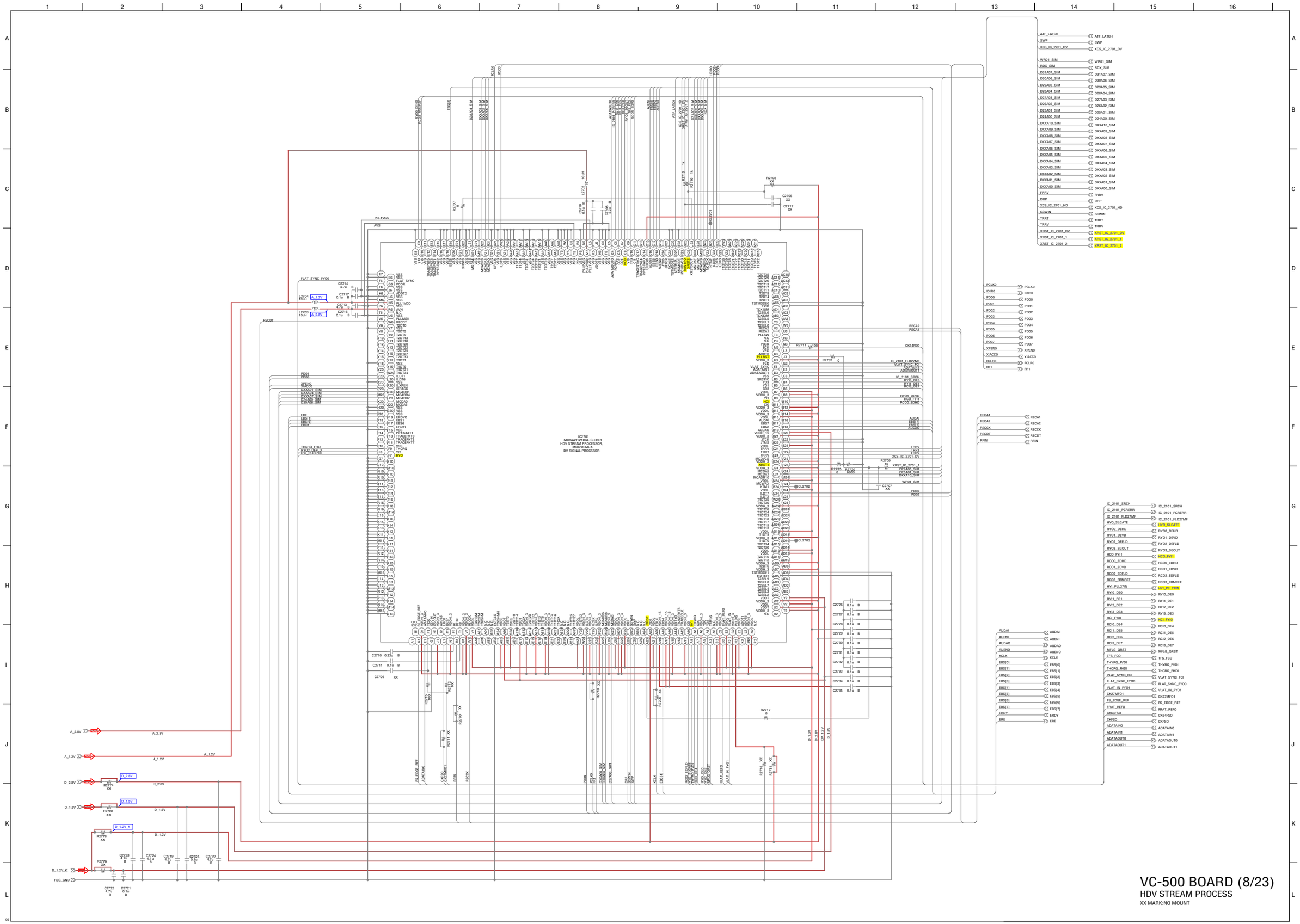


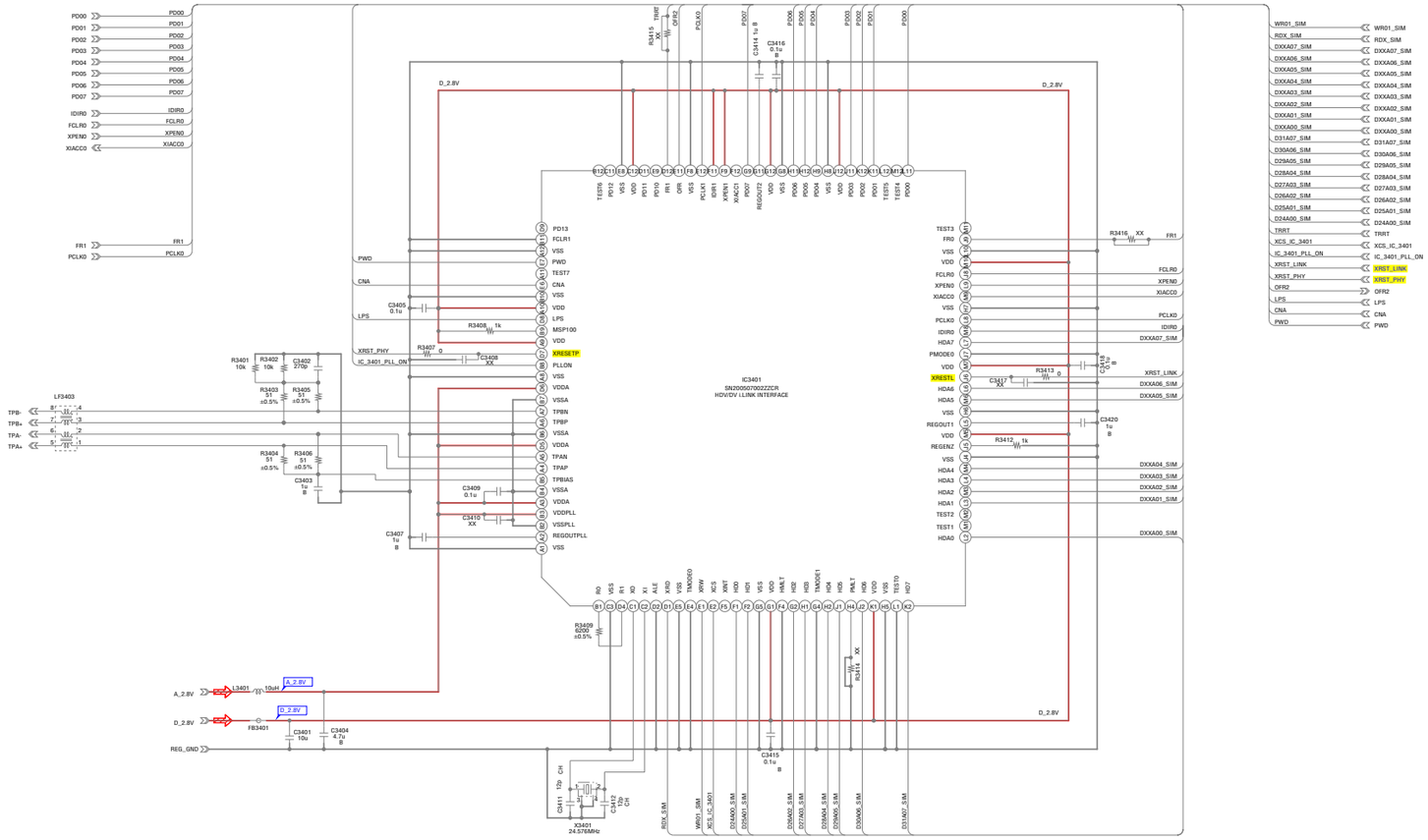




# VC-500 BOARD (7/23)

SDRAM 2

XX MARK:NO MOUNT

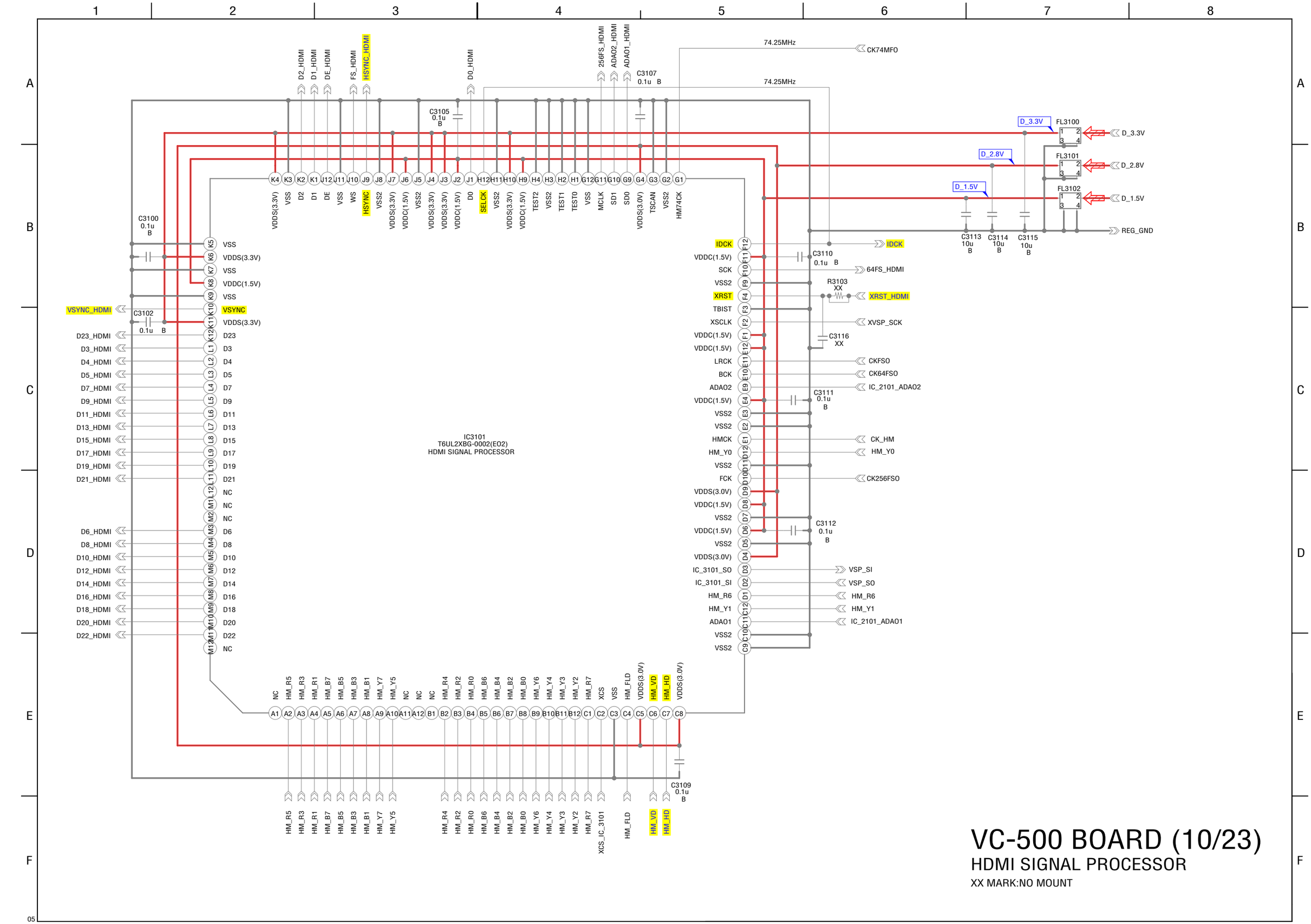

IC2701
M88AA11218GL-G-ERE1
HDV STREAM PROCESSOR,
MUX/DEMUX,
DV SIGNAL PROCSSOR
VC-500 BOARD (8/23)
HDV STREAM PROCESS
XX MARK:NO MOUNT




## VC-500 BOARD (9/23)

HDV/DV i.LINK INTERFACE

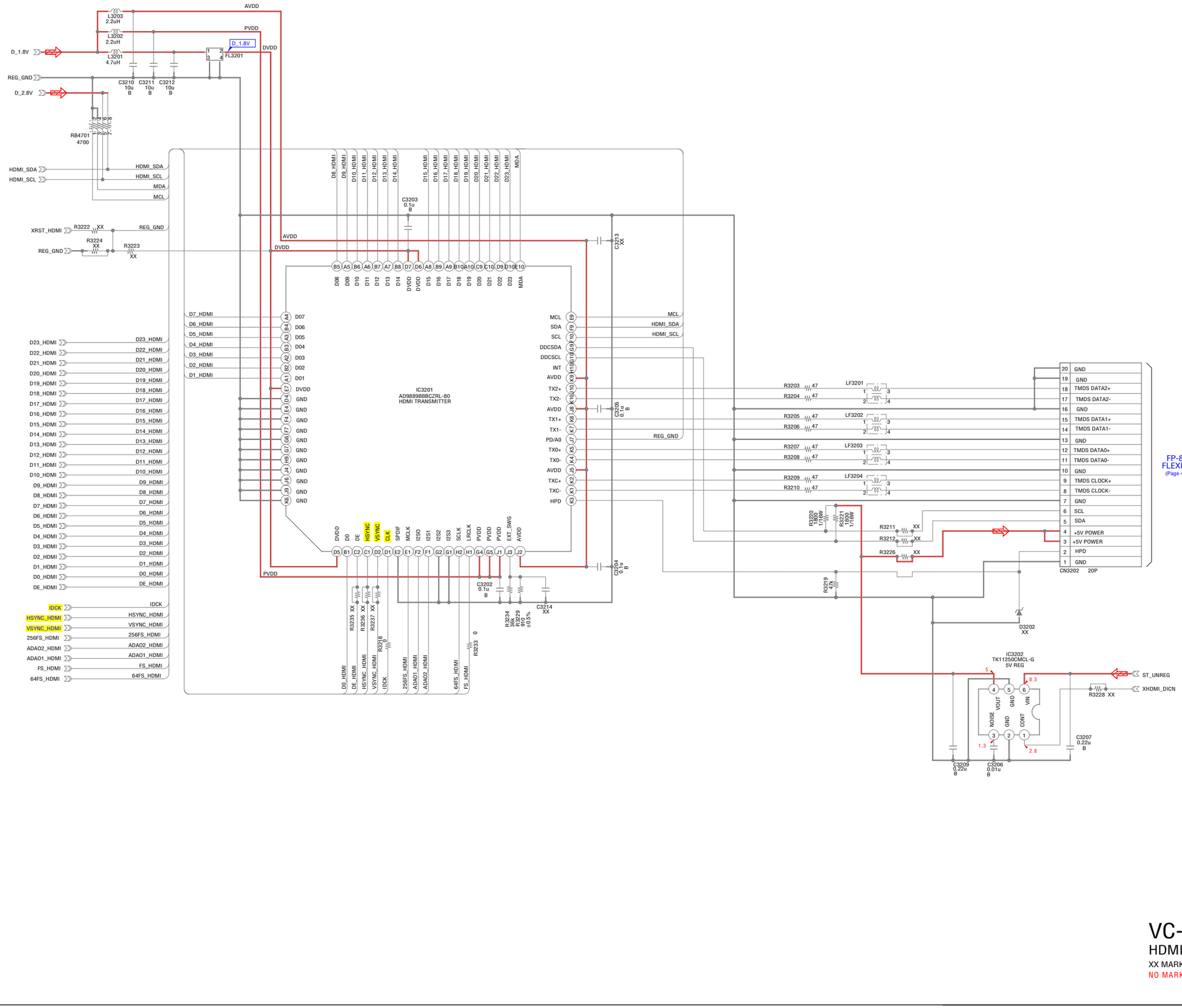
XX MARK:NO MOUNT




# VC-500 BOARD (10/23)

## HDMI SIGNAL PROCESSOR

XX MARK:NO MOUNT

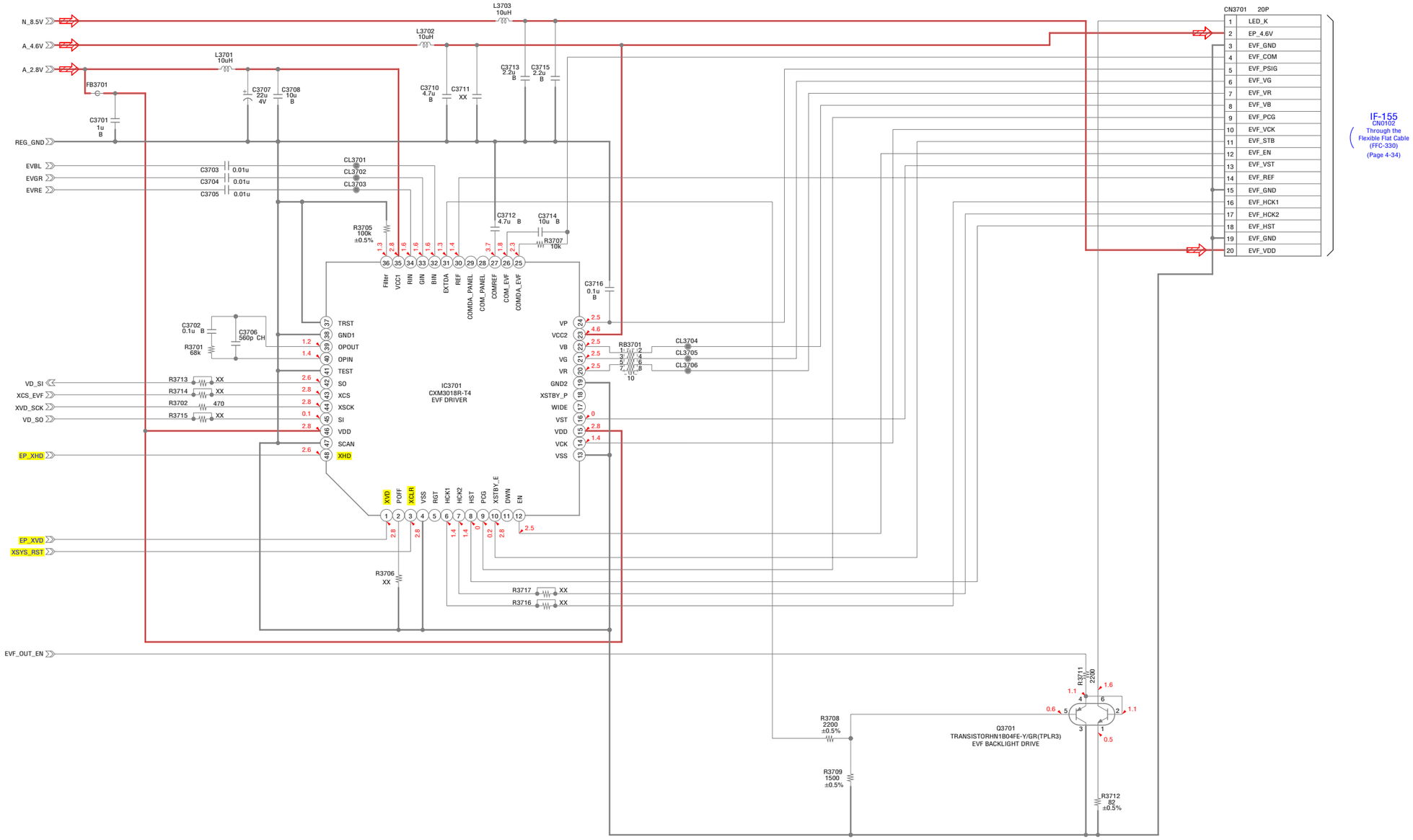



# VC-500 BOARD (11/23)

## HDMI TRANSMITTER

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

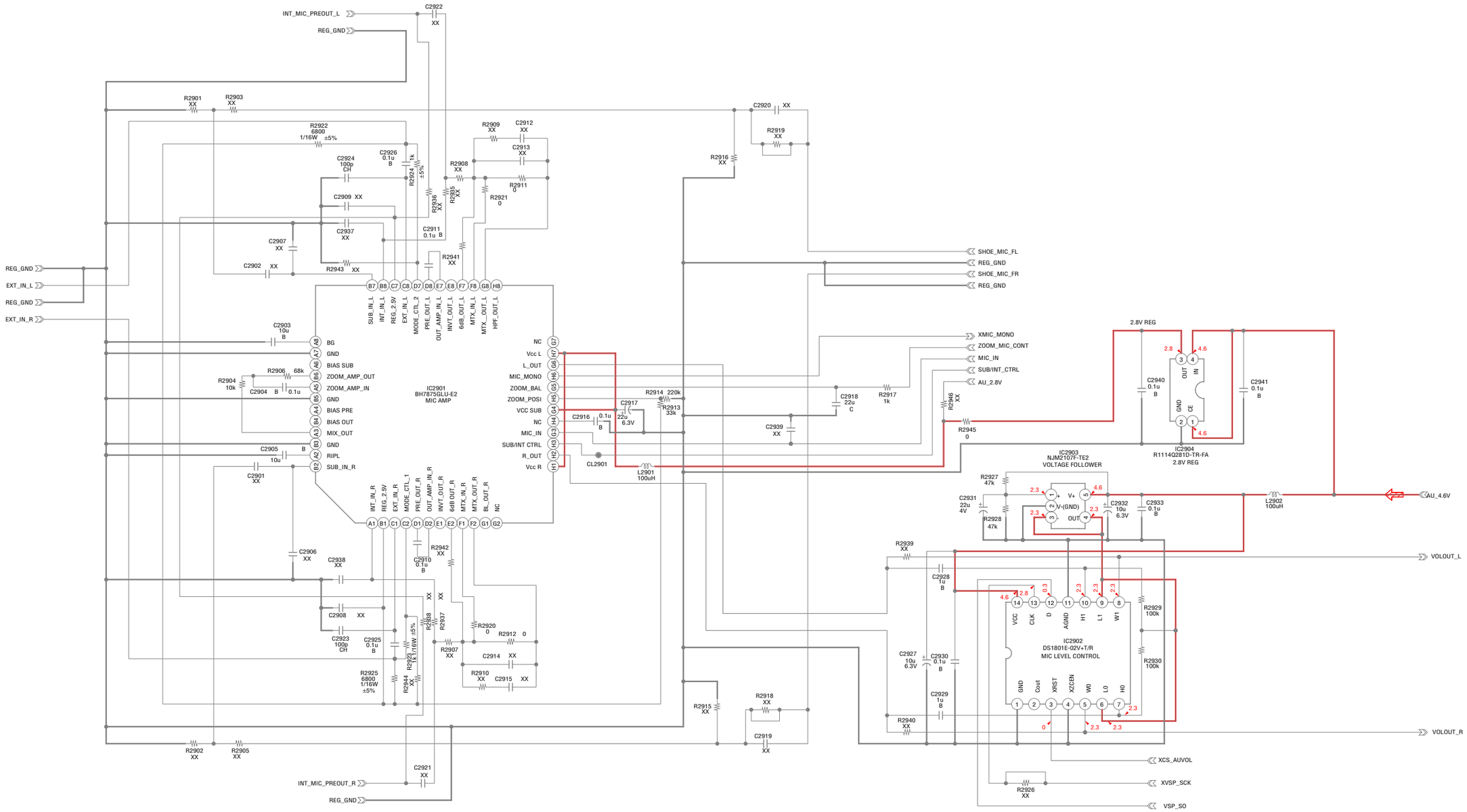



IF-155
CN0102
Through the Flexible Flat Cable (FFC-330)
(Page 4-34)

# VC-500 BOARD (12/23)

## EVF DRIVE

XX MARK:NO MOUNT
NO MARK:REC/PB MODE

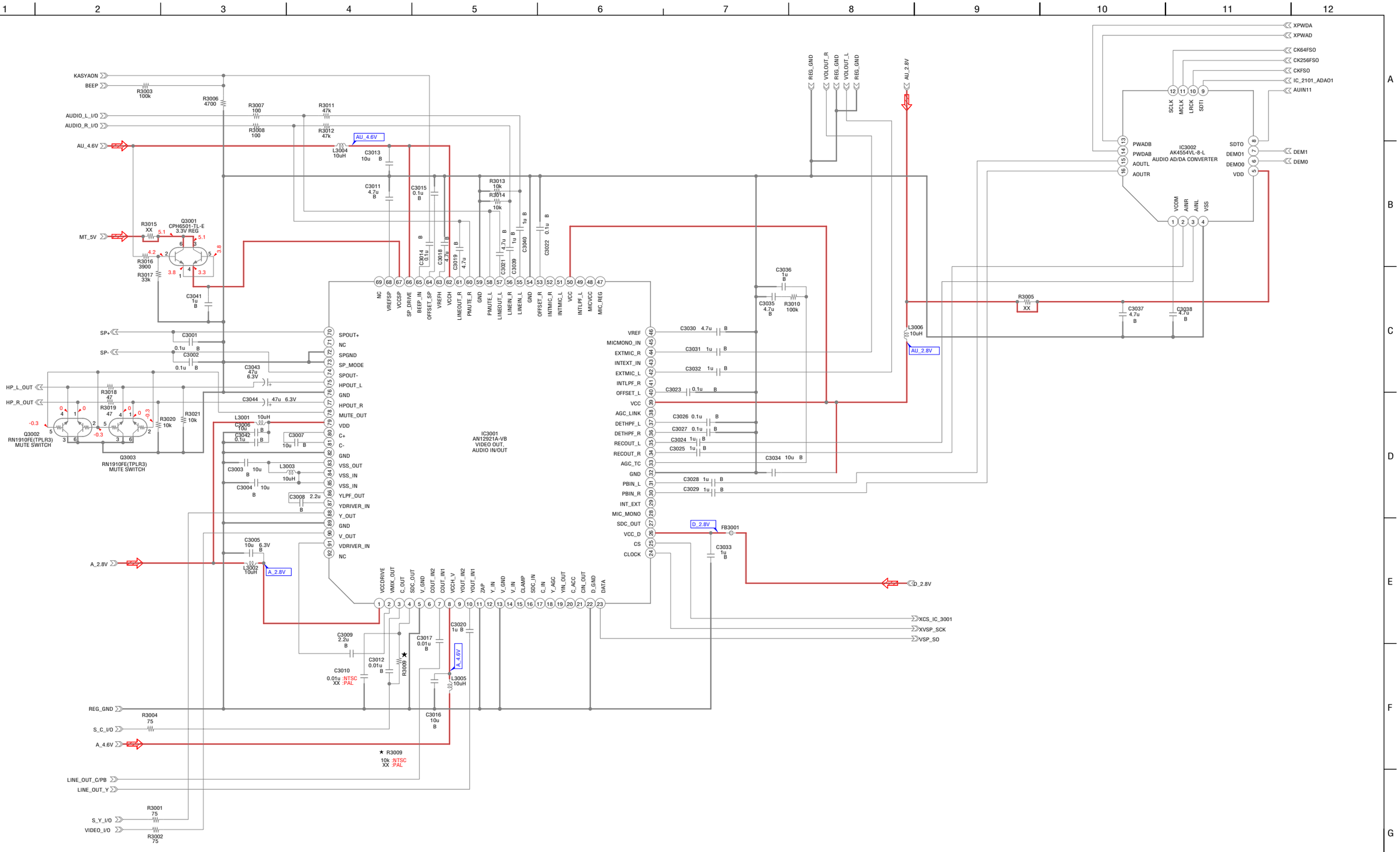



# VC-500 BOARD (13/23)

## MIC AMP

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

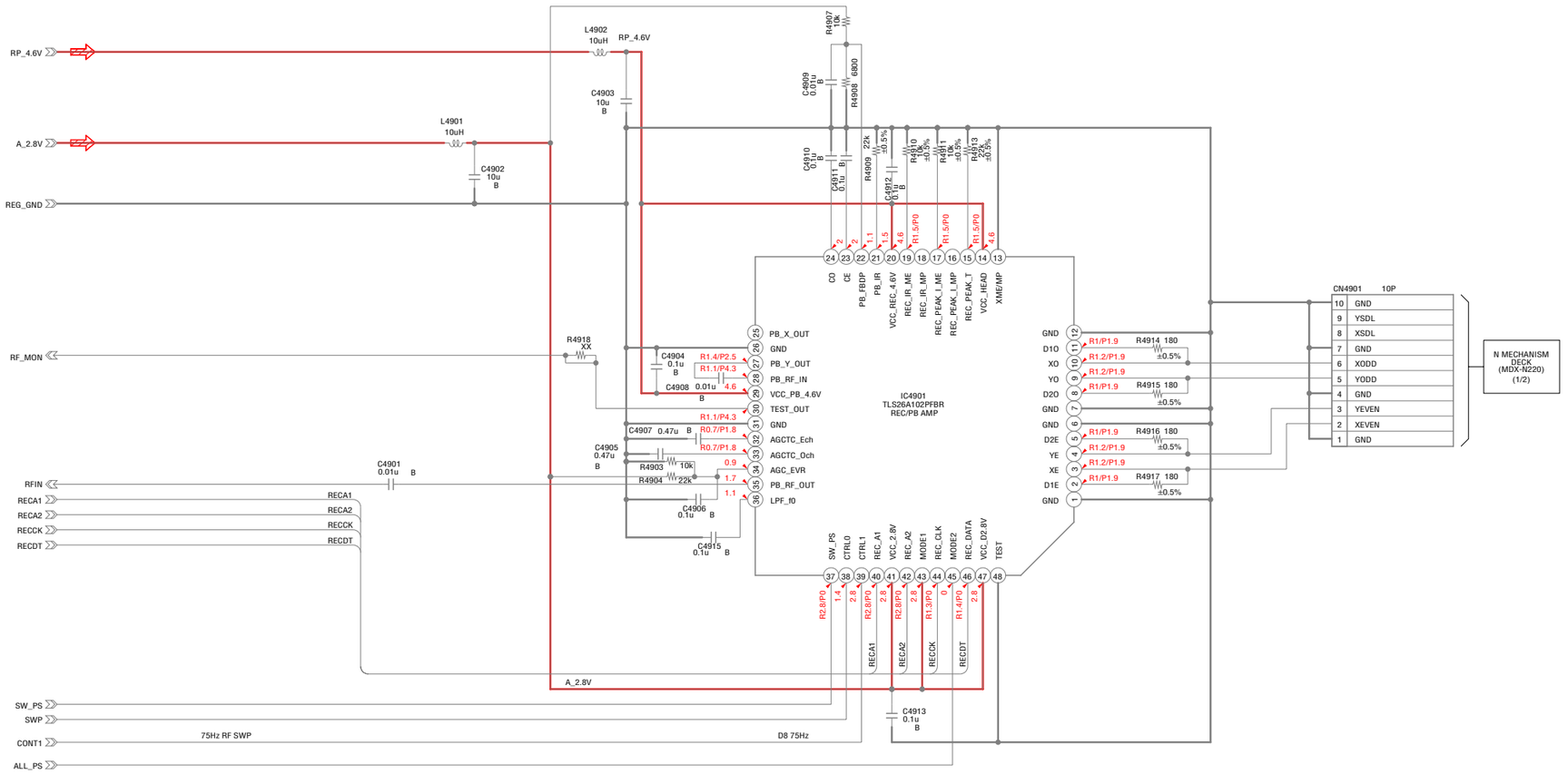



# VC-500 BOARD (14/23)

## VIDEO OUT, AUDIO IN/OUT

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

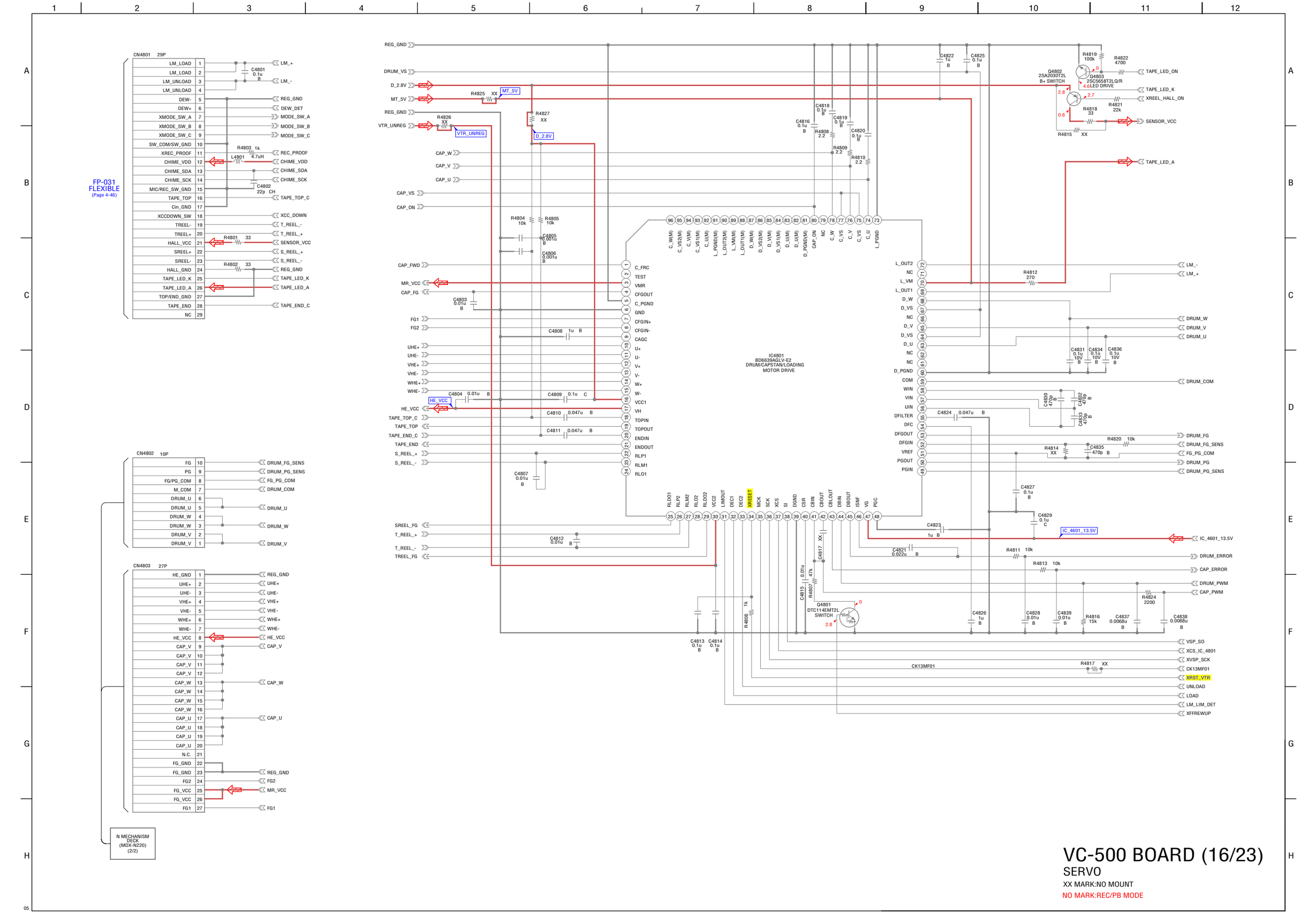


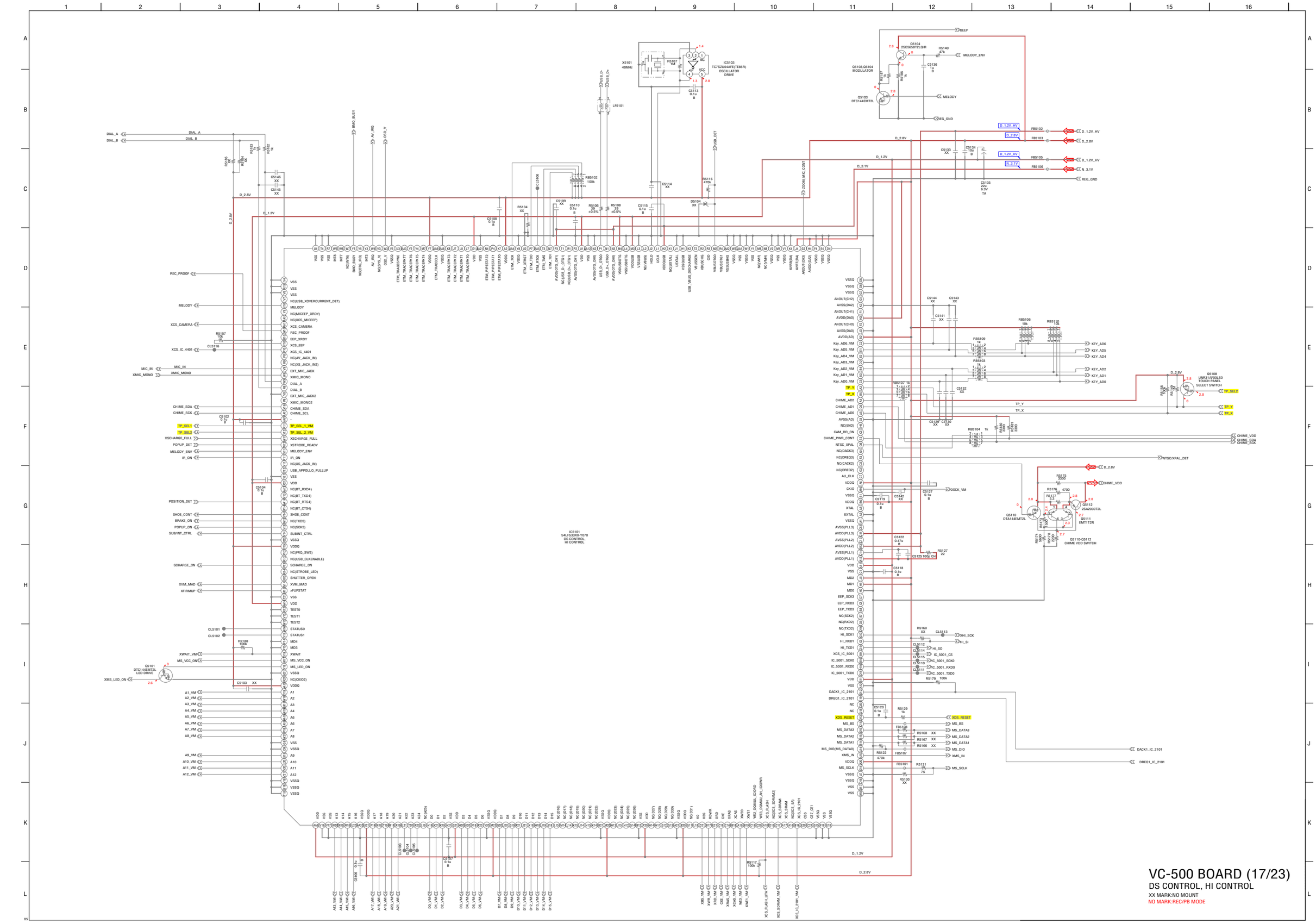

# VC-500 BOARD (15/23)

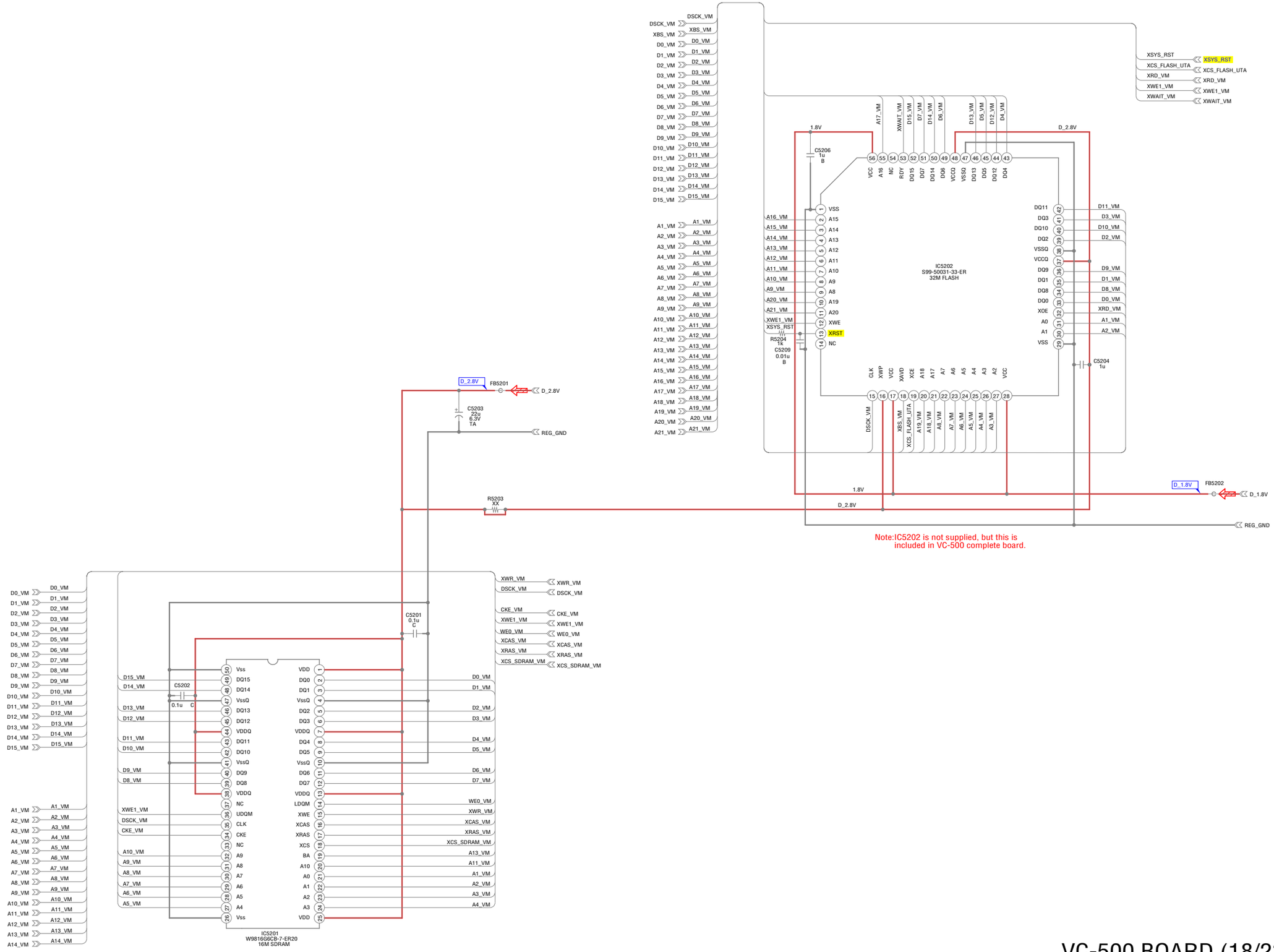
## REC/PB AMP

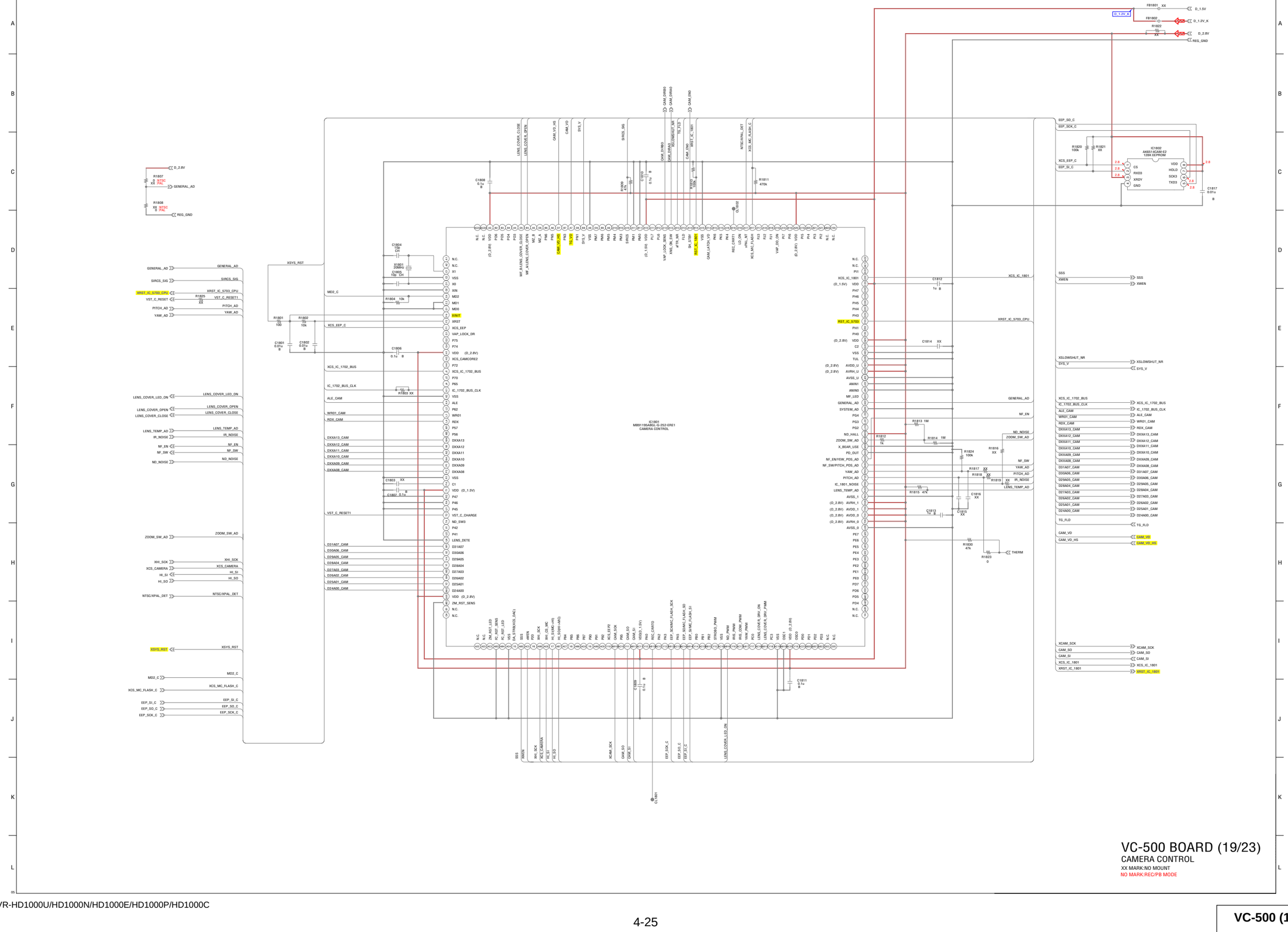
XX MARK:NO MOUNT

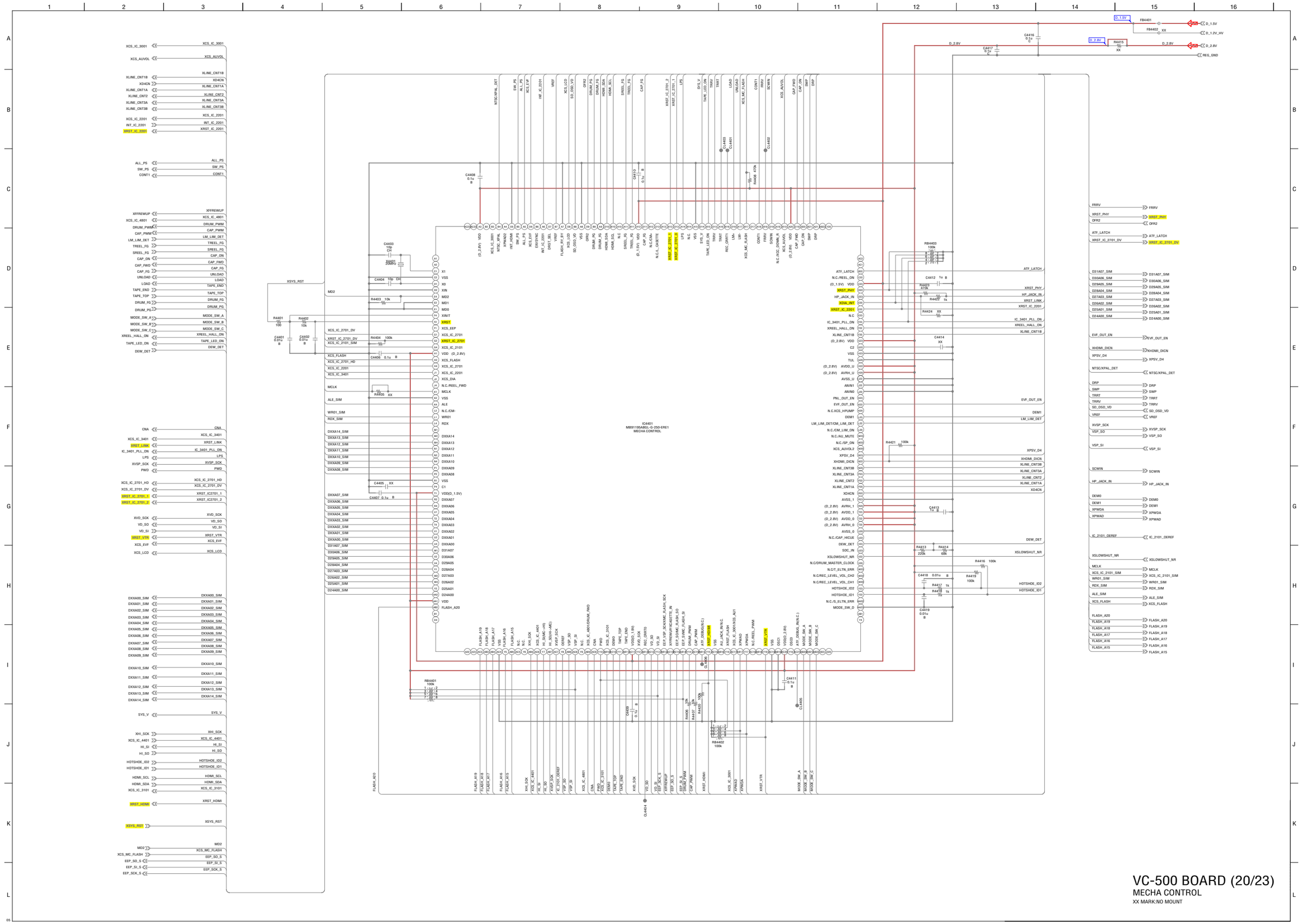
NO MARK:REC/PB MODE
R:REC MODE
P:PB MODE

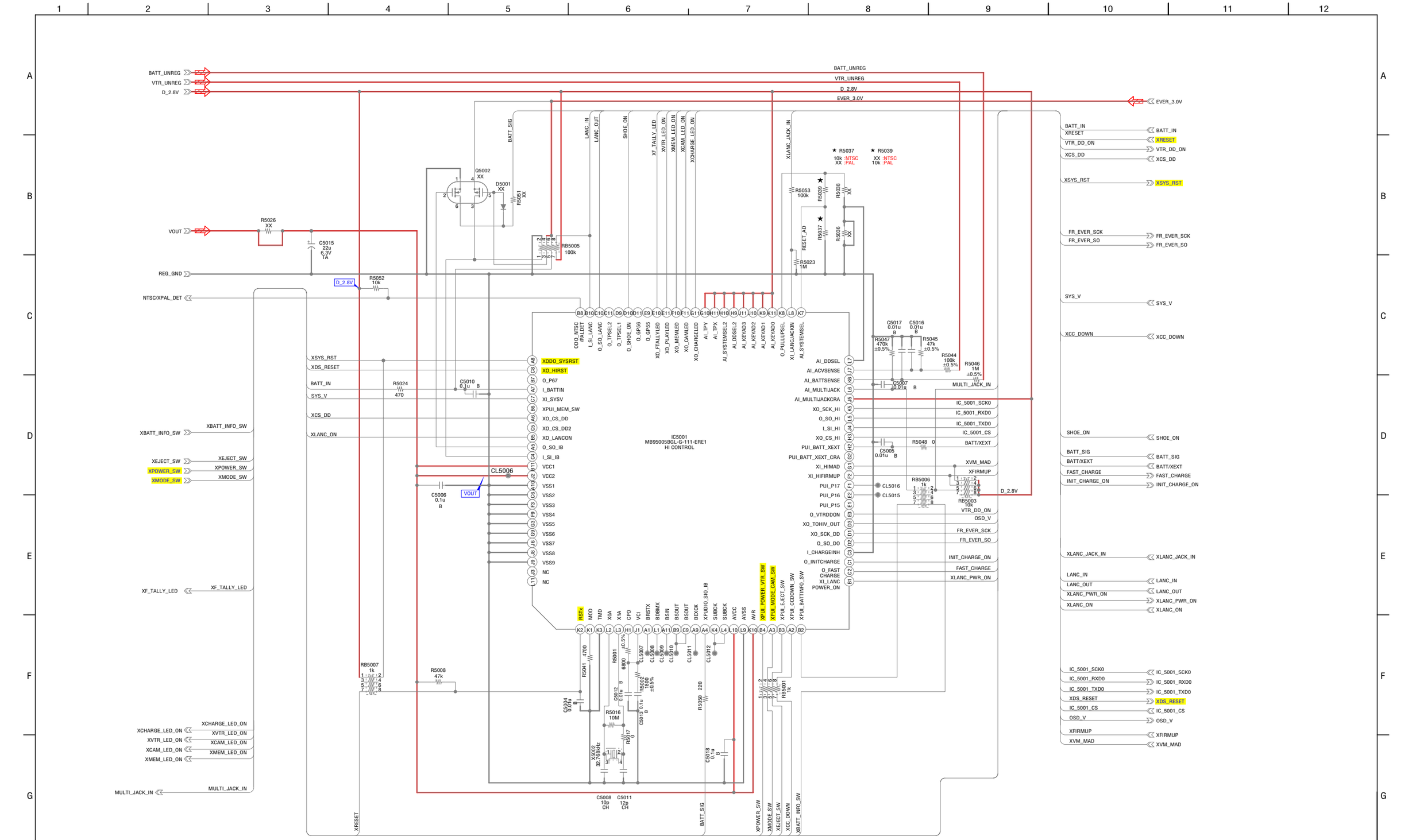

CN4801 29P
LM_LOAD 1
LM_LOAD 2
LM_UNLOAD 3
LM_UNLOAD 4
DEW- 5
DEW+ 6
XMODE_SW_A 7
XMODE_SW_B 8
XMODE_SW_C 9
SW_COM/SW_GND 10
XREC_PROOF 11
CHIME_VDD 12
CHIME_SDA 13
CHIME_SCK 14
MIC/REC_SW_GND 15
TAPE_TOP 16
Cin_GND 17
XCCDOWN_SW 18
TREEL- 19
TREEL+ 20
HALL_VCC 21
SREEL+ 22
SREEL- 23
HALL_GND 24
TAPE_LED_K 25
TAPE_LED_A 26
TOP/END_GND 27
TAPE_END 28
NC 29
LM_+
LM_-
REG_GND
DEW_DET
MODE_SW_A
MODE_SW_B
MODE_SW_C
REC_PROOF
CHIME_VDD
CHIME_SDA
CHIME_SCK
TAPE_TOP_C
XCC_DOWN
T_REEL_-
T_REEL_+
SENSOR_VCC
S_REEL_+
S_REEL_-
REG_GND
TAPE_LED_K
TAPE_LED_A
TAPE_END_C
R4803 1k
L4801 4.7uH
C4801 0.1u B
C4802 22p CH
R4801 33
R4802 33
FP-031
FLEXIBLE
(Page 4-46)
CN4802 10P
FG 10
PG 9
FG/PG_COM 8
M_COM 7
DRUM_U 6
DRUM_U 5
DRUM_W 4
DRUM_W 3
DRUM_V 2
DRUM_V 1
DRUM_FG_SENS
DRUM_PG_SENS
FG_PG_COM
DRUM_COM
DRUM_U
DRUM_W
DRUM_V
CN4803 27P
HE_GND 1
UHE+ 2
UHE- 3
VHE+ 4
VHE- 5
WHE+ 6
WHE- 7
HE_VCC 8
CAP_V 9
CAP_V 10
CAP_V 11
CAP_V 12
CAP_W 13
CAP_W 14
CAP_W 15
CAP_W 16
CAP_U 17
CAP_U 18
CAP_U 19
CAP_U 20
N.C. 21
FG_GND 22
FG_GND 23
FG2 24
FG_VCC 25
FG_VCC 26
FG1 27
REG_GND
UHE+
UHE-
VHE+
VHE-
WHE+
WHE-
HE_VCC
CAP_V
CAP_W
CAP_U
REG_GND
FG2
MR_VCC
FG1
N MECHANISM DECK (MDX-N220) (2/2)
REG_GND
DRUM_VS
D_2.8V
MT_5V
REG_GND
VTR_UNREG
CAP_W
CAP_V
CAP_U
CAP_VS
CAP_ON
CAP_FWD
MR_VCC
CAP_FG
FG1
FG2
UHE+
UHE-
VHE+
VHE-
WHE+
WHE-
HE_VCC
TAPE_TOP_C
TAPE_TOP
TAPE_END_C
TAPE_END
S_REEL_+
S_REEL_-
R4825 XX
R4826 XX
R4827 XX
R4804 10k
R4805 10k
C4805 0.001u B
C4806 0.001u B
C4803 0.01u B
C4808 1u B
C4804 0.01u B
C4809 0.1u C
C4810 0.047u B
C4811 0.047u B
C4807 0.01u B
C4812 0.01u B
C4813 0.1u B
C4814 0.1u B
C4815 0.01u
R4807 47k
R4806 1k
C4817 XX
C4818 0.1u B
C4819 0.1u B
C4820 0.1u B
C4816 0.1u B
R4808 2.2
R4809 2.2
R4810 2.2
C4822 1u B
C4825 0.1u B
R4819 100k
R4822 4700
Q4802 2SA2030T2L B+ SWITCH
Q4803 2SC5658T2LQ/R LED DRIVE
4.6
2.8
2.7
0.6
0
R4821 22k
R4818 33
R4815 XX
TAPE_LED_ON
TAPE_LED_K
XREEL_HALL_ON
SENSOR_VCC
TAPE_LED_A
IC4801
BD6639AGLV-E2
DRUM/CAPSTAN/LOADING
MOTOR DRIVE
C_W(M) 96
C_VS2(M) 95
C_V(M) 94
C_VS1(M) 93
C_U(M) 92
L_PGND(M) 91
L_OUT2(M) 90
L_VM(M) 89
L_OUT1(M) 88
D_W(M) 87
D_VS2(M) 86
D_V(M) 85
D_VS1(M) 84
D_U(M) 83
D_U(M) 82
D_PGND(M) 81
CAP_ON 80
NC 79
C_W 78
C_VS 77
C_V 76
C_VS 75
C_U 74
L_PGND 73
C_FRC 1
TEST 2
VMR 3
CFGOUT 4
C_PGND 5
GND 6
CFGIN+ 7
CFGIN- 8
CAGC 9
U+ 10
U- 11
V+ 12
V- 13
W+ 14
W- 15
VCC1 16
VH 17
TOPIN 18
TOPOUT 19
ENDIN 20
ENDOUT 21
RLP1 22
RLM1 23
RLO1 24
RLDO1 25
RLP2 26
RLM2 27
RLO2 28
RLDO2 29
VCC2 30
LIMOUT 31
DEC1 32
DEC2 33
XRESET 34
MCK 35
SCK 36
XCS 37
SI 38
DGND 39
CSR 40
CBIN 41
CBOUT 42
CBLOUT 43
DBIN 44
DBOUT 45
ISNF 46
VG 47
PGC 48
L_OUT2 72
NC 71
L_VM 70
L_OUT1 69
D_W 68
D_VS 67
NC 66
D_V 65
D_VS 64
D_U 63
NC 62
NC 61
D_PGND 60
COM 59
WIN 58
VIN 57
UIN 56
DFILTER 55
DFC 54
DFGOUT 53
DFGIN 52
VREF 51
PGOUT 50
PGIN 49
R4812 270
LM_-
LM_+
DRUM_W
DRUM_V
DRUM_U
C4831 0.1u 10V B
C4834 0.1u 10V B
C4836 0.1u 10V B
DRUM_COM
C4830 470p B
C4832 470p B
C4833 470p B
C4824 0.047u B
R4820 10k
R4814 XX
C4835 470p B
DRUM_FG
DRUM_FG_SENS
FG_PG_COM
DRUM_PG
DRUM_PG_SENS
C4827 0.1u B
C4829 0.1u C
C4823 1u B
IC_4601_13.5V
C4821 0.022u B
R4811 10k
DRUM_ERROR
R4813 10k
CAP_ERROR
DRUM_PWM
CAP_PWM
R4824 2200
C4826 1u B
C4828 0.01u B
C4839 0.01u B
R4816 15k
C4837 0.0068u B
C4838 0.0068u B
Q4801 DTC114EMT2L SWITCH
2.8
0
VSP_SO
XCS_IC_4801
XVSP_SCK
CK13MF01
XRST_VTR
UNLOAD
LOAD
LM_LIM_DET
XFFREWUP
CK13MF01
R4817 XX
SREEL_FG
T_REEL_+
T_REEL_-
TREEL_FG
VC-500 BOARD (16/23)
SERVO
XX MARK:NO MOUNT
NO MARK:REC/PB MODE


IC5101
S4LP533XD-Y070
DS CONTROL,
HI CONTROL
VC-500 BOARD (17/23)
DS CONTROL, HI CONTROL
XX MARK:NO MOUNT
NO MARK:REC/PB MODE


DSCK_VM
XBS_VM
D0_VM
D1_VM
D2_VM
D3_VM
D4_VM
D5_VM
D6_VM
D7_VM
D8_VM
D9_VM
D10_VM
D11_VM
D12_VM
D13_VM
D14_VM
D15_VM
A1_VM
A2_VM
A3_VM
A4_VM
A5_VM
A6_VM
A7_VM
A8_VM
A9_VM
A10_VM
A11_VM
A12_VM
A13_VM
A14_VM
A15_VM
A16_VM
A17_VM
A18_VM
A19_VM
A20_VM
A21_VM
XSYS_RST
XCS_FLASH_UTA
XRD_VM
XWE1_VM
XWAIT_VM
1.8V
D_2.8V
C5206
1u
B
IC5202
S99-50031-33-ER
32M FLASH
VSS
VCC
A16
A15
A14
A13
A12
A11
A10
A9
A8
A19
A20
XWE
XRST
NC
RDY
DQ15
DQ7
DQ14
DQ6
VCCQ
VSSQ
DQ13
DQ5
DQ12
DQ4
DQ11
DQ3
DQ10
DQ2
DQ9
DQ1
DQ8
DQ0
XOE
A0
A1
CLK
XWP
XAVD
XCE
A18
A17
A7
A6
A5
A4
A3
A2
R5204
1k
C5209
0.01u
B
C5204
1u
FB5201
C5203
22u
6.3V
TA
REG_GND
R5203
XX
FB5202
Note:IC5202 is not supplied, but this is
included in VC-500 complete board.
C5201
0.1u
C
C5202
0.1u
IC5201
W9816G6CB-7-ER20
16M SDRAM
Vss
VDD
DQ15
DQ0
DQ14
DQ1
VssQ
DQ13
DQ2
DQ12
DQ3
VDDQ
DQ11
DQ4
DQ10
DQ5
DQ9
DQ6
DQ8
DQ7
NC
LDQM
UDQM
XWE
CLK
XCAS
CKE
XRAS
XCS
A9
BA
A8
A10
A7
A0
A6
A1
A5
A2
A4
XWR_VM
DSCK_VM
CKE_VM
XWE1_VM
WE0_VM
XCAS_VM
XRAS_VM
XCS_SDRAM_VM
VC-500 BOARD (18/23)
SDRAM, FLASH
XX MARK:NO MOUNT


VC-500 BOARD (19/23)
CAMERA CONTROL
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
IC1801
MB91195ABGL-G-252-ERE1
CAMERA CONTROL
IC1802
AK6514CAM-E2
128K EEPROM


IC4401
MB91195ABGL-G-250-ERE1
MECHA CONTROL
VC-500 BOARD (20/23)
MECHA CONTROL
XX MARK:NO MOUNT

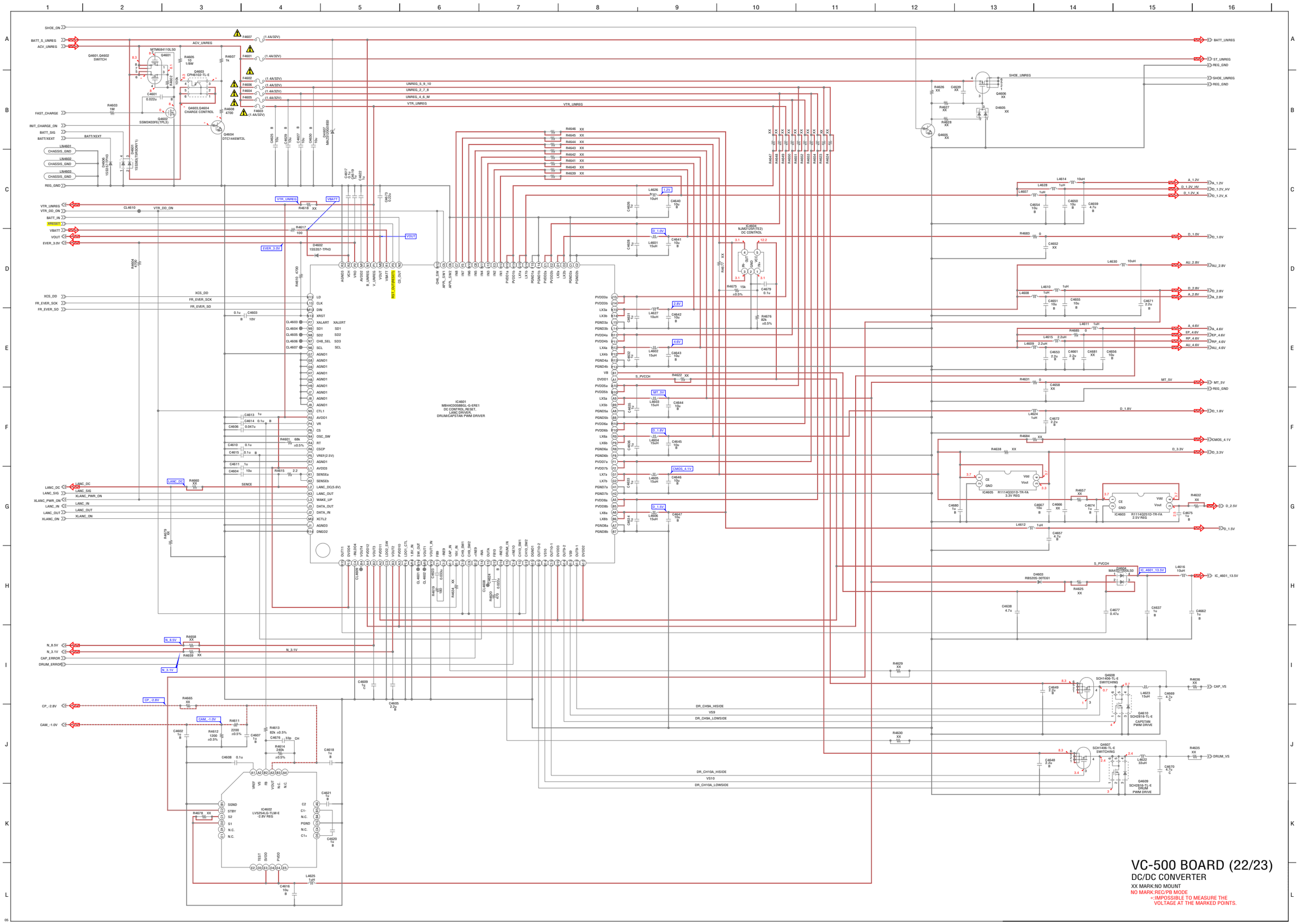


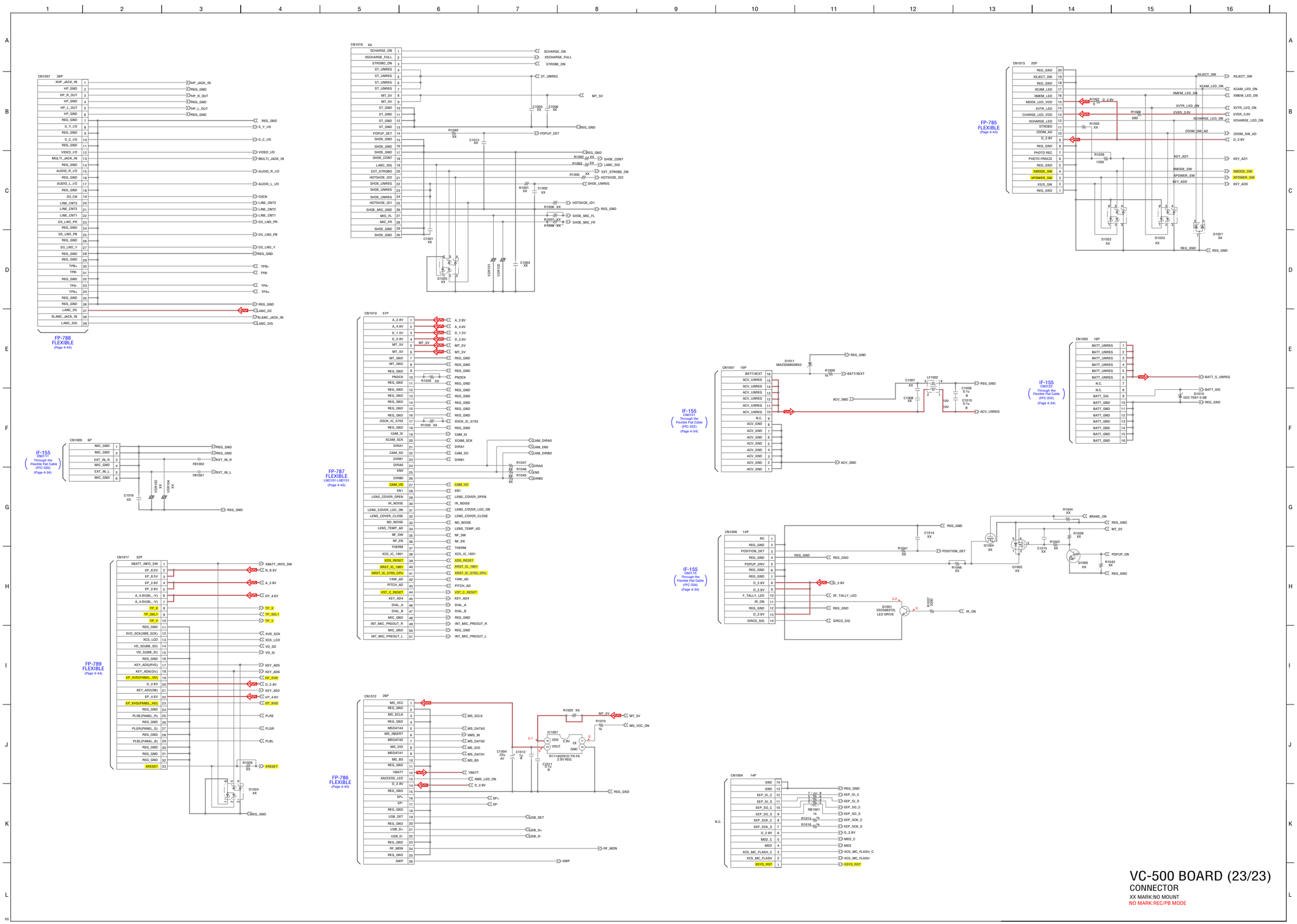

# VC-500 BOARD (21/23)

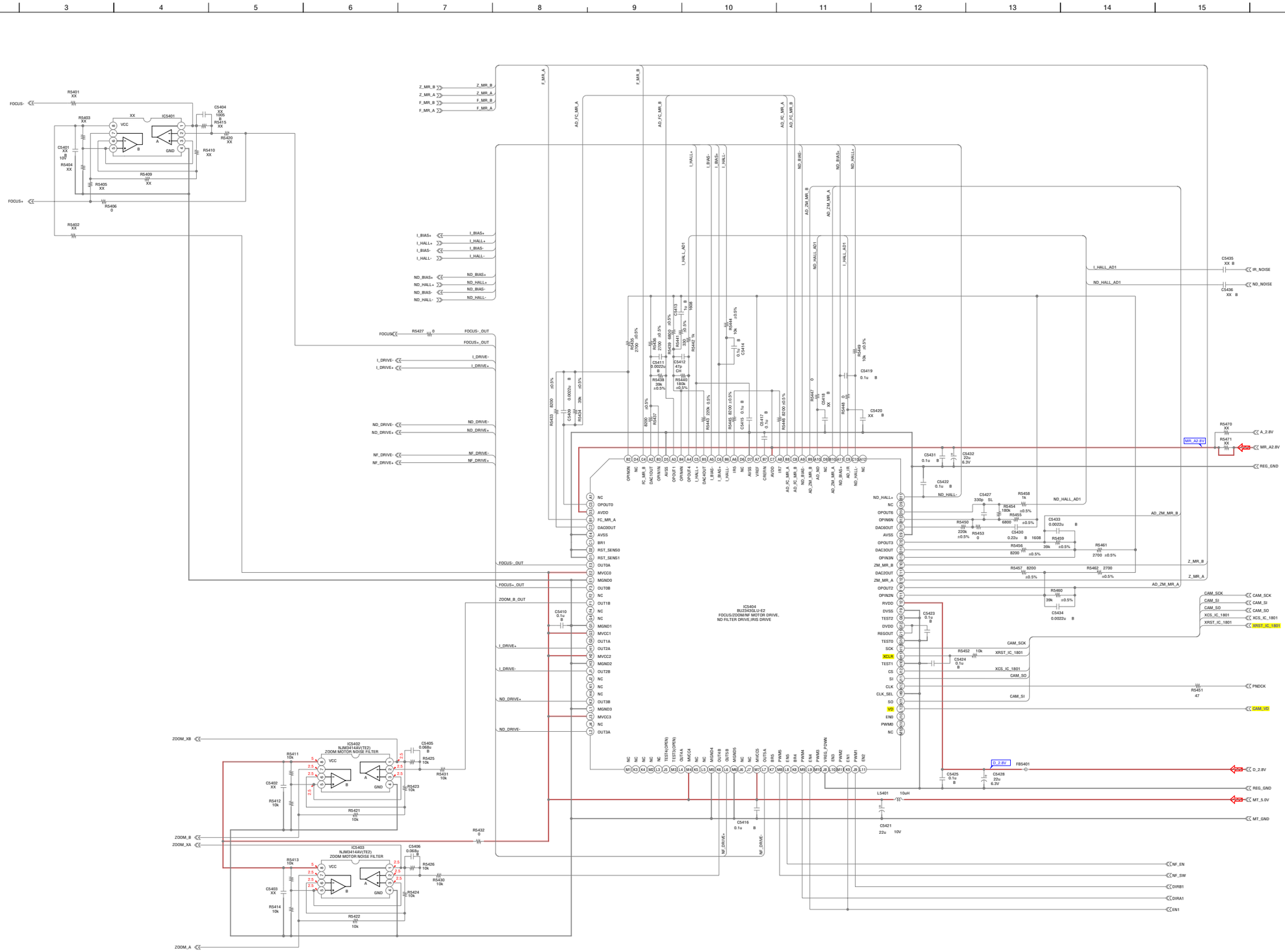
HI CONTROL

XX MARK:NO MOUNT

• Refer to page 4-3 for mark ⚠.




CN1007 39P
XHP_JACK_IN
HP_GND
HP_R_OUT
HP_GND
HP_L_OUT
HP_GND
REG_GND
S_Y_I/O
REG_GND
S_C_I/O
REG_GND
VIDEO_I/O
MULTI_JACK_IN
REG_GND
AUDIO_R_I/O
REG_GND
AUDIO_L_I/O
REG_GND
D3_CN
LINE_CNT3
LINE_CNT2
LINE_CNT1
D3_LNO_PR
REG_GND
D3_LNO_PB
REG_GND
D3_LNO_Y
REG_GND
REG_GND
TPB+
TPB-
REG_GND
TPA-
TPA+
REG_GND
REG_GND
LANC_DC
XLANC_JACK_IN
LANC_SIG
FP-788 FLEXIBLE (Page 4-44)
CN1018 XX
SCHARGE_ON
XSCHARGE_FULL
STROBO_ON
ST_UNREG
MT_5V
POPUP_DET
SHOE_GND
SHOE_CONT
LANC_SIG
EXT_STROBO
HOTSHOE_ID2
SHOE_UNREG
HOTSHOE_ID1
SHOE_MIC_GND
MIC_FL
MIC_FR
SHOE_GND
C1001 XX
C1003 XX
D1025 XX
VDR101
VDR102
CN1010 51P
A_2.8V
A_4.6V
D_1.5V
D_2.8V
MT_5V
REG_GND
PNDCK
DSCK_IC_5703
CAM_SI
XCAM_SCK
DIRA1
CAM_SO
DIRB1
DIRA0
EN0
DIRB0
CAM_VD
EN1
LENS_COVER_OPEN
IR_NOISE
LENS_COVER_LED_ON
LENS_COVER_CLOSE
ND_NOISE
LENS_TEMP_AD
NF_SW
NF_EN
THERM
XCS_IC_1801
XDS_RESET
XRST_IC_1801
XRST_IC_5703_CPU
YAW_AD
PITCH_AD
VST_C_RESET
KEY_AD4
DIAL_A
DIAL_B
REG_GND
INT_MIC_PREOUT_R
REG_GND
INT_MIC_PREOUT_L
FP-787 FLEXIBLE LND101-LND151 (Page 4-43)
CN1015 20P
REG_GND
XEJECT_SW
REG_GND
XCAM_LED
XMEM_LED
MODE_LED_VDD
XVTR_LED
CHARGE_LED_VDD
XCHARGE_LED
STROBO
ZOOM_AD
D_2.8V
REG_GND
PHOTO REC
PHOTO FREEZE
REG_GND
XMODE_SW
XPOWER_SW
XS/S_SW
REG_GND
D1022 XX
D1023 XX
D1021 XX
FP-785 FLEXIBLE (Page 4-43)
CN1001 16P
BATT/XEXT
ACV_UNREG
N.C.
ACV_GND
D1011 MAZS068G0850
IF-155 CN0127 Through the Flexible Flat Cable (FFC-332) (Page 4-34)
CN1003 16P
BATT_UNREG
N.C.
BATT_SIG
BATT_GND
BATT_S_UNREG
D1010 ED2-TE61-5.6B
IF-155 CN0122 Through the Flexible Flat Cable (FFC-332) (Page 4-34)
CN1009 6P
MIC_GND
EXT_IN_R
EXT_IN_L
FB1002
FB1001
C1016 XX
VDR103
VDR104
IF-155 CN0117 Through the Flexible Flat Cable (FFC-335) (Page 4-34)
CN1017 33P
XBATT_INFO_SW
EP_8.5V
EP_4.6V
TP_X
TP_SELT
TP_V
XVD_SCK
XCS_LCD
VD_SO
VD_SI
KEY_AD5
KEY_AD6
EP_XVD
D_2.8V
KEY_AD2
XRESET
D1024 XX
FP-789 FLEXIBLE (Page 4-44)
CN1012 26P
MS_VCC
MS_SCLK
MS_DATA3
MS_DATA2
MS_DIO
MS_DATA1
MS_BS
VBATT
XMS_LED_ON
SP+
SP-
USB_DET
USB_D+
USB_D-
RF_MON
SWP
IC1001 RN112402291D-TR-FA 2.9V REG
FP-786 FLEXIBLE (Page 4-43)
CN1006 14P
NC
POSITION_DET
POPUP_DRV
F_TALLY_LED
IR_ON
SIRCS_SIG
Q1001 2SC5663TZL LED DRIVE
Q1003 XX
Q1004 XX
Q1002 XX
IF-155 CN0110 Through the Flexible Flat Cable (FFC-334) (Page 4-34)
CN1004 14P
GND
EEP_SI_C
EEP_SI_S
EEP_SO_C
EEP_SO_S
EEP_SCK_C
EEP_SCK_S
D_2.8V
MD2_C
MD2
XCS_MC_FLASH_C
XCS_MC_FLASH
XSYS_RST
N.C.
RB1001 1k
VC-500 BOARD (23/23)
CONNECTOR
XX MARK:NO MOUNT
NO MARK:REC/PB MODE

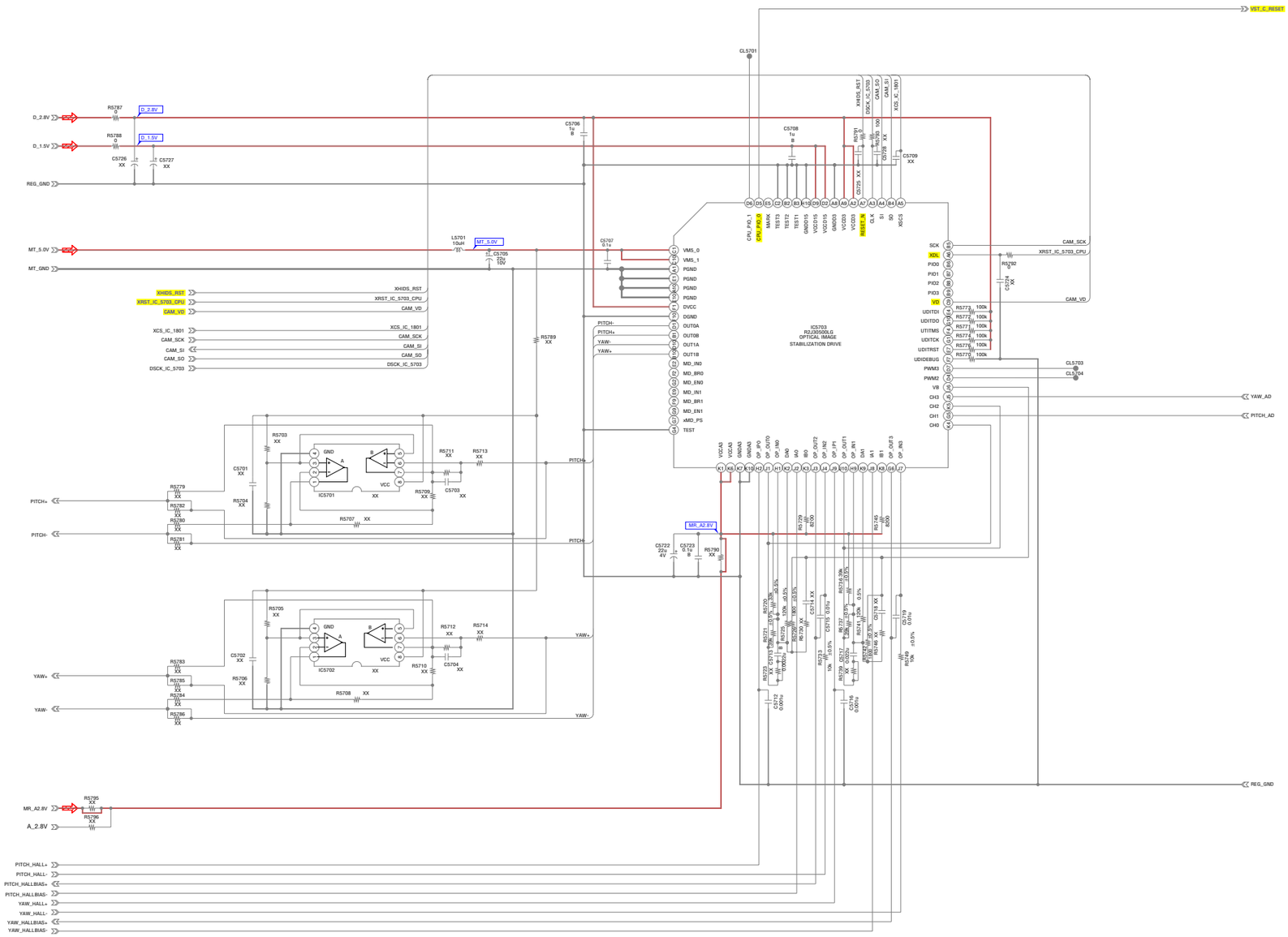



LD-229 BOARD (1/4)

LENS DRIVE

XX MARK:NO MOUNT

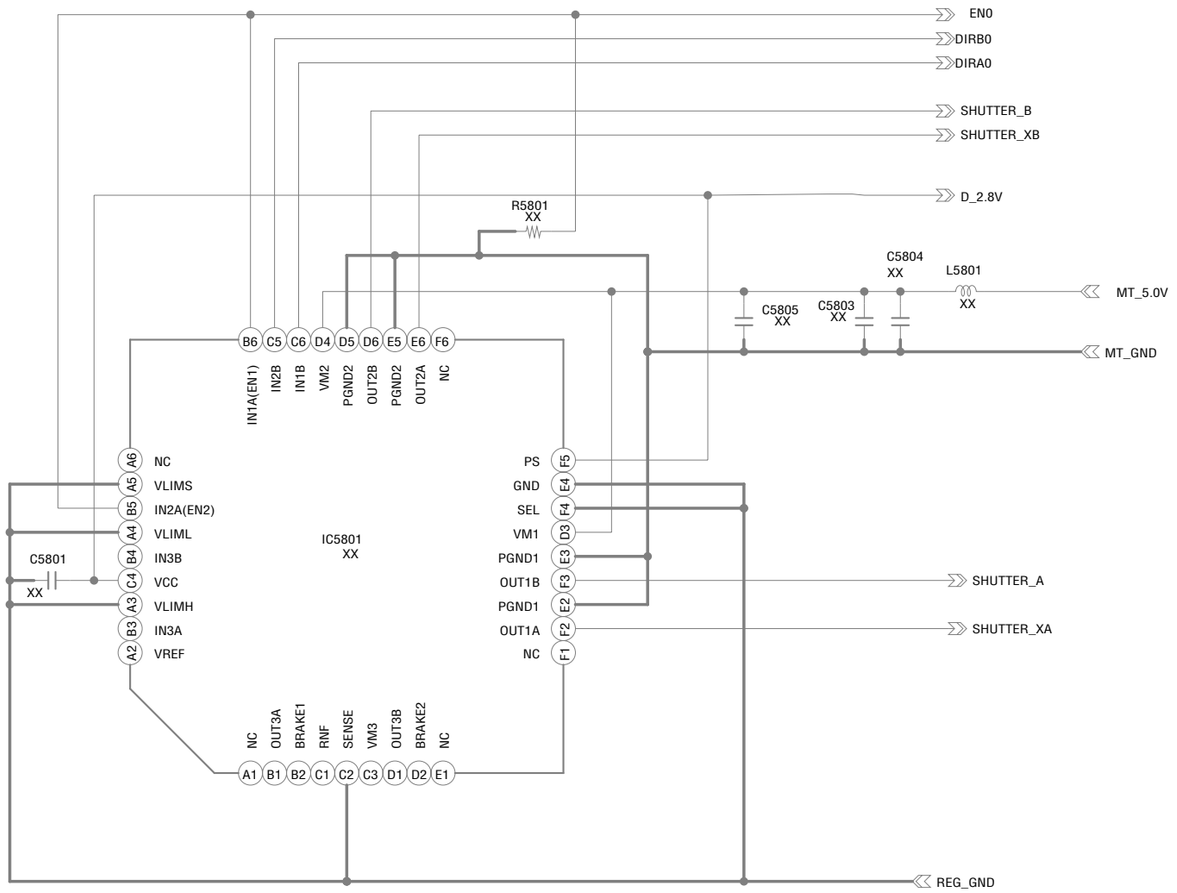
NO MARK:REC/PB MODE




# LD-229 BOARD (2/4)

OIS DRIVE

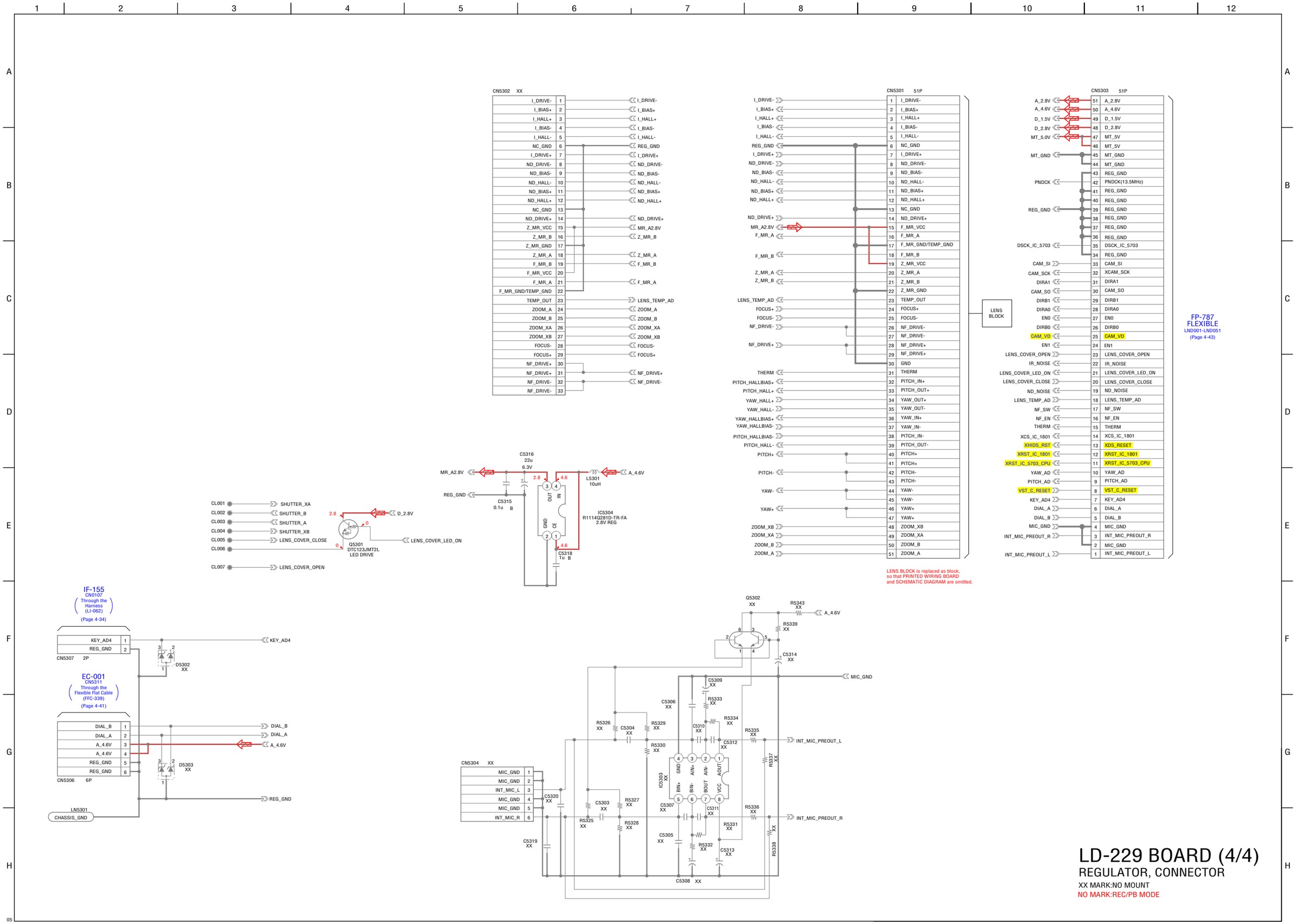
XX MARK:NO MOUNT




# LD-229 BOARD (3/4)

(Not Used)

XX MARK:NO MOUNT


CN5302 XX
I_DRIVE- 1
I_BIAS+ 2
I_HALL+ 3
I_BIAS- 4
I_HALL- 5
NC_GND 6
I_DRIVE+ 7
ND_DRIVE- 8
ND_BIAS- 9
ND_HALL- 10
ND_BIAS+ 11
ND_HALL+ 12
NC_GND 13
ND_DRIVE+ 14
Z_MR_VCC 15
Z_MR_B 16
Z_MR_GND 17
Z_MR_A 18
F_MR_B 19
F_MR_VCC 20
F_MR_A 21
F_MR_GND/TEMP_GND 22
TEMP_OUT 23
ZOOM_A 24
ZOOM_B 25
ZOOM_XA 26
ZOOM_XB 27
FOCUS- 28
FOCUS+ 29
NF_DRIVE+ 30
NF_DRIVE+ 31
NF_DRIVE- 32
NF_DRIVE- 33
CN5301 51P
1 I_DRIVE-
2 I_BIAS+
3 I_HALL+
4 I_BIAS-
5 I_HALL-
6 NC_GND
7 I_DRIVE+
8 ND_DRIVE-
9 ND_BIAS-
10 ND_HALL-
11 ND_BIAS+
12 ND_HALL+
13 NC_GND
14 ND_DRIVE+
15 F_MR_VCC
16 F_MR_A
17 F_MR_GND/TEMP_GND
18 F_MR_B
19 Z_MR_VCC
20 Z_MR_A
21 Z_MR_B
22 Z_MR_GND
23 TEMP_OUT
24 FOCUS+
25 FOCUS-
26 NF_DRIVE-
27 NF_DRIVE-
28 NF_DRIVE+
29 NF_DRIVE+
30 GND
31 THERM
32 PITCH_IN+
33 PITCH_OUT+
34 YAW_OUT+
35 YAW_OUT-
36 YAW_IN+
37 YAW_IN-
38 PITCH_IN-
39 PITCH_OUT-
40 PITCH+
41 PITCH+
42 PITCH-
43 PITCH-
44 YAW-
45 YAW-
46 YAW+
47 YAW+
48 ZOOM_XB
49 ZOOM_XA
50 ZOOM_B
51 ZOOM_A
CN5303 51P
51 A_2.8V
50 A_4.6V
49 D_1.5V
48 D_2.8V
47 MT_5V
46 MT_5V
45 MT_GND
44 MT_GND
43 REG_GND
42 PNDCK(13.5MHz)
41 REG_GND
40 REG_GND
39 REG_GND
38 REG_GND
37 REG_GND
36 REG_GND
35 DSCK_IC_5703
34 REG_GND
33 CAM_SI
32 XCAM_SCK
31 DIRA1
30 CAM_SO
29 DIRB1
28 DIRA0
27 EN0
26 DIRB0
25 CAM_VD
24 EN1
23 LENS_COVER_OPEN
22 IR_NOISE
21 LENS_COVER_LED_ON
20 LENS_COVER_CLOSE
19 ND_NOISE
18 LENS_TEMP_AD
17 NF_SW
16 NF_EN
15 THERM
14 XCS_IC_1801
13 XDS_RESET
12 XRST_IC_1801
11 XRST_IC_5703_CPU
10 YAW_AD
9 PITCH_AD
8 VST_C_RESET
7 KEY_AD4
6 DIAL_A
5 DIAL_B
4 MIC_GND
3 INT_MIC_PREOUT_R
2 MIC_GND
1 INT_MIC_PREOUT_L
LENS BLOCK
LENS BLOCK is replaced as block, so that PRINTED WIRING BOARD and SCHEMATIC DIAGRAM are omitted.
FP-787 FLEXIBLE
LND001-LND051
(Page 4-43)
C5316 22u 6.3V
C5315 0.1u B
L5301 10uH
IC5304 R1114Q281D-TR-FA 2.8V REG
C5318 1u B
MR_A2.8V
REG_GND
A_4.6V
CL001 SHUTTER_XA
CL002 SHUTTER_B
CL003 SHUTTER_A
CL004 SHUTTER_XB
CL005 LENS_COVER_CLOSE
CL006
CL007 LENS_COVER_OPEN
Q5301 DTC123JMT2L LED DRIVE
D_2.8V
LENS_COVER_LED_ON
IF-155
CN0107
Through the Harness (LI-062)
(Page 4-34)
CN5307 2P
KEY_AD4
REG_GND
D5302 XX
EC-001
CN5311
Through the Flexible Flat Cable (FFC-339)
(Page 4-41)
CN5306 6P
DIAL_B
DIAL_A
A_4.6V
REG_GND
D5303 XX
LN5301
CHASSIS_GND
Q5302 XX
R5343 XX
R5339 XX
C5314 XX
MIC_GND
C5309 XX
C5306 XX
R5333 XX
R5326 XX
C5304 XX
R5329 XX
R5334 XX
C5310 XX
R5335 XX
C5312 XX
INT_MIC_PREOUT_L
R5330 XX
R5337 XX
IC5303 XX
GND AIN+ AIN- AOUT
BIN+ BIN- BOUT VCC
C5307 XX
C5311 XX
R5336 XX
INT_MIC_PREOUT_R
C5303 XX
R5327 XX
R5325 XX
R5328 XX
R5331 XX
C5305 XX
R5332 XX
C5313 XX
R5338 XX
C5319 XX
C5320 XX
C5308 XX
CN5304 XX
MIC_GND
MIC_GND
INT_MIC_L
MIC_GND
MIC_GND
INT_MIC_R
LD-229 BOARD (4/4)
REGULATOR, CONNECTOR
XX MARK:NO MOUNT
NO MARK:REC/PB MODE

# IF-155 BOARD

CONNECTOR

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

FP-788 FLEXIBLE (Page 4-44)

CN0119 39P

| | | |
|---|---|---|
| XHP_JACK_IN | 39 | HP_JACK_IN |
| HP_GND | 38 | HP_GND |
| HP_R_OUT | 37 | HP_R_OUT |
| HP_GND | 36 | HP_GND |
| HP_L_OUT | 35 | HP_L_OUT |
| HP_GND | 34 | HP_GND |
| REG_GND | 33 | |
| S_Y_I/O | 32 | S_Y_OUT |
| REG_GND | 31 | |
| S_C_I/O | 30 | S_C_OUT |
| REG_GND | 29 | |
| VIDEO_I/O | 28 | VIDEO_OUT |
| MULTI_JACK_IN | 27 | |
| REG_GND | 26 | |
| AUDIO_R_I/O | 25 | AUDIO_R_OUT |
| REG_GND | 24 | REG_GND |
| AUDIO_L_I/O | 23 | AUDIO_L_OUT |
| REG_GND | 22 | |
| D3_CN | 21 | |
| LINE_CNT3 | 20 | |
| LINE_CNT2 | 19 | |
| LINE_CNT1 | 18 | |
| D3_LNO_PR | 17 | D3_LNO_PR |
| REG_GND | 16 | |
| D3_LNO_PB | 15 | D3_LNO_PB |
| REG_GND | 14 | |
| D3_LNO_Y | 13 | D3_LNO_Y |
| REG_GND | 12 | |
| REG_GND | 11 | |
| TPB+ | 10 | TPB+ |
| TPB- | 9 | TPB- |
| REG_GND | 8 | |
| TPA- | 7 | TPA- |
| TPA+ | 6 | TPA+ |
| REG_GND | 5 | |
| REG_GND | 4 | REG_GND |
| LANC_DC | 3 | LANC_DC |
| XLANC_JACK_IN | 2 | XLANC_JACK_IN |
| LANC_SIG | 1 | LANC_SIG |

R119 XX

CL0101 CL0102 CL0103

Q104 DTC144EMT2L INVERTER

2.8 0

R118 10k

D_2.8VA

D3_CN

CN0110 14P

| | | |
|---|---|---|
| N.C | 1 | |
| REG_GND | 2 | |
| POSITION_DET | 3 | |
| REG_GND | 4 | |
| POPUP_DRV | 5 | |
| REG_GND | 6 | |
| REG_GND | 7 | |
| D_2.8V | 8 | |
| D_2.8V | 9 | D_2.8V |
| F_TALLY_LED | 10 | F_TALLY_LED |
| IR_ON | 11 | IR_ON |
| REG_GND | 12 | |
| D_2.8V | 13 | |
| SIRCS_SIG | 14 | |

CL0104 CL0105 R122 10k CL0107

REG_GND

VC-500 (23/23) CN1003 Through the Flexible Flat Cable (FFC-332) (Page 4-29)

VC-500 (23/23) CN1006 Through the Flexible Flat Cable (FFC-334) (Page 4-29)

CN0122 16P

| | | |
|---|---|---|
| BATT_UNREG | 16 | |
| BATT_UNREG | 15 | |
| BATT_UNREG | 14 | |
| BATT_UNREG | 13 | |
| BATT_UNREG | 12 | |
| BATT_UNREG | 11 | BATT_UNREG |
| N.C | 10 | |
| N.C | 9 | |
| BATT_SIG | 8 | BATT_SIG |
| BATT_GND | 7 | REG_GND |
| BATT_GND | 6 | |
| BATT_GND | 5 | |
| BATT_GND | 4 | |
| BATT_GND | 3 | |
| BATT_GND | 2 | |
| BATT_GND | 1 | |

CN0121 16P

| | | |
|---|---|---|
| BATT/XEXT | 1 | ACV_XEXT |
| ACV_UNREG | 2 | |
| ACV_UNREG | 3 | |
| ACV_UNREG | 4 | |
| ACV_UNREG | 5 | |
| ACV_UNREG | 6 | |
| ACV_UNREG | 7 | ACV_UNREG |
| N.C | 8 | |
| ACV_GND | 9 | ACV_GND |
| ACV_GND | 10 | |
| ACV_GND | 11 | |
| ACV_GND | 12 | |
| ACV_GND | 13 | |
| ACV_GND | 14 | |
| ACV_GND | 15 | |
| ACV_GND | 16 | |

VC-500 (23/23) CN1001 Through the Flexible Flat Cable (FFC-332) (Page 4-29)

CN0103 20P

| | | |
|---|---|---|
| REG_GND | 1 | |
| EVF_PSIG | 2 | EVF_PSIG |
| EVF_VG | 3 | EVF_VG |
| EVF_VR | 4 | EVF_VR |
| EVF_VB | 5 | EVF_VB |
| REG_GND | 6 | |
| LED_K | 7 | LED_K |
| EP_4.6V | 8 | EP_4.6V |
| EVF_VCK | 9 | EVF_VCK |
| EVF_HST | 10 | EVF_HST |
| EVF_VST | 11 | EVF_VST |
| EVF_REF | 12 | EVF_REF |
| EVF_HCK1 | 13 | EVF_HCK1 |
| EVF_HCK2 | 14 | EVF_HCK2 |
| REG_GND | 15 | REG_GND |
| EVF_PCG | 16 | EVF_PCG |
| EVF_STB | 17 | EVF_STB |
| EVF_EN | 18 | EVF_EN |
| EVF_VDD | 19 | EVF_VDD |
| EVF_COM | 20 | EVF_COM |

EVF_PSIG EVF_VGO EVF_VRO EVF_VBO LED_K EP_4.6VE EVF_VCK EVF_HST EVF_VST EVF_REF EVF_HCK1 EVF_HCK2 REG_GND EVF_PCG EVF_STB EVF_EN EVF_VDD EVF_COM

R120 XX R121 XX

C103 0.1u B C110 XX C104 0.1u B

BH-001 CN6003 Through the Harness (BI-001) (Page 4-35)

CN0104 15P

| | | |
|---|---|---|
| BB_SI | 1 | VD_SI |
| BB_SO | 2 | VD_SO |
| EP_XVD | 3 | EP_XVD |
| REG_GND | 4 | REG_GND |
| PANEL_XHD | 5 | PANEL_XHD |
| EP_4.6VA | 6 | REG_GND |
| | 7 | EP_4.6V |
| KEY_AD6 | 8 | EP_4.6V |
| D_2.8VA | 9 | KEY_AD6(O/C) |
| PANEL_VB | 10 | D_2.8V |
| PANEL_VG | 11 | REG_GND |
| PANEL_VR | 12 | PANEL_VB |
| | 13 | PANEL_VG |
| | 14 | PANEL_VR |
| | 15 | REG_GND |

C105 0.1u B C105 0.1u B

BH-001 CN6004 Through the Harness (BI-001) (Page 4-35)

JS-033 CN0702 Through the Harness (IJ-001) (Page 4-38)

CN0113 12P

| | | |
|---|---|---|
| XRESET | 12 | XRESET |
| | 11 | REG_GND |
| S_Y_OUT | 10 | S_Y_OUT |
| | 9 | REG_GND |
| S_C_OUT | 8 | S_C_OUT |
| | 7 | REG_GND |
| VIDEO_OUT | 6 | VIDEO_OUT |
| | 5 | REG_GND |
| AUDIO_R_OUT | 4 | AUDIO_R_OUT |
| | 3 | REG_GND |
| AUDIO_L_OUT | 2 | AUDIO_L_OUT |
| REG_GND | 1 | REG_GND |

CN0109 12P

| | | |
|---|---|---|
| D_2.8VA | 12 | D_2.8V |
| | 11 | D_2.8V |
| IR_ON | 10 | IR_ON (N/S_LED) |
| ZOOM_SW_AD | 9 | ZOOM_SW_AD |
| PHOTO_REC | 8 | PHOTO_REC |
| KEY_AD1 | 7 | KEY_AD1 |
| XMODE_SW | 6 | XMODE_SW |
| XPOWER_SW | 5 | XPOWER_SW |
| KEY_AD0 | 4 | KEY_AD0 |
| REG_GND | 3 | REG_GND |
| | 2 | REG_GND |
| | 1 | REG_GND |

C116 XX C115 0.1u B

NS-022 CN0901 Through the Flexible Flat Cable (FFC-340) (Page 4-41)

CN0114 8P

| | | |
|---|---|---|
| D3_LNO_PR | 8 | D3_LNO_PR |
| | 7 | REG_GND |
| D3_LNO_PB | 6 | D3_LNO_PB |
| | 5 | REG_GND |
| D3_LNO_Y | 4 | D3_LNO_Y |
| | 3 | REG_GND |
| D3_CN | 2 | COMPONENT_JACK_IN |
| REG_GND | 1 | REG_GND |

JK-355 CN0701 Through the Harness (IJ-002) (Page 4-38)

CN0116 9P

| | | |
|---|---|---|
| REG_GND | 9 | BATT_GND |
| BATT_UNREG | 8 | BATT_UNREG |
| BATT_SIG | 7 | BATT_SIG |
| ACV_UNREG | 6 | ACV_UNREG |
| ACV_GND | 5 | ACV_GND |
| ACV_XEXT | 4 | ACV/XEXT |
| | 3 | ACV_GND |
| EVER_3.0V | 2 | CHARGE_LED_VDD |
| XCHARGE_LED | 1 | XCHARGE_LED |

C121 0.1u B C122 XX C111 0.1u B C113 XX C112 0.1u B C114 XX C118 XX

DC-110 CN0602 Through the Harness (DI-003) (Page 4-42)

CN0117 14P

| | | |
|---|---|---|
| | 14 | REG_GND |
| XBATT_INFO_SW | 13 | XBATT_INFO_SW |
| KEY_AD4 | 12 | N/S_SW |
| | 11 | BACK_LIGHT_SW |
| | 10 | REG_GND |
| SP- | 9 | SP(-) |
| SP+ | 8 | SP(+) |
| | 7 | REG_GND |
| | 6 | PON_SW |
| XVTR_LED | 5 | XVTR_LED |
| MODE_LED_VDD | 4 | MODE_LED_VDD |
| XMEM_LED | 3 | XMEM_LED |
| XCAM_LED | 2 | XCAM_LED |
| REG_GND | 1 | REG_GND |

R115 150 R114 1200 C117 XX

SP-048 CN0501 Through the Flexible Flat Cable (FFC-337) (Page 4-40)

CN0106 2P

| | | |
|---|---|---|
| SP- | 1 | SP(-) |
| SP+ | 2 | SP(+) |

MS-379 CN8002 Through the Harness (MI-076) (Page 4-39)

CN0115 10P

| | | |
|---|---|---|
| LANC_SIG | 1 | LANC_SIG |
| XLANC_JACK_IN | 2 | XLANC_JACK_IN |
| LANC_DC | 3 | LANC_DC |
| REG_GND | 4 | REG_GND |
| HP_GND | 5 | HP_GND |
| HP_L_OUT | 6 | HP_L_OUT |
| HP_GND | 7 | HP_GND |
| HP_R_OUT | 8 | HP_R_OUT |
| | 9 | HP_GND |
| HP_JACK_IN | 10 | HP_JACK_IN |

HP-150 CN0603 Through the Harness (DI-004) (Page 4-38)

CN0112 6P

| | | |
|---|---|---|
| REG_GND | 1 | REG_GND |
| TPB+ | 2 | TPB+ |
| TPB- | 3 | TPB- |
| TPA- | 4 | TPA- |
| TPA+ | 5 | TPA+ |
| | 6 | REG_GND |

HP-150 CN0604 Through the Harness (DI-005) (Page 4-38)

FP-789 FLEXIBLE (Page 4-44)

CN0118 33P

| | | |
|---|---|---|
| XBATT_INFO_SW | 33 | XBATT_INFO_SW |
| EP_8.5V | 32 | N_8.5V |
| EP_8.5V | 31 | |
| EP_2.8V | 30 | A_2.8V |
| EP_2.8V | 29 | |
| A_4.6V | 28 | A_4.6V |
| A_4.6V | 27 | |
| TP_X | 26 | TP_X |
| TP_SEL1 | 25 | TP_SEL1 |
| TP_Y | 24 | TP_Y |
| REG_GND | 23 | |
| XVD_SCK(XBB_SCK) | 22 | XBB_SCK |
| XCS_LCD | 21 | XCS_LCD |
| VD_SO(BB_SO) | 20 | BB_SO |
| VD_SI(BB_SI) | 19 | BB_SI |
| REG_GND | 18 | |
| KEY_AD5(RVS) | 17 | KEY_AD5 |
| KEY_AD6(O/C) | 16 | KEY_AD6 |
| EP_XVD(PANEL_VD) | 15 | EP_XVD |
| D_2.8V | 14 | D_2.8VA |
| KEY_AD2(SB) | 13 | KEY_AD2 |
| EP_4.6V | 12 | EP_4.6VA |
| EP_XHD(PANEL_HD) | 11 | PANEL_XHD |
| REG_GND | 10 | |
| PLRE(PANEL_R) | 9 | PANEL_VR |
| REG_GND | 8 | |
| PLGR(PANEL_G) | 7 | PANEL_VG |
| REG_GND | 6 | |
| PLBL(PANEL_B) | 5 | PANEL_VB |
| REG_GND | 4 | |
| REG_GND | 3 | |
| REG_GND | 2 | |
| XRESET | 1 | XRESET |

REG_GND

LND001 CHASSIS_GND

LND002 CHASSIS_GND

CN0102 20P

| | | |
|---|---|---|
| LED_K | 20 | LED_K |
| EP_4.6V | 19 | EP_4.6VE |
| REG_GND | 18 | |
| EVF_COM | 17 | EVF_COM |
| EVF_PSIG | 16 | EVF_PSIG |
| EVF_VG | 15 | EVF_VG |
| EVF_VR | 14 | EVF_VR |
| EVF_VB | 13 | EVF_VB |
| EVF_PCG | 12 | EVF_PCG |
| EVF_VCK | 11 | EVF_VCK |
| EVF_STB | 10 | EVF_STB |
| EVF_EN | 9 | EVF_EN |
| EVF_VST | 8 | EVF_VST |
| EVF_REF | 7 | EVF_REF |
| REG_GND | 6 | |
| EVF_HCK1 | 5 | EVF_HCK1 |
| EVF_HCK2 | 4 | EVF_HCK2 |
| EVF_HST | 3 | EVF_HST |
| REG_GND | 2 | |
| EVF_VDD | 1 | EVF_VDD |

REG_GND

VC-500 (12/23) CN3701 Through the Flexible Flat Cable (FFC-330) (Page 4-18)

FP-785 FLEXIBLE (Page 4-43)

CN0120 18P

| | | |
|---|---|---|
| REG_GND | 1 | |
| XCAM_LED | 2 | XCAM_LED |
| XMEM_LED | 3 | XMEM_LED |
| MODE_LED_VDD | 4 | MODE_LED_VDD |
| XVTR_LED | 5 | XVTR_LED |
| CHARGE_LED_VDD | 6 | EVER_3.0V |
| XCHARGE_LED | 7 | XCHARGE_LED |
| STOROBO | 8 | |
| ZOOM_AD | 9 | ZOOM_SW_AD |
| D_2.8V | 10 | D_2.8V |
| REG_GND | 11 | |
| PHOTO_REC | 12 | PHOTO_REC |
| PHOTO_FREEZE | 13 | KEY_AD1 |
| REG_GND | 14 | |
| XMODE_SW | 15 | XMODE_SW |
| XPOWER_SW | 16 | XPOWER_SW |
| XS/S_SW | 17 | KEY_AD0 |
| REG_GND | 18 | REG_GND |

HI-078 CN0207 Through the Flexible Flat Cable (FFC-329) (Page 4-41)

CN0101 8P

| | | |
|---|---|---|
| | 1 | REG_GND |
| | 2 | REG_GND |
| F_TALLY_LED | 3 | XF_TALLY_LED |
| | 4 | XF_TALLY_LED |
| A_4.6V | 5 | A_4.6V |
| | 6 | A_4.6V |
| KEY_AD2 | 7 | KEY_AD2 |
| REG_GND | 8 | REG_GND |

C119 0.1u B C120 0.1u B

LD-229 (4/4) CN5307 Through the Harness (LI-062) (Page 4-33)

CN0107 2P

| | | |
|---|---|---|
| KEY_AD4(PON_SW) | 1 | KEY_AD4 |
| REG_GND | 2 | REG_GND |

CN0105 10P

| | | |
|---|---|---|
| KEY_AD5 | 1 | KEY_AD5(RVS) |
| | 2 | REG_GND |
| XCS_LCD | 3 | XCS_LCD |
| XBB_SCK | 4 | XVD_SCK |
| TP_Y | 5 | TP_Y |
| TP_SEL1 | 6 | TP_SEL1 |
| TP_X | 7 | TP_X |
| A_2.8V | 8 | EP_2.8V |
| A_4.6V | 9 | A_4.6V |
| N_8.5V | 10 | EP_8.5V |
| REG_GND | | |

C107 0.1u B C108 0.1u B C109 0.1u B

BH-001 CN6005 Through the Harness (BI-001) (Page 4-35)

A_2.8V C101 XX C102 XX R103 XX R102 0 REG_GND Q101 XX EVF_VG R101 XX R105 0 R106 XX EVF_VR Q102 XX R104 XX R108 0 R109 XX EVF_VB Q103 XX R107 XX

EVF_VGO EVF_VRO EVF_VBO

CN0111 6P

| | | |
|---|---|---|
| MIC_GND | 1 | |
| MIC_GND | 2 | |
| EXT_IN_R | 3 | |
| MIC_GND | 4 | |
| EXT_IN_L | 5 | |
| MIC_GND | 6 | |

CN0108 4P

| | | |
|---|---|---|
| 1 | EXT_IN_R | |
| 2 | MIC_GND | |
| 3 | EXT_IN_L | |
| 4 | MIC_GND | |

MC-188 CN0401 Through the Harness (MI-075) (Page 4-38)

VC-500 (23/23) CN1009 Through the Flexible Flat Cable (FFC-335) (Page 4-29)

HVR-HD1000U/HD1000N/HD1000E/HD1000P/HD1000C

# BH-001 BOARD

## LCD SWITCH, CONNECTOR

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

BL-015
CN5901
Through the Flexible Flat Cable (FFC-338)
(Page 4-37)

CN6002 20P

| | |
|---|---|
| LED_K | 1 |
| EP_4.6V | 2 |
| EVF_GND | 3 |
| EVF_COM | 4 |
| EVF_PSIG | 5 |
| EVF_VG | 6 |
| EVF_VR | 7 |
| EVF_VB | 8 |
| EVF_PCG | 9 |
| EVF_VCK | 10 |
| EVF_STB | 11 |
| EVF_EN | 12 |
| EVF_VST | 13 |
| EVF_REF | 14 |
| EVF_GND | 15 |
| EVF_HCK1 | 16 |
| EVF_HCK2 | 17 |
| EVF_HST | 18 |
| EVF_GND | 19 |
| EVF_VDD | 20 |

C6003 0.1u B
C6004 0.1u B
FB6003
R6004 XX
R6005 XX

CN6003 20P

| | |
|---|---|
| 1 | REG_GND |
| 2 | EVF_PSIG |
| 3 | EVF_VG |
| 4 | EVF_VR |
| 5 | EVF_VB |
| 6 | REG_GND |
| 7 | LED_K |
| 8 | EP_4.6V |
| 9 | EVF_VCK |
| 10 | EVF_HST |
| 11 | EVF_VST |
| 12 | EVF_REF |
| 13 | EVF_HCK1 |
| 14 | EVF_HCK2 |
| 15 | REG_GND |
| 16 | EVF_PCG |
| 17 | EVF_STB |
| 18 | EVF_EN |
| 19 | EVF_VDD |
| 20 | EVF_COM |

IF-155
CN0103
Through the Harness (BI-001)
(Page 4-34)

PD-342
CN6202
Through the Harness (HP-147)
(Page 4-36)

CN6001 22P

| | |
|---|---|
| PANEL_B | 22 |
| PANEL_G | 21 |
| PANEL_R | 20 |
| REG_GND | 19 |
| PANEL_XHD | 18 |
| REG_GND | 17 |
| EP_4.6V | 16 |
| D_2.8V | 15 |
| PANEL_VD | 14 |
| N.C(BL_CONT) | 13 |
| REG_GND | 12 |
| VD_SI | 11 |
| VD_SO | 10 |
| XCS_LCD | 9 |
| XVD_SCK | 8 |
| REG_GND | 7 |
| TP_Y | 6 |
| TP_SEL_1 | 5 |
| TP_X | 4 |
| A_4.6V | 3 |
| EP_2.8V | 2 |
| EP_8.5V | 1 |

R6006 XX
C6005 0.1u B
C6006 0.1u B
FB6001
FB6002
C6007 0.1u B
C6008 0.1u B

IF-155
CN0104
Through the Harness (BI-001)
(Page 4-34)

CN6004 15P

| | |
|---|---|
| 1 | VD_SI |
| 2 | VD_SO |
| 3 | EP_XVD |
| 4 | REG_GND |
| 5 | PANEL_XHD |
| 6 | REG_GND |
| 7 | EP_4.6V |
| 8 | EP_4.6V |
| 9 | KEY_AD6(O/C) |
| 10 | D_2.8V |
| 11 | REG_GND |
| 12 | PANEL_VB |
| 13 | PANEL_VG |
| 14 | PANEL_VR |
| 15 | REG_GND |

IF-155
CN0105
Through the Harness (BI-001)
(Page 4-34)

CN6005 10P

| | |
|---|---|
| 1 | KEY_AD5(RVS) |
| 2 | REG_GND |
| 3 | XCS_LCD |
| 4 | XVD_SCK |
| 5 | TP_Y |
| 6 | TP_SEL1 |
| 7 | TP_X |
| 8 | EP_2.8V |
| 9 | A_4.6V |
| 10 | EP_8.5V |

C6011 0.1u B
C6010 0.1u B
C6009 0.1u B

RE-038
CN0851
Through the Harness (RS-112)
(Page 4-37)

CN6007 2P

| | |
|---|---|
| KEY_AD5(RVS) | 1 |
| REG_GND | 2 |

R6001 1200

LCD
ON → OFF
S6001
R6008 XX
R6007 XX
C6001 XX
D6001 MAZS068G08S0

FP-784
FLEXIBLE
LND801-LND806
(Page 4-42)

CN6006 6P

| | |
|---|---|
| REG_GND | 1 |
| OPEN/CLOSE_SW | 2 |
| D_2.8V | 3 |
| D_2.8V | 4 |
| REG_GND | 5 |
| REG_GND | 6 |

Q6001 DTA144EMT2L
Q6002 DTC144EMT2L
R6003 1200
R6002 XX
C6002 0.1u B
Q6001,Q6002 SWITCH

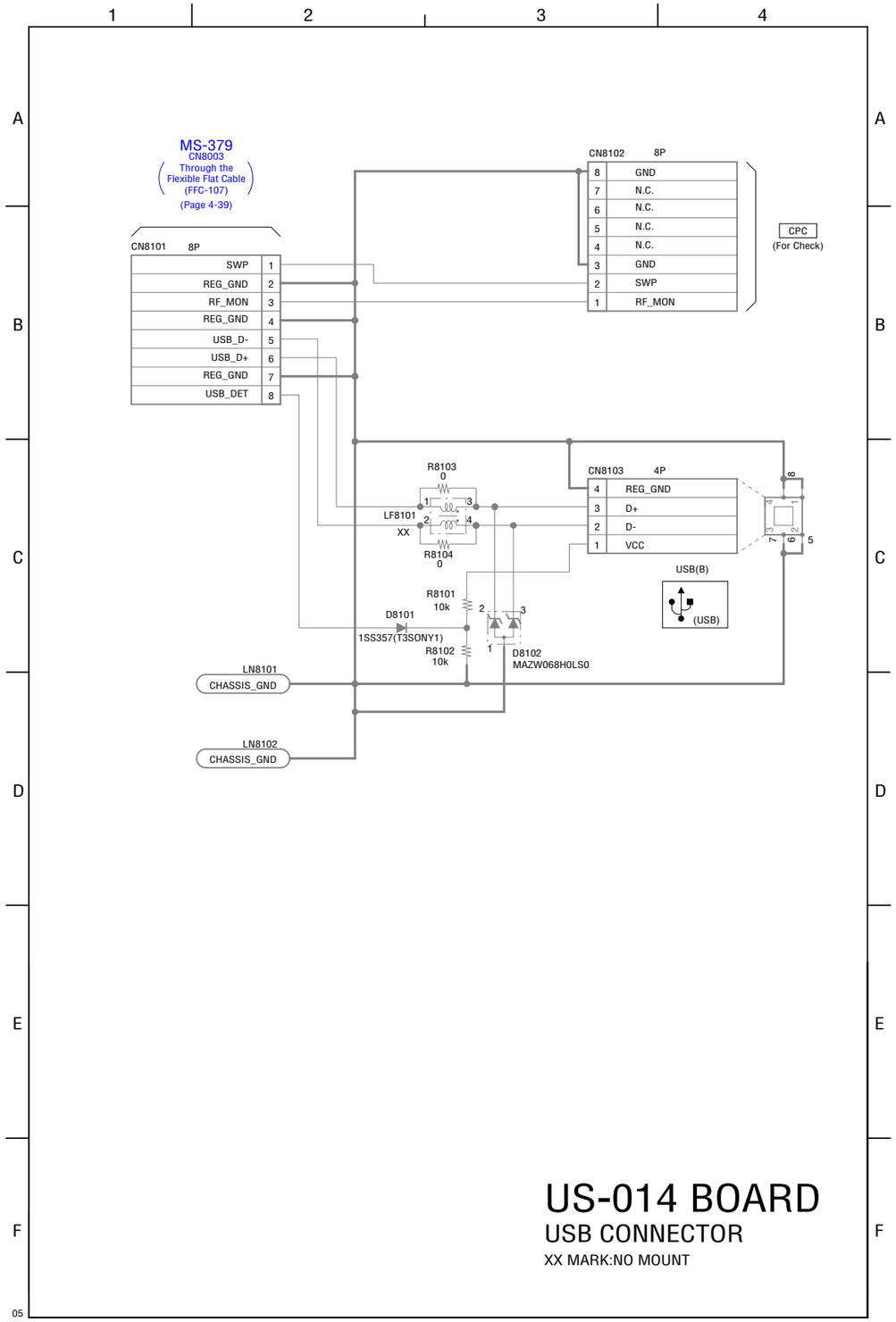
LND651
CHASSIS_GND

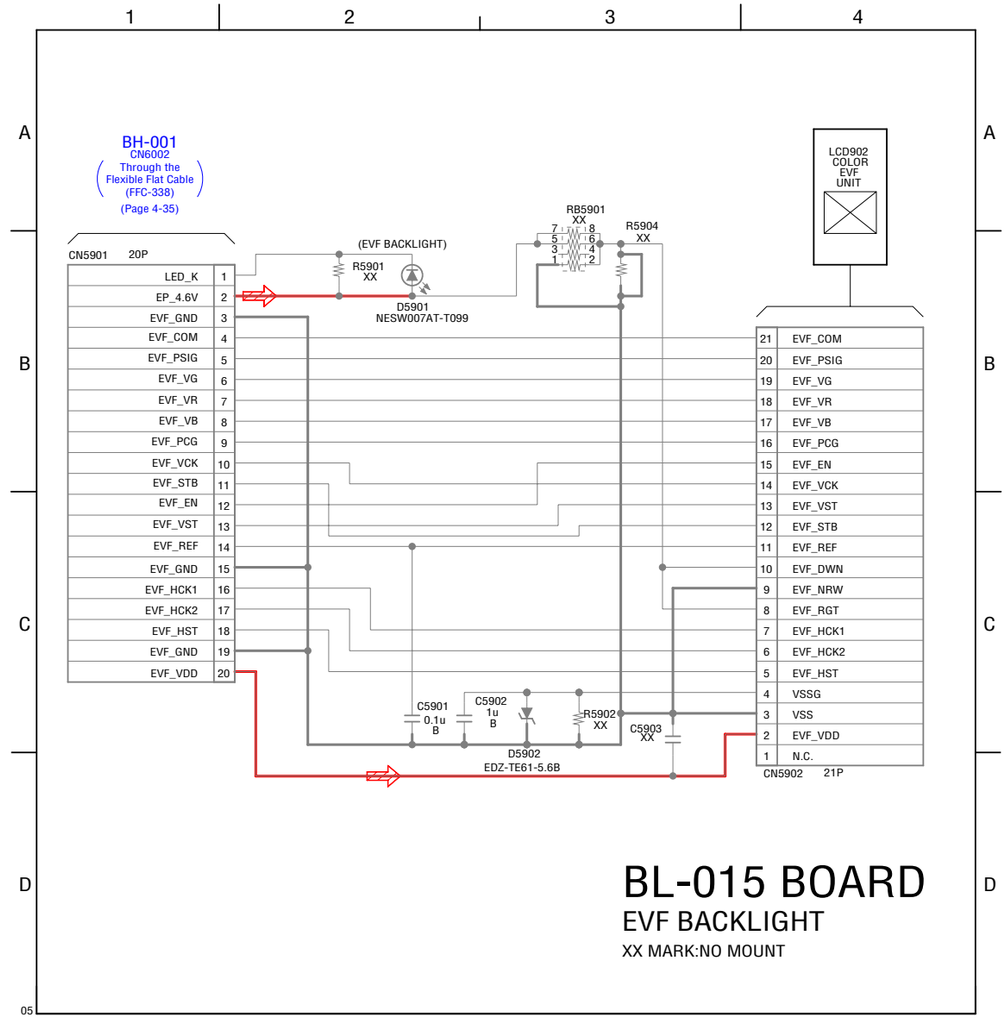
# PD-342 BOARD

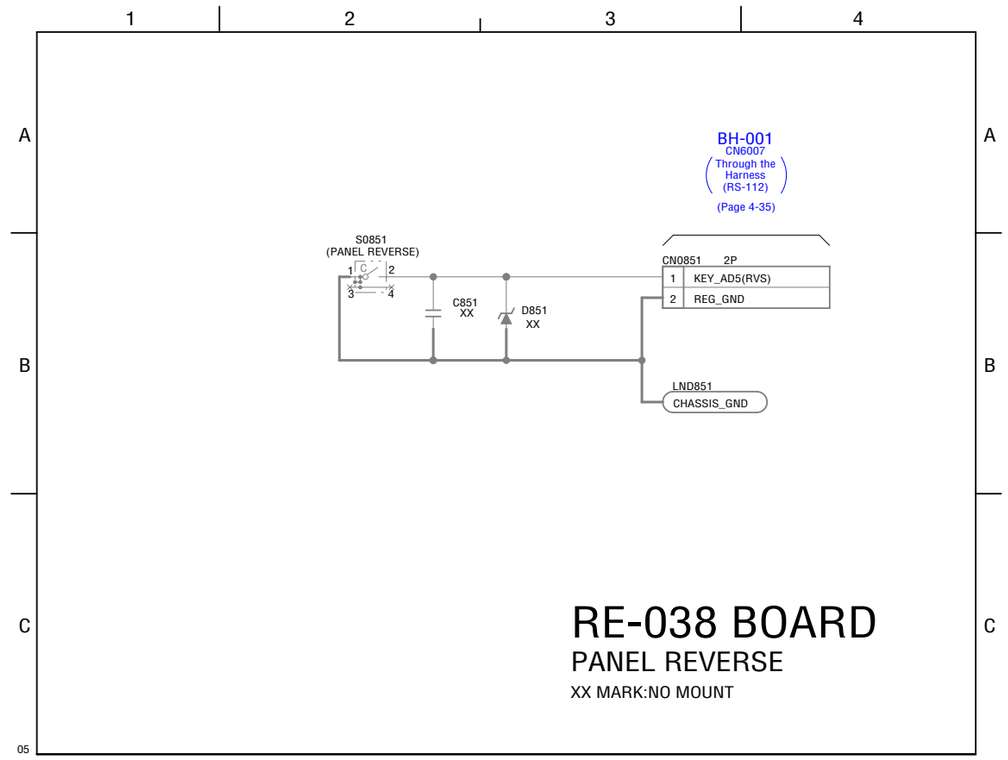
## LCD DRIVE

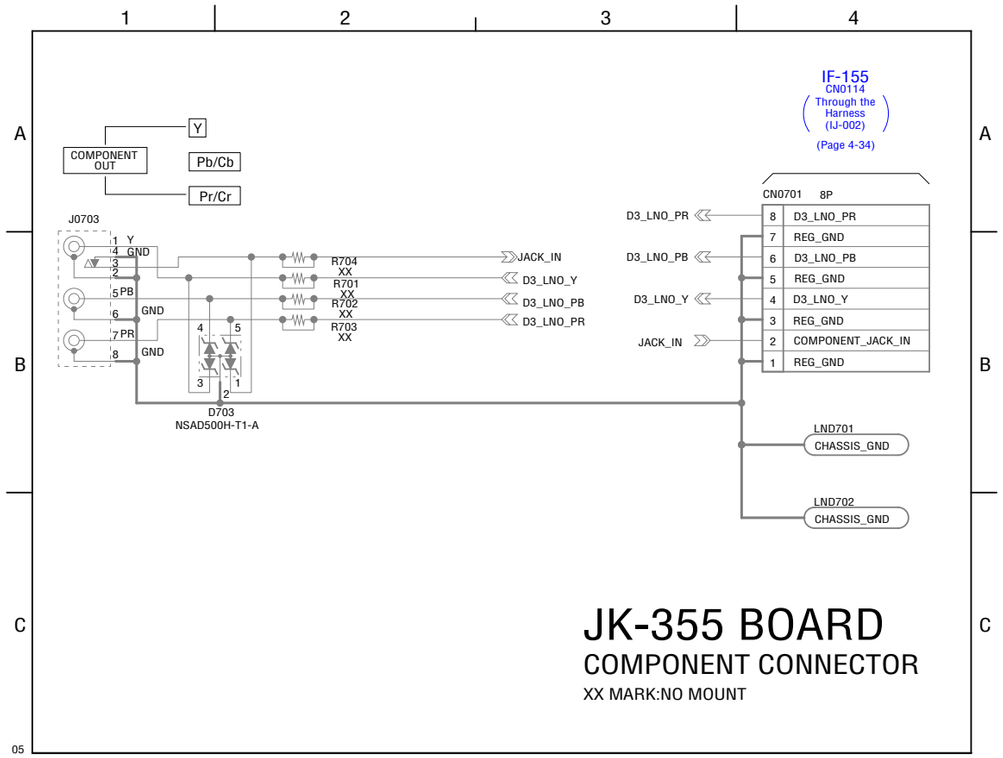
XX MARK:NO MOUNT

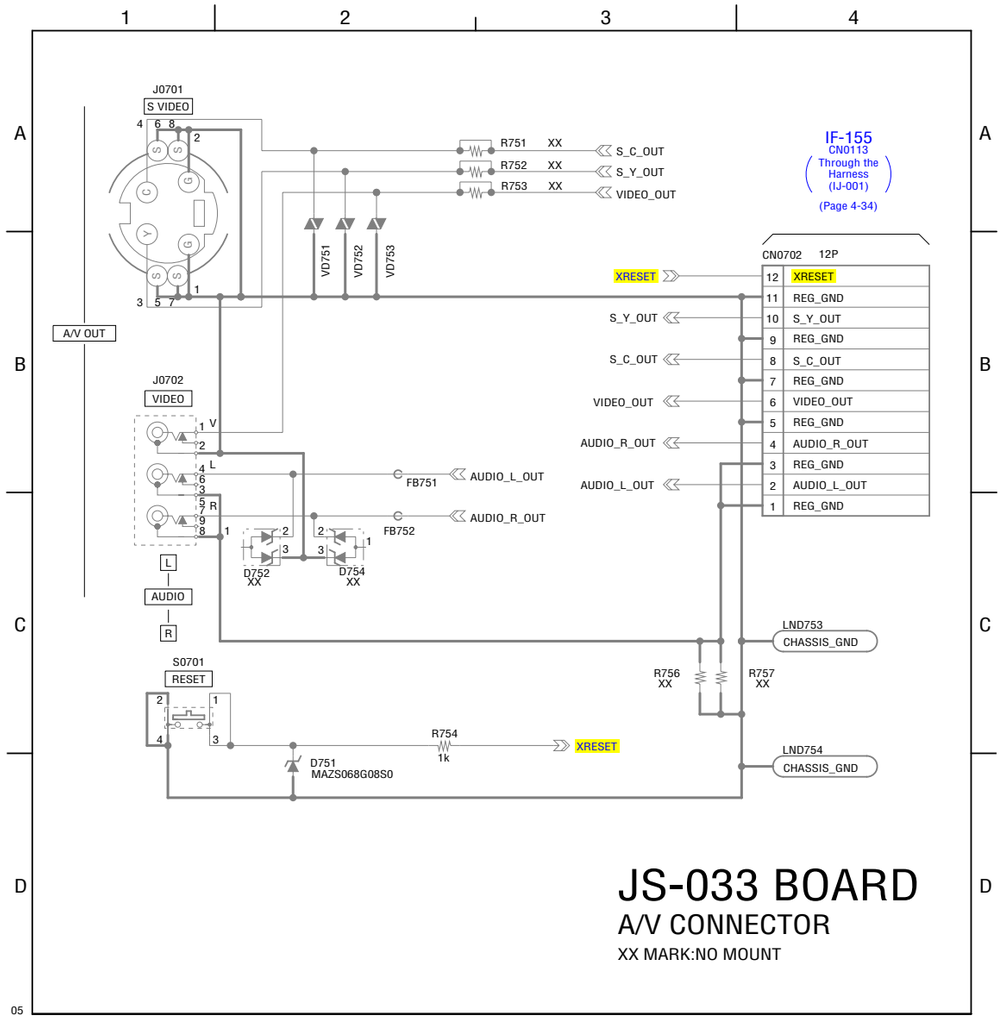
NO MARK:REC/PB MODE

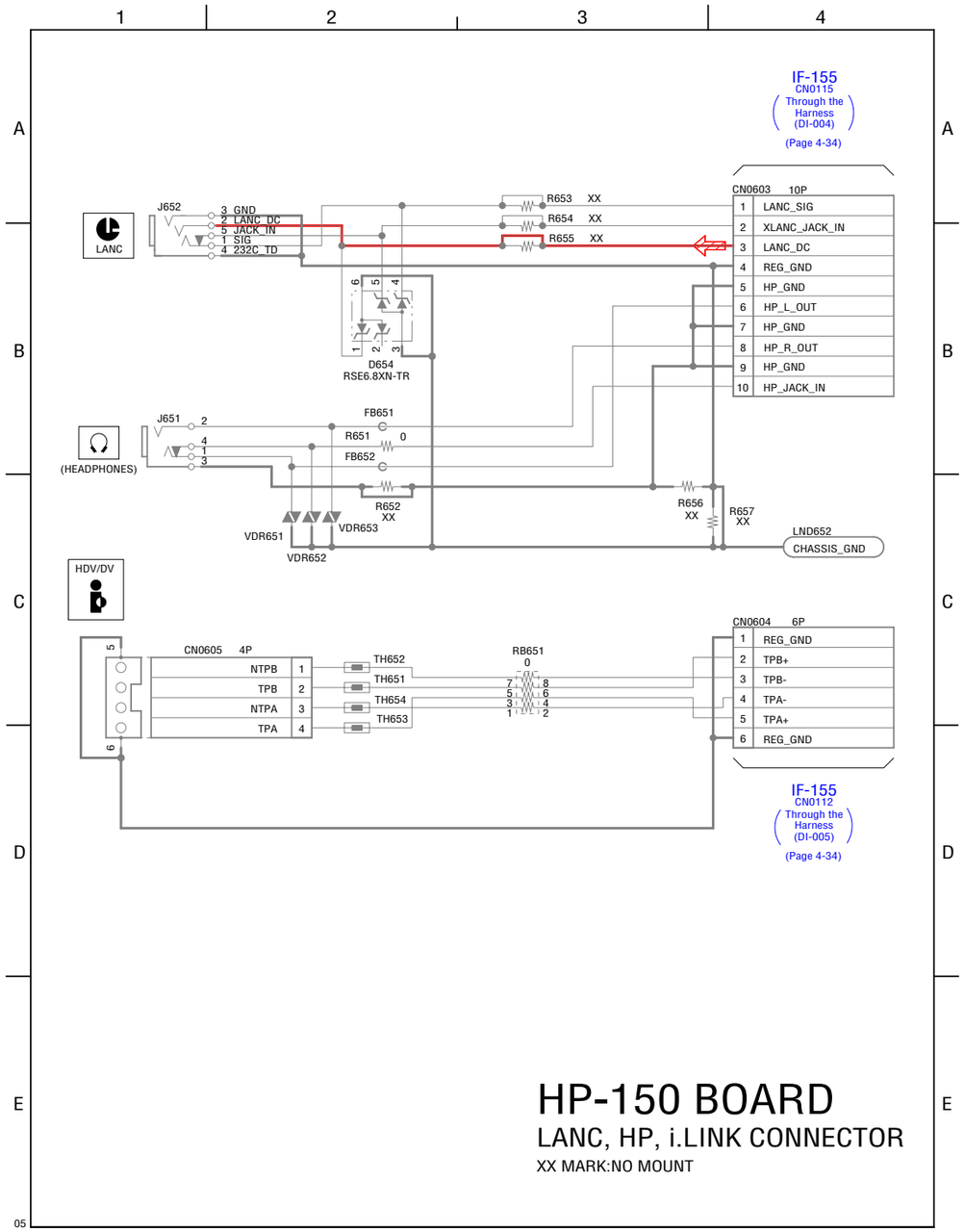

MS-379
CN8003
Through the Flexible Flat Cable (FFC-107)
(Page 4-39)
CN8101 8P
SWP 1
REG_GND 2
RF_MON 3
REG_GND 4
USB_D- 5
USB_D+ 6
REG_GND 7
USB_DET 8
CN8102 8P
8 GND
7 N.C.
6 N.C.
5 N.C.
4 N.C.
3 GND
2 SWP
1 RF_MON
CPC
(For Check)
CN8103 4P
4 REG_GND
3 D+
2 D-
1 VCC
R8103 0
LF8101
XX
R8104 0
R8101 10k
D8101
1SS357(T3SONY1)
R8102 10k
D8102
MAZW068H0LS0
USB(B)
(USB)
LN8101
CHASSIS_GND
LN8102
CHASSIS_GND
US-014 BOARD
USB CONNECTOR
XX MARK:NO MOUNT

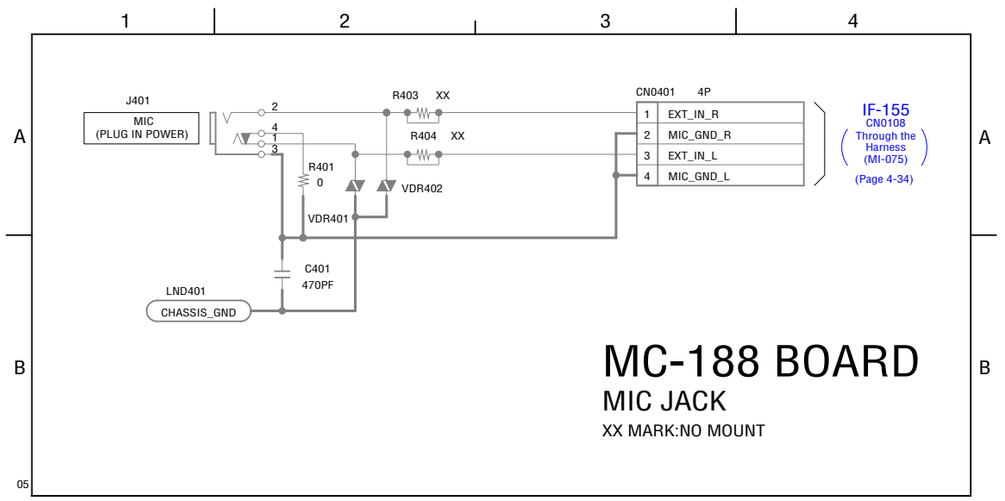

BH-001
CN6002
Through the Flexible Flat Cable (FFC-338)
(Page 4-35)
CN5901 20P
LED_K 1
EP_4.6V 2
EVF_GND 3
EVF_COM 4
EVF_PSIG 5
EVF_VG 6
EVF_VR 7
EVF_VB 8
EVF_PCG 9
EVF_VCK 10
EVF_STB 11
EVF_EN 12
EVF_VST 13
EVF_REF 14
EVF_GND 15
EVF_HCK1 16
EVF_HCK2 17
EVF_HST 18
EVF_GND 19
EVF_VDD 20
(EVF BACKLIGHT)
R5901 XX
D5901 NESW007AT-T099
RB5901 XX
R5904 XX
C5901 0.1u B
C5902 1u B
D5902 EDZ-TE61-5.6B
R5902 XX
C5903 XX
LCD902 COLOR EVF UNIT
21 EVF_COM
20 EVF_PSIG
19 EVF_VG
18 EVF_VR
17 EVF_VB
16 EVF_PCG
15 EVF_EN
14 EVF_VCK
13 EVF_VST
12 EVF_STB
11 EVF_REF
10 EVF_DWN
9 EVF_NRW
8 EVF_RGT
7 EVF_HCK1
6 EVF_HCK2
5 EVF_HST
4 VSSG
3 VSS
2 EVF_VDD
1 N.C.
CN5902 21P
BL-015 BOARD
EVF BACKLIGHT
XX MARK:NO MOUNT


BH-001
CN6007
Through the Harness (RS-112)
(Page 4-35)
S0851
(PANEL REVERSE)
C851 XX
D851 XX
CN0851 2P
1 KEY_AD5(RVS)
2 REG_GND
LND851
CHASSIS_GND
RE-038 BOARD
PANEL REVERSE
XX MARK:NO MOUNT

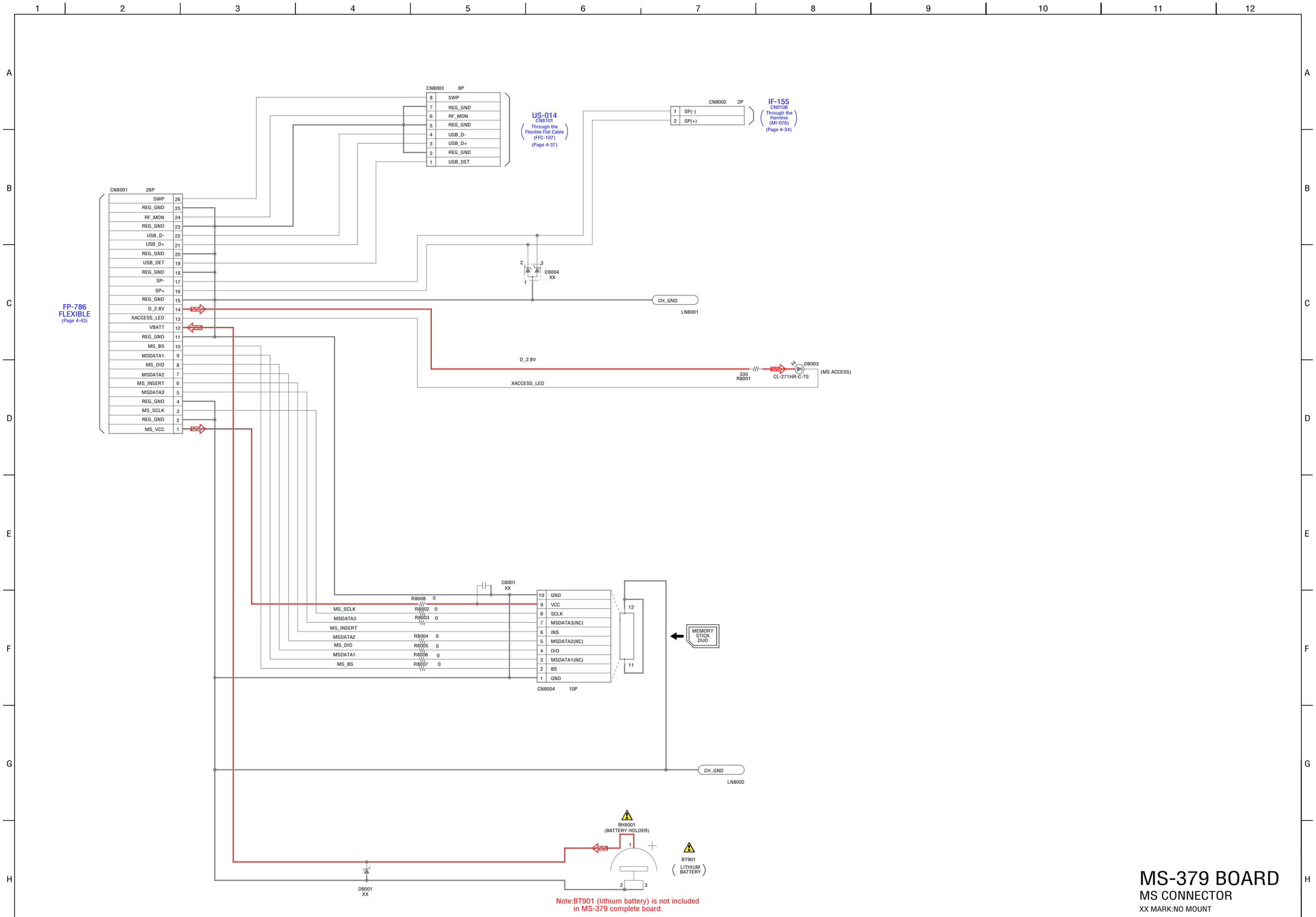

IF-155
CN0114
Through the Harness (IJ-002)
(Page 4-34)
COMPONENT OUT
Y
Pb/Cb
Pr/Cr
J0703
1 Y
4 GND
5 PB
6 GND
7 PR
8 GND
R704 XX
R701 XX
R702 XX
R703 XX
JACK_IN
D3_LNO_Y
D3_LNO_PB
D3_LNO_PR
D703
NSAD500H-T1-A
CN0701 8P
8 D3_LNO_PR
7 REG_GND
6 D3_LNO_PB
5 REG_GND
4 D3_LNO_Y
3 REG_GND
2 COMPONENT_JACK_IN
1 REG_GND
LND701
CHASSIS_GND
LND702
CHASSIS_GND
JK-355 BOARD
COMPONENT CONNECTOR
XX MARK:NO MOUNT


J0701
S VIDEO
R751 XX
R752 XX
R753 XX
S_C_OUT
S_Y_OUT
VIDEO_OUT
VD751
VD752
VD753
IF-155
CN0113
Through the Harness (IJ-001)
(Page 4-34)
CN0702 12P
12 XRESET
11 REG_GND
10 S_Y_OUT
9 REG_GND
8 S_C_OUT
7 REG_GND
6 VIDEO_OUT
5 REG_GND
4 AUDIO_R_OUT
3 REG_GND
2 AUDIO_L_OUT
1 REG_GND
A/V OUT
J0702
VIDEO
AUDIO
FB751
FB752
D752 XX
D754 XX
LND753
CHASSIS_GND
S0701
RESET
R754 1k
D751 MAZS068G08S0
R756 XX
R757 XX
LND754
CHASSIS_GND
JS-033 BOARD
A/V CONNECTOR
XX MARK:NO MOUNT


IF-155
CN0115
Through the Harness (DI-004)
(Page 4-34)
LANC
J652
3 GND
2 LANC_DC
5 JACK_IN
1 SIG
4 232C_TD
R653 XX
R654 XX
R655 XX
D654
RSE6.8XN-TR
CN0603 10P
1 LANC_SIG
2 XLANC_JACK_IN
3 LANC_DC
4 REG_GND
5 HP_GND
6 HP_L_OUT
7 HP_GND
8 HP_R_OUT
9 HP_GND
10 HP_JACK_IN
(HEADPHONES)
J651
FB651
R651 0
FB652
R652 XX
VDR651
VDR652
VDR653
R656 XX
R657 XX
LND652
CHASSIS_GND
HDV/DV
CN0605 4P
NTPB 1
TPB 2
NTPA 3
TPA 4
TH652
TH651
TH654
TH653
RB651 0
CN0604 6P
1 REG_GND
2 TPB+
3 TPB-
4 TPA-
5 TPA+
6 REG_GND
IF-155
CN0112
Through the Harness (DI-005)
(Page 4-34)
HP-150 BOARD
LANC, HP, i.LINK CONNECTOR
XX MARK:NO MOUNT


J401
MIC
(PLUG IN POWER)
R403 XX
R404 XX
R401 0
VDR402
VDR401
C401 470PF
LND401
CHASSIS_GND
CN0401 4P
1 EXT_IN_R
2 MIC_GND_R
3 EXT_IN_L
4 MIC_GND_L
IF-155
CN0108
Through the Harness (MI-075)
(Page 4-34)
MC-188 BOARD
MIC JACK
XX MARK:NO MOUNT

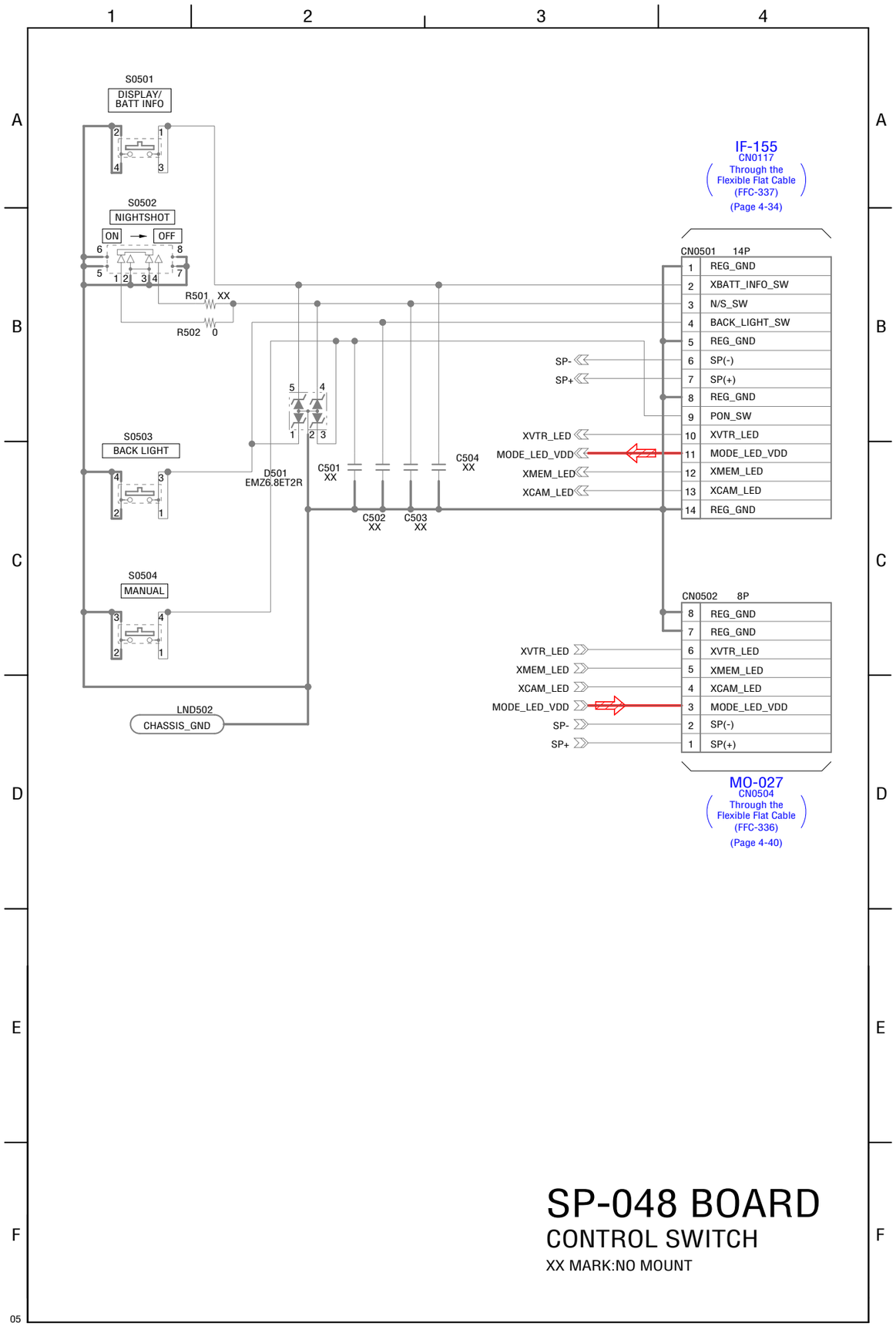
• Refer to page 4-3 for mark ⚠.

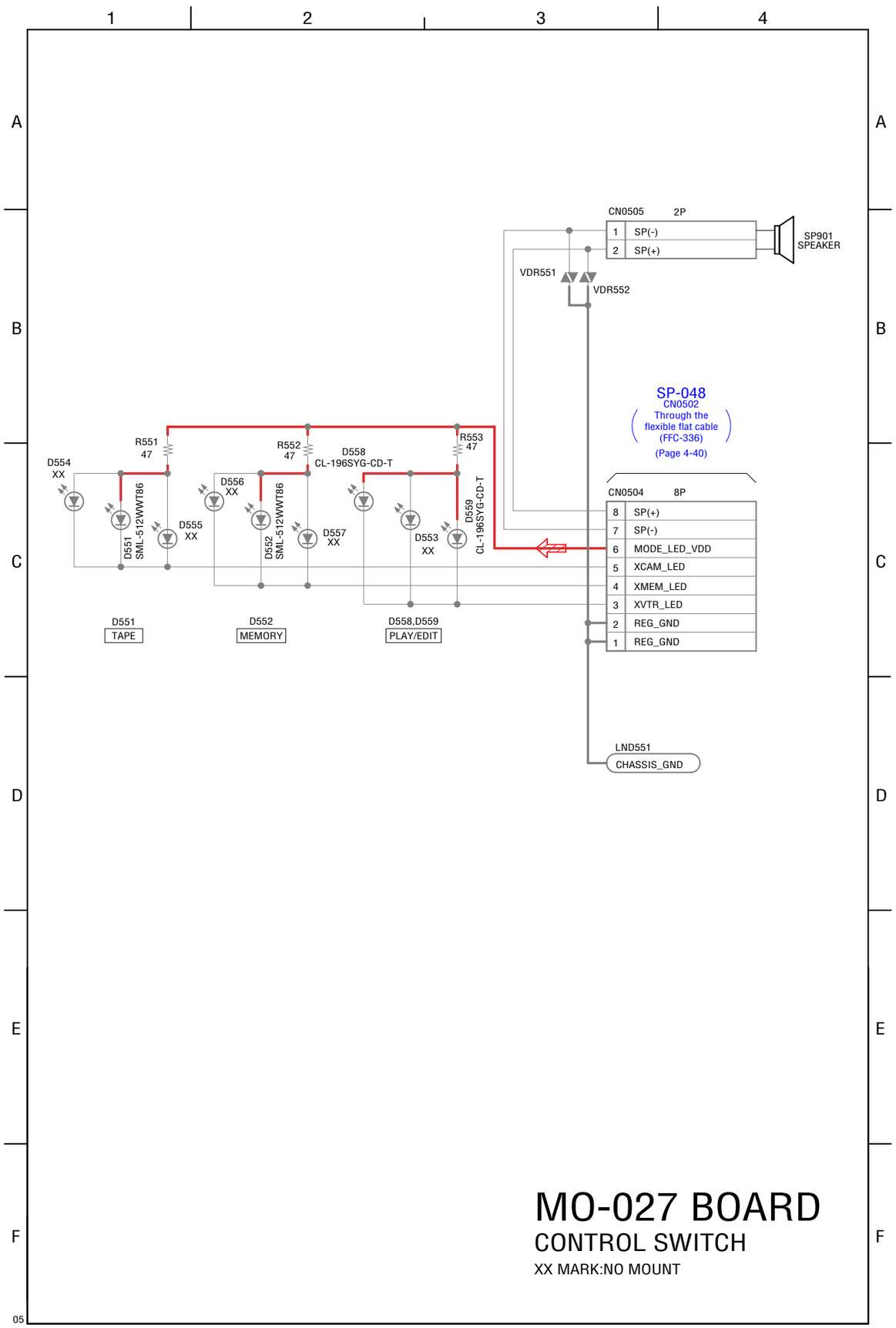


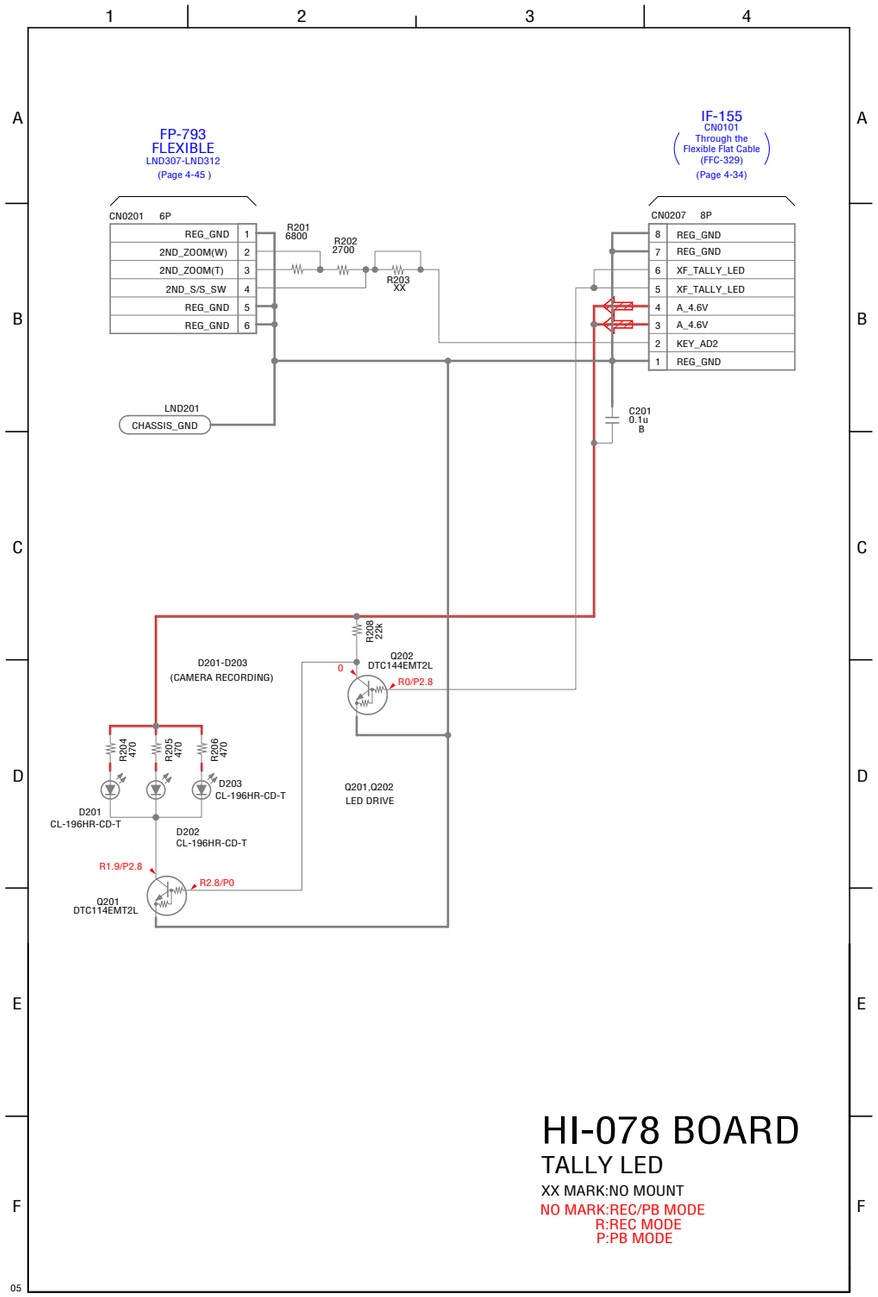

# MS-379 BOARD

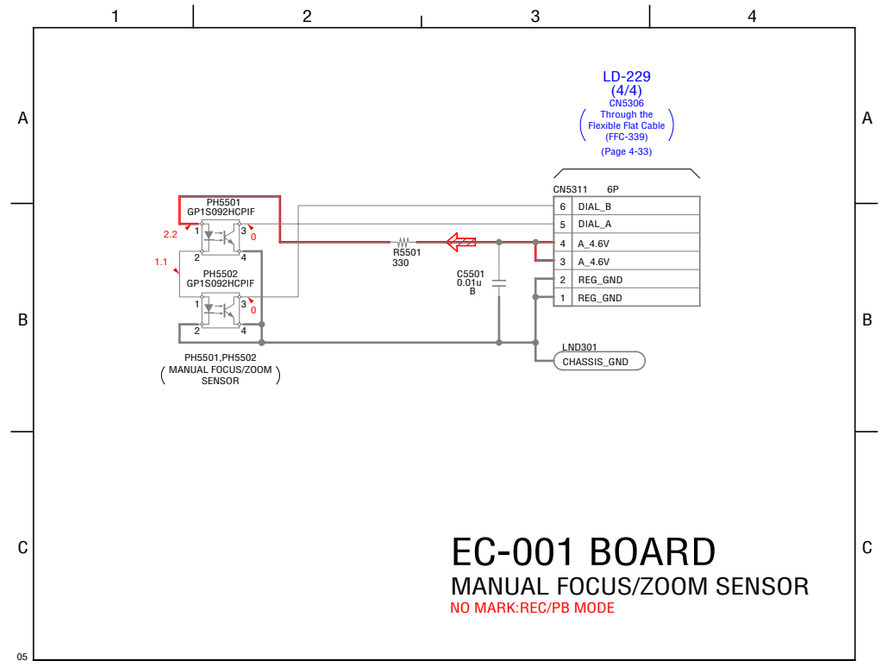
## MS CONNECTOR

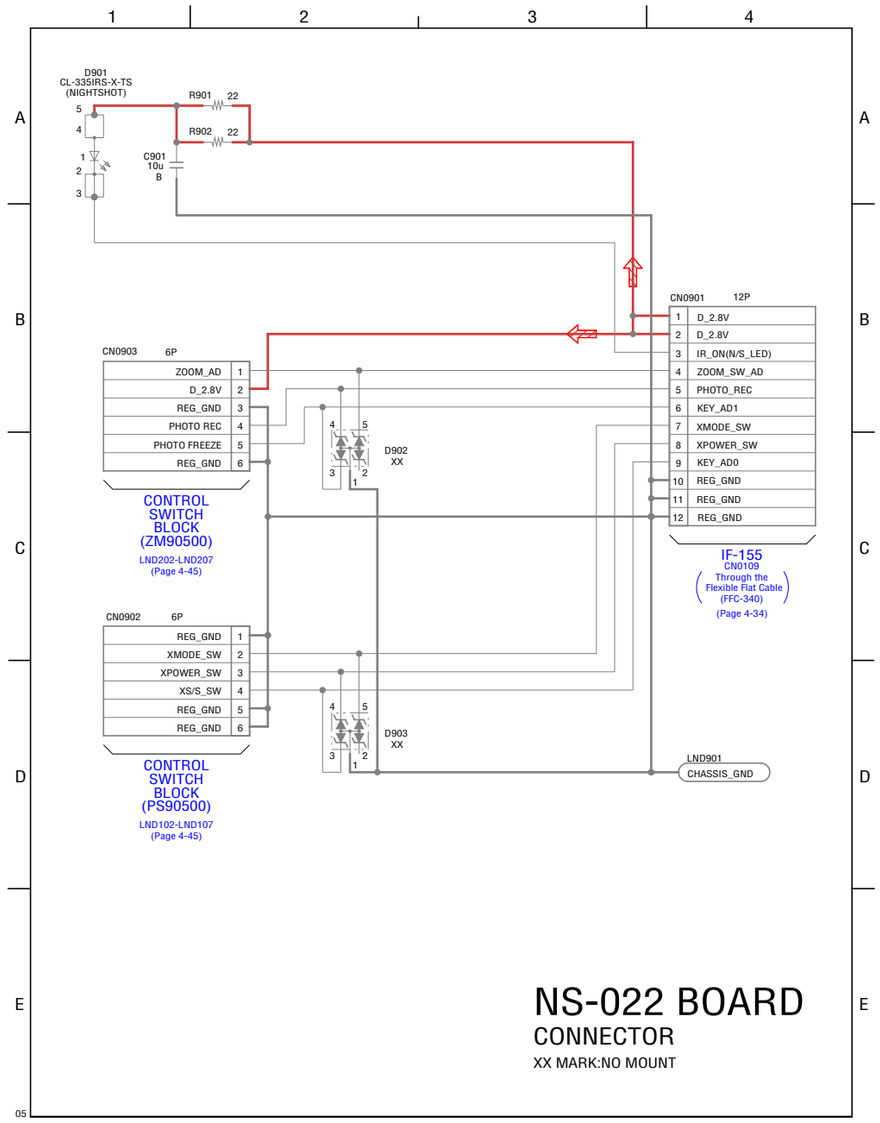
XX MARK:NO MOUNT


S0501
DISPLAY/
BATT INFO
S0502
NIGHTSHOT
ON
OFF
R501 XX
R502 0
S0503
BACK LIGHT
D501
EMZ6.8ET2R
C501
XX
C502
XX
C503
XX
C504
XX
S0504
MANUAL
LND502
CHASSIS_GND
IF-155
CN0117
Through the
Flexible Flat Cable
(FFC-337)
(Page 4-34)
CN0501 14P
1 REG_GND
2 XBATT_INFO_SW
3 N/S_SW
4 BACK_LIGHT_SW
5 REG_GND
6 SP(-)
7 SP(+)
8 REG_GND
9 PON_SW
10 XVTR_LED
11 MODE_LED_VDD
12 XMEM_LED
13 XCAM_LED
14 REG_GND
SP-
SP+
XVTR_LED
MODE_LED_VDD
XMEM_LED
XCAM_LED
CN0502 8P
8 REG_GND
7 REG_GND
6 XVTR_LED
5 XMEM_LED
4 XCAM_LED
3 MODE_LED_VDD
2 SP(-)
1 SP(+)
XVTR_LED
XMEM_LED
XCAM_LED
MODE_LED_VDD
SP-
SP+
MO-027
CN0504
Through the
Flexible Flat Cable
(FFC-336)
(Page 4-40)
SP-048 BOARD
CONTROL SWITCH
XX MARK:NO MOUNT

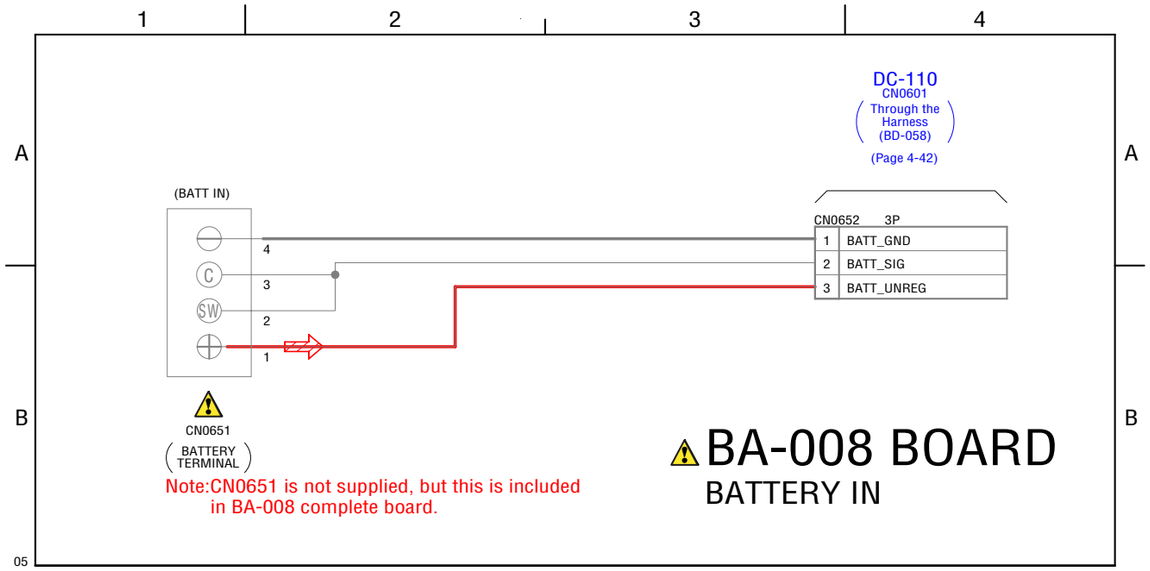

CN0505 2P
1 SP(-)
2 SP(+)
SP901
SPEAKER
VDR551
VDR552
SP-048
CN0502
Through the
flexible flat cable
(FFC-336)
(Page 4-40)
CN0504 8P
8 SP(+)
7 SP(-)
6 MODE_LED_VDD
5 XCAM_LED
4 XMEM_LED
3 XVTR_LED
2 REG_GND
1 REG_GND
R551
47
R552
47
R553
47
D554
XX
D556
XX
D558
CL-196SYG-CD-T
D551
SML-512WWT86
D555
XX
D552
SML-512WWT86
D557
XX
D553
XX
D559
CL-196SYG-CD-T
D551
TAPE
D552
MEMORY
D558,D559
PLAY/EDIT
LND551
CHASSIS_GND
MO-027 BOARD
CONTROL SWITCH
XX MARK:NO MOUNT

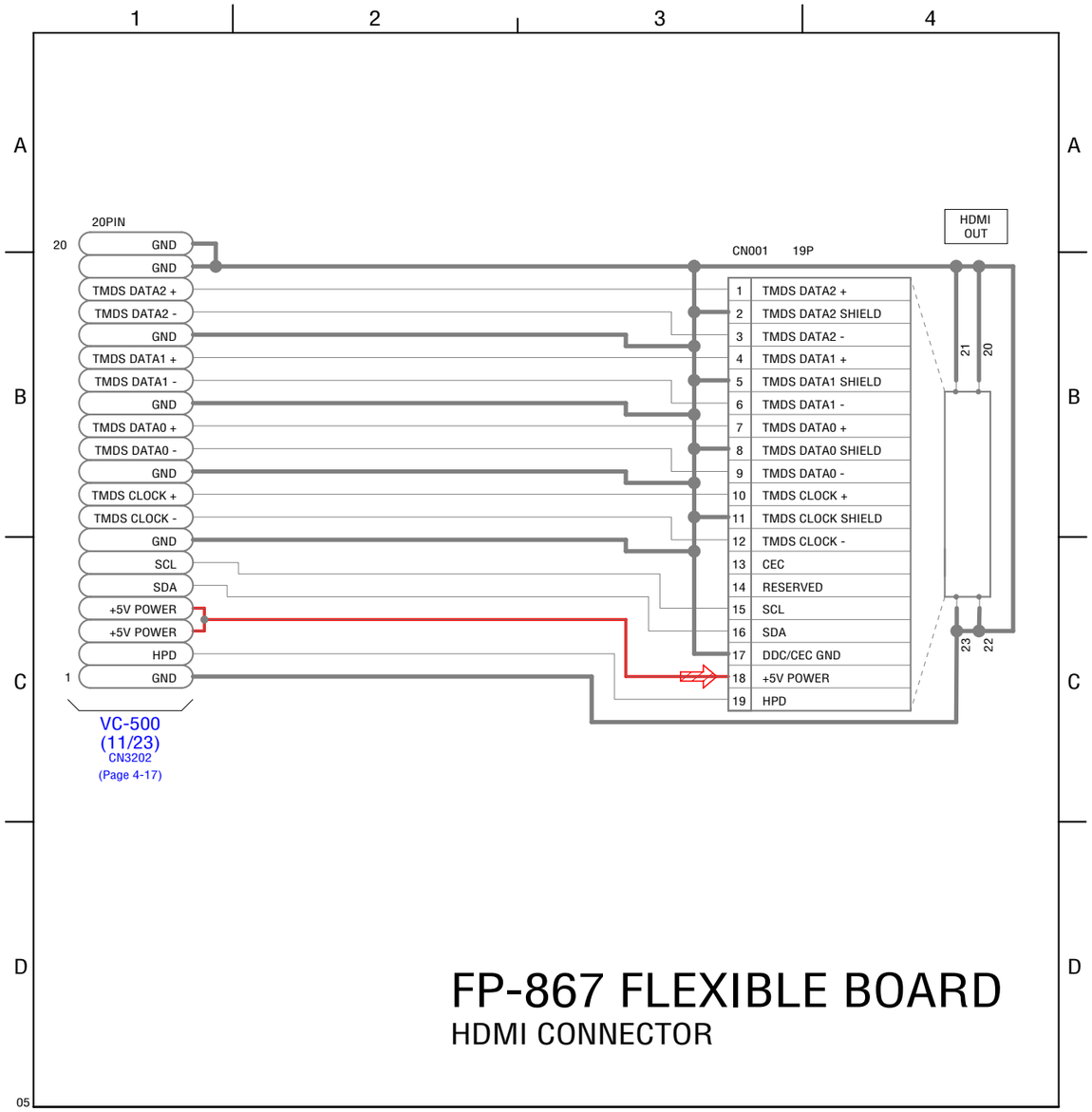

FP-793
FLEXIBLE
LND307-LND312
(Page 4-45 )
CN0201 6P
REG_GND 1
2ND_ZOOM(W) 2
2ND_ZOOM(T) 3
2ND_S/S_SW 4
REG_GND 5
REG_GND 6
R201 6800
R202 2700
R203 XX
LND201
CHASSIS_GND
IF-155
CN0101
Through the Flexible Flat Cable (FFC-329)
(Page 4-34)
CN0207 8P
8 REG_GND
7 REG_GND
6 XF_TALLY_LED
5 XF_TALLY_LED
4 A_4.6V
3 A_4.6V
2 KEY_AD2
1 REG_GND
C201 0.1u B
R208 22K
Q202 DTC144EMT2L
0
R0/P2.8
D201-D203
(CAMERA RECORDING)
R204 470
R205 470
R206 470
D201 CL-196HR-CD-T
D202 CL-196HR-CD-T
D203 CL-196HR-CD-T
Q201,Q202
LED DRIVE
R1.9/P2.8
R2.8/P0
Q201 DTC114EMT2L
HI-078 BOARD
TALLY LED
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R:REC MODE
P:PB MODE

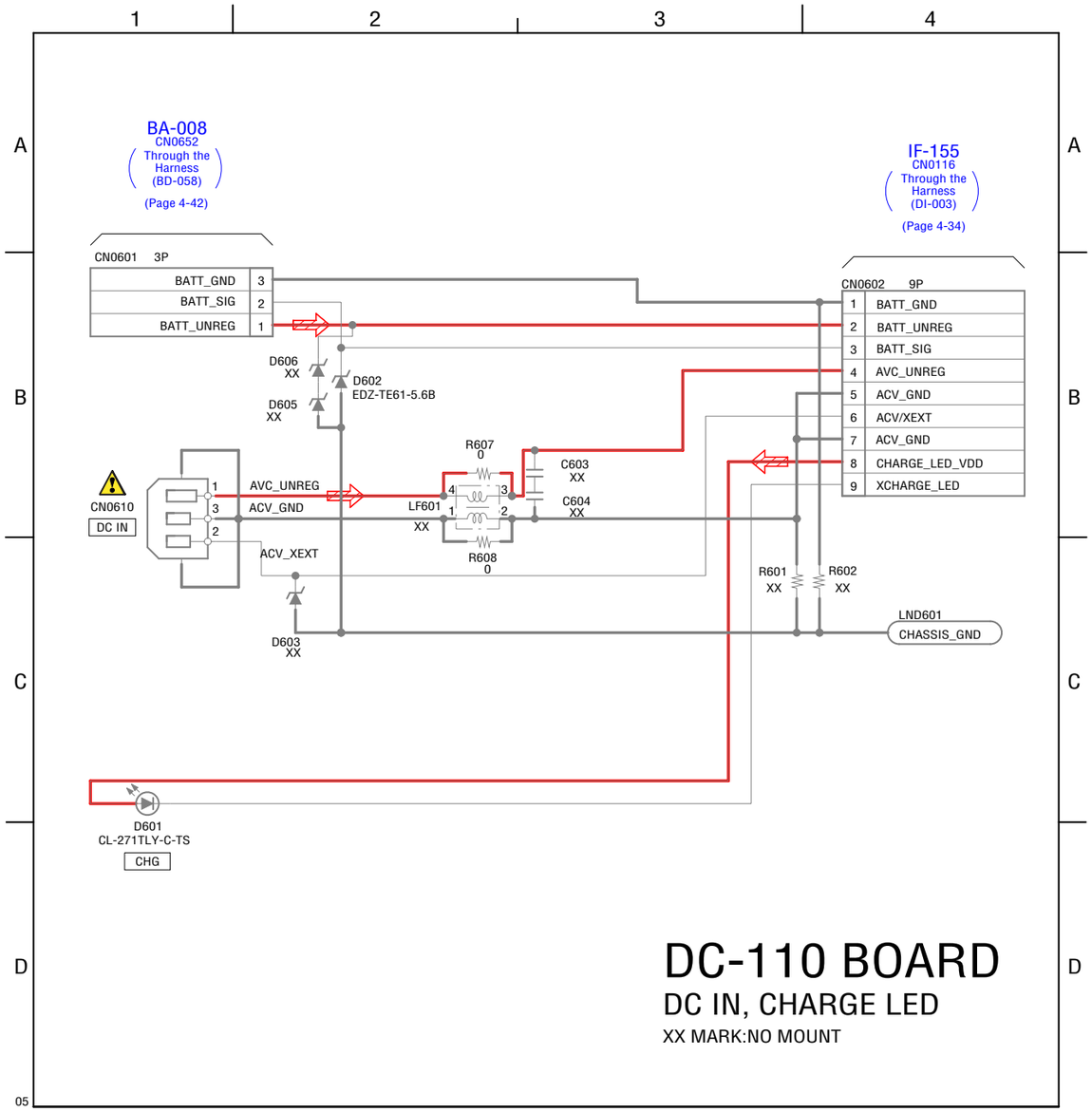

LD-229
(4/4)
CN5306
Through the Flexible Flat Cable (FFC-339)
(Page 4-33)
CN5311 6P
6 DIAL_B
5 DIAL_A
4 A_4.6V
3 A_4.6V
2 REG_GND
1 REG_GND
PH5501 GP1S092HCPIF
PH5502 GP1S092HCPIF
2.2
1.1
R5501 330
C5501 0.01u B
PH5501,PH5502
MANUAL FOCUS/ZOOM SENSOR
LND301
CHASSIS_GND
EC-001 BOARD
MANUAL FOCUS/ZOOM SENSOR
NO MARK:REC/PB MODE

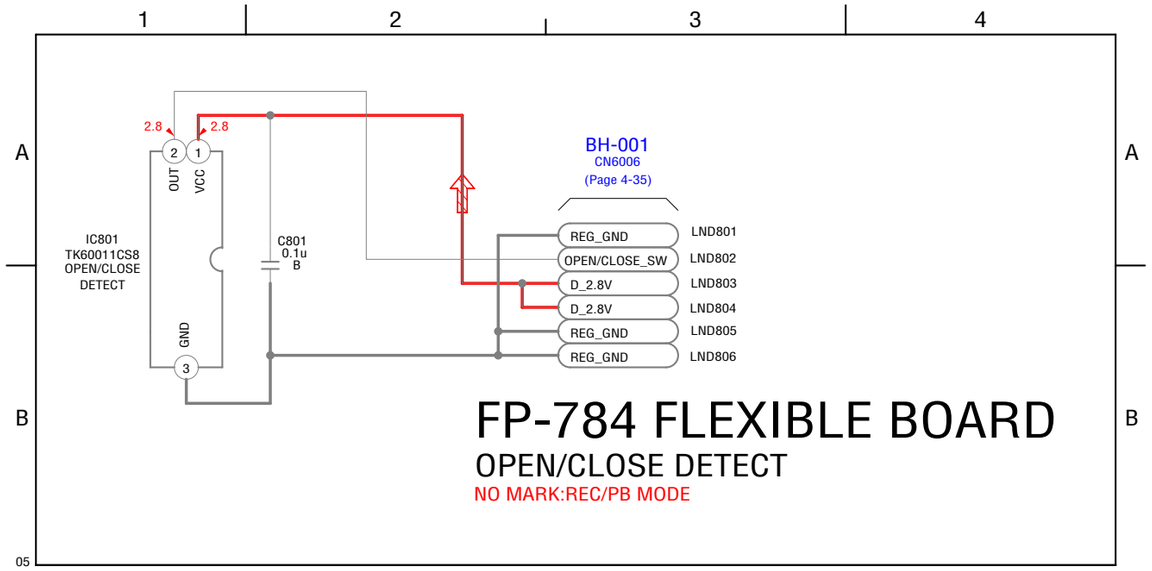

D901 CL-335IRS-X-TS (NIGHTSHOT)
R901 22
R902 22
C901 10u B
CN0901 12P
1 D_2.8V
2 D_2.8V
3 IR_ON(N/S_LED)
4 ZOOM_SW_AD
5 PHOTO_REC
6 KEY_AD1
7 XMODE_SW
8 XPOWER_SW
9 KEY_AD0
10 REG_GND
11 REG_GND
12 REG_GND
IF-155
CN0109
Through the Flexible Flat Cable (FFC-340)
(Page 4-34)
CN0903 6P
ZOOM_AD 1
D_2.8V 2
REG_GND 3
PHOTO REC 4
PHOTO FREEZE 5
REG_GND 6
CONTROL SWITCH BLOCK (ZM90500)
LND202-LND207
(Page 4-45)
D902 XX
CN0902 6P
REG_GND 1
XMODE_SW 2
XPOWER_SW 3
XS/S_SW 4
REG_GND 5
REG_GND 6
CONTROL SWITCH BLOCK (PS90500)
LND102-LND107
(Page 4-45)
D903 XX
LND901
CHASSIS_GND
NS-022 BOARD
CONNECTOR
XX MARK:NO MOUNT

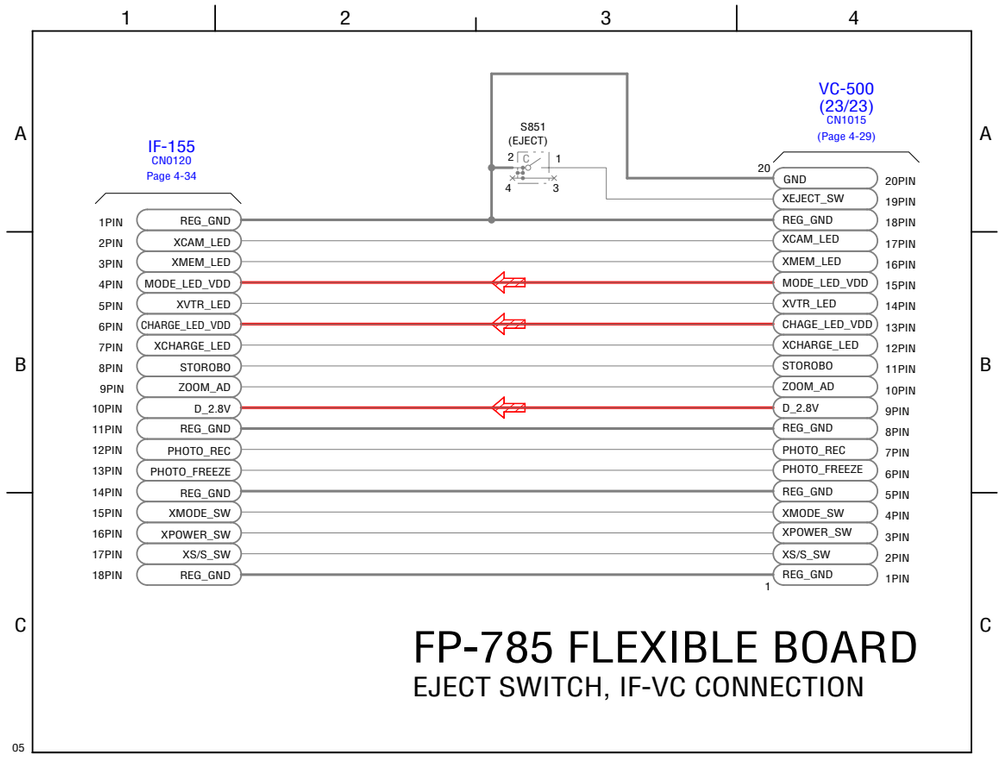
• Refer to page 4-3 for mark ⚠.

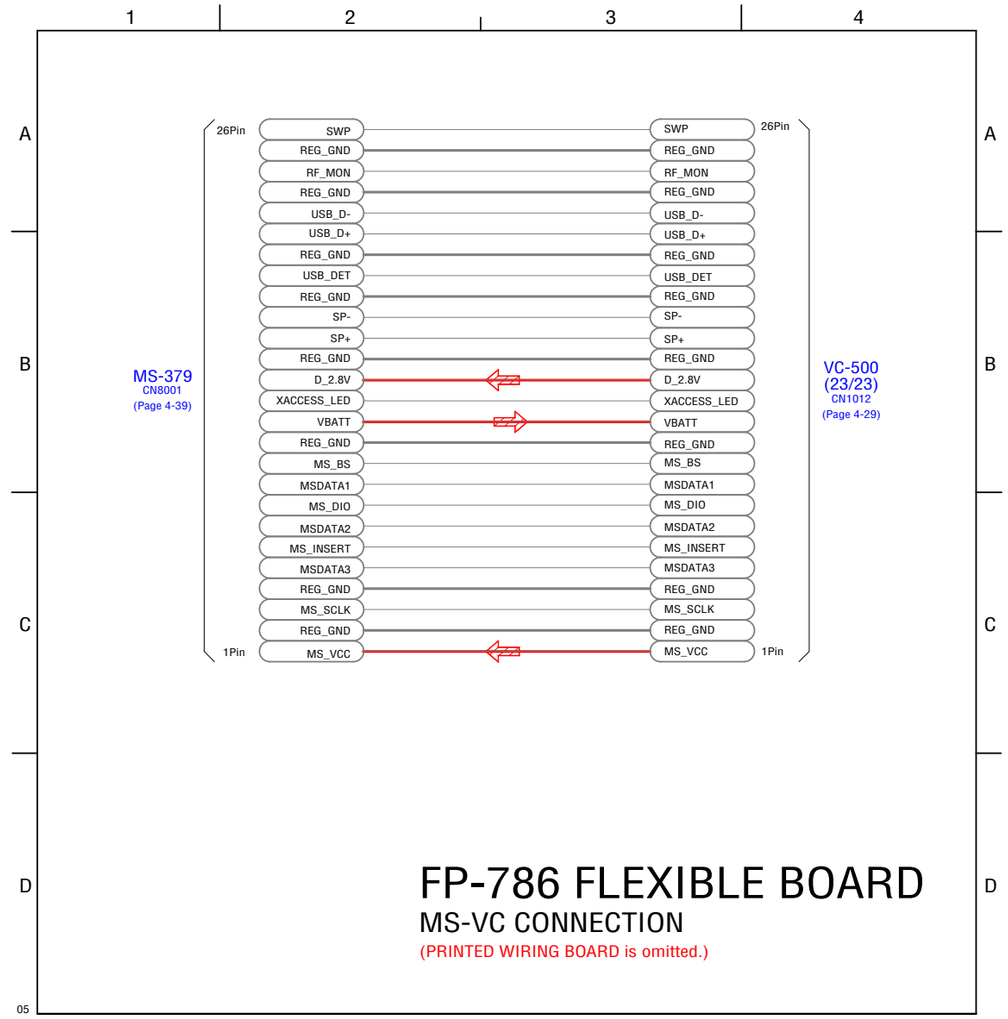


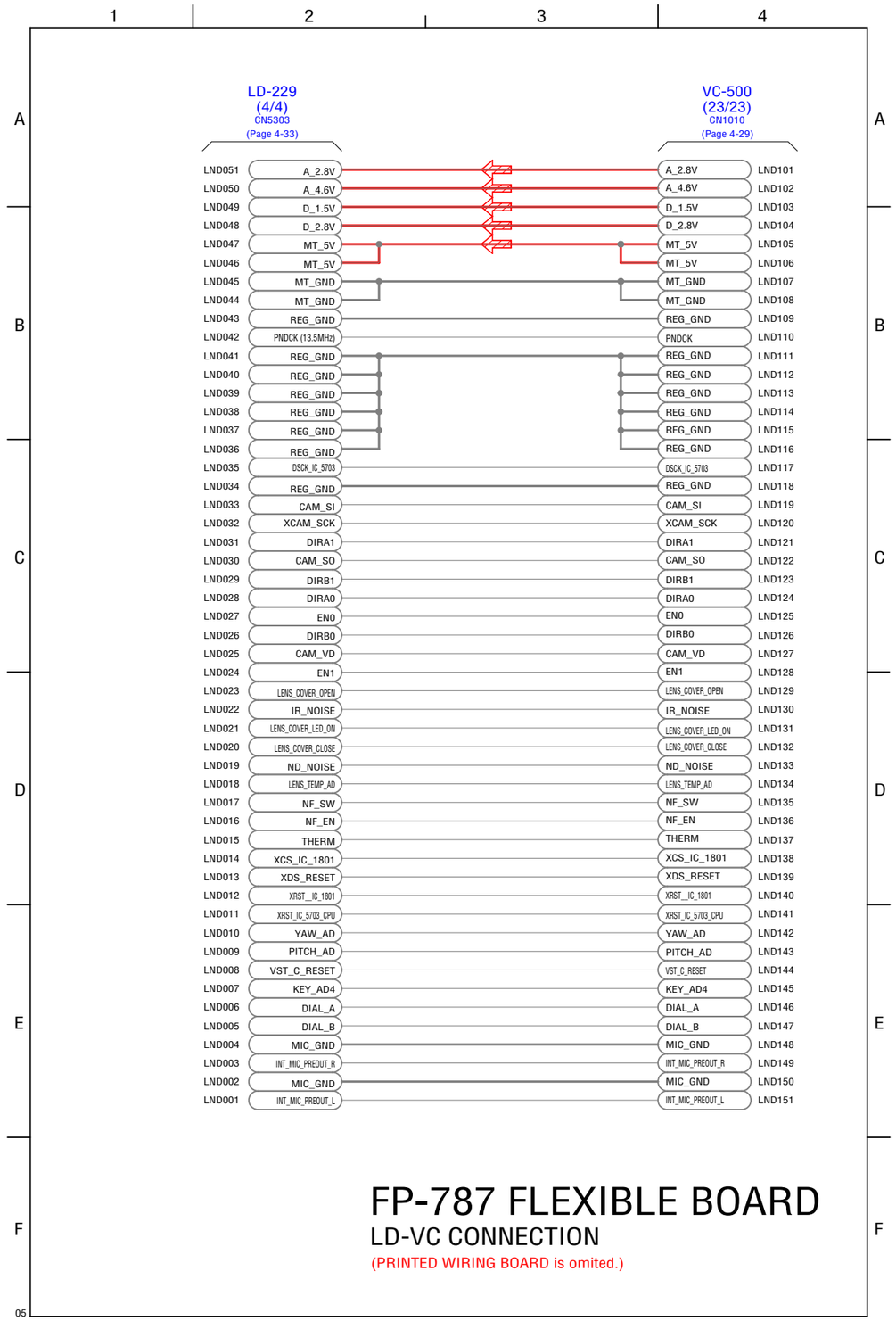



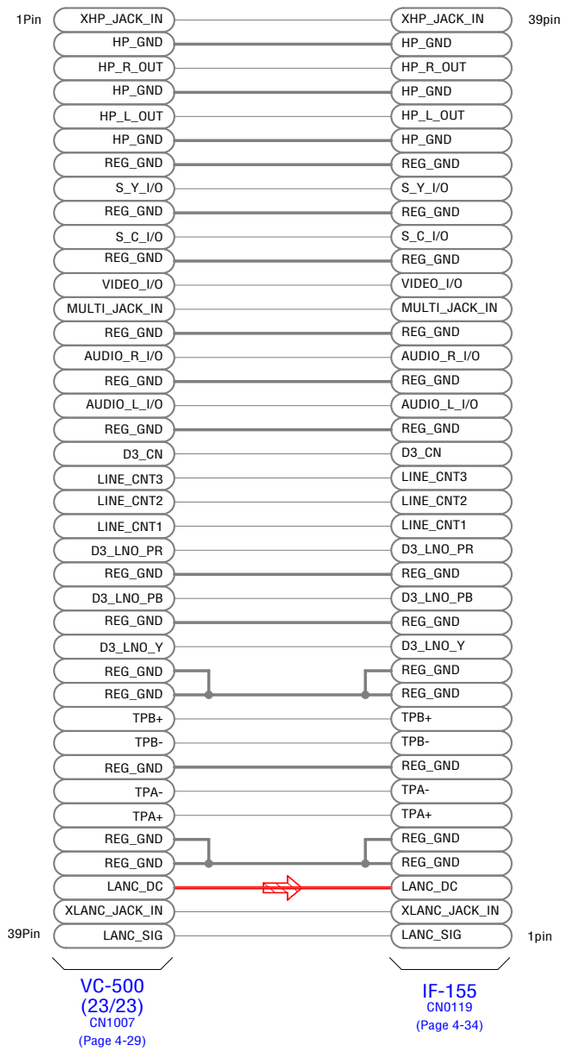




IF-155
CN0120
Page 4-34
S851
(EJECT)
VC-500
(23/23)
CN1015
(Page 4-29)
1PIN REG_GND
2PIN XCAM_LED
3PIN XMEM_LED
4PIN MODE_LED_VDD
5PIN XVTR_LED
6PIN CHARGE_LED_VDD
7PIN XCHARGE_LED
8PIN STOROBO
9PIN ZOOM_AD
10PIN D_2.8V
11PIN REG_GND
12PIN PHOTO_REC
13PIN PHOTO_FREEZE
14PIN REG_GND
15PIN XMODE_SW
16PIN XPOWER_SW
17PIN XS/S_SW
18PIN REG_GND
20PIN GND
19PIN XEJECT_SW
18PIN REG_GND
17PIN XCAM_LED
16PIN XMEM_LED
15PIN MODE_LED_VDD
14PIN XVTR_LED
13PIN CHAGE_LED_VDD
12PIN XCHARGE_LED
11PIN STOROBO
10PIN ZOOM_AD
9PIN D_2.8V
8PIN REG_GND
7PIN PHOTO_REC
6PIN PHOTO_FREEZE
5PIN REG_GND
4PIN XMODE_SW
3PIN XPOWER_SW
2PIN XS/S_SW
1PIN REG_GND
FP-785 FLEXIBLE BOARD
EJECT SWITCH, IF-VC CONNECTION


MS-379
CN8001
(Page 4-39)
VC-500
(23/23)
CN1012
(Page 4-29)
26Pin SWP REG_GND RF_MON REG_GND USB_D- USB_D+ REG_GND USB_DET REG_GND SP- SP+ REG_GND D_2.8V XACCESS_LED VBATT REG_GND MS_BS MSDATA1 MS_DIO MSDATA2 MS_INSERT MSDATA3 REG_GND MS_SCLK REG_GND MS_VCC 1Pin
FP-786 FLEXIBLE BOARD
MS-VC CONNECTION
(PRINTED WIRING BOARD is omitted.)

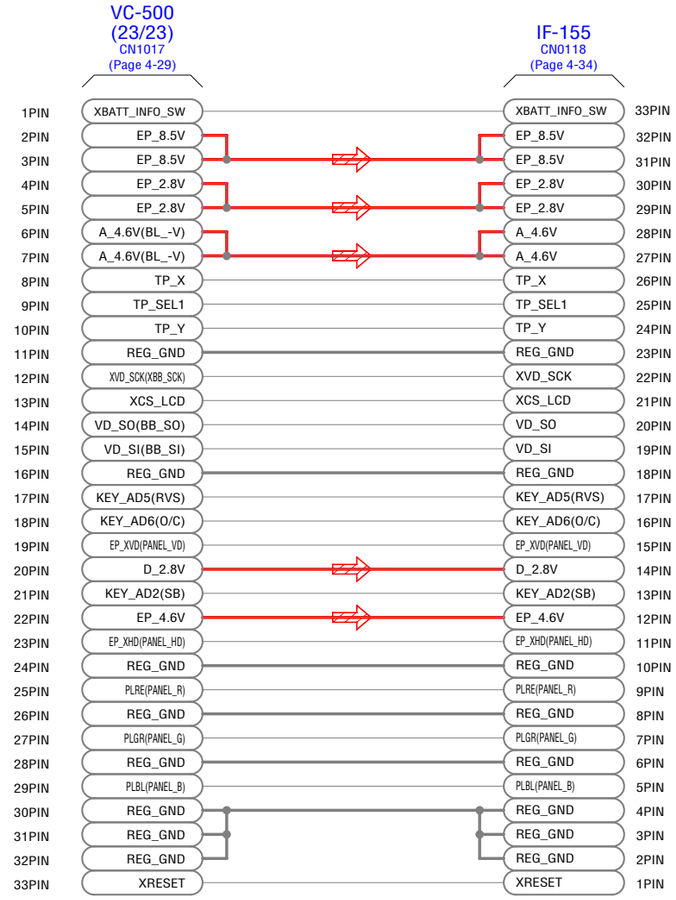

LD-229
(4/4)
CN5303
(Page 4-33)
VC-500
(23/23)
CN1010
(Page 4-29)
LND051 A_2.8V LND101
LND050 A_4.6V LND102
LND049 D_1.5V LND103
LND048 D_2.8V LND104
LND047 MT_5V LND105
LND046 MT_5V LND106
LND045 MT_GND LND107
LND044 MT_GND LND108
LND043 REG_GND LND109
LND042 PNDCK (13.5MHz) LND110
LND041 REG_GND LND111
LND040 REG_GND LND112
LND039 REG_GND LND113
LND038 REG_GND LND114
LND037 REG_GND LND115
LND036 REG_GND LND116
LND035 DSCK_IC_5703 LND117
LND034 REG_GND LND118
LND033 CAM_SI LND119
LND032 XCAM_SCK LND120
LND031 DIRA1 LND121
LND030 CAM_SO LND122
LND029 DIRB1 LND123
LND028 DIRA0 LND124
LND027 EN0 LND125
LND026 DIRB0 LND126
LND025 CAM_VD LND127
LND024 EN1 LND128
LND023 LENS_COVER_OPEN LND129
LND022 IR_NOISE LND130
LND021 LENS_COVER_LED_ON LND131
LND020 LENS_COVER_CLOSE LND132
LND019 ND_NOISE LND133
LND018 LENS_TEMP_AD LND134
LND017 NF_SW LND135
LND016 NF_EN LND136
LND015 THERM LND137
LND014 XCS_IC_1801 LND138
LND013 XDS_RESET LND139
LND012 XRST_IC_1801 LND140
LND011 XRST_IC_5703_CPU LND141
LND010 YAW_AD LND142
LND009 PITCH_AD LND143
LND008 VST_C_RESET LND144
LND007 KEY_AD4 LND145
LND006 DIAL_A LND146
LND005 DIAL_B LND147
LND004 MIC_GND LND148
LND003 INT_MIC_PREOUT_R LND149
LND002 MIC_GND LND150
LND001 INT_MIC_PREOUT_L LND151
FP-787 FLEXIBLE BOARD
LD-VC CONNECTION
(PRINTED WIRING BOARD is omited.)




# FP-788 FLEXIBLE BOARD

## VC-IF CONNECTION

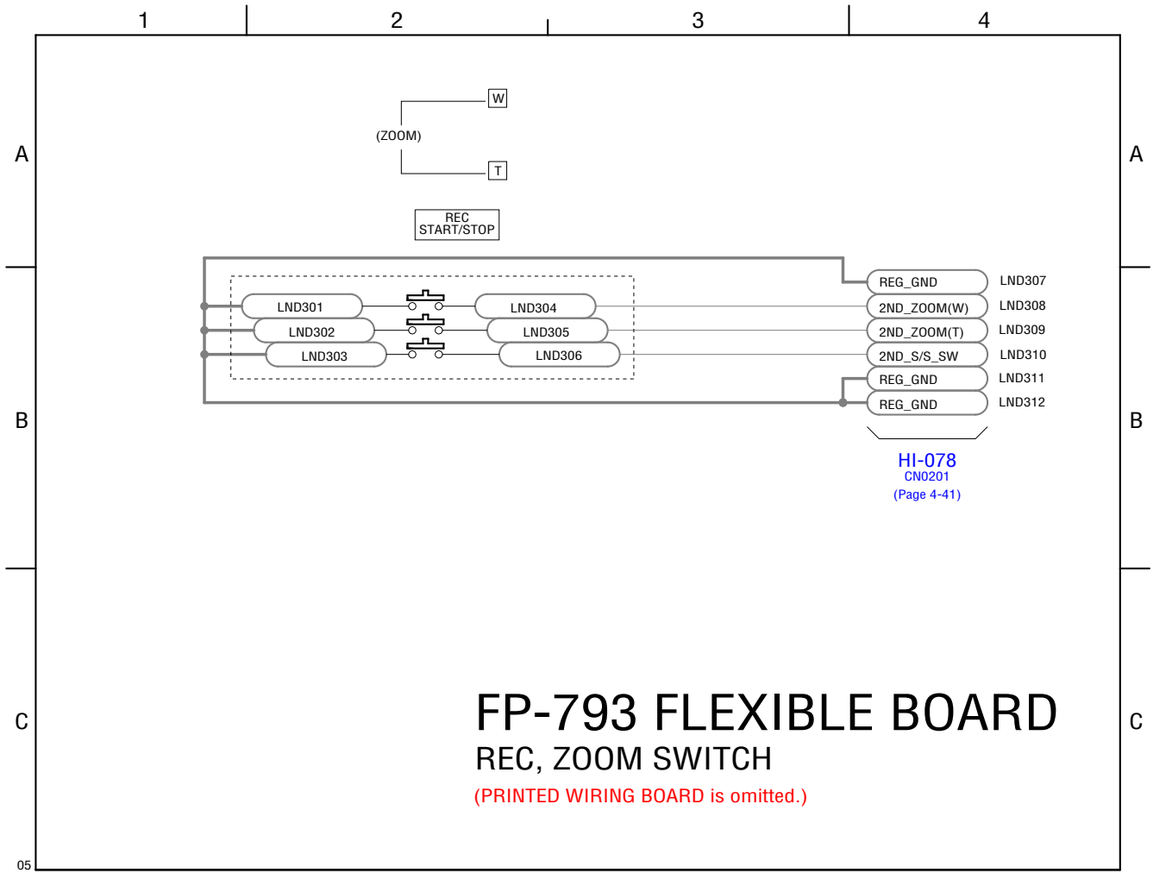
(PRINTED WIRING BOARD is omitted.)




# FP-789 FLEXIBLE BOARD

## VC-IF CONNECTION

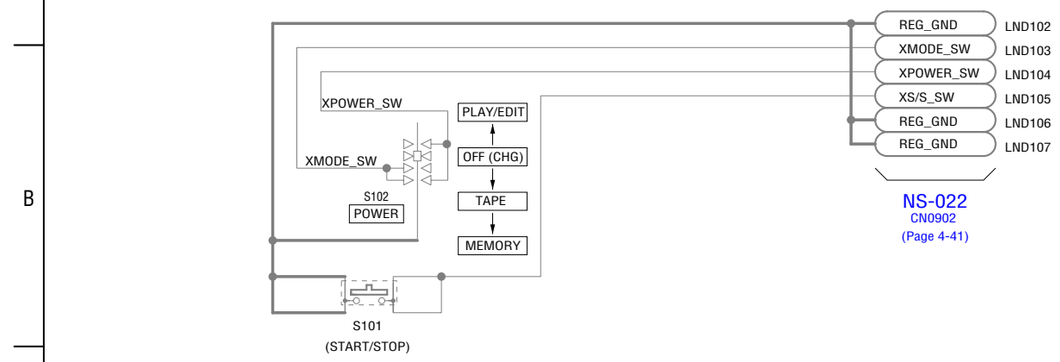
(PRINTED WIRING BOARD is omitted.)




# FP-793 FLEXIBLE BOARD

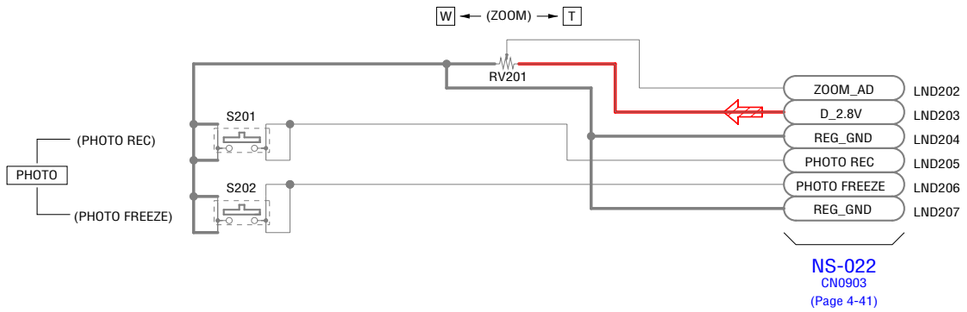
## REC, ZOOM SWITCH

(PRINTED WIRING BOARD is omitted.)




# CONTROL SWITCH BLOCK (PS90500)

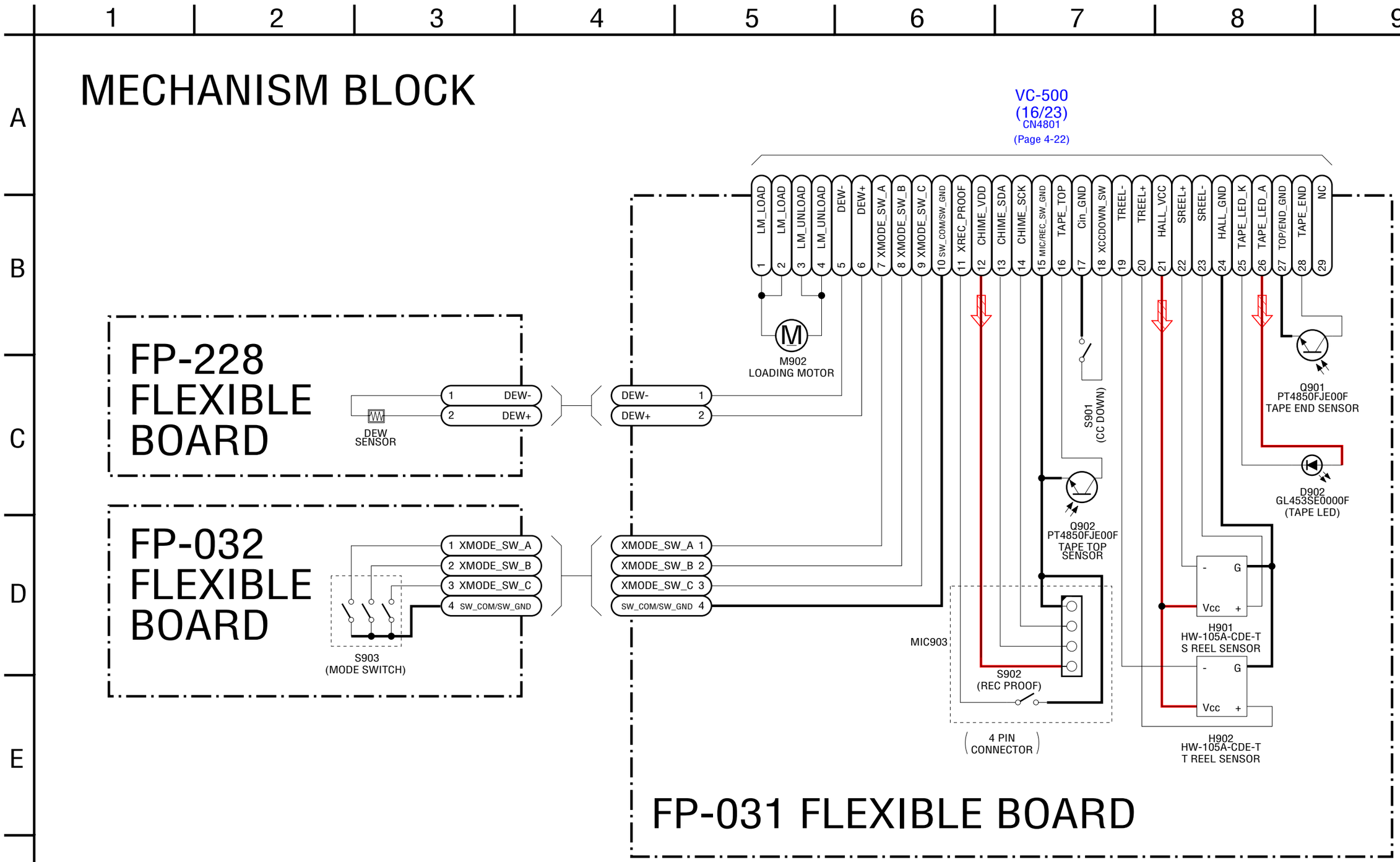
(CONTROL SWITCH BLOCK (PS90500) is replaced as block, so that PRINTED WIRING BOARD is omitted.)




# CONTROL SWITCH BLOCK (ZM90500)

(CONTROL SWITCH BLOCK (ZM90500) is replaced as block, so that PRINTED WIRING BOARD is omitted.)

# MECHANISM BLOCK



# 4-3. PRINTED WIRING BOARDS

## Link

| | |
|---|---|
| CM-077 BOARD | MC-188 BOARD |
| VC-500 BOARD (SIDE A) | MS-379 BOARD |
| VC-500 BOARD (SIDE B) | SP-048 BOARD |
| LD-229 BOARD | MO-027 BOARD |
| IF-155 BOARD | HI-078 BOARD |
| BH-001 BOARD | EC-001 BOARD |
| PD-342 BOARD | NS-022 BOARD |
| US-014 BOARD | BA-008 BOARD |
| BL-015 BOARD | DC-110 BOARD |
| RE-038 BOARD | FP-867 FLEXIBLE BOARD |
| JK-355 BOARD | FP-784 FLEXIBLE BOARD |
| JS-033 BOARD | FP-785 FLEXIBLE BOARD |
| HP-150 BOARD | FP-228, FP-032, FP-031 FLEXIBLE BOARD |

| |
|---|
| COMMON NOTE FOR PRINTED WIRING BOARDS |

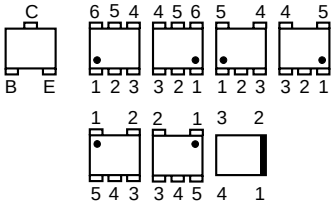
## 4-3. PRINTED WIRING BOARDS

**THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS**

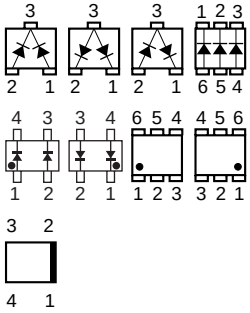
- : Uses unleaded solder.
- : Circuit board
  : Flexible board
  Pattern from the side which enables seeing.
  : pattern of the rear side
  (The other layers' patterns are not indicated)
- Through hole is omitted.
- There are a few cases that the part printed on diagram isn't mounted in this model.
-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

- Chip parts.

Transistor




Diode

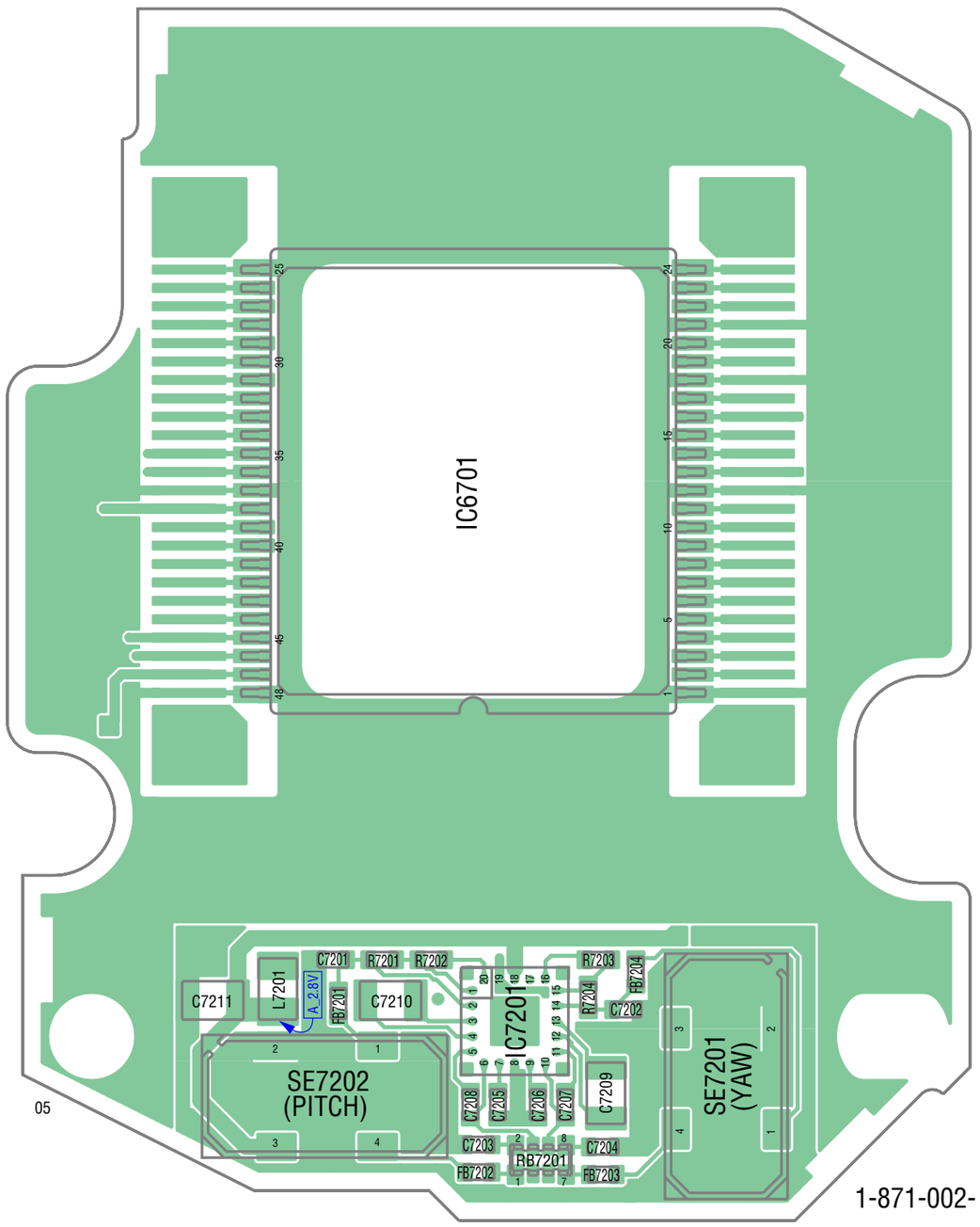


**CM-077 (6 layers)**

**: Uses unleaded solder.**

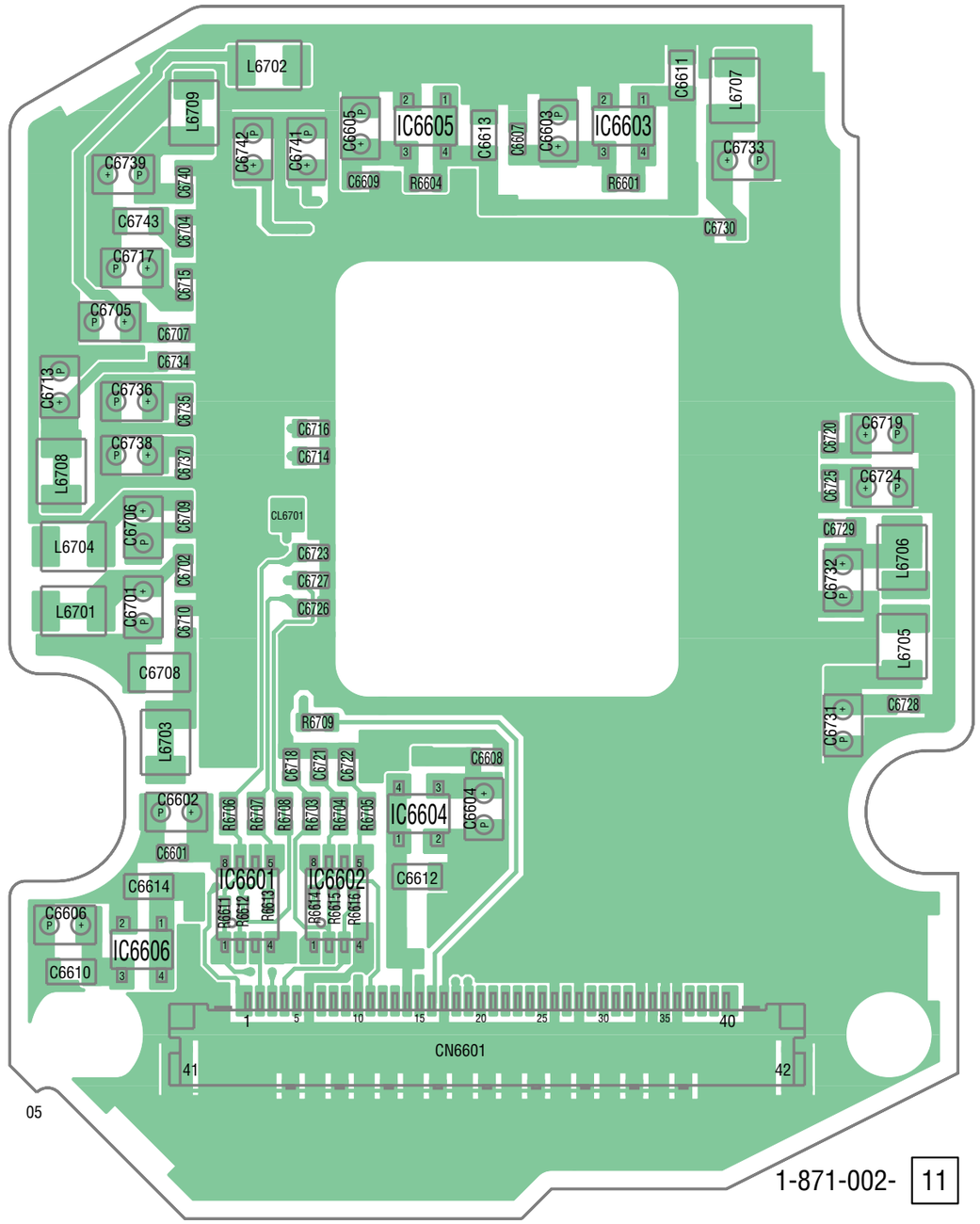
Note: IC6701 is supplied including in CMOS block assy.

## CM-077 BOARD (SIDE A)




1-871-002- 11

## CM-077 BOARD (SIDE B)



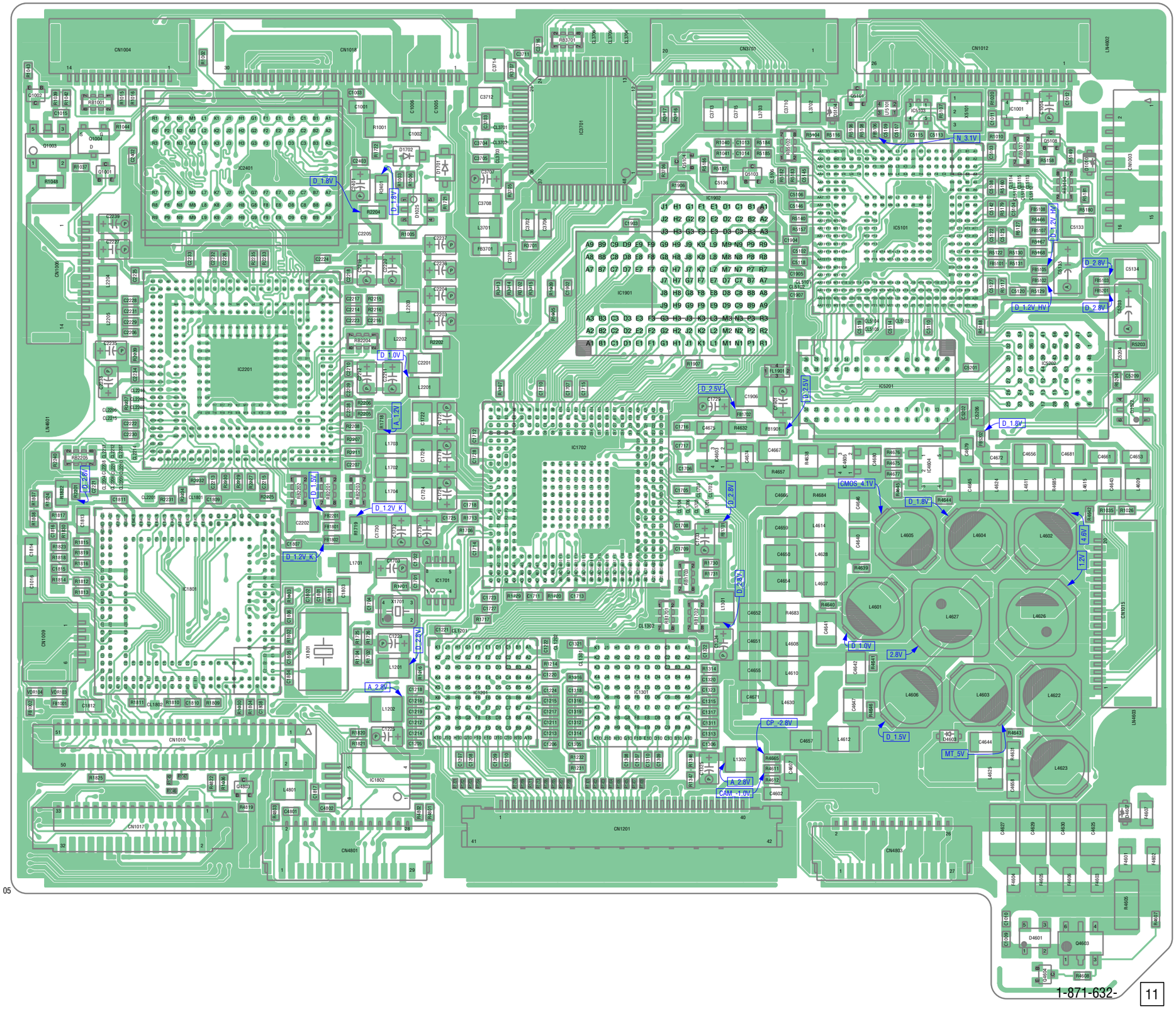

1-871-002- 11

**VC-500 (8 layers)**

**: Uses unleaded solder.**

# VC-500 BOARD (SIDE A)

Note: IC5202 is not supplied, but this is included in VC-500 complete board.

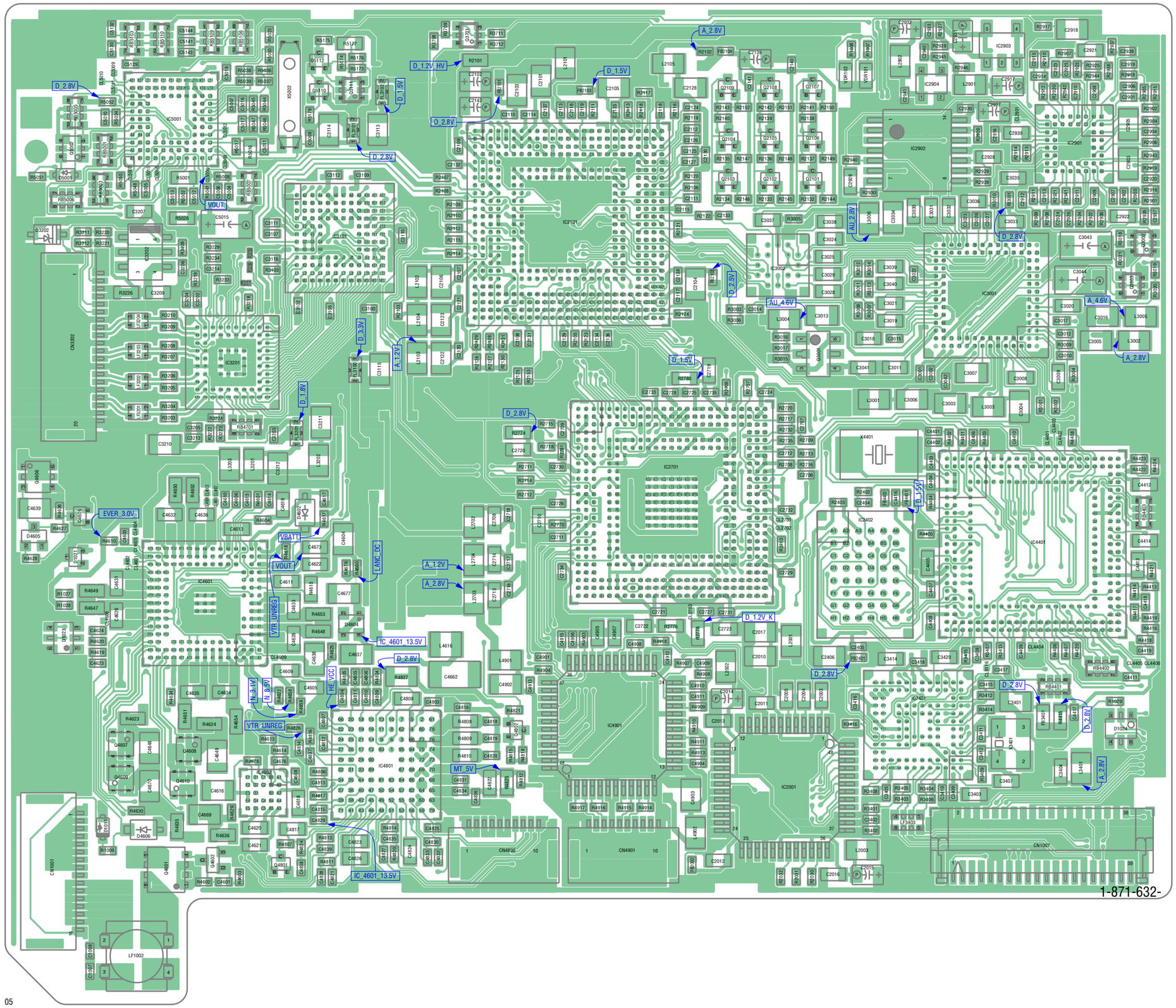


**VC-500 (8 layers)**

**: Uses unleaded solder.**

# VC-500 BOARD (SIDE B)

Note: IC2402 is not supplied, but this is included in VC-500 complete board.



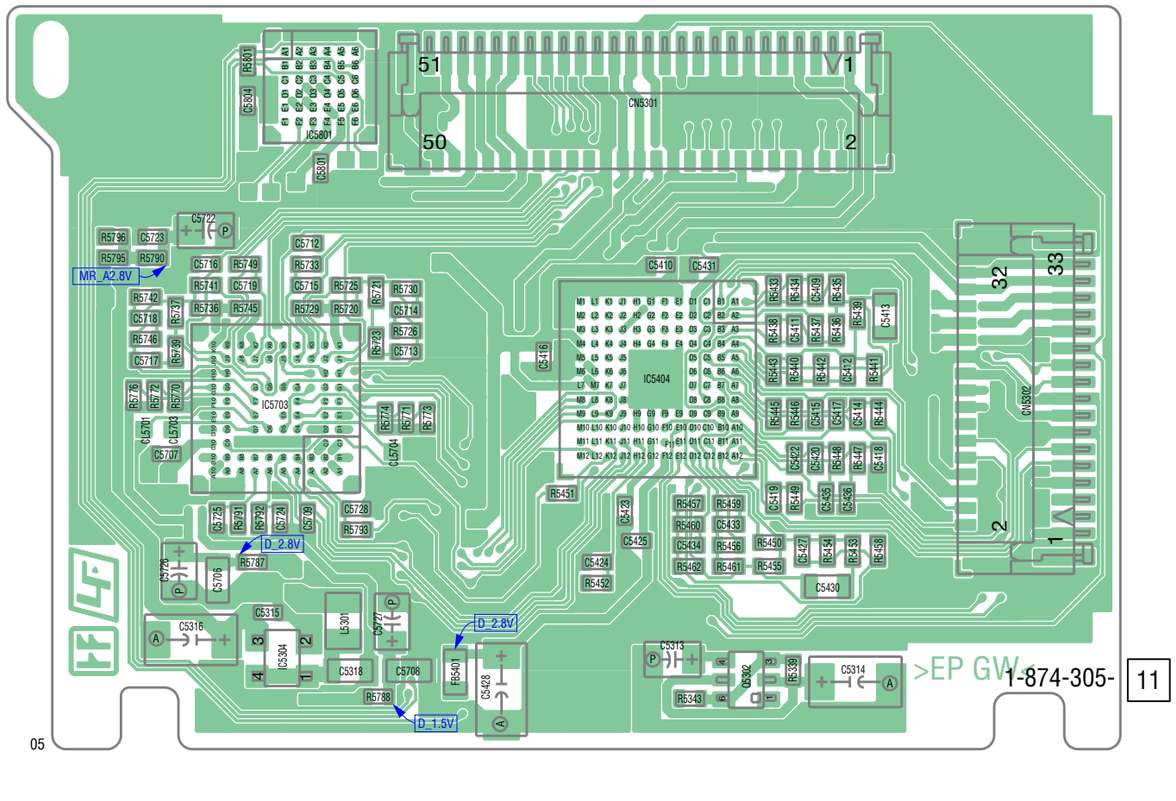

1-871-632-11

05

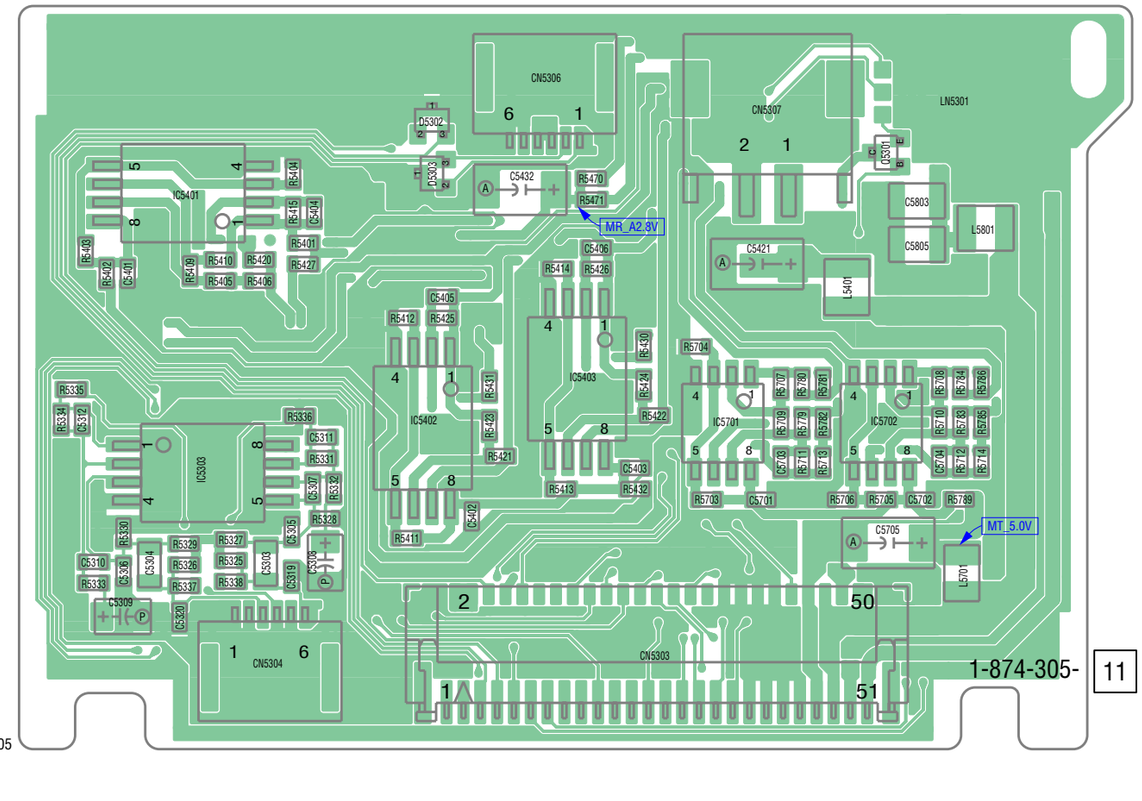
**LD-229 (6 layers)**

: Uses unleaded solder.

# LD-229 BOARD (SIDE A)



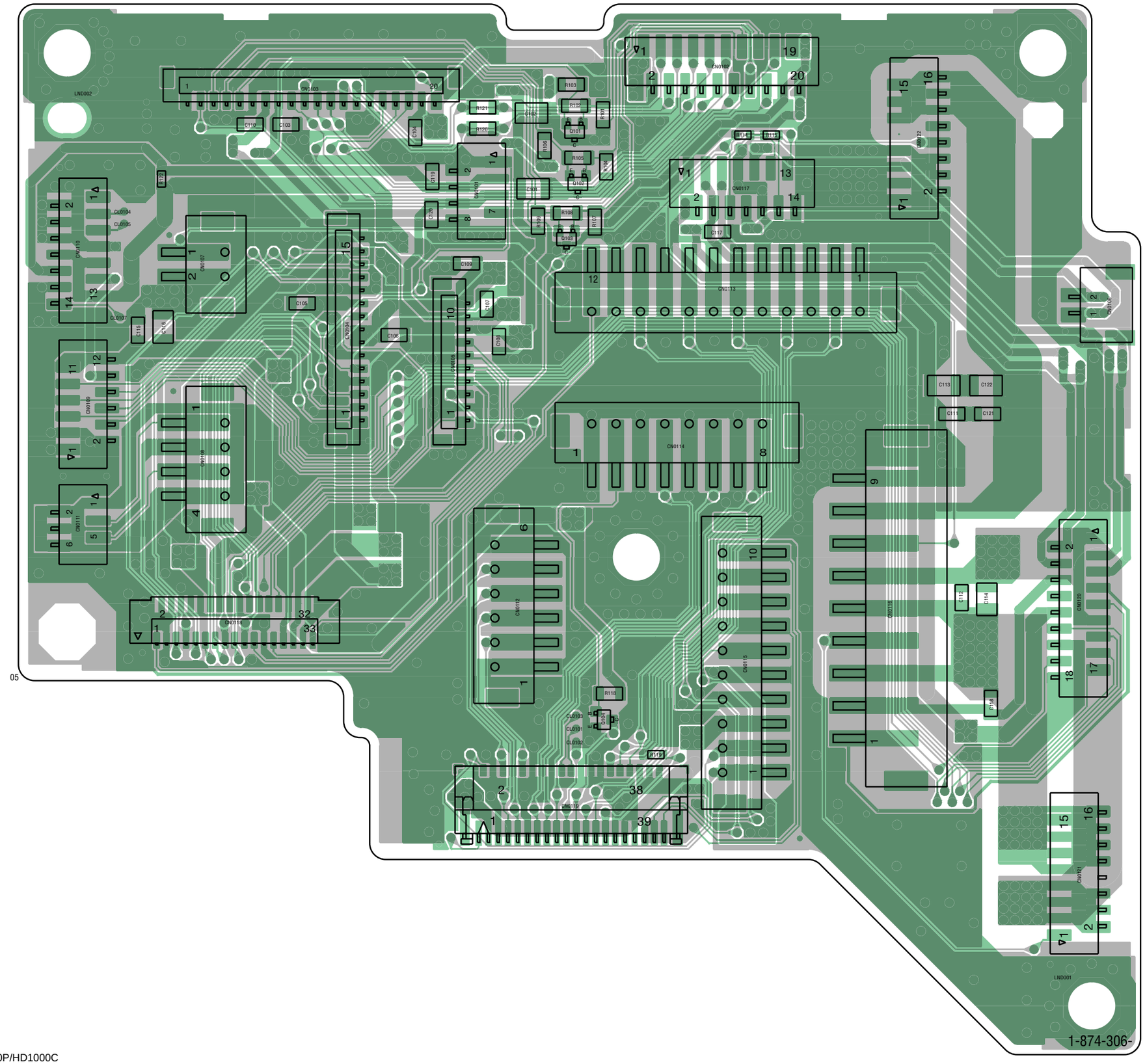

# LD-229 BOARD (SIDE B)



IF-155 (4 layers)

: Uses unleaded solder.

# IF-155 BOARD

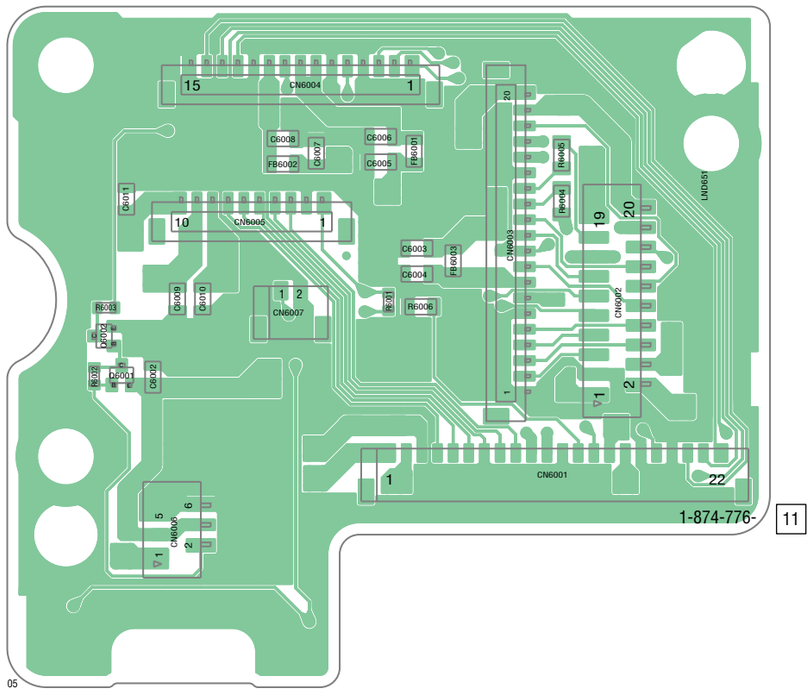



1-874-306-11

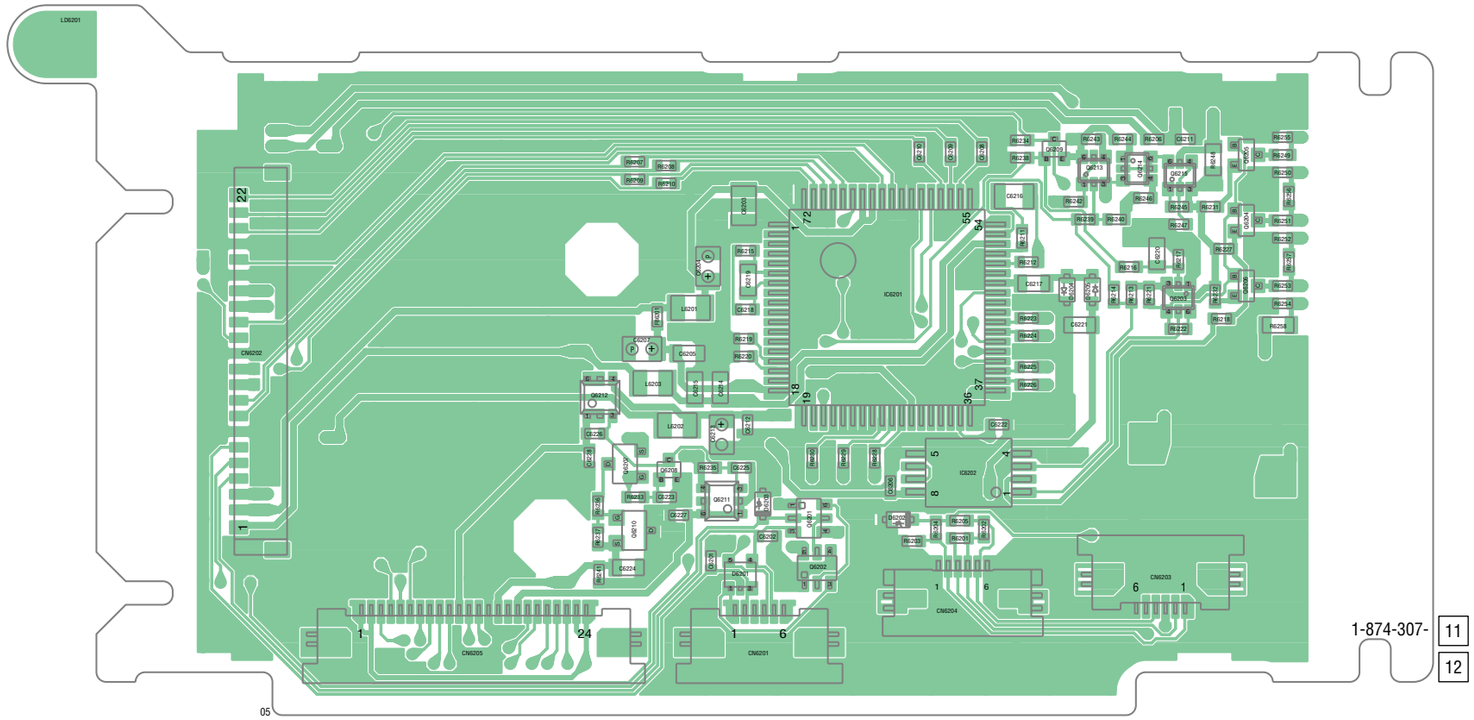
**BH-001 (2 layers), PD-342 (2 layers)**

**: Uses unleaded solder.**

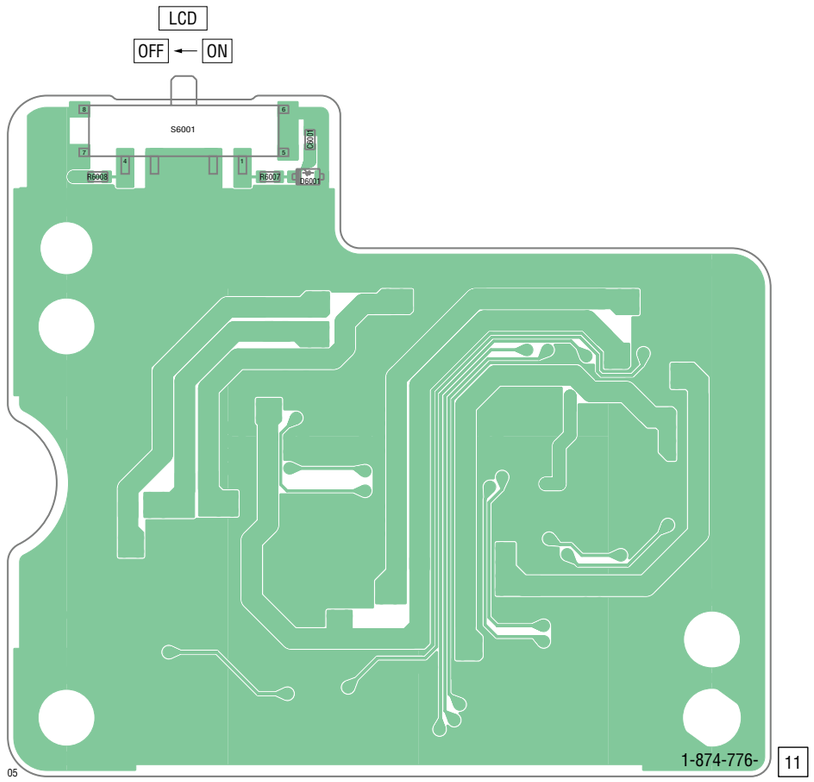
## BH-001 BOARD (SIDE A)



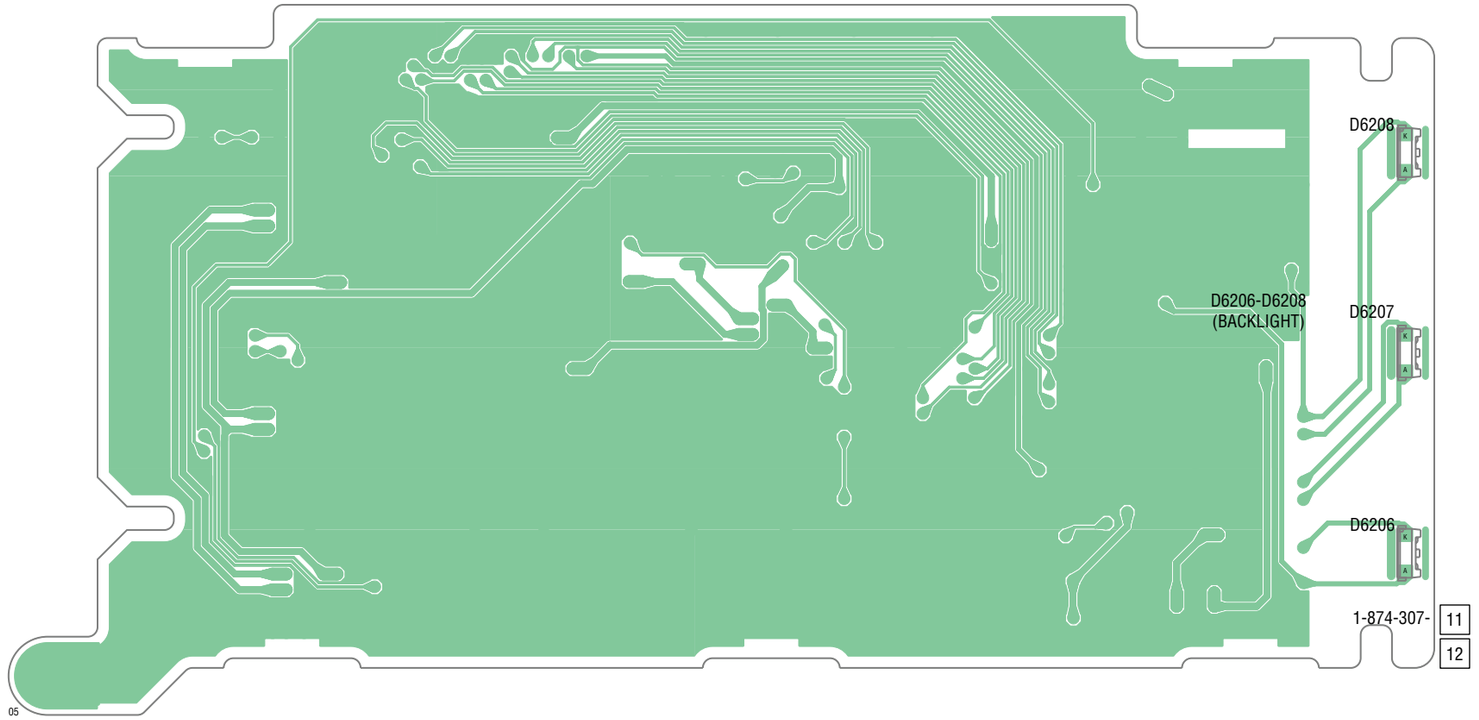

## PD-342 BOARD (SIDE A)




## BH-001 BOARD (SIDE B)



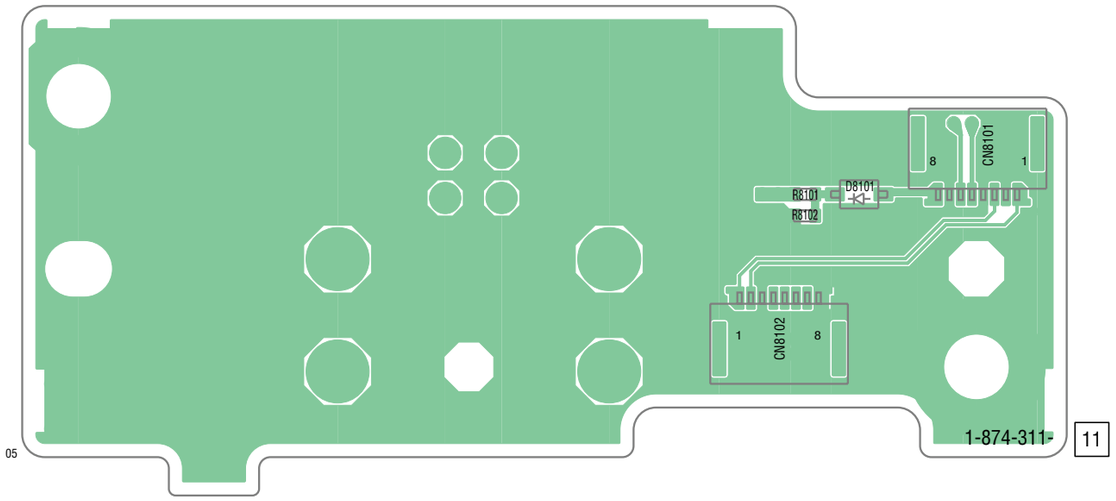

## PD-342 BOARD (SIDE B)



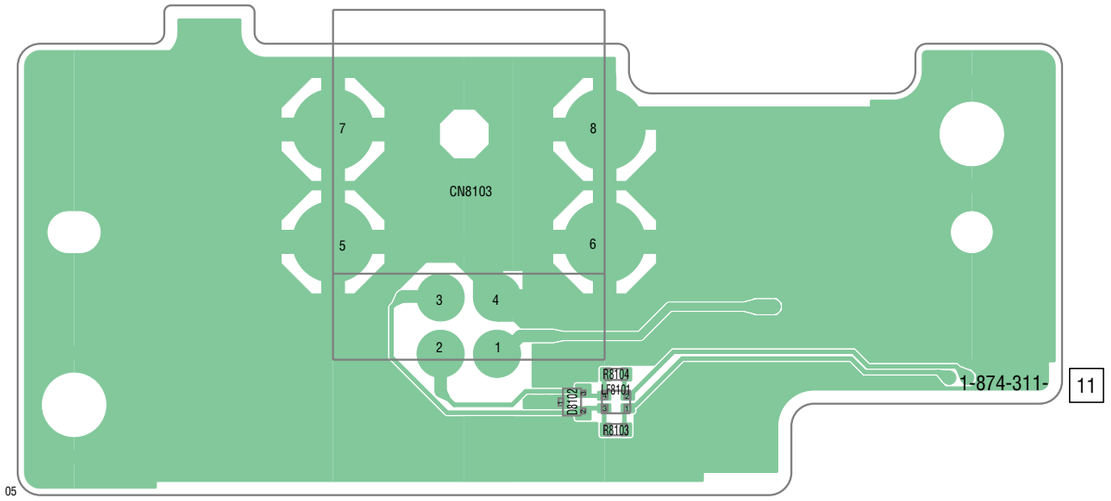
**US-014 (2 layers), BL-015 (2 layers), RE-038 (2 layers), JK-355 (2 layers)**

: Uses unleaded solder.

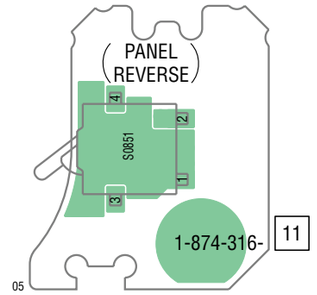
## US-014 BOARD (SIDE A)



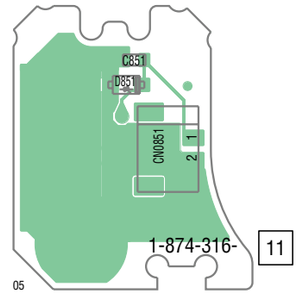

## US-014 BOARD (SIDE B) (USB)



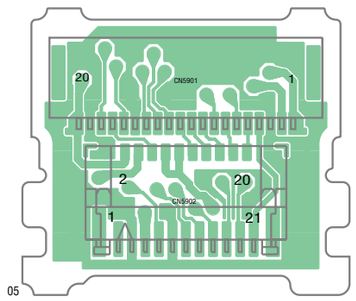

## RE-038 BOARD (SIDE A)




## RE-038 BOARD (SIDE B)




## BL-015 BOARD (SIDE A)

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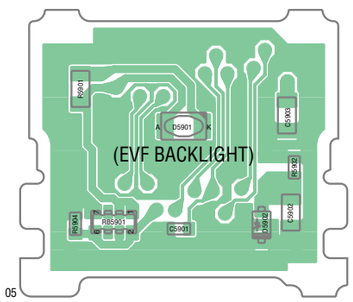
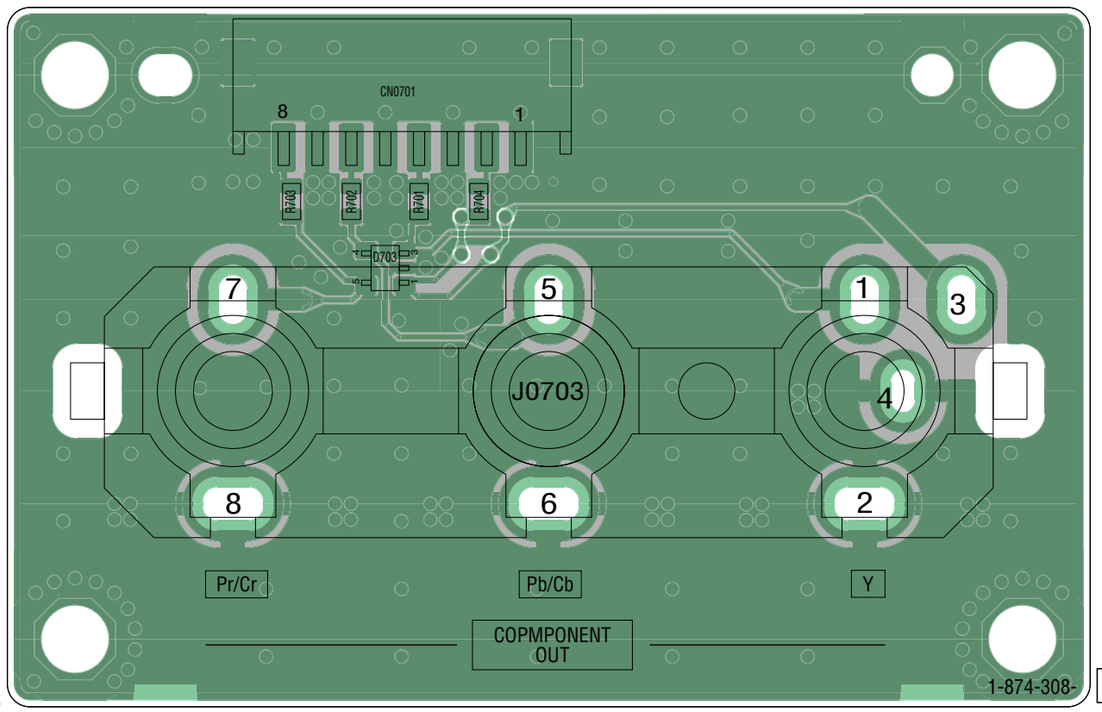
## BL-015 BOARD (SIDE B)



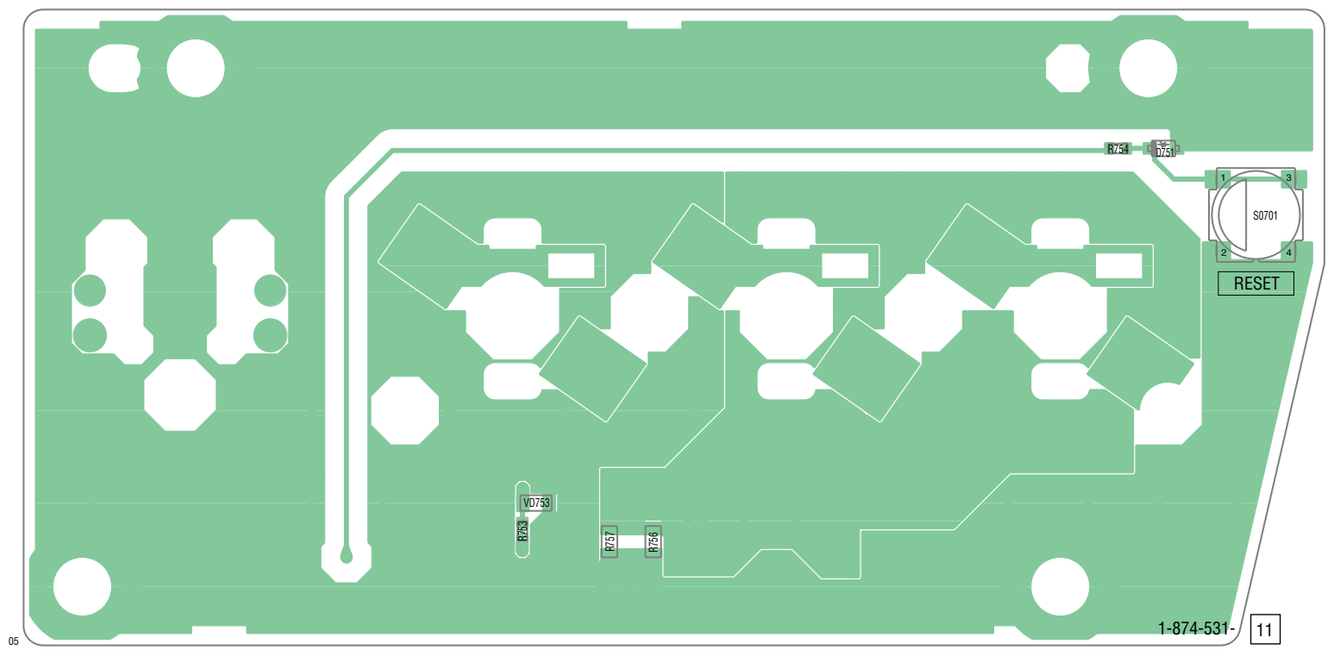

1-874-309- 11

## JK-355 BOARD

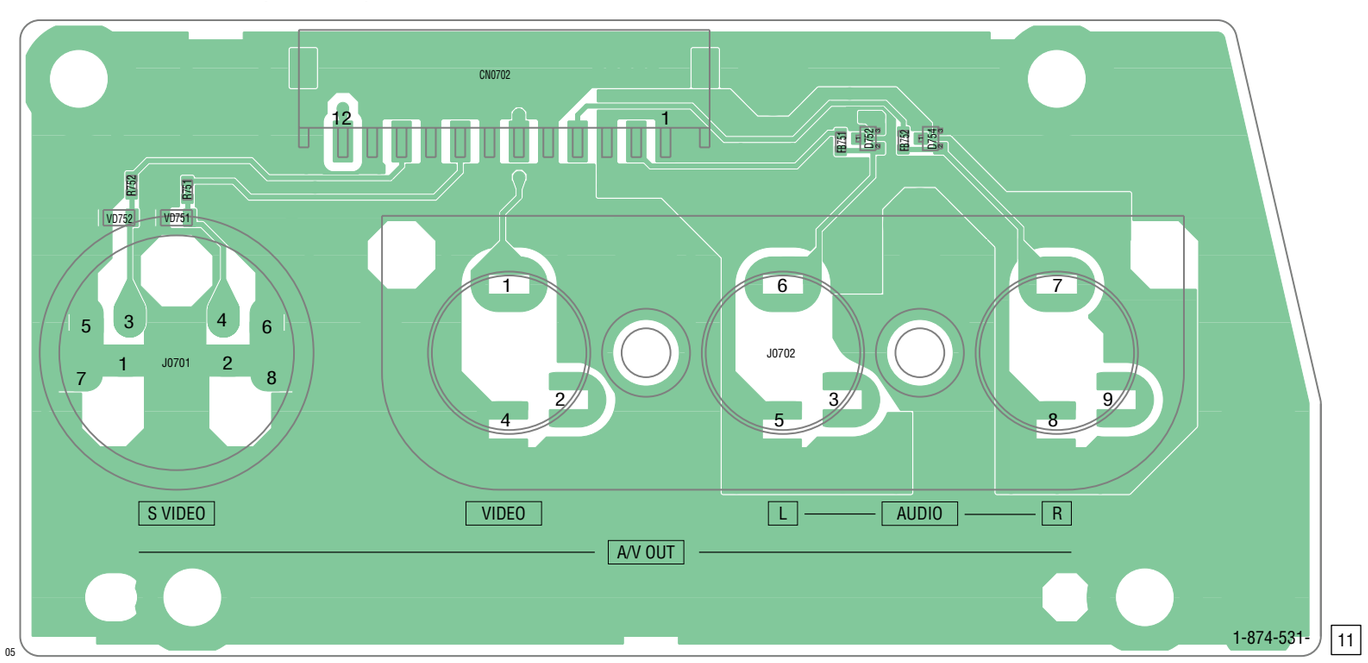


**: Uses unleaded solder.**

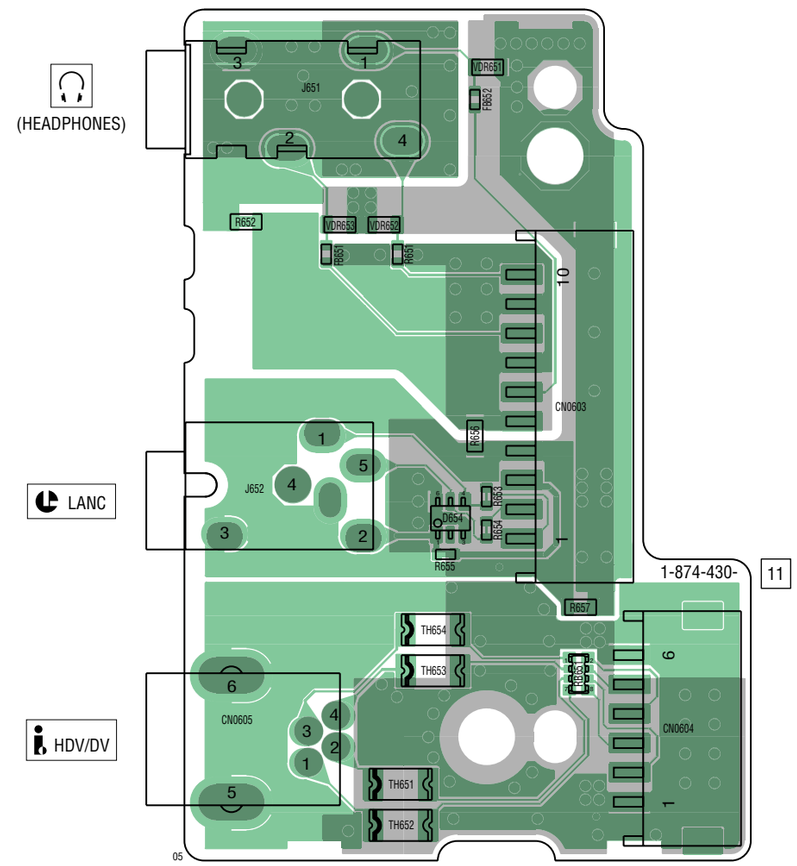
## JS-033 BOARD (SIDE A)



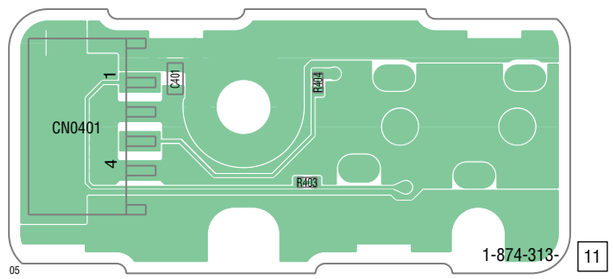

## JS-033 BOARD (SIDE B)



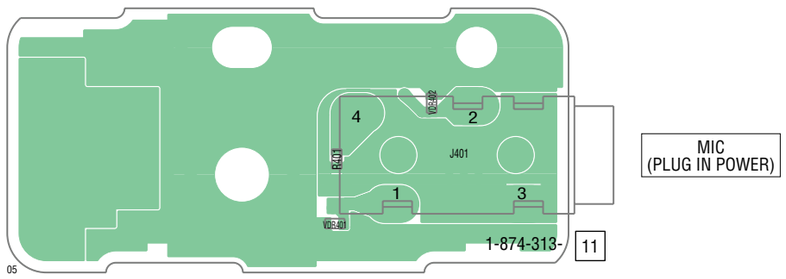

## HP-150 BOARD




## MC-188 BOARD (SIDE A)



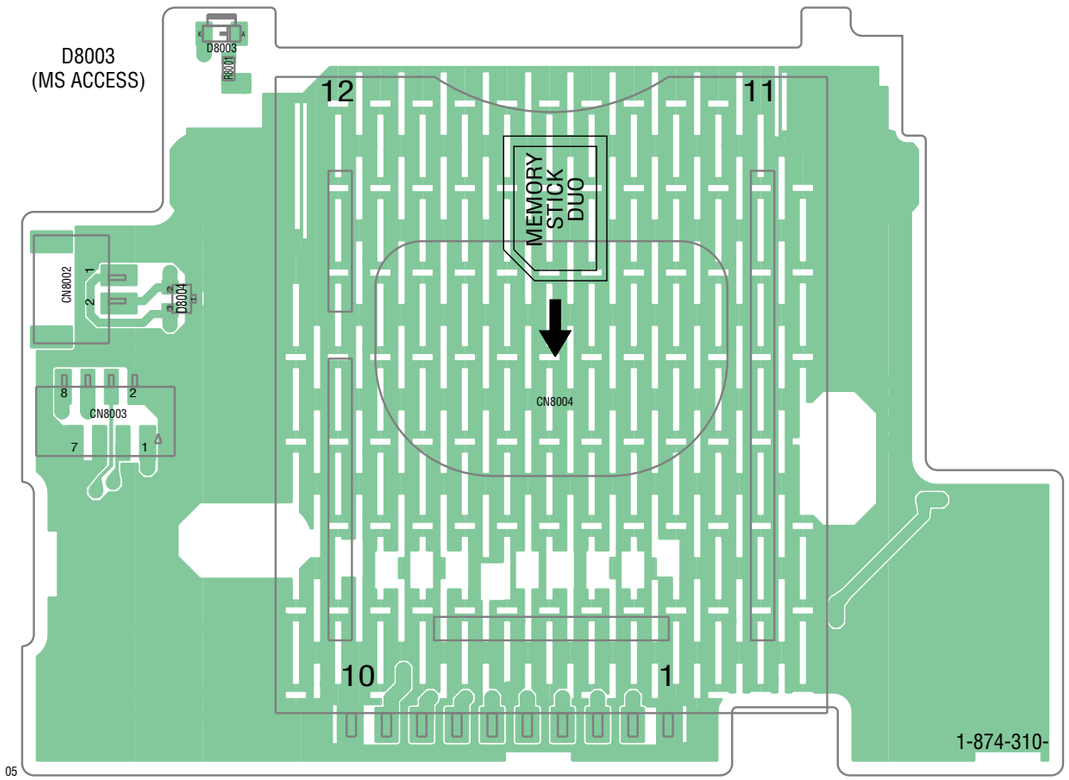

## MC-188 BOARD (SIDE B)



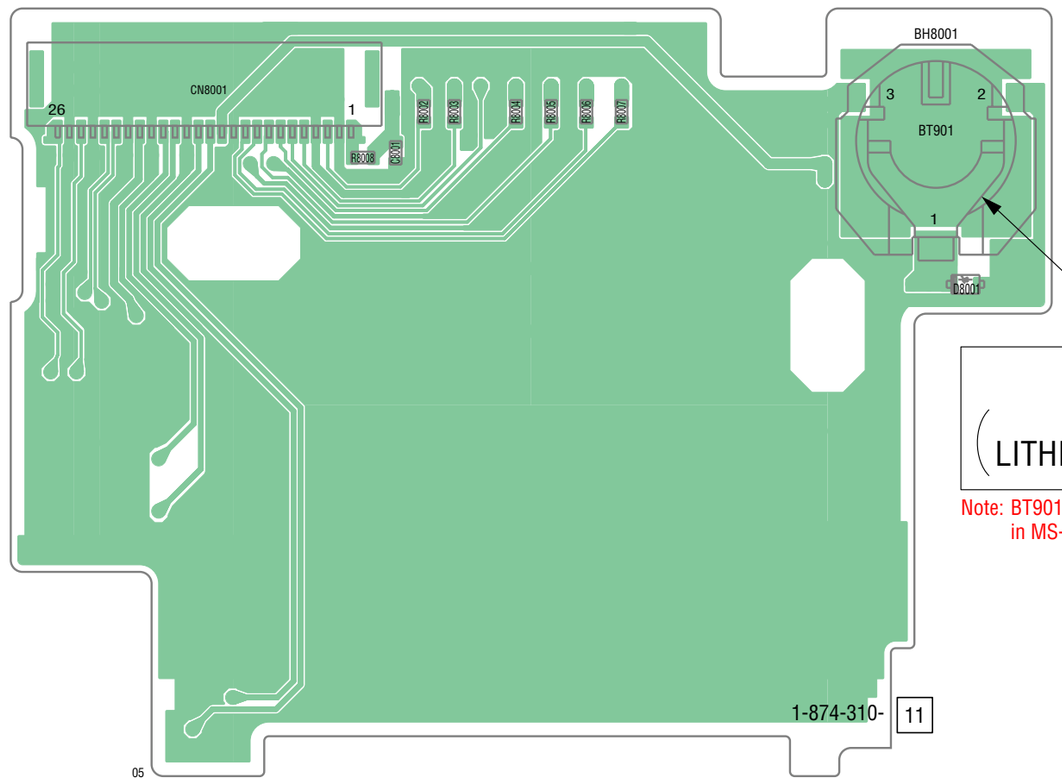
**MS-379 (2 layers)**

: Uses unleaded solder.

## MS-379 BOARD (SIDE A)




## MS-379 BOARD (SIDE B)




BT901
BATTERY,
LITHIUM SECONDARY

Note: BT901 (lithium battery) is not included in MS-379 complete board.

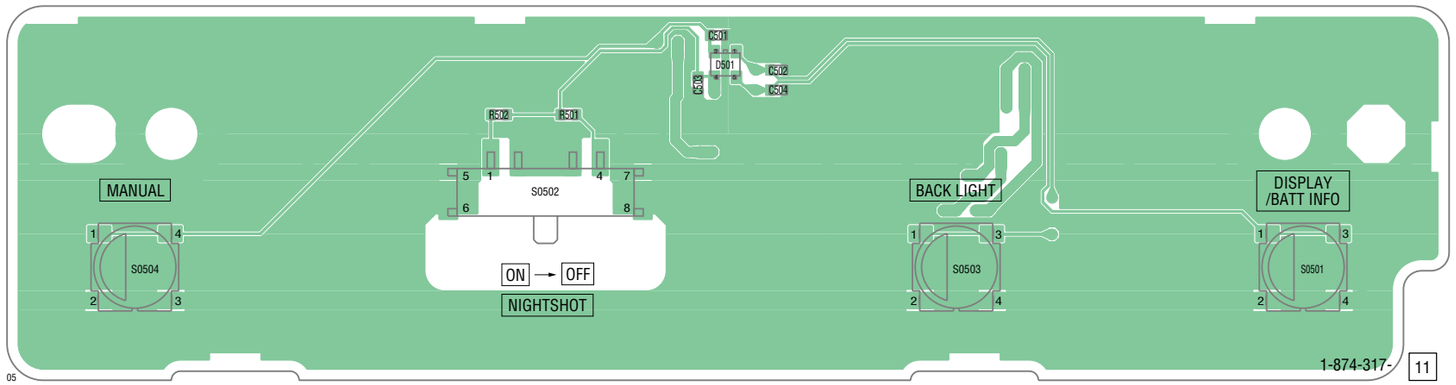
CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

Note: Replace the battery holder (BH8001) together when replacing the lithium battery (BT901) on the MS-379 board. (The battery holder removed once cannot be used again.)
When mounting these parts, mount new battery holder first and attach new lithium battery next.

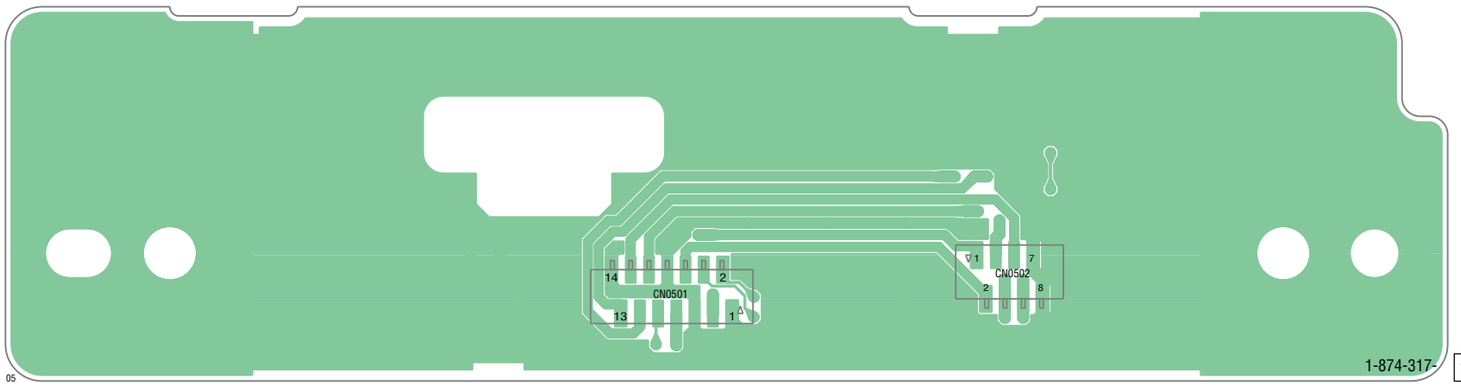
**SP-048 (2 layers), MO-027 (2 layers)**

**: Uses unleaded solder.**

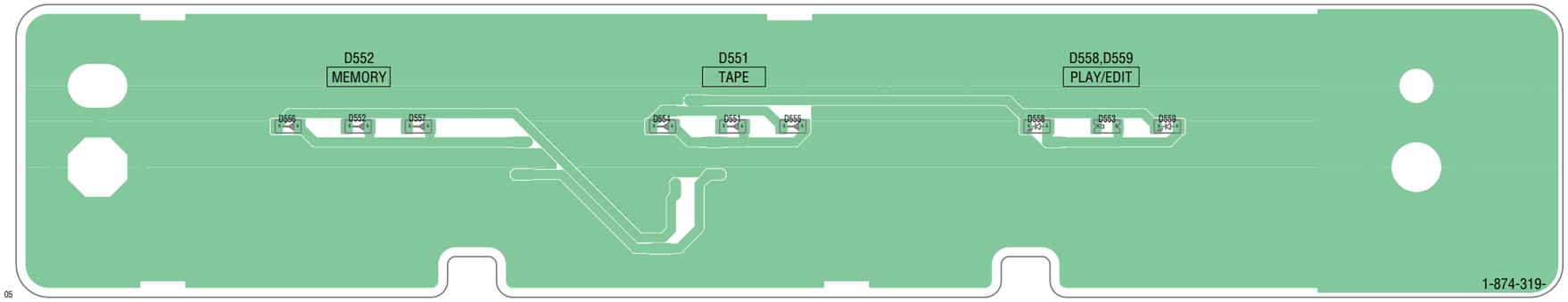
## SP-048 BOARD (SIDE A)



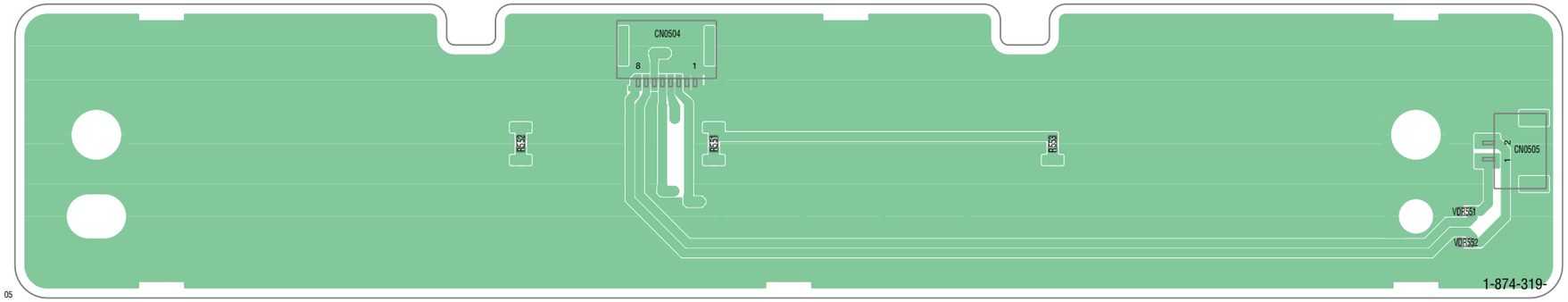

## SP-048 BOARD (SIDE B)




## MO-027 BOARD (SIDE A)

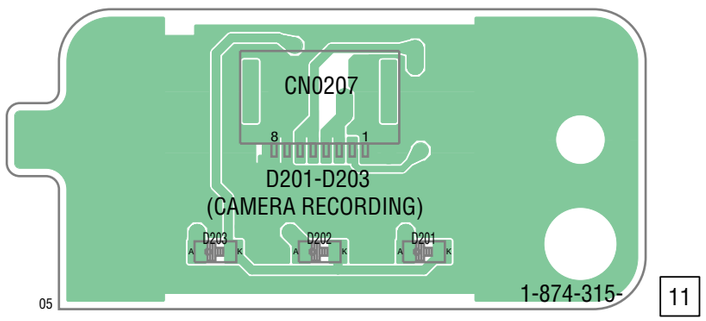



## MO-027 BOARD (SIDE B)

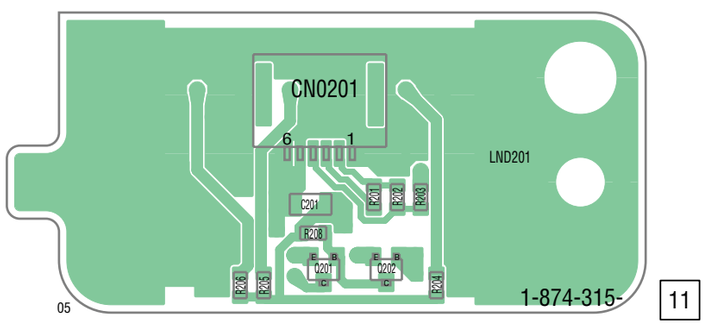


: Uses unleaded solder.

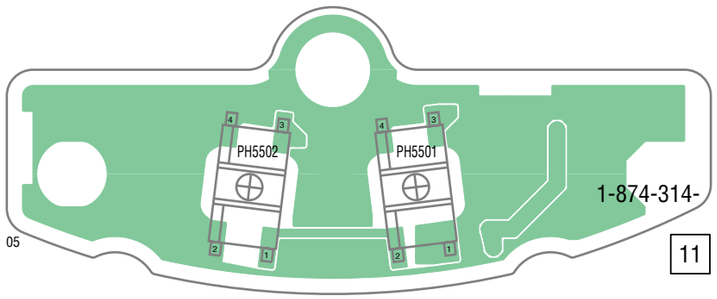
## HI-078 BOARD (SIDE A)




## HI-078 BOARD (SIDE B)

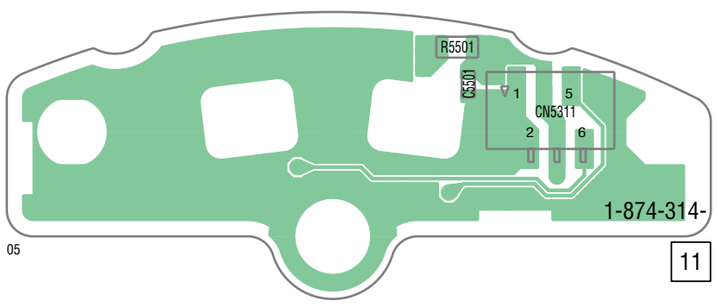



## EC-001 BOARD (SIDE A)

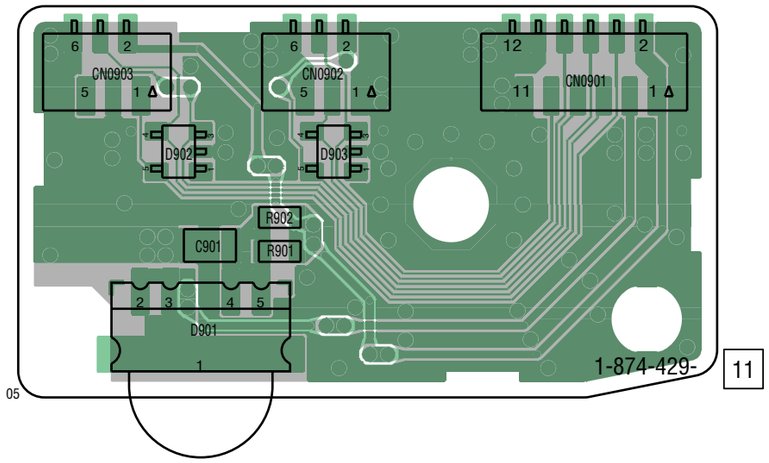



PH5501, PH5502
(MANUAL FOCUS/ZOOM SENSOR)

## EC-001 BOARD (SIDE B)



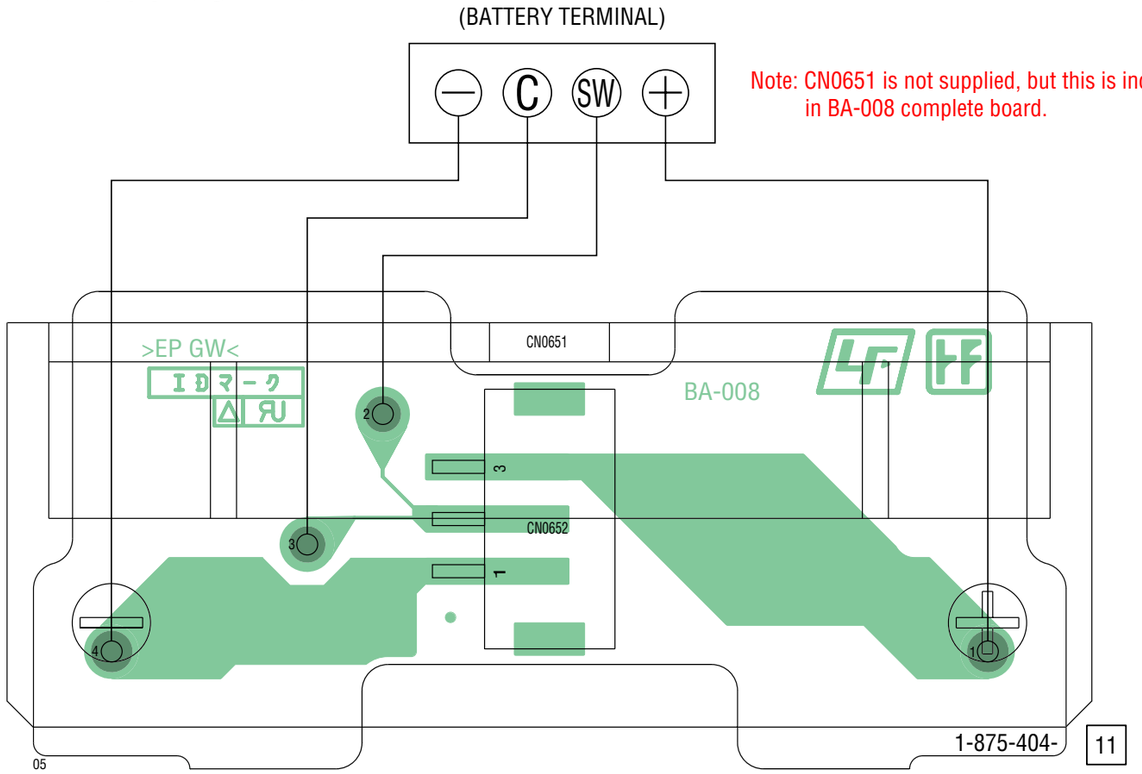

## NS-022 BOARD




(NIGHTSHOT)

## BA-008 BOARD

(BATTERY TERMINAL)

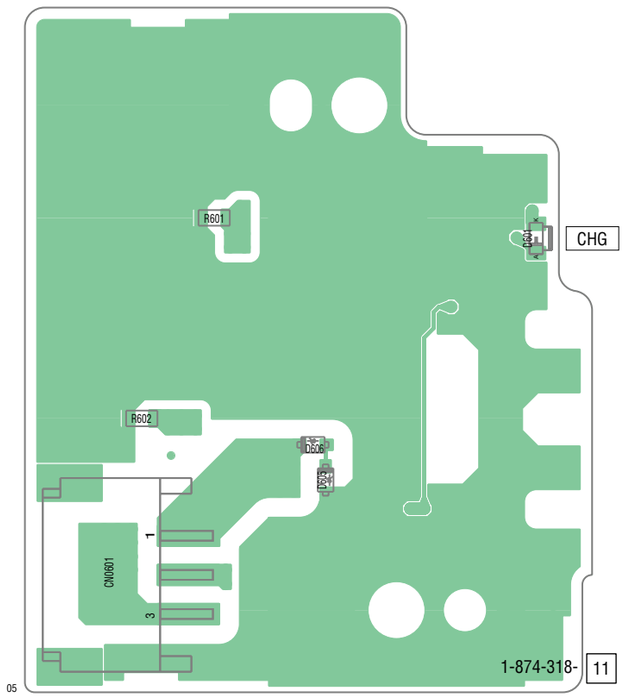



Note: CN0651 is not supplied, but this is included in BA-008 complete board.

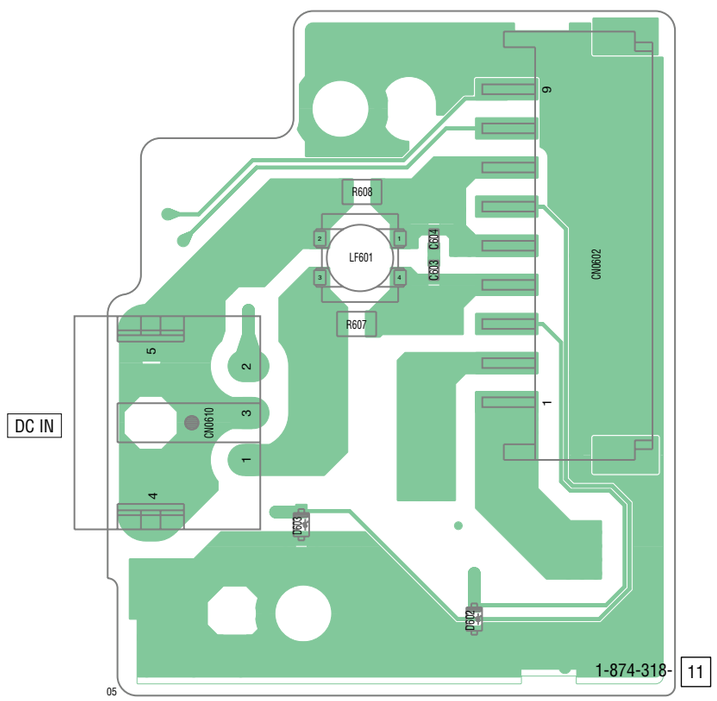
**DC-110 (2 layers), FP-867 (2 layers), FP-784 (1 layer), FP-785 (1 layer)**

: Uses unleaded solder.

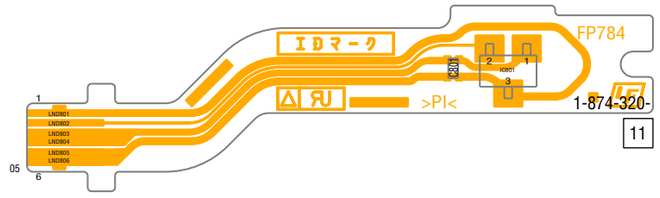
## DC-110 BOARD (SIDE A)



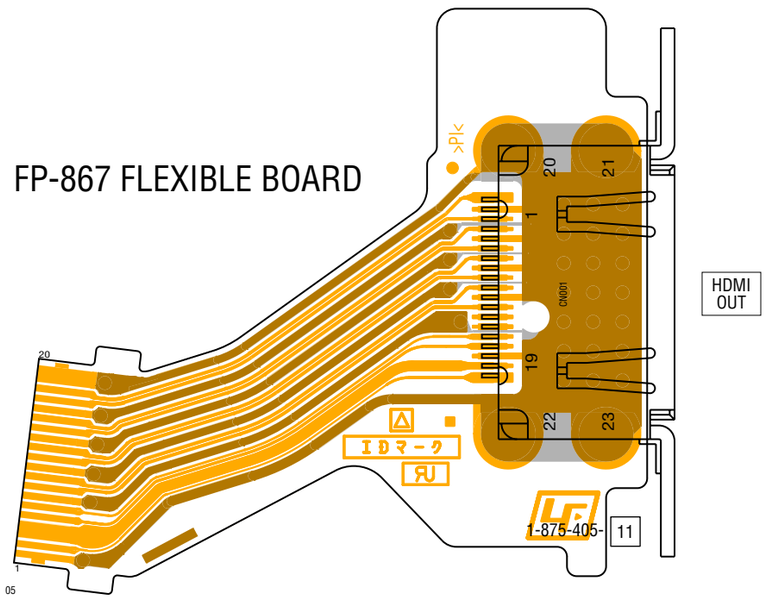

## DC-110 BOARD (SIDE B)



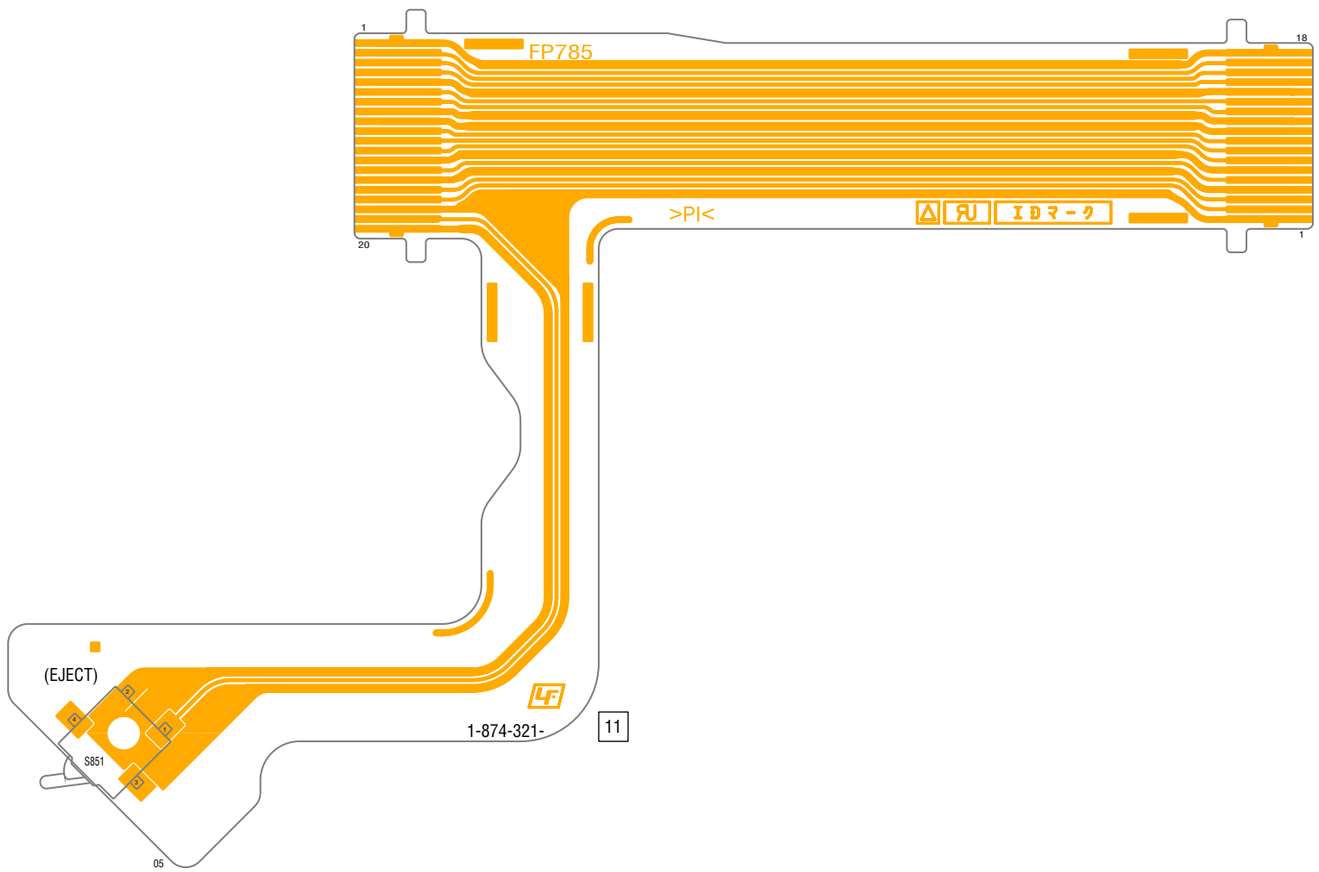

## FP-784 FLEXIBLE BOARD




## FP-867 FLEXIBLE BOARD

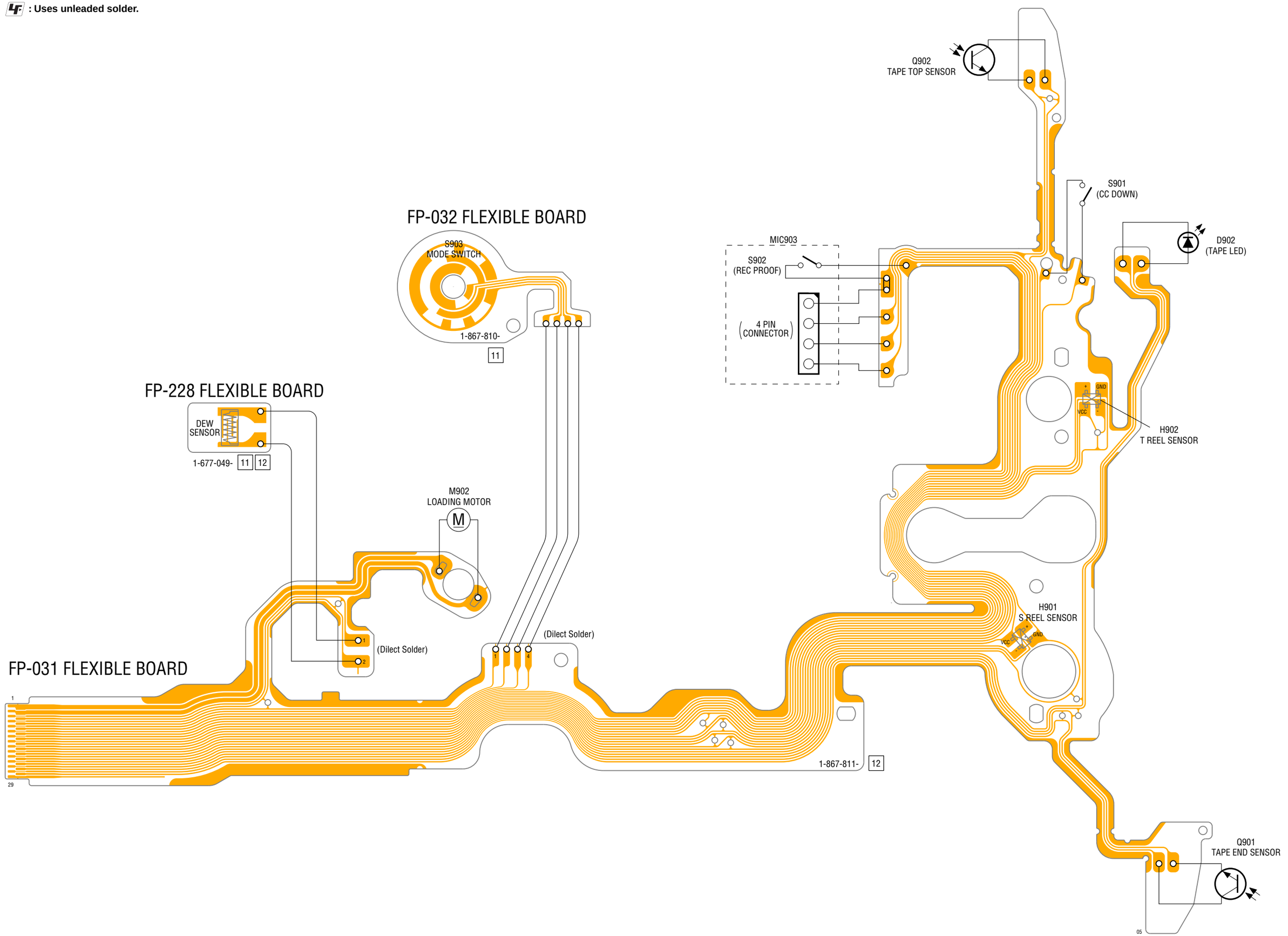



## FP-785 FLEXIBLE BOARD



## FP-228 (1 layer), FP-032 (1 layer), FP-031 (1 layer)

: Uses unleaded solder.



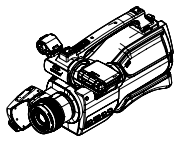
NOTE

# 5. REPAIR PARTS LIST (1/2)

TO (2/2)

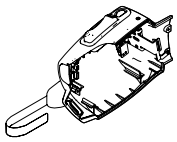
NOTE: Characters A to Z of the electrical parts list indicate location of exploded views in which the desired part is shown.

## Link EXPLODED VIEWS



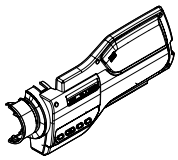
A

OVERALL SECTION-1



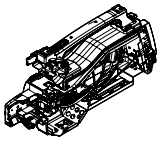
B

GRIP SECTION



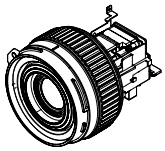
C

CABINET (R) SECTION



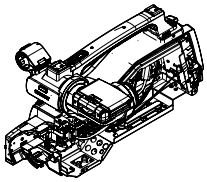
D

OVERALL SECTION-2



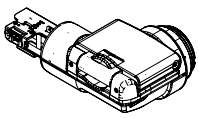
E

LENS SECTION



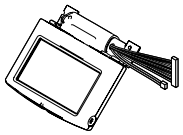
F

HANDLE (TALLY) SECTION



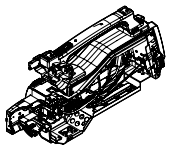
G

VIEW FINDER SECTION



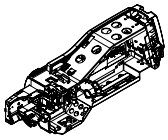
H

LCD PANEL SECTION



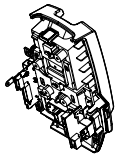
I

HANDLE (COVER) SECTION



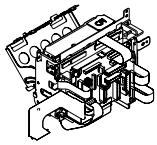
J

OVERRALL SECTION-3



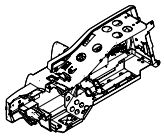
K

BATTERY PANEL SECTION



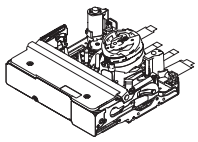
L

G BLOCK SECTION



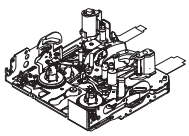
M

CABINET (L) SECTION



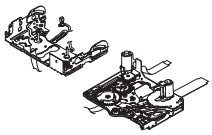
N

MECHANISM DECK SECTION



O

LS/MECHANICHAL CHASSIS BLOCK ASSEMBLY-1



P

LS/MECHANICHAL CHASSIS BLOCK ASSEMBLY-1

NOTE

# 5. REPAIR PARTS LIST (2/2)

TO (1/2)

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

Link

## ELECTRICAL PARTS LIST

ACCESSORIES

| | | |
|---|---|---|
| BA-008 BOARD K | FP-784 FLEXIBLE BOARD G | MC-188 BOARD I |
| BH-001 BOARD G | FP-785 FLEXIBLE BOARD L | MO-027 BOARD C |
| BL-015 BOARD G | FP-867 FLEXIBLE BOARD L | MS-379 BOARD J |
| CM-077 BOARD E | HI-078 BOARD G | NS-022 BOARD B |
| DC-110 BOARD K | HP-150 BOARD K | PD-342 BOARD H |
| EC-001 BOARD E | IF-155 BOARD L | RE-038 BOARD H |
| FP-031 FLEXIBLE BOARD P | JK-355 BOARD M | SP-048 BOARD C |
| FP-032 FLEXIBLE BOARD P | JS-003 BOARD M | US-014 BOARD J |
| FP-228 FLEXIBLE BOARD P | LD-229 BOARD E | VC-500 BOARD L |

# 5. REPAIR PARTS LIST

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: µF
- COILS
  uH: µH
- 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...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

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

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

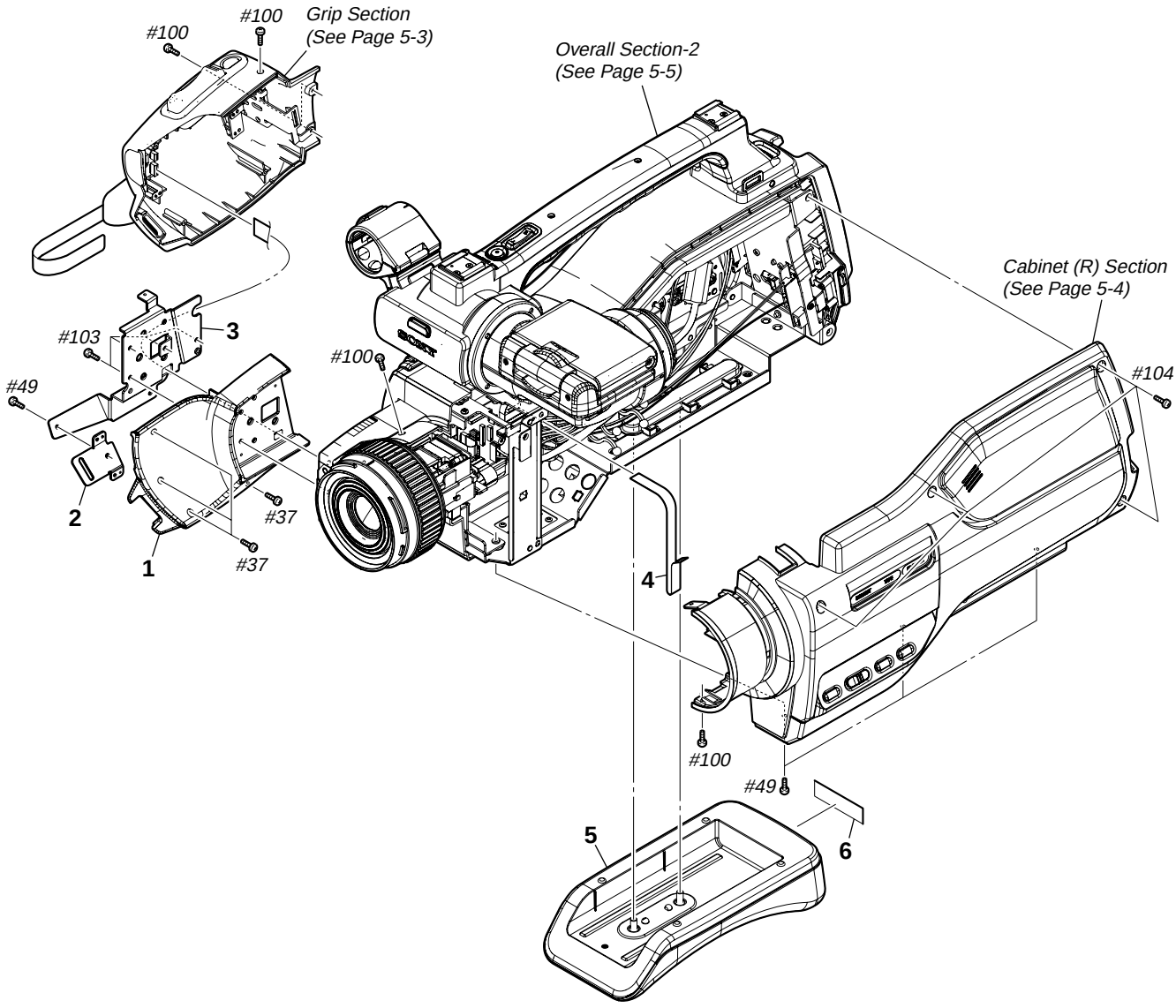
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- 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
  EE : East European model
  HK : Hong Kong model
  J : Japanese model
  JE : Tourist model
  KR : Korea model
  NE : North European model

## 5-1. EXPLODED VIEWS

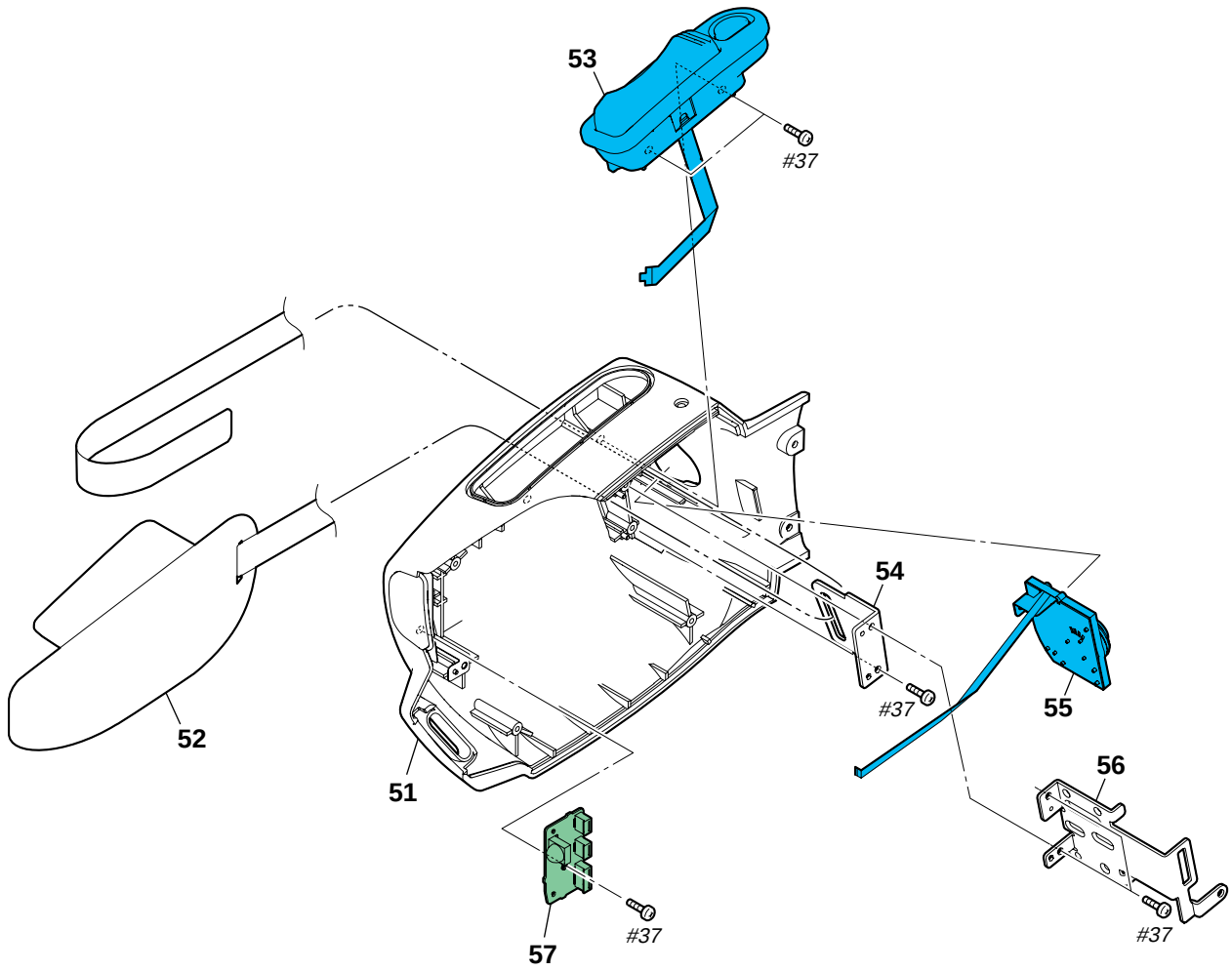
### 5-1-1. OVERALL SECTION-1




| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | 3-284-044-01 | BASE, GRIP |
| * 2 | 3-284-047-01 | BRACKET (F), GRIP BELT |
| 3 | 3-284-046-01 | FRAME, GRIP |
| 4 | 1-834-808-11 | CABLE, FLEXIBLE FLAT (FFC-337) |
| 5 | X-2187-984-1 | PAD ASSY, SHOULDER |
| 6 | 3-284-050-01 | SHEET (JAPAN) (HD1000U) |
| 6 | 3-284-050-11 | SHEET (JAPAN) (HD1000N) |
| 6 | 3-284-050-21 | SHEET (JAPAN) (HD1000P) |
| 6 | 3-284-050-31 | SHEET (JAPAN) (HD1000E) |
| 6 | 3-284-050-41 | SHEET (JAPAN) (HD1000C) |
| #37 | 3-080-206-31 | SCREW, TAPPING, P2 (Black) |
| #49 | 2-630-005-31 | SCREW (M2), NEW TRUSTER, P2 (Black) |
| #100 | 3-080-203-51 | SREW (M2), LOCK ACE, P2 (Black) |
| #103 | 7-685-794-09 | SCREW +PTT 2.6X10 (S) (Silver) |
| #104 | 7-682-548-09 | SCREW +B 3X8 (Black) |

HARDWARE LIST

## 5-1-2. GRIP SECTION

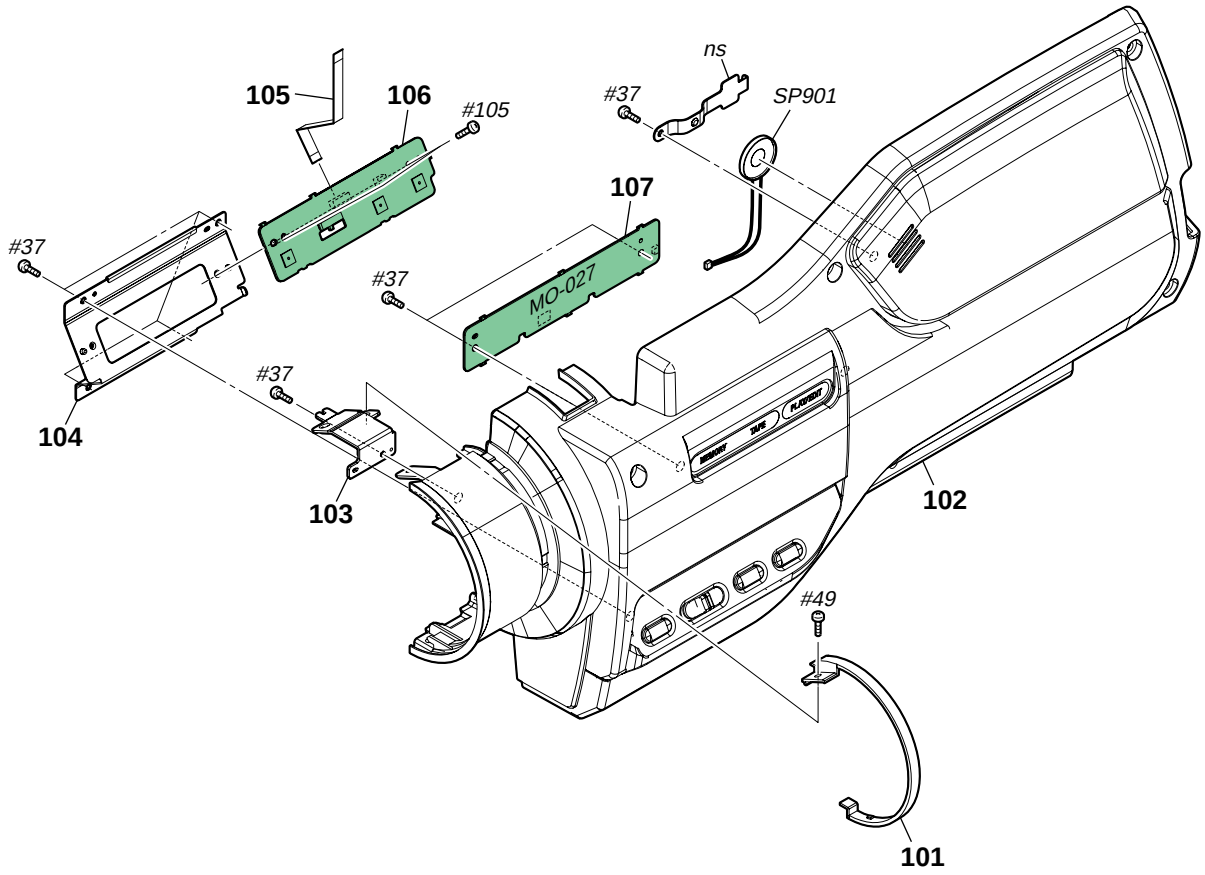



| Ref. No. | Part No. | Description |
|---|---|---|
| 51 | X-2187-973-1 | CABINET ASSY, GRIP |
| 52 | 3-289-560-01 | BELT, GRIP |
| 53 | 1-480-479-11 | SWITCH BLOCK, CONTROL (ZM90500) |
| 54 | 3-283-958-01 | BRACKET (B), GRIP BELT |
| 55 | 1-480-480-11 | SWITCH BLOCK, CONTROL (PS90500) |

| Ref. No. | Part No. | Description |
|---|---|---|
| * 56 | 3-283-959-01 | PLATE, SS RETAINER |
| 57 | A-1438-618-A | NS-022 BOARD, COMPLETE |
| #37 | 3-080-206-31 | SCREW, TAPPING, P2 (Black) |

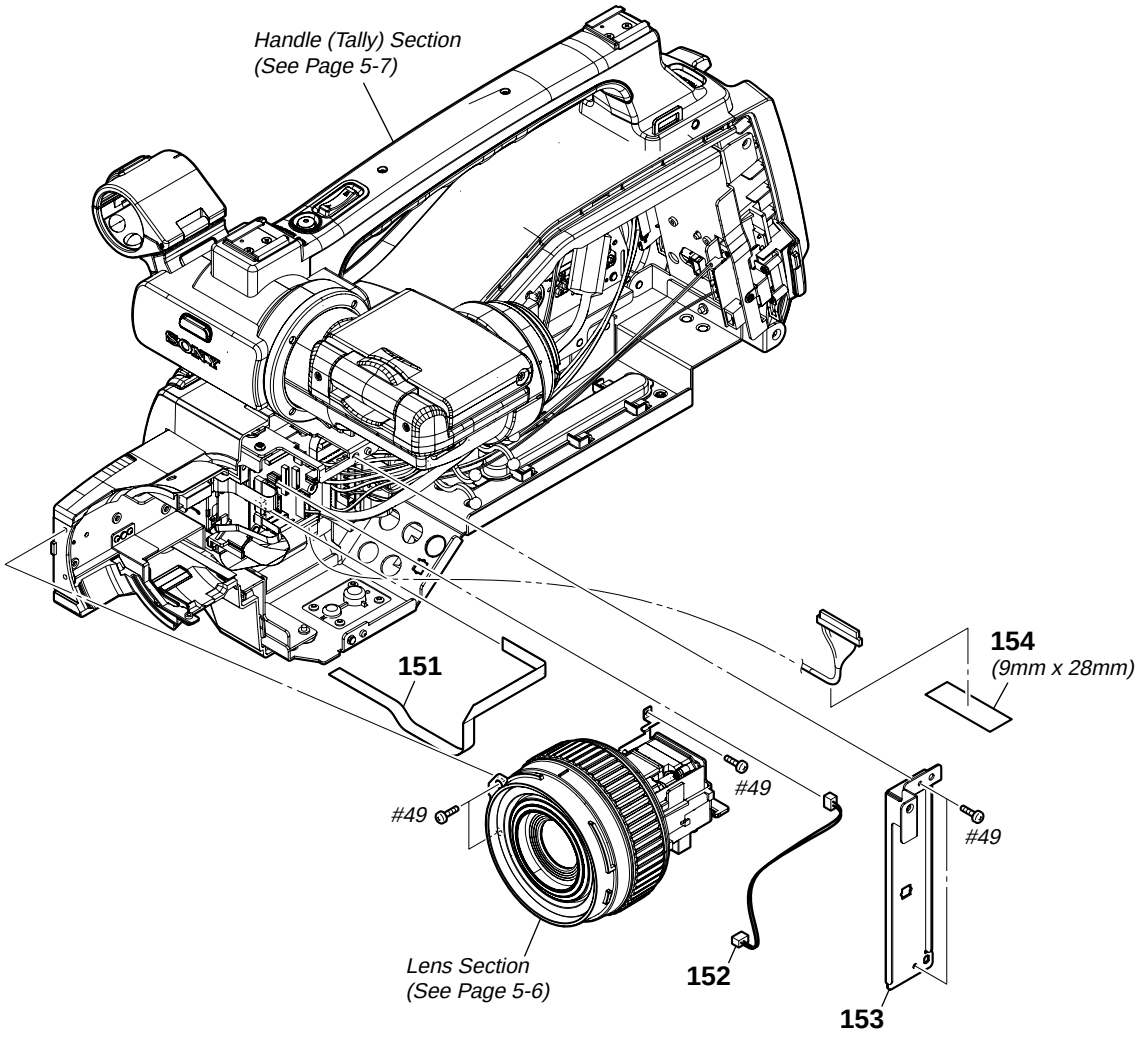
### 5-1-3. CABINET (R) SECTION

ns: not supplied




| Ref. No. | Part No. | Description |
|---|---|---|
| 101 | 3-283-972-01 | RING, ORNAMENTAL |
| 102 | X-2187-974-1 | CABINET (R) ASSY |
| * 103 | 3-283-971-01 | BRACKET (UPPER), LR |
| * 104 | 3-283-969-01 | BRACKET, CHASSIS |
| 105 | 1-834-807-11 | CABLE, FLEXIBLE FLAT (FFC-336) |
| 106 | A-1438-625-A | SP-048 BOARD, COMPLETE |
| 107 | A-1438-628-A | MO-027 BOARD, COMPLETE |
| SP901 | 1-825-262-62 | LOUD SPEAKER (1.6CM) |
| #37 | 3-080-206-31 | SCREW, TAPPING, P2 (Black) |
| #49 | 2-630-005-31 | SCREW (M2), NEW TRUSTER, P2 (Black) |
| #105 | 2-891-494-31 | SCREW (M2), NEW TRUSTER, P2 (Red) |

## 5-1-4. OVERALL SECTION-2

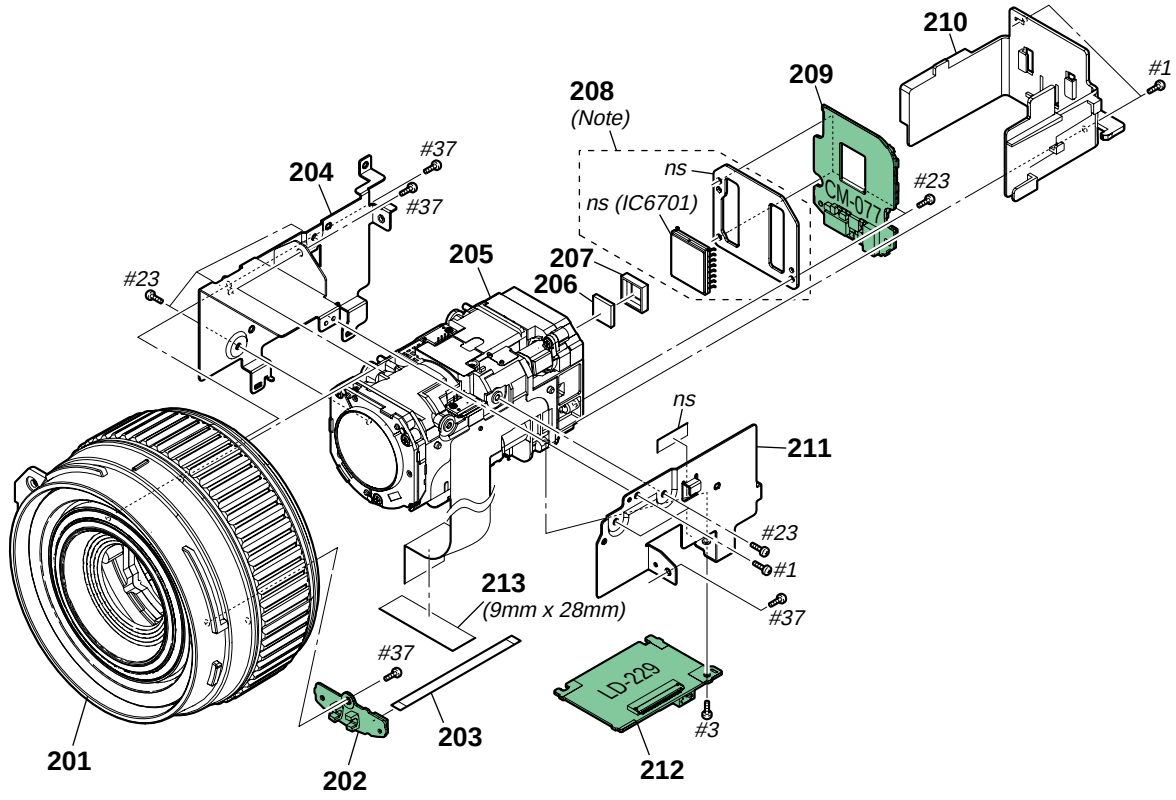



**CAUTION :**
For the part of 154, cut SHEET, LENS FLEXIBLE (3-052-196-01) into the desired length and use it.

| Ref. No. | Part No. | Description |
|---|---|---|
| 151 | 1-834-811-11 | CABLE, FLEXIBLE FLAT (FFC-340) |
| 152 | 1-965-558-11 | HARNESS (LI-062) |
| * 153 | 3-284-037-01 | FRAME (R) |
| 154 | CAUTION | TAPE AS |
| #49 | 2-630-005-31 | SCREW (M2), NEW TRUSTER, P2 (Black) |

## 5-1-5. LENS SECTION

ns: not supplied



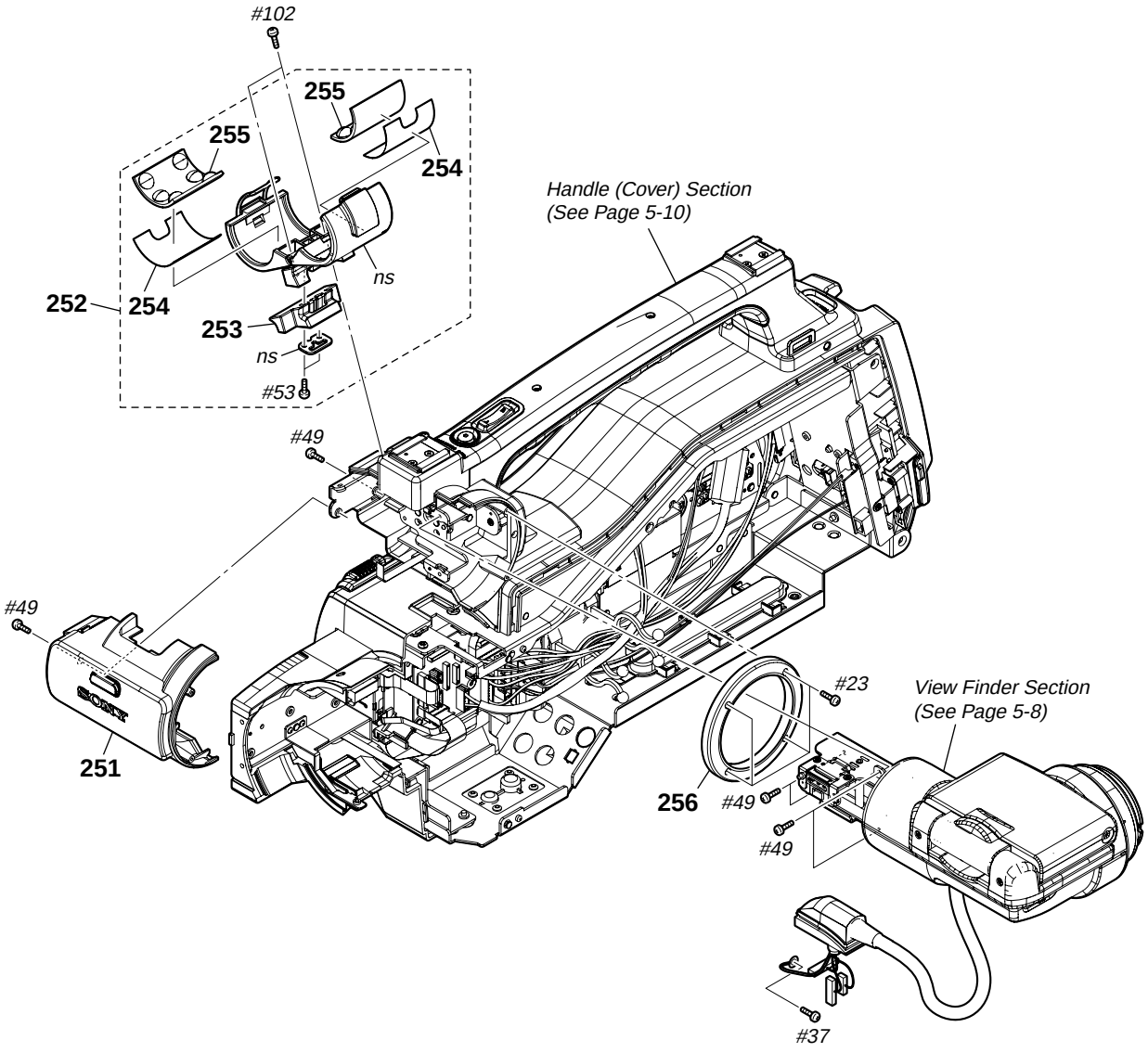

Note: Be sure to read “Precautions for Replacement of Imager” on page 4-3 when changing the imager.

**CAUTION :**
For the part of 213, cut SHEET, LENS FLEXIBLE (3-052-196-01) into the desired length and use it.

| Ref. No. | Part No. | Description |
|---|---|---|
| 201 | X-2187-983-1 | PANEL ASSY, F |
| 202 | A-1438-558-A | EC-001 BOARD, COMPLETE |
| 203 | 1-834-810-11 | CABLE, FLEXIBLE FLAT (FFC-339) |
| * 204 | 3-284-035-01 | FRAME (L) (905) LENS |
| 205 | A-1227-735-A | LSV-1190A (SERVICE) |
| 206 | 1-788-558-11 | FILTER BLOCK, OPTICAL |
| 207 | 2-698-010-01 | RUBBER (1190), SEAL |
| 208 | A-1209-688-A | CMOS BLOCK ASSY (CMOS IMAGER) (Note) |
| 209 | A-1237-309-A | CM-077 BOARD, COMPLETE (SERVICE) |
| 210 | 3-284-036-01 | CLAMP, FLEXIBLE |
| * 211 | 3-284-034-01 | FRAME (R (905)), LENS |
| 212 | A-1438-557-A | LD-229 BOARD, COMPLETE |
| 213 | CAUTION | TAPE AS |
| #1 | 2-635-562-11 | SCREW (M1.7) (Black) |
| #3 | 2-660-401-01 | SCREW (M1.7), NEW TRU-STAR, P2 (Red) |
| #23 | 3-080-204-11 | SCREW, TAPPING, P2 (Black) |
| #37 | 3-080-206-31 | SCREW, TAPPING, P2 (Black) |

## 5-1-6. HANDLE (TALLY) SECTION

ns: not supplied

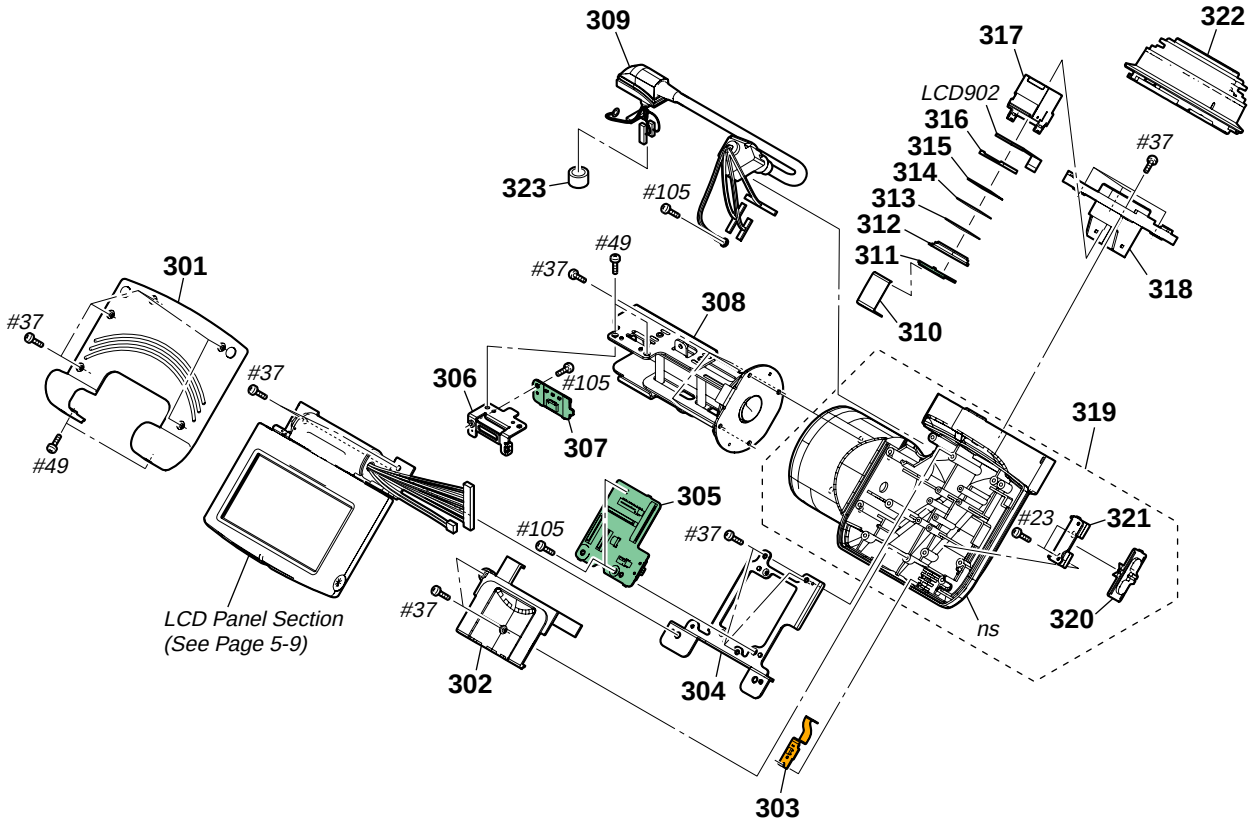



| Ref. No. | Part No. | Description |
|---|---|---|
| 251 | X-2187-977-1 | CABINET ASSY, TALLY (FRONT) |
| 252 | X-2187-986-1 | HOLDER ASSY, MICROPHONE |
| 253 | 3-284-074-01 | RUBBER, MICROPHONE HOLDER |
| 254 | 3-284-081-01 | SHEET, RUBBER ADHESIVE |
| 255 | 3-284-080-01 | RUBBER, MICROPHONE |
| 256 | 3-283-989-01 | BASE, RING |

| Ref. No. | Part No. | Description |
|---|---|---|
| #23 | 3-080-204-11 | SCREW, TAPPING, P2 (Black) |
| #37 | 3-080-206-31 | SCREW, TAPPING, P2 (Black) |
| #49 | 2-630-005-31 | SCREW (M2), NEW TRUSTER, P2 (Black) |
| #53 | 3-080-206-21 | SCREW, TAPPING, P2 (Black) |
| #102 | 7-621-284-30 | SCREW +P 2.6X8 (Black) |

## 5-1-7. VIEW FINDER SECTION

ns: not supplied

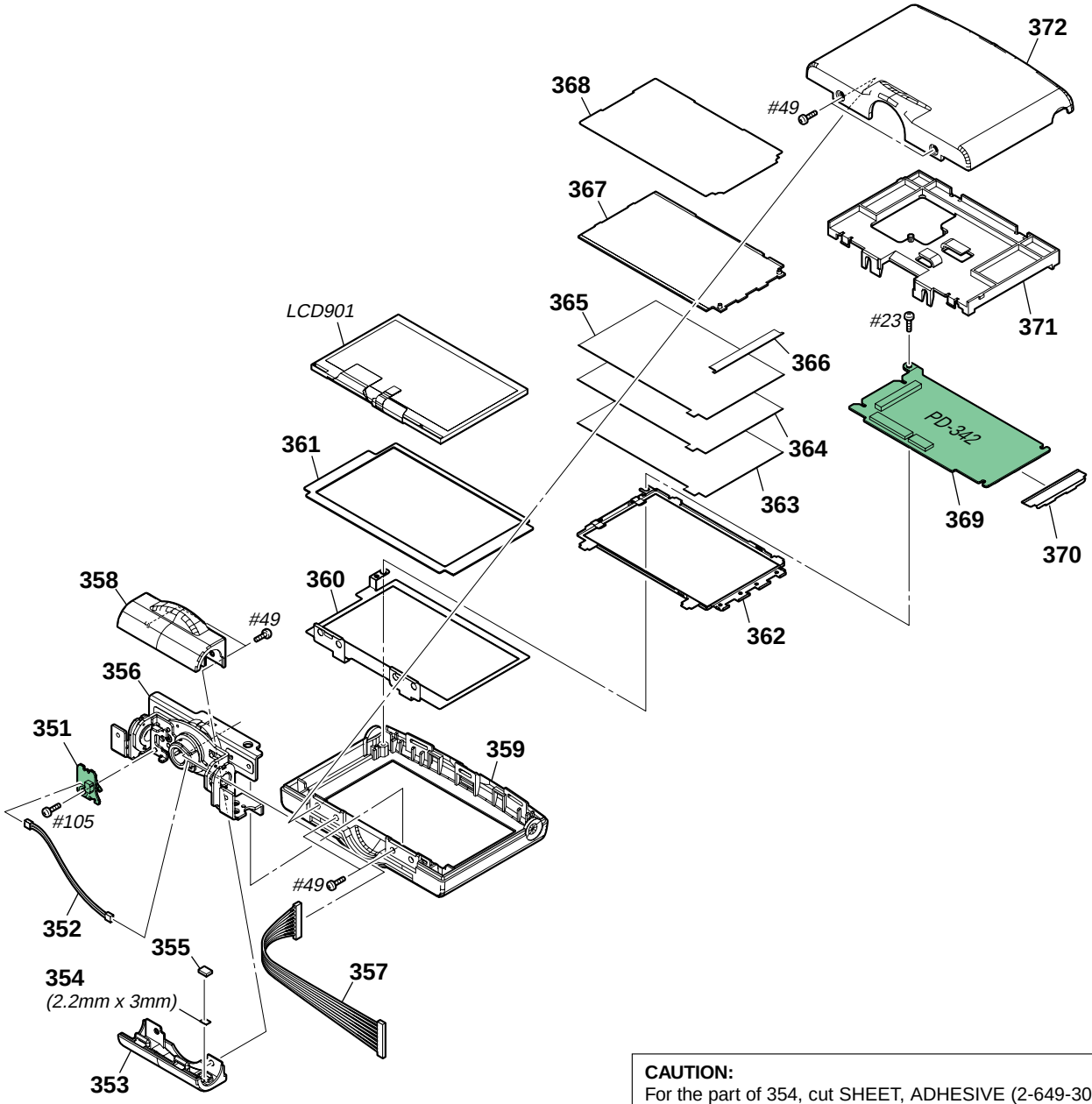



| Ref. No. | Part No. | Description |
|---|---|---|
| 301 | X-2187-981-1 | CABINET (UPPER) ASSY, VF |
| 302 | 3-284-016-01 | COVER, HINGE (LOWER) |
| 303 | A-1438-659-A | FP-784 FLEXIBLE BOARD, COMPLETE |
| * 304 | 3-284-017-01 | FRAME, VF |
| 305 | A-1438-660-A | BH-001 BOARD, COMPLETE |
| * 306 | 3-284-015-01 | FRAME, HI |
| 307 | A-1438-658-A | HI-078 BOARD, COMPLETE |
| 308 | X-2187-979-1 | HINGE ASSY, VF |
| 309 | 1-965-791-11 | HARNESS (BI-001) |
| 310 | 1-834-809-11 | CABLE, FLEXIBLE FLAT (FFC-338) |
| 311 | A-1438-665-A | BL-015 BOARD, COMPLETE |
| 312 | 2-664-672-01 | GUIDE, LAMP |
| * 313 | 2-638-819-01 | CUSHION, LCD |
| * 314 | 2-638-818-01 | ILLUMINATOR |
| * 315 | 2-638-816-01 | PLATE (TFT), DEFLECTION |

| Ref. No. | Part No. | Description |
|---|---|---|
| 316 | 2-664-671-01 | SPACER, LCD |
| * 317 | 2-699-236-01 | CABINET (222), INNER |
| 318 | 3-284-124-01 | CABINET, VF INNER |
| 319 | X-2187-978-1 | CABINET (LOWER) ASSY, VF |
| * 320 | 3-283-991-01 | KNOB, ON/OFF |
| * 321 | 3-283-992-01 | RETAINER, ON/OFF KNOB |
| 322 | X-2187-980-1 | ADJUSTMENT ASSY, VISIBILITY |
| 323 | 1-500-930-11 | CORE, FERRITE |
| LCD902 | 8-753-241-14 | LCX076AKE-1 |
| #23 | 3-080-204-11 | SCREW, TAPPING, P2 (Black) |
| #37 | 3-080-206-31 | SCREW, TAPPING, P2 (Black) |
| #49 | 2-630-005-31 | SCREW (M2), NEW TRUSTER, P2 (Black) |
| #105 | 2-891-494-31 | SCREW (M2), NEW TRUSTER, P2 (Red) |

HARDWARE LIST

### 5-1-8. LCD PANEL SECTION



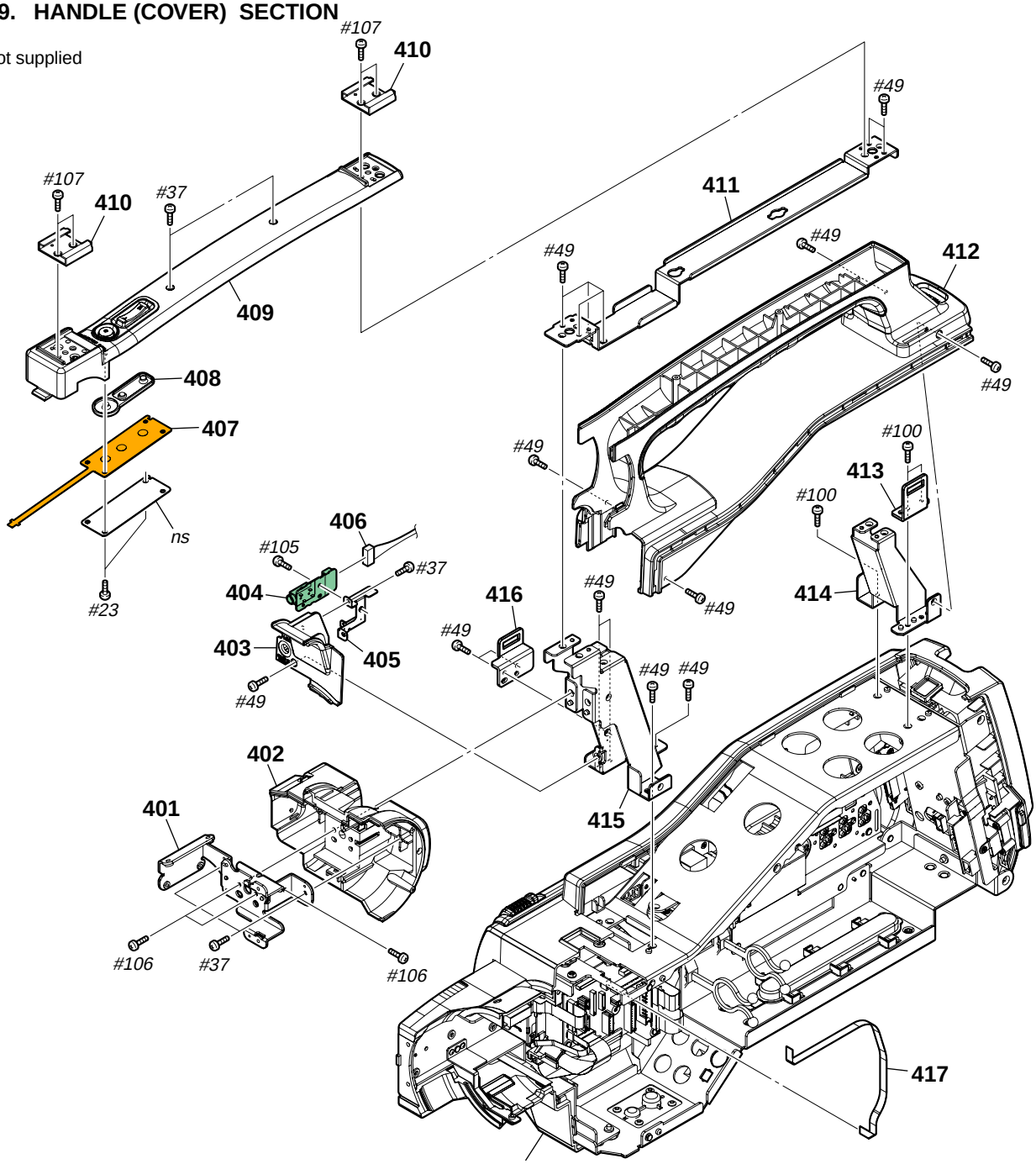

**CAUTION:**
For the part of 354, cut SHEET, ADHESIVE (2-649-300-01) into the desired length and use it.

| Ref. No. | Part No. | Description |
|---|---|---|
| 351 | A-1438-667-A | RE-038 BOARD, COMPLETE |
| 352 | 1-965-560-11 | HARNESS (RS-112) |
| 353 | 3-284-024-01 | COVER (REAR), HINGE |
| 354 | CAUTION | SHEET (MAGNET), ADHESIVE |
| 355 | 1-452-929-12 | MAGNET (011) |
| 356 | X-2187-982-1 | HINGE ASSY |
| 357 | 1-965-550-11 | HARNESS (HP-147) |
| 358 | 3-284-023-01 | COVER (FRONT), HINGE |
| 359 | 3-284-028-01 | CABINET (M), P |
| * 360 | 3-284-026-01 | PLATE (P), GROUND |
| 361 | 3-284-027-01 | CUSHION, TP |
| 362 | 2-887-999-01 | FRONT FRAME (2.7J) |
| 363 | 2-666-802-01 | PRISM SHEET V (2.7) |
| 364 | 2-666-803-01 | PRISM SHEET H (2.7) |

| Ref. No. | Part No. | Description |
|---|---|---|
| 365 | 2-666-804-01 | DIFFUSION SHEET (2.7) |
| 366 | 2-666-807-21 | AG SHEET (2.7) |
| 367 | 2-666-801-01 | LIGHT GUIDE (2.7) |
| 368 | 2-894-347-01 | REFLECTION SHEET (2.7J) |
| 369 | A-1438-668-A | PD-342 BOARD, COMPLETE |
| * 370 | 2-638-780-01 | CLIP |
| 371 | 3-284-029-01 | GUARD, FLEXIBLE |
| 372 | 3-284-025-01 | CABINET (C), P |
| LCD901 | A-1228-786-A | TP BLOCK ASSY (27ESHGU07) |
| #23 | 3-080-204-11 | SCREW, TAPPING, P2 (Black) |
| #49 | 2-630-005-31 | SCREW (M2), NEW TRUSTER, P2 (Black) |
| #105 | 2-891-494-31 | SCREW (M2), NEW TRUSTER, P2 (Red) |

## 5-1-9. HANDLE (COVER) SECTION

ns: not supplied

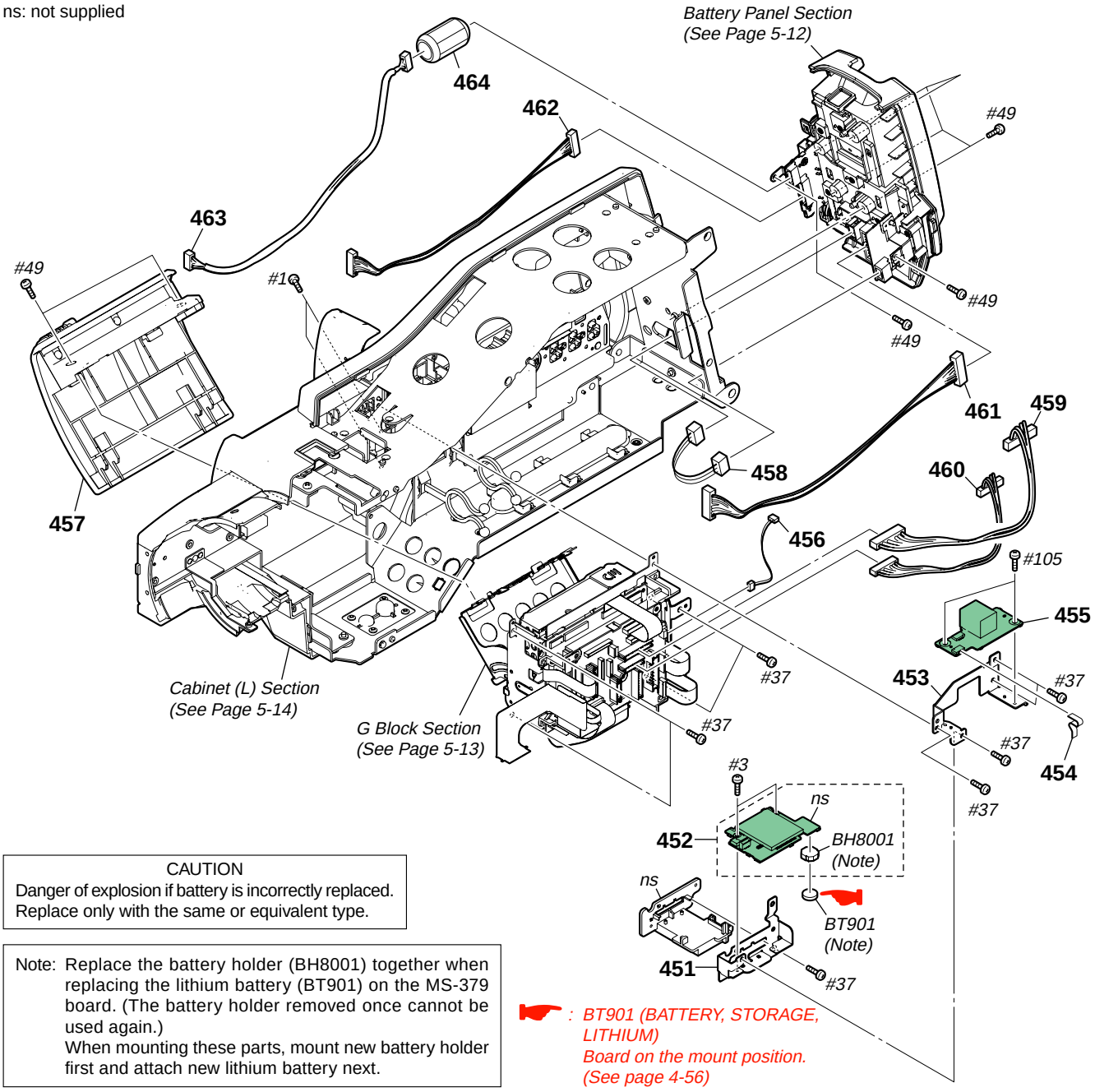



Overall Section-3
(See Page 5-11)

| Ref. No. | Part No. | Description |
|---|---|---|
| * 401 | 3-283-987-01 | BRACKET, TALLY |
| 402 | 3-283-986-01 | CABINET, TALLY (LR) |
| 403 | 3-283-984-01 | COVER, HANDLE LOWER |
| 404 | A-1438-670-A | MC-188 BOARD, COMPLETE |
| * 405 | 3-283-985-01 | BRACKET, MICROPHONE JACK |
| 406 | 1-965-549-11 | HARNESS (MI-075) |
| 407 | 1-874-532-11 | FP-793 FLEXIBLE BOARD |
| * 408 | 2-892-090-01 | KEY, RUBBER TACT |
| 409 | X-2187-976-1 | COVER ASSY, HANDLE |
| 410 | 3-067-469-11 | SHOE, ACCESSORY |
| * 411 | 3-283-980-01 | PLATE (B), HANDLE |
| 412 | X-2187-975-1 | HANDLE ASSY |
| 413 | 3-283-983-01 | BRACKET (R), STRAP |
| * 414 | 3-283-979-01 | PLATE (A), HANDLE |
| * 415 | 3-283-981-01 | PLATE (C), HANDLE |
| 416 | 3-283-982-01 | BRACKET (F), STRAP |
| 417 | 1-834-802-11 | CABLE, FLEXIBLE FLAT (FFC-329) |
| #23 | 3-080-204-11 | SCREW, TAPPING, P2 (Black) |
| #37 | 3-080-206-31 | SCREW, TAPPING, P2 (Black) |
| #49 | 2-630-005-31 | SCREW (M2), NEW TRUSTER, P2 (Black) |
| #100 | 3-080-203-51 | SREW (M2), LOCK ACE, P2 (Black) |
| #105 | 2-891-494-31 | SCREW (M2), NEW TRUSTER, P2 (Red) |
| #106 | 3-713-786-11 | SCREW (M2X6) (Black) |
| #107 | 3-032-750-01 | (+) K SCREW M2 (Silver) |

## 5-1-10. OVERALL SECTION-3

ns: not supplied




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

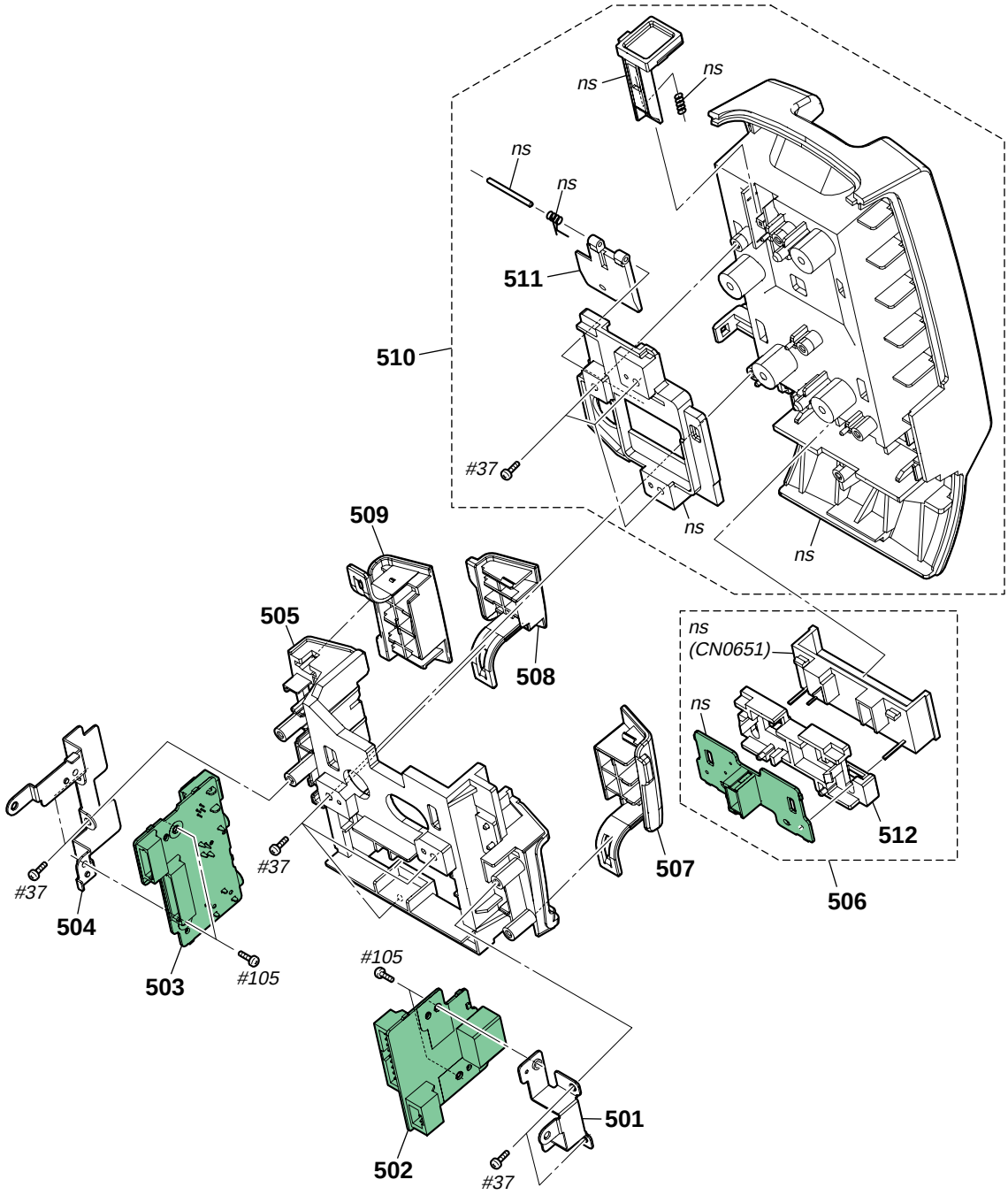
Note: Replace the battery holder (BH8001) together when replacing the lithium battery (BT901) on the MS-379 board. (The battery holder removed once cannot be used again.)
When mounting these parts, mount new battery holder first and attach new lithium battery next.

• Refer to page 5-1 for mark ⚠.

| Ref. No. | Part No. | Description |
|---|---|---|
| * 451 | 3-283-936-01 | BRACKET, MS |
| 452 | A-1438-635-A | MS-379 BOARD, COMPLETE |
| * 453 | 3-283-935-01 | BRACKET, USB |
| 454 | 1-833-788-11 | CABLE, FLEXIBLE FLAT (FFC-107) |
| 455 | A-1438-634-A | US-014 BOARD, COMPLETE |
| 456 | 1-965-572-11 | HARNESS (MI-076) |
| 457 | X-2187-985-1 | DOOR ASSY, MD |
| 458 | 1-965-745-11 | HARNESS (BD-058) |
| 459 | 1-965-556-11 | HARNESS (IJ-001) |
| 460 | 1-965-557-11 | HARNESS (IJ-002) |
| 461 | 1-965-554-11 | HARNESS (DI-003) |
| 462 | 1-965-555-11 | HARNESS (DI-004) |
| 463 | 1-965-559-11 | HARNESS (DI-005) |
| 464 | 1-543-793-11 | FILTER, CLAMP (FERRITE CORE) |
| ⚠BH8001 | 1-756-615-41 | HOLDER, BATTERY |
| ⚠BT901 | 1-756-134-12 | BATTERY, STORAGE, LITHIUM |
| #1 | 2-635-562-11 | SCREW (M1.7) (Black) |
| #3 | 2-660-401-01 | SCREW (M1.7), NEW TRU-STAR, P2 (Red) |
| #37 | 3-080-206-31 | SCREW, TAPPING, P2 (Black) |
| #49 | 2-630-005-31 | SCREW (M2), NEW TRUSTER, P2 (Black) |
| #105 | 2-891-494-31 | SCREW (M2), NEW TRUSTER, P2 (Red) |

## 5-1-11. BATTERY PANEL SECTION

ns: not supplied

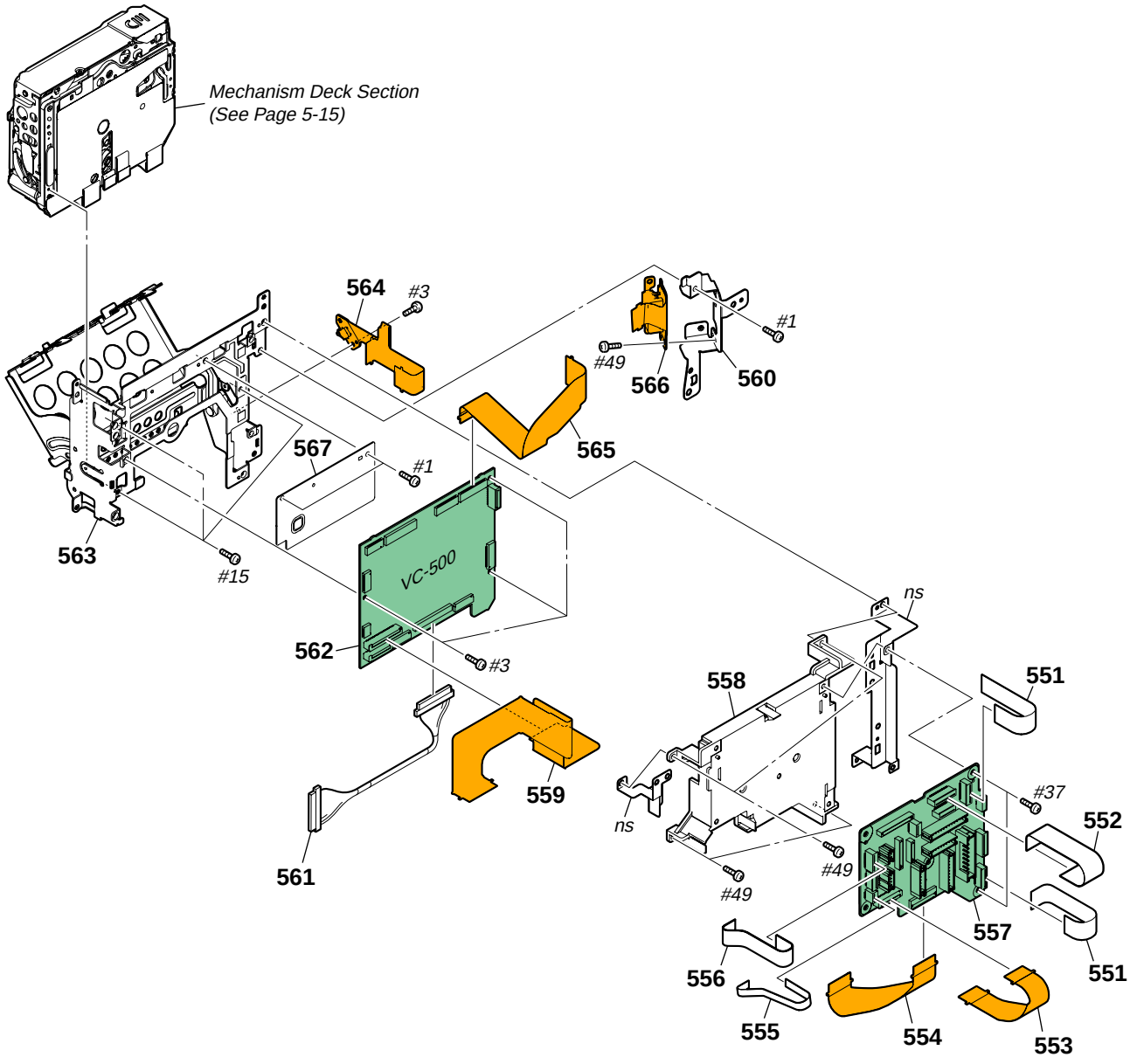



• Refer to page 5-1 for mark ⚠.

| Ref. No. | Part No. | Description |
|---|---|---|
| * 501 | 3-283-953-01 | PLATE, DC TERMINAL RETAINER |
| 502 | A-1438-711-A | DC-110 BOARD, COMPLETE |
| 503 | A-1438-710-A | HP-150 BOARD, COMPLETE |
| * 504 | 3-283-952-01 | PLATE, HP TERMINAL RETAINER |
| 505 | X-2187-972-1 | PANEL ASSY, JACK |
| ⚠506 | A-1438-712-A | BA-008 BOARD, COMPLETE |
| 507 | 3-284-038-01 | COVER (DC), JACK |
| 508 | 3-284-039-01 | COVER (HP), JACK |
| 509 | 3-284-040-01 | COVER (LANC), JACK |
| 510 | X-2187-971-1 | PANEL ASSY, BT |
| 511 | 3-060-595-01 | CLAW, BT LOCK |
| * 512 | 3-283-954-01 | PLATE, BT RELEASE RETAINER |
| #37 | 3-080-206-31 | SCREW, TAPPING, P2 (Black) |
| #105 | 2-891-494-31 | SCREW (M2), NEW TRUSTER, P2 (Red) |

## 5-1-12. G BLOCK SECTION

ns: not supplied

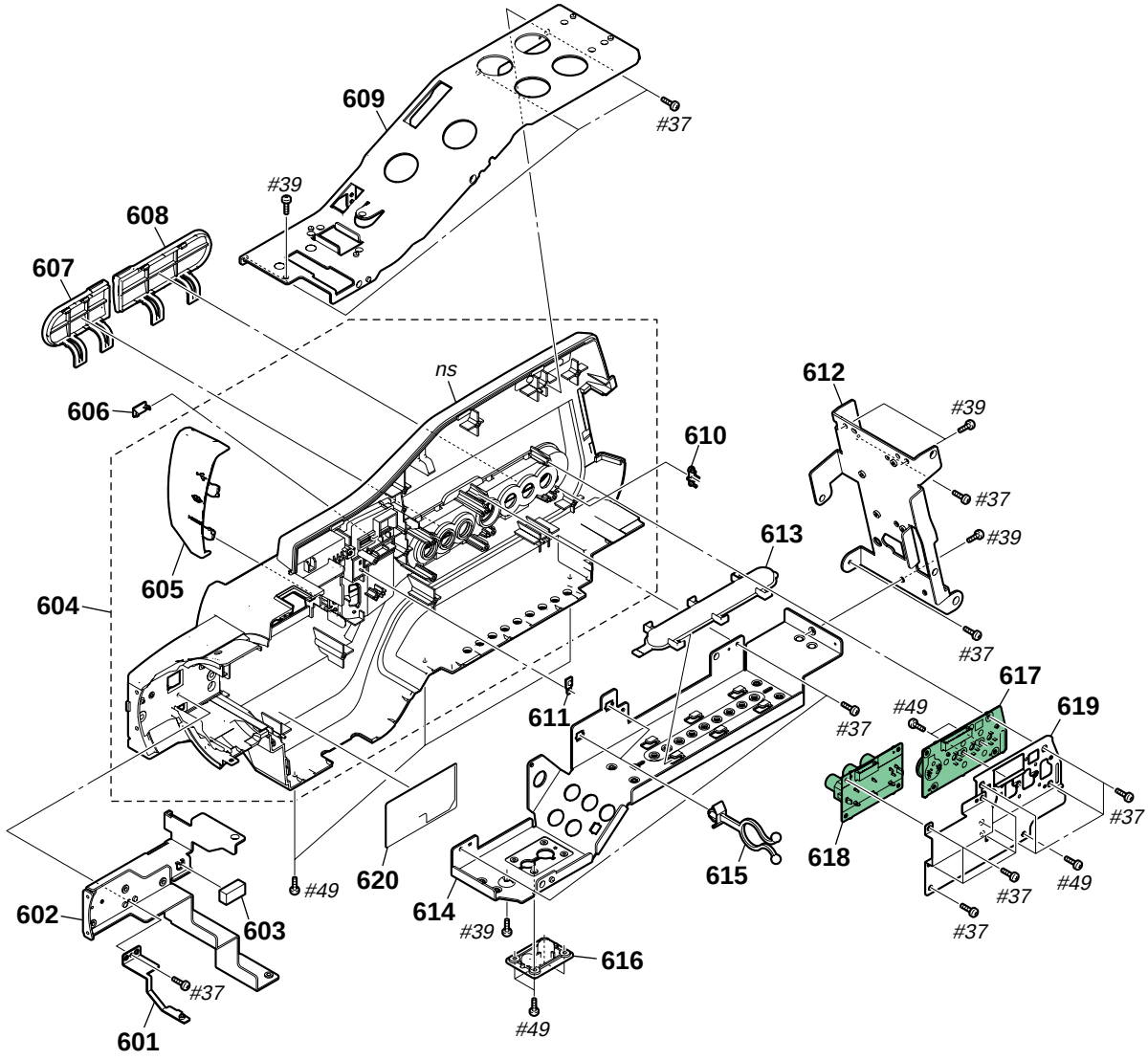



| Ref. No. | Part No. | Description |
|---|---|---|
| 551 | 1-834-804-11 | CABLE, FLEXIBLE FLAT (FFC-332) |
| 552 | 1-834-803-11 | CABLE, FLEXIBLE FLAT (FFC-330) |
| 553 | 1-874-325-11 | FP-789 FLEXIBLE BOARD |
| 554 | 1-874-324-11 | FP-788 FLEXIBLE BOARD |
| 555 | 1-834-806-11 | CABLE, FLEXIBLE FLAT (FFC-335) |
| 556 | 1-834-805-11 | CABLE, FLEXIBLE FLAT (FFC-334) |
| 557 | A-1438-674-A | IF-155 BOARD, COMPLETE |
| * 558 | 3-283-946-01 | HOLDER, IF |
| 559 | 1-874-323-11 | FP-787 FLEXIBLE BOARD |
| * 560 | 3-283-943-01 | BRACKET, HDMI |
| 561 | 1-965-571-11 | HARNESS (HN-047) |
| 562 | A-1438-762-A | VC-500 BOARD, COMPLETE (NTSC: HD1000U/HD1000N) |
| 562 | A-1438-763-A | VC-500 BOARD, COMPLETE (PAL: HD1000E/HD1000P/HD1000C) |
| 563 | X-2187-970-1 | FRAME ASSY (905), MD |
| 564 | A-1438-676-A | FP-785 FLEXIBLE BOARD, COMPLETE |
| 565 | 1-874-322-11 | FP-786 FLEXIBLE BOARD |
| 566 | A-1438-675-A | FP-867 FLEXIBLE BOARD, COMPLETE |
| * 567 | 3-291-065-01 | HEAT SINK, VC |
| #1 | 2-635-562-11 | SCREW (M1.7) (Black) |
| #3 | 2-660-401-01 | SCREW (M1.7), NEW TRU-STAR, P2 (Red) |
| #15 | 3-062-214-01 | SCREW (M1.4X1.5) (Silver) |
| #37 | 3-080-206-31 | SCREW, TAPPING, P2 (Black) |
| #49 | 2-630-005-31 | SCREW (M2), NEW TRUSTER, P2 (Black) |

HARDWARE LIST

### 5-1-13. CABINET (L) SECTION

ns: not supplied

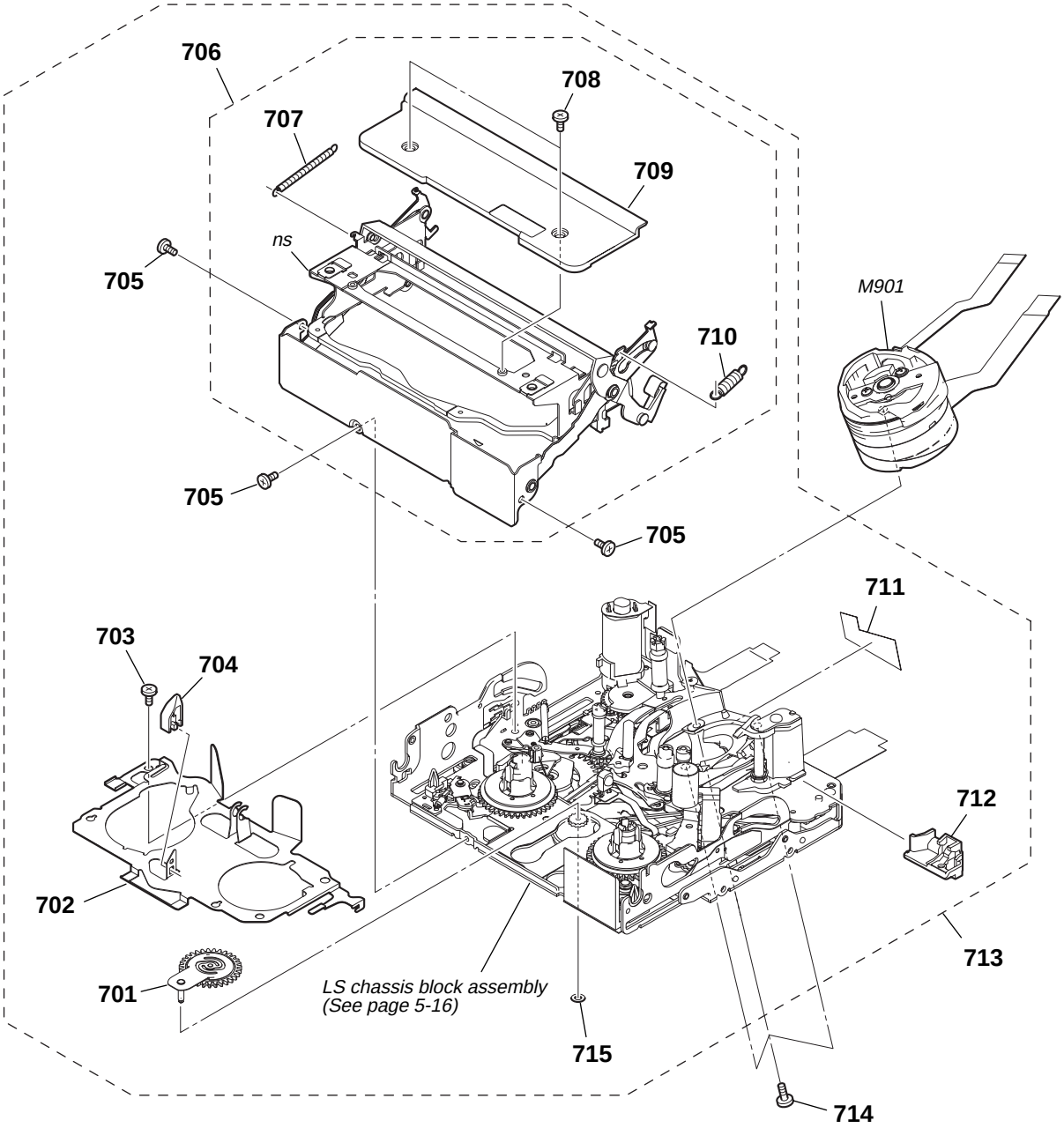



| Ref. No. | Part No. | Description |
|---|---|---|
| * 601 | 3-283-934-01 | BRACKET (LOWER), LR |
| * 602 | 3-283-933-01 | FRAME, MAIN, F |
| * 603 | 3-289-516-01 | GASKET (LE) |
| 604 | X-2187-545-1 | CABINET (L) ASSY |
| 605 | 3-284-122-01 | COVER (HDMI), JACK |
| 606 | 3-284-041-01 | LID, CPC |
| 607 | 3-284-042-01 | COVER (F), PIN JACK |
| 608 | 3-284-043-01 | COVER (R), PIN JACK |
| * 609 | 3-283-931-01 | FRAME, MAIN, T |
| * 610 | 3-283-939-01 | BUTTON, RESET |
| * 611 | 3-283-938-01 | TALLY, MS |
| * 612 | 3-283-932-01 | FRAME, MAIN, R |

| Ref. No. | Part No. | Description |
|---|---|---|
| * 613 | 3-284-049-01 | BASE, SHOULDER PAD FITTING |
| * 614 | 3-283-930-01 | FRAME, MAIN, B |
| 615 | 3-703-319-01 | PURSE LOCK (DIA.15) |
| 616 | 2-178-793-02 | BRACKET (TRIPOD) |
| 617 | A-1438-636-A | JS-033 BOARD, COMPLETE |
| 618 | A-1438-637-A | JK-355 BOARD, COMPLETE |
| * 619 | 3-283-940-01 | PLATE, JK GROUND |
| 620 | 3-286-017-01 | LABEL, FUSE |
| #37 | 3-080-206-31 | SCREW, TAPPING, P2 (Black) |
| #39 | 7-685-791-09 | SCREW +PTT 2.6X5 (S) (Black) |
| #49 | 2-630-005-31 | SCREW (M2), NEW TRUSTER, P2 (Black) |

### 5-1-14. MECHANISM DECK SECTION

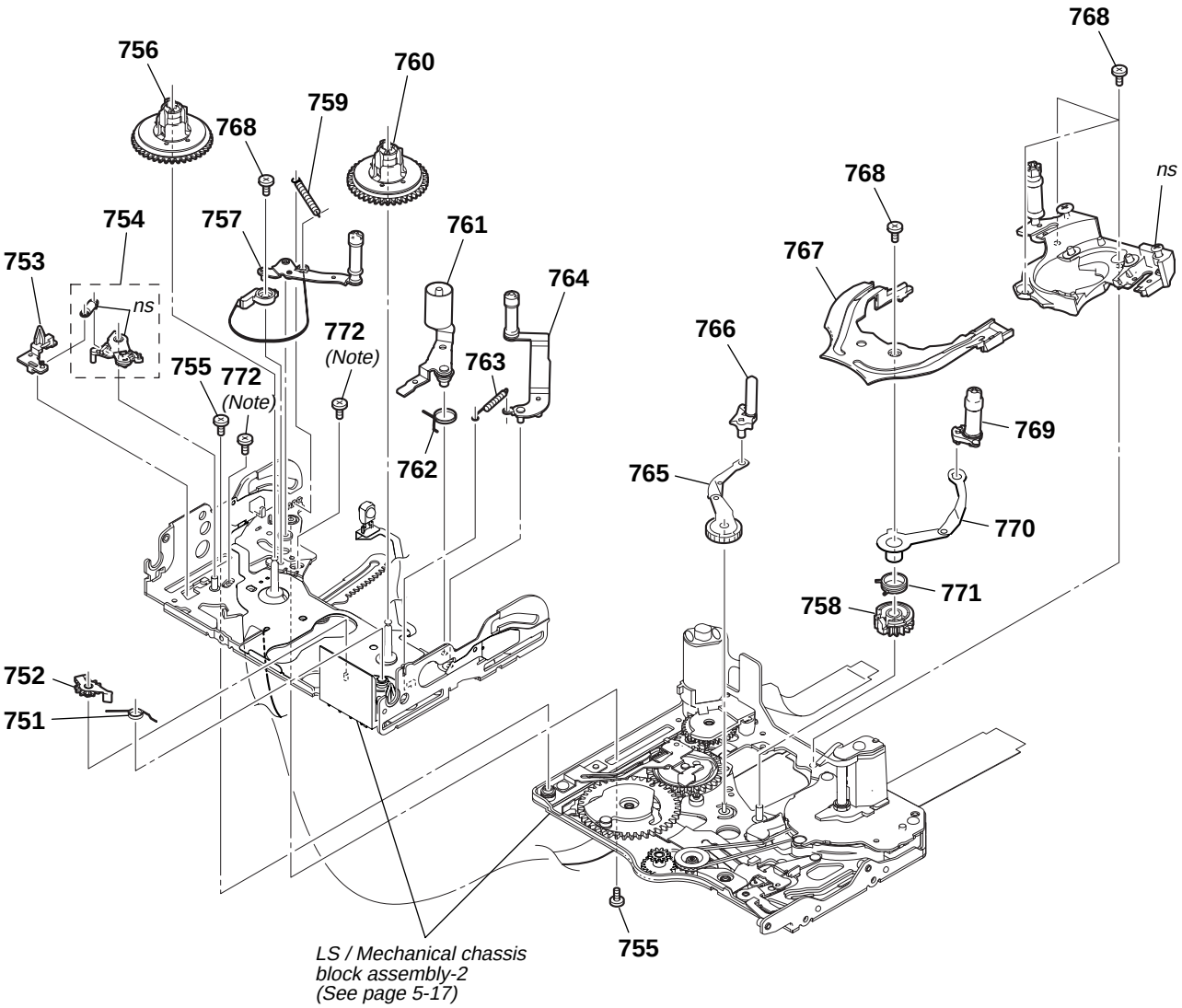
ns: not supplied




| Ref. No. | Part No. | Description |
|---|---|---|
| 701 | X-2024-478-1 | PENDULUM ASSY |
| 702 | 2-342-917-02 | BASE, LED |
| 703 | 7-627-850-77 | SCREW, PRECISION +P 1.4X1.8 |
| 704 | 3-079-366-11 | RELEASE, REEL LOCK |
| 705 | 3-703-816-08 | SCREW (M1.4X1.4), SPECIAL HEAD |
| 706 | X-2024-450-3 | CASSETTE COMPARTMENT ASSY |
| 707 | 2-342-926-01 | SPRING (ARM S), TENSION COIL |
| 708 | 2-546-417-01 | SCREW (M1.4) |
| 709 | 2-342-933-02 | PLATE, TOP |
| 710 | 2-342-927-01 | SPRING (ARM T), TENSION COIL |
| 711 | 2-541-585-01 | SHEET, FLEXIBLE ADHESIVE |
| 712 | 2-342-918-01 | TG6 CATCHER |
| 713 | A-1437-006-A | MD (N220) SUB ASSY (S) A |
| 714 | 3-703-816-13 | SCREW (M1.4X2.0), SPECIAL HEAD |
| 715 | 3-315-414-31 | WASHER |
| M901 | A-1154-545-A | DRUM (DEH-33E-R) |

## 5-1-15. LS/MECHANICAL CHASSIS BLOCK ASSEMBLY-1

ns: not supplied



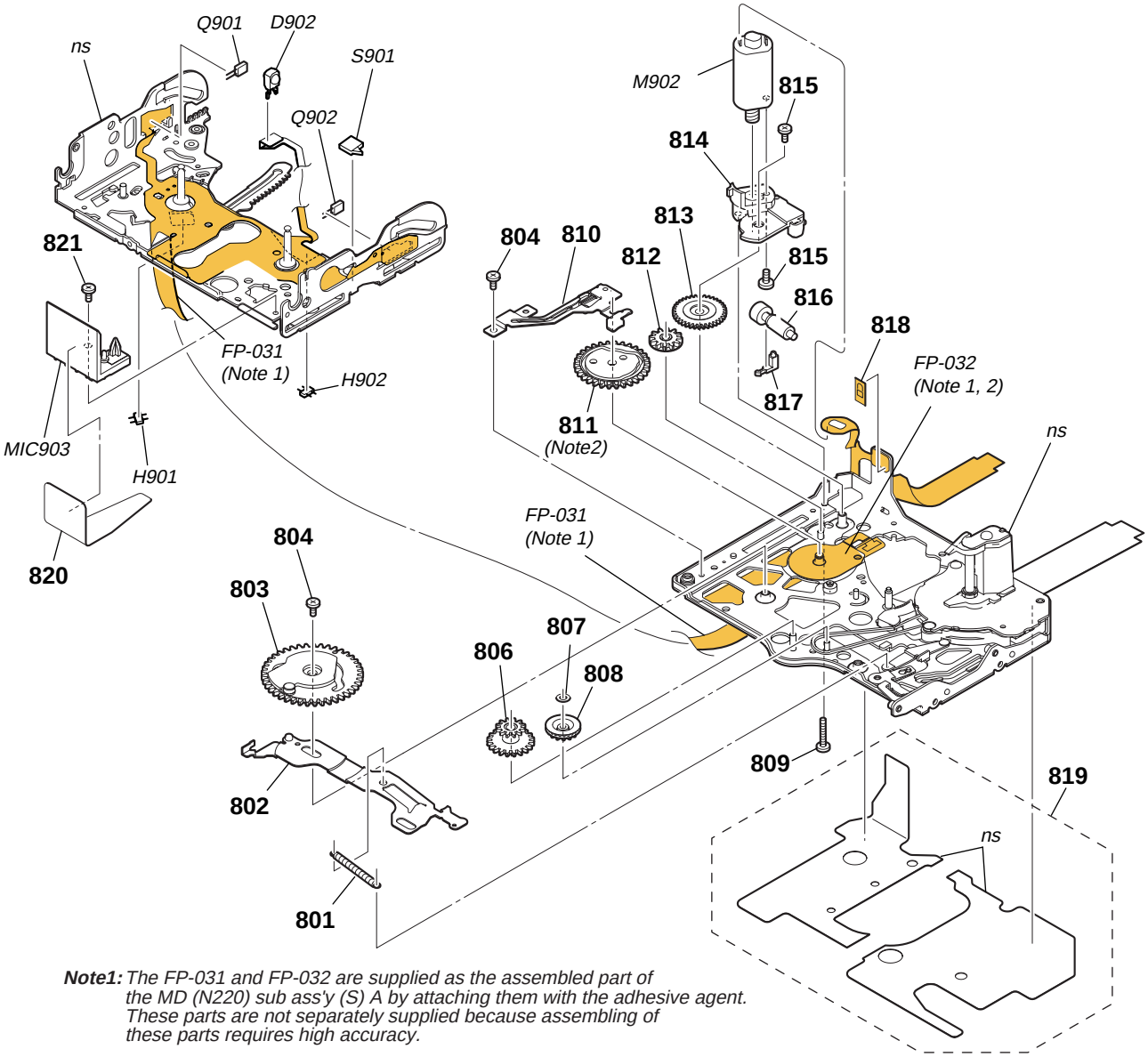

***Note:*** *These two screws are the fixing screws of the LS cam plate.*
*These two fixing screws are used for adjsting the LS cam plate position.*
*(refer to 4-2. LS cam adjustment of 6-2. MECHANISM SECTION ADJUSTMENTS)*

| Ref. No. | Part No. | Description |
|---|---|---|
| 751 | 2-342-759-01 | SPRING, RVS BRAKE |
| 752 | A-1083-005-A | BRAKE BLOCK ASSY, RVS |
| 753 | 2-342-731-01 | POSITIONING (S) |
| 754 | A-1083-006-A | BRAKE BLOCK ASSY, S |
| 755 | 3-075-097-11 | SCREW (M1.4X1.4), SPECIAL HEAD |
| 756 | X-2067-290-1 | TABLE ASSY, S REEL |
| 757 | A-1132-279-A | REGULATOR BLOCK ASSY, TENSION |
| 758 | 2-342-705-01 | GEAR (T), GL |
| 759 | 2-342-902-01 | SPRING, TENSION REGULATOR |
| 760 | X-2067-291-1 | TABLE ASSY, T REEL |
| 761 | X-2067-295-1 | ARM ASSY, PINCH |
| 762 | 2-342-906-01 | SPRING (PINCH RETURN), TORSION |

| Ref. No. | Part No. | Description |
|---|---|---|
| 763 | 2-342-626-01 | SPRING (TG6 RETURN), COIL |
| 764 | A-1083-002-A | TG6 BLOCK ASSY |
| 765 | X-2024-468-1 | ARM (S) ASSY, GL |
| 766 | X-2024-465-1 | COASTER (S) ASSY |
| 767 | 2-342-612-01 | RAIL |
| 768 | 3-703-816-13 | SCREW (M1.4X2.0), SPECIAL HEAD |
| 769 | X-2024-466-1 | COASTER (T) ASSY |
| 770 | X-2024-469-1 | ARM (T) ASSY, GL |
| 771 | 2-342-716-01 | SPRING (T), GL TORSION |
| 772 | 3-703-816-08 | SCREW (M1.4X1.4), SPECIAL HEAD (for adjustment) |

## 5-1-16. LS/MECHANICAL CHASSIS BLOCK ASSEMBLY-2

ns: not supplied




***Note1:*** *The FP-031 and FP-032 are supplied as the assembled part of the MD (N220) sub ass'y (S) A by attaching them with the adhesive agent. These parts are not separately supplied because assembling of these parts requires high accuracy.*

***Note2:*** *The mode switch (S903) function works when the contactor of the FP-032 contacts with the bottom surface of wiper of the mode gear ass'y.*

| Ref. No. | Part No. | Description |
|---|---|---|
| 801 | 2-342-624-01 | SPRING (PINCH LIMITTER), COIL |
| 802 | X-2024-463-2 | SLIDER ASSY, MODE |
| 803 | X-2024-462-1 | GEAR ASSY, CAM |
| 804 | 3-075-097-11 | SCREW (M1.4X1.4), SPECIAL HEAD |
| 806 | 2-342-621-01 | GEAR, RELAY |
| 807 | 3-315-414-31 | WASHER |
| 808 | 2-342-620-01 | GEAR, CONVERSION |
| 809 | 3-084-377-01 | HEAD (SCREW M1.2) |
| 810 | X-2024-460-1 | BASE ASSY, CAM |
| 811 | X-2024-461-1 | GEAR ASSY, MODE |
| 812 | 2-342-615-01 | GEAR, NO.2 |
| 813 | 2-342-691-01 | GEAR, NO.1 |
| 814 | 2-637-945-01 | HOLDER, MOTOR |
| 815 | 3-895-822-71 | SCREW (M1.2X2), SPECIAL, 0 |
| 816 | 2-342-689-01 | SHAFT (2J), WORM |

| Ref. No. | Part No. | Description |
|---|---|---|
| 817 | 2-637-947-01 | BASE, MOTOR HOLDER |
| 818 | 1-677-049-11 | FP-228 FLEXIBLE BOARD (DEW SENSOR) |
| 819 | 2-342-686-01 | COVER, CAPSTAN |
| 820 | 2-541-984-01 | MIC COVER |
| 821 | 3-703-816-13 | SCREW (M1.4X2.0), SPECIAL HEAD |
| D902 | 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) |
| M902 | X-2024-464-1 | MOTOR ASSY (LOADING) |
| MIC903 | 1-818-576-11 | PIN, CONNECTOR (WITH DETECTION) |
| Q901 | 6-550-672-01 | TRANSISTOR PT4850FJE00F (TAPE END) |
| Q902 | 6-550-672-01 | TRANSISTOR PT4850FJE00F (TAPE TOP) |
| S901 | 1-786-448-22 | SWITCH, PUSH (1 KEY) (CC DOWN) |

## 5-2. ELECTRICAL PARTS LIST

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| ⚠ | A-1438-712-A | BA-008 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | (CN0651 is not supplied, but this is included in BA-008 complete board.) | | | |
| * | 3-283-954-01 | PLATE, BT RELEASE RETAINER | | | |
| | | < CONNECTOR > | | | |
| ⚠ CN0651 | (Not supplied) | TERMINAL BOARD, BATTERY (BATTERY TERMINAL) | | | |
| CN0652 | 1-794-509-11 | PIN, CONNECTOR (PC BOARD) (3P) | | | |
| | A-1438-660-A | BH-001 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C6002 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C6003 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C6004 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C6005 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C6006 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C6007 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C6008 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C6009 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C6010 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C6011 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| | | < CONNECTOR > | | | |
| CN6001 | 1-816-928-11 | PIN, CONNECTOR 22P | | | |
| * CN6002 | 1-779-334-51 | CONNECTOR, FFC/FPC 20P | | | |
| CN6003 | 1-794-998-31 | PIN, CONNECTOR 20P | | | |
| CN6004 | 1-817-871-11 | PIN, CONNECTOR 15P | | | |
| CN6005 | 1-817-869-11 | PIN, CONNECTOR 10P | | | |
| CN6006 | 1-779-327-51 | CONNECTOR, FFC/FPC 6P | | | |
| CN6007 | 1-794-375-21 | PIN, CONNECTOR 2P | | | |
| | | < DIODE > | | | |
| * D6001 | 6-501-956-01 | DIODE MAZS068G08S0 | | | |
| | | < FERRITE BEAD > | | | |
| FB6001 | 1-500-238-11 | BEAD, FERRITE (CHIP) (1608) | | | |
| FB6002 | 1-500-238-11 | BEAD, FERRITE (CHIP) (1608) | | | |
| FB6003 | 1-500-238-11 | BEAD, FERRITE (CHIP) (1608) | | | |
| | | < TRANSISTOR > | | | |
| Q6001 | 6-550-239-01 | TRANSISTOR | DTA144EMT2L | | |
| Q6002 | 6-550-119-01 | TRANSISTOR | DTC144EMT2L | | |
| | | < RESISTOR > | | | |
| R6001 | 1-218-954-11 | RES-CHIP | 1.2K | 5% | 1/16W |
| R6003 | 1-218-954-11 | RES-CHIP | 1.2K | 5% | 1/16W |
| | | < SWITCH > | | | |
| S6001 | 1-771-731-21 | SWITCH, SLIDE (LCD) | | | |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| | A-1438-665-A | BL-015 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C5901 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5902 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| | | < CONNECTOR > | | | |
| * CN5901 | 1-816-648-51 | FFC/FPC CONNECTOR (LIF) 20P | | | |
| * CN5902 | 1-817-560-71 | CONNECTOR, FPC (ZIP) 21P | | | |
| | | < DIODE > | | | |
| * D5901 | 6-501-591-01 | DIODE NESW007AT-T099 (EVF BACKLIGHT) | | | |
| D5902 | 8-719-074-67 | DIODE EDZ-TE61-5.6B | | | |
| | A-1237-309-A | CM-077 BOARD, COMPLETE (SERVICE) | | | |
| | | ********** | | | |
| | | (IC6701 (CMOS imager) is not included in CM-077 complete board. Included in CMOS block assy.) | | | |
| | | < CAPACITOR > | | | |
| C6607 | 1-100-415-91 | CERAMIC CHIP | 0.47uF | 10% | 6.3V |
| C6608 | 1-100-415-91 | CERAMIC CHIP | 0.47uF | 10% | 6.3V |
| C6609 | 1-100-415-91 | CERAMIC CHIP | 0.47uF | 10% | 6.3V |
| C6610 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C6611 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C6612 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C6613 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C6614 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C6705 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C6706 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C6707 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C6708 | 1-125-889-11 | CERAMIC CHIP | 2.2uF | 10% | 10V |
| C6709 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C6717 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C6718 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C6719 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C6720 | 1-164-937-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C6724 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C6725 | 1-164-937-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C6729 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C6731 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C6732 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C6733 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C6736 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C6738 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C6739 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C6740 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C6743 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C7201 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C7202 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C7203 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C7204 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C7205 | 1-119-923-11 | CERAMIC CHIP | 0.047uF | 10% | 10V |
| C7206 | 1-119-923-11 | CERAMIC CHIP | 0.047uF | 10% | 10V |
| C7207 | 1-119-923-11 | CERAMIC CHIP | 0.047uF | 10% | 10V |

• Refer to page 5-1 for mark ⚠.

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C7208 | 1-119-923-11 | CERAMIC CHIP | 0.047uF | 10% | 10V |
| C7209 | 1-100-611-91 | CERAMIC CHIP | 22uF | 20% | 6.3V |
| C7210 | 1-100-611-91 | CERAMIC CHIP | 22uF | 20% | 6.3V |
| C7211 | 1-127-760-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| | | < CONNECTOR > | | | |
| CN6601 | 1-820-560-11 | CONNECTOR, COAXIAL (RECEPTACLE) 40P | | | |
| | | < FERRITE BEAD > | | | |
| FB7201 | 1-400-833-21 | SMD EMI FERRITE | | | |
| FB7202 | 1-400-833-21 | SMD EMI FERRITE | | | |
| FB7203 | 1-400-833-21 | SMD EMI FERRITE | | | |
| FB7204 | 1-400-833-21 | SMD EMI FERRITE | | | |
| | | < IC > | | | |
| IC6603 | 6-703-977-01 | IC R1114Q331D-TR-FA | | | |
| * IC6604 | 6-708-444-01 | IC R1114Q281D-TR-FA | | | |
| IC6605 | 6-703-977-01 | IC R1114Q331D-TR-FA | | | |
| IC6606 | 6-703-976-01 | IC R1114Q181D-TR-FA | | | |
| IC7201 | 6-707-333-01 | IC NJM3230SE7 | | | |
| IC6701 | (Not supplied) | IMX022AHF-13 (CMOS IMAGER) (Note 1) (IC6701 is supplied including in CMOS block assy.) | | | |
| | | < COIL > | | | |
| L6702 | 1-216-295-91 | SHORT CHIP | 0 (Note 2) | | |
| L6704 | 1-216-295-91 | SHORT CHIP | 0 (Note 2) | | |
| L6705 | 1-216-295-91 | SHORT CHIP | 0 (Note 2) | | |
| L6706 | 1-216-295-91 | SHORT CHIP | 0 (Note 2) | | |
| L6707 | 1-216-295-91 | SHORT CHIP | 0 (Note 2) | | |
| L7201 | 1-400-588-11 | INDUCTOR | 10uH | | |
| | | < RESISTOR > | | | |
| R6703 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R6709 | 1-218-929-11 | RES-CHIP | 10 | 5% | 1/16W |
| R7201 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R7202 | 1-218-989-11 | RES-CHIP | 1M | 5% | 1/16W |
| R7203 | 1-218-989-11 | RES-CHIP | 1M | 5% | 1/16W |
| R7204 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| | | < COMPOSITION CIRCUIT BLOCK > | | | |
| RB7201 | 1-234-379-21 | RES, NETWORK | 22K (1005X4) | | |
| | | < SENSOR > | | | |
| * SE7201 | 1-479-022-61 | SENSOR, ANGULAR VELOCITY (32.2KHz) (YAW) | | | |
| * SE7202 | 1-479-022-51 | SENSOR, ANGULAR VELOCITY (30.8KHz) (PITCH) | | | |
| | A-1438-711-A | DC-110 BOARD, COMPLETE ********** | | | |
| | | < CONNECTOR > | | | |
| CN0601 | 1-774-730-21 | PIN, CONNECTOR (PC BOARD) 3P | | | |
| CN0602 | 1-778-795-21 | PIN, CONNECTOR (PC BOARD) 9P | | | |
| ⚠ CN0610 | 1-817-361-11 | DC-IN CONNECTOR (DC IN) | | | |

• Refer to page 5-1 for mark ⚠.

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| | | < DIODE > | | | |
| * D601 | 6-501-573-01 | DIODE CL-271TLY-C-TS (CHG) | | | |
| D602 | 8-719-074-67 | DIODE EDZ-TE61-5.6B | | | |
| | | < RESISTOR > | | | |
| R607 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R608 | 1-216-295-91 | SHORT CHIP | 0 | | |
| | A-1438-558-A | EC-001 BOARD, COMPLETE ********** | | | |
| | | < CAPACITOR > | | | |
| C5501 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| | | < CONNECTOR > | | | |
| CN5311 | 1-779-327-51 | CONNECTOR, FFC/FPC 6P | | | |
| | | < IC > | | | |
| PH5501 | 8-749-016-83 | IC GP1S092HCPIF | | | |
| PH5502 | 8-749-016-83 | IC GP1S092HCPIF | | | |
| | | < RESISTOR > | | | |
| R5501 | 1-218-835-11 | METAL CHIP | 330 | 0.5% | 1/10W |
| | (Not supplied) | FP-031 FLEXIBLE BOARD ********** (This flexible board is included in MD (N220) sub assy (S) A (A-1437-006-A).) | | | |
| | | < DIODE > | | | |
| D902 | 6-500-652-01 | DIODE GL453SE0000F (TAPE LED) | | | |
| | | < HOLE ELEMENT > | | | |
| 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) | | | |
| | | < CONNECTOR > | | | |
| MIC903 | 1-818-576-11 | PIN, CONNECTOR (WITH DETECTION) | | | |
| | | < TRANSISTOR > | | | |
| Q901 | 6-550-672-01 | TRANSISTOR PT4850FJE00F (TAPE END) | | | |
| Q902 | 6-550-672-01 | TRANSISTOR PT4850FJE00F (TAPE TOP) | | | |
| | | < SWITCH > | | | |
| S901 | 1-786-448-22 | SWITCH, PUSH (1 KEY) (CC DOWN) | | | |
| | (Not supplied) | FP-032 FLEXIBLE BOARD ********** (This flexible board with S903 is included in (N220) sub assy (S) A (A-1437-006-A).) | | | |

Note 1: Be sure to read “Precautions for Replacement of Imager” on page 4-3 when changing the imager.

Note 2: Short chip are mounted to the location where L6702 and L6704 to L6707 are printed.

| Ref. No. | Part No. | Description |
|---|---|---|
| | 1-677-049-11 | FP-228 FLEXIBLE BOARD (DEW SENSOR) |
| | | ********** |
| | A-1438-659-A | FP-784 FLEXIBLE BOARD, COMPLETE |
| | | ********** |
| | | < CAPACITOR > |
| C801 | 1-125-777-11 | CERAMIC CHIP 0.1uF 10% 10V |
| | | < IC > |
| * IC801 | 6-600-513-01 | IC TK60011CS8 |
| | A-1438-676-A | FP-785 FLEXIBLE BOARD, COMPLETE |
| | | ********** |
| | | < SWITCH > |
| S851 | 1-786-180-31 | SWITCH, PUSH (1KEY) (EJECT) |
| | A-1438-675-A | FP-867 FLEXIBLE BOARD, COMPLETE |
| | | ********** |
| | | < CONNECTOR > |
| * CN001 | 1-819-696-21 | CONNECTOR, HDMI (HDMI) (HDMI OUT) |
| | A-1438-658-A | HI-078 BOARD, COMPLETE |
| | | ********** |
| | | < CAPACITOR > |
| C201 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| | | < CONNECTOR > |
| * CN0201 | 1-816-654-51 | FFC/FPC CONNECTOR (LIF) 6P |
| * CN0207 | 1-816-655-51 | FFC/FPC CONNECTOR (LIF) 8P |
| | | < DIODE > |
| D201 | 8-719-077-09 | DIODE CL-196HR-CD-T (CAMERA RECORDING) |
| D202 | 8-719-077-09 | DIODE CL-196HR-CD-T (CAMERA RECORDING) |
| D203 | 8-719-077-09 | DIODE CL-196HR-CD-T (CAMERA RECORDING) |
| | | < TRANSISTOR > |
| Q201 | 6-550-242-01 | TRANSISTOR DTC114EMT2L |
| Q202 | 6-550-119-01 | TRANSISTOR DTC144EMT2L |
| | | < RESISTOR > |
| R201 | 1-218-963-11 | RES-CHIP 6.8K 5% 1/16W |
| R202 | 1-218-958-11 | RES-CHIP 2.7K 5% 1/16W |
| R204 | 1-218-949-81 | RES-CHIP 470 5% 1/16W |
| R205 | 1-218-949-81 | RES-CHIP 470 5% 1/16W |
| R206 | 1-218-949-81 | RES-CHIP 470 5% 1/16W |
| R208 | 1-218-969-11 | RES-CHIP 22K 5% 1/16W |

| Ref. No. | Part No. | Description |
|---|---|---|
| | A-1438-710-A | HP-150 BOARD, COMPLETE |
| | | ********** |
| | | < CONNECTOR > |
| * CN0603 | 1-695-223-21 | PIN, CONNECTOR (SMD) 10P |
| * CN0604 | 1-580-789-22 | PIN, CONNECTOR (SMD) 6P |
| * CN0605 | 1-794-276-21 | CONNECTOR, SQUARE TYPE 4P (HDV/DV) |
| | | < DIODE > |
| D654 | 6-500-044-01 | DIODE DF6A6.8FU (TE85R) |
| | | < FERRITE BEAD > |
| FB651 | 1-400-927-31 | BEAD, FERRITE (1005) |
| FB652 | 1-400-927-31 | BEAD, FERRITE (1005) |
| | | < JACK > |
| J651 | 1-818-055-21 | JACK (HEADPHONES) |
| J652 | 1-793-995-31 | JACK, SUPER SMALL TYPE (LANC) |
| | | < RESISTOR > |
| R651 | 1-218-990-81 | SHORT CHIP 0 |
| | | < COMPOSITION CIRCUIT BLOCK > |
| RB651 | 1-234-400-21 | CONDUCTOR, NETWORK (1005X4) |
| | | < THERMISTOR > |
| TH651 | 1-805-726-11 | THERMISTOR, POSITIVE |
| TH652 | 1-805-726-11 | THERMISTOR, POSITIVE |
| TH653 | 1-805-726-11 | THERMISTOR, POSITIVE |
| TH654 | 1-805-726-11 | THERMISTOR, POSITIVE |
| | | < VARISTOR > |
| VDR651 | 1-803-974-21 | VARISTOR, CHIP (1608) |
| VDR652 | 1-803-974-21 | VARISTOR, CHIP (1608) |
| VDR653 | 1-803-974-21 | VARISTOR, CHIP (1608) |
| | A-1438-674-A | IF-155 BOARD, COMPLETE |
| | | ********** |
| | | < CAPACITOR > |
| C103 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C104 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C105 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C106 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C107 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C108 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C109 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C111 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C112 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C115 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C119 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C120 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C121 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| | | < CONNECTOR > | | | |
| CN0101 | 1-779-328-51 | CONNECTOR, FFC/FPC 8P | | | |
| * CN0102 | 1-779-334-51 | CONNECTOR, FFC/FPC 20P | | | |
| CN0103 | 1-794-998-31 | PIN, CONNECTOR 20P | | | |
| CN0104 | 1-817-871-11 | PIN, CONNECTOR 15P | | | |
| CN0105 | 1-817-869-11 | PIN, CONNECTOR 10P | | | |
| CN0106 | 1-778-506-21 | PIN, CONNECTOR (PC BOARD) 2P | | | |
| CN0107 | 1-695-320-21 | PIN, CONNECTOR (1.5MM) (SMD) 2P | | | |
| CN0108 | 1-573-290-21 | PIN, CONNECTOR (1.5MM) (SMD) 4P | | | |
| CN0109 | 1-779-330-51 | CONNECTOR, FFC/FPC 12P | | | |
| CN0110 | 1-779-331-51 | CONNECTOR, FFC/FPC 14P | | | |
| CN0111 | 1-779-327-51 | CONNECTOR, FFC/FPC 6P | | | |
| CN0112 | 1-573-806-21 | PIN, CONNECTOR (1.5MM) (SMD) 6P | | | |
| CN0113 | 1-766-383-21 | PIN, CONNECTOR (1.5MM) (SMD) 12P | | | |
| * CN0114 | 1-691-591-11 | PIN, CONNECTOR (1.5MM) (SMD) 8P | | | |
| CN0115 | 1-766-382-21 | PIN, CONNECTOR (1.5MM) (SMD) 10P | | | |
| CN0116 | 1-816-296-21 | PIN, CONNECTOR (PC BOARD) 9P | | | |
| CN0117 | 1-779-331-51 | CONNECTOR, FFC/FPC 14P | | | |
| * CN0118 | 1-819-778-61 | CONNECTOR, FPC (ZIF) 33P | | | |
| * CN0119 | 1-817-544-71 | CONNECTOR, FPC (ZIF) 39P | | | |
| * CN0120 | 1-779-333-51 | CONNECTOR, FFC/FPC 18P | | | |
| CN0121 | 1-779-332-51 | CONNECTOR, FFC/FPC 16P | | | |
| CN0122 | 1-779-332-51 | CONNECTOR, FFC/FPC 16P | | | |
| | | < TRANSISTOR > | | | |
| Q104 | 6-550-119-01 | TRANSISTOR | DTC144EMT2L | | |
| | | < RESISTOR > | | | |
| R102 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R105 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R108 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R114 | 1-218-954-11 | RES-CHIP | 1.2K | 5% | 1/16W |
| R115 | 1-218-955-11 | RES-CHIP | 1.5K | 5% | 1/16W |
| R118 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/10W |
| R122 | 1-208-911-11 | METAL CHIP | 10K | 0.5% | 1/16W |
| | A-1438-637-A | JK-355 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CONNECTOR > | | | |
| * CN0701 | 1-691-551-11 | PIN, CONNECTOR (SMD) 8P | | | |
| | | < DIODE > | | | |
| D703 | 6-500-750-01 | DIODE NSAD500H-T1-A | | | |
| | | < JACK > | | | |
| * J0703 | 1-821-701-11 | JACK, PIN 3P (COMPONENT OUT) | | | |
| | A-1438-636-A | JS-033 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CONNECTOR > | | | |
| * CN0702 | 1-764-007-11 | PIN, CONNECTOR (SMD) 12P | | | |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| | | < DIODE > | | | |
| * D751 | 6-501-956-01 | DIODE MAZS068G08S0 | | | |
| | | < FERRITE BEAD > | | | |
| FB751 | 1-400-927-31 | BEAD, FERRITE (1005) | | | |
| FB752 | 1-400-927-31 | BEAD, FERRITE (1005) | | | |
| | | < JACK > | | | |
| J0701 | 1-778-518-11 | CONNECTOR, EXTERNAL (S VIDEO) | | | |
| J0702 | 1-694-713-11 | TERMINAL BOARD (A/V OUT) | | | |
| | | < RESISTOR > | | | |
| R754 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| | | < SWITCH > | | | |
| S0701 | 1-786-157-31 | TACTILE SWITCH (RESET) | | | |
| | | < VARISTOR > | | | |
| VD753 | 1-803-974-21 | VARISTOR, CHIP (1608) | | | |
| | A-1438-557-A | LD-229 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C5315 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5316 | 1-119-750-11 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C5318 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C5405 | 1-137-987-81 | CERAMIC CHIP | 0.068uF | 10% | 10V |
| C5406 | 1-137-987-81 | CERAMIC CHIP | 0.068uF | 10% | 10V |
| C5409 | 1-164-939-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C5410 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5411 | 1-164-939-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C5412 | 1-164-866-11 | CERAMIC CHIP | 47PF | 5% | 50V |
| C5413 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C5414 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5415 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5416 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5417 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5419 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5421 | 1-165-897-11 | TANTAL. CHIP | 22uF | 20% | 10V |
| C5422 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5423 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5424 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5425 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5427 | 1-164-930-11 | CERAMIC CHIP | 330PF | 5% | 16V |
| C5428 | 1-119-750-11 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C5430 | 1-127-715-11 | CERAMIC CHIP | 0.22uF | 10% | 16V |
| C5431 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5432 | 1-119-750-11 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C5433 | 1-164-939-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C5434 | 1-164-939-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C5705 | 1-165-897-11 | TANTAL. CHIP | 22uF | 20% | 10V |
| C5706 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C5707 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5708 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C5712 | 1-164-937-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C5713 | 1-164-939-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C5715 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C5716 | 1-164-937-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C5717 | 1-107-819-11 | CERAMIC CHIP | 0.022uF | 10% | 16V |
| C5719 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C5722 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C5723 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| | | < CONNECTOR > | | | |
| * CN5301 | 1-817-283-71 | CONNECTOR, FPC (ZIF) 51P | | | |
| * CN5303 | 1-817-283-71 | CONNECTOR, FPC (ZIF) 51P | | | |
| * CN5306 | 1-816-654-51 | FFC/FPC CONNECTOR (LIF) 6P | | | |
| * CN5307 | 1-580-055-21 | PIN, CONNECTOR (SMD) 2P | | | |
| | | < FERRITE BEAD > | | | |
| FB5401 | 1-500-238-11 | BEAD, FERRITE (CHIP) (1608) | | | |
| | | < IC > | | | |
| * IC5304 | 6-708-444-01 | IC R1114Q281D-TR-FA | | | |
| IC5402 | 8-759-359-49 | IC NJM3414AV (TE2) | | | |
| IC5403 | 8-759-359-49 | IC NJM3414AV (TE2) | | | |
| IC5404 | 6-708-814-01 | IC BU2343GLU-E2 | | | |
| * IC5703 | 6-709-026-01 | IC R2J30500LG | | | |
| | | < COIL > | | | |
| L5301 | 1-400-588-11 | INDUCTOR | 10uH | | |
| L5401 | 1-469-555-21 | INDUCTOR | 10uH | | |
| L5701 | 1-400-588-11 | INDUCTOR | 10uH | | |
| | | < TRANSISTOR > | | | |
| Q5301 | 6-550-384-01 | TRANSISTOR | DTC123JMT2L | | |
| | | < RESISTOR > | | | |
| R5406 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R5411 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5412 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5413 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5414 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5421 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5422 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5423 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5424 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5425 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5426 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5427 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R5430 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5431 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5432 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R5433 | 1-208-909-11 | METAL CHIP | 8.2K | 0.5% | 1/16W |
| R5434 | 1-208-721-11 | METAL CHIP | 39K | 0.5% | 1/16W |
| R5435 | 1-218-958-11 | RES-CHIP | 2.7K | 5% | 1/16W |
| R5436 | 1-218-958-11 | RES-CHIP | 2.7K | 5% | 1/16W |
| R5437 | 1-208-909-11 | METAL CHIP | 8.2K | 0.5% | 1/16W |
| R5438 | 1-208-721-11 | METAL CHIP | 39K | 0.5% | 1/16W |
| R5439 | 1-208-703-11 | METAL CHIP | 6.8K | 0.5% | 1/16W |
| R5440 | 1-208-941-11 | METAL CHIP | 180K | 0.5% | 1/16W |
| R5441 | 1-208-671-11 | METAL CHIP | 330 | 0.5% | 1/16W |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R5442 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R5443 | 1-208-943-11 | METAL CHIP | 220K | 0.5% | 1/16W |
| R5444 | 1-208-911-11 | METAL CHIP | 10K | 0.5% | 1/16W |
| R5445 | 1-208-909-11 | METAL CHIP | 8.2K | 0.5% | 1/16W |
| R5446 | 1-208-909-11 | METAL CHIP | 8.2K | 0.5% | 1/16W |
| R5447 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R5448 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R5449 | 1-208-911-11 | METAL CHIP | 10K | 0.5% | 1/16W |
| R5450 | 1-208-943-11 | METAL CHIP | 220K | 0.5% | 1/16W |
| R5451 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R5452 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5453 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R5454 | 1-208-941-11 | METAL CHIP | 180K | 0.5% | 1/16W |
| R5455 | 1-208-703-11 | METAL CHIP | 6.8K | 0.5% | 1/16W |
| R5456 | 1-208-909-11 | METAL CHIP | 8.2K | 0.5% | 1/16W |
| R5457 | 1-208-909-11 | METAL CHIP | 8.2K | 0.5% | 1/16W |
| R5458 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R5459 | 1-208-721-11 | METAL CHIP | 39K | 0.5% | 1/16W |
| R5460 | 1-208-721-11 | METAL CHIP | 39K | 0.5% | 1/16W |
| R5461 | 1-218-958-11 | RES-CHIP | 2.7K | 5% | 1/16W |
| R5462 | 1-218-958-11 | RES-CHIP | 2.7K | 5% | 1/16W |
| R5720 | 1-208-719-11 | METAL CHIP | 33K | 0.5% | 1/16W |
| R5721 | 1-208-721-11 | METAL CHIP | 39K | 0.5% | 1/16W |
| R5725 | 1-218-978-11 | RES-CHIP | 120K | 5% | 1/16W |
| R5726 | 1-208-689-11 | METAL CHIP | 1.8K | 0.5% | 1/16W |
| R5729 | 1-208-705-11 | METAL CHIP | 8.2K | 0.5% | 1/16W |
| R5733 | 1-208-707-11 | METAL CHIP | 10K | 0.5% | 1/16W |
| R5736 | 1-208-721-11 | METAL CHIP | 39K | 0.5% | 1/16W |
| R5737 | 1-208-721-11 | METAL CHIP | 39K | 0.5% | 1/16W |
| R5741 | 1-218-978-11 | RES-CHIP | 120K | 5% | 1/16W |
| R5742 | 1-208-689-11 | METAL CHIP | 1.8K | 0.5% | 1/16W |
| R5745 | 1-208-705-11 | METAL CHIP | 8.2K | 0.5% | 1/16W |
| R5749 | 1-208-707-11 | METAL CHIP | 10K | 0.5% | 1/16W |
| R5770 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R5771 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R5772 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R5773 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R5774 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R5776 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R5787 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R5788 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R5791 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R5792 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R5793 | 1-218-941-81 | RES-CHIP | 100 | 5% | 1/16W |
| | A-1438-670-A | MC-188 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C401 | 1-162-962-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| | | < CONNECTOR > | | | |
| CN0401 | 1-580-057-11 | PIN, CONNECTOR (SMD) 4P | | | |
| | | < JACK > | | | |
| J401 | 1-793-703-21 | JACK (DIA. 3.5) (MIC (PLUG IN POWER)) | | | |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| | | < RESISTOR > | | | |
| R401 | 1-218-990-81 | SHORT CHIP | 0 | | |
| | | < VARISTOR > | | | |
| * VDR401 | 1-802-279-11 | VARISTOR (SMD) | | | |
| * VDR402 | 1-802-279-11 | VARISTOR (SMD) | | | |
| | A-1438-628-A | MO-027 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CONNECTOR > | | | |
| * CN0504 | 1-817-555-51 | CONNECTOR, FFC/FPC 8P | | | |
| CN0505 | 1-778-506-21 | PIN, CONNECTOR (PC BOARD) 2P | | | |
| | | < DIODE > | | | |
| D551 | 6-500-252-01 | DIODE SML-512WWT86 (TAPE) | | | |
| D552 | 6-500-252-01 | DIODE SML-512WWT86 (MEMORY) | | | |
| D558 | 6-500-594-01 | DIODE CL-196SYG-CD-T (PLAY/EDIT) | | | |
| D559 | 6-500-594-01 | DIODE CL-196SYG-CD-T (PLAY/EDIT) | | | |
| | | < RESISTOR > | | | |
| R551 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R552 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R553 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| | | < VARISTOR > | | | |
| * VDR551 | 1-802-279-11 | VARISTOR (SMD) | | | |
| * VDR552 | 1-802-279-11 | VARISTOR (SMD) | | | |
| | A-1438-635-A | MS-379 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | (BT901 is not included in MS-379 complete board.) | | | |
| | | < BATTERY HOLDER > | | | |
| ⚠ BH8001 | 1-756-615-41 | HOLDER, BATTERY (Note) | | | |
| | | < BATTERY > | | | |
| ⚠ BT901 | 1-756-134-12 | BATTERY, STORAGE, LITHIUM (Note) | | | |
| | | < CONNECTOR > | | | |
| * CN8001 | 1-818-087-51 | CONNECTOR, FFC/FPC (LIF) 26P | | | |
| CN8002 | 1-778-506-21 | PIN, CONNECTOR (PC BOARD) 2P | | | |
| CN8003 | 1-779-328-51 | CONNECTOR, FFC/FPC 8P | | | |
| CN8004 | 1-817-913-41 | MEMORY STICK DUO CONNECTOR | | | |
| | | < DIODE > | | | |
| D8003 | 6-501-216-01 | DIODE CL-271HR-C-TS (MS ACCESS) | | | |
| | | < RESISTOR > | | | |
| R8001 | 1-218-947-11 | RES-CHIP | 330 | 5% | 1/16W |
| R8002 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R8003 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R8004 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R8005 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R8006 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R8007 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R8008 | 1-218-990-81 | SHORT CHIP | 0 | | |
| | A-1438-618-A | NS-022 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C901 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| | | < CONNECTOR > | | | |
| CN0901 | 1-779-330-51 | CONNECTOR, FFC/FPC 12P | | | |
| CN0902 | 1-779-327-51 | CONNECTOR, FFC/FPC 6P | | | |
| CN0903 | 1-779-327-51 | CONNECTOR, FFC/FPC 6P | | | |
| | | < DIODE > | | | |
| * D901 | 6-501-598-01 | DIODE CL-335IRS-X-TS (NIGHTSHOT) | | | |
| | | < RESISTOR > | | | |
| R901 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| R902 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/10W |
| | A-1438-668-A | PD-342 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C6201 | 1-100-581-81 | CERAMIC CHIP | 0.0047uF | 10% | 50V |
| C6202 | 1-100-581-81 | CERAMIC CHIP | 0.0047uF | 10% | 50V |
| C6203 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C6204 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C6205 | 1-165-884-11 | CERAMIC CHIP | 2.2uF | 10% | 6.3V |
| C6206 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C6208 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C6209 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C6210 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C6211 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C6212 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C6213 | 1-100-786-91 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C6214 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C6215 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C6216 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C6217 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C6218 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C6219 | 1-164-739-11 | CERAMIC CHIP | 560PF | 5% | 50V |
| C6220 | 1-165-884-11 | CERAMIC CHIP | 2.2uF | 10% | 6.3V |
| C6221 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C6225 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C6226 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C6227 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C6228 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |

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

Note: Replace the battery holder (BH8001) together when replacing the lithium battery (BT901) on the MS-379 board. (The battery holder removed once cannot be used again.)
When mounting these parts, mount new battery holder first and attach new lithium battery next.

• Refer to page 5-1 for mark ⚠.

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| | | < CONNECTOR > | | | |
| CN6201 | 1-794-322-51 | FFC/CONNECTOR, FPC (ZIF) 6P | | | |
| CN6202 | 1-816-928-11 | PIN, CONNECTOR 22P | | | |
| * CN6205 | 1-819-913-71 | CONNECTOR, FPC (ZIF) 24P | | | |
| | | < DIODE > | | | |
| D6204 | 8-719-071-34 | DIODE RB521S-30-TE61 | | | |
| D6205 | 8-719-071-34 | DIODE RB521S-30-TE61 | | | |
| * D6206 | 6-501-597-01 | DIODE NSSW008DT-T108 (BACKLIGHT) | | | |
| * D6207 | 6-501-597-01 | DIODE NSSW008DT-T108 (BACKLIGHT) | | | |
| * D6208 | 6-501-597-01 | DIODE NSSW008DT-T108 (BACKLIGHT) | | | |
| | | < FERRITE BEAD > | | | |
| FB6201 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) | | | |
| | | < IC > | | | |
| * IC6201 | 6-710-240-01 | IC IR3Y65M4 | | | |
| IC6202 | 8-759-693-13 | IC NJM12904V (TE2) | | | |
| | | < COIL > | | | |
| L6201 | 1-400-588-11 | INDUCTOR | 10uH | | |
| L6202 | 1-400-588-11 | INDUCTOR | 10uH | | |
| L6203 | 1-400-588-11 | INDUCTOR | 10uH | | |
| | | < TRANSISTOR > | | | |
| Q6201 | 8-729-427-37 | TRANSISTOR | XP411F-TXE | | |
| Q6202 | 8-729-427-67 | TRANSISTOR | XP421F-TXE | | |
| Q6203 | 8-729-053-52 | TRANSISTOR | RN1910FE (TPLR3) | | |
| Q6204 | 8-729-425-50 | TRANSISTOR | 2SB1462-Q | | |
| Q6205 | 8-729-425-50 | TRANSISTOR | 2SB1462-Q | | |
| Q6206 | 8-729-425-50 | TRANSISTOR | 2SB1462-Q | | |
| Q6207 | 6-550-150-01 | TRANSISTOR | SSM3J09FU (TE85L) | | |
| Q6208 | 6-550-119-01 | TRANSISTOR | DTC144EMT2L | | |
| Q6210 | 8-729-053-84 | TRANSISTOR | SSM3KO9FU (T5LSONY1) | | |
| Q6211 | 6-551-184-01 | TRANSISTOR | MCH6305-TL-E-S | | |
| Q6212 | 6-551-184-01 | TRANSISTOR | MCH6305-TL-E-S | | |
| | | < RESISTOR > | | | |
| R6206 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R6208 | 1-218-949-11 | RES-CHIP | 470 | 5% | 1/16W |
| R6211 | 1-218-936-11 | RES-CHIP | 39 | 5% | 1/16W |
| R6212 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R6213 | 1-208-922-11 | METAL CHIP | 30K | 0.5% | 1/16W |
| R6214 | 1-208-943-11 | METAL CHIP | 220K | 0.5% | 1/16W |
| R6215 | 1-218-975-11 | RES-CHIP | 68K | 5% | 1/16W |
| R6216 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R6217 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R6218 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R6219 | 1-208-935-11 | METAL CHIP | 100K | 0.5% | 1/16W |
| R6220 | 1-208-911-11 | METAL CHIP | 10K | 0.5% | 1/16W |
| R6221 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R6222 | 1-218-957-11 | RES-CHIP | 2.2K | 5% | 1/16W |
| R6227 | 1-220-876-81 | METAL CHIP | 18 | 0.5% | 1/16W |
| R6231 | 1-220-876-81 | METAL CHIP | 18 | 0.5% | 1/16W |
| R6232 | 1-220-876-81 | METAL CHIP | 18 | 0.5% | 1/16W |
| R6235 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R6236 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R6237 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R6241 | 1-218-981-91 | RES-CHIP | 220K | 5% | 1/16W |
| R6249 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R6250 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R6251 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R6252 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R6253 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R6254 | 1-218-990-81 | SHORT CHIP | 0 | | |

| | | | | | |
|---|---|---|---|---|---|
| | A-1438-667-A | RE-038 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CONNECTOR > | | | |
| CN0851 | 1-794-375-21 | PIN, CONNECTOR 2P | | | |
| | | < SWITCH > | | | |
| S0851 | 1-786-179-11 | SWITCH, PUSH (1KEY) (PANEL REVERSE) | | | |

| | | | | | |
|---|---|---|---|---|---|
| | A-1438-625-A | SP-048 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CONNECTOR > | | | |
| CN0501 | 1-779-331-51 | CONNECTOR, FFC/FPC 14P | | | |
| CN0502 | 1-779-328-51 | CONNECTOR, FFC/FPC 8P | | | |
| | | < DIODE > | | | |
| D501 | 8-719-084-17 | DIODE EMZ6.8ET2R | | | |
| | | < RESISTOR > | | | |
| R502 | 1-218-990-81 | SHORT CHIP | 0 | | |
| | | < SWITCH > | | | |
| S0501 | 1-786-157-31 | TACTILE SWITCH (DISPLAY/BATT INFO) | | | |
| S0502 | 1-771-731-21 | SWITCH, SLIDE (NIGHTSHOT) | | | |
| S0503 | 1-786-157-31 | TACTILE SWITCH (BACK LIGHT) | | | |
| S0504 | 1-786-157-31 | TACTILE SWITCH (MANUAL) | | | |

| | | | | | |
|---|---|---|---|---|---|
| | A-1438-634-A | US-014 BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CONNECTOR > | | | |
| * CN8101 | 1-816-655-51 | FFC/FPC CONNECTOR (LIF) 8P | | | |
| * CN8102 | 1-816-655-51 | FFC/FPC CONNECTOR (LIF) 8P | | | |
| CN8103 | 1-784-010-11 | CONNECTOR, USB (B) (USB) | | | |
| | | < DIODE > | | | |
| D8101 | 8-719-078-02 | DIODE 1SS357 (T3SONY1) | | | |
| D8102 | 6-500-776-01 | DIODE MAZW068H0LS0 | | | |
| | | < RESISTOR > | | | |
| R8101 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R8102 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R8103 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R8104 | 1-218-990-81 | SHORT CHIP | 0 | | |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| | A-1438-762-A | VC-500 BOARD, COMPLETE (NTSC: HD1000U/HD1000N) | | | |
| | A-1438-763-A | VC-500 BOARD, COMPLETE (PAL: HD1000E/HD1000P/HD1000C) | | | |
| | | ********** | | | |
| | | (IC2402 and IC5202 are not supplied, but they are included in VC-500 complete board.) | | | |
| | | < CAPACITOR > | | | |
| C1004 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C1009 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1010 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1011 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1012 | 1-112-717-91 | CERAMIC CHIP | 1uF | 10% | 6.3V |
| C1205 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1206 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1207 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1208 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1209 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1210 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1213 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1214 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1215 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1216 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1217 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1218 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1219 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1220 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1221 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1222 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1223 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C1224 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1225 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C1305 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1306 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1307 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1308 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1309 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1310 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1313 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1314 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1315 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1316 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1317 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1318 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1319 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1320 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1321 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1322 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1323 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1324 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C1325 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C1702 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1703 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C1704 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1705 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1706 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1707 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1708 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1709 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1710 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1711 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1712 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1713 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1714 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1715 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1716 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1717 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1718 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1719 | 1-100-786-91 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C1720 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C1721 | 1-100-786-91 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C1722 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C1723 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1724 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C1725 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1726 | 1-100-786-91 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C1727 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1728 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1729 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C1730 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C1731 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C1732 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C1733 | 1-100-786-91 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C1801 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1802 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1804 | 1-164-850-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C1805 | 1-164-850-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C1806 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1807 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1808 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1809 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1810 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1811 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1812 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C1813 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C1817 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1902 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1903 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1904 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1905 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C1906 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C2003 | 1-165-884-11 | CERAMIC CHIP | 2.2uF | 10% | 6.3V |
| C2004 | 1-165-884-11 | CERAMIC CHIP | 2.2uF | 10% | 6.3V |
| C2005 | 1-165-884-11 | CERAMIC CHIP | 2.2uF | 10% | 6.3V |
| C2010 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C2011 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C2012 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C2013 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C2014 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2015 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2016 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C2017 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C2101 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C2102 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C2103 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C2104 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C2105 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C2106 | 1-100-611-91 | CERAMIC CHIP | 22uF | 20% | 6.3V |
| C2107 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2108 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2109 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2110 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2111 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2112 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2113 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2114 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2115 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2116 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2117 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2118 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2119 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2120 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2121 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2122 | 1-100-611-91 | CERAMIC CHIP | 22uF | 20% | 6.3V |
| C2123 | 1-100-611-91 | CERAMIC CHIP | 22uF | 20% | 6.3V |
| C2124 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2125 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2126 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C2127 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2128 | 1-100-611-91 | CERAMIC CHIP | 22uF | 20% | 6.3V |
| C2129 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2130 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2131 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2132 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C2134 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2135 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2136 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C2137 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2138 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2139 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2140 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2141 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2142 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2201 | 1-127-760-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C2202 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C2203 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2204 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2205 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C2206 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2207 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2208 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2209 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2210 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2211 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2212 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2213 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2214 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2215 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2217 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C2218 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C2219 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2220 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C2221 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2222 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2223 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2224 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2225 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2226 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2227 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2228 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2229 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2230 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2231 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2232 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2233 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2234 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2235 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2236 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2237 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2238 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2239 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2401 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2402 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C2403 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C2405 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C2406 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C2708 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C2710 | 1-128-934-61 | CERAMIC CHIP | 0.33uF | 10% | 10V |
| C2711 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2713 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C2714 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C2716 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2717 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2718 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2719 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C2720 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C2721 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2722 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C2723 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C2724 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2725 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2726 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2727 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2728 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2729 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2730 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2731 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2732 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2733 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2734 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2735 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2903 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C2904 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2905 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C2910 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2911 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2916 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2917 | 1-100-786-91 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C2918 | 1-100-611-91 | CERAMIC CHIP | 22uF | 20% | 6.3V |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C2923 | 1-164-874-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C2924 | 1-164-874-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C2925 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2926 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2927 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C2928 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C2929 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C2930 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2931 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C2932 | 1-117-919-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C2933 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2940 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C2941 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3001 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3002 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3003 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3004 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3005 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3006 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3007 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3008 | 1-165-884-11 | CERAMIC CHIP | 2.2uF | 10% | 6.3V |
| C3009 | 1-165-884-11 | CERAMIC CHIP | 2.2uF | 10% | 6.3V |
| C3010 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| | | | (NTSC: HD1000U/HD1000N) | | |
| C3011 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C3012 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C3013 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3014 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3015 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3016 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3017 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C3018 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C3019 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C3020 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3021 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C3022 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3023 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3024 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3025 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3026 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3027 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3028 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3029 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3030 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C3031 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3032 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3033 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3034 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3035 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C3036 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3037 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C3038 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C3039 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3040 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3041 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3042 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3043 | 1-100-539-91 | TANTAL. CHIP | 47uF | 20% | 6.3V |
| C3044 | 1-100-539-91 | TANTAL. CHIP | 47uF | 20% | 6.3V |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C3100 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3102 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3105 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3107 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3109 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3110 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3111 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3112 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3113 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3114 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3115 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3202 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3203 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3204 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3205 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3206 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C3207 | 1-127-715-11 | CERAMIC CHIP | 0.22uF | 10% | 16V |
| C3209 | 1-127-715-11 | CERAMIC CHIP | 0.22uF | 10% | 16V |
| C3210 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3211 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3212 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3401 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3402 | 1-164-928-11 | CERAMIC CHIP | 270PF | 5% | 16V |
| C3403 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3404 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C3405 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3407 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3409 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3411 | 1-164-852-11 | CERAMIC CHIP | 12PF | 5% | 50V |
| C3412 | 1-164-852-11 | CERAMIC CHIP | 12PF | 5% | 50V |
| C3414 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3415 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3416 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3418 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C3420 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3701 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C3702 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C3703 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C3704 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C3705 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C3706 | 1-164-739-11 | CERAMIC CHIP | 560PF | 5% | 50V |
| C3707 | 1-127-895-91 | TANTAL. CHIP | 22uF | 20% | 4V |
| C3708 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3710 | 1-127-760-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C3712 | 1-127-760-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C3713 | 1-125-889-11 | CERAMIC CHIP | 2.2uF | 10% | 10V |
| C3714 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C3715 | 1-125-889-11 | CERAMIC CHIP | 2.2uF | 10% | 10V |
| C3716 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4401 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4402 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4403 | 1-164-850-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C4404 | 1-164-850-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C4406 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4407 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4408 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4409 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C4410 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4411 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4412 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4413 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4416 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C4417 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C4418 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4419 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4601 | 1-107-819-11 | CERAMIC CHIP | 0.022uF | 10% | 16V |
| C4602 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4603 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4604 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4605 | 1-165-884-11 | CERAMIC CHIP | 2.2uF | 10% | 6.3V |
| C4606 | 1-119-923-11 | CERAMIC CHIP | 0.047uF | 10% | 10V |
| C4607 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4608 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4609 | 1-100-352-91 | CERAMIC CHIP | 1uF | 20% | 16V |
| C4610 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4611 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4613 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4614 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4615 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4616 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4617 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4618 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4619 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4620 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4621 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4622 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4623 | 1-127-772-81 | CERAMIC CHIP | 0.033uF | 10% | 10V |
| C4624 | 1-107-819-11 | CERAMIC CHIP | 0.022uF | 10% | 16V |
| C4625 | 1-165-875-11 | CERAMIC CHIP | 10uF | 10% | 10V |
| C4626 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4627 | 1-165-875-11 | CERAMIC CHIP | 10uF | 10% | 10V |
| C4628 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4629 | 1-165-875-11 | CERAMIC CHIP | 10uF | 10% | 10V |
| C4630 | 1-165-875-11 | CERAMIC CHIP | 10uF | 10% | 10V |
| C4631 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4632 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4633 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4634 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4635 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4636 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4637 | 1-100-591-91 | CERAMIC CHIP | 1uF | 10% | 25V |
| C4638 | 1-127-760-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C4640 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4641 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4642 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4643 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4644 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4645 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4646 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4647 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4648 | 1-125-889-11 | CERAMIC CHIP | 2.2uF | 10% | 10V |
| C4649 | 1-125-889-11 | CERAMIC CHIP | 2.2uF | 10% | 10V |
| C4650 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4651 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4653 | 1-165-884-11 | CERAMIC CHIP | 2.2uF | 10% | 6.3V |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C4654 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4655 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4656 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4657 | 1-127-760-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C4659 | 1-127-760-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V |
| C4661 | 1-165-884-11 | CERAMIC CHIP | 2.2uF | 10% | 6.3V |
| C4662 | 1-125-827-91 | CERAMIC CHIP | 1uF | 10% | 25V |
| C4667 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4669 | 1-100-503-11 | CERAMIC CHIP | 4.7uF | 20% | 10V |
| C4670 | 1-100-503-11 | CERAMIC CHIP | 4.7uF | 20% | 10V |
| C4671 | 1-165-884-11 | CERAMIC CHIP | 2.2uF | 10% | 6.3V |
| C4672 | 1-165-884-11 | CERAMIC CHIP | 2.2uF | 10% | 6.3V |
| C4673 | 1-127-715-11 | CERAMIC CHIP | 0.22uF | 10% | 16V |
| C4674 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4675 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4676 | 1-164-862-11 | CERAMIC CHIP | 33PF | 5% | 50V |
| C4677 | 1-107-823-11 | CERAMIC CHIP | 0.47uF | 10% | 16V |
| C4679 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C4680 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4801 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4802 | 1-164-858-11 | CERAMIC CHIP | 22PF | 5% | 50V |
| C4803 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4804 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4805 | 1-164-937-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C4806 | 1-164-937-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C4807 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4808 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4809 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C4810 | 1-119-923-11 | CERAMIC CHIP | 0.047uF | 10% | 10V |
| C4811 | 1-119-923-11 | CERAMIC CHIP | 0.047uF | 10% | 10V |
| C4812 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4813 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4814 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4815 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4816 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4818 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4819 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4820 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4821 | 1-107-819-11 | CERAMIC CHIP | 0.022uF | 10% | 16V |
| C4822 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4823 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4824 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V |
| C4825 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4826 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C4827 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4828 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4829 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C4830 | 1-164-935-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C4831 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4832 | 1-164-935-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C4833 | 1-164-935-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C4834 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4835 | 1-164-935-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C4836 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4837 | 1-164-942-11 | CERAMIC CHIP | 0.0068uF | 10% | 16V |
| C4838 | 1-164-942-11 | CERAMIC CHIP | 0.0068uF | 10% | 16V |
| C4839 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C4901 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4902 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4903 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C4904 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4905 | 1-125-891-11 | CERAMIC CHIP | 0.47uF | 10% | 10V |
| C4906 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4907 | 1-125-891-11 | CERAMIC CHIP | 0.47uF | 10% | 10V |
| C4908 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4909 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C4910 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4911 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4912 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4913 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C4915 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5004 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C5005 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C5006 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5007 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C5008 | 1-164-850-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C5010 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5011 | 1-164-852-11 | CERAMIC CHIP | 12PF | 5% | 50V |
| C5012 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C5013 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5015 | 1-119-750-11 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C5016 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C5017 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C5018 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5102 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5104 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5106 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5107 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5108 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5110 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5113 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5115 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5118 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5119 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5120 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5122 | 1-100-415-91 | CERAMIC CHIP | 0.47uF | 10% | 6.3V |
| C5125 | 1-164-874-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C5127 | 1-125-777-11 | CERAMIC CHIP | 0.1uF | 10% | 10V |
| C5134 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V |
| C5135 | 1-119-750-11 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C5136 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C5201 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C5202 | 1-100-505-11 | CERAMIC CHIP | 0.1uF | 20% | 16V |
| C5203 | 1-119-750-11 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C5204 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C5206 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V |
| C5209 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V |

< CONNECTOR >

| Ref. No. | Part No. | Description |
|---|---|---|
| * CN1001 | 1-816-646-51 | FFC/FPC CONNECTOR (LIF) 16P |
| CN1003 | 1-779-332-51 | CONNECTOR, FFC/FPC 16P |
| * CN1004 | 1-816-645-51 | FFC/FPC CONNECTOR (LIF) 14P |
| * CN1006 | 1-816-645-51 | FFC/FPC CONNECTOR (LIF) 14P |
| * CN1007 | 1-817-544-71 | CONNECTOR, FPC (ZIF) 39P |
| * CN1009 | 1-816-654-51 | FFC/FPC CONNECTOR (LIF) 6P |
| * CN1010 | 1-820-729-61 | CONNECTOR, FPC (ZIF) 51P |
| * CN1012 | 1-818-087-51 | CONNECTOR, FFC/FPC (LIF) 26P |
| * CN1015 | 1-816-648-51 | FFC/FPC CONNECTOR (LIF) 20P |
| * CN1017 | 1-819-778-61 | CONNECTOR, FPC (ZIF) 33P |
| CN1201 | 1-820-560-11 | CONNECTOR, COAXIAL (RECEPTACLE) 40P |
| * CN3202 | 1-816-648-51 | FFC/FPC CONNECTOR (LIF) 20P |
| * CN3701 | 1-816-648-51 | FFC/FPC CONNECTOR (LIF) 20P |
| * CN4801 | 1-818-818-71 | CONNECTOR, FPC (ZIF) 29P |
| * CN4802 | 1-816-643-51 | FFC/FPC CONNECTOR (LIF) 10P |
| * CN4803 | 1-817-829-71 | CONNECTOR, FPC (ZIF) 27P |
| * CN4901 | 1-816-643-51 | FFC/FPC CONNECTOR (LIF) 10P |

< DIODE >

| Ref. No. | Part No. | Description |
|---|---|---|
| D1010 | 8-719-074-67 | DIODE EDZ-TE61-5.6B |
| * D1011 | 6-501-956-01 | DIODE MAZS068G08S0 |
| D4601 | 8-719-081-19 | DIODE 1SS383 (T5RSONY1) |
| D4602 | 8-719-027-76 | DIODE 1SS357-TPH3 |
| D4603 | 8-719-069-29 | DIODE RB520S-30TE61 |
| D4604 | 6-500-168-01 | DIODE MA4SD1000LS0 |
| D4606 | 8-719-027-76 | DIODE 1SS357-TPH3 |
| * D4607 | 6-501-961-01 | DIODE MAZS120G08S0 |

< FUSE >

| Ref. No. | Part No. | Description |
|---|---|---|
| ⚠F4601 | 1-576-406-21 | FUSE, MICRO (1608) (1.4A/32V) |
| ⚠F4602 | 1-576-406-21 | FUSE, MICRO (1608) (1.4A/32V) |
| ⚠F4603 | 1-576-406-21 | FUSE, MICRO (1608) (1.4A/32V) |
| ⚠F4604 | 1-576-406-21 | FUSE, MICRO (1608) (1.4A/32V) |
| ⚠F4605 | 1-576-406-21 | FUSE, MICRO (1608) (1.4A/32V) |
| ⚠F4606 | 1-576-406-21 | FUSE, MICRO (1608) (1.4A/32V) |
| ⚠F4607 | 1-576-406-21 | FUSE, MICRO (1608) (1.4A/32V) |

< FERRITE BEAD >

| Ref. No. | Part No. | Description |
|---|---|---|
| FB1001 | 1-400-927-31 | BEAD, FERRITE (1005) |
| FB1002 | 1-400-927-31 | BEAD, FERRITE (1005) |
| FB1701 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| FB1702 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| FB1802 | 1-469-082-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB1901 | 1-400-619-11 | BEAD, FERRITE (CHIP) (1608) |
| FB2002 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| FB2101 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| FB2102 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| FB2103 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| FB2104 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| FB2201 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| FB2401 | 1-469-082-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB3001 | 1-469-082-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB3401 | 1-400-619-11 | BEAD, FERRITE (CHIP) (1608) |
| FB3701 | 1-400-619-11 | BEAD, FERRITE (CHIP) (1608) |
| FB4401 | 1-469-082-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB5101 | 1-469-581-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB5102 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| FB5103 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| FB5105 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| FB5106 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| FB5107 | 1-469-581-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB5108 | 1-469-581-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB5201 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |

• Refer to page 5-1 for mark ⚠.

| Ref. No. | Part No. | Description |
|---|---|---|
| FB5202 | 1-400-331-11 | FERRITE, EMI (SMD) (1005) |
| | | < FILTER > |
| FL1901 | 1-234-939-21 | FILTER, EMI REMOVAL (SMD) |
| FL3100 | 1-234-939-21 | FILTER, EMI REMOVAL (SMD) |
| FL3101 | 1-234-939-21 | FILTER, EMI REMOVAL (SMD) |
| FL3102 | 1-234-939-21 | FILTER, EMI REMOVAL (SMD) |
| FL3201 | 1-234-939-21 | FILTER, EMI REMOVAL (SMD) |
| | | < IC > |
| * IC1001 | 6-708-445-01 | IC R1114Q291D-TR-FA |
| * IC1201 | 6-710-806-01 | IC VSP2436ZWDR |
| * IC1301 | 6-710-806-01 | IC VSP2436ZWDR |
| IC1701 | 6-708-135-01 | IC HD74ALVC2G74USE-E |
| * IC1702 | 6-710-008-01 | IC CXD9886GG |
| IC1801 | 6-807-916-01 | IC MB91195ABGL-G-252-ERE1 |
| * IC1802 | 6-710-155-01 | IC AK6514CAM-E2 |
| * IC1901 | 6-710-438-01 | IC EDS2532JEBH-75TT-E |
| IC2001 | 6-708-108-01 | IC TLS26A100PFBR |
| * IC2101 | 6-710-743-01 | IC S4DF006X02-Y071-K12K4C |
| * IC2201 | 8-753-276-37 | IC CXD3195AGG-T6 |
| * IC2401 | 6-710-306-01 | IC HYE18M256320CFX-7.5 |
| IC2402 | (Not supplied) | IC S29AL016D70BFI013 |
| * IC2701 | 6-710-783-01 | IC MB8AA1121BGL-G-ERE1 |
| IC2901 | 6-707-725-01 | IC BH7875GLU-E2 |
| IC2902 | 6-701-112-01 | IC DS1801E-02V+T/R |
| IC2903 | 8-759-710-79 | IC NJM2107F |
| * IC2904 | 6-708-444-01 | IC R1114Q281D-TR-FA |
| IC3001 | 6-707-435-01 | IC AN12921A-VB |
| * IC3002 | 6-709-328-01 | IC AK4554VL-8-L |
| IC3101 | 6-711-003-01 | IC T6UL2XBG-0002 (EO2) |
| * IC3201 | 6-710-770-01 | IC AD9889BBBCZRL-80 |
| IC3202 | 6-705-338-01 | IC TK11250CMCL-G |
| * IC3401 | 6-710-516-01 | IC SN200507002ZZCR |
| * IC3701 | 8-753-242-24 | IC CXM3018R-T4 |
| * IC4401 | 6-807-924-01 | IC MB91195ABGL-G-251-ERE1 |
| * IC4601 | 6-710-636-01 | IC MB44C005BBGL-G-ERE1 |
| * IC4602 | 6-710-254-01 | IC LV5254LG-TLM-E |
| * IC4603 | 6-708-464-01 | IC R1114Q251D-TR-FA |
| IC4604 | 8-759-581-11 | IC NJM2125F (TE2) |
| IC4605 | 6-703-977-01 | IC R1114Q331D-TR-FA |
| IC4801 | 6-707-428-01 | IC BD6639AGLV-E2 |
| IC4901 | 6-707-432-01 | IC TLS26A102PFBR |
| * IC5001 | 6-807-881-01 | IC MB95005BGL-G-111-ERE1 |
| * IC5101 | 6-710-594-01 | IC S4LFS33X0-Y070 |
| IC5103 | 6-702-708-01 | IC TC7SZU04AFE (TE85R) |
| IC5201 | 6-707-634-01 | IC W9816G6CB-7-ER20 |
| IC5202 | (Not supplied) | IC S99-50031-33-ER |
| | | < COIL > |
| L1201 | 1-400-588-11 | INDUCTOR 10uH |
| L1202 | 1-469-555-21 | INDUCTOR 10uH |
| L1301 | 1-400-588-11 | INDUCTOR 10uH |
| L1302 | 1-469-555-21 | INDUCTOR 10uH |
| L1701 | 1-400-353-21 | INDUCTOR 22uH |
| L1702 | 1-400-588-11 | INDUCTOR 10uH |
| L1703 | 1-400-588-11 | INDUCTOR 10uH |
| L1704 | 1-400-588-11 | INDUCTOR 10uH |

| Ref. No. | Part No. | Description |
|---|---|---|
| L2001 | 1-400-588-11 | INDUCTOR 10uH |
| L2002 | 1-400-588-11 | INDUCTOR 10uH |
| L2003 | 1-400-588-11 | INDUCTOR 10uH |
| L2101 | 1-400-675-11 | INDUCTOR 10uH |
| L2102 | 1-400-676-11 | INDUCTOR 22uH |
| L2103 | 1-400-588-11 | INDUCTOR 10uH |
| L2104 | 1-400-676-11 | INDUCTOR 22uH |
| L2105 | 1-400-588-11 | INDUCTOR 10uH |
| L2201 | 1-400-675-11 | INDUCTOR 10uH |
| L2202 | 1-400-676-11 | INDUCTOR 22uH |
| L2203 | 1-400-676-11 | INDUCTOR 22uH |
| L2204 | 1-400-676-11 | INDUCTOR 22uH |
| L2205 | 1-400-676-11 | INDUCTOR 22uH |
| L2702 | 1-400-675-11 | INDUCTOR 10uH |
| L2703 | 1-400-675-11 | INDUCTOR 10uH |
| L2704 | 1-400-675-11 | INDUCTOR 10uH |
| L2901 | 1-400-678-11 | INDUCTOR 100uH |
| L2902 | 1-400-678-11 | INDUCTOR 100uH |
| L3001 | 1-400-588-11 | INDUCTOR 10uH |
| L3002 | 1-400-588-11 | INDUCTOR 10uH |
| L3003 | 1-400-588-11 | INDUCTOR 10uH |
| L3004 | 1-400-588-11 | INDUCTOR 10uH |
| L3005 | 1-400-588-11 | INDUCTOR 10uH |
| L3006 | 1-400-588-11 | INDUCTOR 10uH |
| * L3201 | 1-400-674-21 | INDUCTOR 4.7uH |
| * L3202 | 1-400-673-21 | INDUCTOR 2.2uH |
| * L3203 | 1-400-673-21 | INDUCTOR 2.2uH |
| L3401 | 1-400-588-11 | INDUCTOR 10uH |
| L3701 | 1-400-588-11 | INDUCTOR 10uH |
| L3702 | 1-400-588-11 | INDUCTOR 10uH |
| L3703 | 1-400-588-11 | INDUCTOR 10uH |
| L4601 | 1-456-497-11 | INDUCTOR 15uH |
| L4602 | 1-456-497-11 | INDUCTOR 15uH |
| L4603 | 1-456-497-11 | INDUCTOR 15uH |
| L4604 | 1-456-497-11 | INDUCTOR 15uH |
| L4605 | 1-456-497-11 | INDUCTOR 15uH |
| L4606 | 1-456-497-11 | INDUCTOR 15uH |
| L4607 | 1-469-549-21 | INDUCTOR 1uH |
| L4608 | 1-469-549-21 | INDUCTOR 1uH |
| L4609 | 1-469-551-21 | INDUCTOR 2.2uH |
| L4610 | 1-469-549-21 | INDUCTOR 1uH |
| L4611 | 1-469-549-21 | INDUCTOR 1uH |
| L4612 | 1-469-549-21 | INDUCTOR 1uH |
| L4614 | 1-469-555-21 | INDUCTOR 10uH |
| L4615 | 1-469-551-21 | INDUCTOR 2.2uH |
| L4616 | 1-469-555-21 | INDUCTOR 10uH |
| L4622 | 1-456-501-11 | INDUCTOR 33uH |
| L4623 | 1-456-497-11 | INDUCTOR 15uH |
| L4624 | 1-469-549-21 | INDUCTOR 1uH |
| L4625 | 1-469-549-21 | INDUCTOR 1uH |
| L4626 | 1-456-136-21 | INDUCTOR 10uH |
| L4627 | 1-456-136-21 | INDUCTOR 10uH |
| L4628 | 1-469-549-21 | INDUCTOR 1uH |
| L4630 | 1-469-555-21 | INDUCTOR 10uH |
| L4801 | 1-400-202-21 | INDUCTOR 4.7uH |
| L4901 | 1-400-588-11 | INDUCTOR 10uH |
| L4902 | 1-400-588-11 | INDUCTOR 10uH |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| | | < LINE FILTER > | | | |
| * LF1002 | 1-457-217-21 | COMMON MODE CHOKE COIL | | | |
| * LF3201 | 1-813-880-11 | COMMON MODE CHOKE COIL | | | |
| * LF3202 | 1-813-880-11 | COMMON MODE CHOKE COIL | | | |
| * LF3203 | 1-813-880-11 | COMMON MODE CHOKE COIL | | | |
| * LF3204 | 1-813-880-11 | COMMON MODE CHOKE COIL | | | |
| LF3403 | 1-457-064-12 | COMMON MODE CHOKE COIL | | | |
| LF5101 | 1-457-223-11 | COMMON MODE CHOKE COIL | | | |
| | | < TRANSISTOR > | | | |
| Q1001 | 6-550-102-01 | TRANSISTOR | 2SC5663T2L | | |
| Q2101 | 6-550-232-01 | TRANSISTOR | 2SA2029T2LQ/R | | |
| Q2102 | 6-550-232-01 | TRANSISTOR | 2SA2029T2LQ/R | | |
| Q2103 | 6-550-232-01 | TRANSISTOR | 2SA2029T2LQ/R | | |
| Q2104 | 6-550-232-01 | TRANSISTOR | 2SA2029T2LQ/R | | |
| Q2105 | 6-550-232-01 | TRANSISTOR | 2SA2029T2LQ/R | | |
| Q2106 | 6-550-232-01 | TRANSISTOR | 2SA2029T2LQ/R | | |
| Q2107 | 6-550-232-01 | TRANSISTOR | 2SA2029T2LQ/R | | |
| Q3001 | 8-729-056-73 | TRANSISTOR | CPH6501-TL-E | | |
| Q3002 | 8-729-054-52 | TRANSISTOR | UP04216008S0 | | |
| Q3003 | 8-729-054-52 | TRANSISTOR | UP04216008S0 | | |
| Q3701 | 8-729-054-48 | TRANSISTOR | UP04601008S0 | | |
| Q4601 | 6-551-442-01 | TRANSISTOR | TPCP8301 (T5RSONYF) | | |
| Q4602 | 8-729-047-68 | TRANSISTOR | SSM3K03FE (TPL3) | | |
| Q4603 | 8-729-043-60 | TRANSISTOR | CPH6102-TL-E | | |
| Q4604 | 6-550-119-01 | TRANSISTOR | DTC144EMT2L | | |
| Q4607 | 6-550-714-01 | TRANSISTOR | SCH1406-TL-E | | |
| Q4608 | 6-550-714-01 | TRANSISTOR | SCH1406-TL-E | | |
| Q4609 | 6-550-713-01 | TRANSISTOR | SCH2816-TL-E | | |
| Q4610 | 6-550-713-01 | TRANSISTOR | SCH2816-TL-E | | |
| Q4801 | 6-550-242-01 | TRANSISTOR | DTC114EMT2L | | |
| Q4802 | 6-550-174-01 | TRANSISTOR | 2SA2030T2L | | |
| Q4803 | 6-550-237-01 | TRANSISTOR | 2SC5658T2LQ/R | | |
| Q5101 | 6-550-119-01 | TRANSISTOR | DTC144EMT2L | | |
| Q5103 | 6-550-119-01 | TRANSISTOR | DTC144EMT2L | | |
| Q5104 | 6-550-237-01 | TRANSISTOR | 2SC5658T2LQ/R | | |
| Q5108 | 6-551-338-01 | TRANSISTOR | UNR31AF00LS0 | | |
| Q5110 | 6-550-239-01 | TRANSISTOR | DTA144EMT2L | | |
| Q5111 | 8-729-053-54 | TRANSISTOR | HN1A01FE-Y/GR (TPLR3) | | |
| Q5112 | 6-550-174-01 | TRANSISTOR | 2SA2030T2L | | |
| | | < RESISTOR > | | | |
| R1009 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R1010 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R1015 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R1016 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R1026 | 1-218-954-11 | RES-CHIP | 1.2K | 5% | 1/16W |
| R1027 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R1028 | 1-218-951-11 | RES-CHIP | 680 | 5% | 1/16W |
| R1037 | 1-218-959-11 | RES-CHIP | 3.3K | 5% | 1/16W |
| R1214 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R1232 | 1-218-933-11 | RES-CHIP | 22 | 5% | 1/16W |
| R1314 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R1347 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R1702 | 1-218-990-81 | SHORT CHIP | 0 | | |
| | | | (NTSC: HD1000U/HD1000N) | | |
| R1704 | 1-218-990-81 | SHORT CHIP | 0 | | |
| | | | (PAL: HD1000E/HD1000P/HD1000C) | | |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R1706 | 1-218-929-11 | RES-CHIP | 10 | 5% | 1/16W |
| R1713 | 1-218-933-11 | RES-CHIP | 22 | 5% | 1/16W |
| R1717 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R1722 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R1725 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R1801 | 1-218-941-81 | RES-CHIP | 100 | 5% | 1/16W |
| R1802 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R1804 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R1807 | 1-218-990-81 | SHORT CHIP | 0 | | |
| | | | (NTSC: HD1000U/HD1000N) | | |
| R1808 | 1-218-990-81 | SHORT CHIP | 0 | | |
| | | | (PAL: HD1000E/HD1000P/HD1000C) | | |
| R1809 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R1810 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R1811 | 1-218-985-11 | RES-CHIP | 470K | 5% | 1/16W |
| R1812 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R1813 | 1-218-989-11 | RES-CHIP | 1M | 5% | 1/16W |
| R1814 | 1-218-989-11 | RES-CHIP | 1M | 5% | 1/16W |
| R1815 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R1820 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R1823 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R1824 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R1830 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R1906 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R1907 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R2030 | 1-208-860-81 | METAL CHIP | 75 | 0.5% | 1/16W |
| R2031 | 1-208-860-81 | METAL CHIP | 75 | 0.5% | 1/16W |
| R2032 | 1-208-860-81 | METAL CHIP | 75 | 0.5% | 1/16W |
| R2103 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R2105 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2106 | 1-208-711-11 | METAL CHIP | 15K | 0.5% | 1/16W |
| R2109 | 1-218-935-11 | RES-CHIP | 33 | 5% | 1/16W |
| R2111 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R2115 | 1-218-935-11 | RES-CHIP | 33 | 5% | 1/16W |
| R2116 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R2119 | 1-208-699-11 | METAL CHIP | 4.7K | 0.5% | 1/16W |
| R2120 | 1-208-715-11 | METAL CHIP | 22K | 0.5% | 1/16W |
| R2121 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2122 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R2123 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R2125 | 1-218-935-11 | RES-CHIP | 33 | 5% | 1/16W |
| R2132 | 1-208-873-81 | METAL CHIP | 270 | 0.5% | 1/16W |
| R2133 | 1-208-873-81 | METAL CHIP | 270 | 0.5% | 1/16W |
| R2134 | 1-208-873-81 | METAL CHIP | 270 | 0.5% | 1/16W |
| R2135 | 1-208-671-11 | METAL CHIP | 330 | 0.5% | 1/16W |
| R2136 | 1-208-671-11 | METAL CHIP | 330 | 0.5% | 1/16W |
| R2137 | 1-208-671-11 | METAL CHIP | 330 | 0.5% | 1/16W |
| R2138 | 1-208-869-11 | METAL CHIP | 180 | 0.5% | 1/16W |
| R2139 | 1-208-869-11 | METAL CHIP | 180 | 0.5% | 1/16W |
| R2140 | 1-208-869-11 | METAL CHIP | 180 | 0.5% | 1/16W |
| R2142 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2143 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2144 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R2145 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R2146 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R2147 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R2148 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R2149 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R2150 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R2153 | 1-218-935-11 | RES-CHIP | 33 | 5% | 1/16W |
| R2208 | 1-218-935-11 | RES-CHIP | 33 | 5% | 1/16W |
| R2215 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2216 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R2231 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R2233 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2235 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2240 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R2401 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R2402 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2707 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2709 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R2711 | 1-218-941-81 | RES-CHIP | 100 | 5% | 1/16W |
| R2712 | 1-218-941-81 | RES-CHIP | 100 | 5% | 1/16W |
| R2713 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R2715 | 1-218-941-81 | RES-CHIP | 100 | 5% | 1/16W |
| R2716 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R2717 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2720 | 1-218-963-11 | RES-CHIP | 6.8K | 5% | 1/16W |
| R2732 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2735 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2904 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R2906 | 1-218-975-11 | RES-CHIP | 68K | 5% | 1/16W |
| R2911 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2912 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2913 | 1-208-923-11 | METAL CHIP | 33K | 0.5% | 1/16W |
| R2914 | 1-208-943-11 | METAL CHIP | 220K | 0.5% | 1/16W |
| R2917 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R2920 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2921 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R2922 | 1-218-963-11 | RES-CHIP | 6.8K | 5% | 1/16W |
| R2923 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R2924 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R2925 | 1-218-963-11 | RES-CHIP | 6.8K | 5% | 1/16W |
| R2927 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R2928 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R2929 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R2930 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R2945 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R3001 | 1-208-860-81 | METAL CHIP | 75 | 0.5% | 1/16W |
| R3002 | 1-208-860-81 | METAL CHIP | 75 | 0.5% | 1/16W |
| R3003 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R3004 | 1-208-860-81 | METAL CHIP | 75 | 0.5% | 1/16W |
| R3006 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R3007 | 1-218-941-81 | RES-CHIP | 100 | 5% | 1/16W |
| R3008 | 1-218-941-81 | RES-CHIP | 100 | 5% | 1/16W |
| R3009 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| | | | (NTSC: HD1000U/HD1000N) | | |
| R3010 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R3011 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R3012 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R3013 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R3014 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R3016 | 1-218-960-11 | RES-CHIP | 3.9K | 5% | 1/16W |
| R3017 | 1-218-971-11 | RES-CHIP | 33K | 5% | 1/16W |
| R3018 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R3019 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R3020 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R3021 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R3203 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R3204 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R3205 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R3206 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R3207 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R3208 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R3209 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R3210 | 1-218-937-11 | RES-CHIP | 47 | 5% | 1/16W |
| R3218 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R3219 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R3220 | 1-218-956-11 | RES-CHIP | 1.8K | 5% | 1/16W |
| R3221 | 1-218-956-11 | RES-CHIP | 1.8K | 5% | 1/16W |
| R3229 | 1-208-886-81 | METAL CHIP | 910 | 0.5% | 1/16W |
| R3233 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R3234 | 1-208-720-11 | METAL CHIP | 36K | 0.5% | 1/16W |
| R3401 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R3402 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R3403 | 1-208-652-11 | METAL CHIP | 51 | 0.5% | 1/16W |
| R3404 | 1-208-652-11 | METAL CHIP | 51 | 0.5% | 1/16W |
| R3405 | 1-208-652-11 | METAL CHIP | 51 | 0.5% | 1/16W |
| R3406 | 1-208-652-11 | METAL CHIP | 51 | 0.5% | 1/16W |
| R3407 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R3408 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R3409 | 1-208-906-81 | METAL CHIP | 6.2K | 0.5% | 1/16W |
| R3412 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R3413 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R3701 | 1-218-975-11 | RES-CHIP | 68K | 5% | 1/16W |
| R3702 | 1-218-949-11 | RES-CHIP | 470 | 5% | 1/16W |
| R3705 | 1-208-935-11 | METAL CHIP | 100K | 0.5% | 1/16W |
| R3707 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R3708 | 1-208-691-11 | METAL CHIP | 2.2K | 0.5% | 1/16W |
| R3709 | 1-208-687-11 | METAL CHIP | 1.5K | 0.5% | 1/16W |
| R3711 | 1-218-957-11 | RES-CHIP | 2.2K | 5% | 1/16W |
| R3712 | 1-208-861-81 | METAL CHIP | 82 | 0.5% | 1/16W |
| R4401 | 1-218-941-81 | RES-CHIP | 100 | 5% | 1/16W |
| R4402 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R4403 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R4404 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R4406 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R4407 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R4408 | 1-218-985-11 | RES-CHIP | 470K | 5% | 1/16W |
| R4413 | 1-218-981-91 | RES-CHIP | 220K | 5% | 1/16W |
| R4414 | 1-218-975-11 | RES-CHIP | 68K | 5% | 1/16W |
| R4416 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R4417 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R4418 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R4419 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R4420 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R4421 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R4422 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R4423 | 1-218-985-11 | RES-CHIP | 470K | 5% | 1/16W |
| R4601 | 1-208-931-11 | METAL CHIP | 68K | 0.5% | 1/16W |
| R4602 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R4603 | 1-218-989-11 | RES-CHIP | 1M | 5% | 1/16W |
| R4604 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R4605 | 1-216-150-91 | RES-CHIP | 10 | 5% | 1/8W |
| R4607 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R4608 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R4610 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R4611 | 1-208-691-11 | METAL CHIP | 2.2K | 0.5% | 1/16W |
| R4612 | 1-208-889-11 | METAL CHIP | 1.2K | 0.5% | 1/16W |
| R4613 | 1-208-933-11 | METAL CHIP | 82K | 0.5% | 1/16W |
| R4614 | 1-208-944-81 | METAL CHIP | 240K | 0.5% | 1/16W |
| R4615 | 1-216-789-11 | METAL CHIP | 2.2 | 5% | 1/10W |
| R4617 | 1-218-941-81 | RES-CHIP | 100 | 5% | 1/16W |
| R4619 | 1-218-944-11 | RES-CHIP | 180 | 5% | 1/16W |
| R4620 | 1-218-949-11 | RES-CHIP | 470 | 5% | 1/16W |
| R4631 | 1-216-864-11 | SHORT CHIP | 0 | | |
| R4675 | 1-208-711-11 | METAL CHIP | 15K | 0.5% | 1/16W |
| R4676 | 1-208-933-11 | METAL CHIP | 82K | 0.5% | 1/16W |
| R4683 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R4685 | 1-216-295-91 | SHORT CHIP | 0 | | |
| R4801 | 1-218-935-11 | RES-CHIP | 33 | 5% | 1/16W |
| R4802 | 1-218-935-11 | RES-CHIP | 33 | 5% | 1/16W |
| R4803 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R4804 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R4805 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R4806 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R4807 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R4808 | 1-216-789-11 | METAL CHIP | 2.2 | 5% | 1/10W |
| R4809 | 1-216-789-11 | METAL CHIP | 2.2 | 5% | 1/10W |
| R4810 | 1-216-789-11 | METAL CHIP | 2.2 | 5% | 1/10W |
| R4811 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R4812 | 1-218-946-11 | RES-CHIP | 270 | 5% | 1/16W |
| R4813 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R4816 | 1-218-967-11 | RES-CHIP | 15K | 5% | 1/16W |
| R4818 | 1-218-935-11 | RES-CHIP | 33 | 5% | 1/16W |
| R4819 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R4820 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R4821 | 1-218-969-11 | RES-CHIP | 22K | 5% | 1/16W |
| R4822 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R4824 | 1-218-957-11 | RES-CHIP | 2.2K | 5% | 1/16W |
| R4903 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R4904 | 1-218-969-11 | RES-CHIP | 22K | 5% | 1/16W |
| R4907 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R4908 | 1-218-963-11 | RES-CHIP | 6.8K | 5% | 1/16W |
| R4909 | 1-208-715-11 | METAL CHIP | 22K | 0.5% | 1/16W |
| R4910 | 1-208-911-11 | METAL CHIP | 10K | 0.5% | 1/16W |
| R4911 | 1-208-911-11 | METAL CHIP | 10K | 0.5% | 1/16W |
| R4913 | 1-208-715-11 | METAL CHIP | 22K | 0.5% | 1/16W |
| R4914 | 1-208-869-11 | METAL CHIP | 180 | 0.5% | 1/16W |
| R4915 | 1-208-869-11 | METAL CHIP | 180 | 0.5% | 1/16W |
| R4916 | 1-208-869-11 | METAL CHIP | 180 | 0.5% | 1/16W |
| R4917 | 1-208-869-11 | METAL CHIP | 180 | 0.5% | 1/16W |
| R5001 | 1-218-867-11 | METAL CHIP | 6.8K | 0.5% | 1/10W |
| R5002 | 1-208-893-11 | METAL CHIP | 1.8K | 0.5% | 1/16W |
| R5008 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R5016 | 1-219-570-11 | METAL CHIP | 10M | 5% | 1/10W |
| R5017 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R5023 | 1-218-989-11 | RES-CHIP | 1M | 5% | 1/16W |
| R5024 | 1-218-949-11 | RES-CHIP | 470 | 5% | 1/16W |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R5037 | 1-218-965-11 | RES-CHIP | 10K (NTSC: HD1000U/HD1000N) | 5% | 1/16W |
| R5039 | 1-218-965-11 | RES-CHIP | 10K (PAL: HD1000E/HD1000P/HD1000C) | 5% | 1/16W |
| R5041 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R5044 | 1-208-935-11 | METAL CHIP | 100K | 0.5% | 1/16W |
| R5045 | 1-208-927-11 | METAL CHIP | 47K | 0.5% | 1/16W |
| R5046 | 1-218-989-11 | RES-CHIP | 1M | 5% | 1/16W |
| R5047 | 1-218-985-11 | RES-CHIP | 470K | 5% | 1/16W |
| R5048 | 1-218-990-81 | SHORT CHIP | 0 | | |
| R5050 | 1-218-945-11 | RES-CHIP | 220 | 5% | 1/16W |
| R5052 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5053 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R5106 | 1-220-884-81 | METAL CHIP | 39 | 0.5% | 1/16W |
| R5107 | 1-218-989-11 | RES-CHIP | 1M | 5% | 1/16W |
| R5108 | 1-220-884-81 | METAL CHIP | 39 | 0.5% | 1/16W |
| R5116 | 1-218-985-11 | RES-CHIP | 470K | 5% | 1/16W |
| R5117 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R5122 | 1-218-985-11 | RES-CHIP | 470K | 5% | 1/16W |
| R5127 | 1-218-933-11 | RES-CHIP | 22 | 5% | 1/16W |
| R5129 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R5131 | 1-220-169-11 | RES-CHIP | 75 | 5% | 1/16W |
| R5140 | 1-218-973-11 | RES-CHIP | 47K | 5% | 1/16W |
| R5149 | 1-218-989-11 | RES-CHIP | 1M | 5% | 1/16W |
| R5157 | 1-218-965-11 | RES-CHIP | 10K | 5% | 1/16W |
| R5158 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R5173 | 1-218-955-11 | RES-CHIP | 1.5K | 5% | 1/16W |
| R5174 | 1-218-962-11 | RES-CHIP | 5.6K | 5% | 1/16W |
| R5175 | 1-218-959-11 | RES-CHIP | 3.3K | 5% | 1/16W |
| R5176 | 1-218-961-11 | RES-CHIP | 4.7K | 5% | 1/16W |
| R5177 | 1-216-791-11 | METAL CHIP | 3.3 | 5% | 1/10W |
| R5178 | 1-218-957-11 | RES-CHIP | 2.2K | 5% | 1/16W |
| R5179 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R5180 | 1-218-959-11 | RES-CHIP | 3.3K | 5% | 1/16W |
| R5181 | 1-218-959-11 | RES-CHIP | 3.3K | 5% | 1/16W |
| R5182 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R5183 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R5186 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R5187 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |
| R5188 | 1-218-977-11 | RES-CHIP | 100K | 5% | 1/16W |
| R5204 | 1-218-953-11 | RES-CHIP | 1K | 5% | 1/16W |

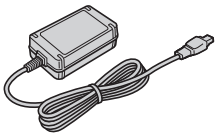
< COMPOSITION CIRCUIT BLOCK >

| | | | |
|---|---|---|---|
| RB1001 | 1-234-375-21 | RES, NETWORK | 1K (1005X4) |
| RB2201 | 1-234-377-21 | RES, NETWORK | 4.7K (1005X4) |
| RB2202 | 1-234-377-21 | RES, NETWORK | 4.7K (1005X4) |
| RB2203 | 1-234-377-21 | RES, NETWORK | 4.7K (1005X4) |
| RB2204 | 1-234-377-21 | RES, NETWORK | 4.7K (1005X4) |
| RB2205 | 1-234-377-21 | RES, NETWORK | 4.7K (1005X4) |
| RB3701 | 1-234-369-21 | RES, NETWORK | 10 (1005X4) |
| RB4401 | 1-234-381-11 | RES, NETWORK | 100K (1005X4) |
| RB4402 | 1-234-381-11 | RES, NETWORK | 100K (1005X4) |
| RB4403 | 1-234-381-11 | RES, NETWORK | 100K (1005X4) |
| RB4701 | 1-234-377-21 | RES, NETWORK | 4.7K (1005X4) |
| RB5001 | 1-234-375-21 | RES, NETWORK | 1K (1005X4) |
| RB5003 | 1-234-378-21 | RES, NETWORK | 10K (1005X4) |
| RB5005 | 1-234-381-21 | RES, NETWORK | 100K (1005X4) |
| RB5006 | 1-234-375-21 | RES, NETWORK | 1K (1005X4) |

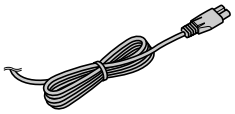
| Ref. No. | Part No. | Description |
|---|---|---|
| RB5007 | 1-234-375-21 | RES, NETWORK 1K (1005X4) |
| RB5102 | 1-234-381-21 | RES, NETWORK 100K (1005X4) |
| RB5103 | 1-234-375-21 | RES, NETWORK 1K (1005X4) |
| RB5104 | 1-234-375-21 | RES, NETWORK 1K (1005X4) |
| RB5106 | 1-234-378-21 | RES, NETWORK 10K (1005X4) |
| RB5107 | 1-234-375-21 | RES, NETWORK 1K (1005X4) |
| RB5109 | 1-234-375-21 | RES, NETWORK 1K (1005X4) |
| RB5110 | 1-234-378-21 | RES, NETWORK 10K (1005X4) |
| | | < VIBRATOR > |
| * X1701 | 1-813-854-21 | QUARTZ CRYSTAL OSCILLATOR (74.25MHz) (PAL: HD1000E/HD1000P/HD1000C) |
| * X1701 | 1-813-855-21 | QUARTZ CRYSTAL OSCILLATOR (89.010989MHz) (NTSC: HD1000U/HD1000N) |
| * X1801 | 1-767-205-81 | VIBRATOR, CRYSTAL (20MHz) |
| X3401 | 1-781-045-21 | VIBRATOR, CRYSTAL (24.576MHz) |
| * X4401 | 1-767-205-81 | VIBRATOR, CRYSTAL (20MHz) |
| X5002 | 1-781-525-11 | VIBRATOR, CRYSTAL (32.768kHz) |
| X5101 | 1-781-620-21 | VIBRATOR, CERAMIC (48MHz) |

## Checking supplied accessories.

Note: This item is supplied with the unit as an accessory, but is not prepared as a service part.



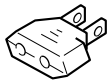
AC Adaptor
AC-L100
⚠ 1-479-286-21



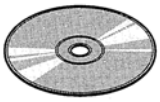
Power Cord
⚠ 1-790-107-42 (US, CND)
⚠ 1-575-131-82 (AEP, E)
⚠ 1-782-476-51 (CH)

Operating Guide
3-278-988-11 (ENGLISH) (HD1000U/HD1000N)
3-279-638-11 (ENGLISH) (HD1000E/HD1000P)
3-279-638-21 (SIMPLIFIED CHINESE) (HD1000C)

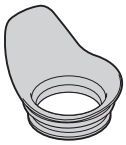
A/V Connecting Cable
1-823-364-21



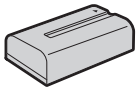
Conversion 2P Adaptor
⚠ 1-569-008-12 (E)



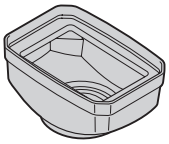
CD-ROM
("Manuals for Digital HD Video Camera Recorder")
3-279-636-01



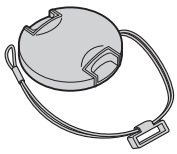
Eye cup
3-283-026-01



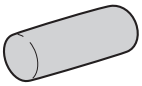
Rechargeable Battery Pack
NP-F570
(Note)



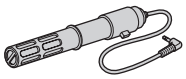
Lens Hood
X-2187-866-1



Lens Cap
X-2187-867-1



Wind Screen
3-283-027-01



Microphone
1-542-750-11

Operating Guide (PDF)

The CD-ROM supplied contains all of language version of the Operating Guide (PDF) for printing.
• The printed matter is not supplied. If required, please order it with the part number below.

3-278-988-11 (ENGLISH)
＊ 3-278-988-21 (FRENCH)
3-279-638-11 (ENGLISH)
3-279-638-21 (SIMPLIFIED CHINESE)
＊ 3-279-638-31 (FRENCH)
＊ 3-279-638-41 (SPANISH)
＊ 3-279-638-51 (ITALIAN)
＊ 3-279-638-61 (GERMAN)

• Refer to page 5-1 for mark ⚠.

# 6. ADJUSTMENTS

## Link


- Before starting adjustments
  - Adjusting items when replacing main parts and boards
  - List of service tools
- CAMERA SECTION ADJUSTMENTS
  - PREPARATIONS BEFORE ADJUSTMENTS
  - INITIALIZATION OF EVR DATA
  - CAMERA SYSTEM ADJUSTMENTS
  - ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS
  - LCD SYSTEM ADJUSTMENTS
- MECHANISM SECTION ADJUSTMENTS
  - PREPARATIONS FOR CHECK, ADJUSTMENT AND REPLACEMENT OF MECHANISM BLOCK
  - PERIODIC INSPECTION AND MAINTENANCE
  - CHECK, ADJUSTMENT AND REPLACEMENT OF MECHANICAL PARTS
  - ADJUSTMENT
- VIDEO SECTION ADJUSTMENTS
  - PREPARATIONS BEFORE ADJUSTMENTS
  - SYSTEM CONTROL SYSTEM ADJUSTMENTS
  - SERVO AND RF SYSTEM ADJUSTMENTS
  - VIDEO SYSTEM ADJUSTMENTS
  - AUDIO SYSTEM ADJUSTMENTS
- SERVICE MODE
  - ADJUSTMENT REMOTE COMMANDER (RM-95)
  - ADJUSTMENT REMOTE COMMANDER (NEW LANC JIG)
  - DATA PROCESS
  - SERVICE MODE

# SECTION 6
# ADJUSTMENTS

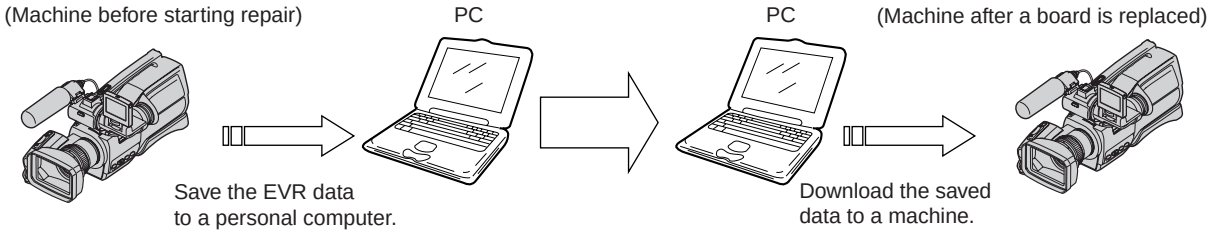
## 1. Before starting adjustments

**EVR Data Re-writing Procedure When Replacing Board**

The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

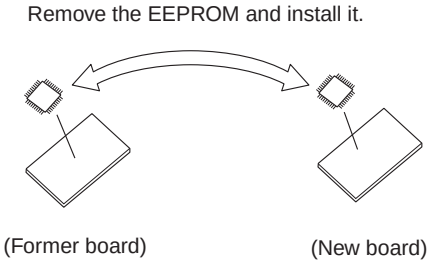
### Procedure 1

Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.



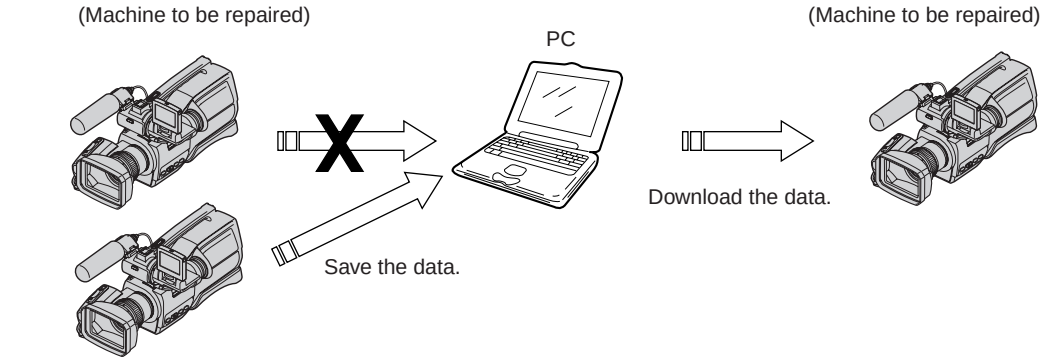

### Procedure 2

Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.




### Procedure 3

When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.




After the EVR data is saved and downloaded, check the respective items of the EVR data.
(Refer to page 6-3 for the items to be checked)

### 1-1. Adjusting items when replacing main parts and boards

**• Adjusting items when replacing main parts**

When replacing main parts, adjust the items indicated by ● in the following table.

**Note 1:** When replacing the drum assy or the mechanism deck, reset the data of page: 7, address: A8 to AB to "00". (Refer to "Record of Use check" of "6-4. SERVICE MODE")

| Adjustment Section | Adjustment | Block replacement | | | | | | Replaced part: Mounted part replacement | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Lens device | LCD block LCD901 (LCD panel, Touch panel) | EVF block LCD902 (LCD panel) | Mechanism deck (Note 1) | Mechanism deck M901 (Drum assembly) (Note 1) | Mechanism deck MD block | CM-077 board IC6701 (CMOS imager) | CM-077 board SE7201, 7202 (YAW, PITCH sensor) | VC-500 board IC1701, X1701 (Clock generator) | VC-500 board IC1201, 1301 (CDS, A/D converter) | VC-500 board IC2101 (Base band signal process, etc.) | VC-500 board IC2701 (DV signal process) | VC-500 board IC3001 (Video out) | VC-500 board IC2001 (Component out AMP) | VC-500 board IC4901 (REC/PB AMP) | VC-500 board IC3701 (EVF drive) | BL-015 board D5901 (Back light (EVF)) | PD-342 board IC6201 (LCD driver) | PD-342 board D6206 - 6208 (Back light (LCD)) |
| Initialization of EVR data | Initialization of A, B, D, 1A, 1B page data | | | | | | | | | | | | | | | | | | | | |
| | Initialization of 8, 9, C, 13, 18, 1C, 1D page data | | | | | | | | | | | | | | | | | | | | |
| | Initialization of F, 63 to 6F page data | | | | | | | | | | | | | | | | | | | | |
| | Initialization of 7C, 7E, 7F page data | | | | | | | | | | | | | | | | | | | | |
| Camera | Origin oscillation check | | | | | | | | | ● | | | | | | | | | | | |
| | HALL adj. (1) | ● | | | | | | | | | | | | | | | | | | | |
| | HALL adj. (2) | ● | | | | | | | | | | | | | | | | | | | |
| | MR adj. | ● | | | | | | | | | | | | | | | | | | | |
| | Differential gain adj. | | | | | | | ● | | | ● | | | | | | | | | | |
| | Flange back adj. | ● | | | | | | ● | | | | | | | | | | | | | |
| | F No. & ND light quality standard data input | ● | | | | | | | | | | | | | | | | | | | |
| | Mechanical shutter adj. (1)/(2) | ● | | | | | | | | | | | | | | | | | | | |
| | Linear matrix adj. (1)/(2) | | | | | | | ● | | | ● | | | | | | | | | | |
| | Auto white balance standard data input | | | | | | | ● | | | ● | | | | | | | | | | |
| | LV standard data input | | | | | | | ● | | | ● | | | | | | | | | | |
| | Auto white balance adj. | | | | | | | ● | | | ● | | | | | | | | | | |
| | Color reproduction adj. | | | | | | | ● | | | ● | | | | | | | | | | |
| | MAX GAIN adj. | | | | | | | ● | | | ● | | | | | | | | | | |
| | White defect Adj. | | | | | | | ● | | | | | | | | | | | | | |
| | Black defect Adj. | ● | | | | | | ● | | | | | | | | | | | | | |
| | Angular velocity sensor sensitivity adj. | ● | | | | | | | ● | | | | | | | | | | | | |
| EVF | EVF automatic adj. | | | | | | | | | | | ● | | | | | ● | | | | |
| | White balance adj. | | | ● | | | | | | | | | | | | | ● | ● | | | |
| LCD | LCD automatic adj. | | | | | | | | | | | ● | | | | | | | ● | | |
| | V-COM adj. | | ● | | | | | | | | | | | | | | | | ● | | |
| | Transmissive mode white balance adj. | | ● | | | | | | | | | | | | | | | | ● | ● | |
| | Reflective mode white balance adj. | | ● | | | | | | | | | | | | | | | | ● | | |
| | Sample hold phase adj. | | ● | | | | | | | | | | | | | | | | ● | | |
| | Touch panel adj. | | ● | | | | | | | | | | | | | | | | | | |
| Mechanism | Tape path adj. | | | | ● | ● | ● | | | | | | | | | | | | | | |
| System control | Node uniqe ID No. input | | | | | | | | | | | | | | | | | | | | |
| | USB Serial number data setting | | | | | | | | | | | | | | | | | | | | |
| Servo, RF | CAP FG duty adj. | | | | ● | | ● | | | | | | | | | | | | | | |
| | Switching position adj. | | | | ● | ● | ● | | | | | | | | | | | | | | |
| | Error rate check | | | | ● | ● | ● | | | | | | ● | | | ● | | | | | |
| Video | S VIDEO OUT Y level adj. | | | | | | | | | | | ● | | ● | | | | | | | |
| | S VIDEO OUT chroma level adj. | | | | | | | | | | | ● | | ● | | | | | | | |
| | COMPONENT OUT Y level adj. | | | | | | | | | | | ● | | | ● | | | | | | |
| | COMPONENT OUT Pr level adj. | | | | | | | | | | | ● | | | ● | | | | | | |
| | COMPONENT OUT Pb level adj. | | | | | | | | | | | ● | | | ● | | | | | | |

***Table 6-1-1 (1)***

**• Adjusting items when replacing a board or EEPROM**

When replacing a board or EEPROM, adjust the items indicated by ● in the following table.

| Adjustment Section | Adjustment | Replaced part: CM-077 board (COMPLETE) | VC-500 board (COMPLETE) | BL-015 board (COMPLETE) | PD-342 board (COMPLETE) | VC-500 board IC1802 (EEPROM) | Supporting RadarW |
|---|---|---|---|---|---|---|---|
| Initialization of EVR data | Initialization of A, B, D, 1A, 1B page data | | ● | | | | |
| | Initialization of 8, 9, C, 13, 18, 1C, 1D page data | | ● | | | | |
| | Initialization of F, 63 to 6F page data | | ● | | | ● | |
| | Initialization of 7C, 7E, 7F page data | | ● | | | ● | |
| Camera | Origin oscillation check | | ● | | | | |
| | HALL adj. (1) | | ● | | | ● | ● |
| | HALL adj. (2) | | ● | | | ● | ● |
| | MR adj. | | ● | | | ● | ● |
| | Differential gain adj. | ● | ● | | | ● | ● |
| | Flange back adj. | ● | ● | | | ● | ● |
| | F No. & ND light quality standard data input | | ● | | | ● | ● |
| | Mechanical shutter adj. (1)/(2) | | ● | | | ● | ● |
| | Linear matrix adj. (1)/(2) | | ● | | | ● | ● |
| | Auto white balance standard data input | ● | ● | | | ● | ● |
| | LV standard data input | ● | ● | | | ● | ● |
| | Auto white balance adj. | ● | ● | | | ● | ● |
| | Color reproduction adj. | ● | ● | | | ● | ● |
| | MAX GAIN adj. | ● | ● | | | ● | ● |
| | White defect Adj. | ● | ● | | | ● | ● |
| | Black defect Adj. | ● | ● | | | ● | ● |
| | Angular velocity sensor sensitivity adj. | ● | | | | ● | |
| EVF | EVF automatic adj. | | ● | | | | ● |
| | White balance adj. | | ● | ● | | | |
| LCD | LCD automatic adj. | | ● | | ● | | ● |
| | V-COM adj. | | ● | | ● | | |
| | Transmissive mode white balance adj. | | ● | | ● | | |
| | Reflective mode white balance adj. | | ● | | ● | | ● |
| | Sample hold phase adj. | | ● | | ● | | |
| | Touch panel adj. | | ● | | | | |
| Mechanism | Tape path adj. | | | | | | |
| System control | Node unique ID No. input | | ● | | | | |
| | USB Serial number data setting | | ● | | | | |
| Servo, RF | CAP FG duty adj. | | ● | | | | ● |
| | Switching position adj. | | ● | | | | ● |
| | Error rate check | | ● | | | | ● |
| Video | S VIDEO OUT Y level adj. | | ● | | | | |
| | S VIDEO OUT chroma level adj. | | ● | | | | |
| | COMPONENT OUT Y level adj. | | ● | | | | |
| | COMPONENT OUT Pr level adj. | | ● | | | | |
| | COMPONENT OUT Pb level adj. | | ● | | | | |

***Table 6-1-1 (2)***

**Note 2:** When the repair is finished, confirm the following items.

1. Shoot the all black subject (Attach the lens cap and shoot), and confirm that there is no level difference like vertical stripes in the picture.
2. Shoot a subject of low light, and confirm that there is no level difference like vertical stripes in the picture.
3. Shoot a subject of normal light, and confirm that there is no level difference like vertical stripes in the picture.

   When the above symptom occurs, perform the whole process of "Differencal Gain Adjustment".

**Note 3:** IC2402 (Flash memory) on the VC-500 board and IC5202 (32M Flash memory) on the VC-500 board cannot be replaced.

### 1-2. List of service tools

- Oscilloscope
- Color monitor
- Vectorscope
- Digital voltmeter
- Frequency counter
- Audio level meter
- Calculating machine capable of calculating hexadecimal numbers

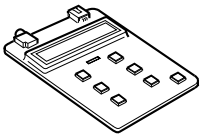
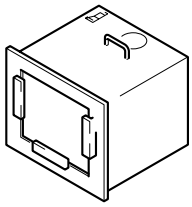
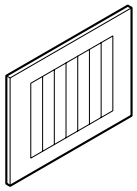
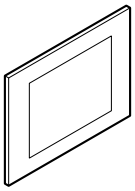
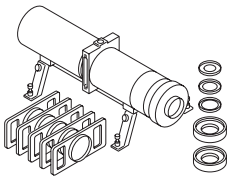
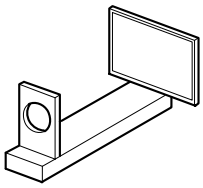
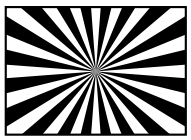
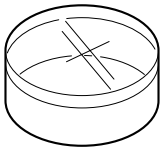
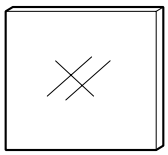
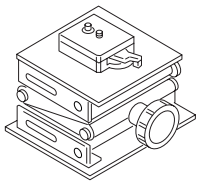
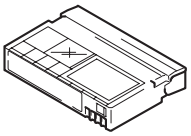
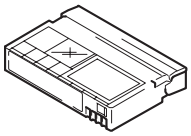
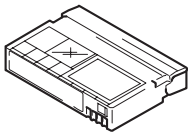
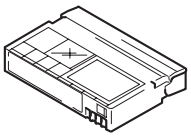
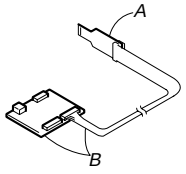
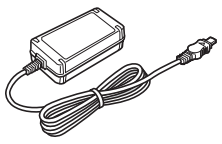
| | | |
|---|---|---|
| J-1<br> <br>Adjustment remote commander<br>(RM-95)<br>J-6082-053-B | J-2<br>  <br>Adjustment remote commander<br>(NEW LANC JIG)<br>J-6082-565-A | J-3<br> <br>LANC cable<br>J-6082-442-A |
| J-4<br>  <br>Pattern box PTB-450<br>J-6082-200-A<br>or<br>Small pattern box<br>PTB-1450<br>J-6082-557-A | J-5<br>  <br>Color bar chart<br>For PTB-450:<br>J-6020-250-A<br>For PTB-1450:<br>J-6082-559-A | J-6<br>  <br>Clear chart<br>For PTB-450:<br>J-6080-621-A<br>For PTB-1450:<br>J-6082-560-A |
| J-7<br>  <br>Minipattern box<br>J-6082-353-B | J-8<br>  <br>Flange back adjustment jig<br>J-6082-563-A | J-9<br>  <br>Siemens star chart<br>J-6080-875-A |
| J-10<br>  <br>Filter for color temperature correction<br>(C14)<br>J-6080-058-A | J-11<br>  <br>ND filter 1.0<br>J-6080-808-A<br>ND filter 0.4<br>J-6080-806-A<br>ND filter 0.1<br>J-6080-807-A | J-12<br>  <br>Camera table<br>J-6082-384-A |
| J-13<br>  <br>Tracking standard<br>(XH2-1)<br>8-967-997-01 | J-14<br>  <br>SW/OL standard<br>(XH2-3)<br>8-967-997-11 | J-15<br>Audio operation check<br>  <br>for NTSC (XH5-3)<br>8-967-997-51<br>for PAL (XH5-3P)<br>8-967-997-55 |
| J-16<br>  <br>System operation check<br>for NTSC (XH5-5)<br>8-967-997-61<br>for PAL (XH5-5P)<br>8-967-997-66 | J-17<br>  <br><br>A: CPC-15<br>J-6082-564-A<br>B: I/F unit for LANC control<br>J-6082-521-A | J-18<br>  <br>AC power adaptor<br>AC-L100<br>1-479-286-21 |

***Fig. 6-1-1 (1)***

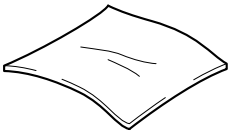
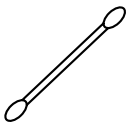
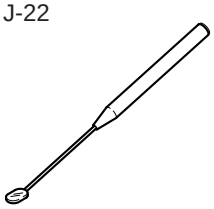
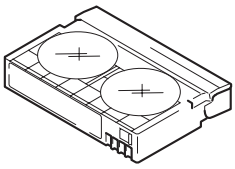
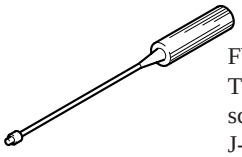
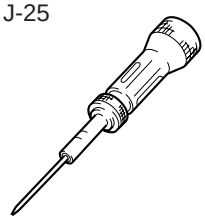
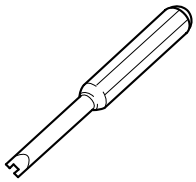
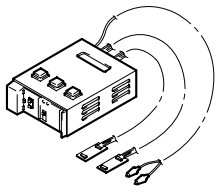
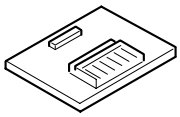
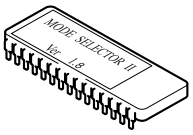
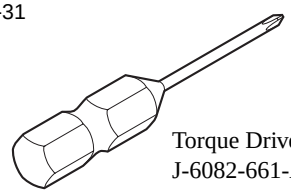
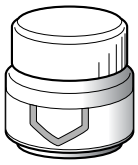
| | | |
|---|---|---|
| J-19<br> <br>Head cleaning liquid<br>9-919-573-01 | J-20<br>  <br>Wiping cloth<br>7-741-900-53 | J-21<br>  <br>Super-fine applicator<br>(made by Nippon<br>Applicator (P752D)) |
| J-22<br>  <br>Mirror<br>(small oval type)<br>J-6080-840-A | J-23<br>  <br>Mini DV<br>torque cassette<br>J-6082-360-A | J-24<br>  <br>FWD/BACK<br>T adjustment<br>screwdriver<br>J-6082-364-A |
| J-25<br>  <br>Torque screwdriver<br>J-9049-330-A | J-26<br>  <br>Tape path<br>screwdriver<br>J-6082-026-A | J-28<br>  <br>Mode Selector II<br>J-6082-282-B |
| J-29<br>  <br>Mode Selector II<br>conversion board (N)<br>J-6082-567-A | J-30<br>  <br>Mode Selector II<br>ROM (Note1)<br>J-6082-314-G | J-31<br>  <br>Torque Driver Bit (#0)<br>J-6082-661-A |
| J-32<br>  <br>Grease<br>(SUNCALL FG-87HSR)<br>7-640-006-08 | | |

***Fig. 6-1-1 (2)***

**Note 1:** This is the ROM used for upgrading the version of Mode Selector II to enable it to be used for the N mechanism. Set the indication to “Z” when using the mode selector II.

## 6-1. CAMERA SECTION ADJUSTMENTS

### 1-1. PREPARATIONS BEFORE ADJUSTMENTS (CAMERA SECTION)

#### 1-1-1. Preparations

**Note:** Before perform the adjustment, check that the data of page: 0, address: 10 is “00”.
If not, select page: 0, address: 10, and set data “00”.

1) Connect the equipment for adjustments according to Fig. 6-1-3.

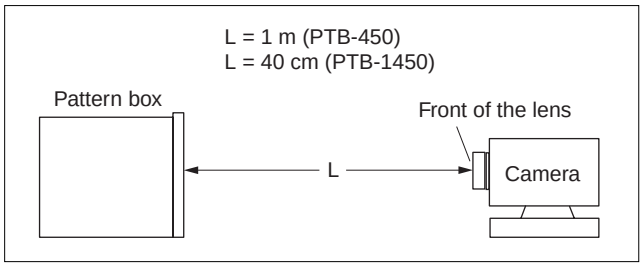



***Fig. 6-1-2***

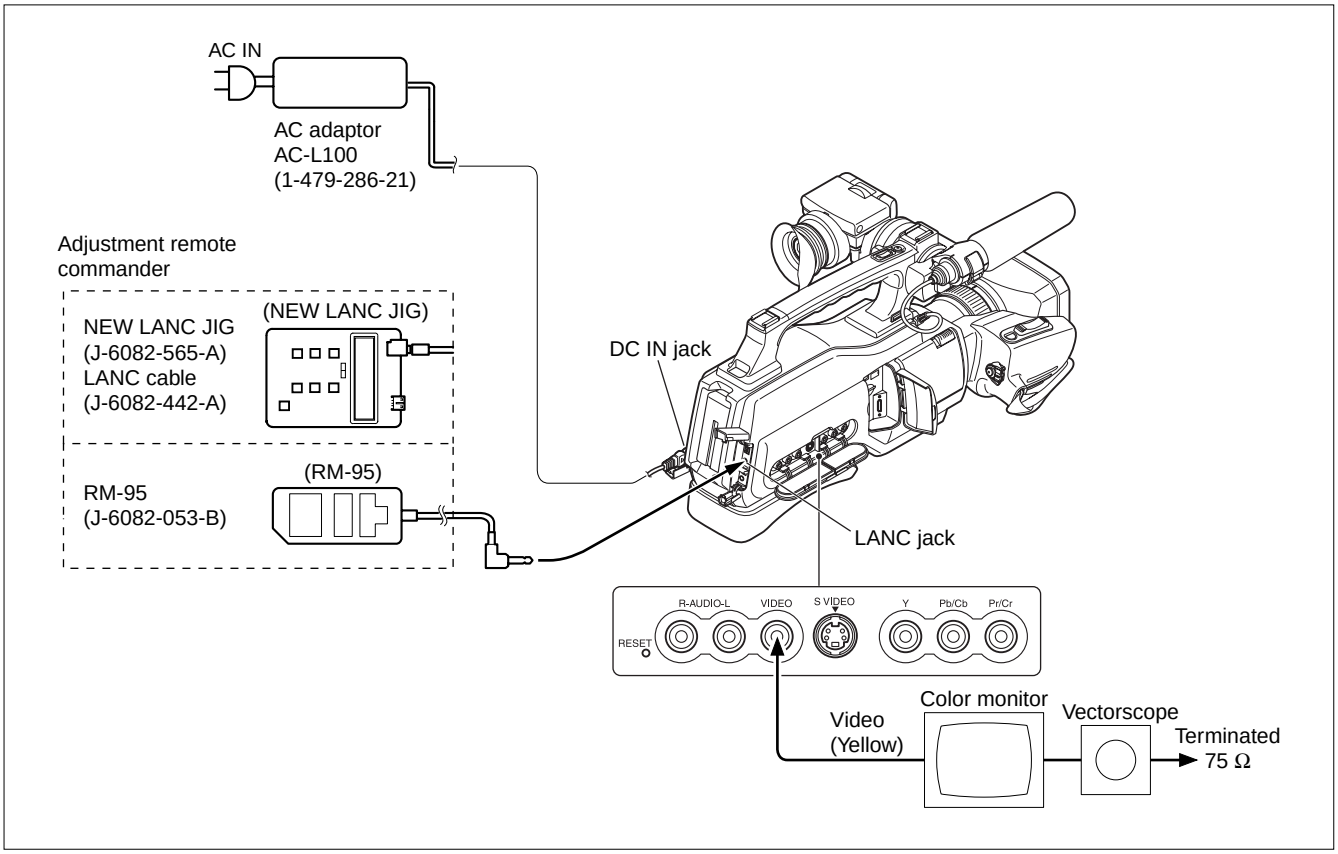



***Fig. 6-1-3***

### 1-1-2. Precaution

#### 1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments without loading cassette.

1. POWER switch (PS90500 block) ..... CAMERA-TAPE
2. BACK LIGHT (SP-048 board) ..... OFF
3. NIGHT SHOT switch (SP-048 board) ..... OFF
4. SCENE SELECT (MENU setting) ..... AUTO
5. SPOT METER (MENU setting) ..... AUTO
6. EXPOSURE (MENU setting) ..... AUTO
7. WHITE BAL. (MENU setting) ..... AUTO
8. AE SHIFT (MENU setting) ..... 0
9. WB SHIFT (MENU setting) ..... 0
10. FOCUS (MENU setting) ..... MANUAL
11. COLOR SLOW S (MENU setting) ..... OFF
12. DIGITAL ZOOM (MENU setting) ..... OFF
13. STEADY SHOT (MENU setting) ..... OFF
14. D. EFFECT (MENU setting) ..... OFF
15. PICT. EFFECT (MENU setting) ..... OFF
16. REC FORMAT (MENU setting) ..... HDV 1080i

#### 2. Order of Adjustments

Basically carry out adjustments in the order given.

**Color bar chart (Color reproduction adjustment frame)**

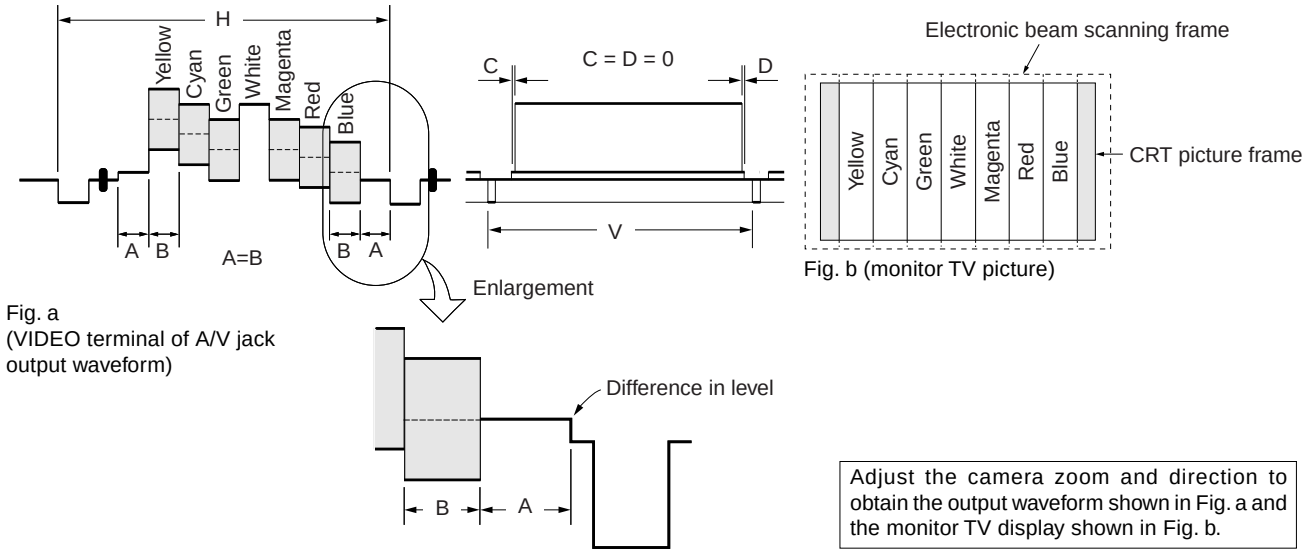



***Fig. 6-1-4***

#### 3. Subjects

1) Color bar chart (Color reproduction adjustment frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 6-1-4. (Color reproduction adjustment frame)
2) Clear chart (AWB adjustment frame)
   Shoot the color bar chart. Then adjust the zoom to TELE side from WIDE side, and stop it when the black frame of the chart disappears. Remove the color bar chart from pattern box and insert a clear chart in its place.
3) Chart for flange back adjustment
   Join together a piece of white A0 size paper (1189 mm × 841 mm) and a piece of black paper to make the chart shown in Fig. 6-1-5.

**Note:** Use a non-reflecting and non-glazing vellum paper. The size must be A0 or larger and the joint between the white and black paper must not have any undulations.

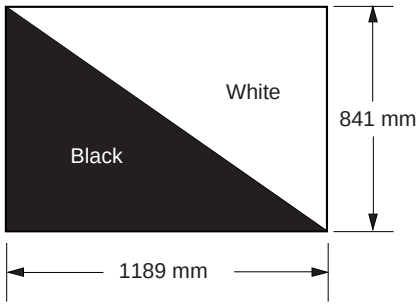



***Fig. 6-1-5***

## 1-2. INITIALIZATION OF EVR DATA

**Note 1:** Pages used for the EVR consists of 26 pages. There are 8, 9, A to D, F, 13, 18, 1A to 1D, 63 to 6F pages.

**Note 2:** When reading or writing the 13, 18, 1A, 1B, 1C or 1D page data, select page: 0, address: 10, and set data: 01, then sclect 3, 8, A, B, C or D page. The 13, 18, 1A, 1B, 1C or 1D page can be chosen by this data setting.
After reading or writing, reset the data or page: 0, address: 10 to "00".

**Note 3:** When reading or writing the 63 to 6F page data, select page: 0, address: 10, and set data: 06, then select 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, or F page. The 63, 64, 65, 66, 67, 68, 69, 6A, 6B, 6C, 6D, 6E, or 6F page can be chosen by this data setting.
After reading or writing, reste the data of page: 0, address: 10 to "00".

### 1-3-1. Initialization of A, B, D, 1A, 1B Page Data

**Note:** Check that the data of page: 0, address: 10 is "00".

### 1. Initializing of A, B, D, 1A, 1B Page Data

**Note:** If the A, B, D, 1A, 1B page data has been initialized, the following adjustments need to be performed again.
1) Modification of A, B, D, 1A, 1B page data
2) Touch panel adjustment

| | |
|---|---|
| Adjustment Page | A |
| Adjustment Address | 10 to FF |
| Adjustment Page | B |
| Adjustment Address | 00 to FF |
| Adjustment Page | D |
| Adjustment Address | 10 to FF |
| Adjustment Page | 1A |
| Adjustment Address | 00 to FF |
| Adjustment Page | 1B |
| Adjustment Address | 00 to FF |

**Initializing method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 00 | |
| 3 | 7 | 04 | | Set the following data<br>00: NTSC model<br>01: PAL model |
| 4 | 7 | 01 | | Set the following data<br>20: Initializing A page<br>21: Initializing B page<br>22: Initializing D page<br>23: Initializing 1A page<br>24: Initializing 1B page<br>25: Initializing A and 1A page<br>26: Initializing B and 1B page<br>28: Initializing A, B, D, 1A and 1B page |
| 5 | 7 | 02 | FF | |
| 6 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 7 | 7 | 02 | | Check the data changes to "01". |
| 8 | | | | Perform "Modification of A, B, D, 1A, 1B Page Data" |

## 2. Modification of A, B, D, 1A, 1B Page Data

If the A, B, D, 1A, 1B page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

**Processing before Modification A, B, D, 1A, 1B page data:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 00 | |
| 3 | 7 | 01 | 38 | |
| 4 | 7 | 02 | FF | |
| 5 | 7 | 04 | 02 | |
| 6 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 7 | 7 | 02 | | Check the data changes to "01". |

**Modifying Method:**

1) If modification of data on pages A, B, D, set data: 00 to page: 0, address: 10, and then select pages A, B, D.
2) If modification of data on pages 1A, 1B, set data: 01 to page: 0, address: 10, and then select pages A, B.
   After the modification of data finished, return the data on page: 0, address: 10 to "00".
3) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   **Note 1:** If copy the data built in the different model, the camcorder may not operate.
4) When changing the data, press the PAUSE (Write) button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
5) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

**Processing after Completing Modification A, B, D, 1A, 1B page data:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 10 | 00 | |
| 2 | 7 | 01 | 38 | |
| 3 | 7 | 02 | FF | |
| 4 | 7 | 04 | 01 | |
| 5 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 6 | 7 | 02 | | Check the data changes to "01". |
| 7 | 2 | 00 | 29 | |
| 8 | 2 | 01 | 29 | Press PAUSE (Write) button. |

**Note 2:** If following symptoms occur after completing of the "Modification A, B, D, 1A, 1B page data", check that the data of the "Fixed data-2" address of A, B, D, 1A, 1B page are same as those of same model of same destination.
1) The power is shut off so that unit cannot operate.

## 3. A Page table

**Note 1:** Check that the data of page: 0, address: 10 is "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of A, B, D, 1A, 1B Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of A, B, D, 1A, 1B Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 10 | 00 | 00 | Test mode |
| 11 to 7B | Fixed data-1 (Initialized data) | | |
| 7C | Fixed data-2 | | |
| 7D | | | |
| 7E | | | |
| 7F | | | |
| 80 to 8F | Fixed data-1 (Initialized data) | | |
| 90 | E8 | EA | Touch panel adj. |
| 91 | 0E | 0D | |
| 92 | DE | DD | |
| 93 | 19 | 17 | |
| 94 to FF | Fixed data-1 (Initialized data) | | |

## 4. B Page table

**Note 1:** Check that the data of page: 0, address: 10 is "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of A, B, D, 1A, 1B Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of A, B, D, 1A, 1B Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to D0 | Fixed data-1 (Initialized data) | | |
| D1 | 00 | 00 | USB Serial number data setting |
| D2 | 00 | 00 | |
| D3 | 00 | 00 | |
| D4 | 00 | 00 | |
| D5 | 00 | 00 | |
| D6 | 00 | 00 | |
| D7 | 00 | 00 | |
| D8 | 00 | 00 | |
| D9 | 00 | 00 | |
| DA to FF | Fixed data-1 (Initialized data) | | |

### 5. D Page table

**Note 1:** Check that the data of page: 0, address: 10 is “00”.

**Note 2:** Fixed data-1: Initialized data. (Refer to “1. Initializing of A, B, D, 1A, 1B Page Data”)
Fixed data-2: Modified data. (Refer to “2. Modification of A, B, D, 1A, 1B Page Data”)

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 10 to 28 | Fixed data-1 (Initialized data) | | |
| 29 | Fixed data-2 | | |
| 2A | Fixed data-1 (Initialized data) | | |
| 2B | Fixed data-2 | | |
| 2C to 35 | Fixed data-1 (Initialized data) | | |
| 36 | Fixed data-2 | | |
| 37 | | | |
| 38 | Fixed data-1 (Initialized data) | | |
| 39 | Fixed data-2 | | |
| 3A | | | |
| 3B | | | |
| 3C to FF | Fixed data-1 (Initialized data) | | |

### 6. 1A Page table

**Note 1:** If reading/writing data on pages 1A, set data: 01 to page: 0, address: 10, and then select pages: A. By this data setting, the pages 1A can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to “00”.

**Note 2:** Fixed data-1: Initialized data. (Refer to “1. Initializing of A, B, D, 1A, 1B Page Data”)
Fixed data-2: Modified data. (Refer to “2. Modification of A, B, D, 1A, 1B Page Data”)

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 77 | Fixed data-1 (Initialized data) | | |
| 78 | Fixed data-2 | | |
| 79 | | | |
| 7A | | | |
| 7B, 7C | Fixed data-1 (Initialized data) | | |
| 7D | Fixed data-2 | | |
| 7E | Fixed data-1 (Initialized data) | | |
| 7F | Fixed data-2 | | |
| 80 | Fixed data-1 (Initialized data) | | |
| 81 | Fixed data-2 | | |
| 82 to FF | Fixed data-1 (Initialized data) | | |

### 7. 1B Page table

**Note 1:** If reading/writing data on pages 1B, set data: 01 to page: 0, address: 10, and then select pages: B. By this data setting, the pages 1B can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to “00”.

**Note 2:** Fixed data-1: Initialized data. (Refer to “1. Initializing of A, B, D, 1A, 1B Page Data”)
Fixed data-2: Modified data. (Refer to “2. Modification of A, B, D, 1A, 1B Page Data”)

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to FF | Fixed data-1 (Initialized data) | | |

### 1-2-2. Initialization of 8, 9, C, 13, 18, 1C, 1D Page Data

#### 1. Initializing of 8, 9, C, 13, 18, 1C, 1D Page Data

**Note 1:** If "Initialization of Pages 8, 9, C, 13, 18, 1C, 1D" is executed, all data on pages 8, 9, C, 13, 18, 1C, 1D are initialized. (Only an individual page cannot be initialized)

**Note 2:** If the 8, 9, C, 13, 18, 1C, 1D page data has been initialized, the following adjustments need to be performed again.

1) Modification of 8, 9, C, 13, 18, 1C, 1D page data
2) Electronic viewfinder system adjustments (if all areas were initialized)
3) LCD system adjustments (if all areas were initialized)
4) Node unique ID No. input (if all areas were initialized)
5) Servo and RF system adjustments (if all areas were initialized)
6) Video system adjustments (if all areas were initialized)

| | |
|---|---|
| Adjustment Page | 8 |
| Adjustment Address | 00 to FF |
| Adjustment Page | 9 |
| Adjustment Address | 00 to FF |
| Adjustment Page | C |
| Adjustment Address | 10 to FF |
| Adjustment Page | 13 |
| Adjustment Address | 00 to FF |
| Adjustment Page | 18 |
| Adjustment Address | 00 to FF |
| Adjustment Page | 1C |
| Adjustment Address | 00 to FF |
| Adjustment Page | 1D |
| Adjustment Address | 00 to FF |

**Initializing method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 00 | |
| 3 | 3 | 81 | | Set the following data, and press PAUSE (Write) button. (Note 3)<br>00: Initializing all areas<br>01: Initializing other than adjustment address |
| 4 | 3 | 80 | 0C | Press PAUSE (Write) button. |
| 5 | 3 | 80 | | Check the data changes to "1C". |
| 6 | | | | Perform "Modification of 8, 9, C, 13, 18, 1C, 1D Page Data" |

**Note 3:** If other than adjustment address was initialized, the adjusted data is not initialized.

#### 2. Modification of 8, 9, C, 13, 18, 1C, 1D Page Data

If the 8, 9, C, 13, 18, 1C, 1D page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

**Processing before Modification 8, 9, C, 13, 18, 1C, 1D page data:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 00 | |
| 3 | 3 | 71 | 01 | Press PAUSE (Write) button. |

**Modifying Method:**

1) If modification of data on pages 8, 9, C, set data: 00 to page: 0, address: 10, and then select pages 8, 9, C.
2) If modification of data on pages 13, 18, 1C, 1D, set data: 01 to page: 0, address: 10, and then select pages 3, 8, C, D.
   After the modification of data finished, return the data on page: 0, address: 10 to "00".
3) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   **Note:** If copy the data built in the different model, the camcorder may not operate.
4) When changing the data, press the PAUSE (Write) button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
5) If all areas were initialized, check that the data at the addresses for adjustment are initial values (adjustment initial values) listed in the table.
   If different, change them to the adjustment initial values.

**Processing after Completing Modification 8, 9, C, 13, 18, 1C, 1D page data:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 00 | |
| 3 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 4 | 3 | 70 | | Check the data changes to "11". |
| 5 | 2 | 00 | 29 | |
| 6 | 2 | 01 | 29 | Press PAUSE (Write) button. |

### 3. 8 Page table

**Note 1:** Check that the data of page: 0, address: 10 is “00”.

**Note 2:** Fixed data-1: Initialized data. (Refer to “1. Initializing of 8, 9, C, 13, 18, 1C, 1D Page Data”)
Fixed data-2: Modified data. (Refer to “2. Modification of 8, 9, C, 13, 18, 1C, 1D Page Data”)

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 | Fixed data-2 | | |
| 01 | Fixed data-1 (Initialized data) | | |
| 02 | Fixed data-2 | | |
| 03 to FF | Fixed data-1 (Initialized data) | | |

### 4. 9 Page table

**Note 1:** Check that the data of page: 0, address: 10 is “00”.

**Note 2:** Fixed data-1: Initialized data. (Refer to “1. Initializing of 8, 9, C, 13, 18, 1C, 1D Page Data”)
Fixed data-2: Modified data. (Refer to “2. Modification of 8, 9, C, 13, 18, 1C, 1D Page Data”)

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to FF | Fixed data-1 (Initialized data) | | |

### 5. C Page table

**Note 1:** Check that the data of page: 0, address: 10 is “00”.

**Note 2:** Fixed data-1: Initialized data. (Refer to “1. Initializing of 8, 9, C, 13, 18, 1C, 1D Page Data”)
Fixed data-2: Modified data. (Refer to “2. Modification of 8, 9, C, 13, 18, 1C, 1D Page Data”)

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 10 | EE | EE | Switching position adj. |
| 11 | 00 | 00 | |
| 12 | 00 | 00 | |
| 13 | 00 | 00 | |
| 14, 15 | | | Fixed data-1 (Initialized data) |
| 16 | E0 | E0 | CAP FG duty adj. |
| 17 to 24 | | | Fixed data-1 (Initialized data) |
| 25 | 70 | - | S VIDEO OUT Y level adj. (NTSC)/ Fixed data-1 (PAL) |
| 26 | 8A | - | S VIDEO OUT chroma level adj. (NTSC)/ |
| 27 | 61 | - | Fixed data-1 (PAL) |
| 28 to 30 | | | Fixed data-1 (Initialized data) |
| 31 | | | Fixed data-2 |
| 32, 33 | | | Fixed data-1 (Initialized data) |
| 34 | 80 | 80 | VCO adj. (EVF) |
| 35 | 8A | 8A | |
| 36 to 39 | | | Fixed data-1 (Initialized data) |
| 3A | 93 | 93 | White balance adj. (EVF) |
| 3B | 7F | 7F | |
| 3C | 82 | 82 | Contrast adj. (EVF) |
| 3D to 41 | | | Fixed data-1 (Initialized data) |
| 42 | | | Fixed data-2 |
| 43, 44 | | | Fixed data-1 (Initialized data) |
| 45 | 64 | 64 | VCO adj. (LCD) |
| 46 | 6E | 6E | |
| 47 | 95 | 95 | V-COM adj. (LCD) |
| 48 to 4A | | | Fixed data-1 (Initialized data) |
| 4B | 8A | 8A | Transmissive mode white balance |
| 4C | 64 | 64 | adj. (LCD) |
| 4D | 7A | 7A | Contrast adj. (LCD) |
| 4E to 53 | | | Fixed data-1 (Initialized data) |
| 54 | 3F | 3F | Sample hold phase adj. |
| 55 to 6F | | | Fixed data-1 (Initialized data) |
| 70 | 72 | 72 | Reflective mode white balance |
| 71 | 6A | 6A | adj. (LCD) |
| 72 to 75 | | | Fixed data-1 (Initialized data) |
| 76 | 7A | 7A | Contrast adj. (LCD) |
| 77 | 82 | 82 | Contrast adj. (EVF) |
| 78 to 84 | | | Fixed data-1 (Initialized data) |
| 85 | - | 70 | Fixed data-1 (NTSC)/ S VIDEO OUT Y level adj. (PAL) |
| 86 | - | 8A | Fixed data-1 (NTSC)/ |
| 87 | - | 61 | S VIDEO OUT chroma level adj. (PAL) |
| 88 to 92 | | | Fixed data-1 (Initialized data) |

**C Page table**

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 93 | 79 | 79 | COMPONENT OUT Y level adj. |
| 94 | 31 | 31 | COMPONENT OUT Pb level adj. |
| 95 | 32 | 32 | COMPONENT OUT Pr level adj. |
| 96 to B1 | | | Fixed data-1 (Initialized data) |
| B2 | 00 | 00 | Error rate check |
| B3 | 00 | 00 | |
| B4 | 00 | 00 | |
| B5 | 00 | 00 | |
| B6 | 00 | 00 | |
| B7 | 80 | 80 | |
| B8 | 00 | 00 | |
| B9 | 00 | 00 | |
| BA | 00 | 00 | |
| BB | 00 | 00 | |
| BC | 00 | 00 | |
| BD | 00 | 00 | |
| BE | 00 | 00 | |
| BF | 00 | 00 | |
| C0 | 00 | 00 | |
| C1 | 00 | 00 | |
| C2 | 80 | 80 | |
| C3 | 00 | 00 | |
| C4 | 00 | 00 | |
| C5 | 00 | 00 | |
| C6 | 00 | 00 | |
| C7 | 00 | 00 | |
| C8 to F3 | | | Fixed data-1 (Initialized data) |
| F4 | 00 | 00 | Emergency memory address (Mechanism section) |
| F5 | 00 | 00 | |
| F6 | 00 | 00 | |
| F7 | 00 | 00 | |
| F8 | 00 | 00 | |
| F9 | 00 | 00 | |
| FA | 00 | 00 | |
| FB | 00 | 00 | |
| FC | 00 | 00 | |
| FD | 00 | 00 | |
| FE | 00 | 00 | |
| FF | 00 | 00 | |

**6. 13 Page table**

**Note 1:** If reading/writing data on pages 13, set data: 01 to page: 0, address: 10, and then select pages: 3. By this data setting, the pages 13 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of 8, 9, C, 13, 18, 1C, 1D Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of 8, 9, C, 13, 18, 1C, 1D Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 03 | | | Fixed data-1 (Initialized data) |
| 04 | 08 | 08 | Node unique ID No. input |
| 05 | 00 | 00 | |
| 06 | 46 | 46 | |
| 07 | 01 | 01 | |
| 08 | 02 | 02 | |
| 09 | 00 | 00 | |
| 0A | 00 | 00 | |
| 0B | 00 | 00 | |
| 0C | | | Fixed data-1 (Initialized data) |
| 0D | | | Fixed data-2 |
| 0E to 10 | | | Fixed data-1 (Initialized data) |
| 11 | | | Fixed data-2 |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 to 24 | | | Fixed data-1 (Initialized data) |
| 25 | | | Fixed data-2 |
| 26 to FF | | | Fixed data-1 (Initialized data) |

**7. 18 Page table**

**Note 1:** If reading/writing data on pages 18, set data: 01 to page: 0, address: 10, and then select pages: 8. By this data setting, the pages 18 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of 8, 9, C, 13, 18, 1C, 1D Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of 8, 9, C, 13, 18, 1C, 1D Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 2D | | | Fixed data-1 (Initialized data) |
| 2E | | | Fixed data-2 |
| 2F | | | |
| 30 to 33 | | | Fixed data-1 (Initialized data) |
| 34 | | | Fixed data-2 |
| 35 to F1 | | | Fixed data-1 (Initialized data) |
| F2 | | | Fixed data-2 |
| F3 to FF | | | Fixed data-1 (Initialized data) |

### 8. 1C Page table

**Note 1:** If reading/writing data on pages 1C, set data: 01 to page: 0, address: 10, and then select pages: C. By this data setting, the pages 1C can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to “00”.

**Note 2:** Fixed data-1: Initialized data. (Refer to “1. Initializing of 8, 9, C, 13, 18, 1C, 1D Page Data”)
Fixed data-2: Modified data. (Refer to “2. Modification of 8, 9, C, 13, 18, 1C, 1D Page Data”)

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to FF | Fixed data-1 (Initialized data) | | |

### 9. 1D Page table

**Note 1:** If reading/writing data on pages 1D, set data: 01 to page: 0, address: 10, and then select pages: D. By this data setting, the pages 1D can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to “00”.

**Note 2:** Fixed data-1: Initialized data. (Refer to “1. Initializing of 8, 9, C, 13, 18, 1C, 1D Page Data”)
Fixed data-2: Modified data. (Refer to “2. Modification of 8, 9, C, 13, 18, 1C, 1D Page Data”)

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 57 | Fixed data-1 (Initialized data) | | |
| 58 | Fixed data-2 | | |
| 59 to FF | Fixed data-1 (Initialized data) | | |

### 1-2-3. Initialization of F, 63 to 6F Page Data

#### 1. Initializing of F, 63 to 6F Page Data

**Note 1:** If "Initialization of Pages F, 63 to 6F" is executed, all data on pages F, 63 to 6F are initialized. (Only an individual page cannot be initialized)

**Note 2:** If the F, 63 to 6F page data has been initialized, the following adjustments need to be performed again.
1) Modification of F, 63 to 6F page data
2) Camera system adjustment

| | |
|---|---|
| Adjustment Page | F |
| Adjustment Address | 00 to FF |
| Adjustment Page | 63 |
| Adjustment Address | 00 to FF |
| Adjustment Page | 64 |
| Adjustment Address | 00 to FF |
| Adjustment Page | 65 |
| Adjustment Address | 00 to FF |
| Adjustment Page | 66 |
| Adjustment Address | 00 to FF |
| Adjustment Page | 67 |
| Adjustment Address | 00 to FF |
| Adjustment Page | 68 |
| Adjustment Address | 00 to FF |
| Adjustment Page | 69 |
| Adjustment Address | 00 to FF |
| Adjustment Page | 6A |
| Adjustment Address | 00 to FF |
| Adjustment Page | 6B |
| Adjustment Address | 00 to FF |
| Adjustment Page | 6C |
| Adjustment Address | 00 to FF |
| Adjustment Page | 6D |
| Adjustment Address | 00 to FF |
| Adjustment Page | 6E |
| Adjustment Address | 00 to FF |
| Adjustment Page | 6F |
| Adjustment Address | 10 to FF |

**Initializing method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 00 | |
| 3 | 6 | 01 | | Set the following data, and press PAUSE (Write) button.<br>2D: NTSC model<br>2F: PAL model |
| 4 | 6 | 03 | 01 | Press PAUSE (Write) button. |
| 5 | 6 | 02 | | Check the data changes to "01". |
| 6 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 7 | | | | Perform "Modification of F, 63 to 6F Page Data" |

#### 2. Modification of F, 63 to 6F Page Data

If the F, 63 to 6F page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

**Modifying Method:**

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) If modification of data on pages F, set data: 00 to page: 0, address: 10, and then select pages F.
3) If modification of data on pages 63 to 6F, set data: 06 to page: 0, address: 10, and then select pages 3 to F.
   After the modification of data finished, return the data on page: 0, address: 10 to "00".
4) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   **Note:** If copy the data built in the different model, the camcorder may not operate.
5) When changing the data, press the PAUSE (Write) button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
6) Check that the data at the addresses for adjustment are initial values (adjustment initial values) listed in the table.
   If different, change them to the adjustment initial values.

**Processing after Completing Modification F, 63 to 6F page data:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 10 | 00 | |
| 2 | 2 | 00 | 29 | |
| 3 | 2 | 01 | 29 | Press PAUSE (Write) button. |

### 3. F Page table

**Note 1:** Check that the data of page: 0, address: 10 is “00”.

**Note 2:** Fixed data-1: Initialized data. (Refer to “1. Initializing of F, 63 to 6F Page Data”)
Fixed data-2: Modified data. (Refer to “2. Modification of F, 63 to 6F Page Data”)

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 3E | Fixed data-1 (Initialized data) | | |
| 3F | Fixed data-2 | | |
| 40 | Fixed data-1 (Initialized data) | | |
| 41 | Fixed data-2 | | |
| 42 to F3 | Fixed data-1 (Initialized data) | | |
| F4 | Fixed data-2 | | |
| F5 to FF | Fixed data-1 (Initialized data) | | |

### 4. 63 Page table

**Note 1:** If reading/writing data on pages 63, set data: 06 to page: 0, address: 10, and then select pages: 3. By this data setting, the pages 63 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to “00”.

**Note 2:** Fixed data-1: Initialized data. (Refer to “1. Initializing of F, 63 to 6F Page Data”)
Fixed data-2: Modified data. (Refer to “2. Modification of F, 63 to 6F Page Data”)

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 8E | Fixed data-1 (Initialized data) | | |
| 8F | Fixed data-2 | | |
| 90, 91 | Fixed data-1 (Initialized data) | | |
| 92 | Fixed data-2 | | |
| 93 to C8 | Fixed data-1 (Initialized data) | | |
| C9 | Fixed data-2 | | |
| CA | | | |
| CB | | | |
| CC | | | |
| CD to D3 | Fixed data-1 (Initialized data) | | |
| D4 | Fixed data-2 | | |
| D5 | | | |
| D6 | | | |
| D7 | Fixed data-1 (Initialized data) | | |
| D8 | Fixed data-2 | | |
| D9 | | | |
| DA to E2 | Fixed data-1 (Initialized data) | | |
| E3 | Fixed data-2 | | |
| E4 | | | |
| E5 | | | |
| E6 | | | |
| E7 | Fixed data-1 (Initialized data) | | |
| E8 | Fixed data-2 | | |
| E9 | | | |
| EA | | | |
| EB | | | |
| EC to FF | Fixed data-1 (Initialized data) | | |

### 5. 64 Page table

**Note 1:** If reading/writing data on pages 64, set data: 06 to page: 0, address: 10, and then select pages: 4. By this data setting, the pages 64 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of F, 63 to 6F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of F, 63 to 6F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 0F | Fixed data-1 (Initialized data) | | |
| 10 | Fixed data-2 | | |
| 11 | | | |
| 12 to 1F | Fixed data-1 (Initialized data) | | |
| 20 | Fixed data-2 | | |
| 21 | | | |
| 22 | | | |
| 23 | | | |
| 24 | | | |
| 25 | | | |
| 26 | | | |
| 27 | | | |
| 28 | | | |
| 29 | | | |
| 2A | | | |
| 2B | | | |
| 2C | | | |
| 2D | | | |
| 2E | | | |
| 2F | | | |
| 30 | | | |
| 31 | | | |
| 32 | | | |
| 33 | | | |
| 34 | | | |
| 35 | | | |
| 36 | | | |
| 37 | | | |
| 38 | | | |
| 39 | | | |
| 3A | | | |
| 3B | | | |
| 3C | | | |
| 3D | | | |
| 3E | | | |
| 3F | | | |
| 40 to 49 | Fixed data-1 (Initialized data) | | |
| 4A | Fixed data-2 | | |
| 4B | | | |
| 4C | | | |
| 4D | | | |
| 4E | Fixed data-2 | | |
| 4F | | | |
| 50 | | | |
| 51 | | | |
| 52 | | | |
| 53 | | | |
| 54 | | | |
| 55 | | | |
| 56 | | | |
| 57 | | | |
| 58 | | | |
| 59 | | | |
| 5A | | | |
| 5B | | | |
| 5C | | | |
| 5D | | | |
| 5E | | | |
| 5F | | | |
| 60 | | | |
| 61 | | | |
| 62 | | | |
| 63 | | | |
| 64 | | | |
| 65 | | | |
| 66 | | | |
| 67 | | | |
| 68 | | | |
| 69 | | | |
| 6A | Fixed data-1 (Initialized data) | | |
| 6B | Fixed data-2 | | |
| 6C | | | |
| 6D | | | |
| 6E | | | |
| 6F | | | |
| 70 | Fixed data-1 (Initialized data) | | |
| 71 | Fixed data-2 | | |
| 72 | | | |
| 73 | | | |
| 74 | | | |
| 75 | | | |
| 76 | | | |
| 77 | | | |
| 78 | Fixed data-1 (Initialized data) | | |
| 79 | Fixed data-2 | | |
| 7A | | | |
| 7B | | | |
| 7C | | | |
| 7D | | | |

**64 Page table**

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 7E | | | Fixed data-2 |
| 7F | | | |
| 80 | | | |
| 81 | | | |
| 82 | | | |
| 83 | | | |
| 84 | | | |
| 85 | | | |
| 86 | | | |
| 87 | | | |
| 88 | | | |
| 89 | | | |
| 8A | | | |
| 8B | | | |
| 8C | | | |
| 8D | | | |
| 8E | | | |
| 8F | | | |
| 90 | | | |
| 91 | | | |
| 92 | | | |
| 93 | | | |
| 94 | | | |
| 95 | | | |
| 96 | | | |
| 97 | | | |
| 98 | | | |
| 99 | | | |
| 9A | | | Fixed data-1 (Initialized data) |
| 9B | | | Fixed data-2 |
| 9C | | | |
| 9D | | | |
| 9E | | | |
| 9F | | | |
| A0 | | | Fixed data-1 (Initialized data) |
| A1 | | | Fixed data-2 |
| A2 | | | |
| A3 | | | |
| A4 | | | |
| A5 | | | |
| A6 | | | |
| A7 | | | |
| A8 | | | Fixed data-1 (Initialized data) |
| A9 | | | Fixed data-2 |
| AA | | | Fixed data-1 (Initialized data) |
| AB | | | Fixed data-2 |
| AC to AF | | | Fixed data-1 (Initialized data) |

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| B0 | | | Fixed data-2 |
| B1 | | | |
| B2 | | | |
| B3 | | | |
| B4 to D7 | | | Fixed data-1 (Initialized data) |
| D8 | | | Fixed data-2 |
| D9 | | | |
| DA | | | Fixed data-1 (Initialized data) |
| DB | | | Fixed data-2 |
| DC | | | |
| DD | | | |
| DE | | | Fixed data-1 (Initialized data) |
| DF | | | Fixed data-2 |
| E0, E1 | | | Fixed data-1 (Initialized data) |
| E2 | | | Fixed data-2 |
| E3 to EC | | | Fixed data-1 (Initialized data) |
| ED | | | Fixed data-2 |
| EE, EF | | | Fixed data-1 (Initialized data) |
| F0 | | | Fixed data-2 |
| F1 | | | |
| F2 | | | Fixed data-1 (Initialized data) |
| F3 | | | Fixed data-2 |
| F4 to FE | | | Fixed data-1 (Initialized data) |
| FF | | | Fixed data-2 |

### 6. 65 Page table

**Note 1:** If reading/writing data on pages 65, set data: 06 to page: 0, address: 10, and then select pages: 5. By this data setting, the pages 65 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of F, 63 to 6F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of F, 63 to 6F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 10 | | | Fixed data-1 (Initialized data) |
| 11 | | | Fixed data-2 |
| 12 | | | Fixed data-1 (Initialized data) |
| 13 | | | Fixed data-2 |
| 14 | | | Fixed data-1 (Initialized data) |
| 15 | | | Fixed data-2 |
| 16 | | | |
| 17 | | | |
| 18 | | | |
| 19 | | | |
| 1A | | | |
| 1B | | | |
| 1C to 1E | | | Fixed data-1 (Initialized data) |
| 1F | | | Fixed data-2 |
| 20 to 2D | | | Fixed data-1 (Initialized data) |
| 2E | | | Fixed data-2 |
| 2F | | | Fixed data-1 (Initialized data) |
| 30 | | | Fixed data-2 |
| 31 | | | |
| 32 to 35 | | | Fixed data-1 (Initialized data) |
| 36 | | | Fixed data-2 |
| 37 | | | Fixed data-1 (Initialized data) |
| 38 | | | Fixed data-2 |
| 39 to FF | | | Fixed data-1 (Initialized data) |

### 7. 66 Page table

**Note 1:** If reading/writing data on pages 66, set data: 06 to page: 0, address: 10, and then select pages: 6. By this data setting, the pages 66 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of F, 63 to 6F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of F, 63 to 6F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 11 | | | Fixed data-1 (Initialized data) |
| 12 | | | Fixed data-2 |
| 13 | | | |
| 14 to 97 | | | Fixed data-1 (Initialized data) |
| 98 | | | Fixed data-2 |
| 99 | | | Fixed data-1 (Initialized data) |
| 9A | | | Fixed data-2 |
| 9B | | | |
| 9C, 9D | | | Fixed data-1 (Initialized data) |
| 9E | | | Fixed data-2 |
| 9F | | | |
| A0 to A6 | | | Fixed data-1 (Initialized data) |
| A7 | | | Fixed data-2 |
| A8 to AE | | | Fixed data-1 (Initialized data) |
| AF | | | Fixed data-2 |
| B0 to C1 | | | Fixed data-1 (Initialized data) |
| C2 | | | Fixed data-2 |
| C3 | | | |
| C4 | | | |
| C5 to C7 | | | Fixed data-1 (Initialized data) |
| C8 | | | Fixed data-2 |
| C9 to DF | | | Fixed data-1 (Initialized data) |
| E0 | | | Fixed data-2 |
| E1 | | | |
| E2 | | | |
| E3 | | | |
| E4 to E6 | | | Fixed data-1 (Initialized data) |
| E7 | | | Fixed data-2 |
| E8 | | | |
| E9 | | | |
| EA | | | |
| EB | | | |
| EC to EE | | | Fixed data-1 (Initialized data) |
| EF | | | Fixed data-2 |
| F0 | | | |
| F1 | | | |
| F2 | | | |
| F3 | | | |
| F4 to F6 | | | Fixed data-1 (Initialized data) |

**66 Page table**

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| F7 | Fixed data-2 | | |
| F8 | | | |
| F9 | | | |
| FA | | | |
| FB | | | |
| FC to FE | Fixed data-1 (Initialized data) | | |
| FF | Fixed data-2 | | |

**8. 67 Page table**

**Note 1:** If reading/writing data on pages 67, set data: 06 to page: 0, address: 10, and then select pages: 7. By this data setting, the pages 67 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of F, 63 to 6F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of F, 63 to 6F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 02 | Fixed data-1 (Initialized data) | | |
| 03 | Fixed data-2 | | |
| 04 to 45 | Fixed data-1 (Initialized data) | | |
| 46 | Fixed data-2 | | |
| 47 to 85 | Fixed data-1 (Initialized data) | | |
| 86 | Fixed data-2 | | |
| 87 to B0 | Fixed data-1 (Initialized data) | | |
| B1 | Fixed data-2 | | |
| B2 | | | |
| B3 to BD | Fixed data-1 (Initialized data) | | |
| BE | Fixed data-2 | | |
| BF to FF | Fixed data-1 (Initialized data) | | |

**9. 68 Page table**

**Note 1:** If reading/writing data on pages 68, set data: 06 to page: 0, address: 10, and then select pages: 8. By this data setting, the pages 68 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of F, 63 to 6F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of F, 63 to 6F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00, 01 | Fixed data-1 (Initialized data) | | |
| 02 | Fixed data-2 | | |
| 03 | | | |
| 04 | | | |
| 05 | | | |
| 06 | | | |
| 07 | | | |
| 08 | | | |
| 09 | | | |
| 0A to 0C | Fixed data-1 (Initialized data) | | |
| 0D | Fixed data-2 | | |
| 0E to 3D | Fixed data-1 (Initialized data) | | |
| 3E | Fixed data-2 | | |
| 3F to 5D | Fixed data-1 (Initialized data) | | |
| 5E | Fixed data-2 | | |
| 5F | | | |
| 60 to 6B | Fixed data-1 (Initialized data) | | |
| 6C | Fixed data-2 | | |
| 6D | | | |
| 6E | | | |
| 6F to 8B | Fixed data-1 (Initialized data) | | |
| 8C | Fixed data-2 | | |
| 8D | | | |
| 8E | | | |
| 8F to 9E | Fixed data-1 (Initialized data) | | |
| 9F | Fixed data-2 | | |
| A0 to AD | Fixed data-1 (Initialized data) | | |
| AE | Fixed data-2 | | |
| AF to BD | Fixed data-1 (Initialized data) | | |
| BE | Fixed data-2 | | |
| BF, C0 | Fixed data-1 (Initialized data) | | |
| C1 | Fixed data-2 | | |
| C2 to FF | Fixed data-1 (Initialized data) | | |

### 10. 69 Page table

**Note 1:** If reading/writing data on pages 69, set data: 06 to page: 0, address: 10, and then select pages: 9. By this data setting, the pages 69 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of F, 63 to 6F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of F, 63 to 6F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 0D | Fixed data-1 (Initialized data) | | |
| 0E | Fixed data-2 | | |
| 0F | | | |
| 10 to 72 | Fixed data-1 (Initialized data) | | |
| 73 | Fixed data-2 | | |
| 74 to 9F | Fixed data-1 (Initialized data) | | |
| A0 | 0F | 0C | Mechanical shutter adj. (1) |
| A1 | 80 | B0 | |
| A2 | 0B | 09 | |
| A3 | 00 | 10 | |
| A4 | 08 | 07 | |
| A5 | C0 | 20 | |
| A6 | 07 | 05 | |
| A7 | 00 | A0 | |
| A8 | 05 | 04 | |
| A9 | 40 | 70 | |
| AA | 54 | 55 | |
| AB | 65 | 65 | |
| AC | 63 | 64 | |
| AD | 5C | 5C | |
| AE | 4B | 4B | |
| AF | 21 | 22 | |
| B0 | 80 | 80 | |
| B1 | 80 | 80 | |
| B2 | 80 | 80 | |
| B3 | 80 | 80 | |
| B4 | 80 | 80 | |
| B5 | 80 | 80 | |
| B6 to BD | Fixed data-1 (Initialized data) | | |
| BE | 03 | 03 | Linear matrix adj. (1) |
| BF | C1 | C1 | |
| C0 | FF | FF | |
| C1 | 9F | 9F | |
| C2 | 00 | 00 | |
| C3 | 00 | 00 | |
| C4 | FF | FF | |
| C5 | F9 | F9 | |
| C6 | 04 | 04 | |
| C7 | 06 | 06 | |
| C8 | 00 | 00 | |
| C9 | 01 | 01 | |
| CA | 00 | 00 | Linear matrix adj. (1) |
| CB | 0E | 0E | |
| CC | FF | FF | |
| CD | 48 | 48 | |
| CE | 04 | 04 | |
| CF | 32 | 32 | |
| D0 | 58 | 58 | HALL adj. (2) |
| D1 | 76 | 76 | |
| D2 | 88 | 88 | |
| D3 | 55 | 55 | |
| D4 | 28 | 28 | |
| D5 | D8 | D8 | |
| D6 | 28 | 28 | |
| D7 | D8 | D8 | |
| D8 | 19 | 19 | |
| D9 to DB | Fixed data-1 (Initialized data) | | |
| DC | 35 | 35 | LV standard data input |
| DD | 00 | 00 | |
| DE | FF | FF | Max gain adj. |
| DF | Fixed data-1 (Initialized data) | | |
| E0 | 00 | 00 | F No. & ND light quality standard data input |
| E1 | 00 | 00 | |
| E2 | 00 | 00 | |
| E3 | 00 | 00 | |
| E4 | 00 | 00 | |
| E5 | 00 | 00 | |
| E6 | 00 | 00 | |
| E7 | 00 | 00 | |
| E8 | 00 | 00 | |
| E9 | 00 | 00 | |
| EA | 00 | 00 | |
| EB | 00 | 00 | |
| EC | 00 | 00 | |
| ED | 00 | 00 | |
| EE | 00 | 00 | |
| EF | 00 | 00 | |
| F0 to FF | Fixed data-1 (Initialized data) | | |

### 11. 6A Page table

**Note 1:** If reading/writing data on pages 6A, set data: 06 to page: 0, address: 10, and then select pages: A. By this data setting, the pages 6A can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of F, 63 to 6F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of F, 63 to 6F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to FF | Fixed data-1 (Initialized data) | | |

### 12. 6B Page table

**Note 1:** If reading/writing data on pages 6B, set data: 06 to page: 0, address: 10, and then select pages: B. By this data setting, the pages 6B can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of F, 63 to 6F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of F, 63 to 6F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 0C | Fixed data-1 (Initialized data) | | |
| 0D | Fixed data-2 | | |
| 0E to 83 | Fixed data-1 (Initialized data) | | |
| 84 | Fixed data-2 | | |
| 85 to BD | Fixed data-1 (Initialized data) | | |
| BE | Fixed data-2 | | |
| BF to FF | Fixed data-1 (Initialized data) | | |

### 13. 6C Page table

**Note 1:** If reading/writing data on pages 6C, set data: 06 to page: 0, address: 10, and then select pages: C. By this data setting, the pages 6C can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of F, 63 to 6F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of F, 63 to 6F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 2E | Fixed data-1 (Initialized data) | | |
| 2F | Fixed data-2 | | |
| 30 to 34 | Fixed data-1 (Initialized data) | | |
| 35 | Fixed data-2 | | |
| 36 | | | |
| 37 | | | |
| 38 to 50 | Fixed data-1 (Initialized data) | | |
| 51 | Fixed data-2 | | |
| 52 to 7B | Fixed data-1 (Initialized data) | | |
| 7C | Fixed data-2 | | |
| 7D to 82 | Fixed data-1 (Initialized data) | | |
| 83 | Fixed data-2 | | |
| 84 to 8B | Fixed data-1 (Initialized data) | | |
| 8C | Fixed data-2 | | |
| 8D | | | |
| 8E to AF | Fixed data-1 (Initialized data) | | |
| B0 | Fixed data-2 | | |
| B1 | | | |
| B2 | | | |
| B3 | | | |
| B4 | | | |
| B5 | Fixed data-1 (Initialized data) | | |
| B6 | Fixed data-2 | | |
| B7 | | | |
| B8 | | | |
| B9 | | | |
| BA | | | |
| BB | | | |
| BC | | | |
| BD | Fixed data-1 (Initialized data) | | |
| BE | Fixed data-2 | | |
| BF | | | |
| C0 to E2 | Fixed data-1 (Initialized data) | | |
| E3 | Fixed data-2 | | |
| E4 | Fixed data-1 (Initialized data) | | |
| E5 | Fixed data-2 | | |
| E6 | | | |
| E7 | | | |
| E8 | Fixed data-1 (Initialized data) | | |
| E9 | Fixed data-2 | | |
| EA | | | |
| EB | Fixed data-2 | | |
| EC | | | |
| ED | | | |
| EE to F0 | Fixed data-1 (Initialized data) | | |
| F1 | Fixed data-2 | | |
| F2 | | | |
| F3 | | | |
| F4 | | | |
| F5 | | | |
| F6 | | | |
| F7 | | | |
| F8 | | | |
| F9, FA | Fixed data-1 (Initialized data) | | |
| FB | Fixed data-2 | | |
| FC to FF | Fixed data-1 (Initialized data) | | |

### 14. 6D Page table

**Note 1:** If reading/writing data on pages 6D, set data: 06 to page: 0, address: 10, and then select pages: D. By this data setting, the pages 6D can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of F, 63 to 6F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of F, 63 to 6F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 05 | Fixed data-1 (Initialized data) | | |
| 06 | Fixed data-2 | | |
| 07 | Fixed data-1 (Initialized data) | | |
| 08 | Fixed data-2 | | |
| 09 | | | |
| 0A | Fixed data-1 (Initialized data) | | |
| 0B | Fixed data-2 | | |
| 0C to 2F | Fixed data-1 (Initialized data) | | |
| 30 | Fixed data-2 | | |
| 31 to 33 | Fixed data-1 (Initialized data) | | |
| 34 | Fixe data-2 | | |
| 35 | | | |
| 36, 37 | Fixed data-1 (Initialized data) | | |
| 38 | Fixed data-2 | | |
| 39 | | | |
| 3A | | | |
| 3B to 49 | Fixed data-1 (Initialized data) | | |
| 4A | Fixed data-2 | | |
| 4B | | | |
| 4C | | | |
| 4D to 5F | Fixed data-1 (Initialized data) | | |
| 60 | Fixed data-2 | | |
| 61 | | | |
| 62 | | | |
| 63 | | | |
| 64 | | | |
| 65 | | | |
| 66 | | | |
| 67 | | | |
| 68 to 8F | Fixed data-1 (Initialized data) | | |
| 90 | Fixed data-2 | | |
| 91 | | | |
| 92 | | | |
| 93 | | | |
| 94 | | | |
| 95 | | | |
| 96 to 99 | Fixed data-1 (Initialized data) | | |
| 9A | Fixed data-2 | | |
| 9B | | | |
| 9C to 9F | Fixed data-1 (Initialized data) | | |

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| A0 | Fixed data-2 | | |
| A1 | | | |
| A2 | | | |
| A3 to A7 | Fixed data-1 (Initialized data) | | |
| A8 | Fixed data-2 | | |
| A9 | | | |
| AA to BF | Fixed data-1 (Initialized data) | | |
| C0 | Fixed data-2 | | |
| C1 | | | |
| C2 | | | |
| C3 | | | |
| C4 to D0 | Fixed data-1 (Initialized data) | | |
| D1 | Fixed data-2 | | |
| D2 | | | |
| D3 | | | |
| D4 to E2 | Fixed data-1 (Initialized data) | | |
| E3 | Fixed data-2 | | |
| E4 to FF | Fixed data-1 (Initialized data) | | |

### 15. 6E Page table

**Note 1:** If reading/writing data on pages 6E, set data: 06 to page: 0, address: 10, and then select pages: E. By this data setting, the pages 6E can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of F, 63 to 6F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of F, 63 to 6F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 | 00 | 00 | |
| 01 | 00 | 00 | |
| 02 | 00 | 00 | |
| 03 | 00 | 00 | |
| 04 | 00 | 00 | |
| 05 | 00 | 00 | |
| 06 | 00 | 00 | |
| 07 | 00 | 00 | |
| 08 | 00 | 00 | |
| 09 | 00 | 00 | |
| 0A | 00 | 00 | |
| 0B | 00 | 00 | |
| 0C | 00 | 00 | |
| 0D | 00 | 00 | |
| 0E | 00 | 00 | |
| 0F | 00 | 00 | |
| 10 | 00 | 00 | |
| 11 | 00 | 00 | |
| 12 | 00 | 00 | Differential gain adj. |
| 13 | 00 | 00 | |
| 14 | 00 | 00 | |
| 15 | 00 | 00 | |
| 16 | 00 | 00 | |
| 17 | 00 | 00 | |
| 18 | 00 | 00 | |
| 19 | 00 | 00 | |
| 1A | 00 | 00 | |
| 1B | 00 | 00 | |
| 1C | 00 | 00 | |
| 1D | 00 | 00 | |
| 1E | 00 | 00 | |
| 1F | 00 | 00 | |
| 20 | 00 | 00 | |
| 21 | 00 | 00 | |
| 22 | 00 | 00 | |
| 23 | 00 | 00 | |
| 24 | 00 | 00 | |
| 25 | 00 | 00 | |
| 26 | 00 | 00 | |
| 27 | 00 | 00 | |
| 28 | 00 | 00 | |
| 29 | 00 | 00 | |
| 2A | 00 | 00 | |
| 2B | 00 | 00 | |
| 2C | 00 | 00 | |
| 2D | 00 | 00 | |
| 2E | 00 | 00 | |
| 2F | 00 | 00 | |
| 30 | 00 | 00 | |
| 31 | 00 | 00 | |
| 32 | 00 | 00 | |
| 33 | 00 | 00 | |
| 34 | 00 | 00 | |
| 35 | 00 | 00 | |
| 36 | 00 | 00 | |
| 37 | 00 | 00 | |
| 38 | 00 | 00 | |
| 39 | 00 | 00 | |
| 3A | 00 | 00 | |
| 3B | 00 | 00 | |
| 3C | 00 | 00 | |
| 3D | 00 | 00 | |
| 3E | 00 | 00 | Differential gain adj. |
| 3F | 00 | 00 | |
| 40 | 00 | 00 | |
| 41 | 00 | 00 | |
| 42 | 00 | 00 | |
| 43 | 00 | 00 | |
| 44 | 00 | 00 | |
| 45 | 00 | 00 | |
| 46 | 00 | 00 | |
| 47 | 00 | 00 | |
| 48 | 00 | 00 | |
| 49 | 00 | 00 | |
| 4A | 00 | 00 | |
| 4B | 00 | 00 | |
| 4C | 00 | 00 | |
| 4D | 00 | 00 | |
| 4E | 00 | 00 | |
| 4F | 00 | 00 | |
| 50 | 00 | 00 | |
| 51 | 00 | 00 | |
| 52 | 00 | 00 | |
| 53 | 00 | 00 | |
| 54 | 00 | 00 | |
| 55 | 00 | 00 | |
| 56 | 00 | 00 | |
| 57 | 00 | 00 | |
| 58 | 00 | 00 | |

**6E Page table**

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 59 | 00 | 00 | |
| 5A | 00 | 00 | |
| 5B | 00 | 00 | |
| 5C | 00 | 00 | |
| 5D | 00 | 00 | |
| 5E | 00 | 00 | |
| 5F | 00 | 00 | |
| 60 | 00 | 00 | |
| 61 | 00 | 00 | |
| 62 | 00 | 00 | |
| 63 | 00 | 00 | |
| 64 | 00 | 00 | |
| 65 | 00 | 00 | |
| 66 | 00 | 00 | |
| 67 | 00 | 00 | |
| 68 | 00 | 00 | |
| 69 | 00 | 00 | |
| 6A | 00 | 00 | |
| 6B | 00 | 00 | |
| 6C | 00 | 00 | |
| 6D | 00 | 00 | |
| 6E | 00 | 00 | |
| 6F | 00 | 00 | Differential gain adj. |
| 70 | 00 | 00 | |
| 71 | 00 | 00 | |
| 72 | 00 | 00 | |
| 73 | 00 | 00 | |
| 74 | 00 | 00 | |
| 75 | 00 | 00 | |
| 76 | 00 | 00 | |
| 77 | 00 | 00 | |
| 78 | 00 | 00 | |
| 79 | 00 | 00 | |
| 7A | 00 | 00 | |
| 7B | 00 | 00 | |
| 7C | 00 | 00 | |
| 7D | 00 | 00 | |
| 7E | 00 | 00 | |
| 7F | 00 | 00 | |
| 80 | 00 | 00 | |
| 81 | 00 | 00 | |
| 82 | 00 | 00 | |
| 83 | 00 | 00 | |
| 84 | 00 | 00 | |
| 85 | 00 | 00 | |
| 86 | 00 | 00 | |
| 87 | 00 | 00 | |

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 88 | 00 | 00 | |
| 89 | 00 | 00 | |
| 8A | 00 | 00 | |
| 8B | 00 | 00 | |
| 8C | 00 | 00 | |
| 8D | 00 | 00 | |
| 8E | 00 | 00 | |
| 8F | 00 | 00 | |
| 90 | 00 | 00 | |
| 91 | 00 | 00 | |
| 92 | 00 | 00 | |
| 93 | 00 | 00 | |
| 94 | 00 | 00 | |
| 95 | 00 | 00 | |
| 96 | 00 | 00 | |
| 97 | 00 | 00 | |
| 98 | 00 | 00 | |
| 99 | 00 | 00 | |
| 9A | 00 | 00 | |
| 9B | 00 | 00 | |
| 9C | 00 | 00 | Differential gain adj. |
| 9D | 00 | 00 | |
| 9E | 00 | 00 | |
| 9F | 00 | 00 | |
| A0 | 00 | 00 | |
| A1 | 00 | 00 | |
| A2 | 00 | 00 | |
| A3 | 00 | 00 | |
| A4 | 00 | 00 | |
| A5 | 00 | 00 | |
| A6 | 00 | 00 | |
| A7 | 00 | 00 | |
| A8 | 00 | 00 | |
| A9 | 00 | 00 | |
| AA | 00 | 00 | |
| AB | 00 | 00 | |
| AC | 00 | 00 | |
| AD | 00 | 00 | |
| AE | 00 | 00 | |
| AF | 00 | 00 | |
| B0 | 00 | 00 | |
| B1 | 00 | 00 | |
| B2 | 00 | 00 | |
| B3 | 00 | 00 | |
| B4 to FF | Fixed data-1 (Initialized data) | | |

### 16. 6F Page table

**Note 1:** If reading/writing data on pages 6F, set data: 06 to page: 0, address: 10, and then select pages: F. By this data setting, the pages 6F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of F, 63 to 6F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of F, 63 to 6F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 10 to 1F | Fixed data-1 (Initialized data) | | |
| 20 | 12 | 12 | Flange back adj. |
| 21 | 43 | 43 | |
| 22 | 54 | 54 | |
| 23 | 90 | 90 | |
| 24 | 22 | 22 | |
| 25 | FE | FE | |
| 26 | 00 | 00 | |
| 27 | 00 | 00 | |
| 28 | 00 | 00 | |
| 29 | 00 | 00 | |
| 2A | B3 | B3 | |
| 2B | 19 | 19 | |
| 2C | 19 | 19 | |
| 2D | 45 | 45 | |
| 2E | 00 | 00 | |
| 2F | 06 | 06 | |
| 30 | 00 | 00 | MR adj. / Flange back adj. |
| 31 | 00 | 00 | Flange back adj. |
| 32 | 00 | 00 | |
| 33 | 00 | 00 | |
| 34 | 00 | 00 | |
| 35 | 00 | 00 | |
| 36 | 00 | 00 | |
| 37 | 00 | 00 | |
| 38 | 00 | 00 | |
| 39 | 00 | 00 | |
| 3A | 00 | 00 | |
| 3B | 00 | 00 | |
| 3C | 00 | 00 | |
| 3D | 00 | 00 | |
| 3E | 00 | 00 | |
| 3F | 00 | 00 | |
| 40 | 80 | 80 | MR adj. |
| 41 | 80 | 80 | |
| 42 | 80 | 80 | |
| 43 | 80 | 80 | |
| 44 | 40 | 40 | |
| 45 | C0 | C0 | |
| 46 | 40 | 40 | |
| 47 | C0 | C0 | |
| 48 | 40 | 40 | |
| 49 | C0 | C0 | |
| 4A | 40 | 40 | |
| 4B | C0 | C0 | |
| 4C | 00 | 00 | |
| 4D | 00 | 00 | |
| 4E | 00 | 00 | |
| 4F | 00 | 00 | |
| 50 to 5F | Fixed data-1 (Initialized data) | | |
| 60 | 21 | 21 | Linear matrix adj. (2) |
| 61 | B3 | B3 | |
| 62 | 02 | 02 | |
| 63 | 63 | 63 | |
| 64 | FE | FE | |
| 65 | C1 | C1 | |
| 66 | FF | FF | |
| 67 | DA | DA | |
| 68 | 20 | 20 | |
| 69 | 0A | 0A | |
| 6A | 00 | 00 | |
| 6B | 2C | 2C | |
| 6C | FF | FF | |
| 6D | 43 | 43 | |
| 6E | 04 | 04 | |
| 6F | F6 | F6 | |
| 70 | 1D | 1D | |
| 71 | BC | BC | |
| 72 to 79 | Fixed data-1 (Initialized data) | | |
| 7A | 80 | 80 | Mechanical shutter adj. (2) |
| 7B | 80 | 80 | |
| 7C | 80 | 80 | |
| 7D | 80 | 80 | |
| 7E | 80 | 80 | |
| 7F | 80 | 80 | |
| 80 to 83 | Fixed data-1 (Initialized data) | | |
| 84 | 2A | 2A | AWB adj. |
| 85 | 80 | 80 | |
| 86 | 5E | 5E | |
| 87 | 40 | 40 | |
| 88 | 14 | 14 | AWB standard data input |
| 89 | D3 | D3 | |
| 8A | 05 | 05 | |
| 8B | B0 | B0 | |
| 8C | 14 | 14 | |
| 8D | B4 | B4 | |
| 8E | 05 | 05 | |
| 8F | AC | AC | |
| 90 | 14 | 14 | |

**6F Page table**

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 91 | AE | AE | AWB standard data input |
| 92 | 05 | 05 | |
| 93 | A6 | A6 | |
| 94 | 14 | 14 | |
| 95 | B2 | B2 | |
| 96 | 05 | 05 | |
| 97 | A5 | A5 | |
| 98 | 0C | 0C | AWB adj. |
| 99 | 4E | 4E | |
| 9A | 09 | 09 | |
| 9B | 08 | 08 | |
| 9C | 0C | 0C | |
| 9D | 39 | 39 | |
| 9E | 09 | 09 | |
| 9F | 02 | 02 | |
| A0 | 0C | 0C | |
| A1 | 34 | 34 | |
| A2 | 08 | 08 | |
| A3 | FC | FC | |
| A4 | 0C | 0C | |
| A5 | 2D | 2D | |
| A6 | 08 | 08 | |
| A7 | F3 | F3 | |
| A8 | E5 | E5 | Color reproduction adj. & check |
| A9 | DB | DB | |
| AA | 6E | 6E | |
| AB | 58 | 58 | |
| AC | 05 | 05 | |
| AD | 11 | 11 | |
| AE | 65 | 65 | |
| AF | 6C | 6C | |
| B0 | E5 | E5 | |
| B1 | DB | DB | |
| B2 | 6E | 6E | |
| B3 | 58 | 58 | |
| B4 | 05 | 05 | |
| B5 | 11 | 11 | |
| B6 | 65 | 65 | |
| B7 | 6C | 6C | |
| B8 to C7 | Fixed data-1 (Initialized data) | | |
| C8 | 03 | 03 | Linear matrix adj. (2) |
| C9 | AA | AA | |
| CA | FF | FF | |
| CB | B5 | B5 | |
| CC | 00 | 00 | |
| CD | 30 | 30 | |
| CE | 00 | 00 | |

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| CF | 01 | 01 | Linear matrix adj. (2) |
| D0 | 03 | 03 | |
| D1 | F0 | F0 | |
| D2 | 00 | 00 | |
| D3 | 20 | 20 | |
| D4 | 00 | 00 | |
| D5 | 13 | 13 | |
| D6 | FF | FF | |
| D7 | 54 | 54 | |
| D8 | 04 | 04 | |
| D9 | 87 | 87 | |
| DA | 04 | 04 | |
| DB | 5F | 5F | |
| DC | 00 | 00 | |
| DD | 4C | 4C | |
| DE | FF | FF | |
| DF | D0 | D0 | |
| E0 | 00 | 00 | |
| E1 | 00 | 00 | |
| E2 | 04 | 04 | |
| E3 | 0B | 0B | |
| E4 | FF | FF | |
| E5 | E4 | E4 | |
| E6 | FF | FF | |
| E7 | EE | EE | |
| E8 | 00 | 00 | |
| E9 | 99 | 99 | |
| EA | 03 | 03 | |
| EB | 85 | 85 | |
| EC to EF | Fixed data-1 (Initialized data) | | |
| F0 | 14 | 14 | AWB standard data input |
| F1 | AD | AD | |
| F2 | 05 | 05 | |
| F3 | A7 | A7 | |
| F4 | 14 | 14 | |
| F5 | 95 | 95 | |
| F6 | 05 | 05 | |
| F7 | AA | AA | |
| F8 | 0C | 0C | AWB adj. |
| F9 | 37 | 37 | |
| FA | 09 | 09 | |
| FB | 01 | 01 | |
| FC | 0C | 0C | |
| FD | 0A | 0A | |
| FE | 09 | 09 | |
| FF | 02 | 02 | |

### 1-2-4. Initialization of 7C, 7E, 7F Page Data

#### 1. Initializing of 7C, 7E, 7F Page Data

**Note 1:** If "Initialization of Pages 7C, 7E, 7F" is executed, all data on pages 7C, 7E, 7F are initialized.
(Only an individual page cannot be initialized)

**Note 2:** If the 7C, 7E, 7F page data has been initialized, the following adjustments need to be performed again.
1) Modification of 7C, 7E, 7F page data
2) HALL adjustment (1) (if all areas were initialized)
3) Angular velocity sensor sensitivity adjustment (if all areas were initialized)

| | |
|---|---|
| Adjustment Page | 7C |
| Adjustment Address | 00 to FF |
| Adjustment Page | 7E |
| Adjustment Address | 00 to FF |
| Adjustment Page | 7F |
| Adjustment Address | 00 to FF |

**Initializing method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 07 | |
| 3 | 2 (72) | 01 | 2D | Press PAUSE (Write) button. |
| 4 | 2 (72) | 02 | | Check the data changes to "01". |
| 5 | 2 (72) | 01 | 00 | Press PAUSE (Write) button. |
| 6 | 0 | 10 | 00 | |
| 7 | | | | Perform "Modification of 7C, 7E, 7F Page Data". |

#### 2. Modification of 7C, 7E, 7F Page Data

If the 7C, 7E, 7F page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

**Modifying Method:**

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) If modification of data on pages 7C, 7E, 7F, set data: 01 to page: 0, address: 10, and then select pages C, E, F.
   After the modification of data finished, return the data on page: 0, address: 10 to "00".
3) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   **Note:** If copy the data built in the different model, the camcorder may not operate.
4) When changing the data, press the PAUSE (Write) button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
5) If all areas were initialized, check that the data at the addresses for adjustment are initial values (adjustment initial values) listed in the table. If different, change them to the adjustment initial values.

**Processing after Completing Modification Camera Control Data:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 10 | 00 | |
| 2 | 2 | 00 | 29 | |
| 3 | 2 | 01 | 29 | Press PAUSE (Write) button. |

### 3. 7C Page table

**Note 1:** If reading/writing data on pages 7C, set data: 07 to page: 0, address: 10, and then select pages: C. By this data setting, the pages 7C can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of 7C, 7E, 7F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of 7C, 7E, 7F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 11 | Fixed data-1 (Initialized data) | | |
| 12 | Fixed data-2 | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16, 17 | Fixed data-1 (Initialized data) | | |
| 18 | Fixed data-2 | | |
| 19 | | | |
| 1A to FF | Fixed data-1 (Initialized data) | | |

### 4. 7E Page table

**Note 1:** If reading/writing data on pages 7E, set data: 07 to page: 0, address: 10, and then select pages: E. By this data setting, the pages 7E can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Fixed data-1: Initialized data. (Refer to "1. Initializing of 7C, 7E, 7F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of 7C, 7E, 7F Page Data")

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 16 | Fixed data-1 (Initialized data) | | |
| 17 | Fixed data-2 | | |
| 18 to 1B | Fixed data-1 (Initialized data) | | |
| 1C | Fixed data-2 | | |
| 1D | Fixed data-1 (Initialized data) | | |
| 1E | Fixed data-2 | | |
| 1F | | | |
| 20 to 50 | Fixed data-1 (Initialized data) | | |
| 51 | Fixed data-2 | | |
| 52 | Fixed data-1 (Initialized data) | | |
| 53 | Fixed data-2 | | |
| 54 to AA | Fixed data-1 (Initialized data) | | |
| AB | Fixed data-2 | | |
| AC, AD | Fixed data-1 (Initialized data) | | |
| AE | Fixed data-2 | | |
| AF to C3 | Fixed data-1 (Initialized data) | | |
| C4 | Fixed data-2 | | |
| C5 | | | |
| C6 to EF | Fixed data-1 (Initialized data) | | |
| F0 | Fixed data-2 | | |
| F1 to FF | Fixed data-1 (Initialized data) | | |

### 5. 7F Page table

**Note 1:** If reading/writing data on pages 7F, set data: 07 to page: 0, address: 10, and then select pages: F. By this data setting, the pages 7F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to “00”.

**Note 2:** Fixed data-1: Initialized data. (Refer to “1. Initializing of 7C, 7E, 7F Page Data”)
Fixed data-2: Modified data. (Refer to “2. Modification of 7C, 7E, 7F Page Data”)

| Address | Initial value | | Remark |
|---|---|---|---|
| | NTSC | PAL | |
| 00 to 03 | | | Fixed data-1 (Initialized data) |
| 04 | 80 | 80 | HALL adj. (1) |
| 05 | 80 | 80 | |
| 06 | 80 | 80 | |
| 07 | 80 | 80 | |
| 08 | 03 | 03 | |
| 09 | 77 | 77 | |
| 0A | 03 | 03 | |
| 0B | 79 | 79 | |
| 0C | 00 | 00 | |
| 0D | A3 | A3 | |
| 0E | 00 | 00 | |
| 0F | 83 | 83 | |
| 10, 11 | | | Fixed data-1 (Initialized data) |
| 12 | 36 | 36 | Angular velocity sensor sensitive adj. |
| 13 | 36 | 36 | |
| 14 to FF | | | Fixed data-1 (Initialized data) |

## 1-3. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENTS" are satisfied. (Except Origin Oscillation Check")
Check that the data of page: 0, address: 10 is "00".
If not, select page: 0, address: 10, and set the data "00".

### 1. Origin Oscillation Check (CM-077 board)

Check the frequency of the clock for synchronization.
If deviated, the synchronization will be disrupted and the color will become inconsistent.

| | |
|---|---|
| Subject | Not required |
| Measurement Point | Pin ⑯ of CN6601 on CM-077 board |
| Measuring Instrument | Frequency counter |
| Specified value | f = 44505494 ± 895 Hz (NTSC)<br>f = 37125000 ± 745 Hz (PAL) |

**Switch setting**

1) POWER ..... CAMERA-TAPE mode

**Checking method:**

1) Check that the frequency (f) satisfies the specified value.

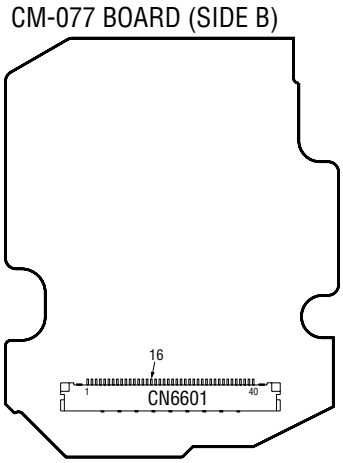



***Fig. 6-1-6***

### 2. HALL Adjustment (1) RadarW

Adjust the offset and gain to eliminate the output dispersion of the Hall sensor.

| | |
|---|---|
| Subject | Not required |
| Measurement Point | Adjusting remote commander |
| Measuring Instrument | |
| Adjustment Page | 7F |
| Adjustment Address | 04 to 0F |
| Specified value | Data of page: 72 address: 03 is "00"<br>Data of page: 72 address: 04 is "00" |

**Note 1:** If reading/writing data on pages 72, 7F set data: 07 to page: 0, address: 10, and then select pages: 2, F. By this data setting, the pages 72, 7F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 2:** Perform this adjustment only when replacing the lens block. When the microprocessor, circuit etc. is damaged, don't perform this adjustment but check the steady shot operations only.

**Note 3:** Perform the adjustment with the camcorder in horizontal state.

**Note 4:** Do not move the set.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 07 | |
| 3 | 2 (72) | 01 | 97 | Press PAUSE (Write) button. (Note 5) |
| 4 | | | | Wait for 4 seconds. |
| 5 | 2 (72) | 02 | | Check the data changes to "01". |
| 6 | 2 (72) | 03 | | Check the data is "00". (Note 6) |
| 7 | 2 (72) | 04 | | Check the data is "00". (Note 6). |

**Note 5:** The adjustment data will be automatically input to page: 7F, address: 04 to 0F.

**Note 6:** If the data is other than "00", perform readjustment.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 2 (72) | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 0 | 10 | 00 | |
| 3 | 0 | 01 | 00 | |
| 4 | | | | Turn off the power and turn on again. |
| 5 | | | | Shake the camcorder vertically and horizontally to check that the steady shot function operates normally. |

### 3. HALL Adjustment (2) RadarW

For detecting the position of lens iris and ND filter, adjust the hall AMP gain and offset.

| | |
|---|---|
| Subject | Not required |
| Measurement Point | Adjusting remote commander |
| Measuring Instrument | |
| Adjustment Page | 69 |
| Adjustment Address | D0 to D8 |
| Specified value | Data of page: 6, address: 0C is “00” |

**Note 1:** If reading/writing data on pages 69, set data: 06 to page: 0, address: 10, and then select pages 9. By this data setting, the pages 69 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to “00”.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 6 | 02 | | Check the data is “00”. (Note 2) |
| 3 | 6 | D0 | 22 | |
| 4 | 6 | 01 | 6D | Press PAUSE (Write) button. (Note 3) |
| 5 | 6 | 02 | | Check the data changes to “01”. |
| 6 | 6 | 0C | | Check the data is “00”. |

**Note 2:** If not, select page: 6, address: 01, set data: 00, and press the PAUSE (Write) button.

**Note 3:** The adjustment data will be automatically input to page: 69, address: D0 to D8.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 0 | 01 | 00 | |

### 4. MR Adjustment RadarW

The inner focus lens MR adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

| | |
|---|---|
| Subject | Not required |
| Measurement Point | Adjusting remote commander |
| Measuring Instrument | |
| Adjustment Page | 6F |
| Adjustment Address | 30, 40 to 4F |
| Specified value | Data of page: 6, address: 0C is “00”. |

**Note 1:** Perform the adjustment with the lens in horizontal state.

**Note 2:** Perform “Flange Back Adjustment” after this adjustment.

**Note 3:** If reading/writing data on pages 6F, set data: 06 to page: 0, address: 10, and then select pages F. By this data setting, the pages 6F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to “00”.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 6 | 02 | | Check the data is “00”. (Note 4) |
| 3 | | | | Wait for 2 seconds. |
| 4 | 6 | 01 | BD | Press PAUSE (Write) button. (Note 5) |
| 5 | 6 | 02 | | Check the data changes to “01”. |
| 6 | 6 | 0C | | Check the data is “00”. |

**Note 4:** If not, select page: 6, address: 01, set data: 00, and press the PAUSE (Write) button.

**Note 5:** The adjustment data will be automatically input to page: 6F, address: 30, 40 to 4F.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | 01 | 25 | Press PAUSE (Write) button. |
| 3 | | | | Wait for 2 seconds. |
| 4 | 6 | 02 | | Check the data changes to “01”. |
| 5 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 6 | 0 | 01 | 00 | |

### 5. Differential Gain Adjustment RadarW

Correct the dispersion of between the channels of CMOS imager.

| | |
|---|---|
| Subject | Clear chart (All white) (Note 1) |
| Adjustment Page | 6E |
| Adjustment Address | 00 to B3 |

**Note 1:** Shoot the clear chart with the zoom TELE end.

**Note 2:** If reading/writing data on pages 6E set data: 06 to page: 0, address: 10, and then select pages: E. By this data setting, the pages 6E can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) ZOOM ..... TELE end
4) STEADY SHOT (Menu setting) ..... OFF
5) FOCUS (Menu setting) ..... MANUAL

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 6 | 02 | | Check the data is "00". (Note 3) |
| 3 | 6 | 2C | 01 | |
| 4 | 6 | 40 | 01 | |
| 5 | 6 | D0 | 60 | |
| 6 | 6 | D2 | 01 | |
| 7 | 6 | D3 | 01 | |
| 8 | 6 | D6 | 10 | |
| 9 | 6 | 01 | F5 | Press PAUSE (Write) button. (Note 4) |
| 10 | | | | Wait for 3 seconds. |
| 11 | 6 | 02 | | Check the data changes to "01". |

**Note 3:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Note 4:** The adjustment data will be automatically input to page: 6E, address: 00 to B3.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | 2C | 00 | |
| 3 | 6 | 40 | 00 | |
| 4 | 0 | 01 | 00 | |

## 6. Flange Back Adjustment RadarW (Using the minipattern box or flange back adjustment jig)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

| | |
|---|---|
| Subject | Siemens star chart with ND filter for minipattern box (Note 1) or flange back adjustment jig |
| Measurement Point | Adjusting remote commander |
| Measuring Instrument | |
| Adjustment Page | 6F |
| Adjustment Address | 20 to 3F |
| Specified value | Data of page: 6F, address: 2F is "00" to "09"<br>Data of pege: 6, address: 0C is "00" |

**Note 1:** Dark Siemens star chart.
**Note 2:** Perform "HALL Adjustment", "MR Adjustment" and "Differential Gain Adjustment" before this adjustment.
**Note 3:** Perform the adjustment with the lens in horizontal state.
**Note 4:** If reading/writing data on pages 6F, set data: 06 to page: 0, address: 10, and then select pages F. By this data setting, the pages 6F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".
**Note 5:** Don't touch the zoom lever during adjustment.
**Note 6:** After adjustment, if the focusing to a subject located at infinity failed, increase the illuminance of the chart and perform readjustment.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) COLOR SLOW S (Menu setting) ..... OFF
4) REC FORMAT (Menu setting) ..... HDV1080i

**Preparation (Using the minipattern box)**

1) The minipattern box is installed as shown in the following figure.
**Note 7:** The attachment lenses are not used.
2) Install the minipattern box so that the distance between it and the front of lens of camera is less than 3 cm.
3) Make the height of minipattern box and the camera equal.
4) Check the output voltage of the regulated power supply is the specified voltage ± 0.01 Vdc.
5) Check that the center of Siemens star chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.

Specified voltage: The specified voltage varies according to the minipattern box, so adjustment the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

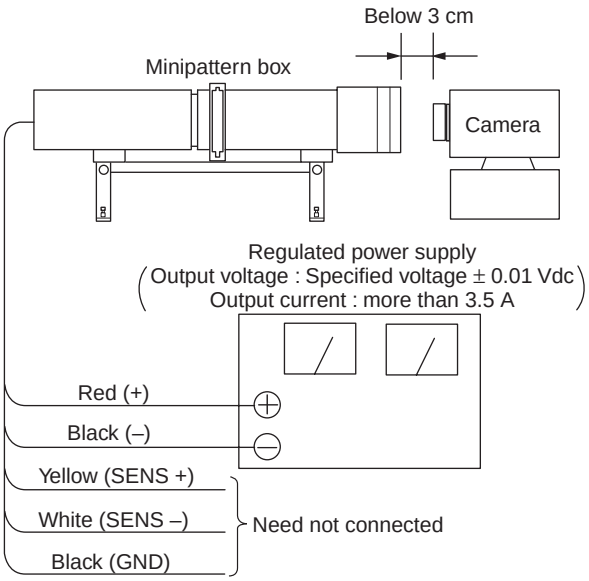



***Fig. 6-1-7***

**Preparation (Using the flange back adjustment jig) (Luminance: 300 to 400 lux)**

1) Install the flange back adjustment jig so that the distance between it and the front of lens of camera is less than 3 cm.
2) Make the height of flange back adjustment jig and the camera equal.
3) Check that the center of chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.

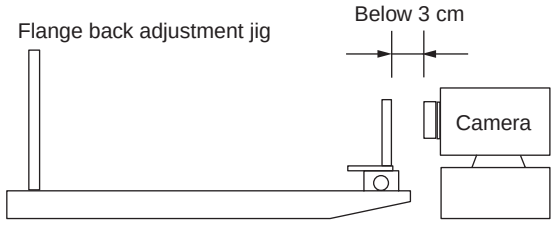



***Fig. 6-1-8***

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 06 | |
| 3 | 8 (68) | 19 | 03 | Press PAUSE (Write) button. |
| 4 | 8 (68) | 90 | 40 | Press PAUSE (Write) button. |
| 5 | 0 | 10 | 00 | |
| 6 | 6 | 02 | | Check the data is “00”. (Note 8) |
| 7 | 6 | 4D | 40 | |
| 8 | 6 | 64 | 04 | |
| 9 | 6 | 01 | 13 | Press PAUSE (Write) button. |
| 10 | | | | Wait for 2 seconds. |
| 11 | 6 | 01 | 27 | Press PAUSE (Write) button. (Note 9) |
| 12 | | | | Wait for 10 seconds. |
| 13 | 6 | 02 | | Check the data changes to “01”. |
| 14 | 6 | 0C | | Check the data is “00”. |
| 15 | 0 | 10 | 06 | |
| 16 | F (6F) | 2F | | Check the data is “00” to “09”. |
| 17 | 0 | 10 | 00 | |

**Note 8:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Note 9:** The adjustment data will be automatically input to page: 6F, address: 20 to 3F.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | 01 | 25 | Press PAUSE (Write) button. |
| 3 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 4 | 6 | 4D | 00 | |
| 5 | 6 | 64 | 00 | |
| 6 | 0 | 10 | 06 | |
| 7 | 8 (68) | 90 | 00 | Press PAUSE (Write) button. |
| 8 | 8 (68) | 19 | 07 | Press PAUSE (Write) button. |
| 9 | 0 | 10 | 00 | |
| 10 | 0 | 01 | 00 | |
| 11 | | | | Perform “Flange Back Check”. |

## 7. Flange Back Adjustment (Using the flange back adjustment chart and subject more than 500 m away)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

### 7-1. Flange Back Adjustment (1) RadarW

| | |
|---|---|
| Subject | Flange back adjustment chart (2.0 m from the front of lens) (Luminance: 300 to 400 lux) |
| Measurement Point | Adjusting remote commander |
| Measuring Instrument | |
| Adjustment Page | 6F |
| Adjustment Address | 20 to 3F |
| Specified value | Data of page: 6F, address: 2F is “00” to “09”<br>Data of pege: 6, address: 0C is “00” |

**Note 1:** Perform “HALL Adjustment”, “MR Adjustment” and “Differential Gain Adjustment” before this adjustment.

**Note 2:** Perform the adjustment with the lens in horizontal state.

**Note 3:** If reading/writing data on pages 6F, set data: 06 to page: 0, address: 10, and then select pages F. By this data setting, the pages 6F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to “00”.

**Note 4:** Don’t touch the zoom lever during adjustment.

**Note 5:** After adjustment, if the focusing to a subject located at infinity failed, increase the illuminance of the chart and perform readjustment.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) COLOR SLOW S (Menu setting) ..... OFF
4) REC FORMAT (Menu setting) ..... HDV1080i

**Preparations before adjustments:**

1) Check that the center of Flange back adjustment chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 06 | |
| 3 | 8 (68) | 19 | 03 | Press PAUSE (Write) button. |
| 4 | 8 (68) | 90 | 40 | Press PAUSE (Write) button. |
| 5 | 0 | 10 | 00 | |
| 6 | 6 | 02 | | Check the data is “00”. (Note 6) |
| 7 | 6 | 4D | 40 | |
| 8 | 6 | 64 | 04 | |
| 9 | 6 | 01 | 13 | Press PAUSE (Write) button. |
| 10 | | | | Wait for 2 seconds. |
| 11 | 6 | 01 | 15 | Press PAUSE (Write) button. (Note 7) |
| 12 | | | | Wait for 10 seconds. |
| 13 | 6 | 02 | | Check the data changes to “01”. |
| 14 | 6 | 0C | | Check the data is “00”. |
| 15 | 0 | 10 | 06 | |
| 16 | F (6F) | 2F | | Check the data is “00” to “09”. |
| 17 | 0 | 10 | 00 | |

**Note 6:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Note 7:** The adjustment data will be automatically input to page: 6F, address: 20 to 3F.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | 01 | 25 | Press PAUSE (Write) button. |
| 3 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 4 | 6 | 4D | 00 | |
| 5 | 6 | 64 | 00 | |
| 6 | 0 | 10 | 06 | |
| 7 | 8 (68) | 90 | 00 | Press PAUSE (Write) button. |
| 8 | 8 (68) | 19 | 07 | Press PAUSE (Write) button. |
| 9 | 0 | 10 | 00 | |
| 10 | 0 | 01 | 00 | |
| 11 | | | | Perform “Flange Back Adjustment (2)”. |

## 7-2. Flange Back Adjustment (2) RadarW

Perform this adjustment after performing "Flange Back Adjustment (1)".

| | |
|---|---|
| Subject | Subject more than 500 m away (Subject with clear contrast such as buildings, etc.) |
| Measurement Point | Adjusting remote commander |
| Measuring Instrument | |
| Adjustment Page | 6F |
| Adjustment Address | 20 to 3F |
| Specified value | Data of page: 6F, address: 2F is"00" to "09"<br>Data of page: 6, address: 0C is"00" |

**Note 1:** Perform the adjustment with the lens in horizontal state.

**Note 2:** If reading/writing data on pages 6F, set data: 06 to page: 0, address: 10, and then select pages F. By this data setting, the pages 6F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Note 3:** Don't touch the zoom lever during adjustment.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) COLOR SLOW S (Menu setting) ..... OFF
4) REC FORMAT (Menu setting) ..... HDV1080i

**Preparations before adjustments:**

1) Set the zoom lens to the TELE end and expose a subject that is more than 500 m away.
(subjects with clear contrast such as building, etc.)
(Nearby subjects less than 500 m away should not be in the screen)

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 06 | |
| 3 | 8 (68) | 19 | 03 | Press PAUSE (Write) button. |
| 4 | 8 (68) | 90 | 40 | Press PAUSE (Write) button. |
| 5 | 0 | 10 | 00 | |
| 6 | 6 | 02 | | Check the data is "00". (Note 4) |
| 7 | 6 | 4D | 40 | |
| 8 | 6 | 64 | 04 | |
| 9 | 6 | 01 | 13 | Press PAUSE (Write) button. |
| 10 | | | | Wait for 2 seconds. |
| 11 | | | | Place ND filter on the lens so that the optimum image is obtain. |
| 12 | 6 | 01 | 29 | Press PAUSE (Write) button. (Note 5) |
| 13 | | | | Wait for 10 seconds. |
| 14 | 6 | 02 | | Check the data changes to "01". |
| 15 | 6 | 0C | | Check the data is "00". |
| 16 | 0 | 10 | 06 | |
| 17 | F (6F) | 2F | | Check the data is "00" to "09". |
| 18 | 0 | 10 | 00 | |

**Note 4:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Note 5:** The adjustment data will be automatically input to page: 6F, address: 20 to 3F.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | 01 | 25 | Press PAUSE (Write) button. |
| 3 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 4 | 6 | 4D | 00 | |
| 5 | 6 | 64 | 00 | |
| 6 | 0 | 10 | 06 | |
| 7 | 8 (68) | 90 | 00 | Press PAUSE (Write) button. |
| 8 | 8 (68) | 19 | 07 | Press PAUSE (Write) button. |
| 9 | 0 | 10 | 00 | |
| 10 | 0 | 01 | 00 | |
| 11 | | | | Perform "Flange Back Check". |

### 8. Flange Back Check (Using the flange back adjustment jig)

| | |
|---|---|
| Subject | Flange back adjustment jig (Luminance: approx. 200 lux) |
| Measurement Point | Check operation on monitor TV |
| Measuring Instrument | |
| Specified value | Focused at the TELE end and WIDE end |

**Note:** Check that the data of page: 0, address: 10 is “00”.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) REC FORMAT (Menu setting) ..... HDV1080i

**Preparations before adjustments:**

1) Install the flange back adjustment jig so that the distance between it and the front of lens of camera is less than 3 cm.
2) To open the IRIS, decrease the luminous intensity to the chart of the flange back adjustment jig up to a point before noise appear on the image. (approx. 200 lux)
3) Check that the center of chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.

**Checking method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 40 | 01 | |
| 2 | 6 | 41 | 01 | |
| 3 | 6 | 4D | 40 | |
| 4 | | | | Shoot the chart with the zoom TELE end. |
| 5 | 6 | 2C | 02 | |
| 6 | | | | Check that the lens is focused. |
| 7 | | | | Shoot the chart with the zoom WIDE end. |
| 8 | | | | Check that the lens is focused. |

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 2C | 00 | |
| 2 | 6 | 40 | 00 | |
| 3 | 6 | 41 | 00 | |
| 4 | 6 | 4D | 00 | |

### 9. Flange Back Check (Using the Siemens star)

| | |
|---|---|
| Subject | Siemens star (2.0 m from the front of the lens) (Luminance: approx. 200 lux) |
| Measurement Point | Check operation on monitor TV |
| Measuring Instrument | |
| Specified value | Focused at the TELE end and WIDE end |

**Note 1:** Check that the data of page: 0, address: 10 is “00”.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) REC FORMAT (Menu setting) ..... HDV1080i

**Note 2:** When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on the page: 1 of the adjusting remote commander.

1 : 00 : XX
- Odd: Focused
- Even: Unfocused

**Preparations before adjustments:**

1) Place the Siemens star 2.0 m from the front of the lens.
2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.

**Checking method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 40 | 01 | |
| 2 | 6 | 41 | 01 | |
| 3 | 6 | 4D | 40 | |
| 4 | | | | Shoot the Siemens star with the zoom TELE end. |
| 5 | | | | Turn on the auto focus. |
| 6 | 0 | 03 | 0F | |
| 7 | 1 | | | Check that the lens is focused. (Note 2) |
| 8 | 6 | 21 | 10 | |
| 9 | | | | Shoot the Siemens star with the zoom WIDE end. |
| 10 | | | | Observe the TV monitor and check that the lens is focused. |

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 21 | 00 | |
| 2 | 6 | 40 | 00 | |
| 3 | 6 | 41 | 00 | |
| 4 | 6 | 4D | 40 | |
| 5 | 0 | 03 | 00 | |

### 10. F No. & ND Light Quality Standard Data Input RadarW

Correct the lens iris and dispersion of the ND filter light quantity.

| | |
|---|---|
| Adjustment Page | 69 |
| Adjustment Address | E0 to EF |

**Note 1:** If reading/writing data on pages 69, set data: 06 to page: 0, address: 10, and then select pages: 9. By this data setting, the pages 69 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Adjusting method:**

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 10, and set data: 06.
3) Input the following data to page: 69, address: E0 to EF.

**Note 2:** Press the PAUSE (Write) button of the adjustment remote commander each time to set data.

| Address | Data | |
|---|---|---|
| | NTSC | PAL |
| E0 | 00 | 00 |
| E1 | 00 | 00 |
| E2 | 00 | 00 |
| E3 | 00 | 00 |
| E4 | 00 | 00 |
| E5 | 00 | 00 |
| E6 | 00 | 00 |
| E7 | 00 | 00 |
| E8 | 00 | 00 |
| E9 | 00 | 00 |
| EA | 00 | 00 |
| EB | 00 | 00 |
| EC | 00 | 00 |
| ED | 00 | 00 |
| EE | 00 | 00 |
| EF | 00 | 00 |

4) Select page: 0, address: 10, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

### 11. Mechanical Shutter Adjustment (1) RadarW

Adjust the close time and loss time every F number of the mechanical shutter and the high-speed shutter correction value to correct the luminous exposure.

| | |
|---|---|
| Adjustment Page | 69 |
| Adjustment Address | A0 to B5 |

**Note 1:** If reading/writing data on pages 69 set data: 06 to page: 0, address: 10, and then select pages: 9. By this data setting, the pages 69 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Adjusting method:**

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 10, and set data: 06.
3) Input the following data to page: 9 (69), address: A0 to B5.

**Note 2:** Press the PAUSE (Write) button of the adjustment remote commander each time to set data.

| Address | Data | |
|---|---|---|
| | NTSC | PAL |
| A0 | 0F | 0C |
| A1 | 80 | B0 |
| A2 | 0B | 09 |
| A3 | 00 | 10 |
| A4 | 08 | 07 |
| A5 | C0 | 20 |
| A6 | 07 | 05 |
| A7 | 00 | A0 |
| A8 | 05 | 04 |
| A9 | 40 | 70 |
| AA | 54 | 55 |
| AB | 65 | 65 |
| AC | 63 | 64 |
| AD | 5C | 5C |
| AE | 4B | 4B |
| AF | 20 | 20 |
| B0 | 80 | 80 |
| B1 | 80 | 80 |
| B2 | 80 | 80 |
| B3 | 80 | 80 |
| B4 | 80 | 80 |
| B5 | 80 | 80 |

4) Select page: 0, address: 10, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

### 12. Mechanical Shutter Adjustment (2) RadarW

Adjust the close time and loss time every F number of the mechanical shutter and the high-speed shutter correction value to correct the luminous exposure.

| | |
|---|---|
| Adjustment Page | 6F |
| Adjustment Address | 7A to 7F |

**Note 1:** If reading/writing data on pages 6F set data: 06 to page: 0, address: 10, and then select pages: F. By this data setting, the pages 6F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Adjusting method:**

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 10, and set data: 06.
3) Input the following data to page: F (6F), address: 7A to 7F.

**Note 2:** Press the PAUSE (Write) button of the adjustment remote commander each time to set data.

| Address | Data | |
|---|---|---|
| | NTSC | PAL |
| 7A | 80 | 80 |
| 7B | 80 | 80 |
| 7C | 80 | 80 |
| 7D | 80 | 80 |
| 7E | 80 | 80 |
| 7F | 80 | 80 |

4) Select page: 0, address: 10, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

### 13. Linear Matrix Adjustment (1) RadarW

Adjust the matrix coefficient for compensating the variation in spectral sensitivity.

| | |
|---|---|
| Adjustment Page | 69 |
| Adjustment Address | BE to CF |

**Note 1:** If reading/writing data on pages 69, set data: 06 to page: 0, address: 10, and then select pages: 9. By this data setting, the pages 69 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Adjusting method:**

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 10, and set data: 06.
3) Input the following data to page: 9 (69), address: BE to CF.

**Note 2:** Press the PAUSE (Write) button of the adjustment remote commander each time to set data.

| Address | Data | |
|---|---|---|
| | NTSC | PAL |
| BE | 06 | 06 |
| BF | 8E | 8E |
| C0 | FE | FE |
| C1 | 67 | 67 |
| C2 | 00 | 00 |
| C3 | 35 | 35 |
| C4 | FE | FE |
| C5 | F2 | F2 |
| C6 | 05 | 05 |
| C7 | A0 | A0 |
| C8 | FE | FE |
| C9 | 8A | 8A |
| CA | 00 | 00 |
| CB | 19 | 19 |
| CC | FE | FE |
| CD | 92 | 92 |
| CE | 06 | 06 |
| CF | 2A | 2A |

4) Select page: 0, address: 10, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

### 14. Linear Matrix Adjustment (2) RadarW

Adjust the matrix coefficient for compensating the variation in spectral sensitivity.

| | |
|---|---|
| Adjustment Page | 6F |
| Adjustment Address | 60 to 71, C8 to EB |

**Note 1:** If reading/writing data on pages 6F, set data: 06 to page: 0, address: 10, and then select pages: F. By this data setting, the pages 6F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Adjusting method:**

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 10, and set data: 06.
3) Input the following data to page: F (6F), address: 60 to 71, C8 to EB.

**Note 2:** Press the PAUSE (Write) button of the adjustment remote commander each time to set data.

| Address | Data | | Address | Data | |
|---|---|---|---|---|---|
| | NTSC | PAL | | NTSC | PAL |
| 60 | 21 | 21 | D1 | E5 | E5 |
| 61 | 78 | 78 | D2 | 00 | 00 |
| 62 | 02 | 02 | D3 | 25 | 25 |
| 63 | BC | BC | D4 | 00 | 00 |
| 64 | FE | FE | D5 | 17 | 17 |
| 65 | 34 | 34 | D6 | FF | FF |
| 66 | FF | FF | D7 | 55 | 55 |
| 67 | E9 | E9 | D8 | 04 | 04 |
| 68 | 20 | 20 | D9 | 7F | 7F |
| 69 | 2D | 2D | DA | 04 | 04 |
| 6A | FF | FF | DB | 45 | 45 |
| 6B | AF | AF | DC | 00 | 00 |
| 6C | FF | FF | DD | 5B | 5B |
| 6D | 36 | 36 | DE | FF | FF |
| 6E | 05 | 05 | DF | CE | CE |
| 6F | 0A | 0A | E0 | FF | FF |
| 70 | 1D | 1D | E1 | F3 | F3 |
| 71 | 9D | 9D | E2 | 04 | 04 |
| C8 | 03 | 03 | E3 | 15 | 15 |
| C9 | BF | BF | E4 | FF | FF |
| CA | FF | FF | E5 | E0 | E0 |
| CB | A6 | A6 | E6 | FF | FF |
| CC | 00 | 00 | E7 | E9 | E9 |
| CD | 32 | 32 | E8 | 00 | 00 |
| CE | 00 | 00 | E9 | 9A | 9A |
| CF | 0E | 0E | EA | 03 | 03 |
| D0 | 03 | 03 | EB | 8B | 8B |

4) Select page: 0, address: 10, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

## 15. Picture Frame Setting (AWB adjustment frame)

| | |
|---|---|
| Subject | Clear chart<br>(AWB adjustment frame)<br>(1 m (PTB-450) or 40 cm (PTB-1450) from the front of lens) |
| Measurement Point | Video terminal of A/V jack<br>(75 Ω terminated) |
| Measuring Instrument | Monitor TV (16:9) |
| Specified Value | Only the clear chart must be shot (entire screen is white). |

**Note 1:** Perform "Hall Adjustment" and "Flange Back Adjustment" before this adjustment.

**Note 2:** Check that the data of page: 0, address: 10 is "00".

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu setting) ..... OFF
4) STEADY SHOT (Menu setting) ..... OFF
5) FOCUS (Menu Setting) ..... MANUAL
6) REC FORMAT (Menu setting) ..... HDV1080i

**Setting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 4D | 40 | |
| 2 | | | | Shoot the color bar chart. |
| 3 | | | | Adjust the camera direction and zoom to set a picture frame so that color bars on the chart can be shot on the entire screen. (Refer to Fig. 6-1-12) |
| 4 | | | | Remove the color bar chart from the pattern box, and install the clear chart. |
| 5 | | | | Check that whole of the screen is white. |
| 6 | | | | In the adjustment performed later, when the "AWB adjustment frame" is used, set the zoom and focus to this position. |

**How to read the XH, XL, YH and YL data:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 03 | 18 | |
| 2 | 1 | | | Read XH data and XL data. (Note 3) |
| 3 | 0 | 03 | 22 | |
| 4 | 1 | | | Read YH data and YL data. (Note 3) |

**Note 3:** The right four digits of the page: 1 displayed data of the adjusting remote commander.

1:XX : XX
- XL or YL data
- XH or YH data

**How to reset the zoom and focus when they deviated:**

If the zoom and focus deviated due to some reason, reset them in the following method.

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 4D | 40 | |
| 2 | 6 | 90 | XL | |
| 3 | 6 | 91 | XH | |
| 4 | 6 | 92 | YL | |
| 5 | 6 | 93 | YH | |
| 6 | 6 | 01 | 79 | Press PAUSE (Write) button. |

**How to release the picture frame setting:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 4D | 00 | |
| 2 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 3 | 6 | 90 | 00 | |
| 4 | 6 | 91 | 00 | |
| 5 | 6 | 92 | 00 | |
| 6 | 6 | 93 | 00 | |

## Check on the monitor TV (Underscanned mode)

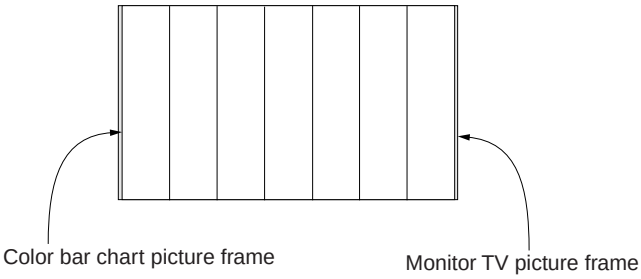



***Fig. 6-1-9***

### 16. Auto White Balance Standard Data Input RadarW

Adjust the white balance reference at 3200K, and adjust the normal coefficient of the light value.

| | |
|---|---|
| Subject | Clear chart (AWB adjustment frame) |
| Adjustment Page | 6F |
| Adjustment Address | 88 to 97, F0 to F7 |

**Note 1:** Perform "F No. & ND Light Quality Standard Data Input" and "Linear Matrix Adjustment" before this adjustment.

**Note 2:** If reading/writing data on pages 6F, set data: 06 to page: 0, address: 10, and then select pages: F. By this data setting, the pages 6F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu setting) ..... OFF
4) STEADY SHOT (Menu setting) ..... OFF
5) FOCUS (Menu setting) ..... MANUAL
6) REC FORMAT (Menu setting) ..... HDV1080i

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Check that the picture frame is "AWB adjustment frame". If not, perform "15. Picture Frame Setting (AWB adjustment frame)" |
| 2 | 0 | 01 | 01 | |
| 3 | 6 | 02 | | Check the data is "00". (Note 3) |
| 4 | 6 | 4D | 40 | |
| 5 | 6 | CA | 08 | |
| 6 | 6 | 01 | 41 | Press PAUSE (Write) button. (Note 4) |
| 7 | 6 | 02 | | Check the data changes to "01". |

**Note 3:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Note 4:** The adjustment data will be automatically input to page: 6F, address: 88 to 97, F0 to F7.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | CA | 00 | |
| 3 | 6 | 4D | 00 | |
| 4 | 0 | 01 | 00 | |

### 17. LV Standard Data Input RadarW

Adjust the normal coefficient of the light value at 3200K.

| | |
|---|---|
| Subject | Clear chart (AWB adjustment frame) |
| Measuring Instrument | Adjusting remote commander |
| Adjustment Page | 69 |
| Adjustment Address | DC, DD |
| Specified Value | Data of page: 6, address: 0C is "00". |

**Note 1:** Perform "F No. & ND Light Quality Standard Data Input" and "Auto White Balance Standard Data Input" before this adjustment.

**Note 2:** If reading/writing data on pages 69, set data: 06 to page: 0, address: 10, and then select pages 9. By this data setting, the pages 69 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu setting) ..... OFF
4) STEADY SHOT (Menu setting) ..... OFF
5) FOCUS (Menu setting) ..... MANUAL
6) REC FORMAT (Menu setting) ..... HDV1080i

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Check that the picture frame is "AWB adjustment frame". If not, perform "15. Picture Frame Setting (AWB adjustment frame)" |
| 2 | 0 | 01 | 01 | |
| 3 | 6 | 02 | | Check the data is "00". (Note 3) |
| 4 | 6 | 4D | 40 | |
| 5 | 6 | C9 | 10 | |
| 6 | 6 | 01 | 0D | Press PAUSE (Write) button. (Note 4) |
| 7 | 6 | 02 | | Check the data changes to "01". |
| 8 | 6 | 0C | | Check the data is "00". |

**Note 3:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Note 4:** The adjustment data will be automatically input to page: 69, address: DC, DD.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | C9 | 00 | |
| 3 | 6 | 4D | 00 | |
| 4 | 0 | 01 | 00 | |

### 18. Auto White Balance Adjustment RadarW

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

| | |
|---|---|
| Subject | Clear chart (AWB adjustment frame) |
| Filter | Filter C14 for color temperature correction |
| Adjustment Page | 6F |
| Adjustment Address | 84 to 87, 98 to A7, F8 to FF |

**Note 1:** Perform "F No. & ND Light Quality Standard Data Input" and "Auto White Balance Standard Data Input" before this adjustment.

**Note 2:** If reading/writing data on pages 6F, set data: 06 to page: 0, address: 10, and then select pages: F. By this data setting, the pages 6F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu setting) ..... OFF
4) STEADY SHOT (Menu setting) ..... OFF
5) FOCUS (Menu setting) ..... MANUAL
6) REC FORMAT (Menu setting) ..... HDV1080i

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Check that the picture frame is "AWB adjustment frame". If not, perform "15. Picture Frame Setting (AWB adjustment frame)" |
| 2 | | | | Place the C14 filter on the lens. |
| 3 | 0 | 01 | 01 | |
| 4 | 6 | 02 | | Check the data is "00". (Note 3) |
| 5 | 6 | 4D | 40 | |
| 6 | 6 | CA | 08 | |
| 7 | 0 | 10 | 06 | |
| 8 | F (6F) | 84 | 2A | Press PAUSE (Write) button. |
| 9 | F (6F) | 85 | 80 | Press PAUSE (Write) button. |
| 10 | F (6F) | 86 | 5E | Press PAUSE (Write) button. |
| 11 | F (6F) | 87 | 40 | Press PAUSE (Write) button. |
| 12 | 0 | 10 | 00 | |
| 13 | 6 | 01 | 45 | Press PAUSE (Write) button. (Note 4) |
| 14 | 6 | 02 | | Check the data changes to "01". |

**Note 3:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Note 4:** The adjustment data will be automatically input to page: 6F, address: 98 to A7, F8 to FF.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | CA | 00 | |
| 3 | 6 | 4D | 00 | |
| 4 | 0 | 01 | 00 | |
| 5 | | | | Remove the C14 filter on the lens. |

### 19. Picture Frame Setting (Color reproduction adjustment frame)

| | |
|---|---|
| Subject | Color bar chart (Color reproduction adjustment frame) (1 m (PTB-450) or 40 cm (PTB-1450) from the front of lens) |
| Measurement Point | Video terminal of A/V jack (75 Ω terminated) |
| Measuring Instrument | Oscilloscope and monitor TV (16:9) |
| Specified Value | A = B, C = D, E = F |

**Note 1:** Perform "Hall Adjustment" and "Flange Back Adjustment" before this adjustment.

**Note 2:** Check that the data of page: 0, address: 10 is "00".

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu setting) ..... OFF
4) STEADY SHOT (Menu setting) ..... OFF
5) FOCUS (Menu Setting) ..... MANUAL
6) REC FORMAT (Menu setting) ..... HDV1080i

**Setting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 4D | 40 | |
| 2 | | | | Adjust the zoom and the camera direction, and set the specified position. |
| 3 | | | | Mark the position of the picture frame on the monitor TV, and adjust the picture frame to this position in following adjustment using "Color reproduction adjustment frame". |

**How to read the XH, XL, YH and YL data:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 03 | 18 | |
| 2 | 1 | | | Read XH data and XL data. (Note 3) |
| 3 | 0 | 03 | 22 | |
| 4 | 1 | | | Read YH data and YL data. (Note 3) |

**Note 3:** The right four digits of the page: 1 displayed data of the adjusting remote commander.

1:XX : XX
- XL or YL data
- XH or YH data

**How to reset the zoom and focus when they deviated:**

If the zoom and focus deviated due to some reason, reset them in the following method.

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 4D | 40 | |
| 2 | 6 | 90 | XL | |
| 3 | 6 | 91 | XH | |
| 4 | 6 | 92 | YL | |
| 5 | 6 | 93 | YH | |
| 6 | 6 | 01 | 79 | Press PAUSE (Write) button. |

**How to release the picture frame setting:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 4D | 00 | |
| 2 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 3 | 6 | 90 | 00 | |
| 4 | 6 | 91 | 00 | |
| 5 | 6 | 92 | 00 | |
| 6 | 6 | 93 | 00 | |

### Check on the oscilloscope

#### 1. Horizontal period

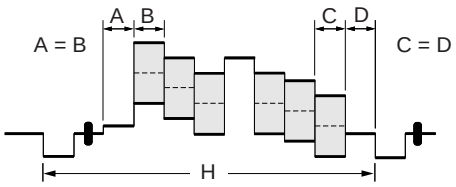



*Fig. 6-1-10*

#### 2. Vertical period

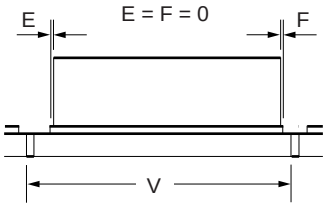



*Fig. 6-1-11*

### Check on the monitor TV (Underscanned mode)

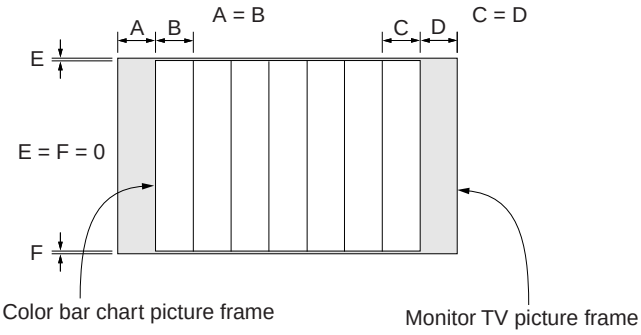



*Fig. 6-1-12*

### 20. Color Reproduction Adjustment & Check

### (Indoor HD) RadarW

Adjust the color separation matrix coefficient so that proper color reproduction is produced.

| | |
|---|---|
| Subject | Color bar chart<br>(Color reproduction adjustment frame) |
| Measurement Point | Video reminal of A/V jack<br>(75 Ω terminated) |
| Measuring Instrument | Vectorscope, Oscilloscope |
| Adjustment Page | 6F |
| Adjustment Address | A8 to B7 |
| Specified Value | All color luminance points should settle within each color reproduction frame. |

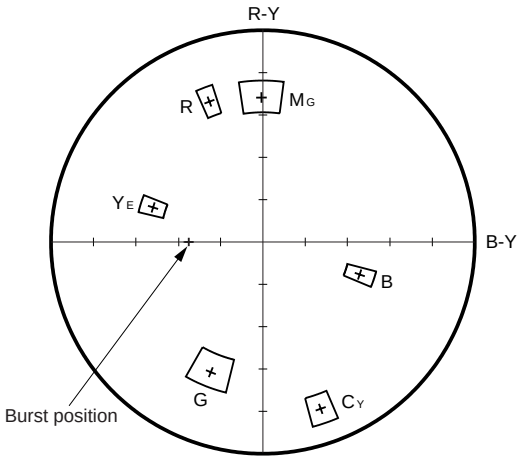
**Note 1:** Perform "F No. & ND Light Quality Standard Data Input" and "Auto White Balance Standard Data Input" before this adjustment.

**Note 2:** If reading/writing data on pages 6F, set data: 06 to page: 0, address: 10, and then select pages: F. By this data setting, the pages 6F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu setting) ..... OFF
4) STEADY SHOT (Menu setting) ..... OFF
5) FOCUS (Menu setting). ..... MANUAL
6) REC FORMAT (Menu setting) ..... HDV1080i

**NTSC model**




**PAL model**

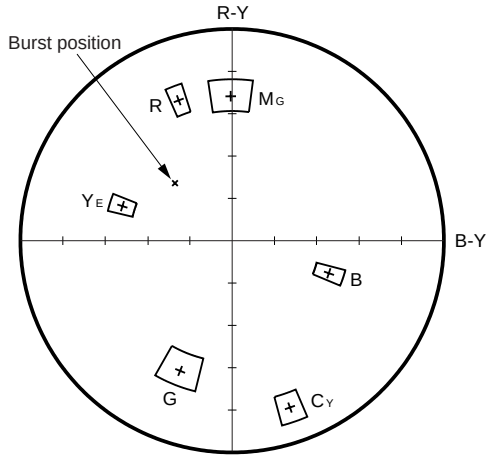



***Fig. 6-1-13***

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Check that the picture frame is “Color Reproduction Adjustment Frame”. If not, Perform “19. Picture Frame Setting (Color Reproduction Adjustment Frame)”. |
| 2 | 0 | 01 | 01 | |
| 3 | 7 | 01 | BD | |
| 4 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 5 | 6 | 9B | | Check the bit value of bit 2, 3 is “0”. (Note 3) |
| 6 | 6 | 02 | | Check the data is “00”. (Note 4) |
| 7 | 6 | 4D | 40 | |
| 8 | 6 | C9 | 10 | |
| 9 | 6 | CA | 0C | |
| 10 | 6 | D0 | 59 | |
| 11 | 6 | 01 | 61 | Press PAUSE (Write) button. (Note 5) |
| 12 | 6 | 02 | | Check the data changes to “01”. |
| 13 | 6 | 0C | | Check the data is “00”. |
| 14 | | | | Adjust the GAIN and PHASE of the verctorscope, and set to the burst luminance point to the burst position of color reproduction frame. |
| 15 | | | | Check the each color luminance point is in each color reproduction frame. |

**Note 3:** For the bit values, refer to “6-4. SERVICE MODE”, ”4-4.3. Bit value discrimitaion”.

**Note 4:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Note 5:** The adjustment data will be automatically input to page: 6F, address: A8 to B7.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | 4D | 00 | |
| 3 | 6 | C9 | 00 | |
| 4 | 6 | CA | 00 | |
| 5 | 6 | D0 | 00 | |
| 6 | 0 | 01 | 00 | |

## 21. Color Reproduction Check (Indoor SD) RadarW

| | | |
|---|---|---|
| Subject | Color bar chart (Color reproduction adjustment frame) | |
| Measurement Point | Video terminal of A/V jack (75 Ω terminated) | Adjusting remote commander |
| Measuring Instrument | Vectorscope | |
| Specified Value | All color luminance points should settle within each color reproduction frame. | Data of page: 6, address: 0C is "00". |

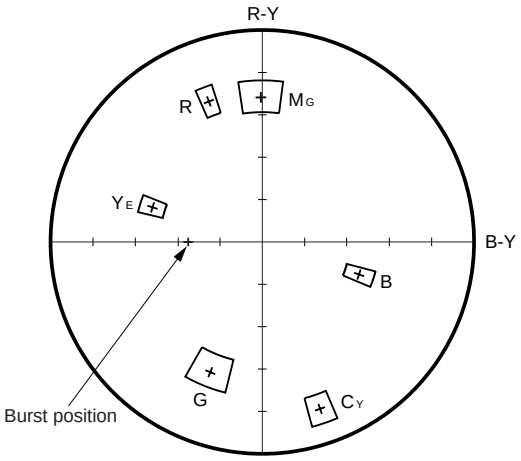
**Note 1:** Perform "Color Reproduction Adjustment" before this adjustment.

**Note 2:** Check that the data of page: 0, address: 10 is "00".

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu setting) ..... OFF
4) STEADY SHOT (Menu setting) ..... OFF
5) FOCUS (Menu setting) ..... MANUAL

**NTSC model**




**PAL model**

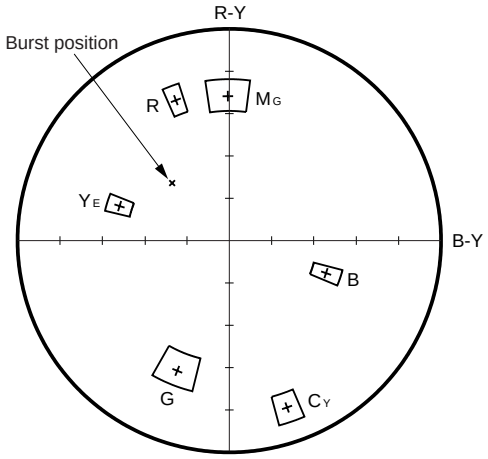



***Fig. 6-1-14***

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Check that the picture frame is “Color Reproduction Adjustment Frame”. If not, Perform “19. Picture Frame Setting (Color Reproduction Adjustment Frame)”. |
| 2 | 0 | 01 | 01 | |
| 3 | 7 | 01 | BE | |
| 4 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 5 | 6 | 9B | | Check the bit value of bit 2 is “1”. (Note 3) |
| | | | | Check the bit value of bit 3 is “0”. (Note 3) |
| 6 | 6 | 02 | | Check the data is “00”. (Note 4) |
| 7 | 6 | 4D | 40 | |
| 8 | 6 | C9 | 10 | |
| 9 | 6 | CA | 0C | |
| 10 | 6 | D0 | 59 | |
| 11 | 6 | 01 | 4D | Press PAUSE (Write) button. |
| 12 | 6 | 02 | | Check the data changes to “01”. |
| 13 | 6 | 0C | | Check the data is “00”. |
| 14 | | | | Adjust the GAIN and PHASE of the vectorscope, and set to the burst luminance point to the burst position of color reproduction frame. |
| 15 | | | | Check that the each color luminance point is in each color reproduction frame. |

**Note 3:** For the bit values, refer to “6-4. SERVICE MODE”, “4-4. 3. Bit value discrimination”.

**Note 4:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | 4D | 00 | |
| 3 | 6 | C9 | 00 | |
| 4 | 6 | CA | 00 | |
| 5 | 6 | D0 | 00 | |
| 6 | 7 | 01 | BD | |
| 7 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 8 | 0 | 01 | 00 | |

## 22. Color Reproduction Check (Outdoor HD) RadarW

| | | |
|---|---|---|
| Subject | Color bar chart (Color reproduction adjustment frame) | |
| Filter | Filter C14 for color temperature correction | |
| Measurement Point | Video terminal of A/V jack (75 Ω terminated) | Adjusting remote commander |
| Measuring Instrument | Vectorscope | |
| Specified Value | All color luminance points should settle within each color reproduction frame. | Data of page: 6, address: 0C is "00". |

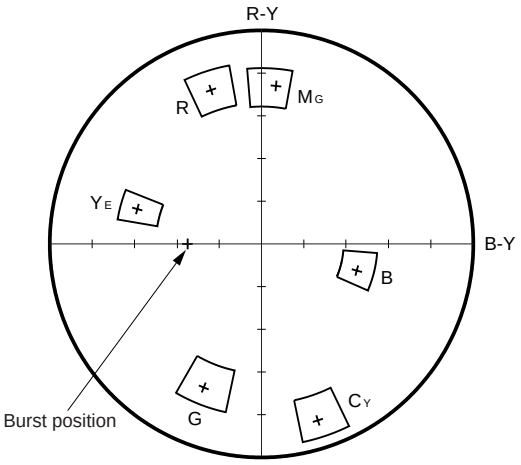
**Note 1:** Perform "Color Reproduction Adjustment" before this adjustment.

**Note 2:** Check that the data of page: 0, address: 10 is "00".

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu setting) ..... OFF
4) STEADY SHOT (Menu setting) ..... OFF
5) FOCUS (Menu setting) ..... MANUAL
6) REC FORMAT (Menu setting) ..... HDV1080i

**NTSC model**




**PAL model**

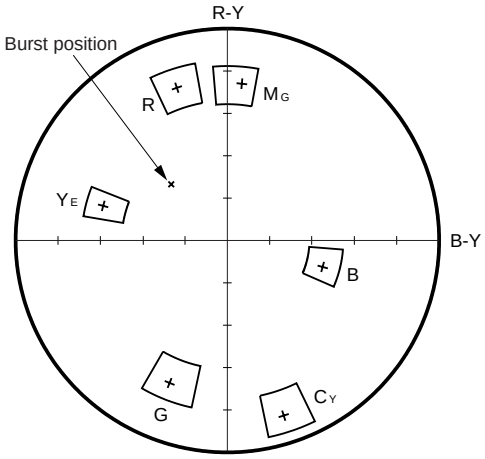



***Fig. 6-1-15***

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Check that the picture frame is “Color Reproduction Adjustment Frame”. If not, Perform “19. Picture Frame Setting (Color Reproduction Adjustment Frame)”. |
| 2 | | | | Place the C14 filter on the lens. |
| 3 | 0 | 01 | 01 | |
| 4 | 7 | 01 | BD | |
| 5 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 6 | 6 | 9B | | Check the bit value of bit 2, 3 is “0”. (Note 3) |
| 7 | 6 | 02 | | Check the data is “00”. (Note 4) |
| 8 | 6 | 4D | 40 | |
| 9 | 6 | C9 | 10 | |
| 10 | 6 | CA | 0C | |
| 11 | 6 | D0 | 59 | |
| 12 | 6 | 01 | 3D | Press PAUSE (Write) button. |
| 13 | 6 | 02 | | Check the data changes to “01”. |
| 14 | 6 | 0C | | Check the data is “00”. |
| 15 | | | | Adjust the GAIN and PHASE of the vectorscope, and set to the burst luminance point to the burst position of color reproduc tion frame. |
| 16 | | | | Check that the each color luminance point is in each color reproduction frame. |

**Note 3:** For the bit values, refer to “6-4. SERVICE MODE”, “4-4. 3. Bit value discrimination”.

**Note 4:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | 4D | 00 | |
| 3 | 6 | C9 | 00 | |
| 4 | 6 | CA | 00 | |
| 5 | 6 | D0 | 00 | |
| 6 | 0 | 01 | 00 | |
| 7 | | | | Remove the C14 filter on the lens. |

### 23. Color Reproduction Check (Outdoor SD) RadarW

| | | |
|---|---|---|
| Subject | Color bar chart (Color reproduction adjustment frame) | |
| Filter | Filter C14 for color temperature correction | |
| Measurement Point | Video terminal of A/V jack (75 Ω terminated) | Adjusting remote commander |
| Measuring Instrument | Vectorscope | |
| Specified Value | All color luminance points should settle within each color reproduction frame. | Data of page: 6, address: 0C is "00" |

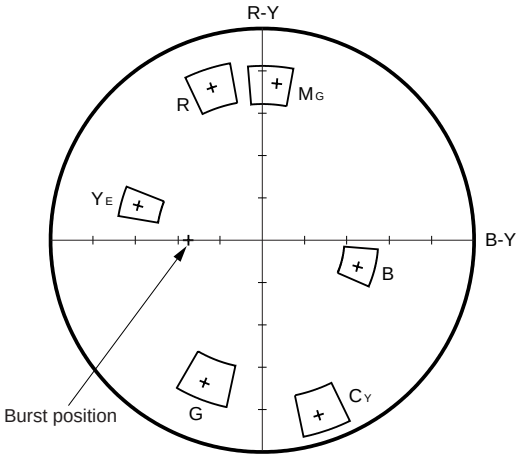
**Note 1:** Perform "Color Reproduction Adjustment" before this adjustment.

**Note 2:** Check that the data of page: 0, address: 10 is "00".

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu setting) ..... OFF
4) STEADY SHOT (Menu setting) ..... OFF
5) FOCUS (Menu setting) ..... MANUAL

**NTSC model**




**PAL model**

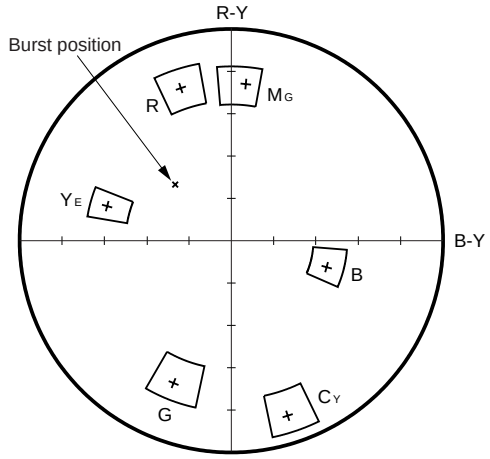



***Fig. 6-1-16***

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Check that the picture frame is “Color Reproduction Adjustment Frame”. If not, Perform “19. Picture Frame Setting (Color Reproduction Adjustment Frame)”. |
| 2 | | | | Place the C14 filter on the lens. |
| 3 | 0 | 01 | 01 | |
| 4 | 7 | 01 | BE | |
| 5 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 6 | 6 | 9B | | Check the bit value of bit 2 is “1”. (Note 3) |
| | | | | Check the bit value of bit 3 is “0”. (Note 3) |
| 7 | 6 | 02 | | Check the data is “00”. (Note 4) |
| 8 | 6 | 4D | 40 | |
| 9 | 6 | C9 | 10 | |
| 10 | 6 | CA | 0C | |
| 11 | 6 | D0 | 59 | |
| 12 | 6 | 01 | 3D | Press PAUSE (Write) button. |
| 13 | 6 | 02 | | Check the data changes to “01”. |
| 14 | 6 | 0C | | Check the data is “00”. |
| 15 | | | | Adjust the GAIN and PHASE of the vectorscope, and set to the burst luminance point to the burst position of color reproduction frame. |
| 16 | | | | Check that the each color luminance point is in each color reproduction frame. |

**Note 3:** For the bit values, refer to “6-4. SERVICE MODE”, “4-4. 3. Bit value discrimination”.

**Note 4:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | 4D | 00 | |
| 3 | 6 | C9 | 00 | |
| 4 | 6 | CA | 00 | |
| 5 | 6 | D0 | 00 | |
| 6 | 7 | 01 | BD | |
| 7 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 8 | 0 | 01 | 00 | |
| 9 | | | | Remove the C14 filter on the lens. |

### 24. Auto White Balance Check RadarW

| | |
|---|---|
| Subject | Clear chart (AWB adjustment frame) |
| Filter | ND filter 1.0, 0.4 and 0.1 |
| Measurement Point | Adjusting remote commander |
| Measuring Instrument | |
| Specified Value | Data of page: 6, address: 0C is “00” |

**Note 1:** Perform “Auto White Balance Adjustment” and “Color Reproduction Adjustment” before this adjustment.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu setting) ..... OFF
4) STEADY SHOT (Menu setting) ..... OFF
5) FOCUS (Menu setting) ..... MANUAL
6) REC FORMAT (Menu setting) ..... HDV1080i

**Checking method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Check that the picture frame is “AWB adjustment frame”. If not, perform “15. Picture Frame Setting (AWB adjustment frame)”. |
| 2 | 0 | 01 | 01 | |
| 3 | 6 | 02 | | Check the data is “00”. (Note 2) |
| 4 | 6 | 4D | 40 | |
| 5 | 6 | CA | 0D | |
| 6 | 6 | C9 | 10 | |
| INDOOR/OUTDOOR white balance check | | | | |
| 7 | 6 | 01 | C1 | Press PAUSE (Write) button. |
| 8 | 6 | 02 | | Check the data changes to “01”. |
| 9 | 6 | 0C | | Check the data is “00”. |
| 10 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| InOut check | | | | |
| 11 | | | | Place the ND filter 1.5 (1.0 + 0.4 + 0.1) on the lens. |
| 12 | 6 | C9 | 11 | |
| 13 | 6 | 01 | 4B | Press PAUSE (Write) button. |
| 14 | 6 | 02 | | Check the data changes to “01”. |
| 15 | 6 | 0C | | Check the data is “00”. |
| 16 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 17 | | | | Remove the ND filter 1.5 (1.0 + 0.4 + 0.1) on the lens. |

**Note 2:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | CA | 00 | |
| 2 | 6 | C9 | 00 | |
| 3 | 6 | 4D | 00 | |
| 4 | 0 | 01 | 00 | |

### 25. Picture Frame Setting (Center frame)

| | |
|---|---|
| Subject | Clear chart (Center frame)<br>(1 m (PTB-450) or 40 cm (PTB-1450) from the front of lens) |
| Measurement Point | Video terminal of A/V jack (75 Ω terminated) |
| Measuring Instrument | Monitor TV |
| Specified Value | A clear chart must be shot in larger size than nine grids in the center of frame shown on the screen.<br>(Fig. 6-1-17) |

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) ZOOM ..... WIDE end
4) DIGITAL ZOOM (Menu setting) ..... OFF
5) STEADY SHOT (Menu setting) ..... OFF
6) FOCUS (Menu Setting) ..... MANUAL

**Setting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Shoot a clear chart in the center of screen with the zoom at WIDE end. |
| 2 | 0 | 01 | 01 | |
| 3 | 0 | 10 | 06 | |
| 4 | B (6B) | 2F | 81 | Press PAUSE (Write) button. |
| 5 | B (6B) | 2E | 08 | Press PAUSE (Write) button. |
| 6 | | | | Check that a clear chart is shot in larger size than nine grids in the center of frame shown on the screen. |
| 7 | B (6B) | 2F | 00 | Press PAUSE (Write) button. |
| 8 | B (6B) | 2E | 00 | Press PAUSE (Write) button. |
| 9 | 0 | 10 | 00 | |
| 10 | 0 | 01 | 00 | |
| 11 | | | | In the following adjustment, if the “Center frame” is used, adjust the clear chart to this position. |

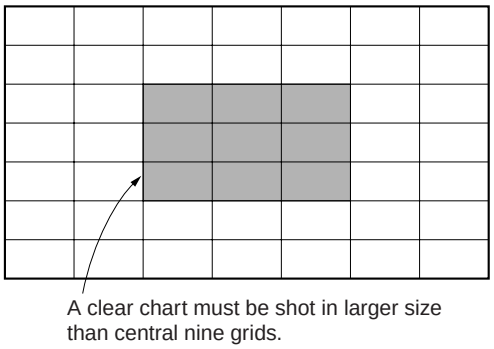



***Fig. 6-1-17***

## 26. MAX GAIN Adjustment RadarW

Setting the minimum illumination.
If it is not consistent, the image level required for taking subjects in low illuminance will not be produced (dark).

| | |
|---|---|
| Subject | Clear chart (Center frame) |
| Adjustment Page | 69 |
| Adjustment Address | DE |

**Note 1:** Perform “Flange Back Adjustment” before this adjustment.

**Note 2:** If reading/writing data on pages 69, set data: 06 to page: 0, address: 10, and then select pages 9. By this data setting, the pages 69 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to “00”.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode
2) NIGHT SHOT ..... OFF
3) ZOOM ..... WIDE end
4) DIGITAL ZOOM (Menu setting) ..... OFF
5) STEADY SHOT (Menu setting) ..... OFF
6) FOCUS (Menu setting) ..... MANUAL
7) REC FORMAT (Menu setting) ..... HDV1080i

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Check that the picture frame is “Center Frame”. If not, perform “25. Picture Frame Setting (Center Frame)” |
| 2 | 0 | 01 | 01 | |
| 3 | 0 | 10 | 06 | |
| 4 | 9 (69) | DE | FF | Press PAUSE (Write) button. |
| 5 | 0 | 10 | 00 | |
| 6 | 6 | 02 | | Check the data is “00”. (Note 3) |
| 7 | 6 | 4D | 40 | |
| 8 | 6 | C9 | 10 | |
| 9 | 6 | D0 | | Set the following data<br>28: NTSC model<br>22: PAL model |
| 10 | 6 | D1 | | Set the following data<br>80: NTSC model<br>80: PAL model |
| 11 | 6 | 01 | 6F | Press PAUSE (Write) button. (Note 4) |
| 12 | 6 | 02 | | Check the data changes to “01”. |

**Note 3:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Note 4:** The adjustment data will be automatically input to page: 69, address: DE.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | 4D | 00 | |
| 3 | 6 | C9 | 00 | |
| 4 | 0 | 01 | 00 | |

## 27. HS White Defect Adjustment RadarW

Defect white defective pixels of CMOS image sensor. (HS mode)

| | |
|---|---|
| Subject | Not required |
| Measurement Point | Adjusting remote commander |
| Measuring Instrument | |
| Specified value | Data of page: 6 address: D3 is “00” |

**Note 1:** Perform “MAX GAIN Adjustment” before this adjustment.

**Note 2:** Check that the data of page: 0, address: 10 is “00”.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode

**Preparation for adjustment:**

1) Before starting this adjustment, make sure that the lens thermistor data of the set exceeds 37 degrees. If not, perform the aging by the following method (aging temperature judge mode) until the temperature exceeds 37 degrees.

**Aging temperature judge mode:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Reverse and close the panel of the set. |
| 2 | 0 | 01 | 01 | |
| 3 | 0 | 10 | 06 | |
| 4 | B (6B) | 7C | 25 | Press PAUSE (Write) button. |
| 5 | | | | During the aging, the screen will be as follows. (Fig. 6-1-18) When the temperature is below 37 ºC, “grid” screen appears. When the aging continues and the temperature exceeds 37 ºC, “ color bar” screen appears. |
| 6 | | | | When the aging completed, execute the subsequent steps to exit the aging temperature judge mode. |
| 7 | B (6B) | 7C | 00 | Press PAUSE (Write) button. |
| 8 | 0 | 10 | 00 | |
| 9 | 0 | 01 | 00 | |

**Note 3:** If the temperature does not rise despite the aging, cover the set with a bubble cushioning material such as the Air Cap and energize it.

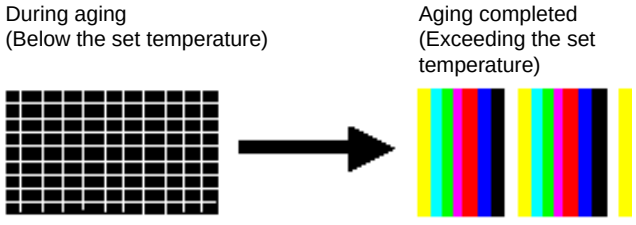



*Fig.6-1-18*

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 6 | D0 | 88 | |
| 3 | 6 | 01 | 21 | Press PAUSE (Write) button. |
| 4 | 6 | 02 | | Check the data changes to “01”. |
| 5 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 6 | 6 | 02 | | Check the data is ”00”. (Note 4) |
| 7 | 6 | E0 | | Check the data is “25” to “FF”. (Note 5) |
| 8 | 6 | 07 | | Check the data is “04”. |
| 9 | 0 | 10 | 06 | |
| 10 | 2 (62) | BA | 3F | Press PAUSE (Write) button. |
| 11 | 2 (62) | BB | 30 | Press PAUSE (Write) button. |
| 12 | 0 | 10 | 00 | |
| 13 | 6 | 0E | 81 | |
| 14 | | | | Wait for 1 second. |
| 15 | 6 | D0 | 44 | |
| 16 | 6 | 01 | 21 | Press PAUSE (Write) button. |
| 17 | 6 | 02 | | Check the data changes to “01”. |

**Note 4:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Note 5:** If the data is other than “25” to “FF”, perform the aging.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | 0E | 00 | |
| 3 | | | | Wait for 1 second. |
| 4 | 0 | 10 | 06 | |
| 5 | 2 (62) | BA | 20 | Press PAUSE (Write) button. |
| 6 | 2 (62) | BB | 20 | Press PAUSE (Write) button. |
| 7 | 0 | 10 | 00 | |
| 8 | 0 | 01 | 00 | |

### 28. White Defect Adjustment RadarW

Defect white defective pixels of CMOS image sensor.

| | |
|---|---|
| Subject | Not required |
| Measurement Point | Adjusting remote commander |
| Measuring Instrument | |
| Specified value | Data of page: 6 address: D3 is “00” or “02” to “FF”. |

**Note 1:** Perform “HS White Defect Adjustment” before this adjustment.

**Note 2:** Perform adjustments successively, starting from the “HS White Defect Adjustment”.

**Note 3:** The lens thermistor data of the set must exceed 37 degrees.
If not, perform the aging in the aging temperature judge mode until the set exceeds 37 degrees.

**Note 4:** Check that the data of page: 0, address: 10 is “00”.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 6 | 02 | | Check the data is “00”. (Note 5) |
| 3 | 6 | E0 | | Check the data is “25” to “FF”. (Note 6) |
| 4 | 6 | 07 | | Check the data is “04”. |
| 5 | 6 | D0 | 06 | |
| 6 | 6 | 01 | 21 | Press PAUSE (Write) button. |
| 7 | | | | Wait for 10 seconds. |
| 8 | 6 | 02 | | Check the data changes to “01”. |
| 9 | 6 | D3 | | Check the data is “00” or “02” to “FF”. |

**Note 5:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Note 6:** If the data is other than “25” to “FF”, perform the aging.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 0 | 01 | 00 | |

### 29. White Defect Adjustment (FD white point)

RadarW

Defect white defective pixels (FD white point) of CMOS image sensor.

| | |
|---|---|
| Subject | Not required |

**Note 1:** Perform “White Defect Adjustment” before this adjustment.

**Note 2:** Perform adjustments successively, starting from the “HS White Defect Adjustment”.

**Note 3:** The lens thermistor data of the set must exceed 37 degrees.
If not, perform the aging in the aging temperature judge mode until the set exceeds 37 degrees.

**Note 4:** Check that the data of page: 0, address: 10 is “00”.

**Switch setting**

1) POWER ..... CAMERA-TAPE mode

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 6 | 02 | | Check the data is “00”. (Note 5) |
| 3 | 6 | E0 | | Check the data is “25” to “FF”. (Note 6) |
| 4 | 6 | 07 | | Check the data is “04”. |
| 5 | 6 | D0 | 0C | |
| 6 | 6 | 01 | 21 | Press PAUSE (Write) button. |
| 7 | 6 | 02 | | Check the data changes to “01”. |

**Note 5:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.

**Note 6:** If the data is other than “25” to “FF”, perform the aging.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 0 | 01 | 00 | |

### 30. White Defect Check RadarW

| | |
|---|---|
| Subject | Not required |
| Measurement Point | Adjusting remote commander |
| Measuring Instrument | |
| Specified value 1 | Data of page: 6 address: D1 is “00” |
| Specified value 2 | Data of page: 6, address: D2 is “00” to “08” |

**Note 1:** Perform “White Defect Adjustment” before this adjustment.
**Note 2:** Perform adjustments successively, starting from the “HS White Defect Adjustment”.
**Note 3:** The lens thermistor data of the set must exceed 37 degrees.
If not, perform the aging in the aging temperature judge mode until the set exceeds 37 degrees.
**Note 4:** Check that the data of page: 0, address: 10 is “00”.

**Switch setting**
1) POWER ..... CAMERA-TAPE mode

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 6 | 02 | | Check the data is “00”. (Note 5) |
| 3 | 6 | E0 | | Check the data is “25” to “FF”. (Note 6) |
| 4 | 6 | 07 | | Check the data is “04”. |
| 5 | 6 | D0 | 04 | |
| 6 | 6 | 01 | 21 | Press PAUSE (Write) button. |
| 7 | 6 | 02 | | Check the data changes to “01”. |
| 8 | 6 | D1 | | Check the data is “00”. |
| 9 | 6 | D2 | | Check the data is “00” to “08”. |

**Note 5:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.
**Note 6:** If the data is other than “25” to “FF”, perform the aging.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 0 | 01 | 00 | |

### 31. Black Defect Adjustment RadarW

Defect black defective pixels of CMOS image sensor.

| | |
|---|---|
| Subject | Clear chart (All white) (Note 1) |

**Note 1:** Perform “White Defect Adjustment” before this adjustment.
**Note 2:** Perform adjustments successively, starting from the “HS White Defect Adjustment”.
**Note 3:** The lens thermistor data of the set must exceed 37 degrees.
If not, perform the aging in the aging temperature judge mode until the set exceeds 37 degrees.
**Note 4:** Shoot the clear chart with the zoom TELE end.
**Note 5:** Check that the data of page: 0, address: 10 is “00”.

**Switch setting**
1) POWER ..... CAMERA-TAPE mode

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Turn off the power and turn on again. |
| 2 | 0 | 01 | 01 | |
| 3 | 6 | 02 | | Check the data is “00”. (Note 6) |
| 4 | 6 | E0 | | Check the data is “25” to “FF”. (Note 7) |
| 5 | 6 | 07 | | Check the data is “04” |
| 6 | 6 | 2C | 01 | |
| 7 | 6 | 90 | 00 | |
| 8 | 6 | 91 | 04 | |
| 9 | 6 | 92 | 00 | |
| 10 | 6 | 93 | 10 | |
| 11 | 6 | 01 | 79 | Press PAUSE (Write) button. |
| 12 | | | | Wait for 1.5 seconds. |
| 13 | | | | Check that the entire screen is white. |
| 14 | 6 | D0 | 01 | |
| 15 | 6 | 01 | 21 | Press PAUSE (Write) button. |
| 16 | 6 | 02 | | Check the data changes to “01”. |

**Note 6:** If not, select page: 6, address: 01, set data: 00, and press PAUSE (Write) button.
**Note 7:** If the data is other than “25” to “FF”, perform the aging.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 2 | 6 | 90 | 00 | |
| 3 | 6 | 91 | 00 | |
| 4 | 6 | 92 | 00 | |
| 5 | 6 | 93 | 00 | |
| 6 | 6 | 01 | 79 | Press PAUSE (Write) button. |
| 7 | | | | Wait for 1.5 seconds. |
| 8 | 6 | 01 | 00 | Press PAUSE (Write) button. |
| 9 | 6 | 2C | 00 | |
| 10 | 0 | 01 | 00 | |

### 32. Angular Velocity Sensor Sensitivity Adjustment

Adjust the gain to eliminate the output dispersion Angular velocity sensor.

Perform this adjustment when the lens block is replaced, CM-077 board is replaced, or Hall sensor is adjusted.

Do not perform this adjustment and check the Steady Shot operation only, if the microcomputer or board other than this lens block failed.

#### 32-1. Preparation when the angular velocity sensor or the CM-077 board is replaced

Note down the sensitivity displayed on the angular velocity sensor of the repair parts. At this time, note down also to which board it was attached to.

Be sure to check because if attached incorrectly, the screen will vibrate up and down or left and right during the steady shot operations.

#### Precautions on the Parts Replacement

The PITCH sensor and the YAW sensor are different parts.

#### Precautions on Angular Velocity Sensor

The sensor incorporates a precision oscillator. Handle it with care as if it dropped, the balance of oscillator will be disrupted and operations will not be performed properly.

| | |
|---|---|
| Adjustment Page | 7F |
| Adjustment Address | 12, 13 |

**Note 1:** The sensor sensitivity of SE7201 and SE7202 of the CM-077 board is written only repair parts.

**Preparation:**

1) Read the PITCH sensor (CM-077 board SE7202) sensitivity written on repair parts, and named this as P12.
2) Read the YAW sensor (CM-077 board SE7201) sensitivity written on repair parts, and named this as Y12.

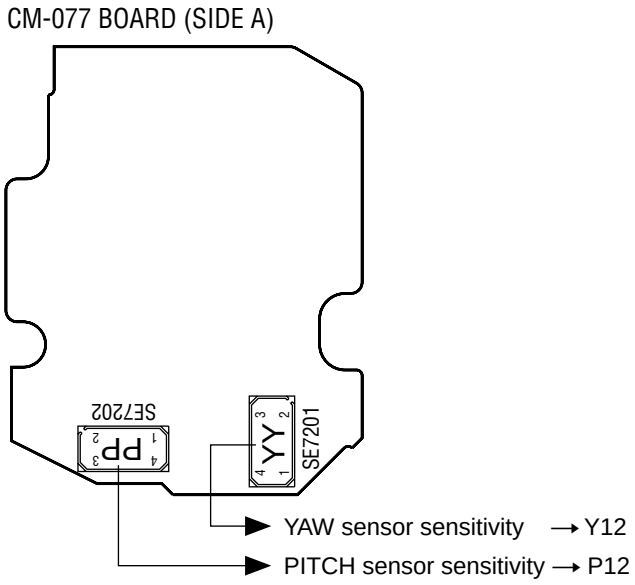



***Fig. 6-1-19 (1)***

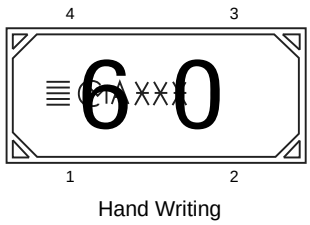
**Note 2:** Only the value of decimal places has been written to the angular velocity sensor.

#### How to read the sensitivity data of angular velocity sensor

With the pins 1 and 2 of angular velocity sensor placed in the lower position, read the data value.

#### Description example :

For the sensor sensitivity value 60




Hand Writing

***Fig. 6-1-19 (2)***

#### 32-2. Preparation when the lens is replaced

Note down the PITCH/YAW data on the replacement lens for repair.

| | |
|---|---|
| Adjustment Page | 7F |
| Adjustment Address | 12, 13 |

**Note:** The PITCH/YAW data of lens is written only repair parts.

**Preparation:**

1) Read the PITCH data written on repair parts, and named this as $L_1$.
2) Read the YAW data written on repair parts, and named this as $L_2$.

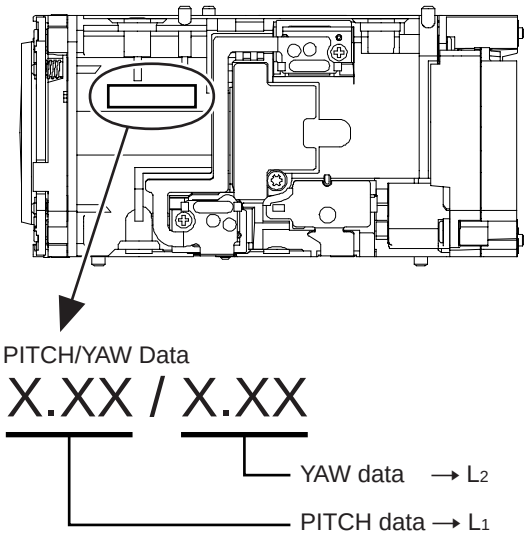



***Fig. 6-1-20***

### 32-3. Angular Velocity Sensor Sensitivity Adjustment

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | | | | Using the following formula calculate:<br>Gain adjustment value of angular velocity sensor in pitch direction $D_{12'}$ (decimal number)<br>Gain adjustment value of angular velocity sensor in yaw direction $D_{13'}$ (decimal number)<br>(Note 1)<br>$D_{12'} = 95 \times P12 \times L_1$<br>$D_{13'} = 95 \times Y12 \times L_2$ |
| 3 | | | | Convert $D_{12'}$ and $D_{13'}$ into hexadecimal numbers and assume them as $D_{12}$ and $D_{13}$ respectively. (Note 2, 3) |
| 4 | 0 | 10 | 07 | |
| 5 | F (7F) | 12 | $D_{12}$ | Press PAUSE (Write) button. |
| 6 | F (7F) | 13 | $D_{13}$ | Press PAUSE (Write) button. |
| 7 | 0 | 10 | 00 | |
| 8 | 0 | 01 | 00 | |

**Note 1:** If the gain data of angular velocity sensor is not available, perform calculation with P12=Y12=0.6. Also, if the lens data is not available, perform calculation with $L_1=L_2=1$.

**Note 2:** Round off the decimal places of the calculation results.

**Note 3:** Refer to table 6-4-1. “Hexadecimal-decimal conversion table”.

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Turn off the power and turn on again. |
| 2 | 0 | 01 | 01 | |
| 3 | 0 | 10 | 07 | |
| 4 | F (7F) | 12 | $D_{12}$ | Check that the data $D_{12}$ is reflected correctly. |
| 5 | F (7F) | 13 | $D_{13}$ | Check that the data $D_{13}$ is reflected correctly. |
| 6 | 0 | 10 | 00 | |
| 7 | | | | Check that the steady shot operates normally when it is turned on. |
| 8 | 0 | 01 | 00 | |

## 1-4. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS

Before perform the viewfinder system adjustments, check the data of page: 0, address: 10 is “00”.
If not, select page: 0, address: 10, and set the data “00”.

**Note 1:** Taken an extreme care not to destroy the liquid crystal display module by static electricity when replacing it.
**Note 2:** Perform the following data setting before the viewfinder system adjustments.
1) Select page: 3, address: C4, and set data: 67.
2) Select page: 3, address: C5, and set data: 01.
Reset the data after completing adjustment.
1) Select page: 3, address: C4, and set data: 00.
2) Select page: 3, address: C5, and set data: 00.

### 1. EVF Automatic Adjustment (VC-500 board)

RadarW

This adjustment does the following items automatically.
VCO Adjustment
Contrast Adjustment

| | |
|---|---|
| Mode | VTR stop (PLAY/EDIT mode) |
| Signal | No signal |
| Adjustment Page | C |
| Adjustment Address | 34, 35 (VCO Adjustment)<br>3C, 77 (Contrast Adjustment) |

**Note 1:** Check that the data of page: 0, address: 10 is “00”.
**Note 2:** If the data change to “01”, adjustment has error. Contents of error is written into page: 3, address: C6. See the following table.

| Data of page: 3, address: C6 | Contents of error |
|---|---|
| 5E | VCO adjustment error |
| 61 | Contrast adjustment error |

**Note 3:** Refer to Table 6-4-1. “Hexadecimal-decimal conversion table”.

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 3 | 03 | FF | |
| 3 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 4 | C | 66 | 00 | Press PAUSE (Write) button. |
| 5 | 3 | 01 | 5A | Press PAUSE (Write) button. (Note 4) |
| 6 | 3 | 02 | | Check the data changes to “00”. |
| 7 | 3 | 03 | | Check the data is “00”. (Note 2) |
| 8 | C | 66 | 41 | Press PAUSE (Write) button. |
| 9 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 10 | 3 | 70 | | Check the data changes to “11”. |
| 11 | 0 | 01 | 00 | |

**Note 4:** The adjustment data will be automatically input to page: C, address: 34 and 3C.

### 2. White Balance Adjustment (VC-500 board)

Correct the white balance.
If deviated, the EVF screen color cannot be reproduced.

| | |
|---|---|
| Mode | VTR stop (PLAY/EDIT mode) |
| Signal | No signal |
| Measurement Point | Check on EVF screen |
| Measuring Instrument | |
| Adjustment Page | C |
| Adjustment Address | 3A, 3B |
| Specified Value | EVF screen must not be colored |

**Note 1:** Check that the data of page: 0, address: 10 is “00”.
**Note 2:** Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC3701

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 3 | C | 3A | 93 | Press PAUSE (Write) button. |
| 4 | C | 3B | 7F | Press PAUSE (Write) button. |
| 5 | | | | Check that the EVF screen is not colored. If not colored, proceed to step 6. |
| 6 | C | 3A<br>3B | | Change the data so that the EVF screen is not colored. (Note 3) |
| 7 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 8 | 3 | 70 | | Check the data changes to “11”. |
| 9 | 0 | 01 | 00 | |

**Note 3:** To write in the non-volatile memory (EEPROM), press the PAUSE (Write) button each time to set the data.

## 1-5. LCD SYSTEM ADJUSTMENTS

Before perform the LCD system adjustments, check that the data of page: 0, address: 10 is “00”.
If not, select page: 0, address: 10, and set the data “00”.

**Note 1:** Taken an extreme care not to destroy the liquid crystal display module by static electricity when replacing it.
**Note 2:** Set the “LCD BRIGHT”, “LCD COLOR” to the center with the menu settings of the touch panel.
**Note 3:** Open the LCD panel during the LCD system adjustment.

### 1. LCD Automatic Adjustment (PD-342 board)

RadarW

This adjustment does the following items automatically.
VCO Adjustment
Contrast Adjustment

| | |
|---|---|
| Mode | VTR stop (PLAY/EDIT mode) |
| Signal | No signal |
| Adjustment Page | C |
| Adjustment Address | 45, 46 (VCO Adjustment)<br>4D, 76 (Contrast Adjustment) |

**Note 1:** Check that the data of page: 0, address: 10 is “00”.
**Note 2:** If the data change to “01”, adjustment has error. Contents of error is written into page: 3, address: C6. See the following table.

| Data of page: 3, address: C6 | Contents of error |
|---|---|
| 58 | VCO adjustment error |
| 60 | Contrast adjustment error |

**Note 3:** Refer to Table 6-4-1. “Hexadecimal-decimal conversion table”.

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 3 | 03 | FF | |
| 3 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 4 | C | 65 | 00 | Press PAUSE (Write) button. |
| 5 | 3 | 01 | 5A | Press PAUSE (Write) button. (Note 4) |
| 6 | 3 | 02 | | Check the data changes to “00”. |
| 7 | 3 | 03 | | Check the data is “00”. (Note 2) |
| 8 | C | 65 | 41 | Press PAUSE (Write) button. |
| 9 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 10 | 3 | 70 | | Check the data changes to “11”. |
| 11 | 0 | 01 | 00 | |

**Note 4:** The adjustment data will be automatically input to page: C, address: 45 and 4D.

### 2. V-COM Adjustment (PD-342 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will be move, producing flicker and conspicuous vertical lines.

| | |
|---|---|
| Mode | VTR stop (PLAY/EDIT mode) |
| Signal | No signal |
| Measurement Point | Check on LCD screen |
| Measuring Instrument | |
| Adjustment Page | C |
| Adjustment Address | 47 |
| Specified Value | The brightness difference between the section-A and section-B is minimum |

**Note 1:** Perform “LCD Automatic Adjustment” before this adjustment.
**Note 2:** Check that the data of page: 0, address: 10 is “00”.

**Switch setting**
LCD BACKLIGHT ..... ON

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 3 | C | 56 | 0D | Press PAUSE (Write) button. |
| 4 | C | 47 | | Change the data so that brightness of the section A and section B is equal. |
| 5 | C | 47 | | Press PAUSE (Write) button. |
| 6 | C | 56 | 05 | Press PAUSE (Write) button. |
| 7 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 8 | 3 | 70 | | Check the data changes to “11”. |
| 9 | 0 | 01 | 00 | |

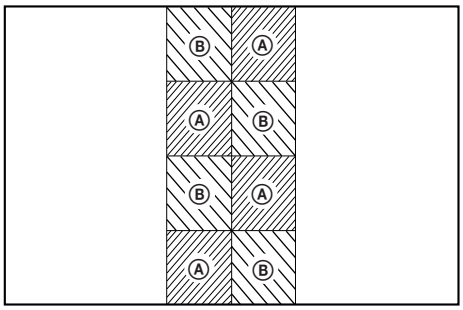



*Fig. 6-1-21*

### 3. Transmissive Mode White Balance Adjustment (PD- 342 board)

Correct the white balance at transmissive mode.
If deviated, the LCD screen color cannot be reproduced.

| | |
|---|---|
| Mode | VTR stop (PLAY/EDIT mode) |
| Signal | No signal |
| Measurement Point | Check on LCD screen |
| Measuring Instrument | |
| Adjustment Page | C |
| Adjustment Address | 4B, 4C |
| Specified Value | LCD screen must not be colored |

**Note 1:** Check that the data of page: 0, address: 10 is "00".
**Note 2:** Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD block
2. Light induction plate
3. IC6201

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 3 | C | 4B | 8A | Press PAUSE (Write) button. |
| 4 | C | 4C | 64 | Press PAUSE (Write) button. |
| 5 | | | | Check that the LCD screen is not colored. If not colored, proceed to step 6. |
| 6 | C | 4B<br>4C | | Change the data so that the LCD screen is not colored. (Note 3) |
| 7 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 8 | 3 | 70 | | Check the data changes to "11". |
| 9 | 0 | 01 | 00 | |

**Note 3:** To write in the non-volatile memory (EEPROM), press the PAUSE (Write) button each time to set the data.

### 4. Reflective Mode White Balance Adjustment (PD-342 board) RadarW

Correct the white balance at reflective mode.
If deviated, the LCD screen color cannot be reproduced.

| | |
|---|---|
| Mode | VTR stop (PLAY/EDIT mode) |
| Signal | No signal |
| Adjustment Page | C |
| Adjustment Address | 70, 71 |

**Note 1:** Check that the data of page: 0, address: 10 is "00".

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 8 | 1D | 60 | Press PAUSE (Write) button. |
| 3 | 3 | C4 | 59 | |
| 4 | 3 | C5 | 02 | |
| 5 | 3 | 0C | 20 | Press PAUSE (Write) button. |
| 6 | 3 | 22 | 0F | Press PAUSE (Write) button. |
| 7 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 8 | 3 | 03 | FF | |
| 9 | 3 | 01 | 66 | Press PAUSE (Write) button. (Note 2) |
| 10 | 3 | 02 | | Check the data changes to "00". |
| 11 | 3 | 03 | | Check the data is "00". (Note 4) |
| 12 | 3 | 03 | FF | |
| 13 | 3 | 01 | 67 | Press PAUSE (Write) button. (Note 3) |
| 14 | 3 | 02 | | Check the data changes to "00". |
| 15 | 3 | 03 | | Check the data is "00". (Note 4) |
| 16 | 3 | C4 | 00 | |
| 17 | 3 | C5 | 00 | |
| 18 | 3 | 0C | 00 | Press PAUSE (Write) button. |
| 19 | 3 | 22 | 00 | Press PAUSE (Write) button. |
| 20 | 8 | 1D | 00 | Press PAUSE (Write) button. |
| 21 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 22 | 3 | 70 | | Check the data changes to "11". |
| 23 | 0 | 01 | 00 | |

**Note 2:** The adjustment data will be automatically input to page: C, address: 70.
**Note 3:** The adjustment data will be automatically input to page: C, address: 71.
**Note 4:** If the data is "01", adjustment has error.

### 5. Sample Hold Phase Adjustment (PD-342 board)

Set the sampling hold timing of the LCD panel to optimum timing.

| | |
|---|---|
| Mode | VTR stop (PLAY/EDIT mode) |
| Signal | No signal |
| Measurement Point | Check on LCD screen |
| Measuring Instrument | |
| Adjustment Page | C |
| Adjustment Address | 54 |
| Specified Value | The LCD screen is brightest |

**Note 1:** Perform “LCD Automatic Adjustment” and “V-COM Adjustment” before this adjustment.

**Note 2:** Check that the data of page: 0, address: 10 is “00”.

**Switch setting**

LCD BACKLIGHT ..... ON

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 3 | 3 | 0C | 20 | Press PAUSE (Write) button. |
| 4 | 3 | 22 | 0F | Press PAUSE (Write) button. |
| 5 | C | 55 | 01 | Press PAUSE (Write) button. |
| 6 | C | 54 | | Set the following data, one by one, and investigate which data makes the LCD screen the brightest.<br>1F, 3F, 5F, 7F, 9F, BF |
| 7 | C | 54 | | Set the data which made the LCD screen the brightest. This data named Dadj. |
| 8 | C | 54 | $D_{adj}$ | Press PAUSE (Write) button. |
| 9 | C | 55 | CC | Press PAUSE (Write) button. |
| 10 | 3 | 0C | 00 | Press PAUSE (Write) button. |
| 11 | 3 | 22 | 00 | Press PAUSE (Write) button. |
| 12 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 13 | 3 | 70 | | Check the data changes to “11”. |
| 14 | 0 | 01 | 00 | |

## 6. Touch Panel Adjustment

Adjust the calibration of touch panel.

| | |
|---|---|
| Mode | VTR stop (PLAY/EDIT mode) |
| Signal | No signal |
| Adjustment Page | A |
| Adjustment Address | 90 to 93 |

**Note 1:** This adjustment should be carried out upon completetion of “LCD Automatic Adjustment”.
**Note 2:** Check that the data of page: 0, address: 10 is “00”.
**Note 3:** Check that a Memory Stick Duo is not insteted.
**Note 4:** Check that the LCD panel is not reverse mode.
**Note 5:** Adjustment must be performed while observing the LCD screen from the front.

**Preparation:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 7 | 01 | 38 | |
| 3 | 7 | 02 | FF | |
| 4 | 7 | 04 | 02 | |
| 5 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 6 | 7 | 02 | | Check the data changes to “01”. |
| 7 | 7 | 01 | C9 | |
| 8 | 7 | 02 | FF | |
| 9 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 10 | 7 | 02 | | Check the data changes to “01”. |
| 11 | | | | Check that the touch panel adjustment screen is displayed. |
| 12 | | | | Perform “Adjusting method”. |

**Adjusting method:**

1) Using a ball-point pen etc., push the center of “×” indicated in the part A.
2) Using a ball-point pen etc., push the center of “×” indicated in the part B.
3) Using a ball-point pen etc., push the center of “×” indicated in the part C.

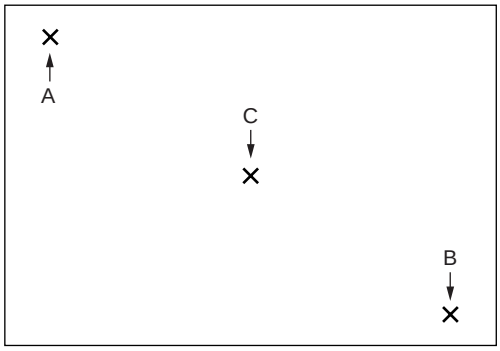



***Fig. 6-1-22***

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 7 | 01 | 38 | |
| 2 | 7 | 02 | FF | |
| 3 | 7 | 04 | 01 | |
| 4 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 5 | 7 | 02 | | Check the data changes to “01”. |
| 6 | 0 | 01 | 00 | |

## 6-2. MECHANISM SECTION ADJUSTMENTS

### 1. Preparations for Check, Adjustment and Replacement of Mechanism Block

- Refer to the "DISASSEMBLY" section of the SERVICE MANUAL of the respective models for details of removing cabinets and printed wiring boards.
- When making any adjustment to a mechanism or replacing mechanical parts, be sure to use the Mode Selector II and select the appropriate status of the mechanical deck such that the mechanical status is suitable for the desired work. Refer to section "2-4. Mode Selector II" for details on how to enter the mode shown in a rectangle [____] mode in subsequent paragraphs of this manual.

### 2. Periodic Inspection and Maintenance

- Be sure to perform the following maintenance and inspection so that the machine delivers its full performance and functions, and to protect the machine and tape. Also, perform the following maintenance items after completing the repair work, regardless of the number of hours the machine has been operated by the user.

#### 2-1. Rotary Drum Cleaning

1) Press a wiping cloth (Ref. No. J-20) moistened with head cleaning liquid (Ref. No. J-19) lightly against the rotary drum. Rotate the upper drum with a super-fine applicator slowly in the counter-clockwise direction to clean the rotary drum.

**Caution:** Never rotate the rotary drum by turning on the main power of the motor or rotate it in the clockwise direction. Never move the cloth vertically against the head tip, as this will surely damage the video head; the video head must not be cleaned by any other different methods.

#### 2-2. Tape Path System Cleaning (Refer to Fig. 6-2-1.)

1) Set the EJECT state. Clean the tape running path (TG-1, -2, -3, -4, -5 and -6 pinch roller and capstan shaft) and lower drum with a super-fine applicator (Ref. J-21) moistened with head cleaning liquid.

**Note 1:** NBe careful not to allow oil or grease of the various link mechanisms to get on the super-fine applicator (Ref. J-21).
**Note 2:** Once the super-fine applicator has been moistened with alcohol, do not use it to clean other mechanical parts such as the tape guide. However, the pinch roller is cleaned with alcohol.
**Note 3:** When cleaning the capstan shaft, be carefull not to move the oil seal. If the oil seal is moved, oil will leak.

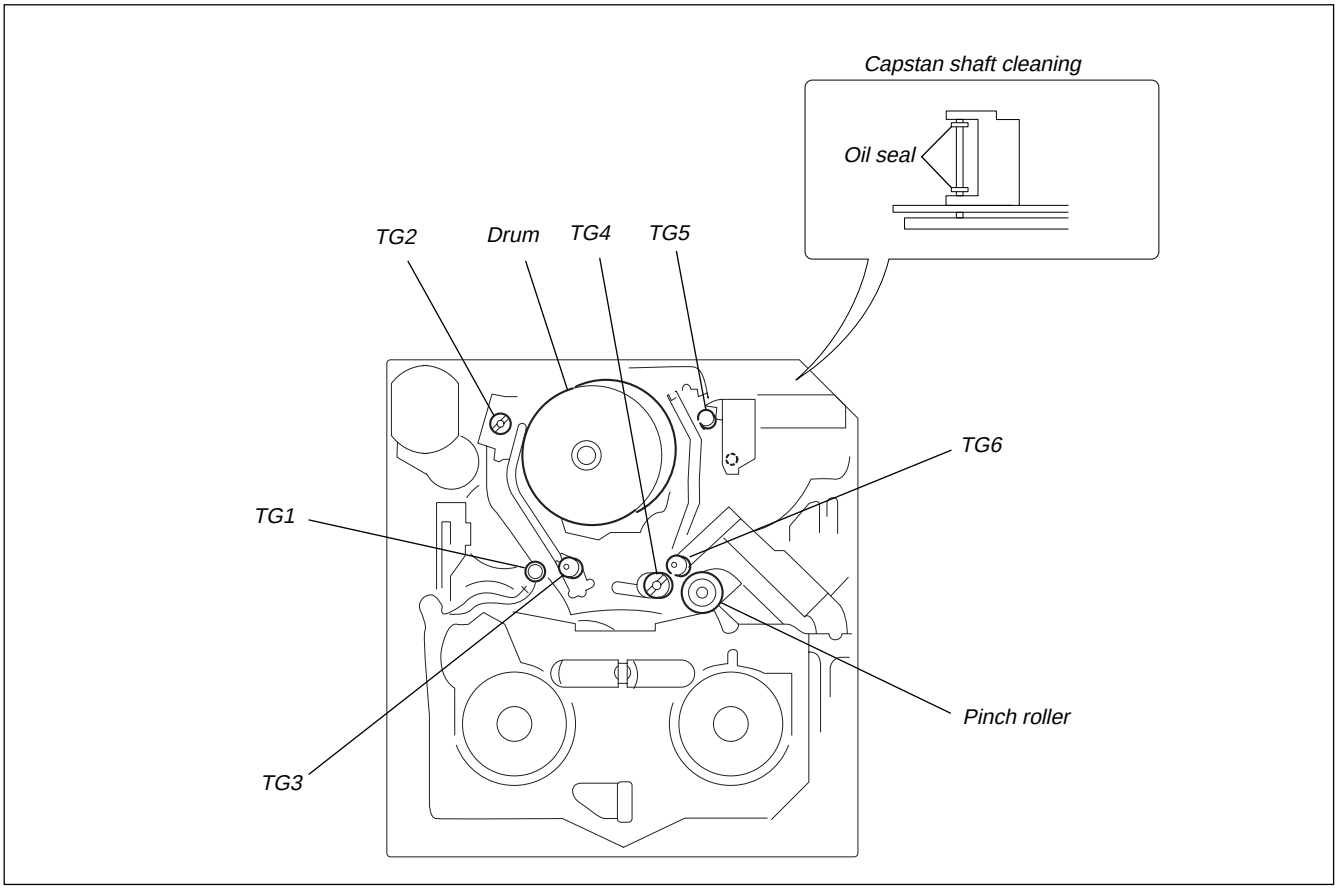



***Fig. 6-2-1***

### 2-3. Periodic Inspection List

| Maintenance and inspection item | | Operating hours (H) | | | | | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 | |
| | Tape running surface cleaning | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Be careful not to attach oil |
| | Rotary drum cleaning and degaussing | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Be careful not to attach oil |
| Drive mechanism | Capstan bearing | — | ☆ | — | ☆ | — | ☆ | — | ☆ | — | ☆ | |
| | Loading motor | — | ☆ | — | ☆ | — | ☆ | — | ☆ | — | ☆ | |
| Performance check | Abnormal sound | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | |
| | Back-tension measurement | — | ☆ | — | ☆ | — | ☆ | — | ☆ | — | ☆ | |
| | Brake system | — | ☆ | — | ☆ | — | ☆ | — | ☆ | — | ☆ | |
| | FWD/RVS torque measurement | — | ☆ | — | ☆ | — | ☆ | — | ☆ | — | ☆ | |

○: Cleaning, ☆: Check

**Note 1:** When the machine is overhauled, replace the parts referring to the above list.

**Note 2:** Grease

- Be sure to use the specified grease only. (If grease of different viscosity is used, it can cause various troubles.)
- The grease must not contain any dust or other matter. (otherwise it can cause various trouble.)
- Observe the noted amount of grease. (otherwise the oozed grease can cause troubles.)
- Grease (SUNCALL FG-87HSR) : Part cord. 7-640-006-08

## 2-4. Mode Selector II Operating Procedure

### 2-4-1. Introduction

The Mode Selector II is a mechanism drive tool that assists maintenance work of the various mechanism decks. It has the following functions.

#### 1. Manual Test

In this mode, the motor of the mechanism deck is powered only during the period while the switch is turned on manually. Using the Manual Test, the operator can freely control the motor of the mechanism deck.

#### 2. Step Test

In this mode, the motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information. The Step Test is used to confirm a series of movements of the mechanism deck.

#### 3. Auto Test

The Mode Selector II stores the status transition table in its memory as data indicating the respective modes of the mechanism deck. The status transition table can be used to confirm whether a mechanism deck is operating normally or has abnormality from a series of movements of a mechanism deck. If an abnormal status transition is detected during operation, the "NG" indication appears and the mechanism stops moving.

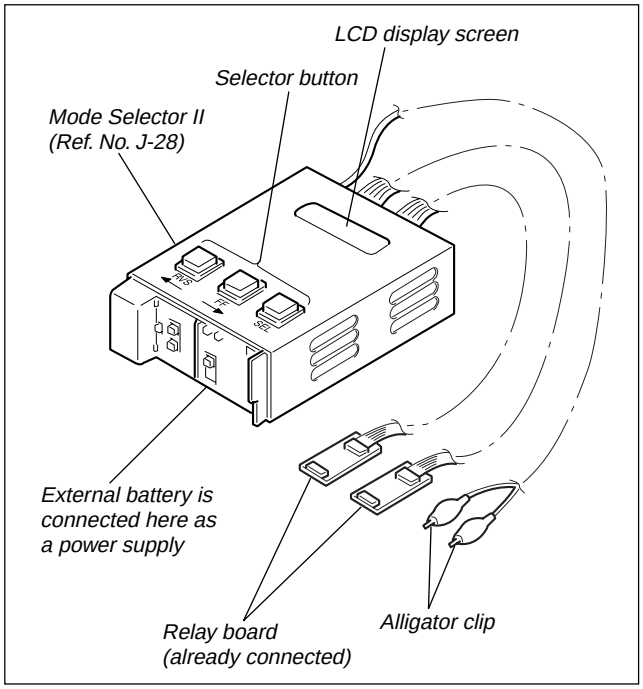



***Fig. 6-2-2***

**Mode Selector II (J-6082-282-B) connection diagram**

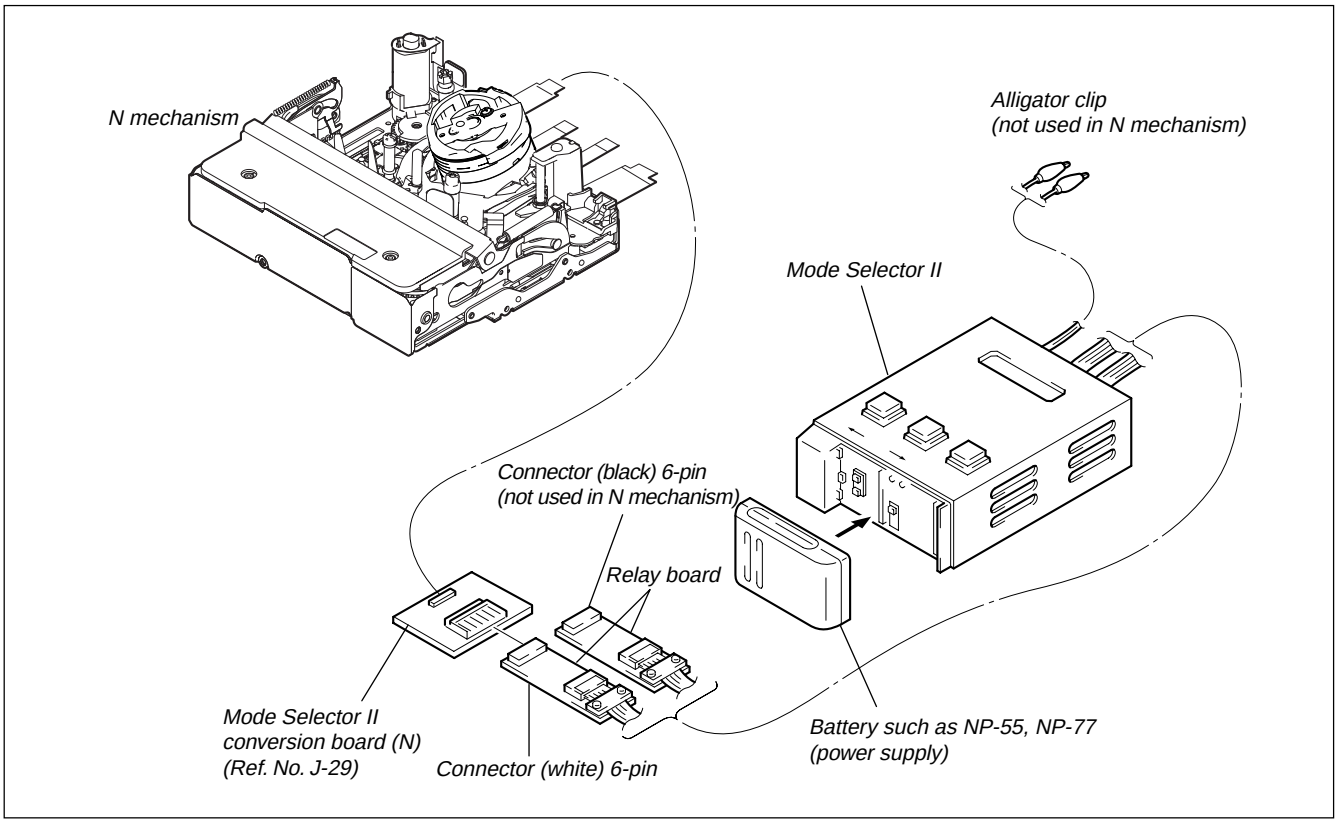
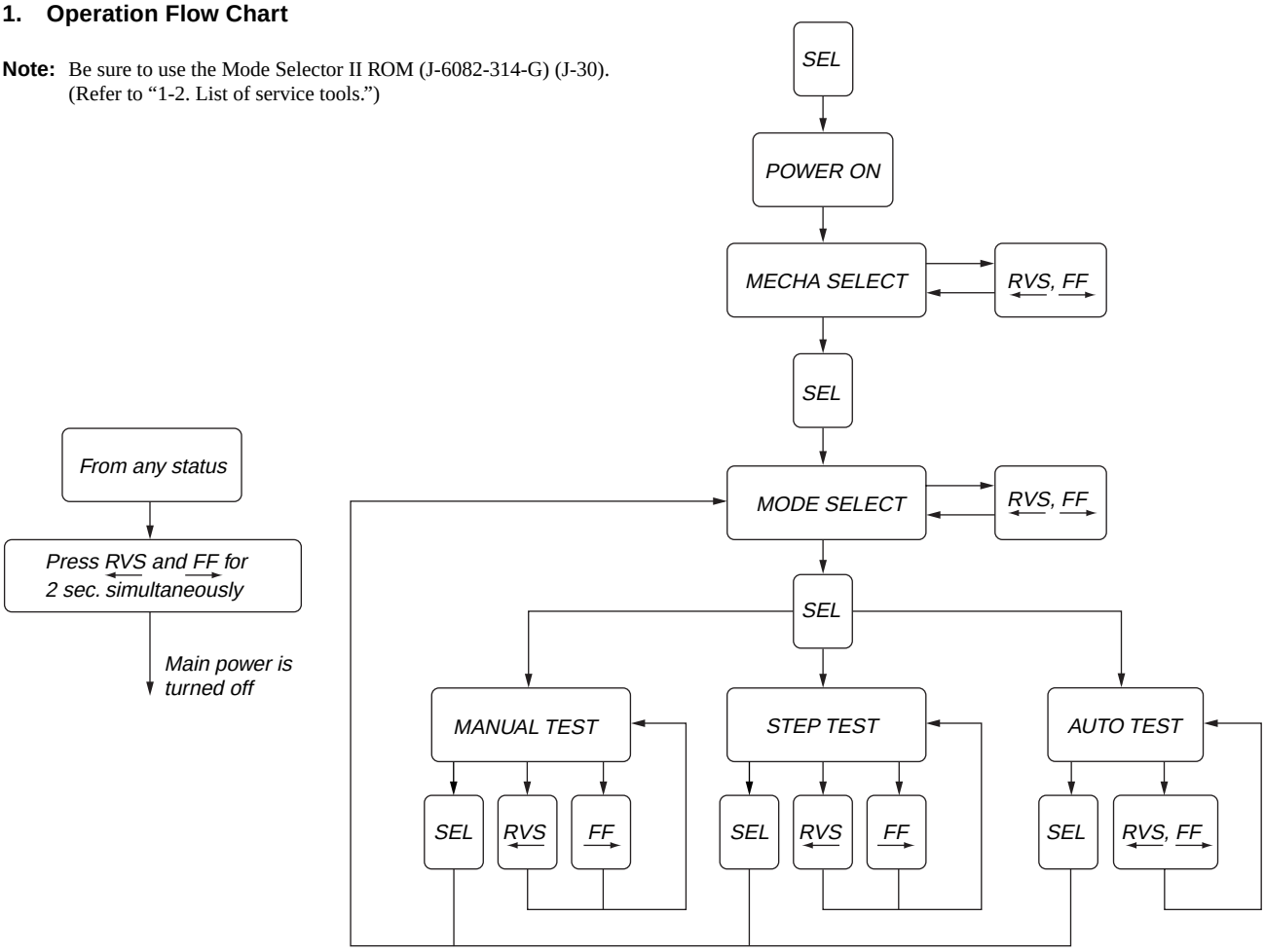



***Fig. 6-2-3***

## 2-4-2. Operation

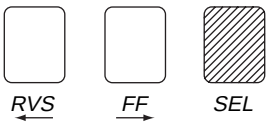
### 1. Operation Flow Chart

**Note:** Be sure to use the Mode Selector II ROM (J-6082-314-G) (J-30). (Refer to "1-2. List of service tools.")



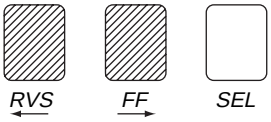

### 2. Mode Selector II Power On

Turn on the main power of the Mode Selector II as follows.
Press the SEL button.




### 3. Mode Selector II Power Off

Turn off the main power of the Mode Selector II as follows.
Press the RVS and FF buttons at the same time for 2 seconds or longer while the power is on.



### 4. Mecha Select

When the main power is turned on, the MECHA SELECT display appears on the LCD screen. Select the desired mechanism name using the RVS and FF buttons. Selection is complete when the SEL button is pressed. (Fig. A shows the N mechanism.)

**Note:** Set the "MECHA SELECT" indication to "Z" when using the mode selector II to operate the N Mechanism.

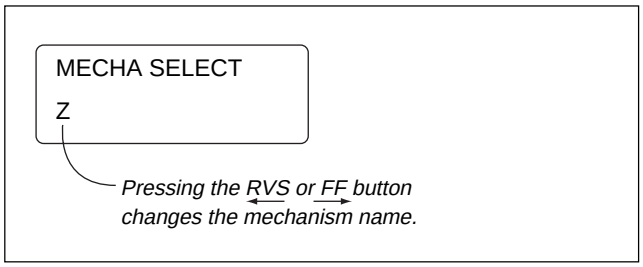



***Fig. A***

### 5. Test Type Select

Using the RVS and FF buttons, select a desired test type from the three types of "MANUAL", "STEP" and "AUTO". Selection is complete when the SEL button is pressed.

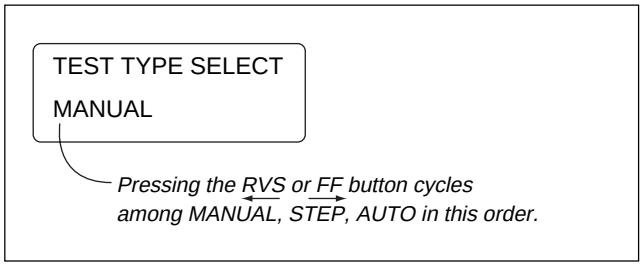



***Fig. B***

### 6. Manual Test

In this test, the motor of the mechanism deck is turned on only during the period while the RVS or FF button is pressed manually.

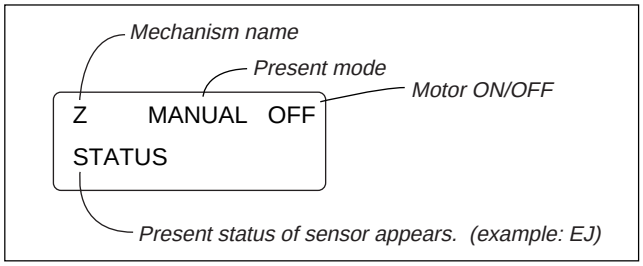



***Fig. C***

### 7. Step Test

In this test, the direction of motor movement is determined by the RVS and FF buttons. The motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information.

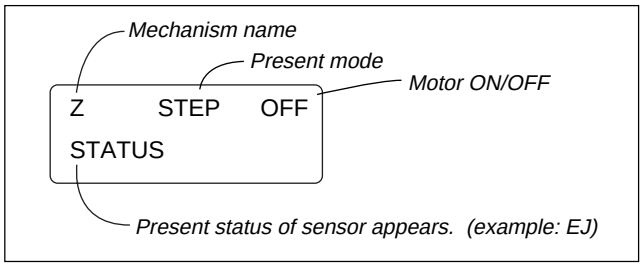



***Fig. D***

### 8. Auto Test

In this test, the mechanism deck is tested as to whether it performs a series of movements correctly in accordance with the operation sequence that is memorized earlier for each type of deck, by checking the output signals from sensors with the stored memory. Turning on the RVS or FF button performs the same operation.

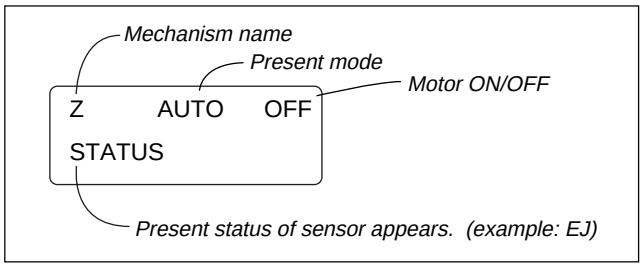



***Fig. E***

### 2-4-3. Mechanism Status (Position) Transition Table Using Mode Selector II

After selecting a mechanism deck, select either the MANUAL or STEP test (not AUTO) using the Mode Selector II. The desired mechanism status (position) can be specified by pressing the RVS or FF button. (The selected status appears on STATUS.)
EJ⟷ULE⟷LD1 (SR)⟷LD2 (HL)⟷STOP⟷R/P

| Code \ MD name | | | | N Mechanism (Display: Z) |
|---|---|---|---|---|
| A | B | C | | |
| 0 | 1 | 0 | 1 | EJ |
| 1 | 1 | 0 | 2 | ULE |
| 1 | 0 | 0 | 3 | LD1 (SR) |
| 1 | 0 | 1 | 4 | LD2 (HL) |
| 0 | 0 | 1 | 5 | STOP |
| 0 | 1 | 1 | 6 | R/P |

### 2-4-4. Battery Alarm Indication

When the level of the battery used to supply power to this system decreases, this display appears asynchronously. When this happens, all operations are disabled and the battery must be replaced.

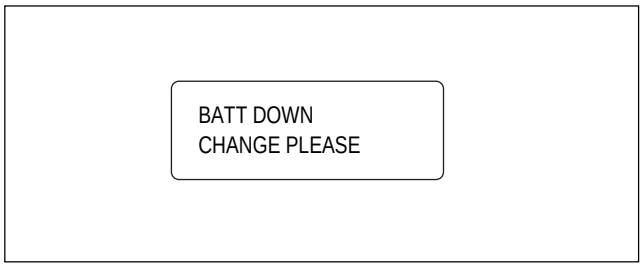
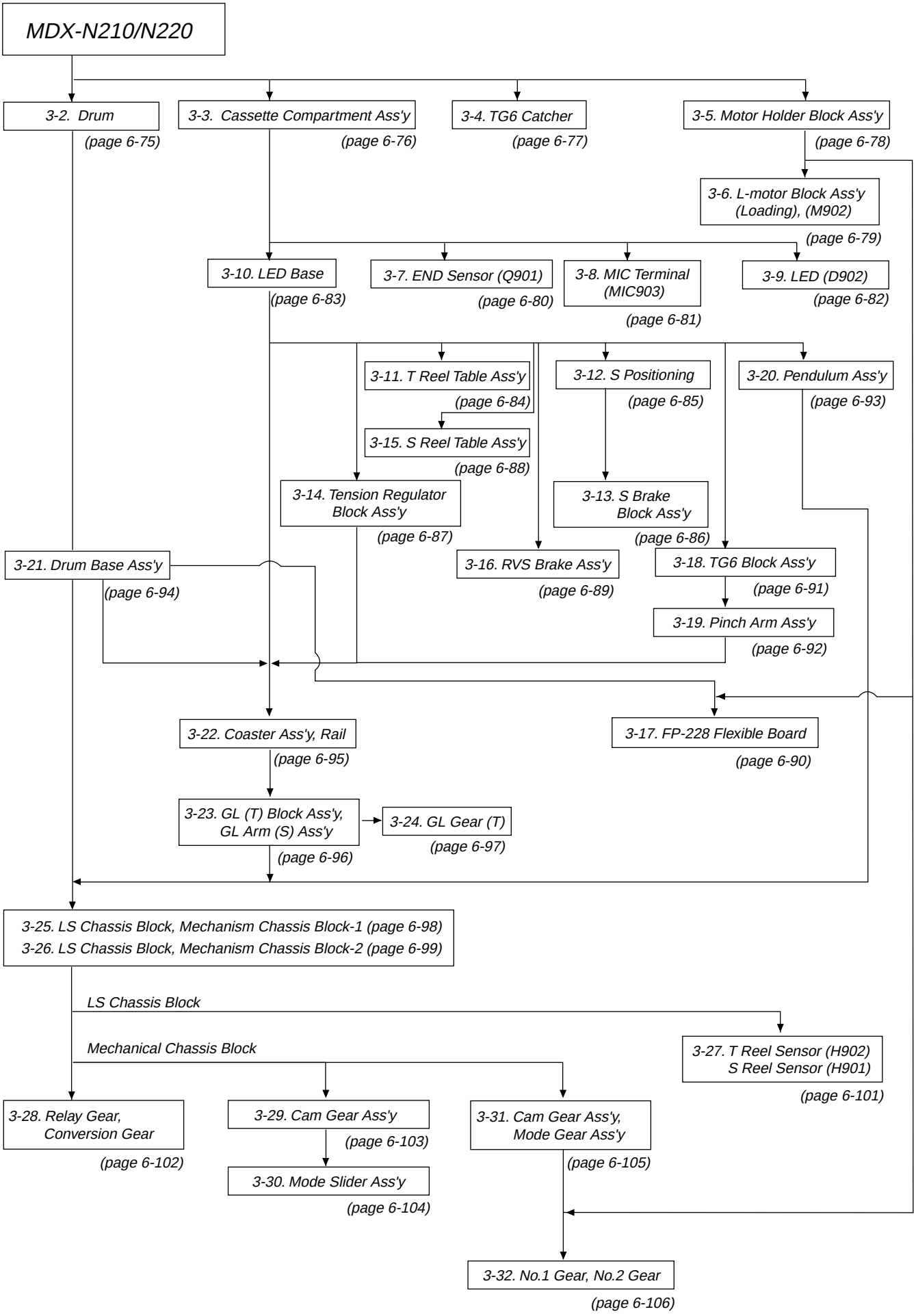



***Fig. F***

# 3. Check, Adjustment and Replacement of Mechanical Parts

## 3-1. Flowchart of Replacement of Mechanical Parts



## 1. Removal procedure

1) Enter the ULE mode.
2) Peel away the portion Ⓐ of the drum flexible board from the flexible adhesive sheet ①.
3) Remove the three screws (special head screw M1.4 × 2.0) ② and remove the drum ③.
4) Peel away the flexible adhesive sheet ④.
(Don't re-use the flexible adhesive sheet. )

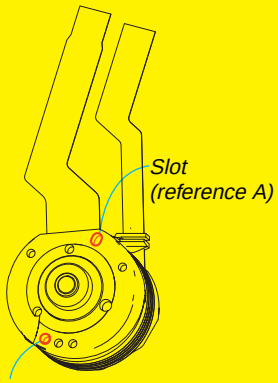
## 2. Attachment procedure

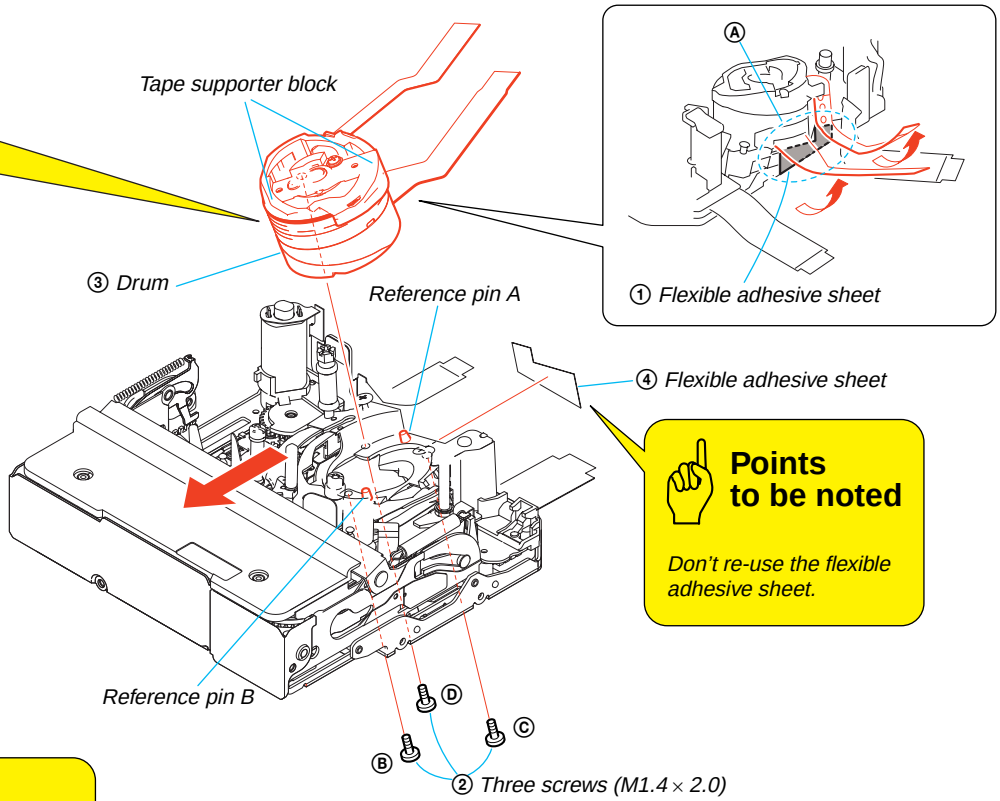
1) Enter the ULE mode.
2) Attach the flexible adhesive sheet ④.
3) Hold the tape supporter block, and set the reference holes A and B to the drum base reference pins A and B.
4) Install the the drum ③ with the three screws (special head screw M1.4 × 2.0) ② in the order of Ⓑ, Ⓒ and Ⓓ.
Tightening torque: 0.04 ± 0.01 N•m (0.41 × 0.1 kgf•cm)
5) Attach the portion Ⓐ of the drum flexible board to the flexible adhesive sheet ①.
6) Clean the tape path mechanism by referring to Section 2-2. (Refer to Section "2-2. Tape Path System Cleaning".)
7) Implement the tape path adjustment. (Refer to Section "4-3. Tape Path Adjustment")

### Drum (rear view)

**Key Points in Re-assembling**

*Drum (rear view)*



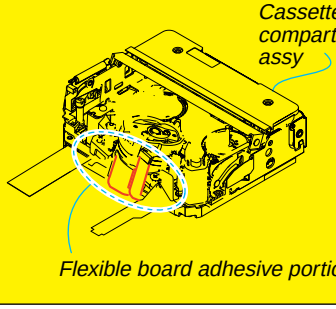

**Points to be noted**

*Don't re-use the flexible adhesive sheet.*

### HOW TO PLACE THE MECHANISM

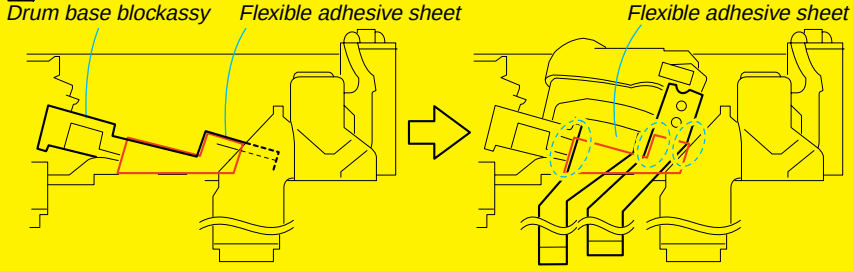
**Points to be noted**

*After the flexible board is attached to the flexible adhesive sheet, place the flexible board, that is folded up, at the rear of the mechanism chassis to prevent the adhered portion from peeling away.*




### Flexible adhesive sheet attachment position

**Key Points in Re-assembling**




*Attach the flexible adhesive sheet along the outer shape of the drum base block assy.*

*Attach the flexible board while aligning its side with the outer profile of the flexible adhesive sheet.*

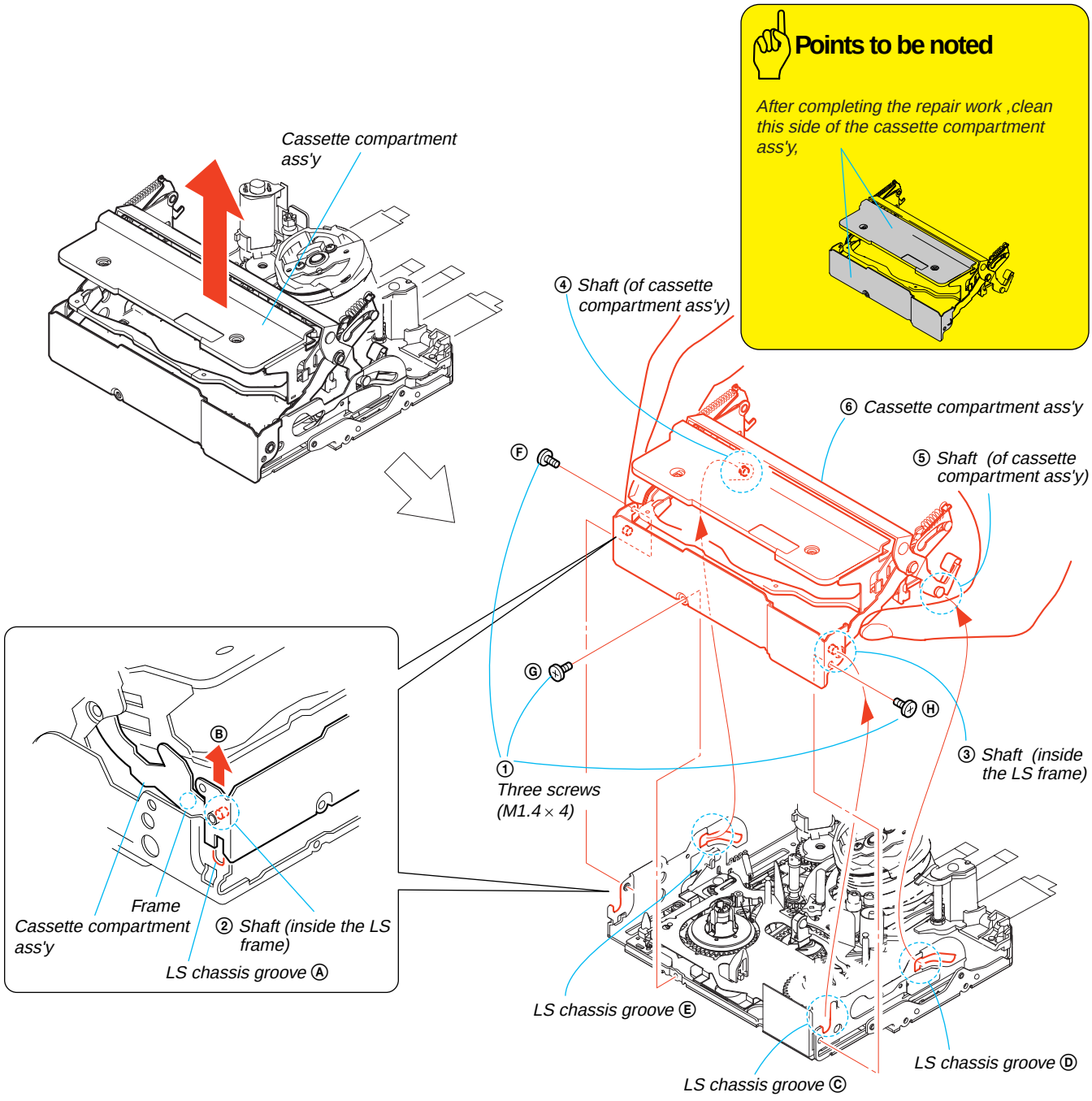
### 3-3. Cassette Compartment Ass'y

#### 1. Removal procedure

1) Enter the [EJ] mode.
2) Remove the three screws (special head screw M1.4 × 1.4) ①.
3) While pushing the frame of the cassette compartment ass'y toward inside, remove the shaft ② inside the LS frame from the groove Ⓐ of the LS chassis in the direction of the arrow Ⓑ.
4) Remove the shaft ③ inside the LS frame from the groove Ⓒ of the LS chassis.
5) Remove the cassette compartment ass'y shafts ④ and ⑤ from the LS chassis grooves Ⓓ and Ⓔ. Remove the cassette compartment ass'y ⑥.

#### 2. Attachment procedure

1) Enter the [ULE] mode.
2) Install cassette compartment ass'y ⑥ shafts ⑤ and ④ into the LS chassis grooves Ⓔ and Ⓓ.
3) While pushing the LS frame inward, install the shafts ③ and ② inside the LS frame into the grooves Ⓒ and Ⓐ of the LS chassis.
4) Install the three screws (special head screw M1.4 × 1.4) ① in the order of Ⓕ, Ⓖ and Ⓗ.
   Tightening torque: 0.06 ± 0.01 N•m (0.61 ± 0.1 kgf•cm)



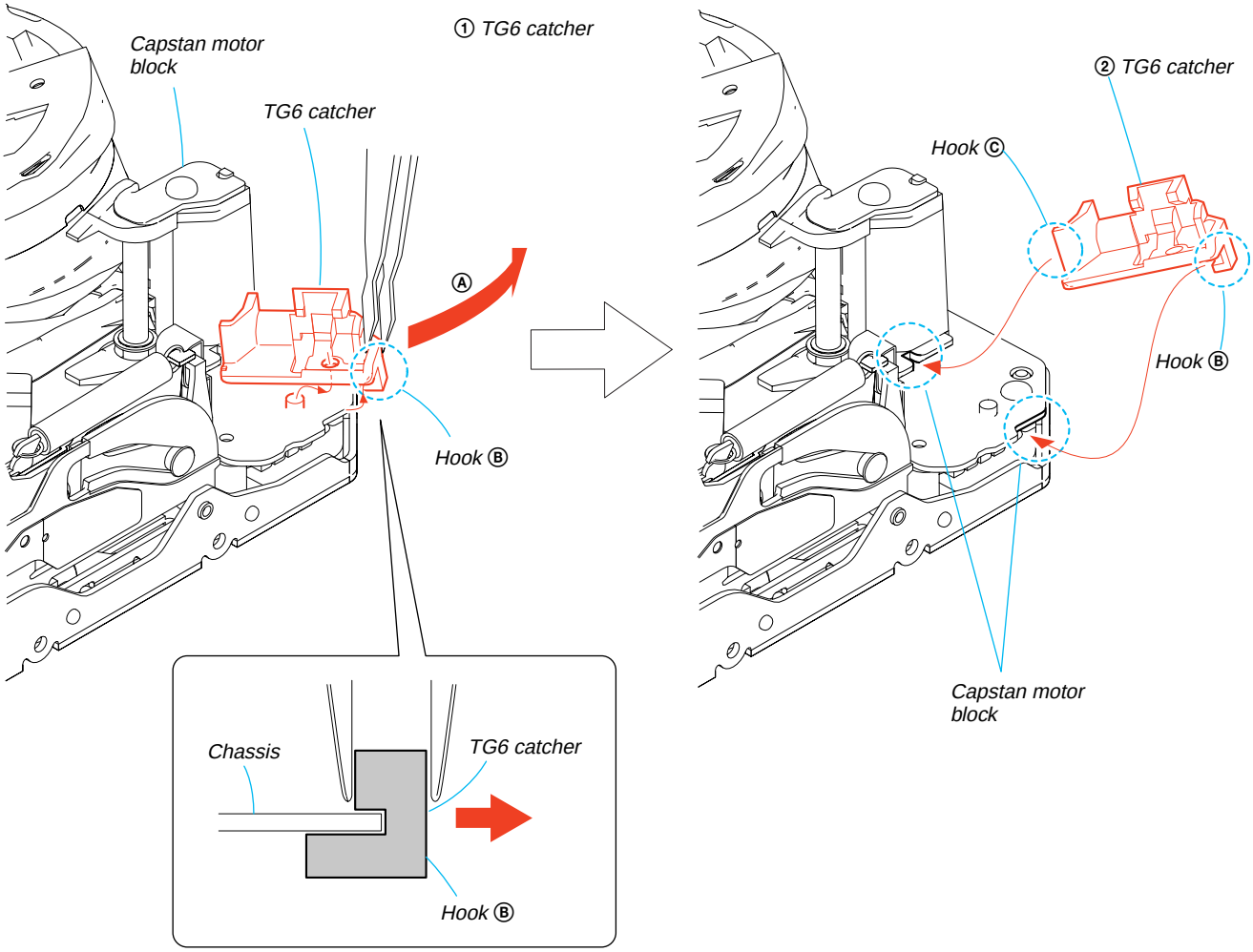
### 3-4. TG6 Catcher

#### 1. Removal procedure

1) Disengage the hook Ⓑ of the TG6 catcher and remove the TG6 catcher ① from the chassis of the capstan motor block in the direction of the arrow Ⓐ.

#### 2. Attachment procedure

1) Engage the hooks Ⓒ and Ⓑ of the TG6 catcher ② in the capstan motor block.



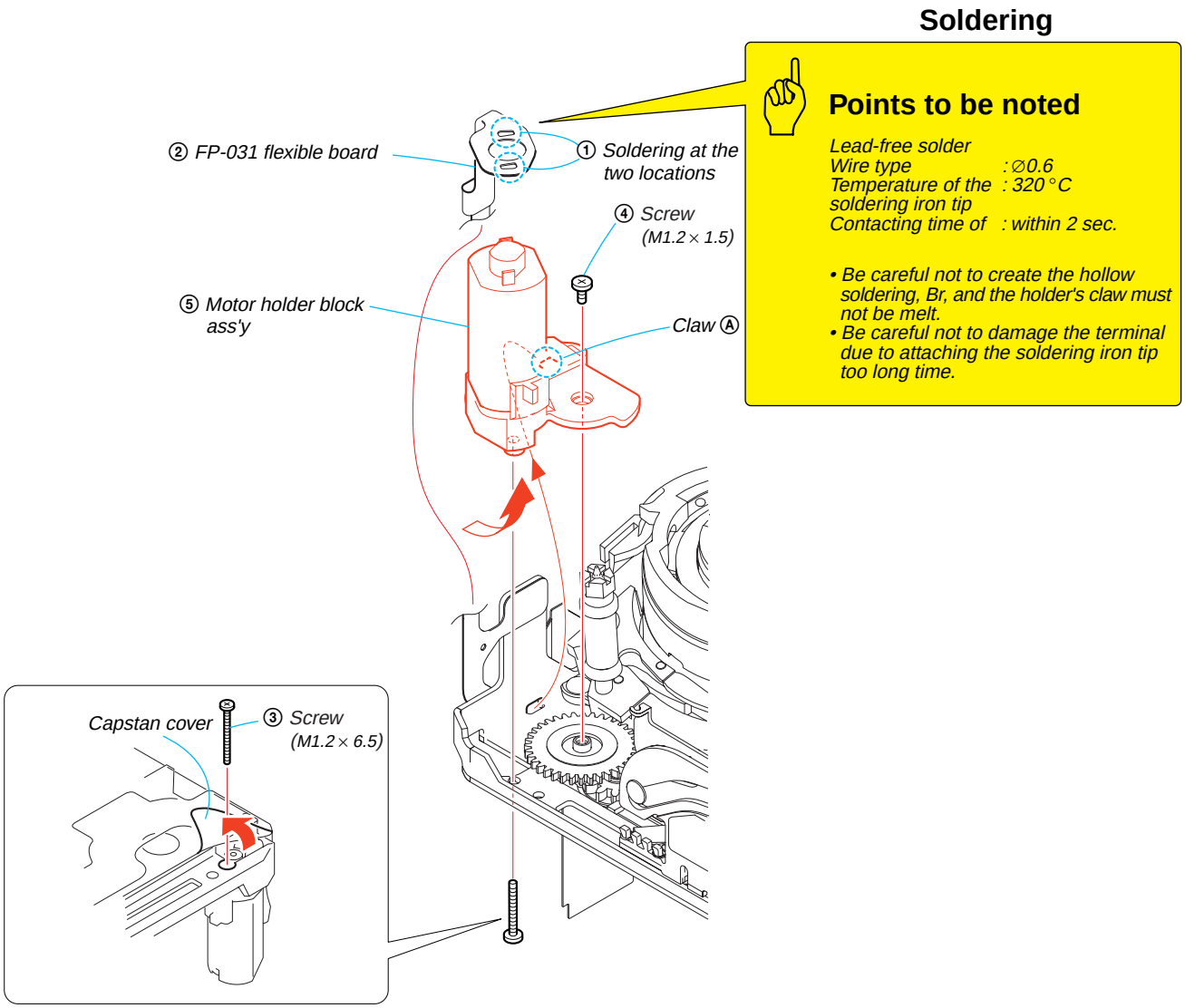
### 3-5. Motor Holder Block Ass'y

#### 1. Removal procedure

1) Remove the two soldering ① and remove the FP-031 flexible board ② from the motor holder block ass'y ⑤.
2) Turn over the capstan cover and remove the screw (special head screw M1.2 × 6.5) ③.
3) Remove the screw (special head screw M1.2 × 1.5) ④.
4) Disengage the claw Ⓐ and motor holder block ass'y ⑤.

#### 2. Attachment procedure

1) Engage the claw Ⓐ and install the motor holder block ass'y (loading) ⑤.
2) Install the screw (special head screw M1.2 × 1.5) ④.
   Tightening torque: 0.04 ± 0.01 N•m (0.41 ± 0.1 kgf•cm)
3) Turn over the capstan cover and install the screw (special head screw M1.2 × 6.5) ③.
4) Solder the two locations ① and install the FP-031 flexible board ② to the motor holder block ass'y (loading) ⑤.
   Tightening torque: 0.04 ± 0.01 N•m (0.41 ± 0.1 kgf•cm)



## 3-6. L-motor Block Ass'y (Loading) (M902)

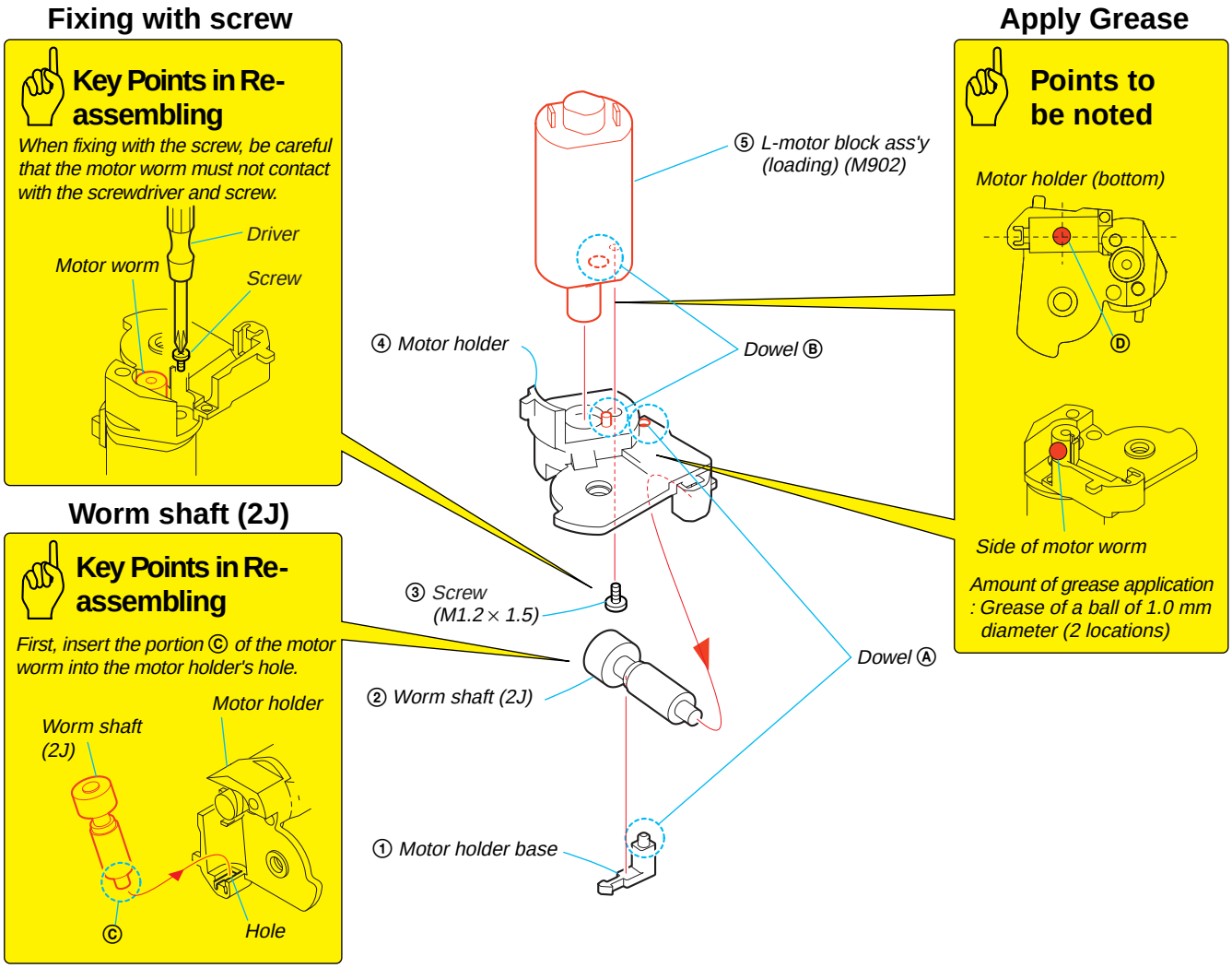
### 1. Removal procedure

1) Release the dowel Ⓐ, and remove the motor holder base ①.
2) Remove the worm shaft (2J) ②.
3) Remove the screw (special head screw M1.2 × 1.5) ③ and remove the L-motor block ass'y (loading) (M902) ⑤ from the motor holder ④.

### 2. Attachment procedure

1) Align the L-motor block ass'y (loading) (M902) ⑤ with the dowel Ⓑ, insert it into the motor holder ④. While being careful not to contact the screw and the screwdriver with the motor worm, install the screw (special head screw M1.2 × 1.5) ③.
   Tightening torque: 0.04 ± 0.01 N•m (0.41 ± 0.1 kgf•cm)
2) Apply the grease as much as a ball of 1.0 mm diameter on the portion Ⓓ on the bottom of the motor holder ④ and on the sides of the motor worm.
3) Install the worm shaft (2J) ②.
4) Engage the dowel Ⓐ and install the motor holder base ①.

**Note:** The motor holder ④ and the motor holder base ① must be replaced simultaneously as a pair.



### 3-7. END Sensor (Q901)

#### 1. Removal procedure

1) Remove soldering at the two locations ① of the END sensor (Q901).
2) Disengage the claw ② and the END sensor (Q901) ③.
3) Remove soldering at the two locations ④ of the TOP sensor (Q902).
4) Disengage the claw ⑤ and the TOP sensor (Q902) ⑥.

#### 2. Attachment procedure

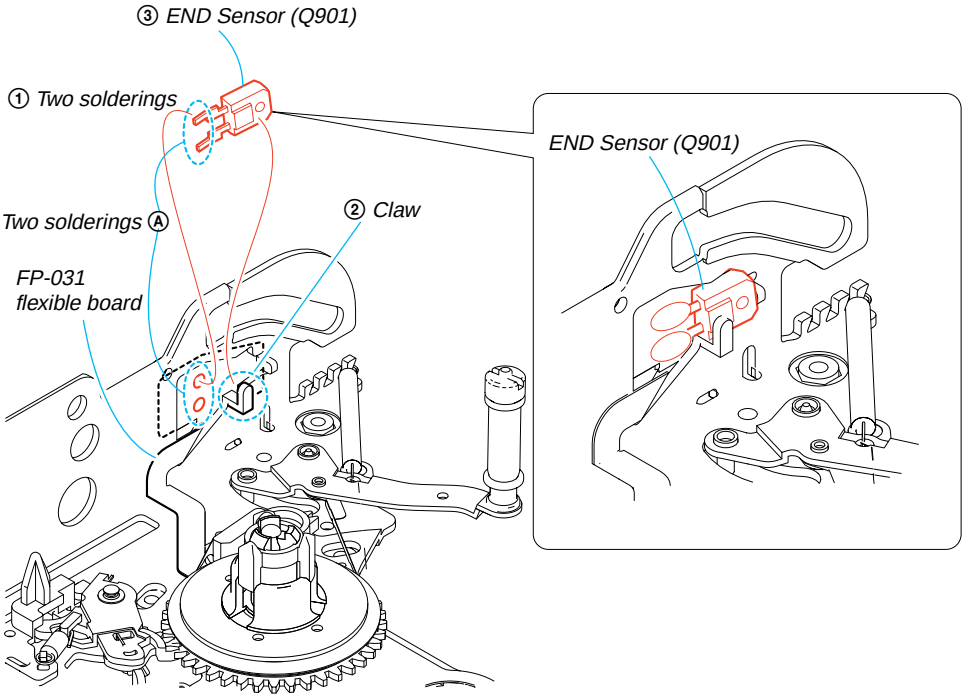
1) Engage the TOP sensor (Q902) ⑥ in the claw ⑤.
2) Solder two locations ④ of the TOP sensor (Q902) and install the TOP sensor (Q902) ⑥ in the FP-031 flexible board.
3) Engage the END sensor (Q901) ③ in the claw ②.
4) Solder two locations ① of the END sensor (Q901) and install the END sensor (Q901) ③ in the FP-031 flexible board.

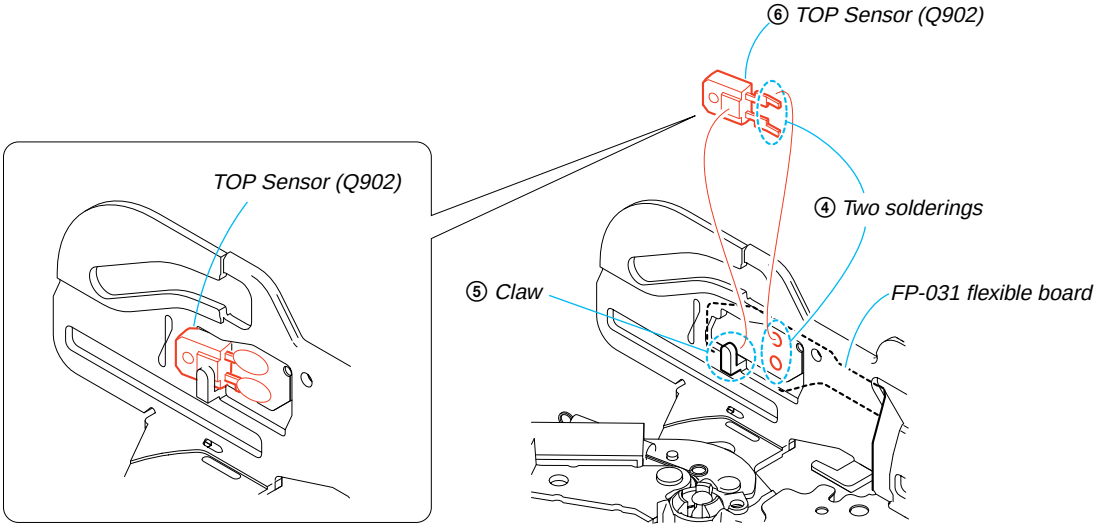
## Soldering

**Points to be noted**

*Use the rubber finger tip cover.*
*Lead-free solder*
*Wire type : ∅0.6*
*Soldering iron : 941 made by Hakko Mfg.*
*Soldering iron tip: T1-1BC*

*Soldering iron tip temperature: 300±10 °C*
*Soldering iron tip contacting time within 2 sec.*



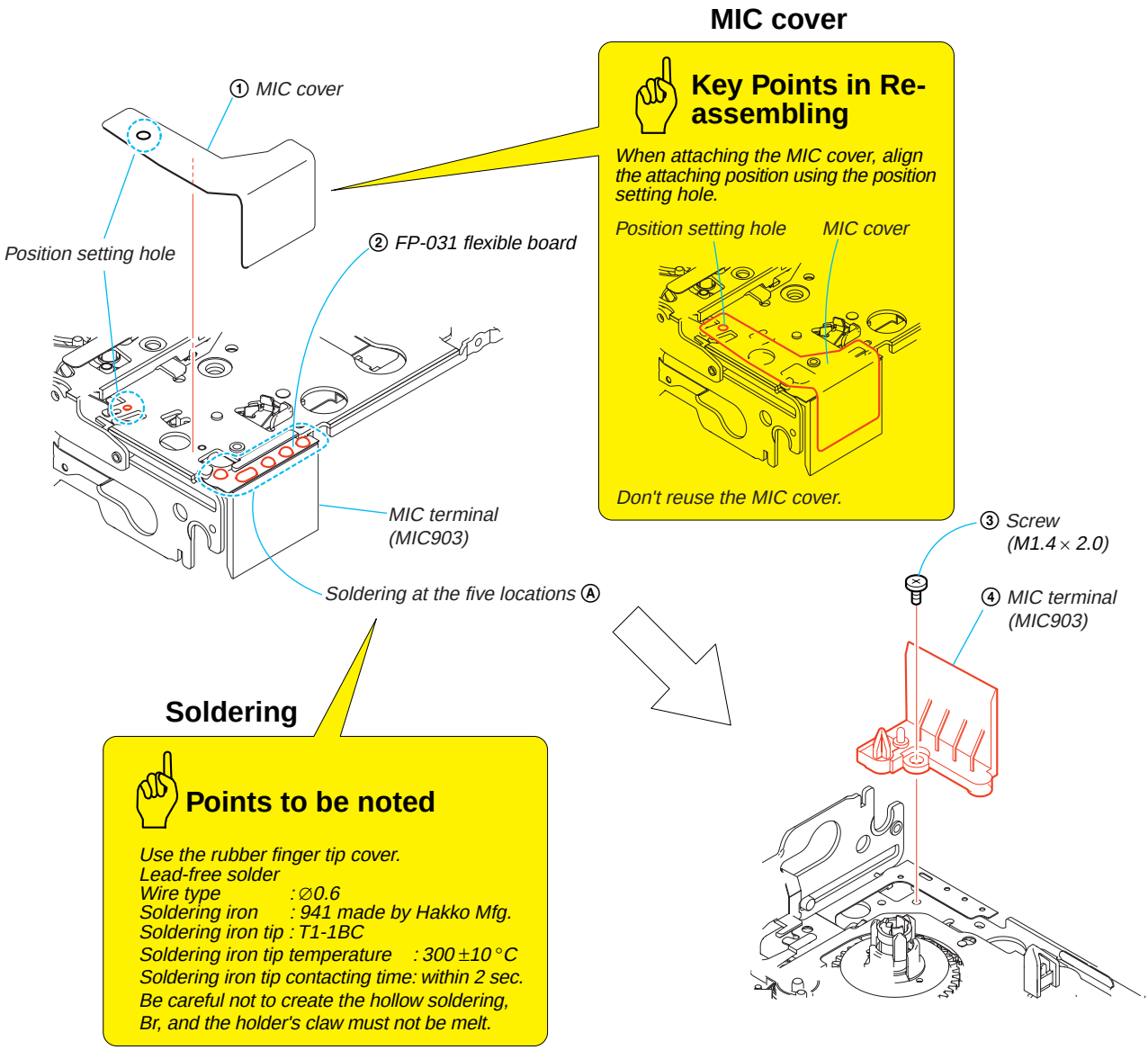
### 3-8. MIC terminal (MIC903)

#### 1. Removal procedure

1) Enter the ULE mode.
2) Peel away the MIC cover ①.
3) Remove soldering at the five locations Ⓐ, and remove the FP-031 flexible board ② from the MIC terminal (MIC903) ④.
4) Remove the screw (special head screw M1.4 × 2.0) ③, and remove the MIC terminal (MIC903) ④.

#### 2. Attachment procedure

1) While pressing the top of the MIC terminal (MIC903) ④, fix it with the screw (special head screw M1.4 × 2.0) ③.
   Tightening torque: 0.06 ± 0.01 N•m (0.61 ± 0.1 kgf•cm)
2) Remove soldering at the five locations Ⓐ, and install the FP-031 flexible board ② to the MIC terminal (MIC903) ④.
3) Align the position setting hole with the hold and attach the MIC cover.
   (Don't reuse the MIC cover.)



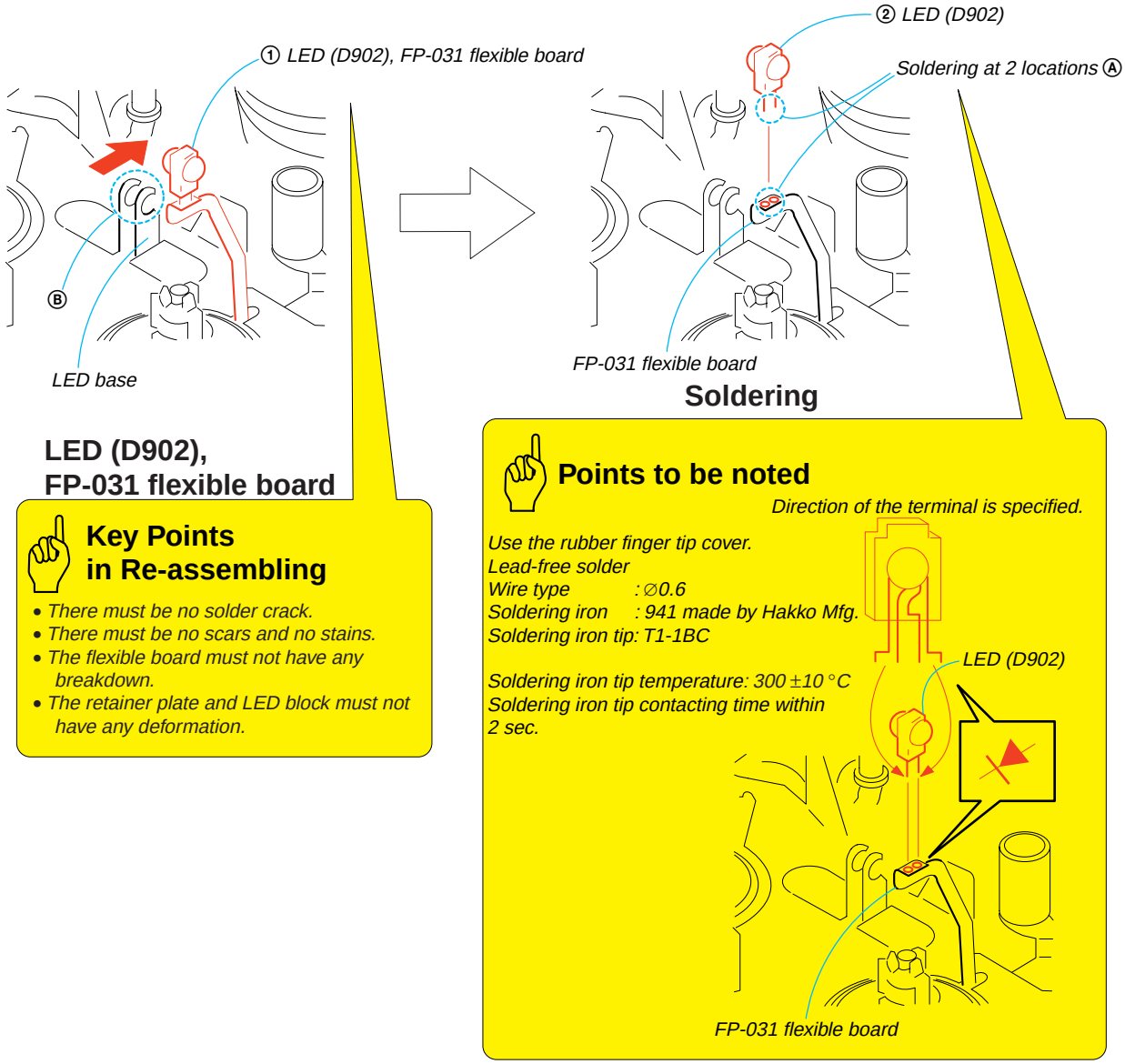
## 3-9. LED (D902)

### 1. Removal procedure

1) Remove the LED (D902) and the FP-031 flexible board ①from the LED base.
2) Remove soldering at the two locations Ⓐ, and remove the LED (D902) ②.

### 2. Attachment procedure

1) Remove soldering at the two locations Ⓐ, and install the LED (D902) ② in the FP-031 flexible board.
2) Roll up the FP-031 flexible board under the LED (D902) ① with fingertip, and insert the LED top head into the portion Ⓑ of the LED base. Then route the flexible board in the specified position.



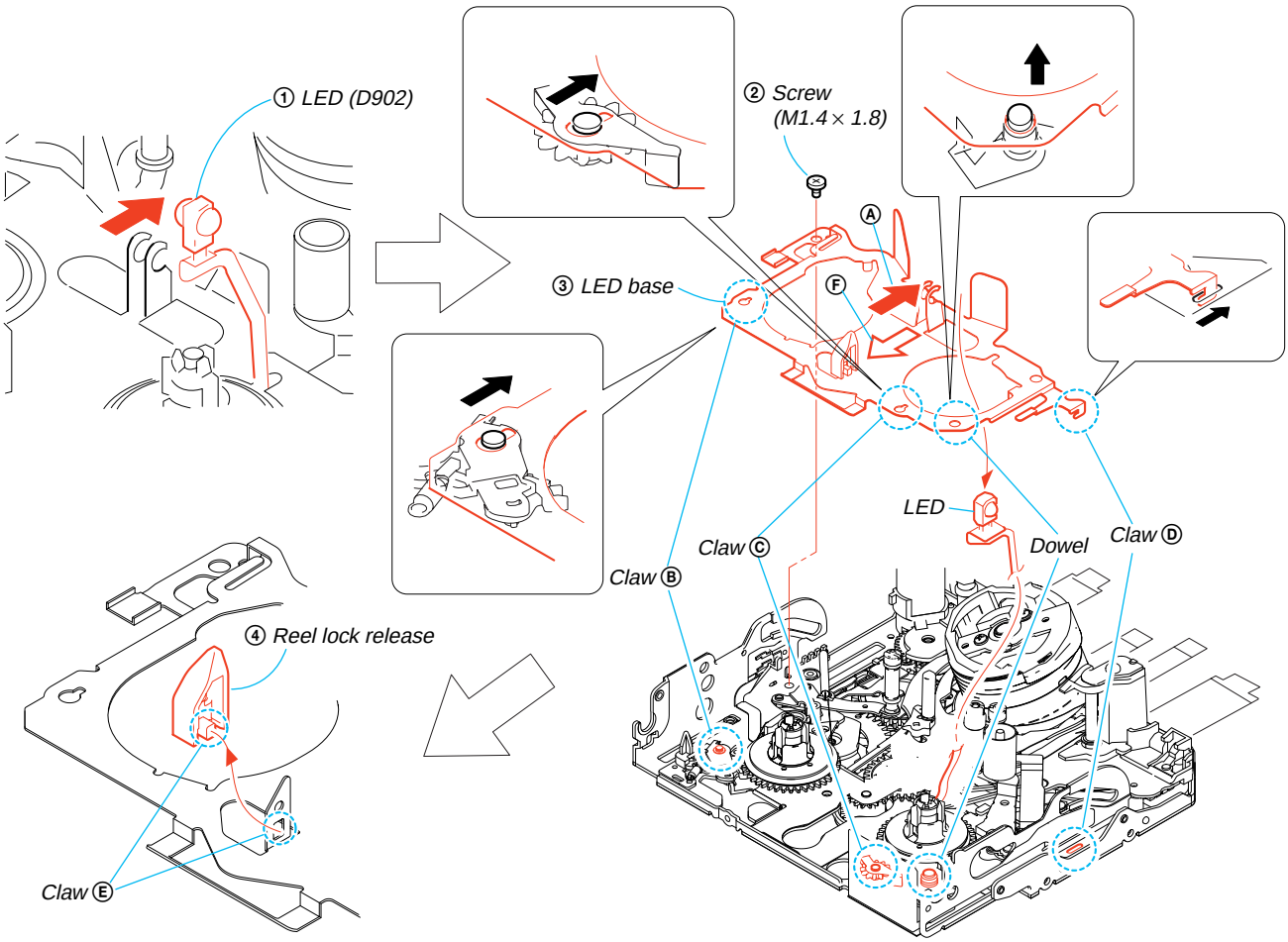
### 3-10. LED Base

#### 1. Removal procedure

1) Remove the LED (D902) ① from the LED base.
2) Remove the screw (precision screw M1.4 × 1.8) ②.
3) Float the LED base ③ and remove the dowel.
4) Slide the LED base ③ in the direction of the arrow Ⓐ, and disengage the three claws at Ⓑ, Ⓒ and Ⓓ.
5) While freeing the LED from the LED base ③, remove the LED base ③.
6) Disengage the claw Ⓔ and remove the Reel Lock Cancel.

#### 2. Attachment procedure

1) Install the Reel Lock Cancel.
2) While passing the LED (D902) ① through the hole of the LED base ③, place the LED base ③ on top of the LS chassis.
3) Align the position of the LED base ③ first with the claws Ⓑ and Ⓒ, then slide the LED base ③ in the direction of the arrow Ⓕ, and engage the three claws Ⓑ, Ⓒ and Ⓓ, and the dowel.
4) Install the screw (precision screw M1.4 × 1.8) ②.
   Tightening torque: 0.04 ± 0.01 N•m (0.41 ± 0.1 kgf•cm)
5) Install the LED (D902) ① to the LED base.




**Reel lock release**

**Key Points in Re-assembling**

- *The reel lock release part must not be re-used.*
- *The retainer plate must not have any deformation.*
- *The reel lock release must be full engaged. (Must not be left in the half-installed state.)*

**LED base**

**Key Points in Re-assembling**

- *All claws must be fully engaged. (Caution : No claws should be left disengaged.)*
- *The flexible board should not be pinched by anything.*
- *The retainer plate must not touch with the MIC terminal.*

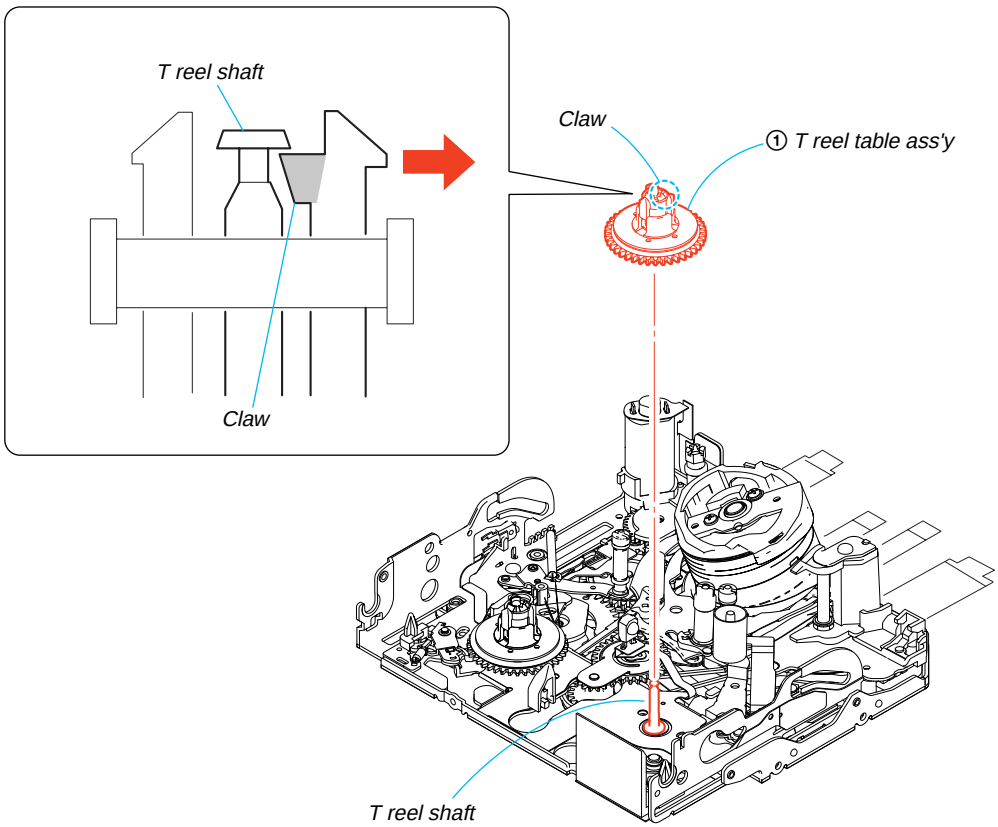
### 3-11. T-reel Table Ass'y

**1. Removal procedure**

1) While freeing the claw from the T-reel shaft in the direction of the arrow, remove the T-reel table ass'y ①.

**2. Attachment procedure**

1) Verify that the part that is going to be installed is the T-reel table ass'y. Then insert it into the T-reel shaft. While rotating it, snap it in. (Verify that it is locked.)



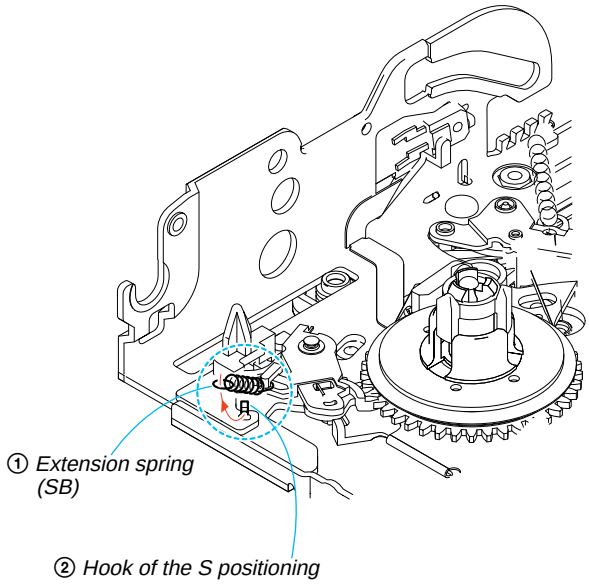
### 3-12. S Positioning

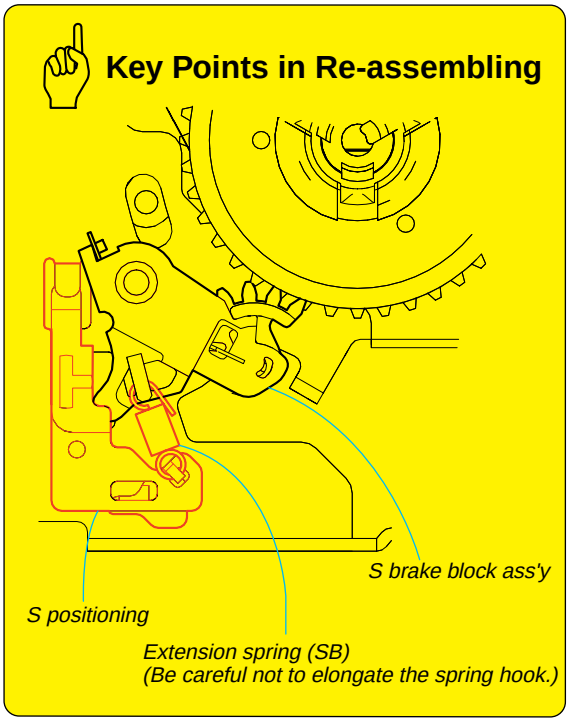
#### 1. Removal procedure

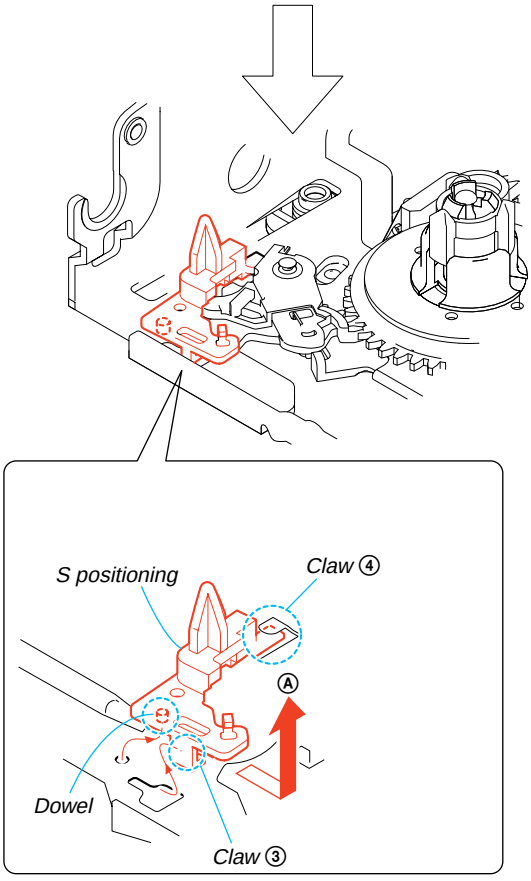
1) Remove the tension coil spring (SB) ① from the hook of the S positioning ②.
2) Rotate the S positioning in the direction of the arrow Ⓐ, and remove the claw ③ and disengage the dowel.
3) Remove the claw ④ and remove the S positioning ⑤.

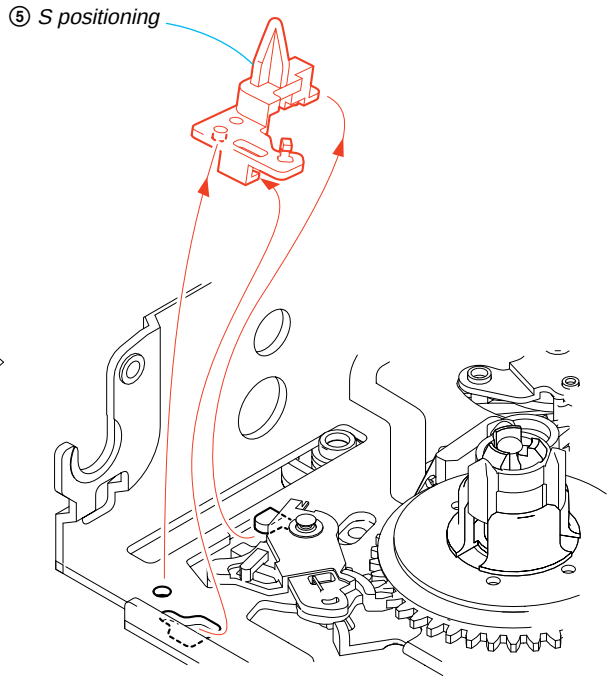
#### 2. Attachment procedure

1) Insert the claw ④ of the S positioning ⑤ in the hole of the LS chassis.
2) Engage the claw ③ and the dowel.
3) Insert the tension coil spring (SB) ① into the hook of the S positioning ②.



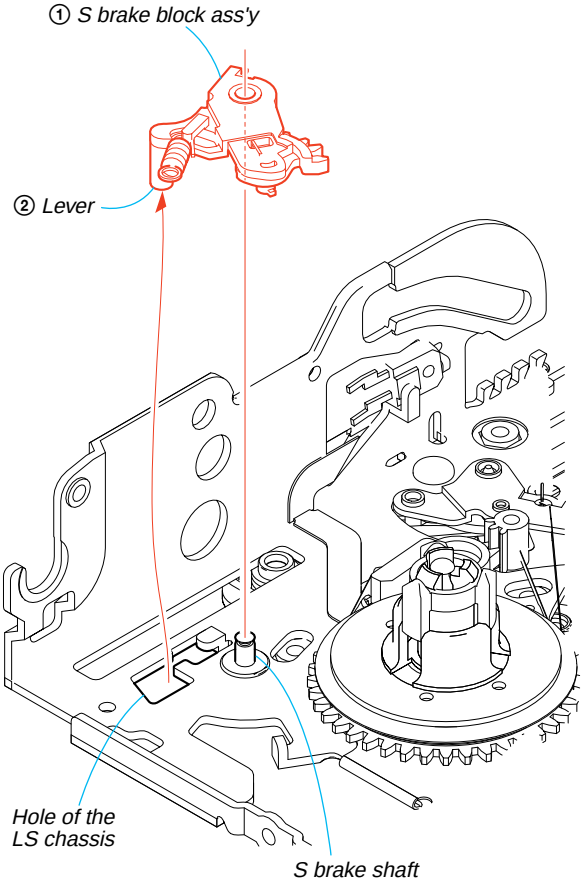
### 3-13. S Brake Block Ass'y

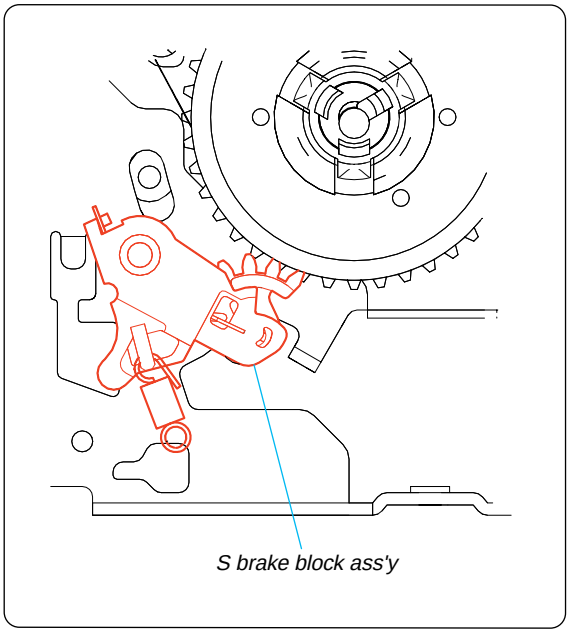
#### 1. Removal procedure

1) Remove the S brake block ass'y ① from the S brake shaft.

#### 2. Attachment procedure

1) Insert the lever ② of the S brake block ass'y into the hole of the LS chassis, and install the S brake block ass'y ① in the S brake shaft.



### 3-14. Tension Regulator Block Ass'y

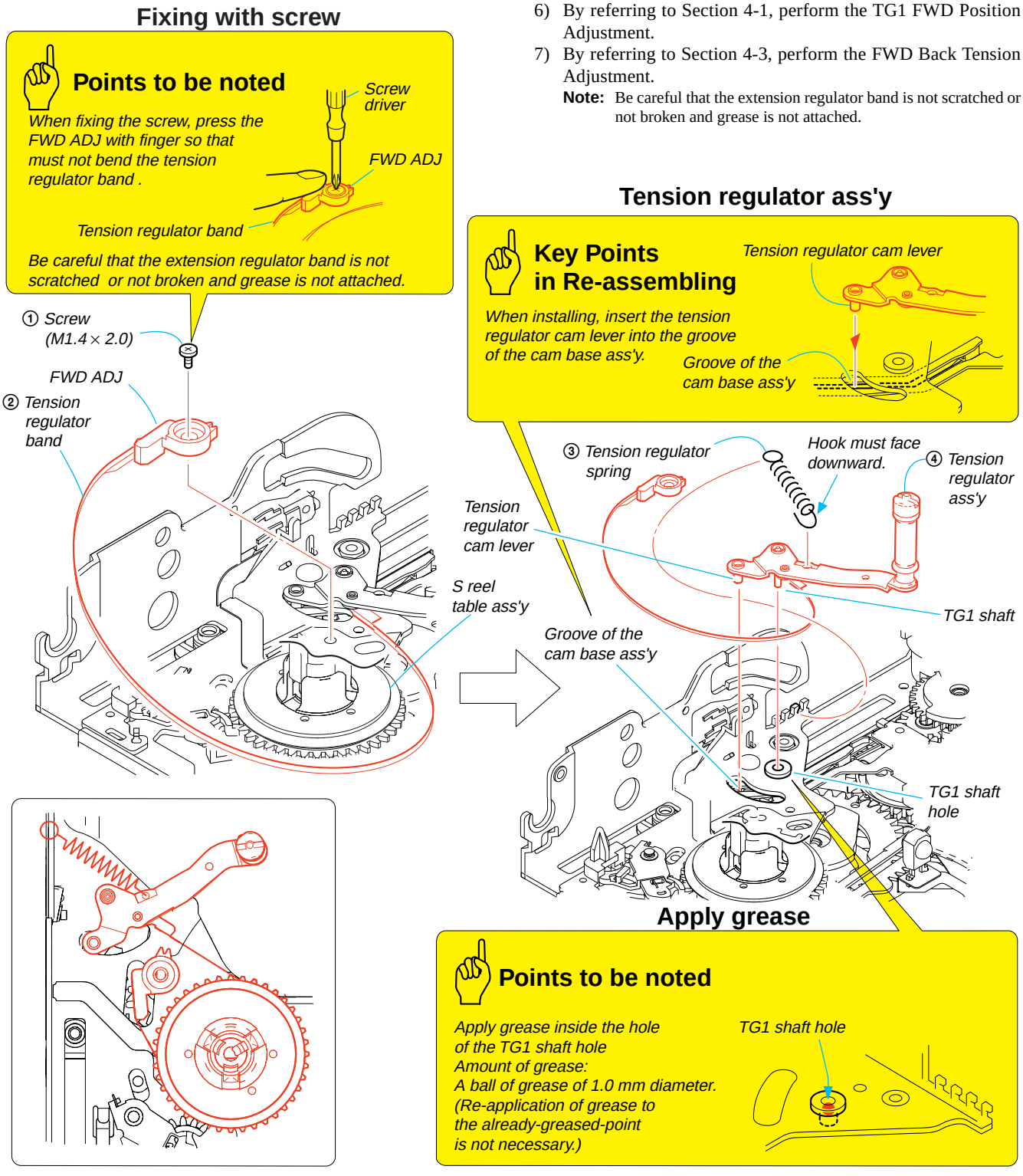
**1. Removal procedure**

1) Remove the screw (special head screw M1.4 × 2.0) ①.
2) Remove the tension regulator band ② from the S-reel table ass'y.
3) Remove the tension regulator spring ③.
   Note: Take a note where the tension regulator spring.
4) Remove the tension regulator block ass'y ④.

**2. Attachment procedure**

1) Apply grease into inside of the TG1 shaft hole.
   Amount of grease: A ball of grease of 1.0 mm diameter.
   Re-application of grease to the already-greased-point is not necessary.
2) While inserting the tension regulator cam lever into the groove of the cam base ass'y, insert the TG1 shaft into the TG1 shaft hole.
3) Hook the tension regulator spring ③ on the tension regulator ass'y ④ with the very end of the spring facing downward.
4) Hook the tension regulator spring ③ on the LS chassis.
   (The position that is taken a note when it is removed.)
5) Insert the tension regulator band ② into the groove of the S-reel table ass'y. While pushing the FWD ADJ with finger, fix it with the screw ① (special head screw M1.4 × 2.0).
   Tightening torque: 0.06 ± 0.01 N•m (0.61 ± 0.1 kgf•cm)
6) By referring to Section 4-1, perform the TG1 FWD Position Adjustment.
7) By referring to Section 4-3, perform the FWD Back Tension Adjustment.

   **Note:** Be careful that the extension regulator band is not scratched or not broken and grease is not attached.



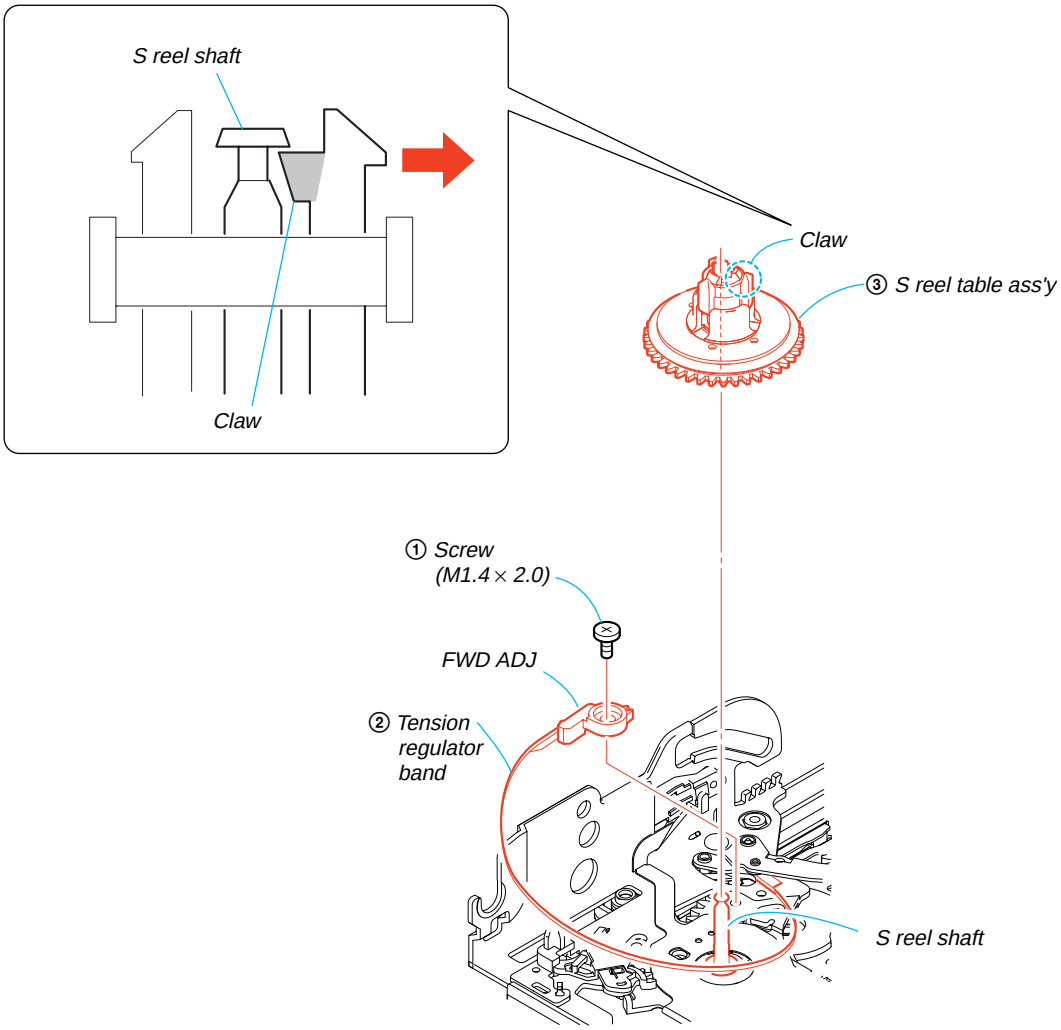
### 3-15. S Reel Table Ass'y

#### 1. Removal procedure

1) Remove the screw (special head screw M1.4 × 2.0) ① .
2) Remove the tension regulator band ② from the S-reel table ass'y.
3) While freeing the claw at the location in the direction of the arrow, remove the S-reel table ass'y ③ from the S reel shaft.

#### 2. Attachment procedure

1) Insert the S-reel table ass'y ③ into the S-reel shaft. While rotating it, snap it in. (Verify that it is locked.)
2) Insert the tension regulator band into the groove of the S-reel table ass'y. While pushing the FWD ADJ with finger, fix it with the screw 1 (special head screw M1.4 × 2.0).
   Tightening torque: 0.06 ± 0.01 N•m (0.61 ± 0.1 kgf•cm)



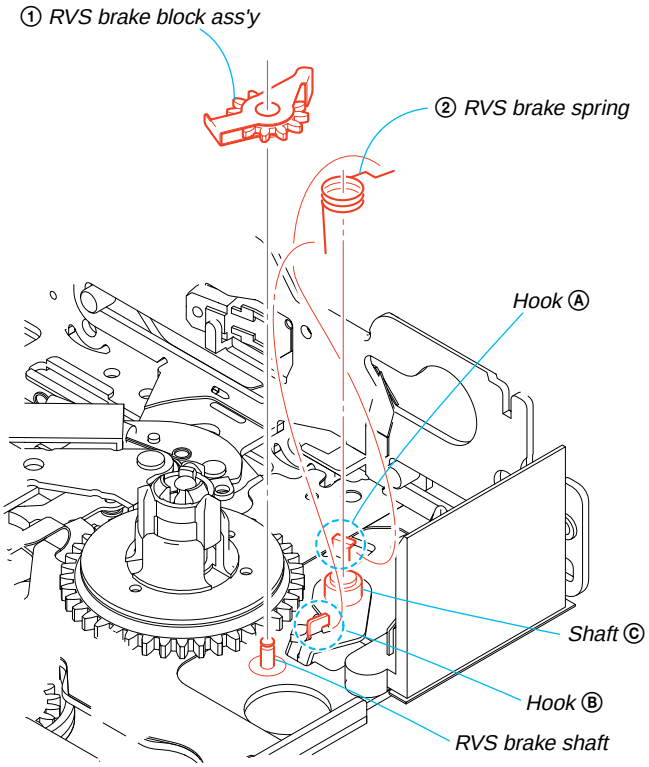
### 3-16. RVS Brake Ass'y

**1. Removal procedure**

1) Remove the RVS brake ass'y ① from the RVS brake shaft.
2) Remove the RVS brake spring ② from the hooks Ⓐ and Ⓑ.

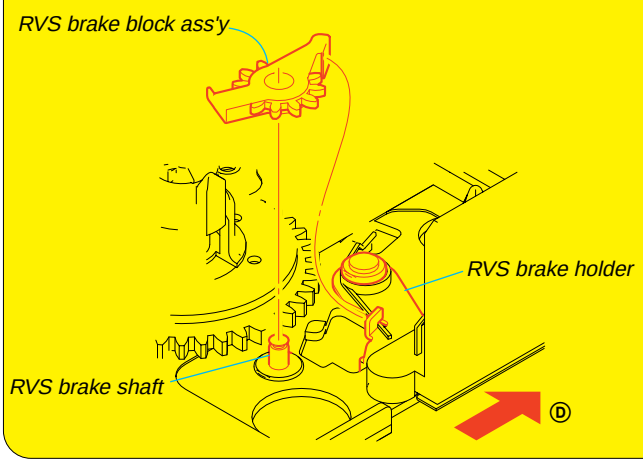
**2. Attachment procedure**

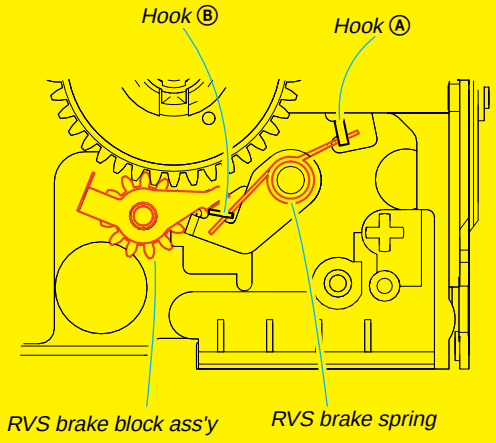
1) Install the RVS brake spring ② in the shaft Ⓒ, and engage the RVS brake spring ② on the hooks Ⓐ and Ⓑ.
2) Open the RVS brake holder in the direction of the arrow Ⓓ, and install the RVS brake ass'y ① into the RVS brake shaft.




**RVS brake block ass'y**

**Key Points in Re-assembling**



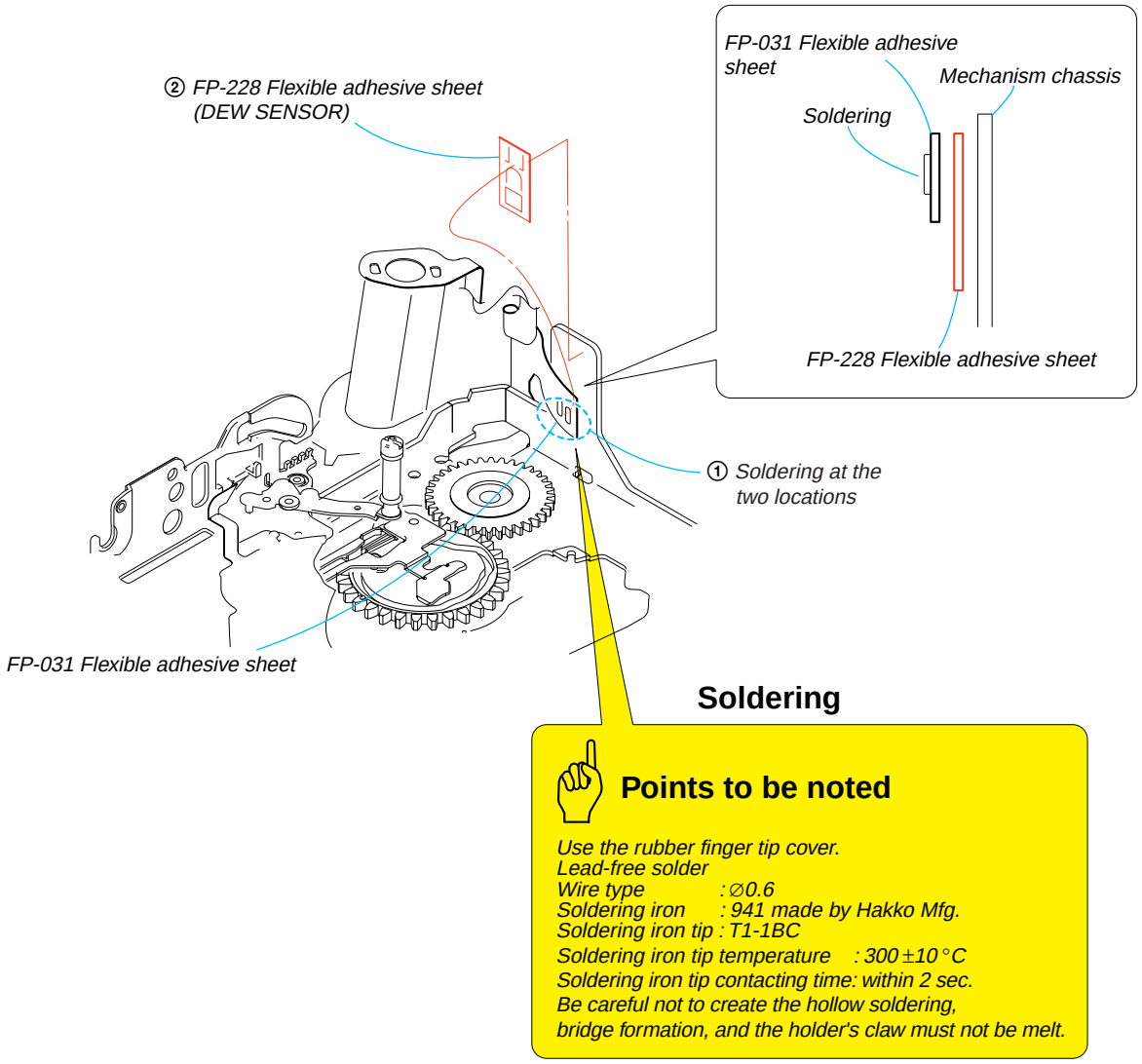
### 3-17. FP-228 Flexible Board

#### 1. Removal procedure

1) Remove soldering at two locations ① on the FP-031 board and the FP-228 flexible board, and remove the FP-228 flexible board (DEW SENSOR) ② from the mechanism chassis.

#### 2. Attachment procedure

1) Attach the FP-228 flexible board (DEW SENSOR) ② to the mechanism chassis and attach the FP-031 board to the FP-228 board.
2) Solder the terminal block at two locations ① on the FP-031 flexible board.




**Soldering**

**Points to be noted**

*Use the rubber finger tip cover.*
*Lead-free solder*
*Wire type : ∅0.6*
*Soldering iron : 941 made by Hakko Mfg.*
*Soldering iron tip : T1-1BC*
*Soldering iron tip temperature : 300 ±10 °C*
*Soldering iron tip contacting time: within 2 sec.*
*Be careful not to create the hollow soldering, bridge formation, and the holder's claw must not be melt.*

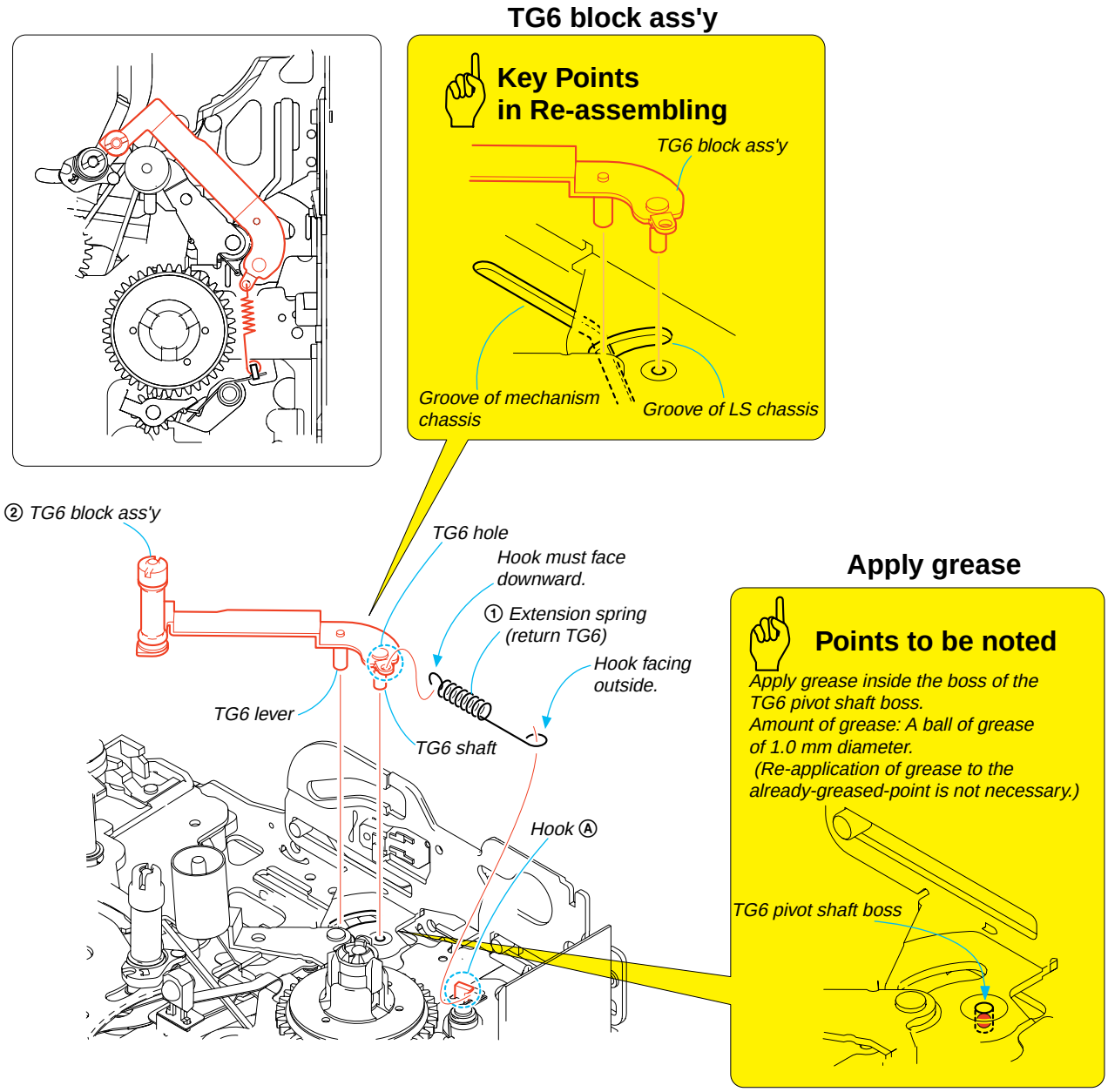
### 3-18. TG6 Block Ass'y

**1. Removal procedure**

1) Remove the extension spring (return TG6) ①.
2) Remove the TG6 block ass'y ②.

**2. Attachment procedure**

1) Apply grease inside the boss of the TG6 shaft hole.
   Amount of grease: A ball of grease of 1.0 mm diameter.
   Re-application of grease to the already-greased-point is not necessary.
2) Insert the TG6 shaft TG6 block ass'y ② in to the TG6 shaft hole. At the same time, insert the TG6 shaft lever into the groove of the LS chassis and that of the mechanism chassis.
3) Engage the extension spring (return TG6) ① on the hook Ⓐ and hole of the TG6.



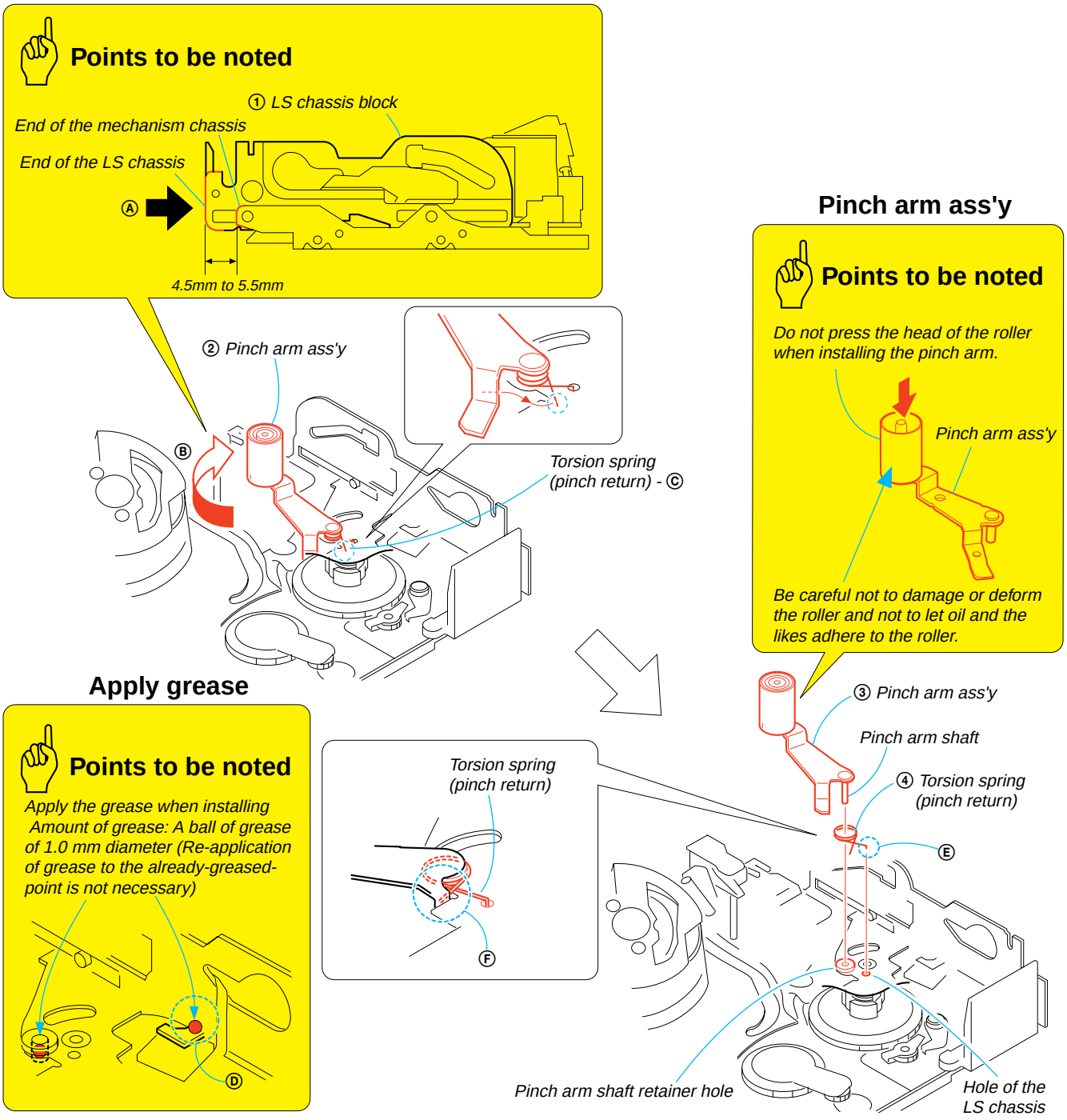
### 3-19. Pinch Arm Ass'y

#### 1. Removal procedure

1) Move the LS chassis in the direction of arrow Ⓐ so that the distance between the end of the LS chassis and end of the mechanism chassis is in the range of 4.5 mm to 5.5 mm.
2) Rotate the pinch arm ass'y ② in the direction of arrow Ⓑ, and remove the torsion spring (pinch return) Ⓒ.
3) Remove the pinch arm ass'y ③ , and remove the torsion spring (pinch return) ④.

#### 2. Attachment procedure

1) Apply grease on the pinch arm shaft retainer hole and the portion Ⓓ of the LS chassis.
   Amount of grease: A ball of grease of 1.0 mm diameter.
2) Move the LS chassis in the direction of arrow Ⓐ so that the distance between the end of the LS chassis and end of the mechanism chassis is in the range of 4.5 mm to 5.5 mm.
3) Insert the portion Ⓔ of the torsion spring (pinch return) ④ into the hole of the LS chassis, and attach it to the pinch arm shaft retainer hole.
4) Install the pinch arm ass'y ③ in the pinch arm shaft retainer hole.
5) Hook the torsion spring (pinch return) ④ on the pinch arm ass'y ③ as shown in Ⓕ.



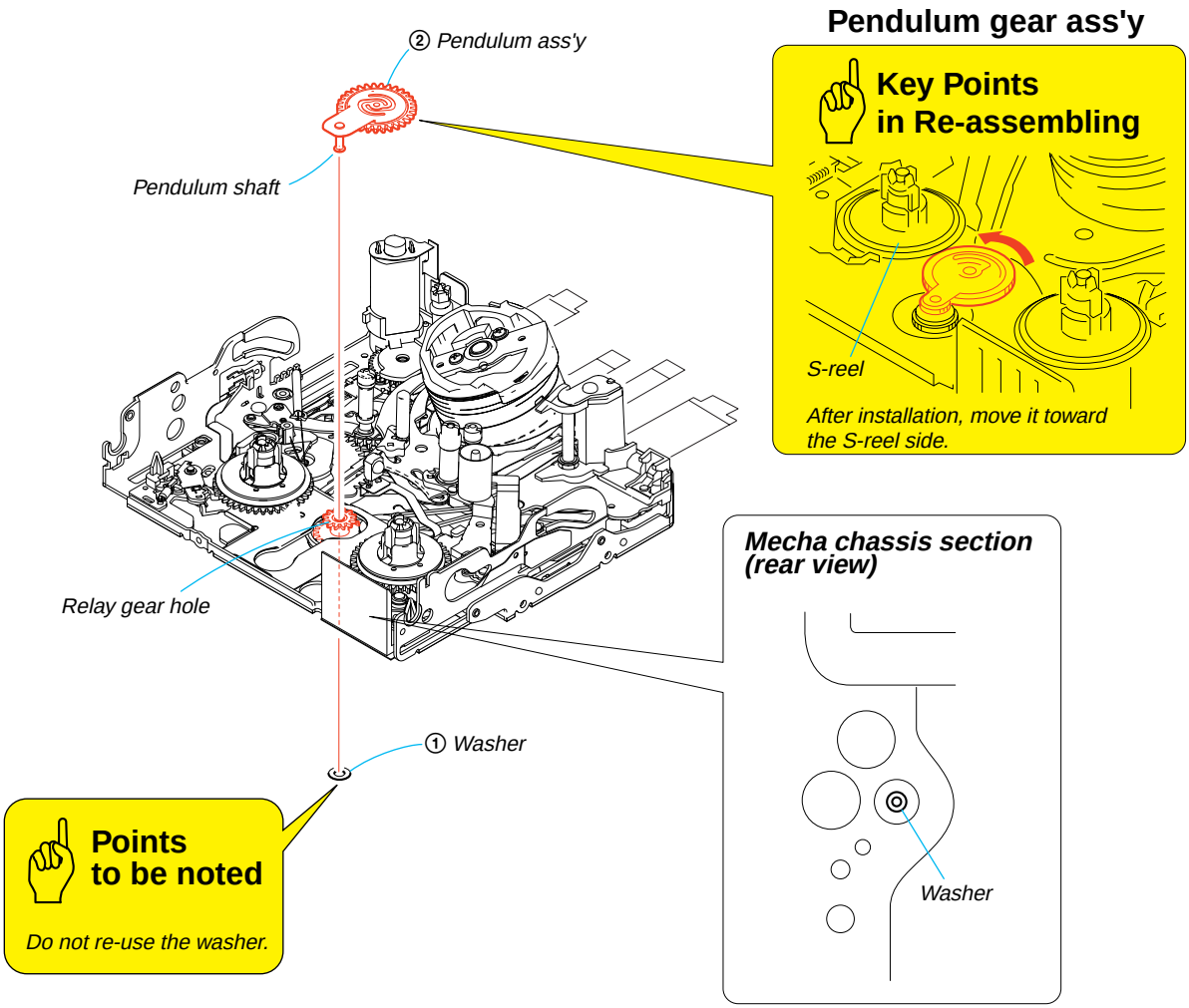
### 3-20. Pendulum Ass'y

**1. Removal procedure**

1) Remove the washer ① from the pendulum shaft.
2) Remove the pendulum ass'y ② from the relay gear hole.

**2. Attachment procedure**

1) Install the pendulum ass'y ② to the relay gear hole.
2) Install the washer ① to the pendulum shaft.
   (Do not re-use the washer.)



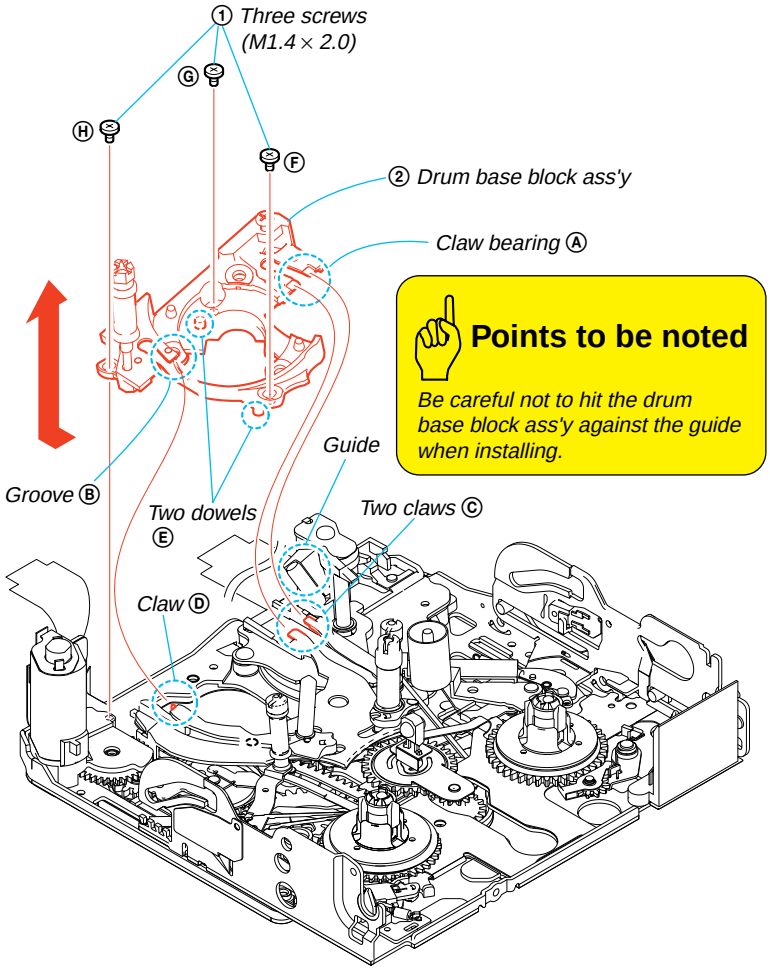
## 3-21. Drum Base Ass'y

### 1. Removal procedure

1) Enter the [ULE] mode.
2) Remove the three screws (special head screw M1.4 × 2.0) ①.
3) Remove the drum base ass'y ② in the direction of the arrow.

### 2. Attachment procedure

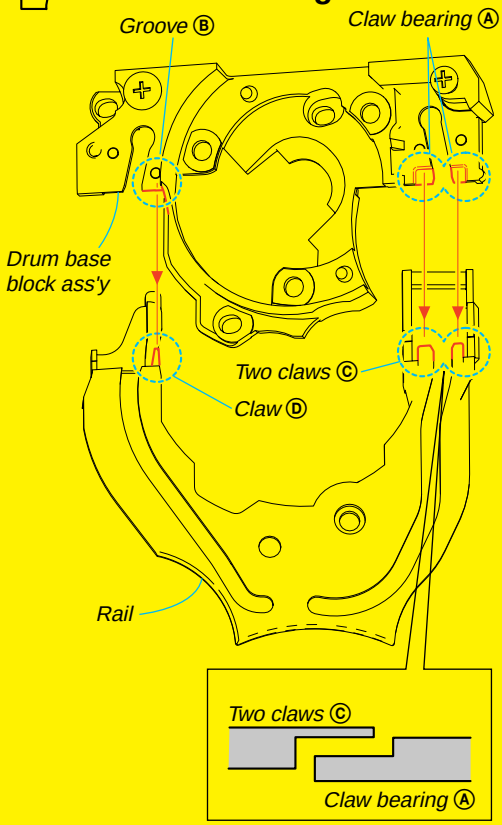
1) Install the claw bearing Ⓐ and then groove Ⓑ of the drum base ass'y ② in the claws Ⓒ in two locations and the claw Ⓓ of the rail, respectively.
2) Align the two dowels of the drum base ass'y at the Ⓔ position and install the drum base ass'y ②.
3) Install the three screws (special head screw M1.4 × 2.0) ① in the order of Ⓕ, Ⓖ and Ⓗ.
   Tightening torque: 0.04 ± 0.01 N•m (0.41 ± 0.1 kgf•cm)
4) By referring to Section "4-2. LS Cam Adjustment", perform the LS Cam Adjustment.




**Points to be noted**

*Be careful not to hit the drum base block ass'y against the guide when installing.*

**Key Points in Re-assembling**




- *Be sure that the claws at two locations Ⓒ of the rail are placed on the claw bearing Ⓐ of the drum base block ass'y.*
- *Be sure that the claw Ⓓ of the rail is inserted inside the groove Ⓑ of the drum base block ass'y.*

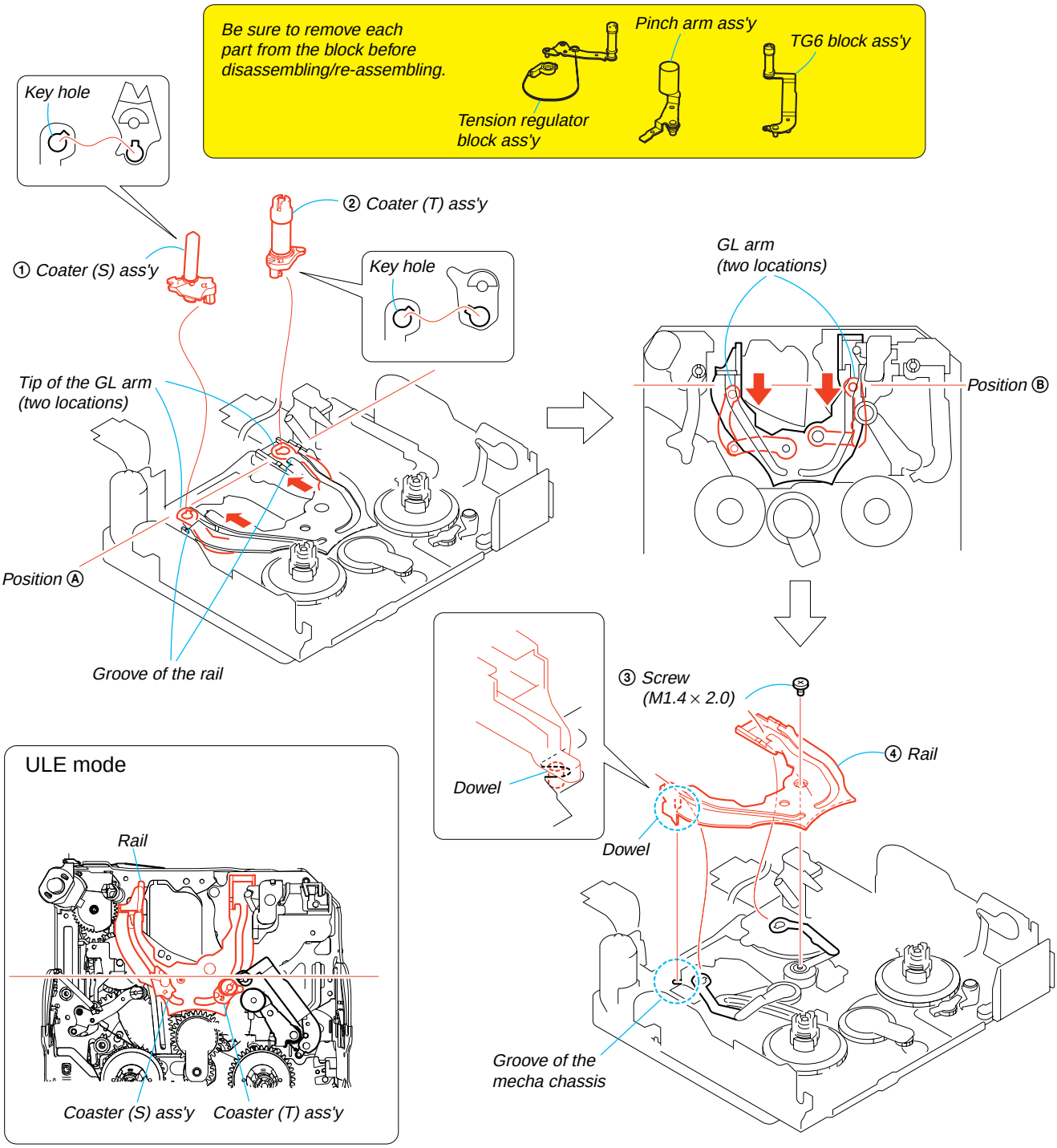
### 3-22. Coaster Ass'y, Rail

#### 1. Removal procedure

1) Load the GL arms (two locations) until the tips of the arms reach the position Ⓐ.
2) While rotating the coaster (S) ass'y ① and the coaster (T) ass'y ②, remove them through the key hole at the tip of the GL arms (two locations).
3) Load the GL arms (two locations) until the tips of the arms reach the position Ⓑ.
4) Remove the screw (special head screw M1.4 × 2.0) ③, and remove the rail ④.

#### 2. Attachment procedure

1) Set the dowel of the rail to the groove of the mecha chassis, and install the rail and install the screw (special head screw M1.4 × 2.0).
   Tightening torque: 0.04 ± 0.01 N•m (0.41 ± 0.1 kgf•cm)
2) Load the GL arms (two locations) until the tips of the arms reach the position Ⓐ.
3) While rotating the coaster (S) ass'y ① and the coaster (T) ass'y ②, install them in the key holes at the tips of the GL arms (two locations).
4) Return to the [ULE] mode.



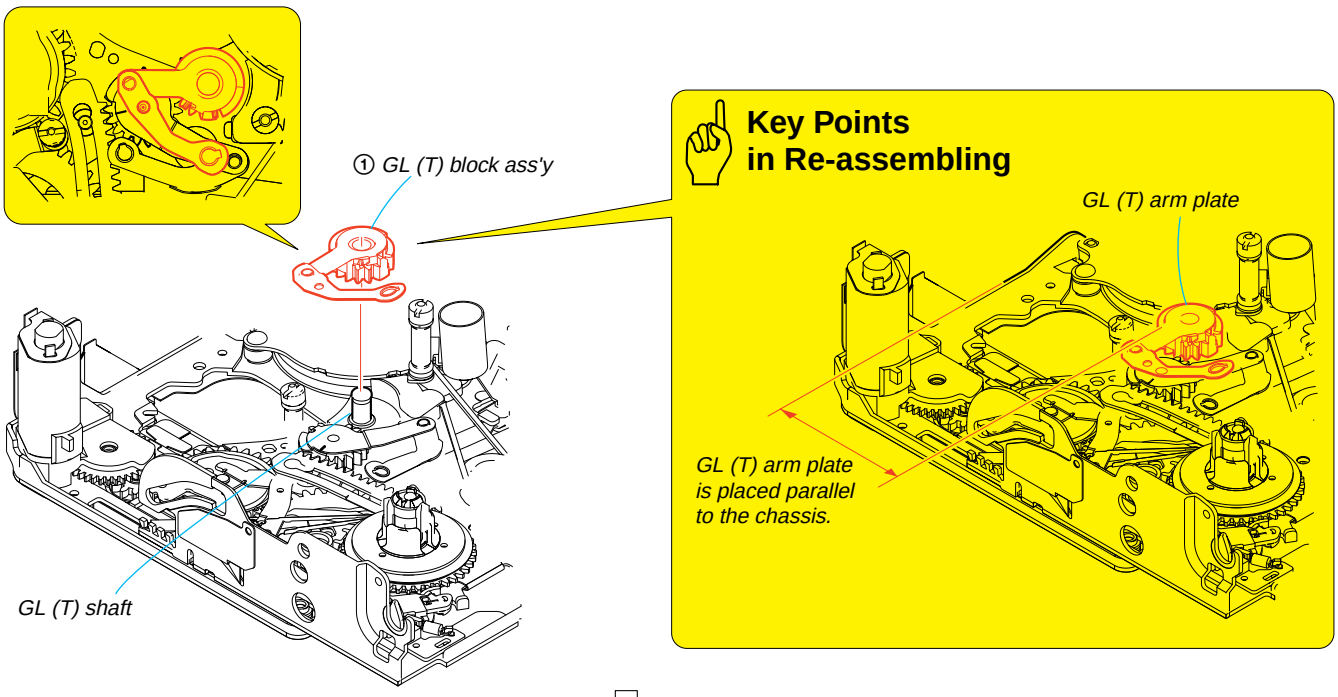
### 3-23. GL (T) Block Ass'y, GL Arm (S) Ass'y

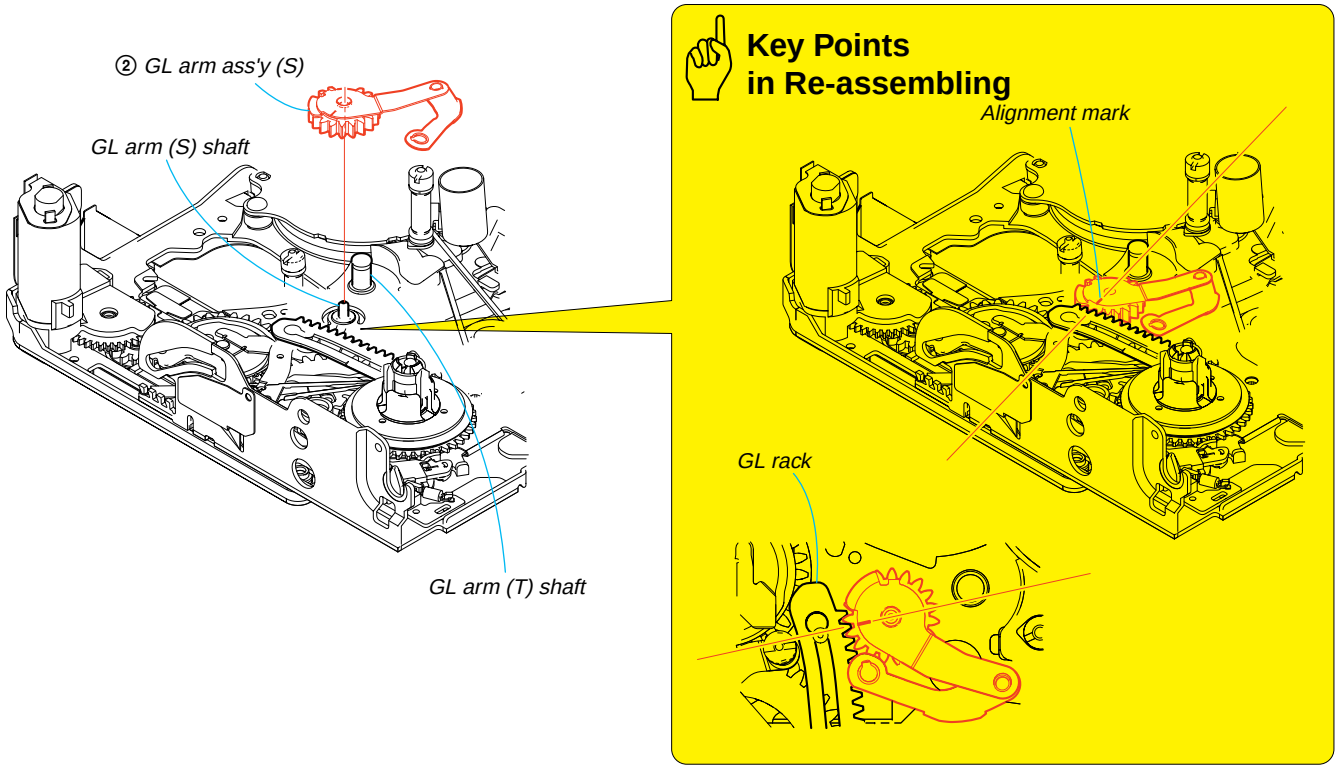
#### 1. Removal

1) Remove the GL (T) block ass'y ① from the GL (T) shaft.
2) Remove the GL (S) block ass'y ② from the GL arm (S) shaft.

#### 2. Attachment procedure

1) Enter the ULE mode.
2) Installing the GL arm (S) ass'y
   Install the GL arm (S) ass'y ② to the GL arm (S) shaft, while aligning the second gear of the GL rack with the phase alignment mark.
3) Installing the GL (T) block ass'y
   Install the GL (T) block ass'y ① to the GL (T) shaf, tin the way that the GL (T) arm plate of the GL (T) block ass'y ① is placed parallel to the chassis.



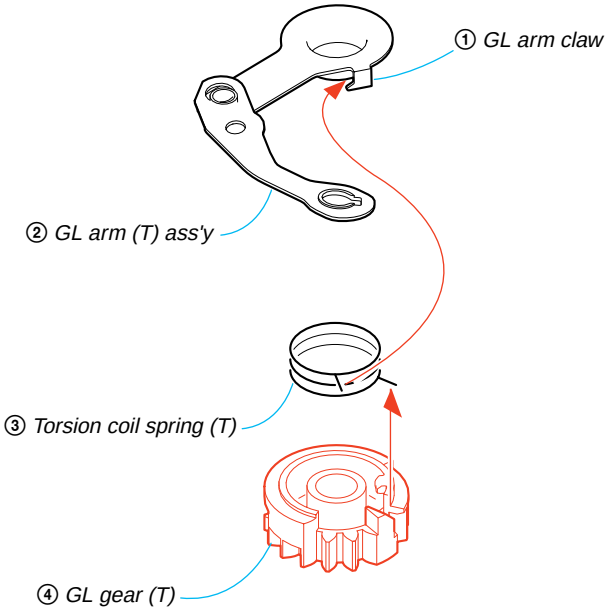
### 3-24. GL Gear (T)

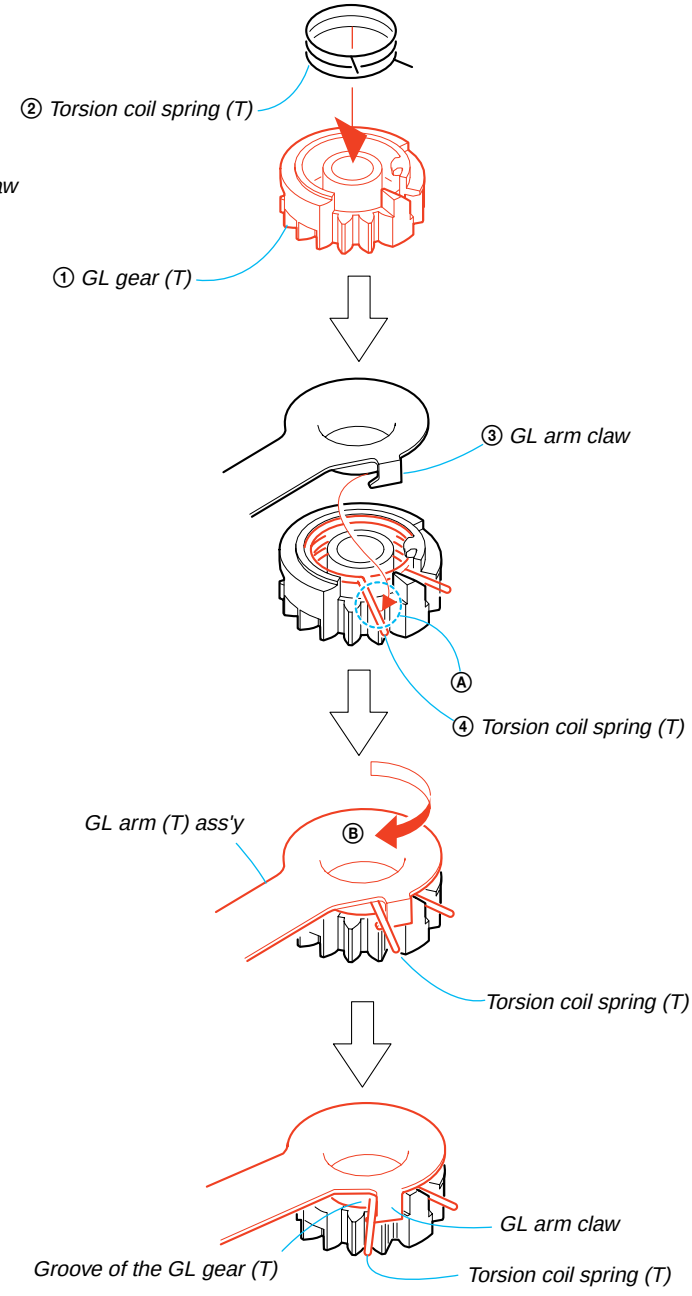
#### 1. Removal procedure

1) Remove the GL arm claw ① in the direction of the arrow.
2) Remove the GL arm (T) ass'y ②.
3) Remove the GL torsion coil spring (T) ③ from the GL gear (T) ④.

#### 2. Attachment procedure

1) Install the torsion coil spring (T) ② in the GL gear (T) ①.
2) Engage the GL arm (T) claw ③ in the Ⓐ portion of the torsion coil spring (T).
3) Engage the GL arm (T) claw in the groove of the GL gear (T) by rotating the GL arm (T) ass'y in the direction of the arrow Ⓑ.

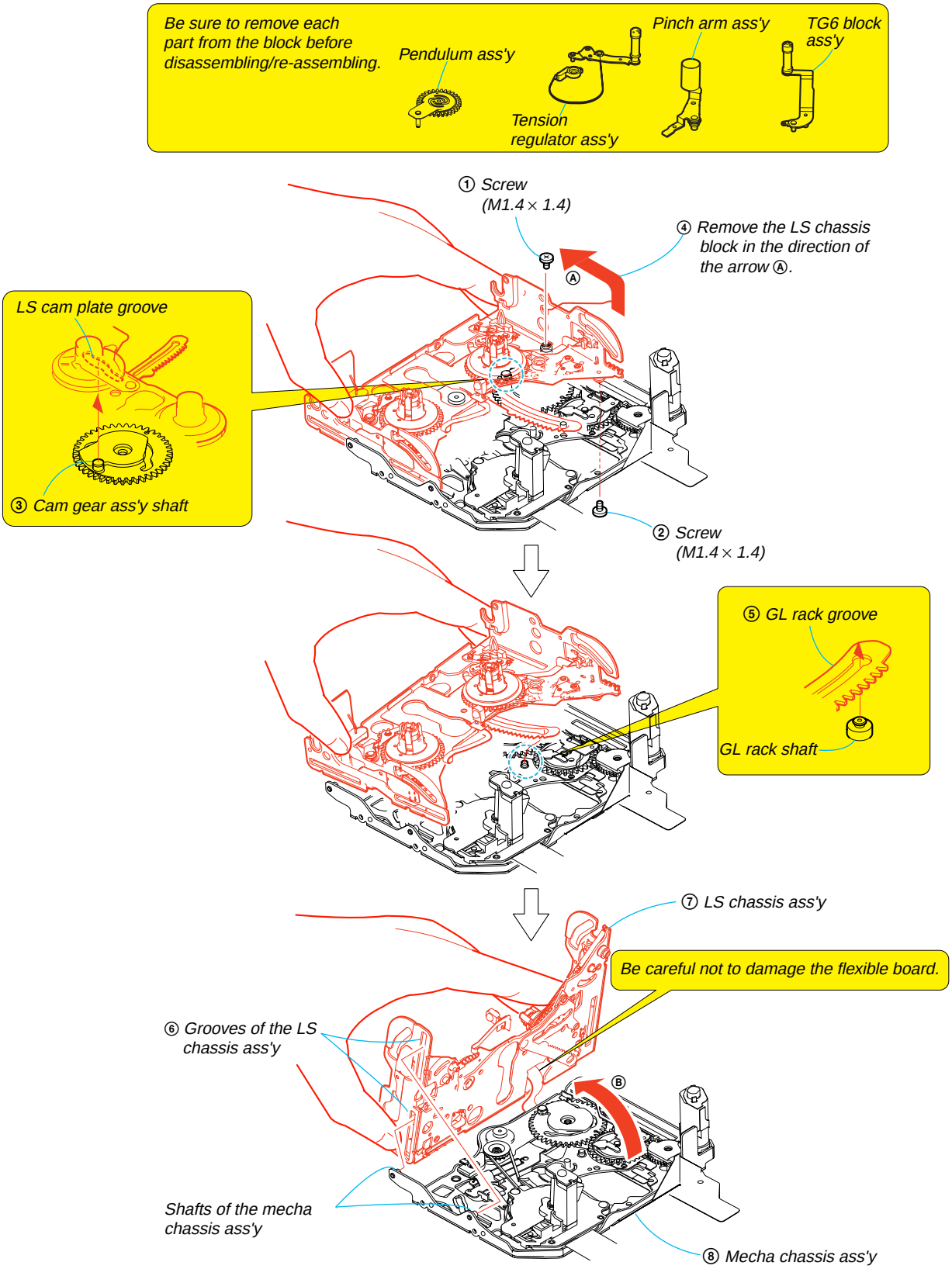


### 3-25. LS Chassis Block, Mechanism Chassis Block-1

#### 1. Removal procedure

1) Enter the [ULE] mode.
2) Remove the screw (special head screw M1.4 × 1.4) ①.
3) Remove the screw (special head screw M1.4 × 1.4) ②.
4) Remove the cam gear ass'y shaft ③ from the LS cam plate groove of the LS chassis block.
5) Remove the LS chassis block ④ in the direction of the arrow Ⓐ.
6) Disengage the GL rack groove ⑤ of the LS chassis block from the GL rack shaft.
7) Disengage the grooves in two locations ⑥ of the LS chassis from the two shafts of the mechanism chassis.
8) Remove the LS chassis block ⑦ from the mechanism chassis block ⑧ in the direction of the arrow Ⓑ.



## 3-26. LS Chassis Block, Mechanism Chassis Block-2

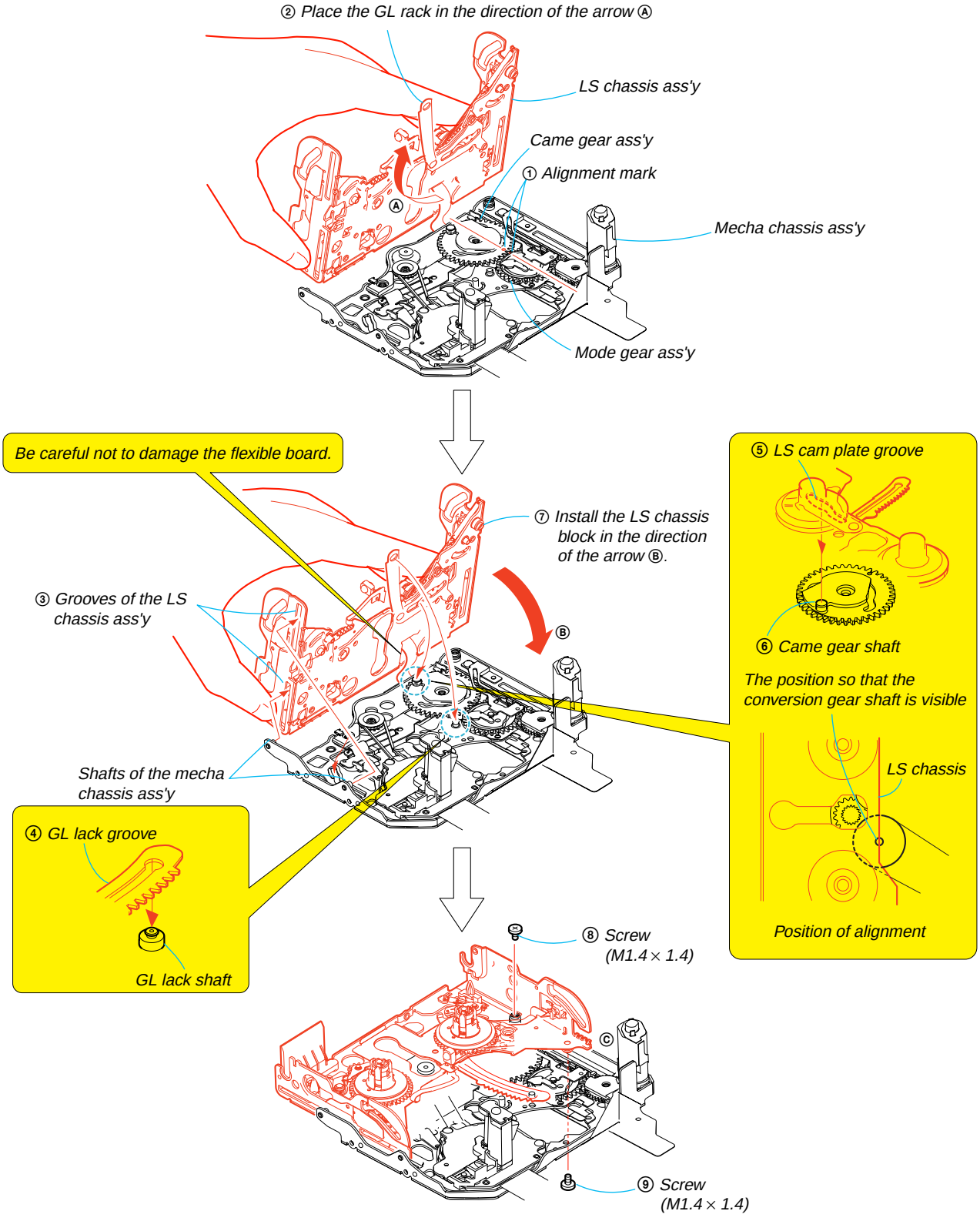
### 1. Attachment procedure

1) Enter the ULE mode.
2) Align the phase alignment mark ① of the cam gear ass'y and the mode gear ass'y of the mechanism chassis.
3) Place the GL rack ② in the direction of the arrow Ⓐ.
4) Insert the mechanism chassis shafts in two locations into the two grooves of the LS chassis block.
5) Insert the GL rack shaft in the GL rack groove ④.
6) Insert the cam gear shaft 6 in the LS cam plate groove ⑤.

**Position of alignment**

Slide the LS chassis to the position so that the conversion gear shaft is visible, and insert the cam gear shaft into the LS cam plate groove.

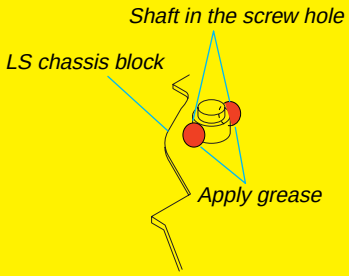
7) Install the LS chassis block ⑦ in the direction of the arrow Ⓑ. (Check if the LS chassis is installed securely in each groove or shaft.)
8) Install the screw (special head screw M1.4 × 1.4) ⑧.
Tightening torque: 0.04 ± 0.01 N•m (0.61 ± 0.1 kgf•cm)
9) Install the screw (special head screw M1.4 × 1.4) ⑨.
Tightening torque: 0.04 ± 0.01 N•m (0.61 ± 0.1 kgf•cm)
10) By referring to Section "4-2. LS Cam Adjustment", perform the LS Cam Adjustment.



## Apply grease

**Points to be noted**

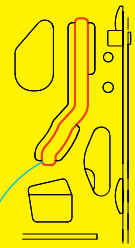
*Apply the grease when installing*
*Amount of grease: A ball of grease of 1.0 mm diameter*



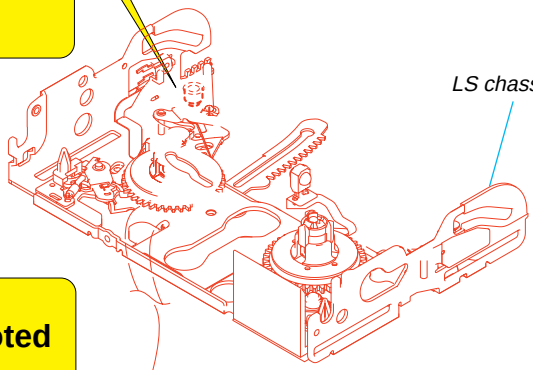

## Apply grease

**Points to be noted**

*Apply the grease when installing*
*Amount of grease: A ball of grease of 1.0 mm diameter*



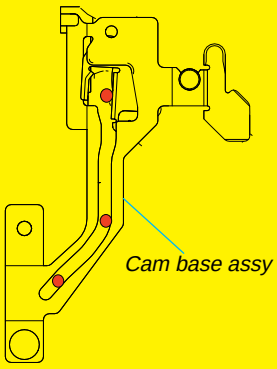
*Apply grease on the side inside of the groove of the mechanism chassis block.*

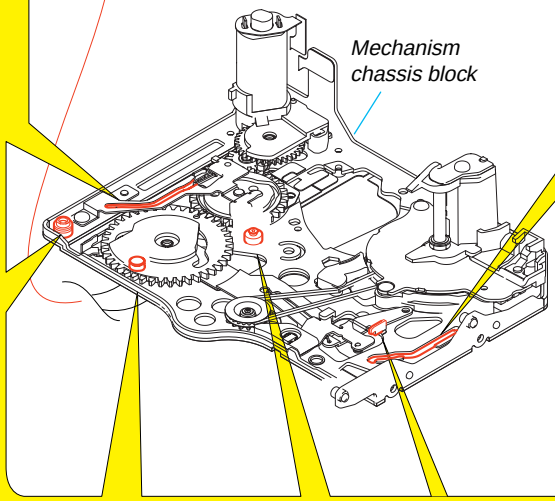



## Apply grease

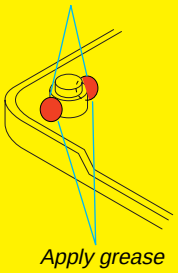
**Points to be noted**

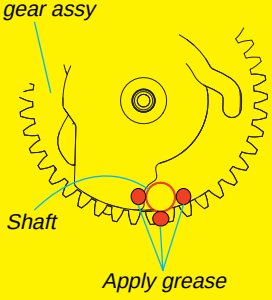
*Apply the grease when installing*
*Amount of grease: A ball of grease of 1.0 mm diameter*

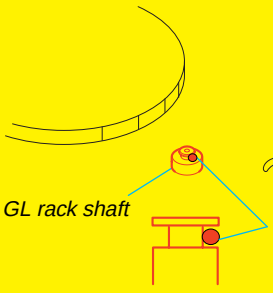



*On the side inside of press arm*




*Apply grease on the sliding surface of the GL rack shaft and the GL rack groove.*

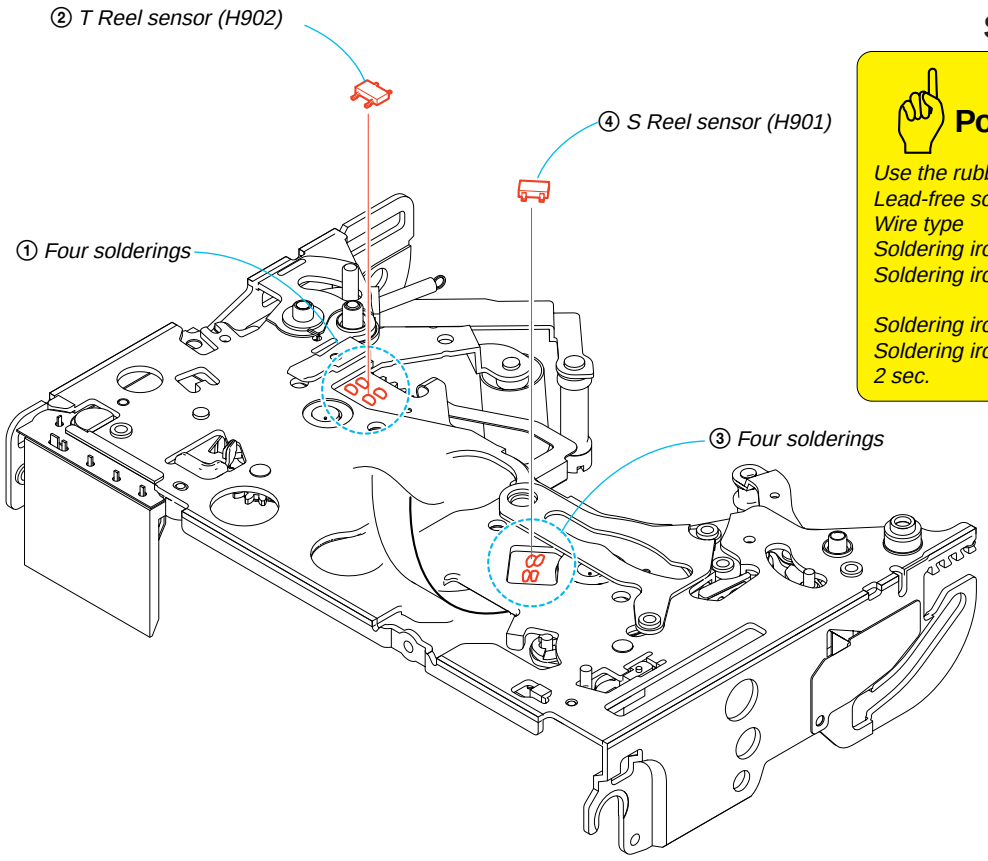
### 3-27. T Reel Sensor (H902), S Reel Sensor (H901)

**1. Removal procedure**

1) Remove soldering at the four locations ① of the T reel sensor, and remove the T reel sensor (H902) ②.
2) Remove soldering at the four locations ③ S reel sensor, and remove the S reel sensor (H901) ④.

**2. Attachment procedure**

1) Solder four locations ③ S reel sensor and install the S reel sensor (H901) ④ in the FP-031 flexible board.
2) Solder four locations ① S reel sensor and install the T reel sensor (H902) ② in the FP-031 flexible board.




**Soldering**

**Points to be noted**

*Use the rubber finger tip cover.*
*Lead-free solder*
*Wire type : ∅0.6*
*Soldering iron : 941 made by Hakko Mfg.*
*Soldering iron tip: T1-1BC*

*Soldering iron tip temperature: 300 ±10 ∞C*
*Soldering iron tip contacting time within 2 sec.*

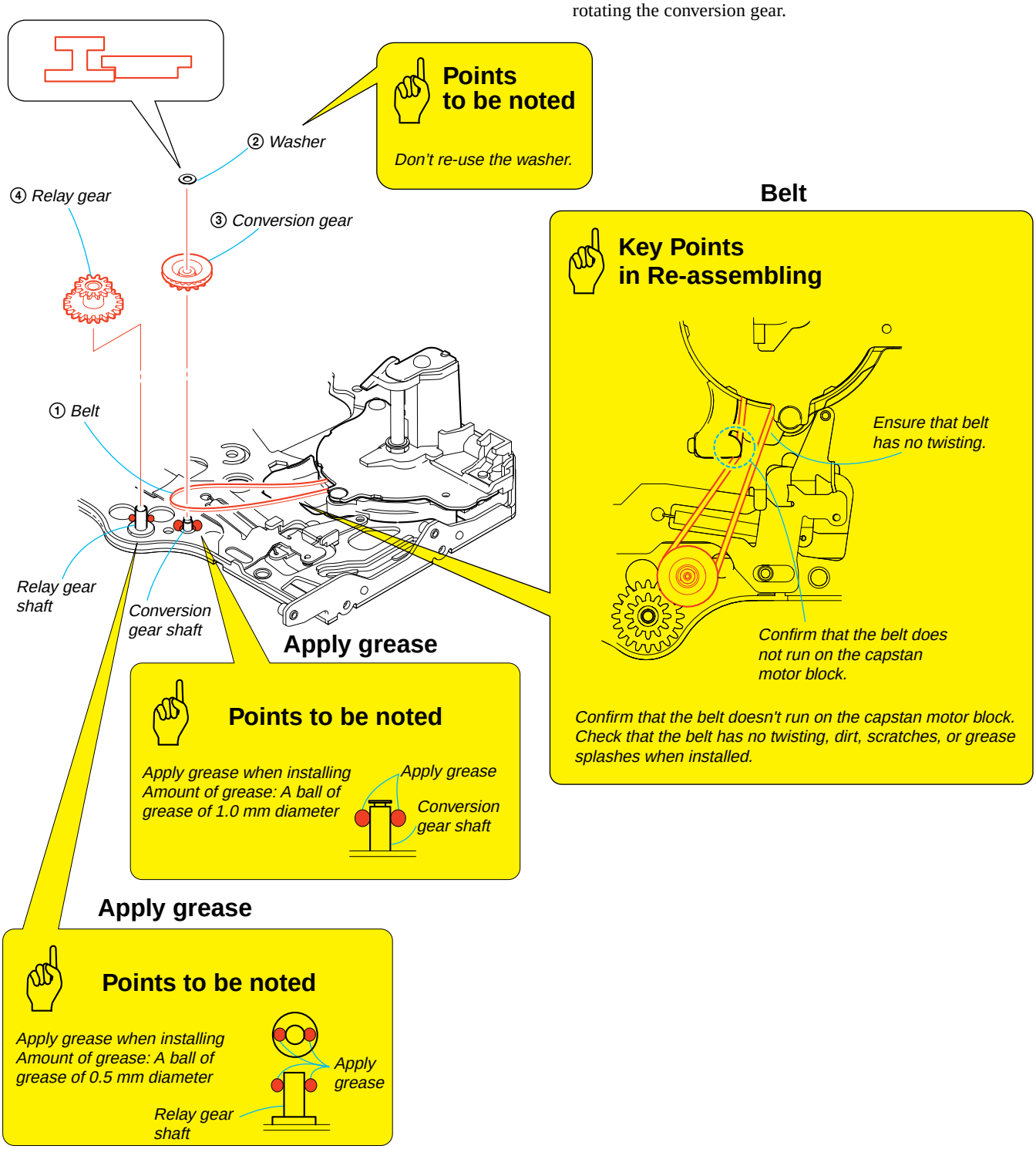
## 3-28. Relay Gear, Conversion Gear

### 1. Removal procedure

1) Remove the belt ① from the conversion gear.
2) Remove the washer ② from the conversion gear shaft.
3) Remove the conversion gear ③.
4) Remove the relay gear ④.

### 2. Attachment procedure

1) Apply grease on the relay gear shaft.
   Amount of grease: A ball of grease of 0.5 mm diameter.
2) Install the relay gear ④ in the relay gear shaft.
3) Apply grease on the conversion gear shaft.
   Amount of grease: A ball of grease of 1.0 mm diameter.
4) Install the conversion gear ③ in the relay gear shaft.
5) Install the washer ② in the conversion gear shaft (Don't re-use the washer)
6) Hook the belt ① on the conversion gear and install it while rotating the conversion gear.

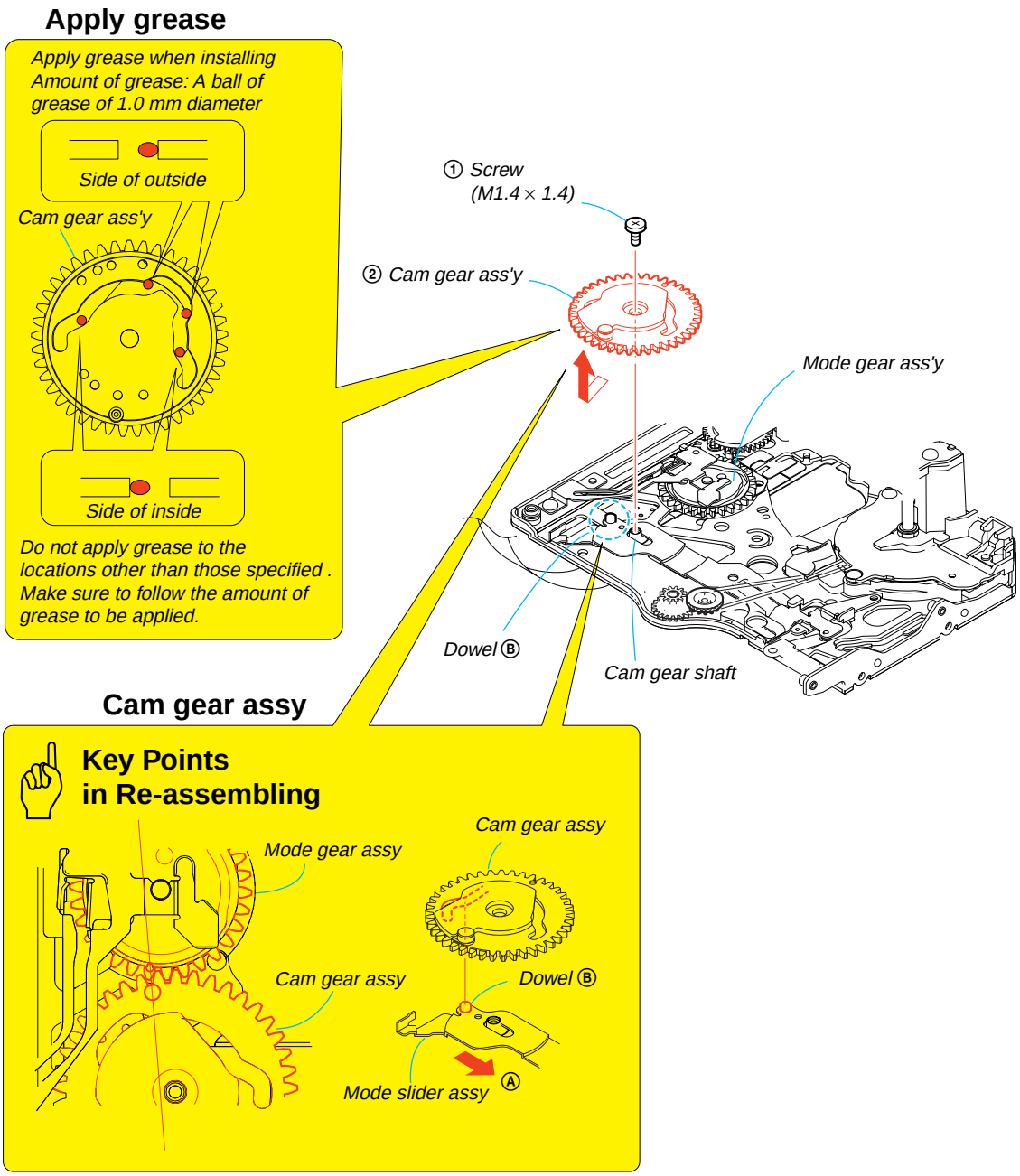


## 1. Removal procedure

1) Remove the screw (special head screw M1.4 × 1.4) ①.
2) Remove the cam gear ass'y ② from the cam gear shaft.

## 2. Attachment procedure

1) Apply grease on the specified locations of the cam gear ass'y ②.
   Amount of grease: A ball of grease of 1.0 mm diameter.
2) Move the mode slider ass'y in the direction of arrow Ⓐ as far as it can go.
3) Align the gear phase of the mode gear ass'y and the cam gear ass'y ②.
4) Install the cam gear ass'y ② while engaging the dowel Ⓑ of the mode slider ass'y into the groove of the cam gear ass'y.
5) Install the screw (special head screw M1.4 × 1.4) ①.
   Tightening torque: 0.04 ± 0.01 N•m (0.61 ± 0.1 kgf•cm)



## 3-30. Mode Slider Ass'y

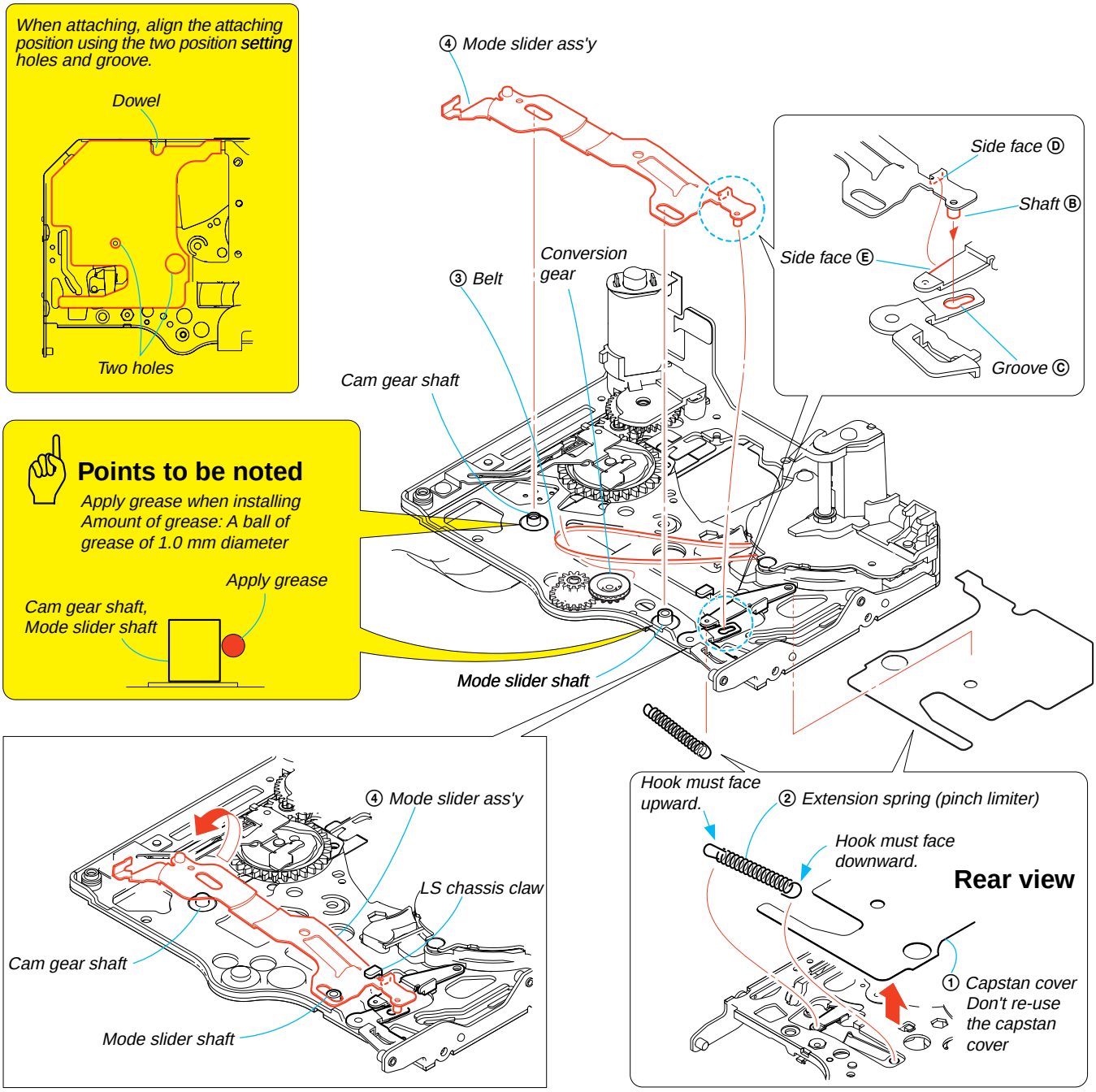
### 1. Removal procedure

1) Remove the capstan cover ① and remove the extension spring (pinch limiter) ②.
2) Remove the belt ③ from the conversion gear.
3) Remove the mode slider ass'y ④ from the cam gear shaft in the direction of the arrow.

### 2. Attachment procedure

1) Apply grease on the cam gear shaft and the mode slider shaft.
   Amount of grease: A ball of grease of 1.0 mm diameter.
2) Engage the shaft Ⓑ in the groove Ⓒ and install the mode slider ass'y ④ while aligning its side Ⓓ and Ⓔ engage it in the claw of the LS chassis, then install the mode slider ass'y ④.
3) Hook the belt ③ on the conversion gear and install it while rotating the conversion gear.
4) Install the extension spring (pinch limiter) ② while being careful of the orientation of the hook.
5) And attach the capstan cover ①. (Don't re-use the capstan cover.)

**Capstan cover (Align the attaching position)**



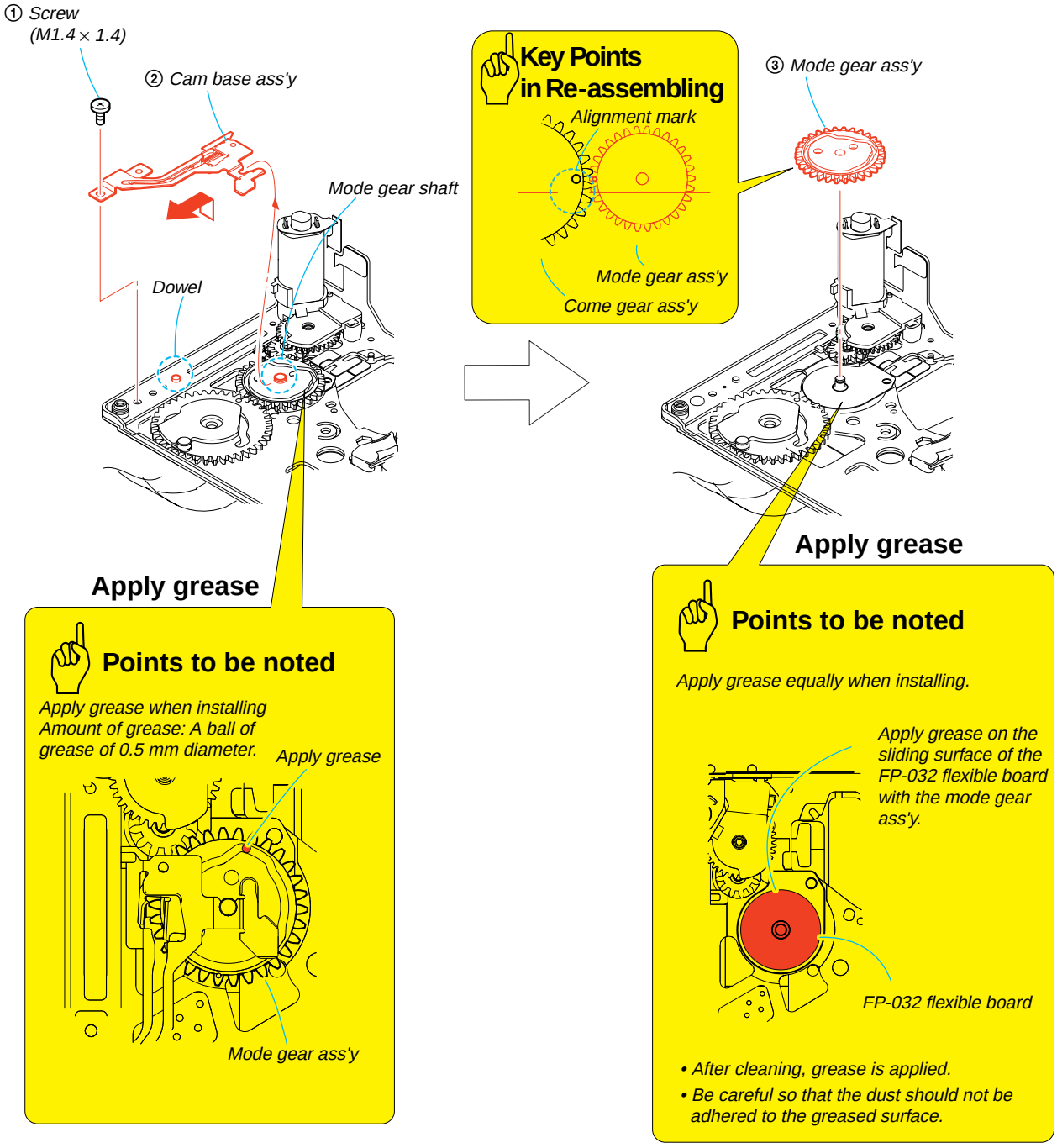
### 3-31. Cam Gear Ass'y, Mode Gear Ass'y

**1. Removal procedure**

1) Remove the screw (special head screw M1.4 × 1.4) ①.
2) Remove the dowel from the cam base ass'y ②. Slide the cam base ass'y ②, and remove the pin Ⓒ, and remove the cam base ass'y ②.
3) Remove the mode gear ass'y ③.

**2. Attachment procedure**

1) Apply grease equally on the sliding surface of the FP-032 flexible board and the mode gear ass'y.
2) Install the mode gear ass'y ③.
3) Install the cam base ass'y ② while engaging it in the pin Ⓒ and the dowel.
4) Install the screw (special head screw M1.4 × 1.4) ①.
   Tightening torque: 0.06 ± 0.01 N•m (0.61 ± 0.1 kgf•cm))
5) Apply grease on the specified locations of the mode gear ass'y.
   Amount of grease: A ball of grease of 0.5 mm diameter.



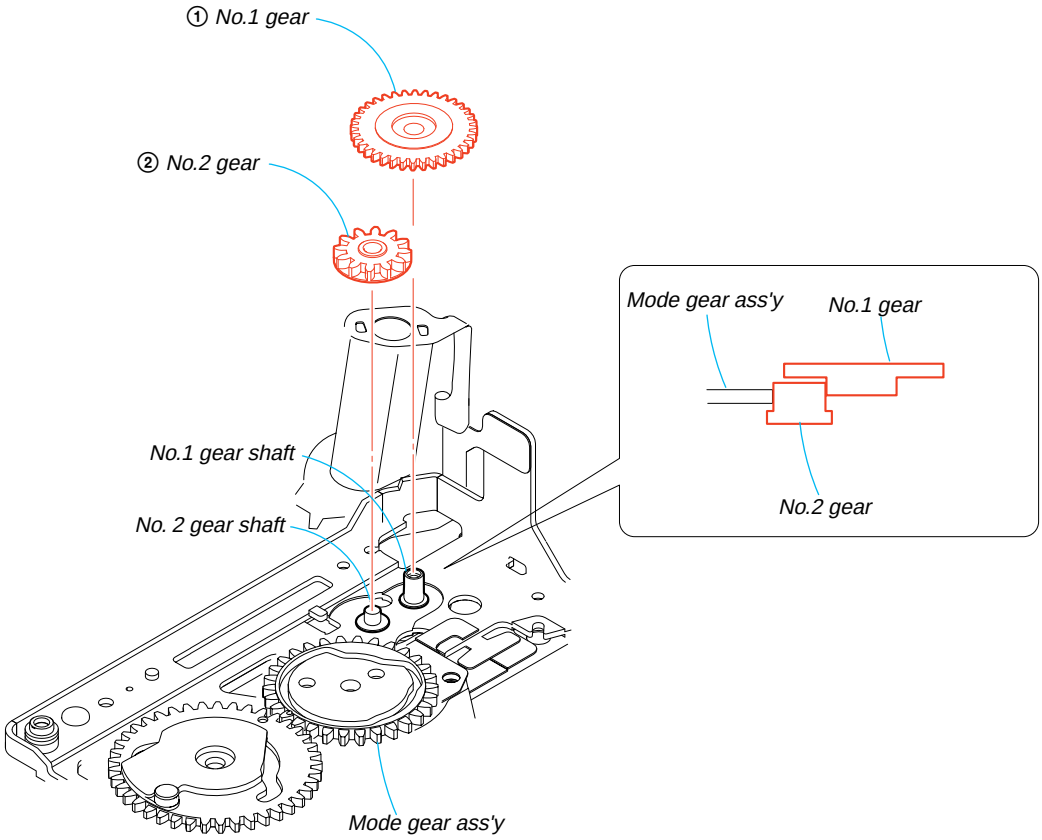
### 3-32. No. 1 Gear, No. 2 Gear

**1. Removal procedure**

1) Remove the No. 1 gear ① from the No. 1 gear shaft.
2) Remove the No. 2 gear ② from the No. 2 gear shaft.

**2. Attachment procedure**

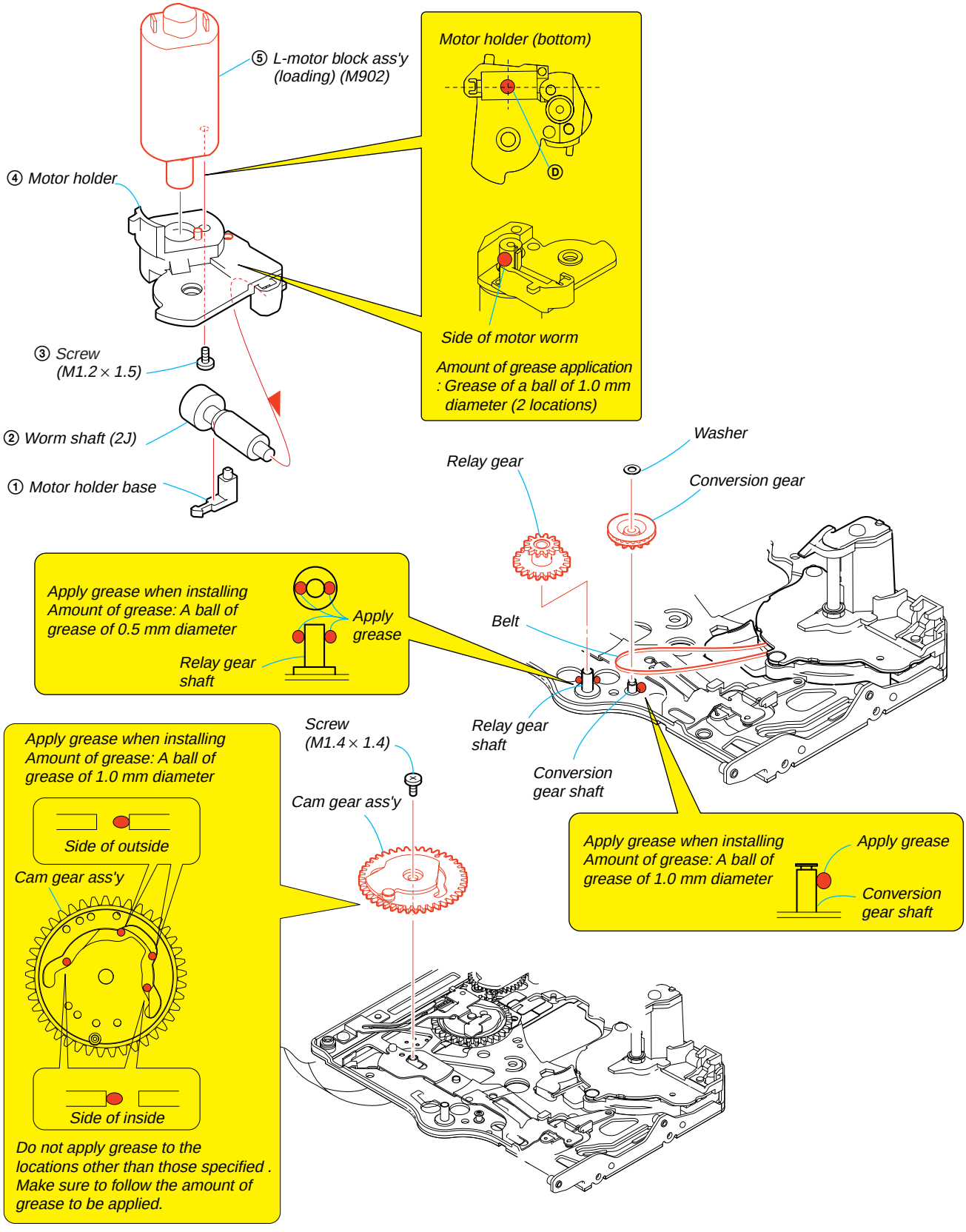
1) Install the No. 2 gear ② in the No. 2 gear shaft.
2) Install the No. 1 gear ① in the No. 1 gear shaft.



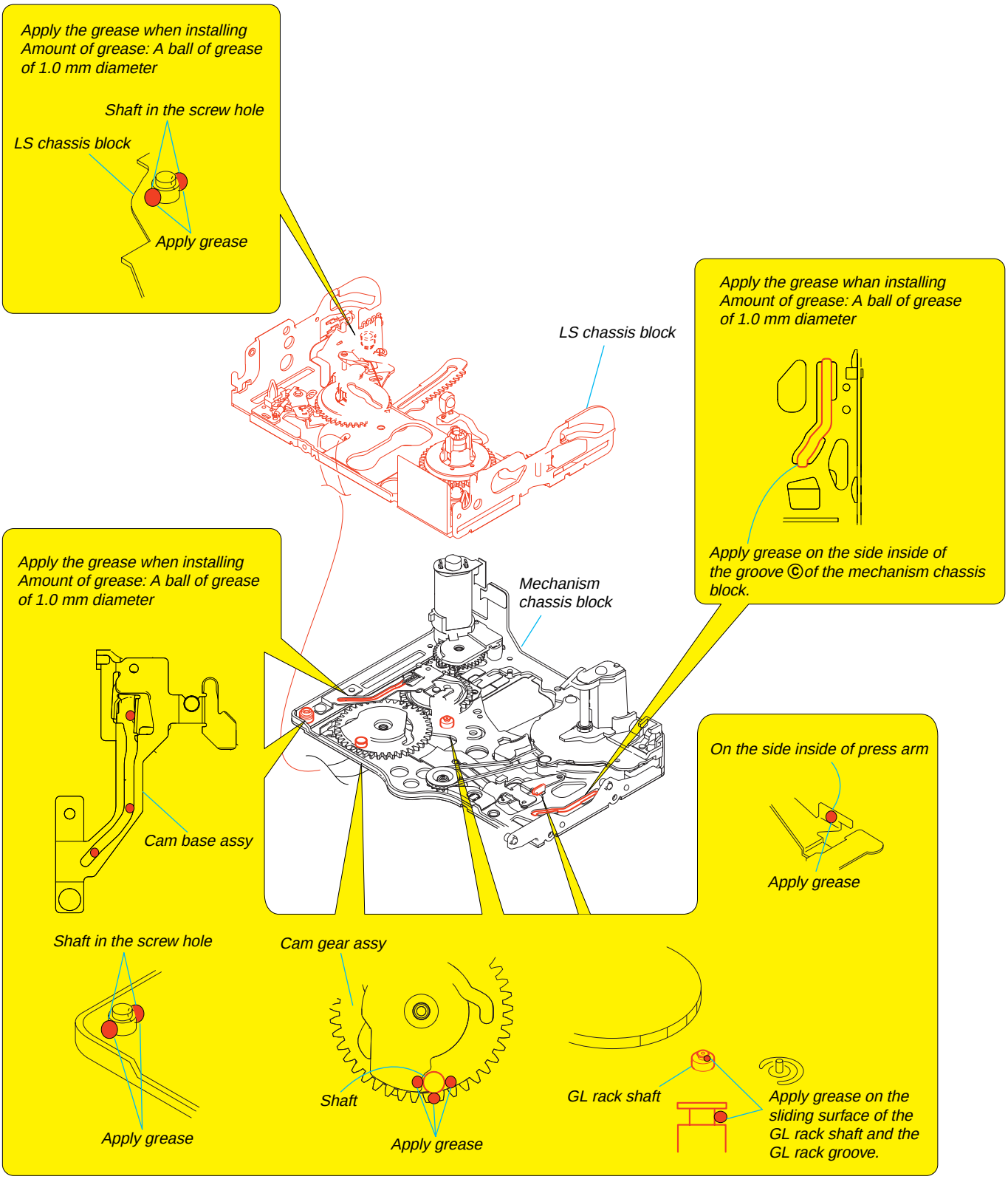
# HELP

Application of grease, soldering method and precautions, and phase matching adjustment are compiled and below.

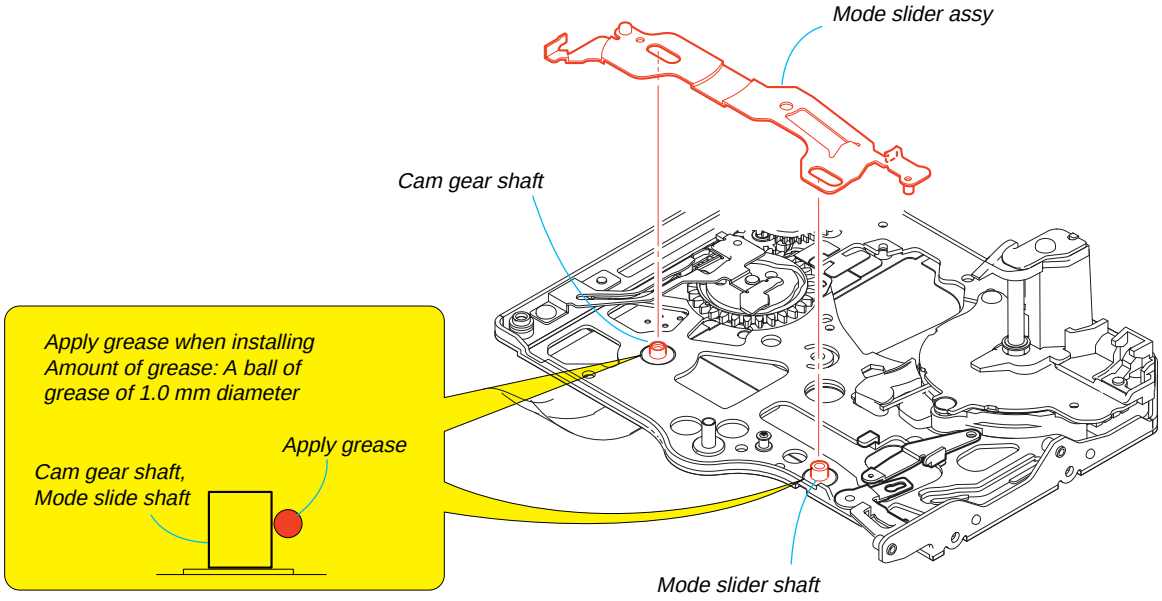
## Apply grease (1)

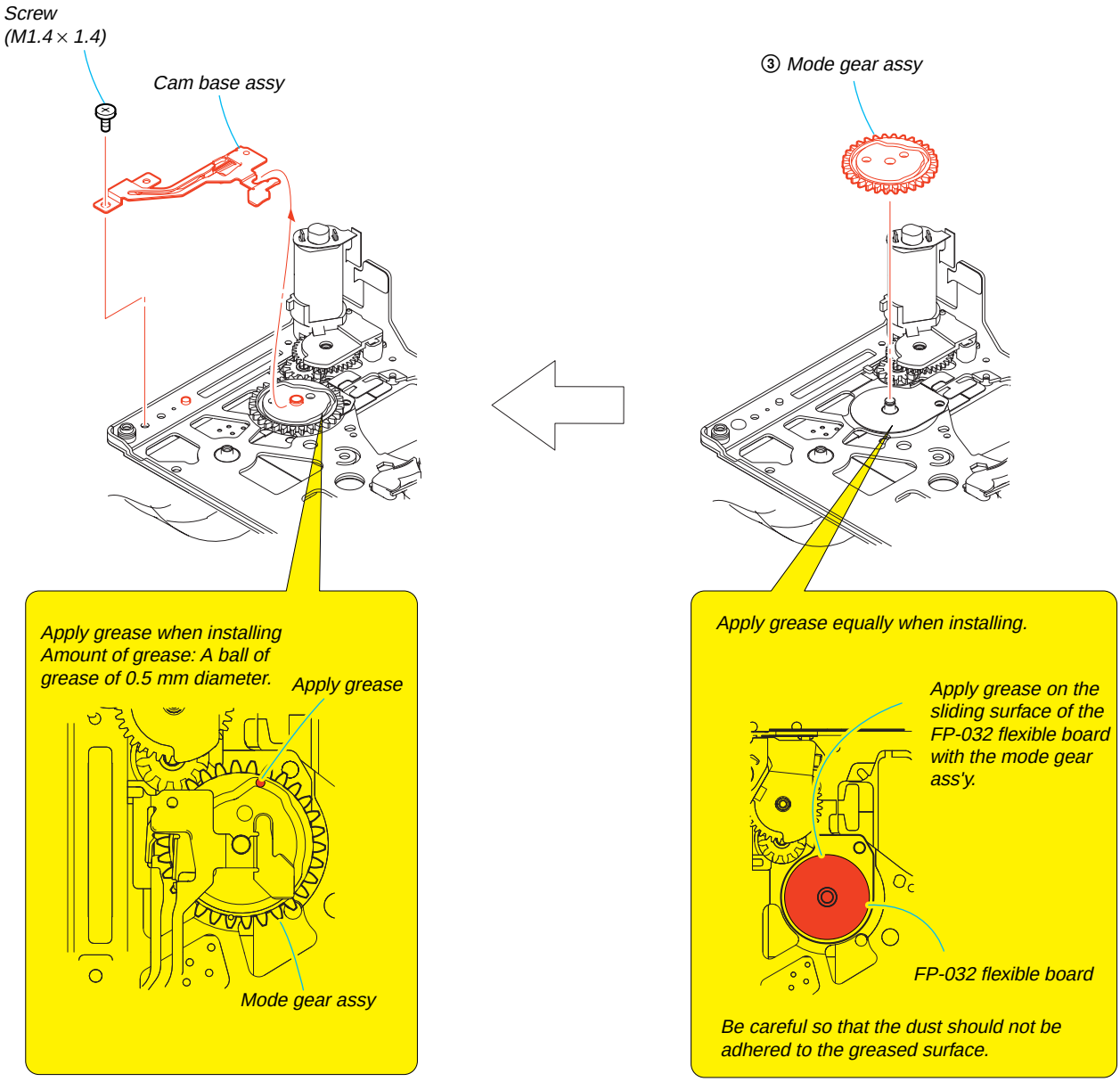


## Apply grease (2)

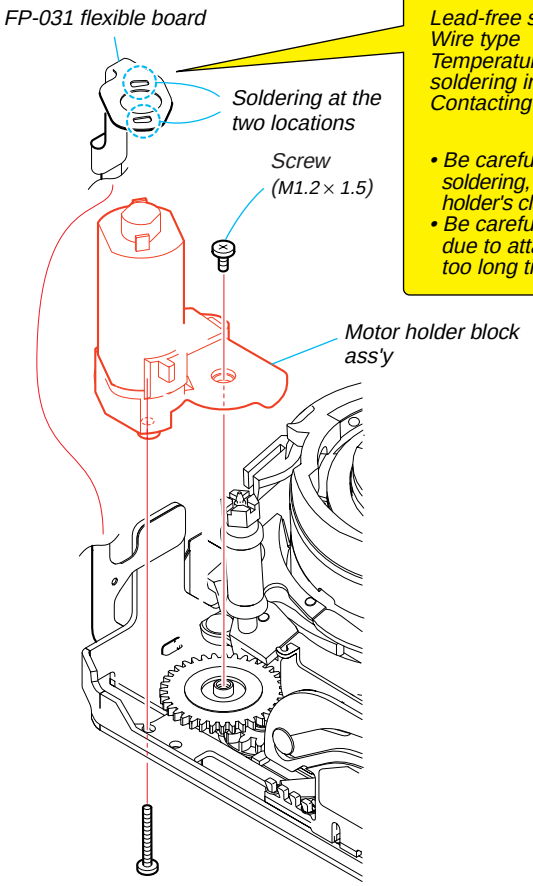


## Apply grease (3)



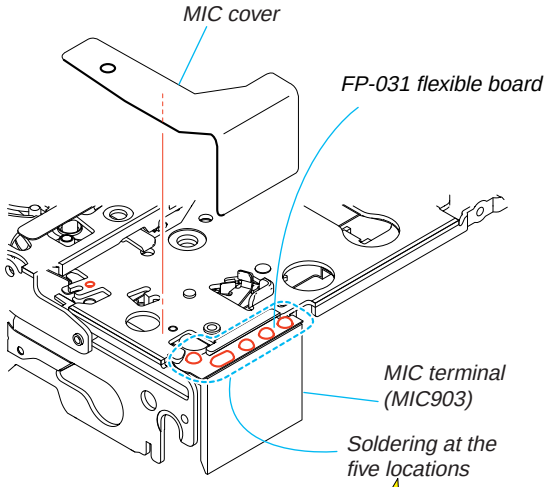



## Soldering (1)

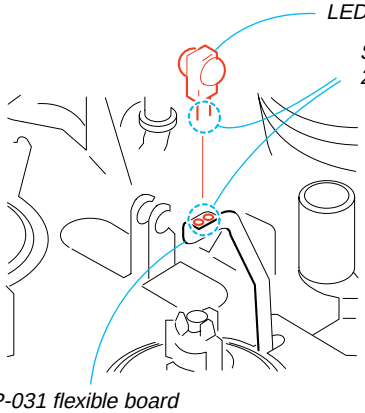



*Lead-free solder*
*Wire type : ∅0.6*
*Temperature of the soldering iron tip : 320 °C*
*Contacting time of : within 2 sec.*

- *Be careful not to create the hollow soldering, bridge formation, and the holder's claw must not be melt.*
- *Be careful not to damage the terminal due to attaching the soldering iron tip too long time.*



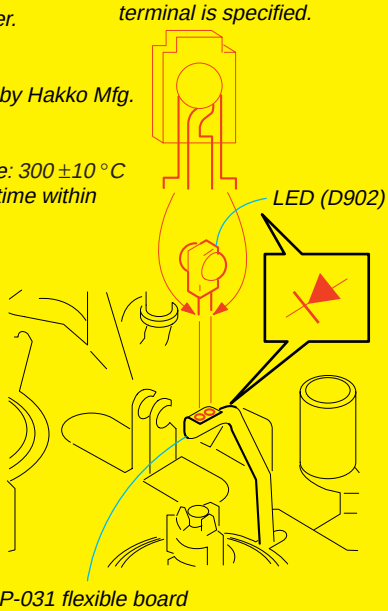

*Use the rubber finger tip cover.*
*Lead-free solder*
*Wire type : ∅0.6*
*Soldering iron : 941 made by Hakko Mfg.*
*Soldering iron tip : T1-1BC*
*Soldering iron tip temperature : 300 ±10 °C*
*Soldering iron tip contacting time: within 2 sec.*
*Be careful not to create the hollow soldering, Br, and the holder's claw must not be melt.*



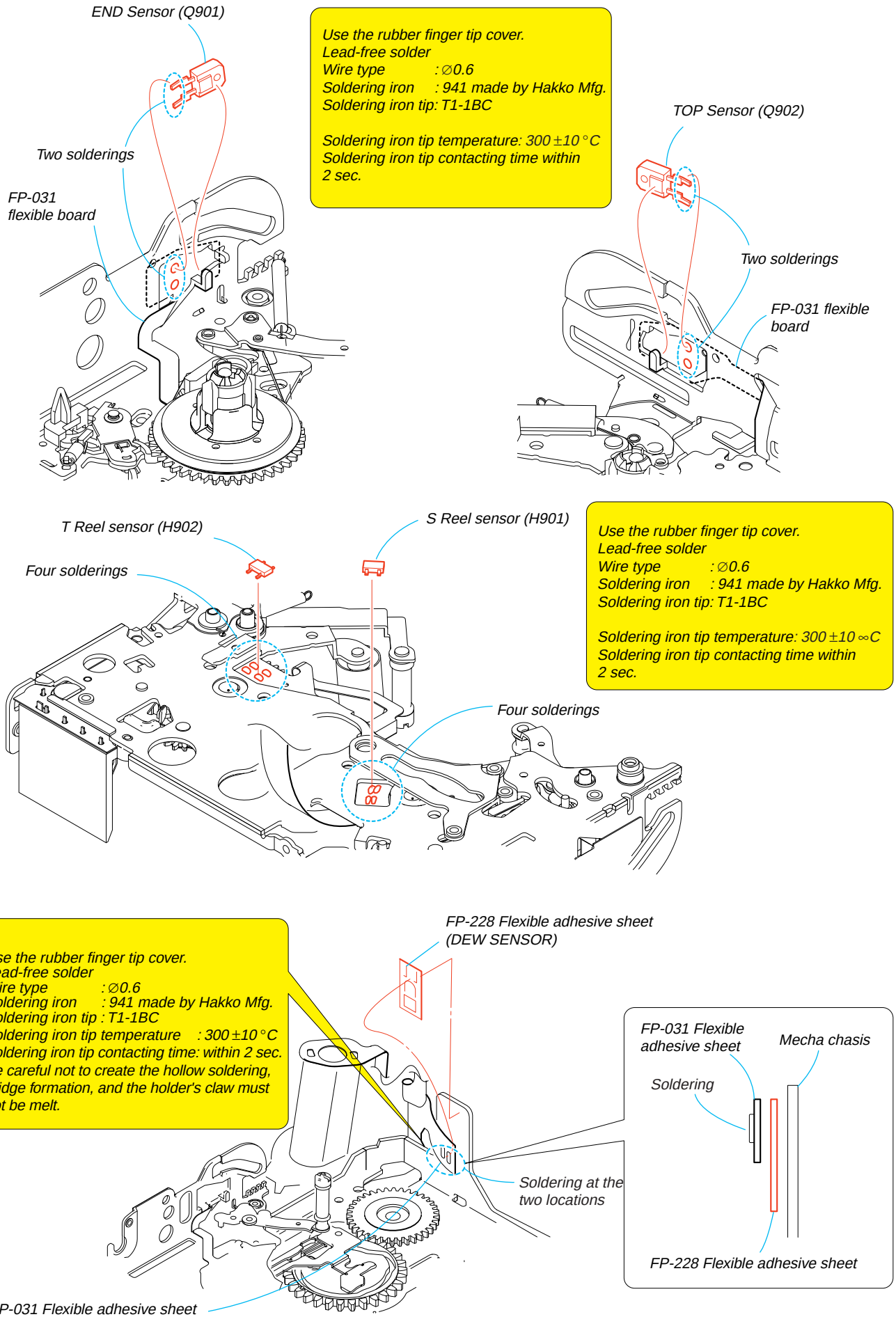

*Use the rubber finger tip cover.*
*Lead-free solder*
*Wire type : ∅0.6*
*Soldering iron : 941 made by Hakko Mfg.*
*Soldering iron tip: T1-1BC*

*Soldering iron tip temperature: 300 ±10 °C*
*Soldering iron tip contacting time within 2 sec.*

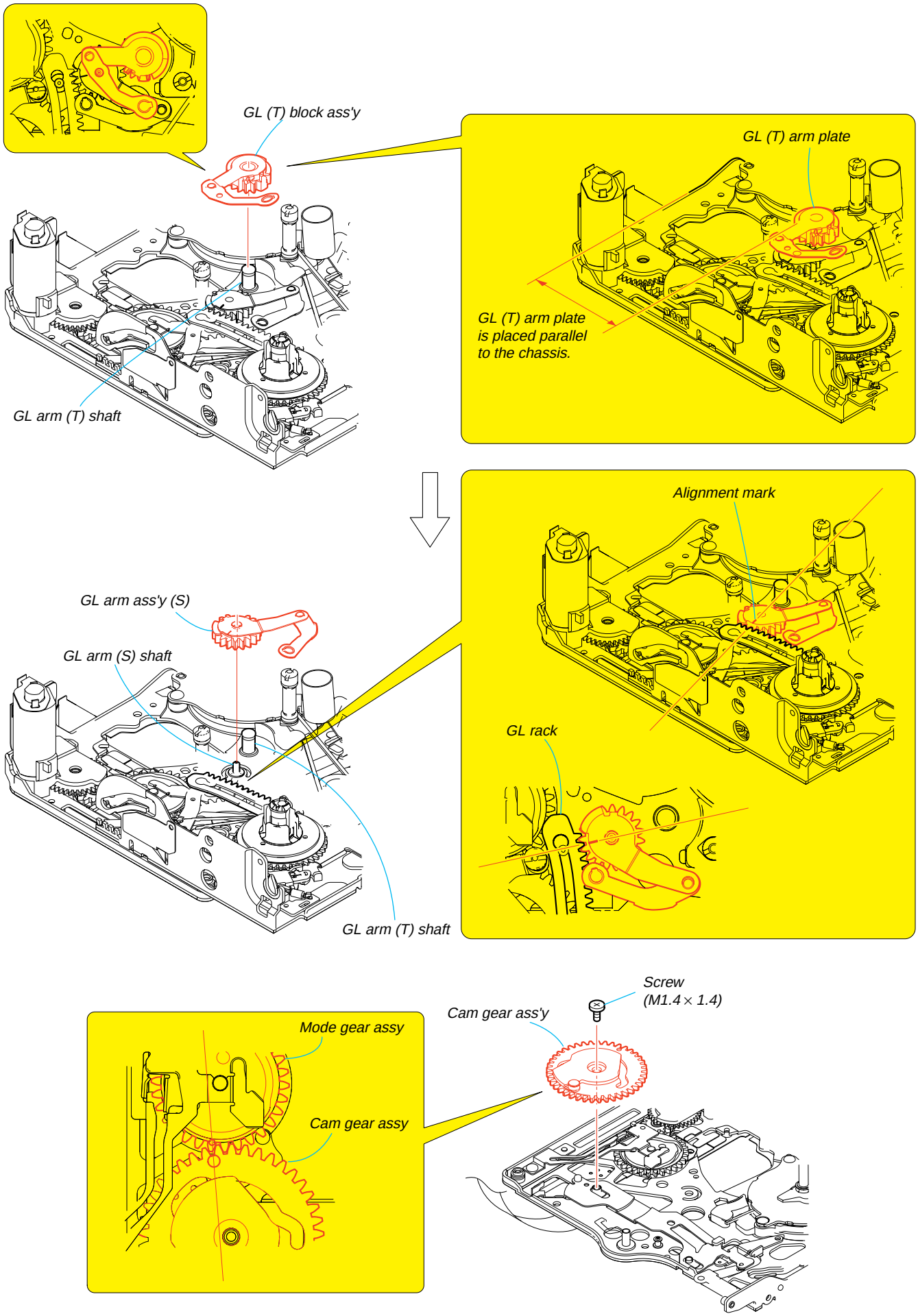
*Direction of the terminal is specified.*



## Soldering (2)


END Sensor (Q901)
Use the rubber finger tip cover.
Lead-free solder
Wire type : ∅0.6
Soldering iron : 941 made by Hakko Mfg.
Soldering iron tip: T1-1BC
Soldering iron tip temperature: 300 ±10 °C
Soldering iron tip contacting time within 2 sec.
Two solderings
FP-031 flexible board
TOP Sensor (Q902)
Two solderings
FP-031 flexible board
T Reel sensor (H902)
S Reel sensor (H901)
Four solderings
Use the rubber finger tip cover.
Lead-free solder
Wire type : ∅0.6
Soldering iron : 941 made by Hakko Mfg.
Soldering iron tip: T1-1BC
Soldering iron tip temperature: 300 ±10 ∞C
Soldering iron tip contacting time within 2 sec.
Four solderings
FP-228 Flexible adhesive sheet (DEW SENSOR)
Use the rubber finger tip cover.
Lead-free solder
Wire type : ∅0.6
Soldering iron : 941 made by Hakko Mfg.
Soldering iron tip : T1-1BC
Soldering iron tip temperature : 300 ±10 °C
Soldering iron tip contacting time: within 2 sec.
Be careful not to create the hollow soldering, bridge formation, and the holder's claw must not be melt.
FP-031 Flexible adhesive sheet
Mecha chasis
Soldering
Soldering at the two locations
FP-228 Flexible adhesive sheet
FP-031 Flexible adhesive sheet

## Matching Phase



# 4. Adjustment

## 4-1. FWD Position Adjustment

Perform this adjustment after the tension regulator ass'y and the S-reel table ass'y are replaced or removed.

- TG1 FWD position adjustment
- FWD back tension adjustment (Refer to Page 6-110).

1) Enter the R/P mode and confirm the positions of TG1 guide and the TG2 guide.
   - Confirm that the distance between the flanges on the TG1 guide and the TG2 guide is 2 mm by inserting the block gauge or the pin gauge between them to measure. If the distance is not 2 mm, perform the following adjustment.

2) Loosen the screw and adjust the band adjuster so that the distance between the flanges on the TG1 guide and the TG2 guide becomes 2 mm using the adjustment screwdriver (Ref. No. J-24), and finally tighten the screw.
   Tightening torque: 0.06 ± 0.01 N•m (0.61 ± 0.1 kgf•cm)
   **Note:** When measuring the distance between guides by inserting the block gauge or pin gauge, be very careful not to damage the roller.

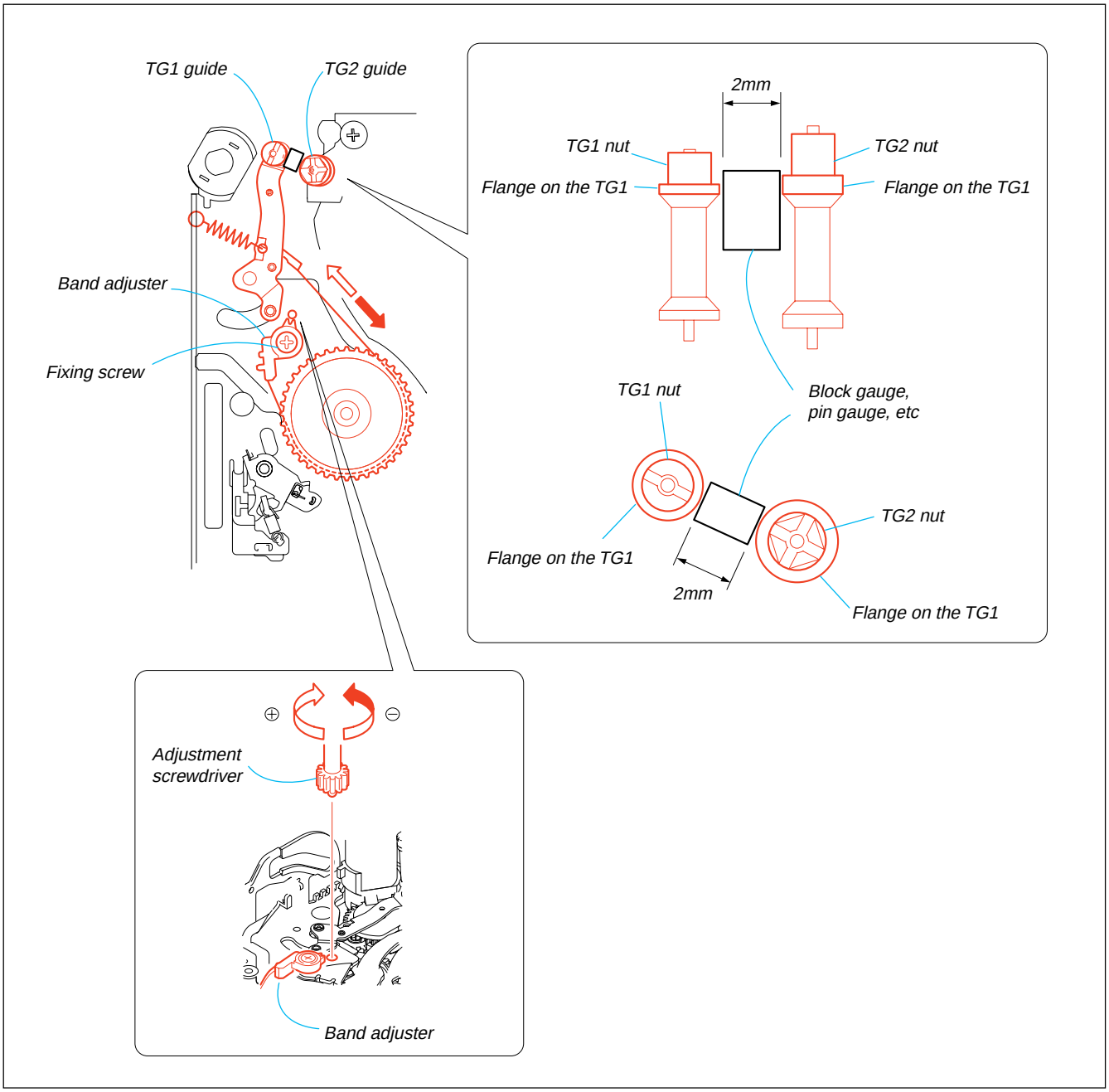



*Fig. 6-2-4*

### 4-2. LS Cam Adjustment

The LS Cam Adjustment becomes necessary in the following two cases;
①When the screw fixing the LS cam plate is loosened, and ② when the docking between the LS chassis block and the mechanism chassis block is removed.

**Adjustment procedure**

1) Enter the R/P mode.
2) Loosen the LS cam plate fixing screws (special head screw M1.4 × 1.4) Ⓐ and Ⓑ by 90 degrees.
3) Pressing the center of the LS chassis block with the force of 15.0 ± 2.0N•m (153.0 ± 25.0kgf•cm) (as shown by the large arrow mark).
4) While pressing the center of the LS chassis block, and while pulling the LS cam plate fixing screw Ⓐ (special head screw M1.4 × 1.4) with the force of 2.5 ± 0.5 N•m (25.5 ± 2.5kgf•cm) (as shown by the small arrow mark), tighten the LS cam plate fixing screw Ⓐ (special head screw M1.4 × 1.4).
   Tightening torque: 0.1 ± 0.01 N•m (1.02 ± 0.1 kgf•cm)
5) Remove the pressing force shown by the large arrow mark in step 3) first. Then remove the pressing force shown by the small arrow mark in step 4), next.
6) Tighten the cam plate fixing screw (special head screw M1.4 × 1.4) Ⓑ.
   Tightening torque: 0.1 ± 0.01 N•m (1.02 ± 0.1 kgf•cm)

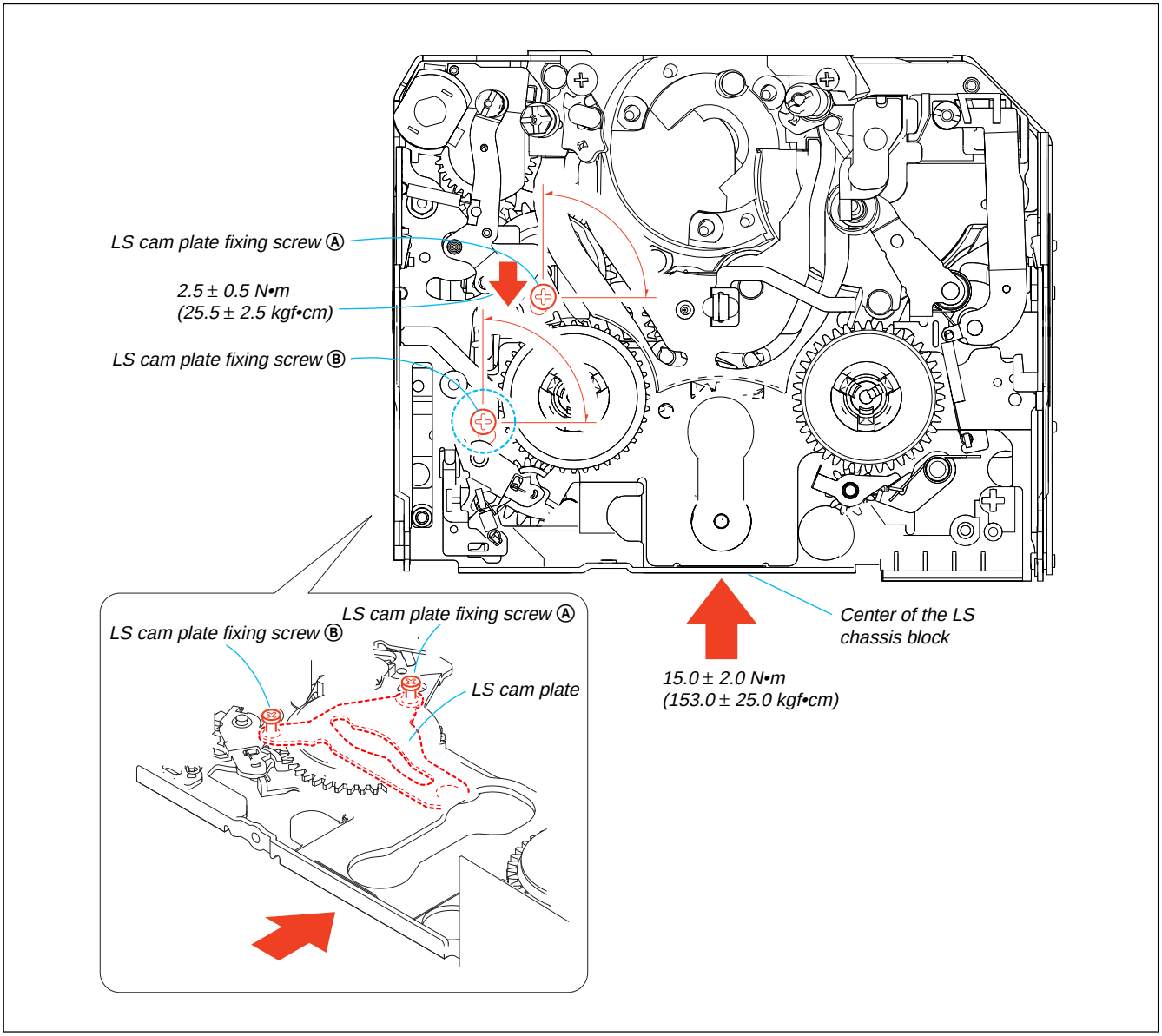
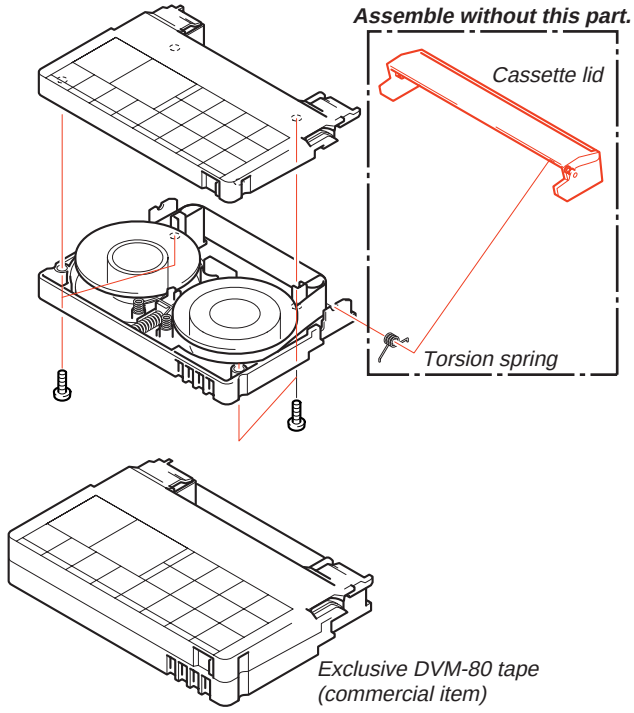



*Fig. 6-2-5*

## 4-3. Tape Path Adjustment

### 3-1. Adjustment Preparation

1) Clean the tape running surface (tape guides, drum, capstan, pinch roller) referring to Section "2-2. Tape Path System Cleaning".
2) Connect the adjustment remote commander (Ref. No. J-1, J-2) to the LANC terminal of the machine. Set the HOLD switch to ON. (Set the slide switch to SERVICE)
3) Connect an oscilloscope to CN8102 of the US-014 board via the CPC-15 jig (J-6082-564-A) and the I/F unit for LANC control jig (J-6082-521-A).
   Channel 1: US-014 board, CN8102 Pin ① (Note)
   External trigger: US-014 board, CN8102 Pin ②
   **Note:** Connect a 75 Ω resistor between pins ① of CN8102 and ③ (GND).
   75 Ω resistor (Parts code: 1-247-804-11)
4) Play back the tracking standard (XH 2-1) (Ref. No. J-13).
5) Select page: 0, address: 10 and set data: 00.
6) Select page: 3, address: 26 and set data: 31, and press the PAUSE (Write) button.
7) Select page: 3, address: 33 and set data: 08.
8) Confirm that the RF waveform on the scope is flat at both of the entrance side and the exit side. (Refer to Fig. 6-2-7A.)
   If the RF waveform is not flat either at the entrance side or the exit side (refer to Fig. 6-2-7 B and C), perform the adjustment of section "3-2. TG2/TG4 Guide Coarse Adjustment" and later.
9) Prepare an exclusive DVM-80 tape (commercial item).
   (Remove the lid of the cassette.)




10) When the required conditions of step 8) are satisfied, perform [Required Work upon Completion of Adjustment] as described below upon completion of adjustment/check.

**[Required Work upon Completion of Adjustment]**

1) Connect the adjustment remote commander (Ref. No. J-1, J-2) to the LANC terminal of the machine. Set the HOLD switch to ON. (Set the slide switch to SERVICE)
2) Select page: 0, address: 10 and set data: 00.
3) Select page: 3, address: 26 and set data: 00, and press the PAUSE (Write) button.
4) Select page: 3, address: 33 and set data: 00.

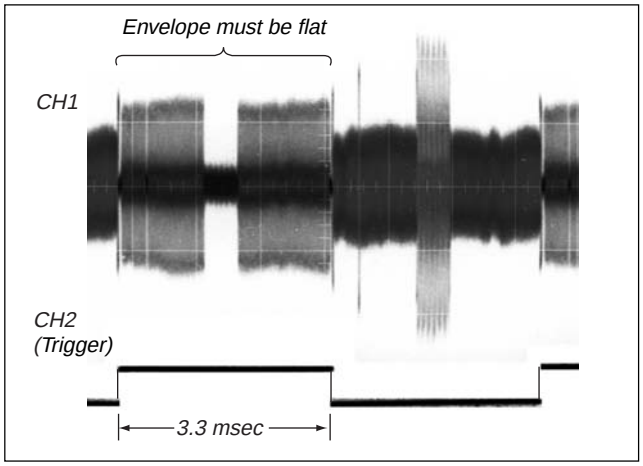



**Fig. 6-2-6**

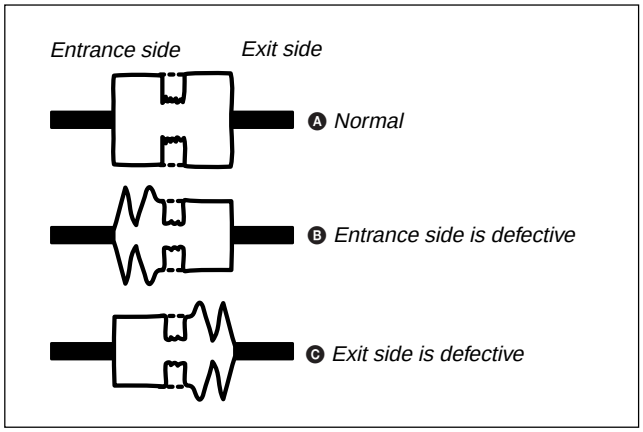



**Fig. 6-2-7**

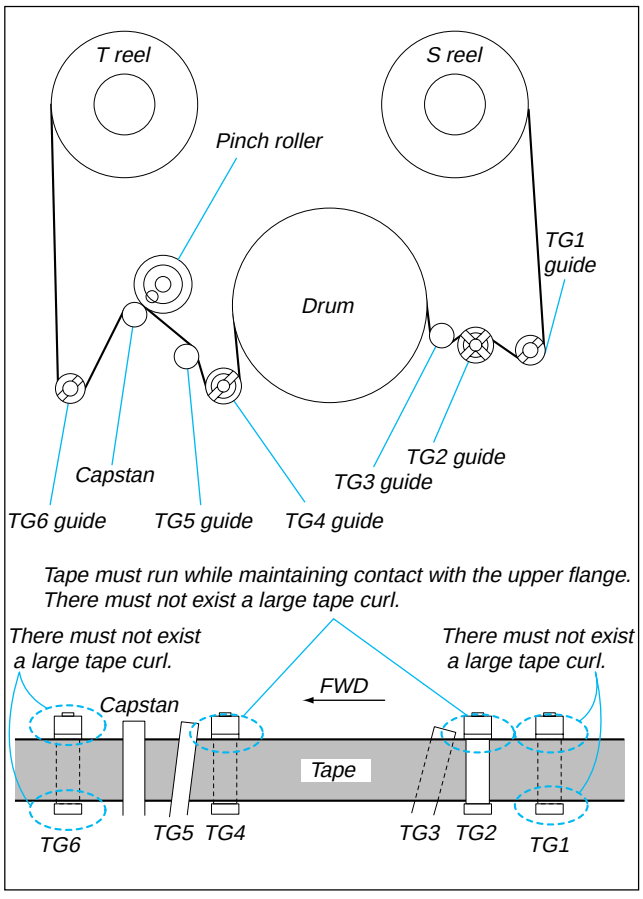



**Fig. 6-2-8**

### 3-2. TG2/TG4 Guide Coarse Adjustment

1) Play back the tracking standard (XH 2-1) (Ref. No. J-13).
2) Adjust the TG2 and TG4 guides until the RF envelope waveform becomes flat. (Refer to Fig. 6-2-11.)

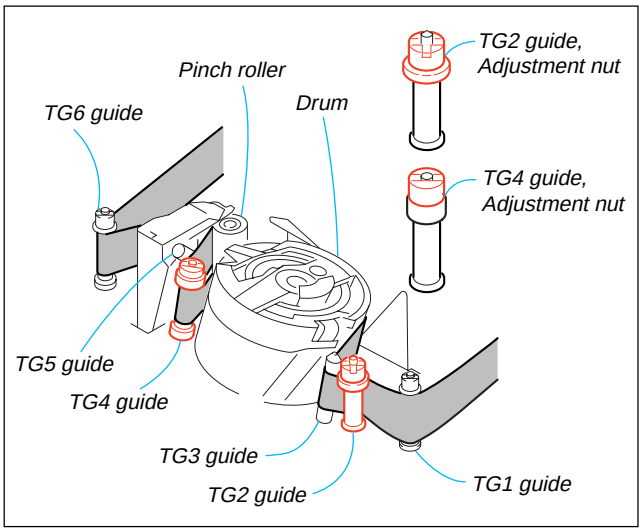



*Fig. 6-2-9*

### 3-3. FWD Back Tension Adjustment

1) Set the mini DV torque cassette (Ref. No. J-23) and establish the FWD mode.
2) Confirm that the S side torque cassette reading value is in the range as shown below.
   0.29 to 0.39 mN•m (3.0 to 4.0 gf•cm)
   If the measurement value does not satisfy the specifications, perform the following adjustment.
   - If the measurement value is higher than the specification: (Decreases the spring tension)
     Move the tension coil spring hook to another spring stay in the direction of Ⓑ.
   - If the measurement value is lower than the specification: (Increases the spring tension)
     Move the tension coil spring hook to another spring stay in the direction of Ⓐ.

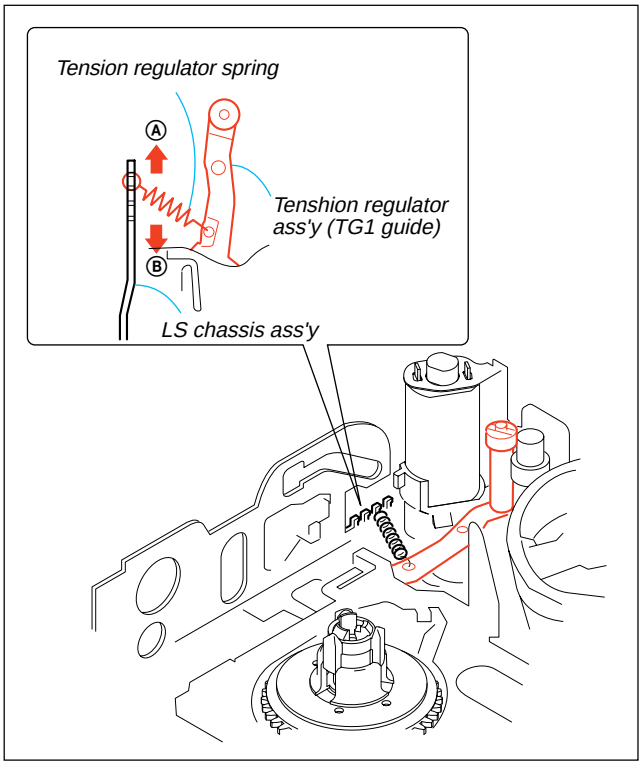



*Fig. 6-2-10*

### 3-4. TG2/TG4 Guide Fine Adjustment

1) Play back the tracking standard (XH 2-1) (Ref. No. J-13).
2) Adjust the TG2 so that the RF envelope has the larger amplitude at the entrance side first, than adjust TG2 guide for flat amplitude. (Refer to Fig. 6-2-11.)
3) Adjust the TG4 so that the RF envelope has the larger amplitude at the exit side first, than adjust TG4 guide for flat amplitude. (Refer to Fig. 6-2-12.)

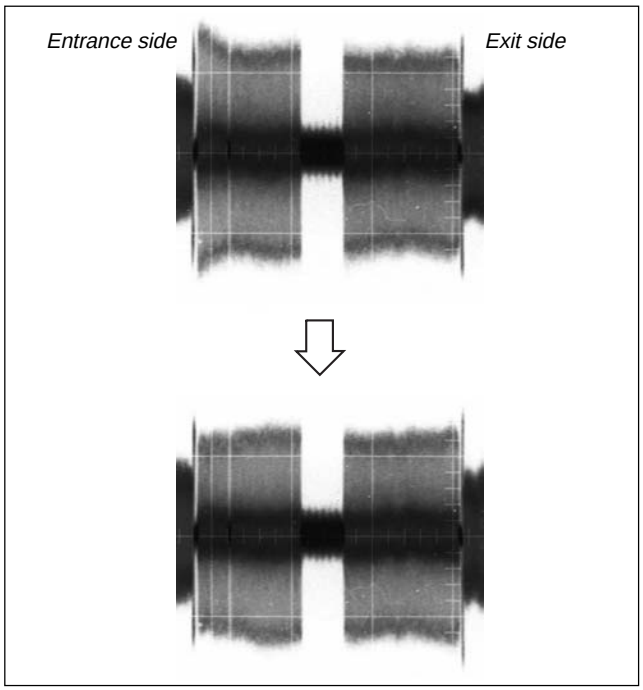



*Fig. 6-2-11*

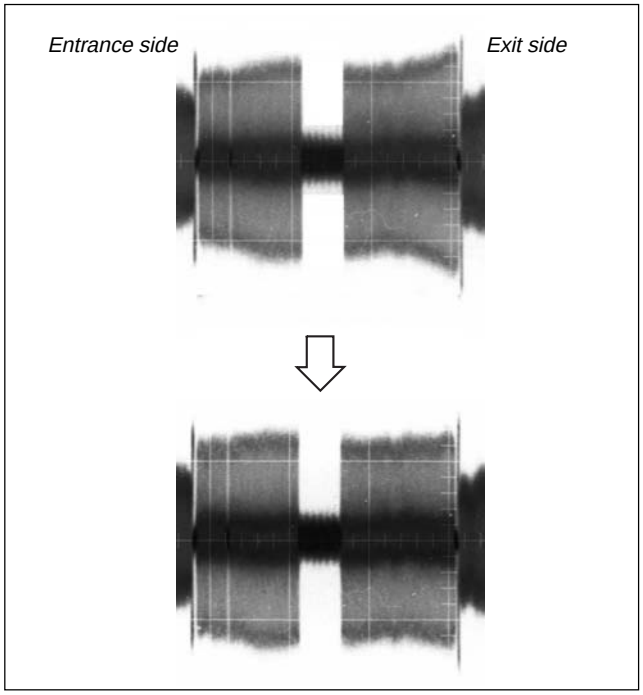



*Fig. 6-2-12*

### 3-5. TG1 Height Adjustment

1) Replay the tracking standard (XH 2-1) (Ref. No. J-13).
2) Confirm that the waveform of the tape path is flat.
   (Refer to Fig. 6-2-11, and 6-2-12.)
3) Confirm to see that there are gaps between top edge of the tape and the TG1 flange, and bottom edge and the TG1 flange.
   (Refer to Fig. 6-2-13.)
   If the top and/or the bottom edge of the tape contacts with TG1 flange, adjust the height of the TG1 so that there is gap between the edge of the tape and the flange.
   If the height of the TG1 is adjusted, check the entrance side of the tape path waveform (refer to Fig. 6-2-11, and 6-2-12). If there is any change in the entrance side of the tape path waveform, re-adjust the entrance side (TG2). (Refer to "3-4. TG2/ TG4 Guide Fine Adjustment.)

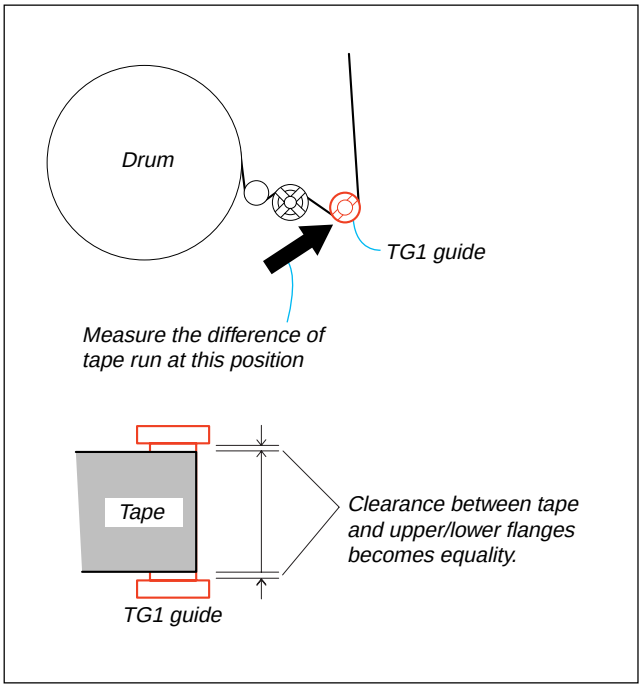



***Fig. 6-2-13***

### 3-6. TG6 Height Adjustment

**Note:** Perform "TG6 height adjustment" using the end segment of the tape which is within the last 5 minutes from the end of the thin DVM-80 tape (commercial item).
When using the DVM-80 (commercial item), use the modified one by removing the cassette rid (Refer to Page 6-109. Adjustment Preparation 9)).

1) Play back the tape (DVM-80) (commercial item).
2) Press the FF button to enter the CUE mode and measure the tape height after 5 seconds have elapsed. (Fig. 6-2-14)
3) Release your finger from the FF button and press the REW button to enter the REV mode.
   Measure the tape height after 3 seconds have elapsed.
4) Release your finger from the REW button.
5) Adjust the TG6 height so that the tape height in the CUE mode is the same as that in the REV mode.
   Adjust the TG6 height by rotating the adjustment nut of the TG6 guide in the following manner.
   - Tape height in the REV mode is higher ⟶ Rotate the adjustment nut clockwise
   - Tape height in the REV mode is lower ⟶ Rotate the adjustment nut counter-clockwise

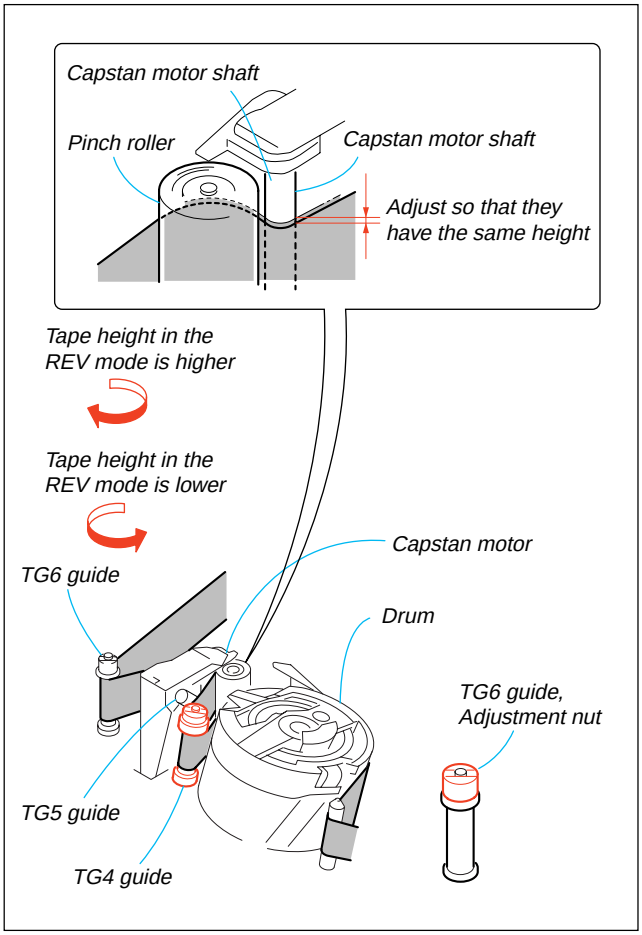



*Fig. 6-2-14*

6) Repeat the steps from 2 to 5 until the tape height in the CUE mode and REV mode becomes the same.

### 3-7. Tape Run Check

1) Play back the tracking standard (XH 2-1) (Ref. No. J-13). Establish the CUE mode first then the REV mode. Confirm in the respective modes that there are no large tape curls at the upper flange of TG2 and TG4. Then confirm in the respective modes that there are no large tape curls at the upper and lower flanges of TG1 and TG6.

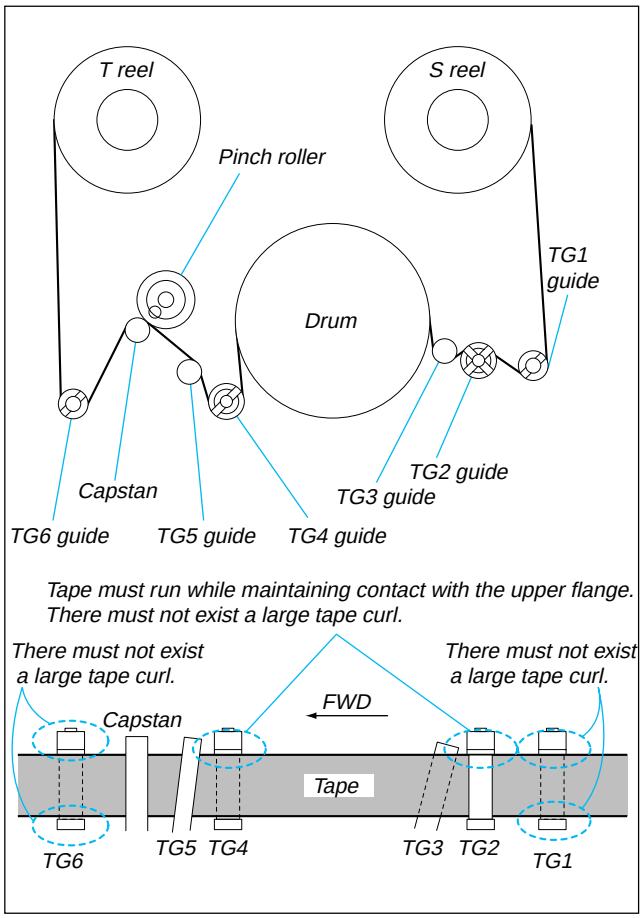



*Fig. 6-2-15*

### 3-8. Check upon Completion of Adjustment

#### 1. Tracking Check

1) Play back the tracking standard (XH 2-1) (Ref. No. J-13).
2) Establish the CUE (or REV) mode. Take the amplitude (A) in this mode as the 100% waveform amplitude. (Refer to Fig. 6-2-16.)
3) Establish the FWD mode. Confirm that the difference between the minimum (E min) and the maximum (E max) is less than 30%. (When taking the amplitude (A) in the CUE or REV mode as 100%)

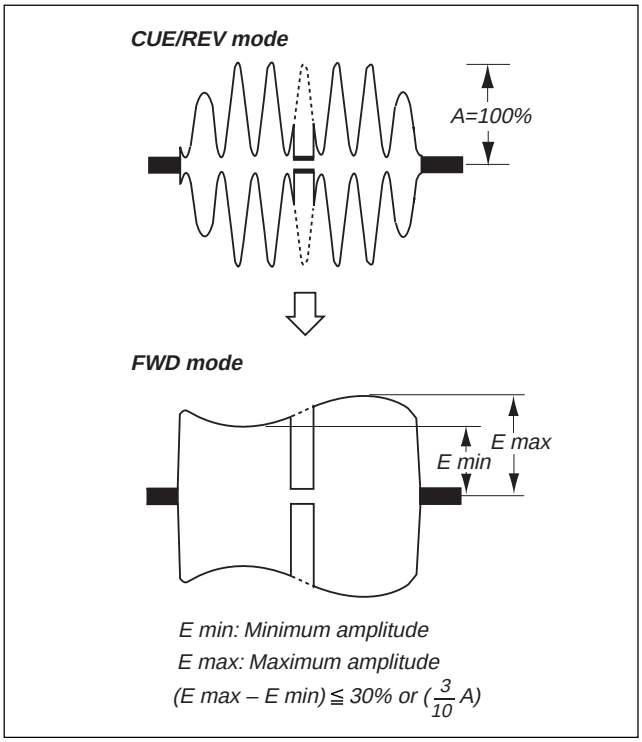



***Fig. 6-2-16***

4) Confirm that the RF waveform does not have excessive fluctuation of amplitude. (Fluctuation of amplitude should be 10% or less at both entrance side (B) and exit side (C), when taking the amplitude (A) in the CUE or REV mode as 100%)

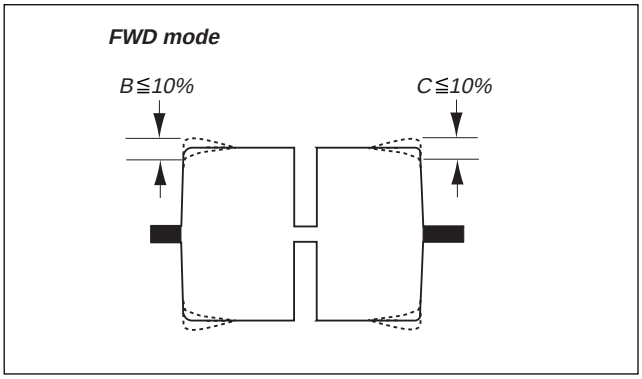



***Fig. 6-2-17***

#### 2. CUE/REV Check

1) Play back the tracking standard (XH 2-1) (Ref. No. J-13).
2) Establish the CUE mode. Confirm that the pitches between the peaks of the RF waveform are equally spaced. Also confirm that the RF waveform amplitude at entrance side (B) and exit side (C) is 50% or more respectively, when taking the amplitude (A) in the CUE or REV mode as 100%.
3) Establish the REV mode. Confirm that the pitches between the peaks of the RF waveform are equally spaced. Also confirm that the RF waveform amplitude at entrance side (B) and exit side (C) is 50% or more respectively.

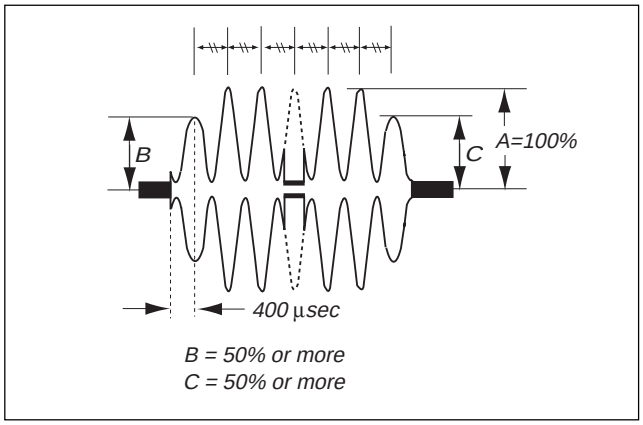



***Fig. 6-2-18***

#### 3. Rise-up Check

1) Play back the tracking standard (XH 2-1) (Ref. No. J-13).
2) Change the modes from CUE mode to FWD. Confirm that the RF waveform rises up within two seconds when the mode is changed from CUE mode to FWD.
3) Change the modes from REV mode (two seconds or more of REV and to the FWD within five seconds) to FWD. Confirm that the RF waveform rises up within two seconds when the mode is changed from REV mode to FWD.
4) Change the modes from STOP mode to FWD. Confirm that the RF waveform rises up within two seconds when the mode is changed from STOP mode to FWD.

## 6-3. VIDEO SECTION ADJUSTMENTS

### 3-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring instruments for video section adjustments.

#### 3-1-1. Precautions on Adjusting

**Note:** Before performing the adjustment, check the data of page: 0, address: 10 is "00". If not, select page: 0, address: 00, and set data "00".

1) The adjustments of this unit are performed in the VTR mode (PLAY/EDIT mode) or camera mode (CAMERA-TAPE mode).

#### 3-1-2. Adjusting Connectors

The measuring point of the playback RF signal is CN8102 of US-014 board. Connect the measuring instruments via the CPC connecting jigs (J-6082-521-A, J-6082-564-A). Refer to "MECHANISM SECTION ADJUSTMENT" for the measuring method. The following table lists the pin numbers and signal names of CN8102.

| Pin No. | Signal Name |
|---|---|
| 1 | RF_MON |
| 2 | SWP |
| 3 | GND |
| 4 | N. C. |
| 5 | N. C. |
| 6 | N. C. |
| 7 | N. C. |
| 8 | GND |

***Table 6-3-1***

#### 3-1-3. Connecting the Equipment

Connect the measuring instruments as shown in Fig. 6-3-1, and perform the adjustments.

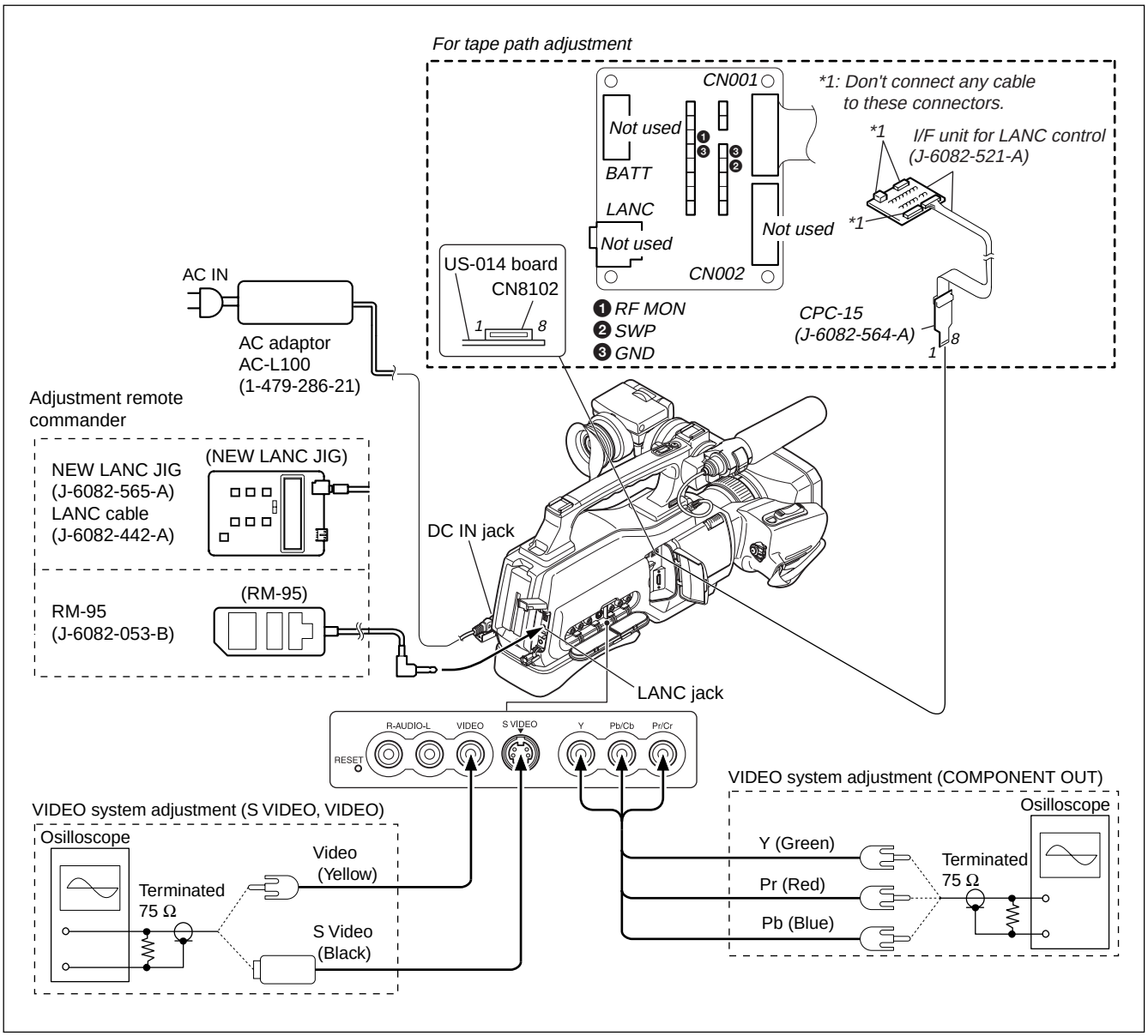



***Fig. 6-3-1***

### 3-1-4. Alignment Tapes

Use the alignment tapes shown in the following table.
Use tapes specified in the signal column of each adjustment.

| Name | Use |
|---|---|
| Tracking standard (XH2-1) | Tape path adjustment |
| SW/OL standard (XH2-3) | Switching position adjustment |
| Audio operation check (XH5-3(NTSC), XH5-3P(PAL)) | Audio system adjustment |
| System operation check (XH5-5(NTSC), XH5-5P(PAL)) | Operation check |

Fig. 6-3-2 shows the 75% color bar signals recorded on the alignment tape for Audio Operation Check.

**Note:** Measure with video terminal (Terminated at 75 Ω)

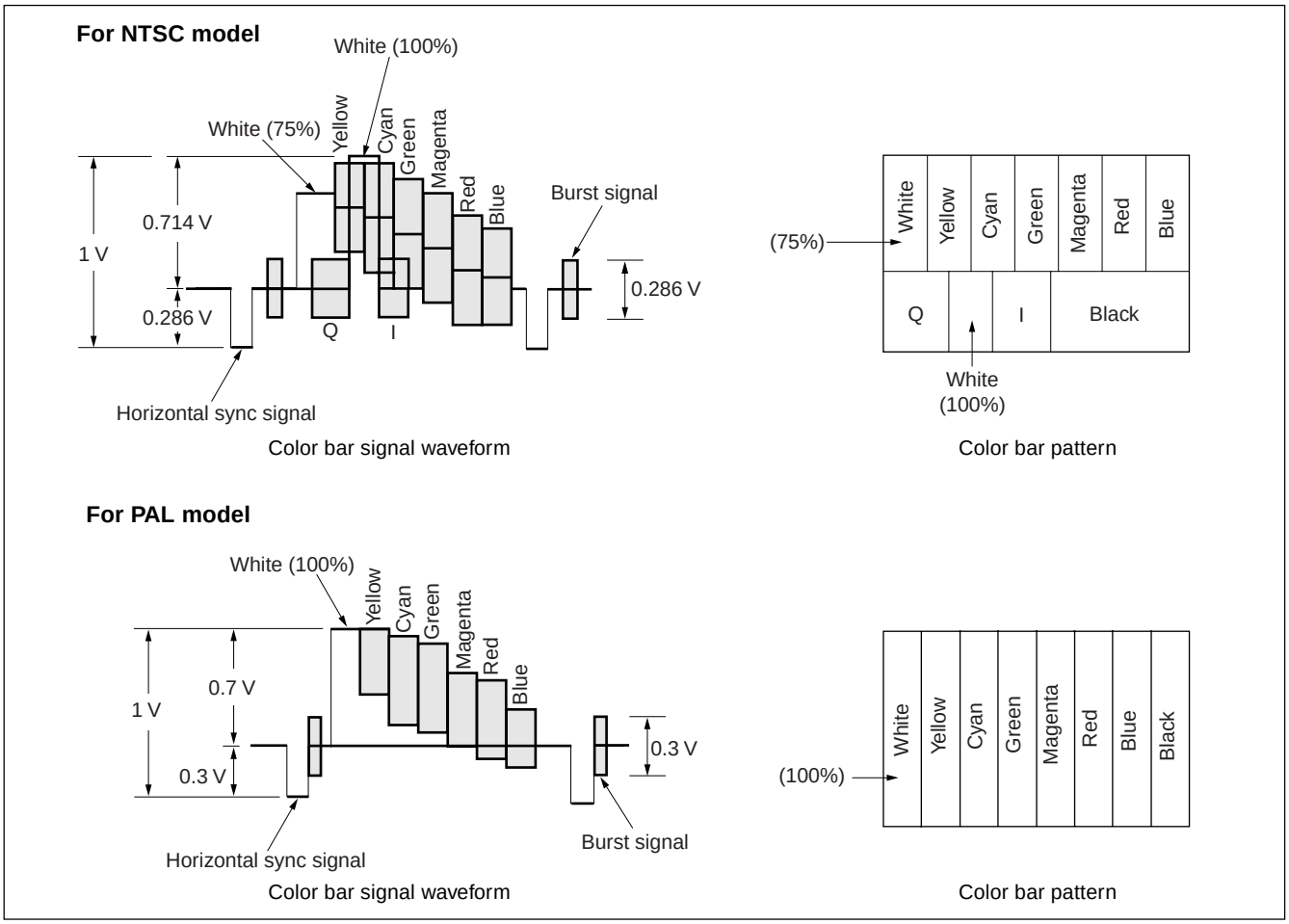



***Fig. 6-3-2 Color bar signal of alignment tapes***

### 3-1-5. Output Level and Impedance

**VIDEO OUT jack**
Pin jack, 1 Vp-p, 75 Ω (ohms)

**S VIDEO OUT jack**
4-pin mini DIN
Luminance signal:
1 Vp-p, 75 Ω (ohms)
Chrominance signal:
0.286 Vp-p, 75 Ω (ohms) (NTSC)
0.300 Vp-p, 75 Ω (ohms) (PAL)

**AUDIO OUT jack**
Pin jack
Audio signal: 327 mV (at load impedance 47 kΩ (kilohms)),
Output impedance with less than 2.2 kΩ (kilohms)

**COMPONENT OUT jack**
Y: 1 Vp-p, 75 Ω (ohms)
$P_B/P_R$, $C_B/C_R$: ± 350 mV, 75 Ω (ohms)

## 3-2. SYSTEM CONTROL SYSTEM ADJUSTMENTS

### 1. Initialization of EEPROM Data

If the EEPROM data is erased due to some reason, perform "1-2. INITIALIZATION OF EEPROM DATA", of "6-1. CAMERA SECTION ADJUSTMENTS"

### 2. Node Unique ID No. Input

**Note 1:** Perform "2-2. Input of Serial No." if the data on page 13 has been cleared and original node unique ID No. is uncertain.
Usually, read the data on page 13 before repair, and write it after repair.

**Note 2:** If reading/writing data on pages 13, set data: 01 to page: 0, address: 10, and then select pages: 3. By this data setting, the pages 13 can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

### 2-1. Input of Company ID

Write the company ID to the EEPROM (nonvolatile memory).

| | |
|---|---|
| Page | 13 |
| Address | 04, 05, 06, 07, 08 |

**Input method:**

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 71, and set data: 01, then press the PAUSE (Write) button.
3) Select page: 0, address: 10, and set data: 01.
4) Select page: 3 (13), and enter the following data.

**Note 3:** Each time the data is set, press the PAUSE (Write) button on the adjusting remote commander.

| Address | Data |
|---|---|
| 04 | 08 |
| 05 | 00 |
| 06 | 46 |
| 07 | 01 |
| 08 | 02 |

5) Select page: 0, address: 10, and set data: 00.
6) Select page: 3, address: 70, and set data: 10, then press the PAUSE (Write) button.
7) Select page: 3, address: 70, and check that the data changes to "11".
8) Select page: 0, address: 01, and set data: 00.

### 2-2. Input of Serial No.

Write the serial No. and model code to the EEPROM (nonvolatile memory).
In writing the serial No., a decimal number should be converted into a hexadecimal number

| | |
|---|---|
| Page | 13 |
| Address | 09, 0A, 0B |

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 71, and set data: 01, then press the PAUSE (Write) button.
3) Read the serial No. from the model name label, and it is assumed to be $D_1$.
   Example: If serial No. is "77881",
   $D_1 = 77881$
4) From Table 6-3-2, obtain $D_2$ and $H_1$ that correspond to $D_1$.
   Example: If $D_1 = 77881$,
   $D_2 = D_1 - 65536 = 12345$
   $H_1 = FE$

| $D_1$ (decimal) | $D_2$ (decimal) | $H_1$ (hexadecimal) (Service model code) |
|---|---|---|
| 00001 to 65535 | $D_1$ | FE |
| 65536 to 131071 | $D_1 - 65536$ | FE |
| 131072 to196607 | $D_1 - 131072$ | FE |
| 196608 to 262143 | $D_1 - 196608$ | FE |
| 262144 to 327679 | $D_1 - 262144$ | FE |
| 327680 to 393215 | $D_1 - 327680$ | FE |
| 393216 to 458751 | $D_1 - 393216$ | FE |
| 458752 to 524287 | $D_1 - 458752$ | FE |
| 524288 to 589823 | $D_1 - 524288$ | FE |
| 589824 to 655359 | $D_1 - 589824$ | FE |
| 655360 to 720895 | $D_1 - 655360$ | FE |
| 720896 to 786431 | $D_1 - 720896$ | FE |
| 786432 to 851967 | $D_1 - 786432$ | FE |
| 851968 to 917503 | $D_1 - 851968$ | FE |
| 917504 to 983039 | $D_1 - 917504$ | FE |
| 983040 to 999999 | $D_1 - 983040$ | FE |

***Table 6-3-2***

5) Enter $H_1$ to address: 09 on page: 13.
   Example: If $H_1 = FE$,
   Select page: 0, address: 10, and set data: 01.
   Select page: 3 (13), address: 09, and set data: FE, then press the PAUSE (Write) button.
6) From Table 6-3-3, obtain the maximum decimal number less than $D_2$, and it is assumed to be $D_3$.
   Example: If $D_2 = 12345$.
   $D_3 = 12288$
7) From Table 6-3-3, obtain a hexadecimal number that corresponds to $D_3$, and it is assumed to be $H_3$.
   Example: If $D_3 = 12288$,
   $H_3 = 3000$
8) Caluculate $D_4$ using following equations (decimal caluculation). ($0 \leqq D_4 \leqq 225$)
   $D_4 = D_2 - D_3$
   Example: If $D_2 = 12345$ and $D_3 = 12288$,
   $D_4 = 12345 - 12288 = 57$
9) Convert $D_4$ into a hexadecimal number to obtain $H_4$. (See Table 6-4-1 "Hexadecimal - decimal conversion table" in 6-4. Service Mode)
   Example: If $D_4 = 57$,
   $H_4 = 39$
10) Enter higher two digits of $H_3$ to address: 0A on page: 13.
    Example: If $H_3 = 3000$,
    Select page: 0, address: 10, and set data: 01.
    Select page: 3 (13), address: 0A, and set data: 30, then press the PAUSE (Write) button.
11) Enter $H_4$ to address: 0B on page: 13.
    Example: If $H_4 = 39$,
    Select page: 0, address: 10, and set data: 01.
    Select page: 3 (13), address: 0B, and set data: 39, then press the PAUSE (Write) button.
12) Select page: 0, address: 10, and set data: 00.
13) Select page: 3, address: 70, and set data: 10, then press the PAUSE (Write) button.
14) Select page: 3, address: 70, and check that the data changes to "11".
15) Select page: 0, address: 01, and set data: 00.

| $D_3$ | $H_3$ | $D_3$ | $H_3$ | $D_3$ | $H_3$ | $D_3$ | $H_3$ | $D_3$ | $H_3$ | $D_3$ | $H_3$ | $D_3$ | $H_3$ | $D_3$ | $H_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0000 | 8192 | 2000 | 16384 | 4000 | 24576 | 6000 | 32768 | 8000 | 40960 | A000 | 49152 | C000 | 57344 | E000 |
| 256 | 0100 | 8448 | 2100 | 16640 | 4100 | 24832 | 6100 | 33024 | 8100 | 41216 | A100 | 49408 | C100 | 57600 | E100 |
| 512 | 0200 | 8704 | 2200 | 16896 | 4200 | 25088 | 6200 | 33280 | 8200 | 41472 | A200 | 49664 | C200 | 57856 | E200 |
| 768 | 0300 | 8960 | 2300 | 17152 | 4300 | 25344 | 6300 | 33536 | 8300 | 41728 | A300 | 49920 | C300 | 58112 | E300 |
| 1024 | 0400 | 9216 | 2400 | 17408 | 4400 | 25600 | 6400 | 33792 | 8400 | 41984 | A400 | 50176 | C400 | 58368 | E400 |
| 1280 | 0500 | 9472 | 2500 | 17664 | 4500 | 25856 | 6500 | 34048 | 8500 | 42240 | A500 | 50432 | C500 | 58624 | E500 |
| 1536 | 0600 | 9728 | 2600 | 17920 | 4600 | 26112 | 6600 | 34304 | 8600 | 42496 | A600 | 50688 | C600 | 58880 | E600 |
| 1792 | 0700 | 9984 | 2700 | 18176 | 4700 | 26368 | 6700 | 34560 | 8700 | 42752 | A700 | 50944 | C700 | 59136 | E700 |
| 2048 | 0800 | 10240 | 2800 | 18432 | 4800 | 26624 | 6800 | 34816 | 8800 | 43008 | A800 | 51200 | C800 | 59392 | E800 |
| 2304 | 0900 | 10496 | 2900 | 18688 | 4900 | 26880 | 6900 | 35072 | 8900 | 43264 | A900 | 51456 | C900 | 59648 | E900 |
| 2560 | 0A00 | 10752 | 2A00 | 18944 | 4A00 | 27136 | 6A00 | 35328 | 8A00 | 43520 | AA00 | 51712 | CA00 | 59904 | EA00 |
| 2816 | 0B00 | 11008 | 2B00 | 19200 | 4B00 | 27392 | 6B00 | 35584 | 8B00 | 43776 | AB00 | 51968 | CB00 | 60160 | EB00 |
| 3072 | 0C00 | 11264 | 2C00 | 19456 | 4C00 | 27648 | 6C00 | 35840 | 8C00 | 44032 | AC00 | 52224 | CC00 | 60416 | EC00 |
| 3328 | 0D00 | 11520 | 2D00 | 19712 | 4D00 | 27904 | 6D00 | 36096 | 8D00 | 44288 | AD00 | 52480 | CD00 | 60672 | ED00 |
| 3584 | 0E00 | 11776 | 2E00 | 19968 | 4E00 | 28160 | 6E00 | 36352 | 8E00 | 44544 | AE00 | 52736 | CE00 | 60928 | EE00 |
| 3840 | 0F00 | 12032 | 2F00 | 20224 | 4F00 | 28416 | 6F00 | 36608 | 8F00 | 44800 | AF00 | 52992 | CF00 | 61184 | EF00 |
| 4096 | 1000 | 12288 | 3000 | 20480 | 5000 | 28672 | 7000 | 36864 | 9000 | 45056 | B000 | 53248 | D000 | 61440 | F000 |
| 4352 | 1100 | 12544 | 3100 | 20736 | 5100 | 28928 | 7100 | 37120 | 9100 | 45312 | B100 | 53504 | D100 | 61696 | F100 |
| 4608 | 1200 | 12800 | 3200 | 20992 | 5200 | 29184 | 7200 | 37376 | 9200 | 45568 | B200 | 53760 | D200 | 61952 | F200 |
| 4864 | 1300 | 13056 | 3300 | 21248 | 5300 | 29440 | 7300 | 37632 | 9300 | 45824 | B300 | 54016 | D300 | 62208 | F300 |
| 5120 | 1400 | 13312 | 3400 | 21504 | 5400 | 29696 | 7400 | 37888 | 9400 | 46080 | B400 | 54272 | D400 | 62464 | F400 |
| 5376 | 1500 | 13568 | 3500 | 21760 | 5500 | 29952 | 7500 | 38144 | 9500 | 46336 | B500 | 54528 | D500 | 62720 | F500 |
| 5632 | 1600 | 13824 | 3600 | 22016 | 5600 | 30208 | 7600 | 38400 | 9600 | 46592 | B600 | 54784 | D600 | 62976 | F600 |
| 5888 | 1700 | 14080 | 3700 | 22272 | 5700 | 30464 | 7700 | 38656 | 9700 | 46848 | B700 | 55040 | D700 | 63232 | F700 |
| 6144 | 1800 | 14336 | 3800 | 22528 | 5800 | 30720 | 7800 | 38912 | 9800 | 47104 | B800 | 55296 | D800 | 63488 | F800 |
| 6400 | 1900 | 14592 | 3900 | 22784 | 5900 | 30976 | 7900 | 39168 | 9900 | 47360 | B900 | 55552 | D900 | 63744 | F900 |
| 6656 | 1A00 | 14848 | 3A00 | 23040 | 5A00 | 31232 | 7A00 | 39424 | 9A00 | 47616 | BA00 | 55808 | DA00 | 64000 | FA00 |
| 6912 | 1B00 | 15104 | 3B00 | 23296 | 5B00 | 31488 | 7B00 | 39680 | 9B00 | 47872 | BB00 | 56064 | DB00 | 64256 | FB00 |
| 7168 | 1C00 | 15360 | 3C00 | 23552 | 5C00 | 31744 | 7C00 | 39936 | 9C00 | 48128 | BC00 | 56320 | DC00 | 64512 | FC00 |
| 7424 | 1D00 | 15616 | 3D00 | 23808 | 5D00 | 32000 | 7D00 | 40192 | 9D00 | 48384 | BD00 | 56576 | DD00 | 64768 | FD00 |
| 7680 | 1E00 | 15872 | 3E00 | 24064 | 5E00 | 32256 | 7E00 | 40448 | 9E00 | 48640 | BE00 | 56832 | DE00 | 65024 | FE00 |
| 7936 | 1F00 | 16128 | 3F00 | 24320 | 5F00 | 32512 | 7F00 | 40704 | 9F00 | 48896 | BF00 | 57088 | DF00 | 65280 | FF00 |

**Note:** $D_3$: Decimal
$H_3$: Hexadecimal

***Table 6-3-3***

### 3. USB Serial Number Data Setting

Set the serial number data of the USB.

**Note 1:** Before the repair, read the data of the set to be repaired, and write the read data after the repair.
Perform "3-1. Model Number Input" and "3-2. Serial Number Input", if the data on page B is erased and original USB serial number is unknown.

**Note 2:** Check that the data of page: 0, address: 10 is "00".

#### 3-1. Model Number Input

Write the model number to the EEPROM (nonvolatile memory). For the model number, enter the ASCII codes that correspond to the last 5 characters of the model name given on the model name label of the set.

| Page | B |
|---|---|
| Address | D1, D2, D3, D4, D5 |

**Input method:**

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 71, set data: 01, and press the PAUSE (Write) button.
3) Select page: B, and enter the following data.

**Note 3:** Each time the data is set, press the PAUSE (Write) button on the adjusting remote commander.

| Address | Data |
|---|---|
| D1 | Last 5th character on model name label (Note 4) |
| D2 | Last 4th character on model name label |
| D3 | Last 3rd character on model name label |
| D4 | Last 2nd character on model name label |
| D5 | Last character on model name label |

**Note 4:** If the model name is less than 5 characters, justify the codes to the right and set "20" for the remainder.

Example: If the model name is "HVR-HD1000U", set "3130303055".
D1 = 31
D2 = 30
D3 = 30
D4 = 30
D5 = 55

4) Select page: 3, address: 70, set data: 10, and press the PAUSE (Write) button.
5) Select page: 3, address: 70, and check that the data is "11".
6) Select page: 0, address: 01, and set data: 00.

#### 3-2. Serial Number Input

Write the serial number to the EEPROM (nonvolatile memory). For the serial number, set the serial number given on the model name label of the set.

| Page | B |
|---|---|
| Address | D6, D7, D8, D9 |

**Input method:**

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 71, set data: 01, and press the PAUSE (Write) button.
3) Select page: B, and enter the following data.

**Note 5:** Each time the data is set, press the PAUSE (Write) button on the adjusting remote commander.

| Address | Data |
|---|---|
| D6 | First and first 2nd digits of serial number |
| D7 | First 3rd and 4th digits of serial number |
| D8 | First 5th and 6th digits of serial number |
| D9 | First 7th and 8th digits of serial number |

**Note 6:** If the serial number is less than 8 digits, set "0" at the top of serial number by the amount of shortage of digits.

Example: If the serial number is "1234567", set "01234567".
D6 = 01
D7 = 23
D8 = 45
D9 = 67

4) Select page: 3, address: 70, set data: 10, and press the PAUSE (Write) button.
5) Select page: 3, address: 70, and check that the data is "11".
6) Select page: 0, address: 01, and set data: 00.

| Charactor | | ! | " | # | $ | % | & | ' | ( | ) |
|---|---|---|---|---|---|---|---|---|---|---|
| ASCII Code | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| Charactor | * | + | , | - | . | / | | | | |
| ASCII Code | 2a | 2b | 2c | 2d | 2e | 2f | | | | |
| Charactor | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| ASCII Code | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 |
| Charactor | : | ; | < | = | > | ? | | | | |
| ASCII Code | 3a | 3b | 3c | 3d | 3e | 3f | | | | |
| Charactor | @ | A | B | C | D | E | F | G | H | I |
| ASCII Code | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |
| Charactor | J | K | L | M | N | O | | | | |
| ASCII Code | 4a | 4b | 4c | 4d | 4e | 4f | | | | |
| Charactor | P | Q | R | S | T | U | V | W | X | Y |
| ASCII Code | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 |
| Charactor | Z | [ | ¥ | ] | ^ | _ | | | | |
| ASCII Code | 5a | 5b | 5c | 5d | 5e | 5f | | | | |
| Charactor | ` | a | b | c | d | e | f | g | h | i |
| ASCII Code | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 |
| Charactor | j | k | l | m | n | o | | | | |
| ASCII Code | 6a | 6b | 6c | 6d | 6e | 6f | | | | |
| Charactor | p | q | r | s | t | u | v | w | x | y |
| ASCII Code | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 |
| Charactor | z | { | \| | } | ~ | | | | | |
| ASCII Code | 7a | 7b | 7c | 7d | 7e | | | | | |

***Table 6-3-4***

## 3-3. SERVO AND RF SYSTEM ADJUSTMENTS

Before perform the servo and RF system adjustments, check that the specified values of "Origin Oscillation check" of "1-3. CAMERA SYSTEM ADJUSTMENTS" is satisfied.
Check that the data of page: 0, address: 10 is "00". If not, select page: 0, address: 10, and set the data "00".

**Adjusting Procedure:**
1. CAP FG duty adjustment
2. Switching position adjustment
3. Error rate check

### 1. CAP FG Duty Adjustment (VC-500 board)

RadarW

Set the CAP FG signal duty cycle to 50% to establish an appropriate capstan servo. If deviated, the uneven rotation of capstan and noise can occur.

| | |
|---|---|
| Mode | VTR stop (PLAY/EDIT mode) |
| Signal | No signal |
| Measurement Point | Displayed data of page: 3, address: 03 |
| Measuring Instrument | Adjusting remote commander |
| Adjustment Page | C |
| Adjustment Address | 16 |
| Specified value | The data of page: 3, address: 03 is "00" |

**Note 1:** Check that the data of page: 0, address: 10 is "00".

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Close the cassette compartment without inserting cassette. |
| 2 | 0 | 01 | 01 | |
| 3 | 3 | 03 | FF | |
| 4 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 5 | 3 | 01 | 1B | Press PAUSE (Write) button. |
| 6 | 3 | 02 | | Check the data changes in the following order "1B" → "2B" → "00" |
| 7 | 3 | 03 | | Check the data is "00". (Note 2) |
| 8 | 3 | 01 | 00 | Press PAUSE (Write) button. |
| 9 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 10 | 3 | 70 | | Check the data changes to "11". |
| 11 | 0 | 01 | 00 | |

**Note 2:** If the data is "01", adjustment has errors or the mechanism deck is defective.
If the data is "80", the mechanism deck is in emergency state or the end of tape was detected.

## 2. Switching Position Adjustment (VC-500 board)

RadarW

| | |
|---|---|
| Mode | VTR playback (PLAY/EDIT mode) |
| Signal | SW/OL standard (XH2-3) |
| Measurement Point | Displayed data of page: 3, address: 03 |
| Measuring Instrument | Adjusting remote commander |
| Adjustment Page | C |
| Adjustment Address | 10, 11, 12, 13 |
| Specified value | The data of page: 3, address: 03 is "00" |

**Note 1:** Check that the data of page: 0, address: 10 is "00".

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Insert the SW/OL standard tape and enter the VTR stop mode. |
| 2 | 0 | 01 | 01 | |
| 3 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 4 | C | 10 | EE | Press PAUSE (Write) button. |
| 5 | 3 | 03 | FF | |
| 6 | 3 | 21 | | Check the data is "02". (Note 2) |
| 7 | 3 | 01 | 0D | Press PAUSE (Write) button. |
| 8 | 3 | 02 | | Check the data changes to "00". |
| 9 | 3 | 03 | | Check the data is "00". (Note 3) |
| 10 | 3 | 01 | 00 | Press PAUSE (Write) button. |
| 11 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 12 | 3 | 70 | | Check the data changes to "11". |
| 13 | 0 | 01 | 00 | |

**Note 2:** If the data is "72", the tape top being played. After playing the tape for 1 to 2 seconds, stop it, perform step 5 and higher.
If the data is "62", the tape end being played. After rewind the tape, perform step 5 and higher.

**Note 3:** If bit0 of the data is "1", the EVEN channel is defective.
If bit1 of the data is "1", the ODD channel is defective.
Contents of the defect is see written into page: C, address: 10 and 12. See following table.
(For the bit values, refer to "6-4. SERVICE MODE", "4-4. 3. Bit value discrimination".)
If bit3 of the data is "1", the tape end being played, so rewind the tape and perform the adjustment again.

When the EVEN channel is defective

| Data of page: C, address: 10 | Contents of defect |
|---|---|
| EE | Writing into Flash is defective |
| E8 | Adjustment data is out of range |
| E7 | No data is returned from IC2701 |

When the ODD channel is defective

| Data of page: C, address: 12 | Contents of defect |
|---|---|
| EE | Writing into Flash is defective |
| E8 | Adjustment data is out of range |
| E7 | No data is returned from IC2701 |

### 3. Error Rate Check (VC-500 board) RadarW

**Note:** Check that the data of page: 0, address: 10 is “00”.

#### 3-1. Preparations before adjustments

| | |
|---|---|
| Mode | Camera recording (CAMERA-TAPE mode) |
| Subject | Arbitrary |

**Switch setting**

1) REC FORMAT (Menu setting) ..... DV

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 3 | 0 | 10 | 01 | |
| 4 | C (1C) | 0D | C8 | Press PAUSE (Write) button. |
| 5 | 0 | 10 | 00 | |
| 6 | | | | Record the camera signal for 2 minutes. |

#### 3-2. Error Rate Check

| | |
|---|---|
| Mode | VTR playback (PLAY/EDIT mode) |
| Subject | Recorded signal at “Preparations before adjustments” |
| Measurement Point | Displayed data of page: 3, address: 03 |
| Measuring Instrument | Adjusting remote commander |
| Adjustment Page | C |
| Adjustment Address | B2 to C7 |
| Specified value | The data of page: 3, address: 03 is “00” |

**Note 1:** Check that the data of page: 0, address: 10 is “00”.

**Initial Value of Page C: Address: B2 to C7**

| Address | Initial value | Address | Initial value | Address | Initial value |
|---|---|---|---|---|---|
| B2 | 00 | BA | 00 | C2 | 80 |
| B3 | 00 | BB | 00 | C3 | 00 |
| B4 | 00 | BC | 00 | C4 | 00 |
| B5 | 00 | BD | 00 | C5 | 00 |
| B6 | 00 | BE | 00 | C6 | 00 |
| B7 | 80 | BF | 00 | C7 | 00 |
| B8 | 00 | C0 | 00 | | |
| B9 | 00 | C1 | 00 | | |

***Table 6-3-5***

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 3 | | | | Check that the data of page: C, address: B2 to C7 is the initial value. (See Table 6-3-5) |
| 4 | | | | Playback the recorded signal at “Preparations before adjustments”. |
| 5 | 3 | 03 | FF | |
| 6 | 3 | 01 | 40 | Press PAUSE (Write) button. |
| 7 | 3 | 02 | | Check the data changes to “00”. |
| 8 | 3 | 03 | | Check the data is “00”. (Note 2) |
| 9 | 3 | 01 | 00 | Press PAUSE (Write) button. |
| 10 | | | | Perform “Processing after Completing Adjustments”. |

**Note 2:** If the data is other than “00”, Error rate is abnormal. For the contents of the abnormality, see the following table.

| Data of page: 3, address: 03 | Contents of defect |
|---|---|
| 01 | EVEN channel is abnormal. |
| 02 | ODD channel is abnormal. |
| 03 | EVEN channel and ODD channel are abnormal. |

**Note 3:** If Error rate is abnormal, Check the use tape, clean the tape running surface. And after inputting initial values to page C: address: B2 to C7, perform re-adjustment. (See Table 6-3-5)

**Processing after Completing Adjustment:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 0 | 10 | 01 | |
| 3 | C (1C) | 0D | 00 | Press PAUSE (Write) button. |
| 4 | 0 | 10 | 00 | |
| 5 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 6 | 3 | 70 | | Check the data changes to “11”. |
| 7 | 0 | 01 | 00 | |

## 3-4. VIDEO SYSTEM ADJUSTMENTS

Before perform the video system adjustments, check that the specified values of "Origin Oscillation Check" of "1-3. CAMERA SYSTEM ADJUSTMENTS" is satisfied.
Check that the data of page: 0, address: 10 is "00".
If not, select page: 0, address: 10, and set the data "00".

**Adjusting Procedure:**

1. S VIDEO OUT Y level adjustment
2. S VIDEO OUT chroma level adjustment
3. VIDEO OUT level check
4. COMPONENT OUT Y level adjustment
5. COMPONENT OUT Pr level adjustment
6. COMPONENT OUT Pb level adjustment

### 1. S VIDEO, VIDEO OUT Adjustment

#### 1-1. Preparations

Perform the following data setting before the "S VIDEO, VIDEO OUT Adjustment".

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Set the unit to PLAY/EDIT mode. |
| 2 | 0 | 01 | 01 | |
| 3 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 4 | 0 | 10 | 01 | |
| 5 | 8 (18) | 00 | 01 | Press PAUSE (Write) button. |
| 6 | 8 (18) | 01 | 60 | Press PAUSE (Write) button. |
| 7 | C (1C) | 0F | 10 | Press PAUSE (Write) button. |
| 8 | 8 (18) | 06 | 55 | Press PAUSE (Write) button. |
| 9 | 8 (18) | 04 | C0 | Press PAUSE (Write) button. |
| 10 | 0 | 10 | 00 | |
| 11 | | | | Wait for 5 sec. |
| 12 | 0 | FF | 3E | |
| 13 | B | 00 | 02 | |
| 14 | C | 85 | | Check the data is "55". |
| 15 | B | 00 | 00 | |
| 16 | 0 | FF | 00 | |

#### 1-2. S VIDEO OUT Y Level Adjustment (VC-500 board)

| | |
|---|---|
| Mode | PLAY/EDIT |
| Signal | No signal |
| Measurement Point | Y signal terminal of S VIDEO plug of A/V OUT jack (75 Ω terminated) |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | C |
| Adjustment Address | 25 (NTSC)<br>85 (PAL) |
| Specified value | A = 1000 ± 14 mVp-p |

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Perform "Preparations". |
| 2 | C | (NTSC) 25<br>(PAL) 85 | | Change the data and set the Y signal level (A) to the specified value. |
| 3 | C | (NTSC) 25<br>(PAL) 85 | | Press PAUSE (Write) button. |
| 4 | | | | Perform "Processing after Complete Adjustment". |

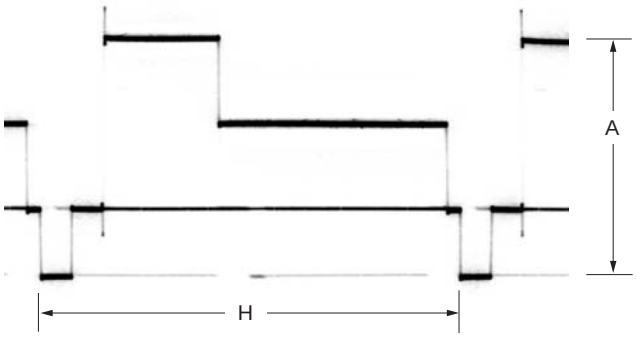



*Fig. 6-3-3*

### 1-3. S VIDEO OUT Chroma Level Adjustment (VC-500 board)

| | |
|---|---|
| Mode | PLAY/EDIT |
| Signal | No signal |
| Measurement Point | Chroma signal terminal of S VIDEO plug of A/V OUT jack (75 Ω terminated)<br>External trigger: Y signal terminal of S VIDEO plug of A/V OUT jack (75 Ω terminated) |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | C |
| Adjustment Address | 26, 27 (NTSC)<br>86, 87 (PAL) |
| Specified value | Cr level: A = 714 ± 14 mVp-p (NTSC)<br>A = 700 ± 14 mVp-p (PAL)<br>Cb level: B = 714 ± 14 mVp-p (NTSC)<br>B = 700 ± 14 mVp-p (PAL)<br>Burst level: C = 286 ± 6 mVp-p (NTSC)<br>C = 300 ± 6 mVp-p (PAL) |

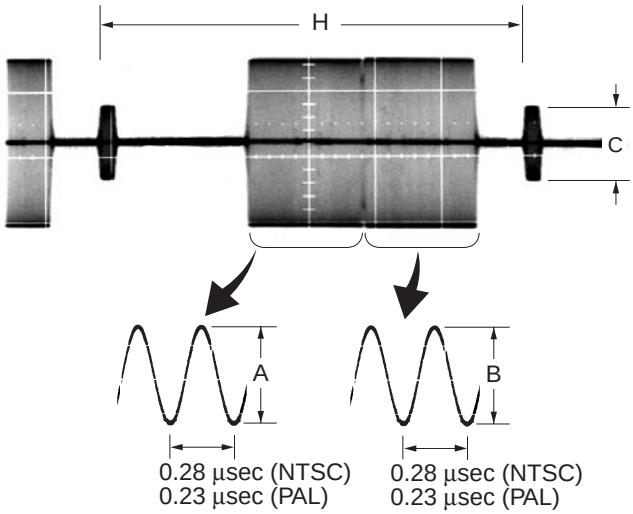



***Fig. 6-3-4***

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Peform “Preparations”. |
| 2 | C | (NTSC) 26<br>(PAL) 86 | | Change the data and set the Cr signal level (A) to the specified value. |
| 3 | C | (NTSC) 26<br>(PAL) 86 | | Press PAUSE (Write) button. |
| 4 | C | (NTSC) 27<br>(PAL) 87 | | Change the data and set the Cb signal level (B) to the specified value. |
| 5 | C | (NTSC) 27<br>(PAL) 87 | | Press PAUSE (Write) button. |
| 6 | | | | Check the burst signal (C) to the specified value. |
| 7 | | | | Perform “Processing after Complete Adjustment”. |

### 1-4. VIDEO OUT Level Check (VC-500 board)

| | |
|---|---|
| Mode | PLAY/EDIT |
| Signal | No signal |
| Measurement Point | Video terminal of A/V OUT jack (75 Ω terminated) |
| Measuring Instrument | Oscilloscope |
| Specified value | Sync level: A = 286 ± 18 mVp-p (NTSC)<br>A = 300 ± 18 mVp-p (PAL)<br>Burst level: B = 286 ± 18 mVp-p (NTSC)<br>B = 300 ± 18 mVp-p (PAL) |

**Checking method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Peform “Preparations” |
| 2 | | | | Check the sync signal level (A) to the specified value. |
| 3 | | | | Check the burst signal level (B) to the specified value. |
| 4 | | | | Perform “Processing after Complete Adjustment”. |

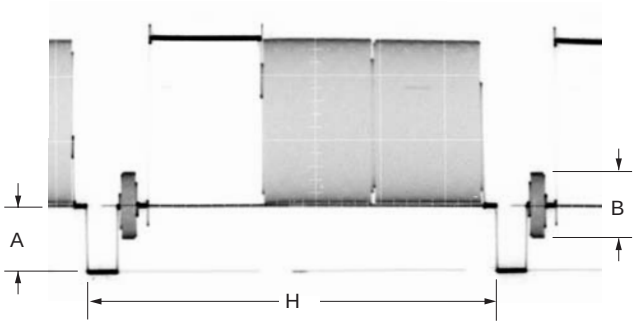



***Fig. 6-3-5***

### 1-5. Processing after Complete Adjustment

Perform the setting through the procedure mentioned below when you finish the “S VIDEO, VIDEO OUT Adjustment”.

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 10 | 01 | |
| 2 | C (1C) | 0F | 00 | Press PAUSE (Write) button. |
| 3 | 8 (18) | 04 | 80 | Press PAUSE (Write) button. |
| 4 | 8 (18) | 00 | 00 | Press PAUSE (Write) button. |
| 5 | 8 (18) | 01 | 00 | Press PAUSE (Write) button. |
| 6 | 8 (18) | 06 | 00 | Press PAUSE (Write) button. |
| 7 | 0 | 10 | 00 | |
| 8 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 9 | 3 | 70 | | Check the data changes to “11”. |
| 10 | 0 | 01 | 00 | |

### 2. COMPONENT OUT Y Level Adjustment (VC-500 board)

| | |
|---|---|
| Mode | CAMERA-TAPE |
| Subject | Arbitrary |
| Measurement Point | Y signal terminal of COMPONENT OUT jack (75 Ω terminated) |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | C |
| Adjustment Address | 93 |
| Specified value | Y level: A = 1000 ± 10 mVp-p<br>Sync level: B = C = 300 ± 10 mVp-p |

**Switch setting:**

1) REC FORMAT (Menu setting) ..... HDV1080i

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 3 | 0 | 10 | 01 | |
| 4 | 8 (18) | 00 | | Set the bit value of bit7 is “1”, and press PAUSE (Write) button. (Note) |
| 5 | 0 | 10 | 00 | |
| 6 | C | 93 | | Change the data and set the Y signal level (A) to the specified value. |
| 7 | C | 93 | | Press PAUSE (Write) button. |
| 8 | | | | Check the sync signal (B, C) to the specified value. |
| 9 | 0 | 10 | 01 | |
| 10 | 8 (18) | 00 | | Set the bit value of bit7 is “0”, and press PAUSE (Write) button. (Note) |
| 11 | 0 | 10 | 00 | |
| 12 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 13 | 3 | 70 | | Check the data changes to “11”. |
| 14 | 0 | 01 | 00 | |

**Note:** For the bit values, refer to “6-4. SERVICE MODE”, “4-4. 3. Bit value discrimination”.

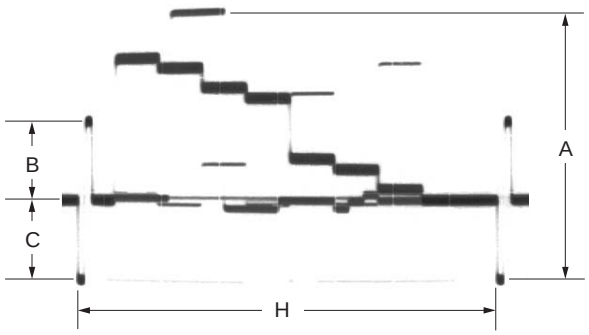



*Fig. 6-3-6*

### 3. COMPONENT OUT Pr Level Adjustment (VC-500 board)

| | |
|---|---|
| Mode | CAMERA-TAPE |
| Subject | Arbitrary |
| Measurement Point | Pr signal terminal of COMPONENT OUT jack (75 Ω terminated) |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | C |
| Adjustment Address | 95 |
| Specified value | Pr level: A = 525 ± 10 mVp-p<br>Sync level: B = C = 300 ± 10 mVp-p |

**Switch setting:**

1) REC FORMAT (Menu setting) ..... HDV1080i

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 3 | 0 | 10 | 01 | |
| 4 | 8 (18) | 00 | | Set the bit value of bit7 is “1”, and press PAUSE (Write) button. (Note) |
| 5 | 0 | 10 | 00 | |
| 6 | C | 95 | | Change the data and set the Y signal level (A) to the specified value. |
| 7 | C | 95 | | Press PAUSE (Write) button. |
| 8 | | | | Check the sync signal (B, C) to the specified value. |
| 9 | 0 | 10 | 01 | |
| 10 | 8 (18) | 00 | | Set the bit value of bit7 is “0”, and press PAUSE (Write) button. (Note) |
| 11 | 0 | 10 | 00 | |
| 12 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 13 | 3 | 70 | | Check the data changes to “11”. |
| 14 | 0 | 01 | 00 | |

**Note:** For the bit values, refer to “6-4. SERVICE MODE”, “4-4. 3. Bit value discrimination”.

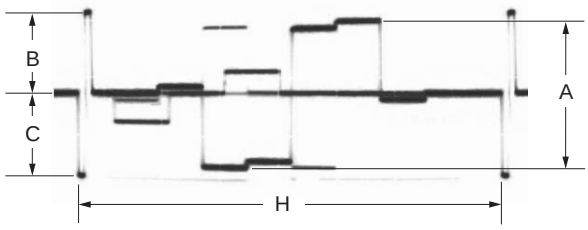



*Fig. 6-3-7*

### 4. COMPONENT OUT Pb Level Adjustment (VC-500 board)

| | |
|---|---|
| Mode | CAMERA-TAPE |
| Subject | Arbitrary |
| Measurement Point | Pb signal terminal of COMPONENT OUT jack (75 Ω terminated) |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | C |
| Adjustment Address | 94 |
| Specified value | Pb level: A = 525 ± 10 mVp-p<br>Sync level: B = C = 300 ± 10 mVp-p |

**Switch setting:**

1) REC FORMAT (Menu setting) ..... HDV1080i

**Adjusting method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 3 | 0 | 10 | 01 | |
| 4 | 8<br>(18) | 00 | | Set the bit value of bit7 is “1”, and press PAUSE (Write) button. (Note) |
| 5 | 0 | 10 | 00 | |
| 6 | C | 94 | | Change the data and set the Y signal level (A) to the specified value. |
| 7 | C | 94 | | Press PAUSE (Write) button. |
| 8 | | | | Check the sync signal (B, C) to the specified value. |
| 9 | 0 | 10 | 01 | |
| 10 | 8<br>(18) | 00 | | Set the bit value of bit7 is “0”, and press PAUSE (Write) button. (Note) |
| 11 | 0 | 10 | 00 | |
| 12 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 13 | 3 | 70 | | Check the data changes to “11”. |
| 14 | 0 | 01 | 00 | |

**Note:** For the bit values, refer to “6-4. SERVICE MODE”, “4-4.

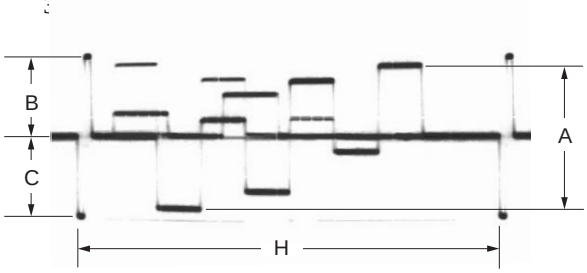



***Fig. 6-3-8***

## 3-5. AUDIO SYSTEM ADJUSTMENTS

**[Connecting the measuring instruments for the audio]**
Connect the audio system measuring instruments in addition to the video system measuring instruments as shown in Fig. 6-3-9.

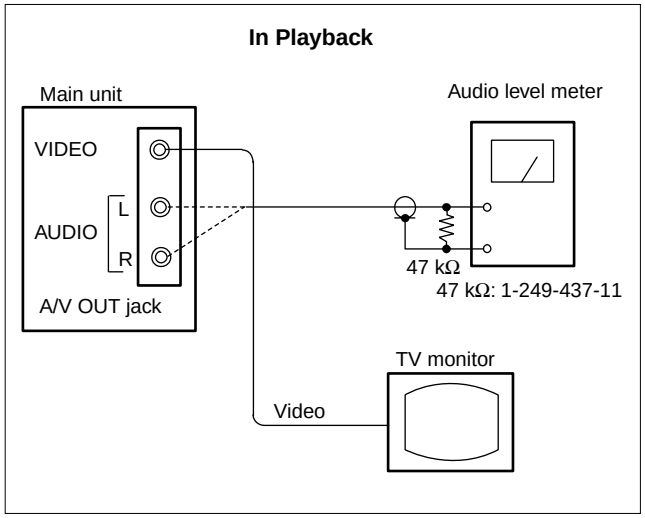



***Fig. 6-3-9***

### 1. Playback Level Check

| | |
|---|---|
| Mode | VTR playback (PLAY/EDIT mode) |
| Signal | Alignment tape:<br>For audio operation check<br>(XH5-3 (NTSC))<br>(XH5-3P (PAL)) |
| Measurement Point | Audio left or right terminal of A/V OUT jack |
| Measuring Instrument | Audio level meter and frequency counter |
| Specified Value | 32 kHz mode: 1 kHz, + 3.0 ± 2.0 dBs<br>48 kHz mode: 1 kHz, + 3.0 ± 2.0 dBs<br>44.1 kHz mode:<br>The 7.35 kHz signal level during EMP OFF is +2.0 ± 2.0 dBs.<br>The 7.35 kHz signal level during EMP ON is –6 ± 2 dB from the signal level during EMP OFF. |

**Checking Method:**
1) Check that the playback signal level is the specified value.

## 6-4. SERVICE MODE

### 4-1. ADJUSTMENT REMOTE COMMANDER (RM-95)

The adjustment remote commander (RM-95) is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander (RM-95) performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

#### 1. Using the Adjustment Remote Commander (RM-95)

1) Connect the adjustment remote commander to the LANC terminal.
2) Set the HOLD switch of the adjustment remote commander (RM-95) to "HOLD" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander (RM-95) will display as shown in Fig. 6-4-1.

***Fig. 6-4-1***

3) Operate the adjustment remote commander (RM-95) as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH- button is pressed. There are altogether 16 pages, from 0 to F.

| | |
|---|---|
| Hexadecimal notation | 0 1 2 3 4 5 6 7 8 9 A B C D E F |
| LCD Display | 0 1 2 3 4 5 6 7 8 9 A b c d E F |
| Decimal notation conversion value | 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 |

   - Changing the address
     The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed)
4) After completing all adjustments, turn off the main power supply (8.4 V) once.

#### 2. Precautions Upon Using the Adjustment Remote Commander (RM-95)

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

## 4-2. ADJUSTMENT REMOTE COMMANDER (NEW LANC JIG)

The adjustment remote commander (New LANC Jig) is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander (New LANC Jig) performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

### 1. Using the Adjustment Remote Commander (New LANC Jig)

1) Connect the adjustment remote commander (New LANC Jig) to the LANC terminal via the LANC cable (J-6082-442-A).
2) Set the slide switch of the adjustment remote commander (New LANC Jig) to "SERVICE" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander (New LANC Jig) will display as shown in Fig. 6-4-2.

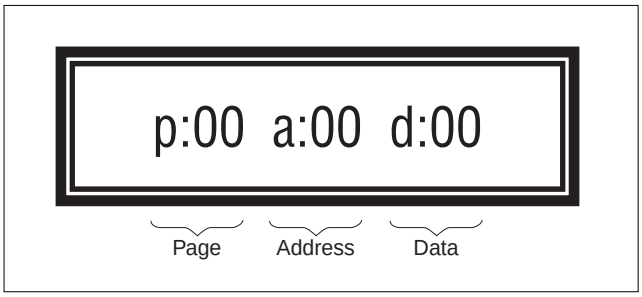



***Fig. 6-4-2***

3) Operate the adjustment remote commander (New LANC Jig) as follows.
   - Changing the page
     The page increases when the Page+ (▶▶) button is pressed, and decreases when the Page– (◀◀) button is pressed.
   - Changing the address
     The address increases when the ADD+ (▶) button is pressed, and decreases when the ADD– (▮▮) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the Data+ button is pressed, and decreases when the Data– button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The Write (■) button must be pressed to write the adjustment data in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed)
4) After completing all adjustments, turn off the main power supply (8.4 V) once.

### 2. Precautions Upon Using the Adjustment Remote Commander (New LANC Jig)

Mishandling of the adjustment remote commander (New LANC Jig) may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

## 4-3. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

**Hexadecimal-decimal Conversion Table**

| Lower digit of hexadecimal / Upper digit of hexadecimal | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A (A) | B (b) | C (C) | D (d) ② | E (E) | F (F) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 1 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| 2 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 |
| 3 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 |
| 4 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 77 | 76 | 77 | 78 | 79 |
| 5 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 |
| 6 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 |
| 7 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 |
| 8 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 |
| 9 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 |
| A (A) | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 |
| ① B (b) | 176 | 177 | 178 | 179 | 180 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 |
| C (C) | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 |
| D (d) | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221 | 222 | 223 |
| E (E) | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 |
| F (F) | 240 | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 |

**Note:** The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

**(Example)** If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

***Table 6-4-1***

## 4-4. SERVICE MODE

**Note:** Before performing the adjustment, check the data of page: 0, address: 10 is “00”. If not, select page: 0, address: 00, and set data “00”.

### 1. Setting the Test Mode

| Page A | Address 10 |
|---|---|

| Data | Function |
|---|---|
| 00 | Normal |
| 01 | Forced camera power ON (CAMERA-TAPE mode) |
| 02 | Forced VTR power ON (PLAY/EDIT mode) |
| 03 | Forced camera + VTR power ON |
| 05 | Forced memory power ON (CAMERA-MEMORY mode) |

- Before setting the data , select page: 0, address: 01, and set data: 01.
- For page A, the data set will be recorded in the non-volatile memory by pressing the PAUSE (Write) button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off (8.4 Vdc).
- After completing adjustments/repairs, be sure to return the data of this address to 00, and press the PAUSE (Write) button of the adjustment remote commander. And select page: 0, address: 01, and set data: 00.

### 2. Emergence Memory Address

### 2-1. Emergence Memory Address (Mechanism section)

| Page C | Address F4 to FF |
|---|---|

| Address | Contents |
|---|---|
| F4 | EMG code when first error occurs |
| F6 | Upper: MSW code when shift starts when first error occurs<br>Lower: MSW code when first error occurs |
| F7 | Lower: MSW code to be moved when first error occurs |
| F8 | EMG code when second error occurs |
| FA | Upper: MSW code when shift starts when second error occurs<br>Lower: MSW code when second error occurs |
| FB | Lower: MSW code to be moved when second error occurs |
| FC | EMG code when last error occurs |
| FE | Upper: MSW code when shift starts when last error occurs<br>Lower: MSW code when last error occurs |
| FF | Lower: MSW code to be moved when last error occurs |

When no error occurs in this unit, data “00” is written in the above addresses (F4 to FF). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (F4 to F7). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (F8 to FB).
Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (FC to FF).

**Note:** After completing adjustments, be sure to initialize the data of addresses F4 to FF to “00”.

**Initializing method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 0 | 01 | 01 | |
| 2 | 3 | 71 | 01 | Press PAUSE (Write) button. |
| 3 | 3 | 03 | FF | |
| 4 | 3 | 01 | 37 | Press PAUSE (Write) button. |
| 5 | 3 | 02 | | Check the data changes to “00”. |
| 6 | 3 | 03 | | Check the data changes to “00”. |
| 7 | 3 | 70 | 10 | Press PAUSE (Write) button. |
| 8 | 3 | 70 | | Check the data changes to “11”. |
| 9 | 0 | 01 | 00 | |

### 2-2. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in C page, addresses F4, F8 and FC . The type of error indicated by the code are shown in the following table.

| Code | Emergency Type |
|---|---|
| 00 | No error |
| 10 | Loading motor emergency during loading |
| 11 | Loading motor emergency during unloading |
| 22 | T reel emergency during normal rotation |
| 23 | S reel emergency during normal rotation |
| 24 | T reel emergency (Short circuit between S reel terminal and T reel terminal) |
| 30 | FG emergency at the start up of the capstan |
| 40 | FG emergency at the start up of the drum |
| 42 | FG emergency during normal rotation of the drum |

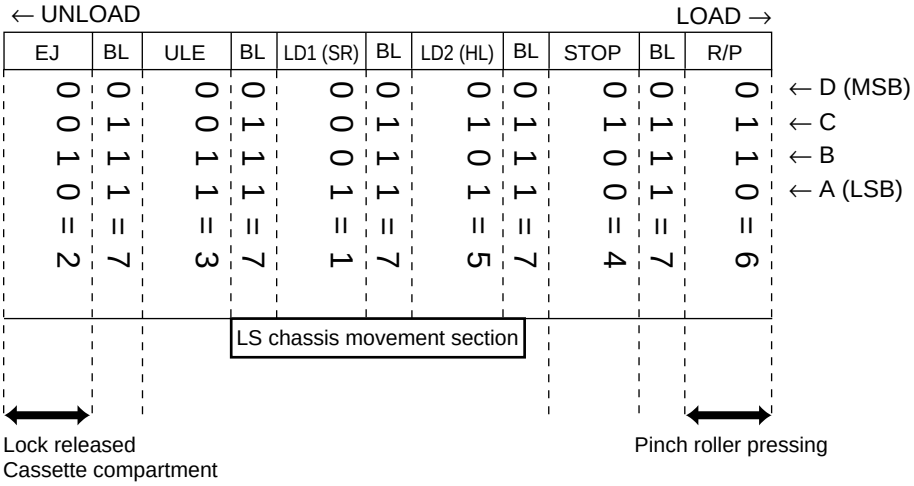
### 2-3. MSW Code

**MSW when errors occur:**
Information on MSW (mode SW) when errors occur

**MSW when movement starts:**
Information on MSW when movements starts when the mechanism position is moved (When the L motor is moved)

**MSW of target of movement:**
Information on target MSW of movement when the mechanism position is moved

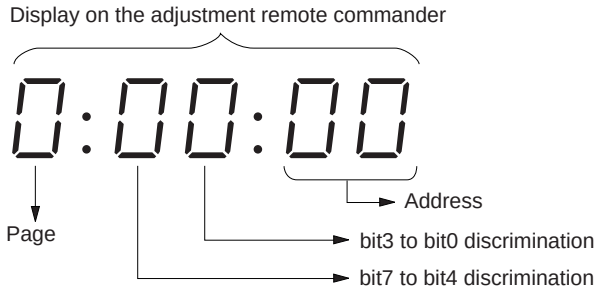
***Mechanical Position***




| Position | Code | Contents |
|---|---|---|
| EJ | 2 | Position at which the cassette component lock is released, at the farthest unload side mechanically at which the mechanism can move no further in the UNLOAD direction. |
| BL | 7 | BLANK code, at the boundary between codes. |
| ULE | 3 | EJECT completion position. when the cassette is ejected, the mechanism will stop at this position. Cassette IN standby. The guide will start protruding out as the mechanism moves towards the LOAD position. |
| LD1 (SR) | 1 | When prepraing TOP load processing or when DEW is detected, rolling up tape by T reel is preformed at this position. |
| LD2 (HL) | 5 | When prepraing TOP load processing or when DEW is detected, rolling up tape by S reel is preformed at this position. |
| STOP | 4 | Stop position in the loading state. The pinch roller separates, the tension regulator returns, and the brake is imposed on both reels. |
| R/P | 6 | PB, REC, CUE, REVIEW, PAUSE, FF, REW positions. When pinch roller is pressed, and the tension regulator is ON, the mechanism is operating at this position in modes in which normal images are shown. |
| NULL | 0 | Code not existing in the MD. Default value. |
| | F | Status before finding any mechanism position. |

### 3. Bit Value Discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for the following items. Us the table below to discriminate if the bit value is "1" or "0".




(Example) If the remote commander display is "8E", bit value from bit 7 to bit 4 can be discriminated from the column Ⓐ, and those from bit 3 to bit 0 from column Ⓑ.

| | Display on the adjustment remote commander | Bit values | | | |
|---|---|---|---|---|---|
| | | bit3 or bit7 | bit2 or bit6 | bit1 or bit5 | bit0 or bit4 |
| | 0 | 0 | 0 | 0 | 0 |
| | 1 | 0 | 0 | 0 | 1 |
| | 2 | 0 | 0 | 1 | 0 |
| | 3 | 0 | 0 | 1 | 1 |
| | 4 | 0 | 1 | 0 | 0 |
| | 5 | 0 | 1 | 0 | 1 |
| | 6 | 0 | 1 | 1 | 0 |
| | 7 | 0 | 1 | 1 | 1 |
| Ⓐ | 8 | 1 | 0 | 0 | 0 |
| | 9 | 1 | 0 | 0 | 1 |
| | A (R) | 1 | 0 | 1 | 0 |
| | B (b) | 1 | 0 | 1 | 1 |
| | C (C) | 1 | 1 | 0 | 0 |
| | D (d) | 1 | 1 | 0 | 1 |
| Ⓑ | E (E) | 1 | 1 | 1 | 0 |
| | F (F) | 1 | 1 | 1 | 1 |

### 4. Jack Check (1)

| | |
|---|---|
| Page 7 | Address FF |

**Note:** Check that the data of page: 0, address: 10 is "00".

| Bit | Function | When bit value = 1 | When bit value = 0 |
|---|---|---|---|
| 1 | COMPONENT OUT jack (JK-355 board J0703) | Used | Not used |

**Using method:**

1) Select page: 7, address: FF.
2) By discriminating the bit value of display data, the state of jack can be discriminated.

### 5. Jack Check (2)

| | |
|---|---|
| Page 3 | Address CF |

**Note:** Check that the data of page: 0, address: 10 is "00".

| Bit | Function | When bit value = 1 | When bit value = 0 |
|---|---|---|---|
| 0 | HDMI OUT jack (FP-867 flexible CN001) | Used | Not used |

**Using method:**

1) Select page: 3, address: CF.
2) By discriminating the bit value of display data, the state of jack can be discriminated.

### 6. Jack Check (3)

| | |
|---|---|
| Page 7 | Address 50 |

**Note:** Check that the data of page: 0, address: 10 is "00".

| Bit | Function | When bit value = 1 | When bit value = 0 |
|---|---|---|---|
| 2 | MIC jack (MC-188 board J401) | Used | Not used |

**Using method:**

1) Select page: 7, address: 50.
2) By discriminating the bit value of display data, the state of jack can be discriminated.

### 7. Jack Check (4)

| | |
|---|---|
| Page 3 | Address 61 |

**Note:** Check that the data of page: 0, address: 10 is “00”.

| Bit | Function | When bit value = 1 | When bit value = 0 |
|---|---|---|---|
| 6 | HEADPHONE jack (HP-150 board J651) | Used | Not used |

**Using method:**
1) Select page: 3, address: 61.
2) By discriminating the bit value of display data, the state of jack can be discriminated.

### 8. Switch Check (1)

| | |
|---|---|
| Page 2 | Address 81 |

**Note:** Check that the data of page: 0, address: 10 is “00”.

| Function | | bit value | |
|---|---|---|---|
| | | bit 1 | bit 0 |
| POWER MODE SW (PS90500) | OFF | 0 | 0 |
| | PLAY/EDIT | 0 | 1 |
| | TAPE | 1 | 0 |
| | MEMORY | 1 | 1 |

**Using method:**
1) Select page: 2, address: 81.
2) By discriminating the bit value of display data, the state of switch can be discriminated.

### 9. Switch Check (2)

| | |
|---|---|
| Page 2 | Address 81 |

**Note:** Check that the data of page: 0, address: 10 is “00”.

| Bit | Function | When bit value = 1 | When bit value = 0 |
|---|---|---|---|
| 3 | EJECT (FP-785 flexible S851) | ON | OFF |
| 4 | CC DOWN (Mechanism chassis) | ON (DOWN) | OFF (UP) |
| 5 | DISPLAY/BATT INFO (SP-048 board S0501) | ON | OFF |

**Using method:**
1) Select page: 2, address: 81.
2) By discriminating the bit value of display data, the state of switch can be discriminated.

### 10. Switch Check (3)

| Page 7 | Address 65 to 6B |
|---|---|

**Note:** Check that the data of page: 0, address: 10 is “00”.

**Using method:**

1) Select page: 7, address: 65 to 6B.
2) By discriminating the display data, the pressed key can be discriminated.

| Address | Data | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 00 to 0C | 0D to 27 | 32 to 3A | 4F to 58 | 73 to 7B | 8B to B7 | B8 to E6 | E7 to FF |
| 65 (KEY AD0) (IC5101 ⑥5) | REC START/STOP (PS90500 block) (S101) | – | – | – | – | – | – | No key input |
| 66 (KEY AD1) (IC5101 ⑧3) | PHOTO (REC) (ZM90500 block) (S201) | PHOTO (FREEZE) (ZM90500 block) (S202) | – | – | – | – | – | No key input |
| 67 (KEY AD2) (IC5101 ⑧4) | REC START/STOP (FP-793 flexible) | | ZOOM WIDE (FP-793 flexible) | | ZOOM TELE (FP-793 flexible) | | – | No key input |
| 68 (KEY AD3) (IC5101 ⑩2) | – | – | – | – | – | – | – | – |
| 69 (KEY AD4) (IC5101 ⑫2) | MANUAL (SP-048 board) (S0504) | BACK LIGHT (SP-048 board) (S0503) | NIGHT SHOT ON (SP-048 board) (S0502) | – | – | – | – | NIGHT SHOT OFF (SP-048 board) (S0502) |
| 6A (KEY AD5) (IC5101 ⑫1) | LCD ON/OFF (BH-001) (S6001) | PANEL REVERSE (RE-038 board) (S0851) | – | – | – | – | – | PANEL NORMAL (RE-038 board) (S0851) |
| 6B (KEY AD6) (IC5101 ⑫2) | – | PANEL CLOSE (FP-784 flexible) (IC801) | – | – | – | – | – | PANEL OPEN (FP-784 flexible) (IC801) |

### 11. Switch Check (4)

| Page 7 | Address 4F |
|---|---|

**Note:** Check that the data of page: 0, address: 10 is “00”.

| Bit | Function | When bit value = 1 | When bit value = 0 |
|---|---|---|---|
| 4 | REC PROOF SW (Mechanism chassis) | SAVE | REC |

**Using method:**

1) Select page: 7, address: 4F.
2) By discriminating the bit value of display data, the state of switch can be discriminated.

### 12. LED, IR Light Check

| Page 7 | Address 00, 01 and 04 |
|---|---|

**Note:** Check that the data of page: 0, address: 10 is “00”.

**Using method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | | | | Set the unit to CAMERA-TAPE mode. |
| 2 | 7 | 01 | 90 | |
| 3 | 7 | 02 | FF | |
| 4 | 7 | 04 | 01 | |
| 5 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 6 | 7 | 02 | | Check the data changes to “01”. |
| 7 | | | | Check that the all LED are lit, and that the IR light is lit. |
| 8 | 7 | 01 | 90 | |
| 9 | 7 | 02 | FF | |
| 10 | 7 | 04 | 00 | |
| 11 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 12 | 7 | 02 | | Check the data changes to “01”. |
| 13 | 7 | 00 | 00 | |
| 14 | 7 | 01 | 00 | |

### 13. Record of Use Check (1)

| Page 7 | Address A4 to AF |
|---|---|

**Note 1:** This data will not be erased (reset) when the lithium 3 V power supply (MS-379 board BT901) is removed.
**Note 2:** When the drum was replaced, initialize the drum rotation counted time.
**Note 3:** Check that the data of page: 0, address: 10 is “00”.

| Address | Function | | Remarks |
|---|---|---|---|
| A4 | Power supplying | Hour (H) | 100000th place digit and 10000th place digit of counted time (decimal digit) |
| A5 | time | Hour (M) | 1000th place digit and 100th place digit of counted time (decimal digit) |
| A6 | | Hour (L) | 10th place digit and 1st place digit of counted time (decimal digit) |
| A7 | (BCD code) | Minute | |
| A8 | Drum rotation | Hour (H) | 100000th place digit and 10000th place digit of counted time (decimal digit) |
| A9 | counted time | Hour (M) | 1000th place digit and 100th place digit of counted time (decimal digit) |
| AA | | Hour (L) | 10th place digit and 1st place digit of counted time (decimal digit) |
| AB | (BCD code) | Minute | |
| AC | Tape run time | Hour (H) | 100000th place digit and 10000th place digit of counted time (decimal digit) |
| AD | | Hour (M) | 1000th place digit and 100th place digit of counted time (decimal digit) |
| AE | | Hour (L) | 10th place digit and 1st place digit of counted time (decimal digit) |
| AF | (BCD code) | Minute | |

**Using method:**

1) The record of use data is displayed at page: 7, addresses: A4 to AF.

**Initializing method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 7 | A4 | 00 | Press PAUSE (Write) button. |
| 2 | 7 | A5 | 00 | Press PAUSE (Write) button. |
| 3 | 7 | A6 | 00 | Press PAUSE (Write) button. |
| 4 | 7 | A7 | 00 | Press PAUSE (Write) button. |
| 5 | 7 | A8 | 00 | Press PAUSE (Write) button. |
| 6 | 7 | A9 | 00 | Press PAUSE (Write) button. |
| 7 | 7 | AA | 00 | Press PAUSE (Write) button. |
| 8 | 7 | AB | 00 | Press PAUSE (Write) button. |
| 9 | 7 | AC | 00 | Press PAUSE (Write) button. |
| 10 | 7 | AD | 00 | Press PAUSE (Write) button. |
| 11 | 7 | AE | 00 | Press PAUSE (Write) button. |
| 12 | 7 | AF | 00 | Press PAUSE (Write) button. |

### 14. Record of Use Check (2)

| | |
|---|---|
| Page 7 | Address 90 to 95 |

**Note 1:** This data will not be erased (reset) when the lithium 3 V power supply (MS-379 board BT901) is removed.
**Note 2:** When the drum was replaced, initialize the drum rotation counted time.
**Note 3:** Check that the data of page: 0, address: 10 is “00”.

| Address | Function | | Remarks |
|---|---|---|---|
| 90 | Eject count with tape (BCD code) | Count (H) | 100000th place digit and 10000th place digit of Eject count (decimal digit) |
| 91 | | Count (M) | 1000th place digit and 100th place digit of Eject count (decimal digit) |
| 92 | | Count (L) | 10th place digit and 1st place digit of Eject count (decimal digit) |
| 93 | Eject count without tape (BCD code) | Count (H) | 100000th place digit and 10000th place digit of Eject count (decimal digit) |
| 94 | | Count (M) | 1000th place digit and 100th place digit of Eject count (decimal digit) |
| 95 | | Count (L) | 10th place digit and 1st place digit of Eject count (decimal digit) |

**Using method:**
1) The record of use data is displayed at page: 7, addresses: 90 to 95.

**Initializing method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 7 | 90 | 00 | Press PAUSE (Write) button. |
| 2 | 7 | 91 | 00 | Press PAUSE (Write) button. |
| 3 | 7 | 92 | 00 | Press PAUSE (Write) button. |
| 4 | 7 | 93 | 00 | Press PAUSE (Write) button. |
| 5 | 7 | 94 | 00 | Press PAUSE (Write) button. |
| 6 | 7 | 95 | 00 | Press PAUSE (Write) button. |

### 15. Record of Use Check (3)

| Page 7 | Address C8 to CD |
|---|---|

**Note 1:** This data will not be erased (reset) when the lithium 3 V power supply (MS-379 board BT901) is removed.
**Note 2:** Check that the data of page: 0, address 10 is “00”.

| Address | Function | | Remarks |
|---|---|---|---|
| C8 | User initial power | Year | After setting the clock, set the date of power on next |
| C9 | on date | Month | |
| CA | (BCD code) | Day | |
| CB | Final condensation | Year | |
| CC | occurrence date | Month | |
| CD | (BCD code) | Day | |

**Using method:**
1) The record of use data is displayed at page: 7, addresses: C8 to CD.

### 16. Record of Self-diagnosis Check

| Page 7 | Address B0 to C6 |
|---|---|

**Note 1:** This data will not be erased (reset) when the lithium 3 V power supply (MS-379 board BT901) is removed.
**Note 2:** Check that the data of page: 0, address 10 is “00”.

| Address | Self-diagnosis code |
|---|---|
| B0 | “Repaired by” code (Occurred 1st time) *1 |
| B1 | “Block function” code (Occurred 1st time) |
| B2 | “Detailed” code (Occurred 1st time) |
| B4 | “Repaired by” code (Occurred 2nd time) *1 |
| B5 | “Block function” code (Occurred 2nd time) |
| B6 | “Detailed” code (Occurred 2nd time) |
| B8 | “Repaired by” code (Occurred 3rd time) *1 |
| B9 | “Block function” code (Occurred 3rd time) |
| BA | “Detailed” code (Occurred 3rd time) |
| BC | “Repaired by” code (Occurred 4th time) *1 |
| BD | “Block function” code (Occurred 4th time) |
| BE | “Detailed” code (Occurred 4th time) |
| C0 | “Repaired by” code (Occurred 5th time) *1 |
| C1 | “Block function” code (Occurred 5th time) |
| C2 | “Detailed” code (Occurred 5th time) |
| C4 | “Repaired by” code (Occurred the last time) *1 |
| C5 | “Block function” code (Occurred the last time) |
| C6 | “Detailed” code (Occurred the last time) |

*1 : “01” → “C”, “03” → “E”

**Using method:**
1) The past self-diagnosis codes are displayed at page: 7, address: BC to C6. Refer to “1-5. SELF-DIAGNOSIS FUNCTION” for detail of the self-diagnosis code.

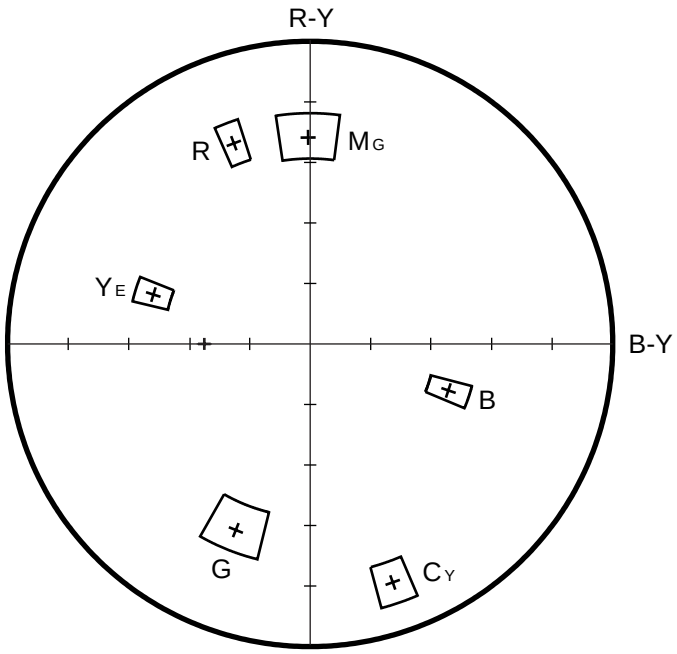
**Initializing method:**

| Order | Page | Address | Data | Procedure |
|---|---|---|---|---|
| 1 | 7 | 01 | C0 | |
| 2 | 7 | 00 | 01 | Press PAUSE (Write) button. |
| 3 | 7 | B0 to C6 | | Check that the data is “00”. |
| 4 | 7 | 00 | 00 | |
| 5 | 7 | 01 | 00 | |

## FOR CAMERA COLOR REPRODUCTION ADJUSTMENT

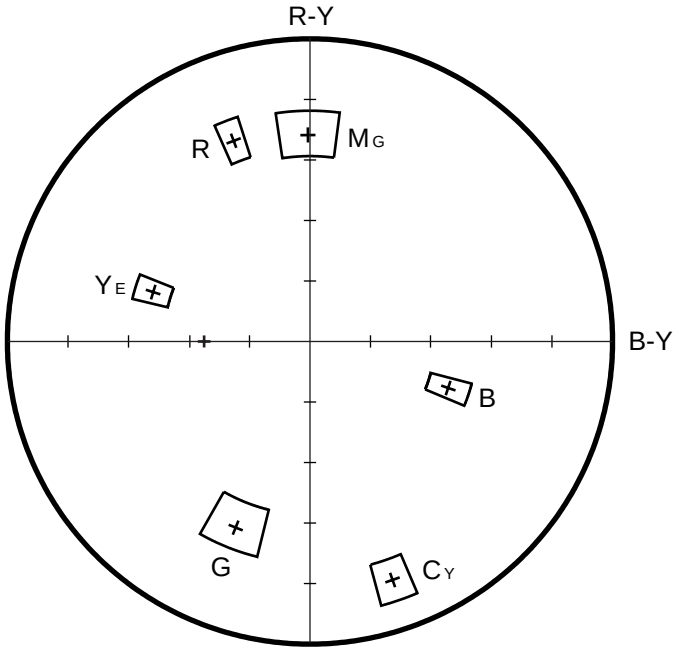
Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

**For Indoor HD mode (NTSC model)**




HVR-HD1000U/HD1000N

**For Indoor SD mode (NTSC model)**

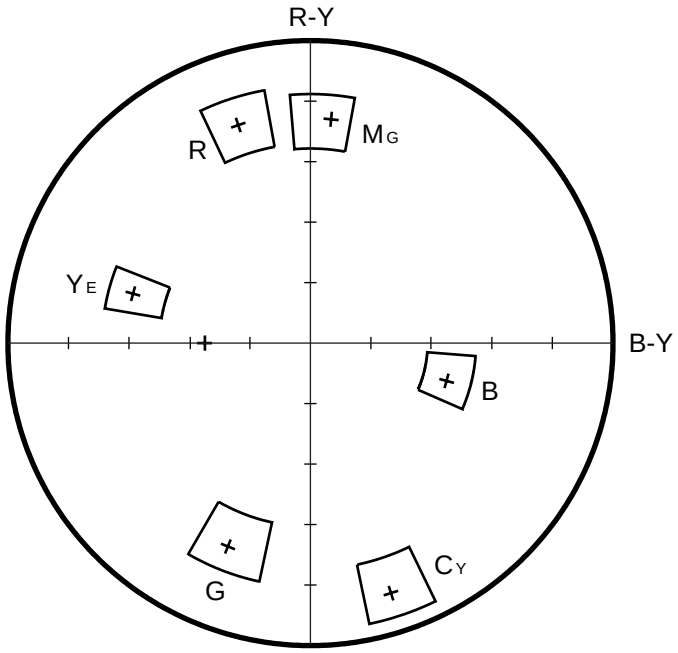



HVR-HD1000U/HD1000N

## FOR CAMERA COLOR REPRODUCTION ADJUSTMENT

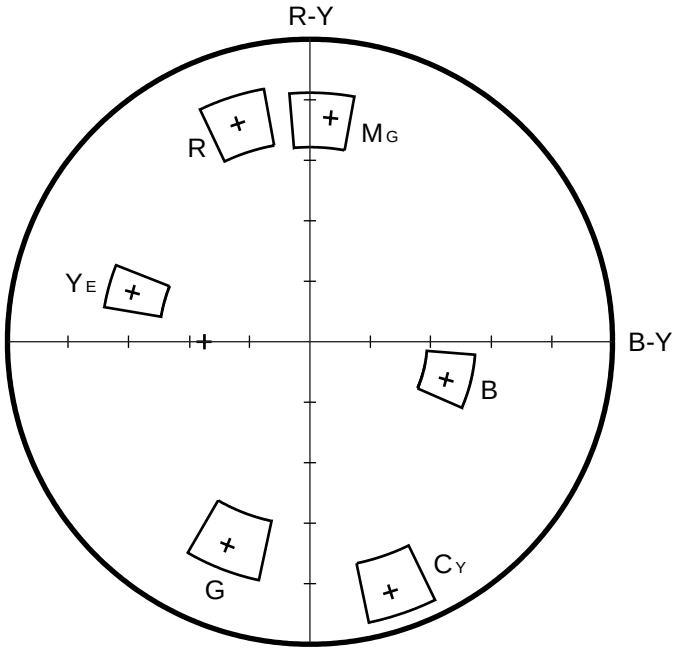
Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

**For Outdoor HD mode (NTSC model)**




HVR-HD1000U/HD1000N

**For Outdoor SD mode (NTSC model)**

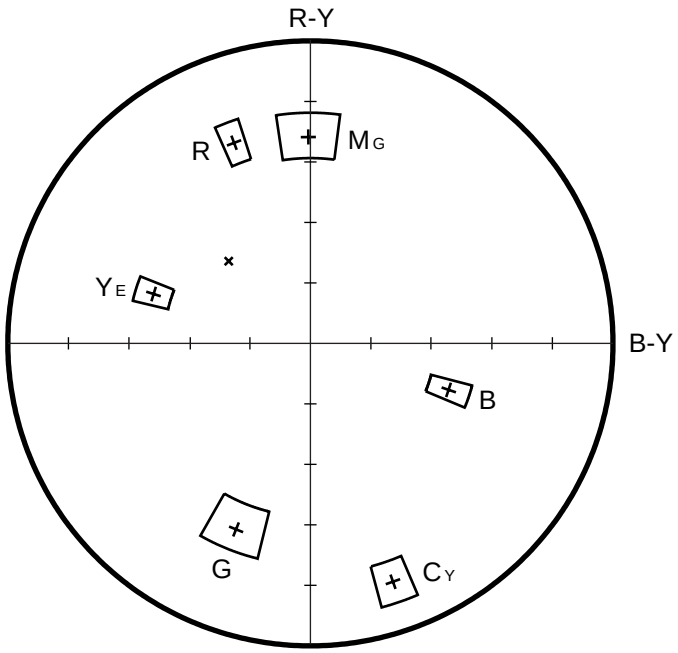



HVR-HD1000U/HD1000N

## FOR CAMERA COLOR REPRODUCTION ADJUSTMENT

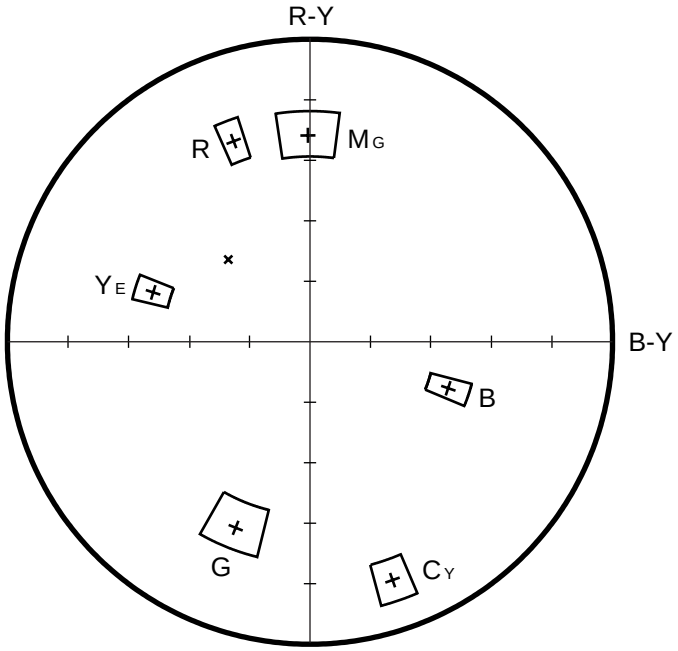
Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

**For Indoor HD mode (PAL model)**




HVR-HD1000E/HD1000P/HD1000C

**For Indoor SD mode (PAL model)**

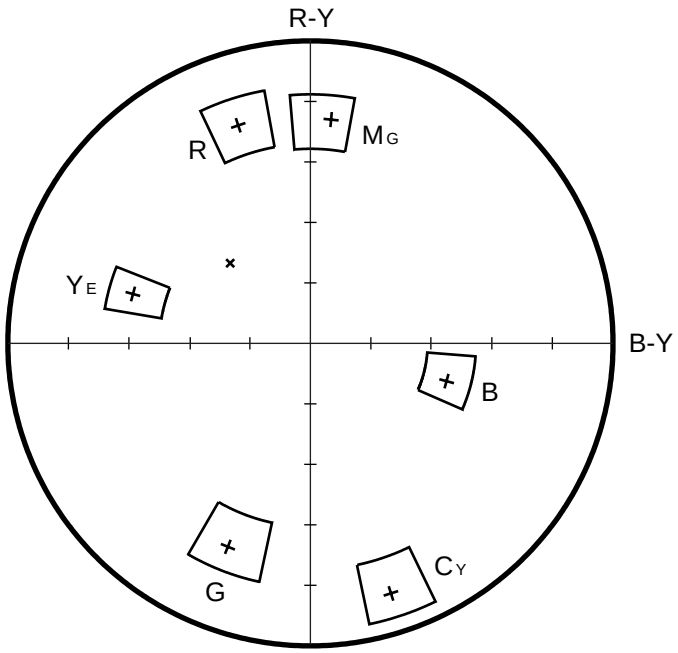



HVR-HD1000E/HD1000P/HD1000C

## FOR CAMERA COLOR REPRODUCTION ADJUSTMENT

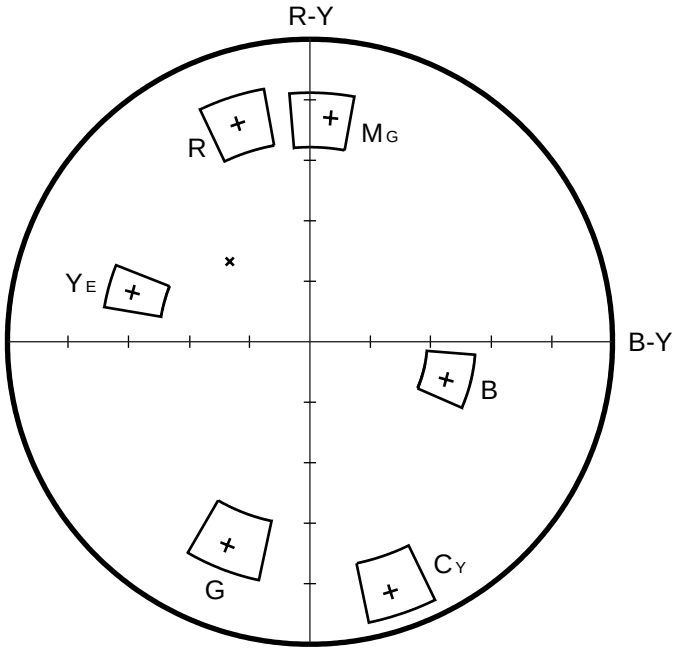
Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

**For Outdoor HD mode (PAL model)**




HVR-HD1000E/HD1000P/HD1000C

**For Outdoor SD mode (PAL model)**




HVR-HD1000E/HD1000P/HD1000C

SONY

3-279-638-**12**(1)

# *Digital HD Video Camera Recorder*

## Operating Guide

Before operating the unit, please read this manual thoroughly, and retain it for future reference

The supplied CD-ROM includes Operating Guide for the HVR-HD1000 series. (English, French, German, Italian, Spanish, and Simplified Chinese versions). For more details, see “Using the CD-ROM Manual” on page 17.

HDV HDV 1080i

Mini DV Digital Video Cassette

MEMORY STICK ™

InfoLITHIUM ™ L SERIES

HDMI

## *HVR-HD1000E/HD1000P*

© 2007 Sony Corporation

# Read this first

## English

Before operating the unit, please read this manual thoroughly, and retain it for future reference.

## WARNING

**To reduce fire or shock hazard, do not expose the unit to rain or moisture.**

## CAUTION

**Replace the battery with the specified type only. Otherwise, fire or injury may result.**

**Excessive sound pressure from earphones and headphones can cause hearing loss.**

**Do not expose the batteries to excessive heat such as sunshine, fire or the like.**

## Notice for customers in the United Kingdom

A moulded plug complying with BS 1363 is fitted to this equipment for your safety and convenience.

Should the fuse in the plug supplied need to be replaced, a fuse of the same rating as the supplied one and approved by ASTA or BSI to BS 1362 (i.e., marked with an ASTA or BSI mark) must be used.

If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the fuse cover, please contact your nearest Sony service station.

## FOR CUSTOMERS IN EUROPE

### ATTENTION

The electromagnetic fields at the specific frequencies may influence the picture and sound of this unit.

This product has been tested and found compliant with the limits set out in the EMC Directive forusing connection cables shorter than 3 meters (9.8 feet).

### Notice

If static electricity or electromagnetism causes data transfer to discontinue midway (fail), restart the application or disconnect and connect the communication cable (USB, etc.) again.

### Notice for the customers in the countries applying EU Directives

The manufacturer of this product is Sony Corporation, 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan. The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61,70327 Stuttgart, Germany. For any service or guarantee matters, please refer to the addresses given in separate service or guarantee documents.

### Disposal of Waste Electrical and Electronic Equipment for business use (Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable take-back scheme for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The recycling of materials will help to conserve natural resources. For more detailed information

about recycling of this product, please contact your local Sony office or visit Sony Europe's web site for business customers:

http://www.sonybiz.net/environment

### Disposal of waste batteries (applicable in the European Union and other European countries with separate collection systems)

This symbol on the battery or on the packaging indicates that the battery provided with this product shall not be treated as household waste.

By ensuring these batteries are disposed of correctly, you will help prevent potentially negative consequences for the environment and human health which could otherwise be caused by inappropriate waste handling of the battery. The recycling of the materials will help to conserve natural resources.

In case of products that for safety, performance or data integrity reasons require a permanent connection with an incorporated battery, this battery should be replaced by qualified service staff only.

To ensure that the battery will be treated properly, hand over the product at end-of-life to the applicable collection point for the recycling of electrical and electronic equipment.

For all other batteries, please view the section on how to remove the battery from the product safely. Hand the battery over to the applicable collection point for the recycling of waste batteries.

For more detailed information about recycling of this product or battery, please contact your local Civic Office, your household waste disposal service or the shop where you purchased the product.

## For the customers in the Nederland
## Voor de klanten in Nederland

### Verwijdering van oude batterijen (in de Europese Unie en andere Europese landen met afzonderlijke inzamelingssystemen)

Dit symbool op de batterij of verpakking wijst erop dat de meegeleverde batterij van dit product niet als huishoudelijk afval behandeld mag worden.

Door deze batterijen op juiste wijze af te voeren, voorkomt u voor mens en milieu negatieve gevolgen die zich zouden kunnen voordoen in geval van verkeerde afvalbehandeling. Het recycleren van materialen draagt bij tot het vrijwaren van natuurlijke bronnen.

In het geval dat de producten om redenen van veiligheid, prestaties dan wel in verband met data-integriteit een permanente verbinding met batterij vereisen, dient deze batterij enkel door gekwalificeerd servicepersoneel vervangen te worden. Om ervoor te zorgen dat de batterij op een juiste wijze zal worden behandeld, dient het product aan het eind van zijn levenscyclus overhandigd te worden aan het desbetreffende inzamelingspunt voor de recyclage van elektrisch en elektronisch materiaal.

Voor alle andere batterijen verwijzen we u naar het gedeelte over hoe de batterij veilig uit het product te verwijderen. Overhandig de batterij bij het desbetreffende inzamelingspunt voor de recyclage van batterijen.

Voor meer details in verband met het recyclen van dit product of batterij, neemt u contact op met de gemeentelijke instanties, het bedrijf of de dienst belast met de verwijdering van huishoudafval of de winkel waar u het product hebt gekocht.

## For customers in the U.S.A.

If you have any questions about this product, you may call:

Sony Customer Information Center 1-800-686 SONY (7669).

The number below is for the FCC related matters only.

### Regulatory Information

**Declaration of Conformity**

Trade Name: SONY

Model No.: HVR-HD1000P

Responsible Party: Sony Electronics Inc.

Address: 16530 Via Esprillo, San Diego, CA 92127 U.S.A

Telephone number: 858-942-2230

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

### Notes

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

– Reorient or relocate the receiving antenna.

– Increase the separation between the equipment and receiver.

– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

– Consult the dealer or an experienced radio/TV technician for help.

The supplied interface cable must be used with the equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

### Battery pack

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## Deutsch

## WARNUNG

**Um Feuer- oder Berührungsgefahr zu verringern, setzen Sie das Gerät weder Regen noch Feuchtigkeit aus.**

Ein zu großer Schalldruck von Ohrhörern oder Kopfhörern kann zu Hörverlusten führen.

Schützen Sie Akkus und Batterien vor übermäßiger Hitze, wie z. B. direktem Sonnenlicht, Feuer o. Ä.

**VORSICHT**

- Auch wenn der Camcorder ausgeschaltet ist, wird er immer noch mit Netzstrom versorgt, solange er über ein Netzteil an eine Netzsteckdose angeschlossen ist.

## ACHTUNG

- Schließen Sie das Netzteil an eine nahe gelegene Netzsteckdose an. Trennen Sie das Netzteil umgehend von der Netzsteckdose, wenn es beim Betrieb des Camcorders zu einer Fehlfunktion kommt.

## FÜR KUNDEN IN EUROPA

### ACHTUNG

Die elektromagnetischen Felder bei den speziellen Frequenzen können Bild und Ton dieses Gerätes beeinflussen.

Dieses Produkt wurde geprüft und erfüllt die EMV-Richtlinie, sofern Verbindungskabel mit einer Länge von weniger als 3 Metern verwendet werden.

### Hinweis

Wenn eine Datenübertragung aufgrund statischer oder elektromagnetischer Störeinflüsse abbricht (fehlschlägt), starten Sie die entsprechende Anwendung neu, oder entfernen Sie das USB-Kabel, und schließen Sie es wieder an.

- Verwenden Sie das Netzteil nicht, wenn nur wenig Platz vorhanden ist, z.B. zwischen einer Wand und Möbelstücken.

### Hinweis für Kunden in Ländern, in denen EU-Richtlinien gelten

Der Hersteller dieses Produkts ist Sony Corporation, 1-7-1 Konan Minato-ku Tokyo, 108-0075, Japan. Autorisierter Vertreter für EMV und Produktsicherheit ist die Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Deutschland. Für Fragen im Zusammenhang mit Kundendienst oder Garantie wenden Sie sich bitte an die in den separaten Kundendienst- oder Garantieunterlagen genannten Adressen.

## Entsorgung von als Industriemüll anfallenden elektrischen und elektronischen Geräten (anzuwenden in den Ländern der Europäischen Union und anderen europäischen Ländern mit einem separaten Sammelsystem für diese Geräte)

Das Symbol auf dem Produkt oder seiner Verpackung weist darauf hin, dass dieses Produkt nicht als normalerHaushaltsabfall zu behandeln ist, sondern im Rahmen des entsprechenden Rücknahmeprogramms für dasRecycling von elektrischen und elektronischen Geräten abgegeben werden muss. Durch Ihren Beitrag zumkorrekten Entsorgen dieses Produkts schützen Sie die Umwelt und die Gesundheit Ihrer Mitmenschen. Umwelt undGesundheit werden durch falsches Entsorgen gefährdet.

Materialrecycling hilft, den Verbrauch von Rohstoffen zuverringern. Weitere Informationen über das Recycling dieses Produkts erhalten Sie von der örtlichen Sony-Niederlassung oder auf der für Firmenkunden eingerichteten Website von Sony Europe:

http://www.sonybiz.net/environment

## Entsorgung von gebrauchten Batterien und Akkus (anzuwenden in den Ländern der Europäischen Union und anderen europäischen Ländern mit einem separaten Sammelsystem für diese Produkte)

Das Symbol auf der Batterie/dem Akku oder der Verpackung weist darauf hin, dass diese nicht als normaler Haushaltsabfall zu behandeln sind.

Durch Ihren Beitrag zum korrekten Entsorgen dieser Batterien/Akkus schützen Sie die Umwelt und die Gesundheit Ihrer Mitmenschen. Umwelt und Gesundheit werden durch falsches Entsorgen gefährdet. Materialrecycling hilft, den Verbrauch von Rohstoffen zu verringern.

Bei Produkten, die auf Grund ihrer Sicherheit, der Funktionalität oder als Sicherung vor

Datenverlust eine ständige Verbindung zur eingebauten Batterie benötigen, sollte die Batterie nur durch qualifiziertes Servicepersonal ausgetauscht werden.

Um sicherzustellen, dass die Batterie korrekt entsorgt wird, geben Sie das Produkt zwecks

Entsorgung an einer Annahmestelle für das Recycling von elektrischen und elektronischen

Geräten ab.

Für alle anderen Batterien entnehmen Sie die Batterie bitte entsprechend dem Kapitel über die sichere Entfernung der Batterie. Geben Sie die Batterie an einer Annahmestelle für das Recycling von Batterien/Akkus ab.

Weitere Informationen über das Recycling dieses Produkts oder der Batterie erhalten Sie von Ihrer Gemeinde, den kommunalen Entsorgungsbetrieben oder dem Geschäft, in dem Sie das Produkt gekauft haben.

## Für Kunden in Deutschland

Entsorgungshinweis: Bitte werfen Sie nur entladene Batterien in die Sammelboxen beim Handel oder den Kommunen.

Entladen sind Batterien in der Regel dann, wenn das Gerät abschaltet und signalisiert „Batterie leer“ oder nach längerer Gebrauchsdauer der Batterien „nicht mehr einwandfrei funktioniert“. Um sicherzugehen, kleben Sie die Batteriepole z.B. mit einem Klebestreifen ab oder geben Sie die Batterien einzeln in einen Plastikbeutel.

## Español

POR FAVOR LEA DETALLADAMENTE ESTE MANUAL DE INSTRUCCIONES ANTES DE CONECTAR Y OPERAR ESTE EQUIPO.

RECUERDE QUE UN MAL USO DE SU APARATO PODRÍA ANULAR LA GARANTÍA.

## AVISO

**Para reducir el riesgo de incendio o descarga eléctrica, no exponga la unidad a la lluvia ni a la humedad.**

Una presión acústica excesiva de los auriculares puede provocar pérdidas auditivas

No exponga las pilas a fuentes de calor excesivo como luz solar directa, fuego o similares.

**PRECAUCIÓN**

- Incluso con la videocámara desconectada, ésta seguirá recibiendo alimentación de ca (corriente) mientras esté conectada a la toma de pared mediante el adaptador de ca

## PRECAUCIÓN

- Utilice una toma de pared cercana al usar el adaptador de ca. Desconecte el adaptador de ca de la toma de pared inmediatamente si se produce algún fallo al utilizar la videocámara.

## PARA LOS CLIENTES DE EUROPA

### ATENCIÓN

Los campos electromagnéticos a frecuencias específicas podrán influir en la imagen y el sonido de esta unidad.

Este producto se ha probado y cumple con la normativa que establece la Directiva EMC si se utiliza un cable de conexión de menos de 3 metros de longitud.

### Aviso

Si la electricidad estática o el electromagnetismo interrumpen la transmisión de datos (fallo), reinicie la aplicación o desconecte el cable de comunicación (USB, etc.) y vuelva a conectarlo.

- No utilice el adaptador de ca en un lugar estrecho (por ejemplo, entre la pared y un mueble).

### Aviso para los clientes de países en los que se aplican las directivas de la UE

El fabricante de este producto es Sony Corporation, 1-7-1 Konan Minato-ku Tokyo, 108-0075, Japón. El representante autorizado en lo referente al cumplimiento de la directiva EMC y a la seguridad de los productos es Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Alemania. Para resolver cualquier asunto relacionado con el soporte técnico o la garantía, consulte las direcciones que se indican en los documentos de soporte técnico y garantía suministrados por separado.

## Tratamiento de equipos eléctricos y electrónicos de uso comercial al final de su vida útil (aplicable en la Unión Europea y en países europeos con sistemas de recogida selectiva de residuos)

Este símbolo en su equipo o su embalaje indica que el presente producto no puede ser tratado como residuos domésticos normales. En su lugar, deben entregarse conforme al correspondiente plan de recogida para el reciclaje de equipos eléctricos y electrónicos. Asegurándose de que este producto es desechado correctamente, Ud. ayuda a prevenir las consecuencias negativas para el medio ambiente y la salud humana que podrían derivarse de la incorrecta manipulación de este producto. El reciclaje de materiales ayuda a conservar las reservas naturales. Para obtener información detallada sobre el reciclaje de este producto,contacte con su oficina local de Sony o visite la página Web europea de Sony para empresas:

http://www.sonybiz.net/environment

## Tratamiento de las baterías al final de su vida útil (aplicable en la Unión Europea y en países europeos con sistemas de recogida selectiva de residuos)

Este símbolo en la batería o en el embalaje indica que la batería proporcionada con este producto no puede ser tratada como un residuo doméstico normal.

Al asegurarse de que estas baterías se desechan correctamente, Ud. ayuda a prevenir las consecuencias negativas para el medio ambiente y la salud humana que podrían derivarse de la incorrecta manipulación en el momento de deshacerse de la batería. El reciclaje de materiales ayuda a conservar los recursos naturales.

En el caso de productos que por razones de seguridad, rendimiento o mantenimiento de datos, sea necesaria una conexión permanente con la batería incorporada, esta batería solo deberá ser reemplazada por personal técnico cualificado para ello.

Para asegurarse de que la batería será tratada correctamente,entregue el producto al final de su vida útil en un punto de recogida para el reciclado de aparatos eléctricos y electrónicos.

Para las demás baterías,vea la sección donde se indica cómo quitar la batería del producto de forma segura. Deposite la batería en el correspondiente punto de recogida para el reciclado.

Para recibir información detallada sobre el reciclaje de este producto o de la batería, póngase en contacto con el ayuntamiento, el punto de recogida más cercano o el establecimiento donde ha adquirido el producto.

## Français

## AVERTISSEMENT

**Afin de réduire les risques d'incendie ou de décharge électrique, n'exposez pas cet appareil à la pluie ou à l'humidité.**

Une pression sonore excessive des écouteurs ou du casque peut provoquer des pertes d'audition.

N'exposez pas les piles à une chaleur excessive comme à la lumière du soleil, au feu ou à d'autres sources de chaleur.

**PRECAUTION**

- Même si votre caméscope est mis hors tension, l'appareil est toujours alimenté tant qu'il est raccordé à la prise secteur via l'adaptateur.

## ATTENTION

- Branchez l'adaptateur secteur sur la prise de courant la plus proche. Débranchez immédiatement l'adaptateur secteur de la prise de courant si un problème de fonctionnement se produit pendant l'utilisation du caméscope.

## POUR LES CLIENTS RESIDANT EN EUROPE

### ATTENTION

Le champ électromagnétique à des fréquences particulières peut avoir une incidence sur l'image et le son de cet appareil.

Cet appareil a été testé et jugé conforme aux limites établies par la directive EMC visant l'utilisation de câbles de connexion de moins de 3 mètres.

### Avis

Si l'électricité statique ou les champs électrostatiques entraînent une interruption lors du transfert des données (échec), redémarrez l'application ou débranchez, puis rebranchez le câble de connexion (USB, etc.).

- N'utilisez pas un adaptateur secteur suité dans un espace restreint, par exemple un mur et un meuble.

### Avis aux consommateurs des pays appliquant les Directives UE

Le fabricant de ce produit est Sony Corporation, 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japon. Le représentant agréé pour la compatibilité électromagnétique et la sécurité du produit est Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Allemagne. Pour toute question relative à la garantie ou aux réparations, reportez-vous à l'adresse que vous trouverez dans les documents ci-joints, relatifs à la garantie et aux réparations.

### Élimination des appareils électriques et électroniques professionnels en fin de vie (Applicable dans les pays de l'Union Européenne et aux autres pays européens disposant de systèmes de collecte sélective)

Ce symbole, apposé sur le produit ou son emballage, indique que ce produit ne doit pas être traité avec les déchets ménagers. Il doit être déposé dans un point de collecte spécialisé dans le recyclage des équipements électriques et électroniques. En s'assurant que ce produit est bien mis au rebut de manière appropriée, vous aiderez à prévenir les conséquences négatives potentielles pour l'environnement et la santé humaine. Le recyclage des matériaux aidera à conserver les ressources naturelles. Pour toute information supplémentaire concernant le recyclage de ce produit, contactez votre centre Sony local ou consultez le site web de Sony pour l'Europe destiné aux professionnels :

http://www.sonybiz.net/environment

### Elimination des piles et accumulateurs usagés (Applicable dans les pays de l'Union Européenne et aux autres pays européens disposant de systèmes de collecte sélective)

Ce symbole, apposé sur les piles et accumulateurs ou sur les emballages, indique que les piles et accumulateurs fournis avec ce produit ne doivent pas être traités comme de simples déchets

ménagers. En vous assurant que ces piles et accumulateurs sont mis au rebut de façon appropriée, vous participez activement à la prévention des conséquences négatives que leur mauvais traitement pourrait provoquer sur l'environnement et sur la santé humaine. Le recyclage des matériaux contribue par ailleurs à la préservation des ressources naturelles.

Pour les produits qui pour des raisons de sécurité, de performance ou d'intégrité de données nécessitent une connexion permanente à une pile ou à un accumulateur, il conviendra de vous rapprocher d'un service technique qualifié pour effectuer son remplacement.

En rapportant votre appareil électrique en fin de vie à un point de collecte approprié vous vous assurez que la pile ou l'accumulateur incorporé sera traitée correctement.

Pour tous les autres cas de figure et afin d'enlever les piles ou accumulateurs en toute sécurité de votre appareil, reportez-vous au manuel d'utilisation. Rapporter les piles ou accumulateurs usagés au point de collecte approprié pour le recyclage.

Pour toute information complémentaire au sujet du recyclage de ce produit ou des piles et accumulateurs, vous pouvez contacter votre municipalité, votre déchetterie locale ou le point de vente où vous avez acheté ce produit.

## Italiano

## AVVERTENZA

**Per ridurre il pericolo di incendi o scosse elettriche, non esporre l'apparecchio alla pioggia o all'umidità.**

È possibile che un'eccessiva pressione audio emessa dagli auricolari e dalle cuffie causi la perdita dell'udito.

Non esporre le pile a fonti di calore eccessivo, quali luce solare, fuoco o simili.

**PRECAUZIONE**

- Anche se disattivata, la videocamera continua a ricevere alimentazione CA (corrente domestica) fintanto che rimane collegata ad una presa di rete mediante l'alimentatore CA.

## AVVERTENZA

- Collegare l'alimentatore CA alla presa di rete più vicina. In caso di problemi di funzionamento durante l'uso della videocamera, scollegare immediatamente l'alimentatore CA dalla presa di rete.

## PER I CLIENTI IN EUROPA

### ATTENZIONE

Il campo elettromagnetico alle frequenze specifiche può influenzare l'immagine e il suono di questa unità.

Il presente prodotto è stato testato ed è risultato conforme ai limiti stabiliti dalla Direttiva EMC relativa all'uso dei cavi di collegamento di lunghezza inferiore a 3 metri.

### Nota

Se l'elettricità statica o interferenze magnetiche causano l'interruzione del trasferimento dei dati, che pertanto non avviene, è necessario riavviare l'applicazione oppure scollegare, quindi ricollegare il cavo.

- Non posizionare l'alimentatore CA in spazi ristretti, ad esempio tra un muro e un mobile.

## Avviso per i clienti residenti nei paesi che applicano le direttive UE

Questo prodotto è realizzato da Sony Corporation, 1-7-1 Konan Minato-ku Tokyo, 108-0075 Giappone. Il Rappresentante autorizzato per la conformità alle direttive EMC e per la sicurezza dei prodotti è Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germania. Per qualsiasi questione relativa all'assistenza o alla garanzia, consultare gli indirizzi forniti a parte nei relativi documenti.

## Smaltimento del dispositivo elettrico ed elettronico per uso aziendale a fine vita (applicabile in tutti i paesi dell'Unione Europea e in quelli con sistema di raccolta differenziata)

Questo simbolo sul prodotto o sulla confezione indica che il prodotto non deve essere considerato come un normale rifiuto domestico, ma deve essere consegnato presso il centro di raccolta appropriato per il riciclaggio di apparecchiature elettriche ed elettroniche. Assicurandovi che questo prodotto sia smaltito correttamente, voi contribuirete a prevenire potenziali conseguenze negative per l'ambiente e per la salute che potrebbero altrimenti essere causate dal suo smaltimento inadeguato. Il riciclaggio dei materiali aiuta a conservare le risorse naturali. Per ulteriori informazioni sul riciclaggio di questo prodotto, contattare l'ufficio Sony locale oppure visitare il sito Web europeo di Sony per i clienti aziendali all'indirizzo:

http://www.sonybiz.net/environment

## Trattamento delle pile esauste (applicabile in tutti i paesi dell'Unione Europea e in altri paesi Europei con sistema di raccolta differenziata)

Questo simbolo sul prodotto o sulla confezione indica che la pila non deve essere considerata un normale rifiuto domestico.

Assicurandovi che le pile siano smaltite correttamente, contribuirete a prevenire potenziali conseguenze negative per l'ambiente e per la salute che potrebbero altrimenti essere causate dal loro inadeguato smaltimento.

Il riciclaggio dei materiali aiuta a conservare le risorse naturali.

In caso di prodotti che per motivi di sicurezza, prestazione o protezione dei dati richiedano un collegamento fisso ad una pila interna, la stessa dovrà essere sostituita solo da personale di assistenza qualificato.

Consegnare il prodotto a fine vita al punto di raccolta idoneo allo smaltimento di apparecchiature elettriche ed elettroniche; questo assicura che anche la pila al suo interno venga trattata correttamente.

Per le altre pile consultate la sezione relativa alla rimozione sicura delle pile. Conferire le pile esauste presso i punti di raccolta indicati per il riciclo.

Per informazioni più dettagliate circa lo smaltimento della pila esausta o del prodotto, potete contattare il Comune, il servizio locale di smaltimento rifiuti oppure il negozio dove l'avete acquistato.

## Notes on use

### Type of cassette you can use in your camcorder

You can use mini DV cassettes marked with Mini DV. Your camcorder is not compatible with the Cassette Memory function (p. 95).

### The HDV standards

- Digital high-definition (HD) video signals are recorded and played back on a DV format cassette.
- HDV signals are compressed in MPEG2 format, which is adopted in BS (broadcast satellite) digital and terrestrial digital HDTV broadcastings and in Blu-ray disc recorders.

### Types of "Memory Stick" you can use in your camcorder

You can use "Memory Stick" marked with the following (p. 96).

– MEMORY STICK DUO ("Memory Stick Duo")
– MEMORY STICK PRO DUO ("Memory Stick PRO Duo")
– MEMORY STICK PRO-HG DUO ("Memory Stick PRO-HG Duo").

"Memory Stick Duo"
(This size can be used with your camcorder.)

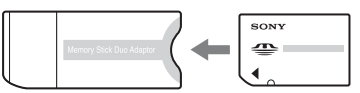
"Memory Stick"
(You cannot use with your camcorder.)

- You cannot use any type of memory card except "Memory Stick Duo."
- "Memory Stick PRO Duo" can be used only with "Memory Stick PRO" compatible equipment.
- Do not attach a label or the like on a "Memory Stick Duo" or a Memory Stick Duo adaptor.

### When using a "Memory Stick Duo" with "Memory Stick" compatible equipment

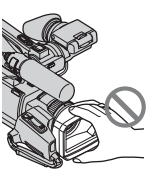
Be sure to insert the "Memory Stick Duo" into the Memory Stick Duo Adaptor.

Memory Stick Duo Adaptor

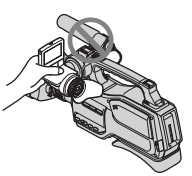



### Using the camcorder

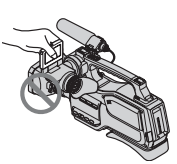
- Do not hold the camcorder by the following parts.



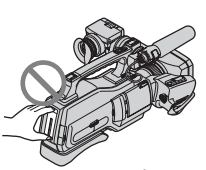
Lens hood



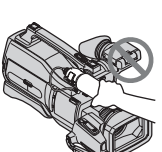
panel EVF block



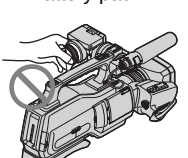
LCD panel



Battery pack



Microphone

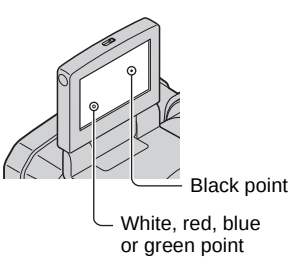


Viewfinder

- The camcorder is not dustproof, dripproof or waterproof.
  See “On using your camcorder” (p. 100).
- When connecting your camcorder to another device with communication cables, be sure to insert the connector plug in the correct way. Pushing the plug forcibly into the terminal will damage the terminal and may result in a malfunction of your camcorder.

### About menu items, LCD panel, viewfinder, and lens

- A menu item that is grayed out is not available under the current recording or playback conditions.
- The LCD screen and the viewfinder are manufactured using extremely high-precision technology, so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue, or green in color) that appear constantly on the LCD screen and the viewfinder. These points are normal results of the manufacturing process and do not affect the recording in any way.




- Exposing the LCD screen, the viewfinder, or the lens to direct sunlight for long periods of time may cause malfunctions.
- Do not aim at the sun. Doing so might cause your camcorder to malfunction. Take pictures of the sun only in low light conditions, such as at dusk.

### About changing the language setting

The on-screen displays in each local language are used for illustrating the operating procedures. Change the screen language before using your camcorder if necessary (p. 24).

### On recording

- Before starting to record, test the recording function to make sure the picture and sound are recorded without any problems.
- Compensation for the contents of recordings cannot be provided, even if recording or playback is not possible due to a malfunction of the camcorder, storage media, etc.
- TV color systems differ depending on the country/region. To view your recordings on a TV, you need a PAL system-based TV.
- Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the copyright laws.

### On playing back HDV tapes on other devices

You cannot play back a tape recorded in the HDV format on DV format video cameras or on mini DV players (The screen appears blue).
Check the contents of tapes by playing them back on this camcorder prior to playing them back on other devices.

### Notes on the icons used in this manual

HDV1080i Features available for the HDV format only.

DV Features available for the DV format only.

### About this manual

- The images of the LCD screen and the viewfinder used in this manual for

illustration purposes are captured using a digital still camera, and therefore may appear different.

- Design and specifications of recording media and other accessories are subject to change without notice.

## About the Carl Zeiss lens

Your camcorder is equipped with a Carl Zeiss lens, which was developed jointly by Carl Zeiss, in Germany, and Sony Corporation, and produces superior images. It adopts the MTF measurement system for video cameras and offers a quality typical of a Carl Zeiss lens. Also, the lens for your camcorder is T*-coated to suppress unwanted reflections and faithfully reproduce colors.
MTF= Modulation Transfer Function
The number value indicates the amount of light from a subject coming into the lens.

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# Using the CD-ROM Manual

The supplied CD-ROM includes versions of the Operating Guide for the HVR-HD1000E/HD1000P series in English, French, German, Italian, Spanish, and Simplified Chinese in PDF format.

## Preparation

The following program must be installed on your computer in order to read the Operating Guide contained on the CD-ROM.

• Adobe Reader Version 7.0 or higher

**Tips**

• If Adobe Reader is not installed, you can download it from the following URL:
http://www.adobe.com/

Adobe and Adobe Reader are trademarks of Adobe Systems Incorporated in the United States and/or other countries.

## Reading the CD-ROM Manual

To read the Operating Guide contained on the CD-ROM, do the following.

**1 Insert the CD-ROM in your CD-ROM drive.**

A cover page appears automatically in your browser.

If it does not appear automatically in the browser, double-click on the index.htm file on the CD-ROM.

**2 Select and click on the Operating Guide that you want to read.**

This opens the PDF file of the Operating Guide.

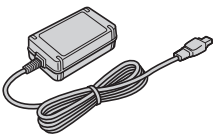
**Tips**

• The files may not be displayed properly, depending on the version of Acrobat Reader. In such a case, install the latest version you can download from the URL mentioned in “Preparation” above.

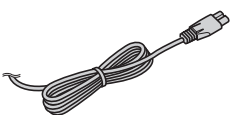
# Step 1: Checking supplied items

Make sure that you have following items supplied with your camcorder.
The number in the parentheses indicates the number of that item supplied.

AC Adaptor (1) (p. 21)

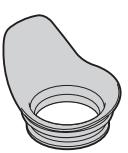


Power cord (mains lead) (1) (p. 21)

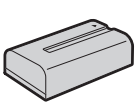


A/V connecting cable (1) (p. 37, 68)

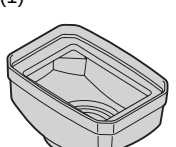
Eye cup (1)



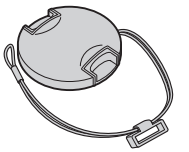
Rechargeable battery pack NP-F570 (1) (p. 21, 98)



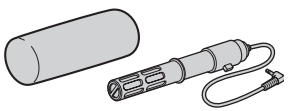
Lens hood (1)



Lens cap (1)



Wind screen (1) (p. 19)
Microphone (1) (p. 19)

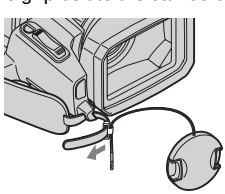


CD-ROM
"Manuals for Digital HD Video Camera Recorder"(1)

Operating Guide (This manual) (1)

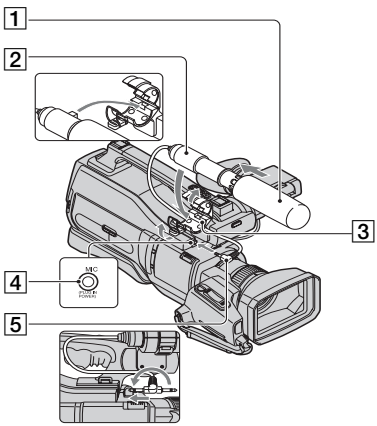
**To attach the lens cap to the grip belt**

Remove the grip belt and attach the lens cap by leading the grip belt through the attachment on the lens cap string. Then attach the grip belt to the camcorder again.



# Step 2: Attaching the supplied microphone, eyecup and the lens hood

## Attaching the supplied microphone




**1** **Attach the wind screen 1 to the microphone 2.**

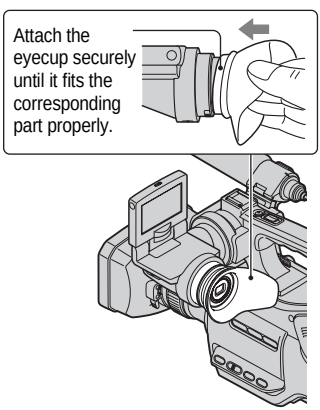
**2** **Unlock the stopper of the microphone holder 3 and open the cover.**

**3** **Align the convex part of the microphone with the concave part of the holder, then place the microphone into the holder. Close the cover and lock the stopper securely.**
**Be sure to align the ▲ mark on the microphone and the I mark on the holder facing each other.**

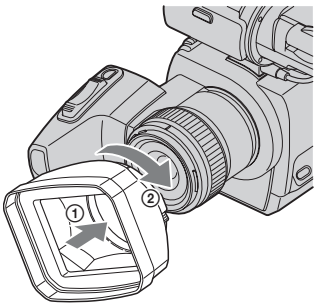
**4** **Turn the plug of the microphone counter-clockwise to 180 degrees in the direction of the arrow 5, and connect it to the Mic jack 4.**

## Attaching the eyecup

Attach the eyecup aligned with the eyecup groove in the viewfinder. You can attach the eyecup facing either the right or left side.

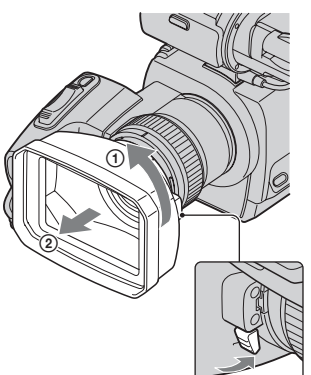


## Attaching the lens hood




**Align the marks on the lens hood to those on the camcorder, and turn the lens hood in the direction of the arrow.**

### To remove the Lens hood



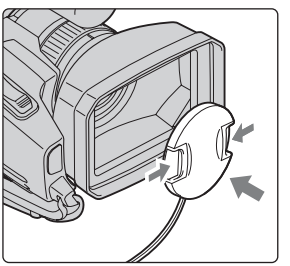

Turn the lens hood cover in the opposite direction of the arrow as illustrated above while pressing the lever on the lens hood cover.

**Tips**

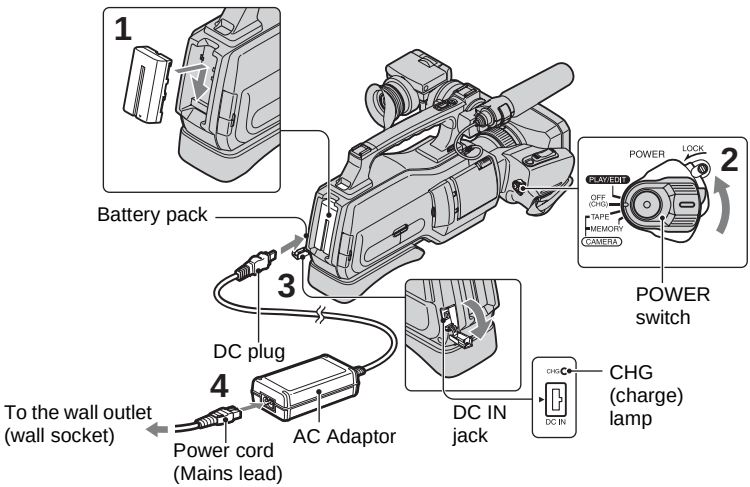
- If you attach, remove or adjust an 37mm (2 1/2in.) PL filter or MC protector, remove the lens hood.

### Attaching the lens cap

Attach the lens cap by pressing both knobs on its sides.



# Step 3: Charging the battery pack




**You can charge the "InfoLITHIUM" battery pack (L series) (p. 98) after attaching it to your camcorder.**

**Notes**

- You cannot attach any "InfoLITHIUM" battery pack other than the L series to your camcorder.

## 1 Attach the battery pack to your camcorder.

Attach the battery pack by sliding it in the direction of the arrow while pressing it until it clicks.

## 2 Slide the POWER switch to OFF (CHG).

## 3 Connect the AC Adaptor to the DC IN jack of your camcorder. Be sure that the ▲ mark on the DC plug is facing to the ▲ mark on your camcorder.

## 4 Connect the power cord (mains lead) to the AC Adaptor and the wall outlet (wall socket).

The CHG (charge) lamp lights up and charging starts. The CHG (charge) lamp turns off when the battery is fully charged.

**Notes**

- Disconnect the AC Adaptor from the DC IN jack holding both the camcorder and the DC plug.

**Tips**

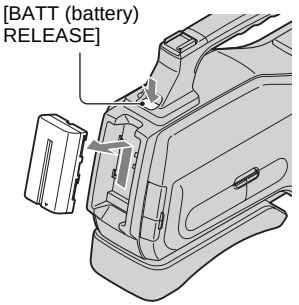
- You can operate your camcorder connected to a power source such as a wall outlet (wall socket) as shown in the illustration. The battery pack will not lose its charge in this case.



*Continued* ➡

### To remove the battery pack

Slide the POWER switch to OFF (CHG). Push the [BATT (battery) RELEASE] button and remove the battery pack.

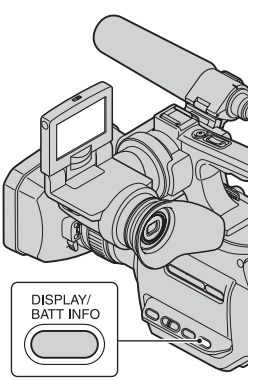



### When storing the battery pack

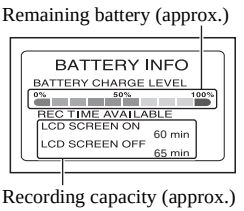
Fully discharge the battery before storing it for an extended period (p. 98).

### To check the remaining battery (Battery Info)

Set the POWER switch to OFF (CHG), then press DISPLAY/BATT INFO.




After a while, the approximate recordable time and battery information appear for about 7 seconds. You can view the battery information for up to 20 seconds by pressing DISPLAY/BATT INFO again while the information is displayed.




You can check the remaining battery charge on the LCD screen.

| Indicator | Status |
|---|---|
| | Sufficient power remaining |
| | Battery low, recording/ playback will stop soon. |
| | Replace the battery with a fully charged one, or charge the battery. |

### Charging time

Approximate time (min.) required when you fully charge a fully discharged battery pack.

| Battery pack | Charging time |
|---|---|
| NP-F570 (supplied) | 260 |
| NP-F770 | 450 |
| NP-F970 | 630 |

### Recording time

Approximate time (min.) available when you use a fully charged battery pack.

| Battery pack | Continuous recording time | | Typical recording time* | |
|---|---|---|---|---|
| Recording Format | HDV | DV | HDV | DV |
| NP-F570 (supplied) | 190 | 200 | 100 | 110 |
| | 205 | 220 | 110 | 125 |
| NP-F770 | 390 | 410 | 210 | 230 |
| | 425 | 445 | 225 | 250 |

| Battery pack | Continuous recording time | | Typical recording time* | |
|---|---|---|---|---|
| Recording Format | HDV | DV | HDV | DV |
| NP-F970 | 580 | 605 | 310 | 340 |
| | 630 | 660 | 340 | 375 |

* Typical recording time shows the time when you repeat recording start/stop, turning the power on/off and zooming.

### Notes

- All times measured under the following conditions:

  Top: When the LCD turns on.

  Bottom: Recording with the viewfinder while the LCD turns off.
- You cannot turn off the viewfinder.

## Playing time

Approximate time (min.) available when you use a fully charged battery pack.

| Battery pack | LCD panel on | | LCD panel off | |
|---|---|---|---|---|
| Recorded Format | HDV | DV | HDV | DV |
| NP-F570 (supplied) | 260 | 280 | 295 | 315 |
| NP-F770 | 540 | 570 | 605 | 650 |
| NP-F970 | 780 | 830 | 890 | 950 |

#### On the battery pack

- Before changing the battery pack, slide the POWER switch to OFF (CHG).
- The CHG (charge) lamp flashes during charging, or Battery Info (p. 22) will not be correctly displayed under the following conditions.
  - The battery pack is not attached correctly.
  - The battery pack is damaged.
  - The battery pack is worn-out (for Battery Info only).
- The power will not be supplied from the battery as long as the AC Adaptor is connected to the DC IN jack of your camcorder, even when the power cord (mains lead) is disconnected from the wall outlet (wall socket).

#### On the charging/recording/playback time

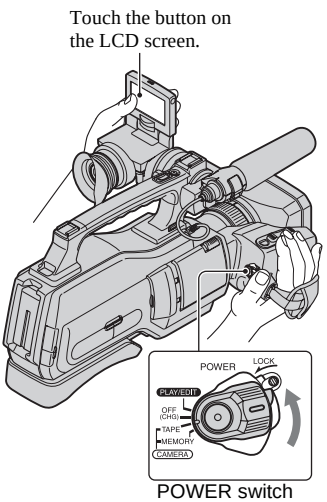
- Times measured with the camcorder at 25 °C (77 °F) (10 to 30 °C (50 °F to 86 °F) is recommended).
- The recording and playback time will be shorter when you use your camcorder in low temperatures.
- The recording and playback time will be shorter depending on the conditions under which you use your camcorder.

#### On the AC Adaptor

- Use the nearby wall outlet when using the AC Adaptor. Disconnect the AC Adaptor from the wall outlet immediately if any malfunction occurs while using your camcorder.
- Do not use the AC Adaptor placed in a narrow space, such as between a wall and furniture.
- Do not short-circuit the DC plug of the AC Adaptor or battery terminal with any metallic objects. This may cause a malfunction.
- Even if your camcorder is turned off, AC power (house current) is still supplied to it while connected to the wall outlet via the AC Adaptor.

# Step 4: Turning the power on and setting the date and time

Set the date and time when using this camcorder for the first time. If you do not set the date and time, the [CLOCK SET] screen appears every time you turn on your camcorder or change the POWER switch position.

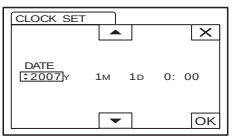


POWER switch

**1 Slide the POWER switch to TAPE or MEMORY while pressing the green button.**

**TAPE:** To record on a tape.
**MEMORY:** To record on a "Memory Stick Duo."
**PLAY/EDIT:** To play or edit pictures.

The [CLOCK SET] screen appears.




**2 Set [Y] (year) with [▲]/[▼], then touch [OK].**

You can set any year up to the year 2079.

**3 Set [M] (month), then touch [OK] and repeat for [D] (day), hour and minute.**

The clock starts.

### To turn off the power

Slide the POWER switch to OFF (CHG).

### To reset the date and time

You can set the desired date and time by touching [P-MENU] → [MENU] → (TIME/LANGU.) → [CLOCK SET] (p. 42).

#### Notes

- If you do not use your camcorder for **about 3 months**, the built-in rechargeable battery gets discharged and the date and time settings may be cleared from the memory. In that case, charge the rechargeable battery and then set the date and time again (p. 103).

#### Tips

- The date and time are not displayed while recording, but they are automatically recorded on the tape, and can be displayed during playback (see page 64 for [DATA CODE]).
- If the buttons on the touch panel do not work correctly, adjust the touch panel (CALIBRATION) (p. 102).

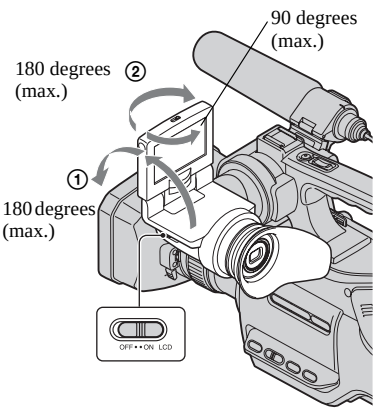
## Changing the language setting

You can change the on-screen displays to show messages in a specified language. Touch [P-MENU] → [MENU] → (TIME/LANGU.) → [LANGUAGE], then select the desired language.

# Step 5: Making setting adjustments before recording

## The LCD panel

Open the LCD panel (①), then rotate it to the best angle to record or play (②).




### To turn off the LCD screen

Set the LCD ON/OFF switch to OFF. This helps to make the battery last longer. The recorded picture will not be affected by the setting. To turn on the LCD screen, set the LCD ON/OFF switch to ON.

**Notes**

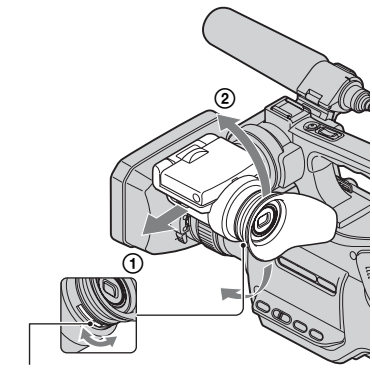
- When the LCD ON/OFF switch is set to OFF, you cannot operate the touch panel.

**Tips**

- If you rotate the LCD panel 180 degrees to the lens side, you can close the LCD panel with the LCD screen facing out. This is convenient during playback operations.
- See [LCD/VF SET] - [LCD BRIGHT] (p. 61) to adjust the brightness of the LCD screen.
- Press DISPLAY/BATT INFO to toggle the screen indicators (such as Battery Info) on or off.

## The viewfinder

Pull out the LCD panel block to adjust the position (①), and rotate the viewfinder to the best angle (②).
You can view pictures using the viewfinder to avoid wearing down the battery, or when the picture seen on the LCD screen is poor.

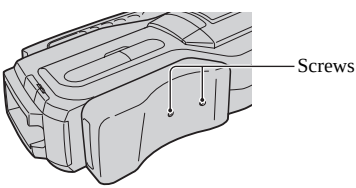



**Tips**

- You can adjust the brightness of the viewfinder backlight by selecting [LCD/VF SET] - [VF B.LIGHT] (p. 61).

## The shoulder pad

You can adjust the position of the shoulder pad by loosen the screws illustrated below. Tighten the screws again after adjustment.



# Step 6: Inserting a tape or a “Memory Stick Duo”

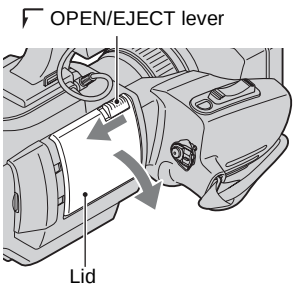
## Cassette tape

You can use mini DV Mini DV cassettes only (p. 95).

**Notes**

- The recordable time varies depending on [REC MODE] (p. 60). DV

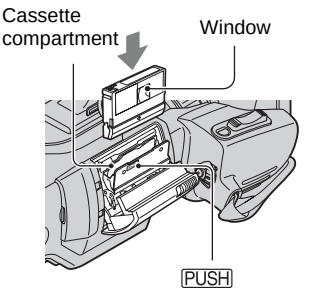
**1 Slide and hold the OPEN/EJECT lever in the direction of the arrow and open the lid.**




The cassette compartment automatically comes out and opens up.

**2 Insert a cassette with its window facing outwards, then press PUSH.**

Push the center of the back of the cassette lightly.




**The cassette compartment automatically slides back in.**

**3 Close the lid.**

### To eject the cassette

Open the lid following the same procedure as described in step **1** and remove the cassette.

**Notes**

- **Do not force the cassette compartment closed by pressing the portion marked DO NOT PUSH while it is sliding in. It may cause a malfunction.**

## “Memory Stick Duo”

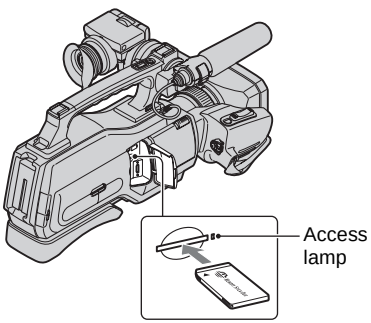
You can use only a “Memory Stick Duo” marked with MEMORY STICK DUO or MEMORY STICK PRO DUO (p. 96).

**Tips**

- The number and time of recordable pictures vary depending on the image quality or the image size. For details, see page 52.

**1** **Open the jack cover.**

**2** **Insert the “Memory Stick Duo” into the “Memory Stick Duo” slot in the right direction until it clicks.**



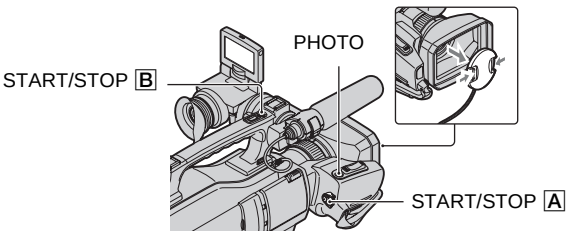

### To eject a “Memory Stick Duo”

Lightly push the “Memory Stick Duo” in once.

#### Notes

- When the access lamp is lit or flashing, your camcorder is reading/writing data. Do not shake or knock your camcorder, turn the power off, eject the “Memory Stick Duo,” or remove the battery pack. Otherwise, image data may be damaged.
- If you force the “Memory Stick Duo” into the slot in the wrong direction, the “Memory Stick Duo,” the “Memory Stick Duo” slot, or image data may be damaged.
- When inserting or ejecting the “Memory Stick Duo,” be careful that the “Memory Stick Duo” does not pop out and drop.

# Recording



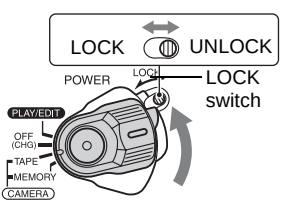

## Recording movies

Movies are recorded on a tape.

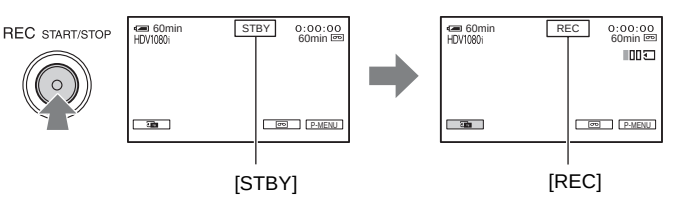
**1** **Remove the lens cap by pressing both knobs on its sides.**

**2** **Slide the POWER switch to TAPE while pressing the green button.**

**Note on the LOCK switch**
When you slide the LOCK switch to the lock position (the POWER switch side), the POWER switch can no longer be set to MEMORY accidentally. (The LOCK switch is set to the unlock position at the time of purchase.)




**3** **Press START/STOP A (or B).**




To stop recording, press START/STOP again.

**Tips**

- The pictures are recorded in the HDV format in the default setting (p. 60).

### To record high quality still images during tape recording (Dual Rec)

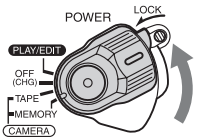
See page 30 for details.

## Recording still images

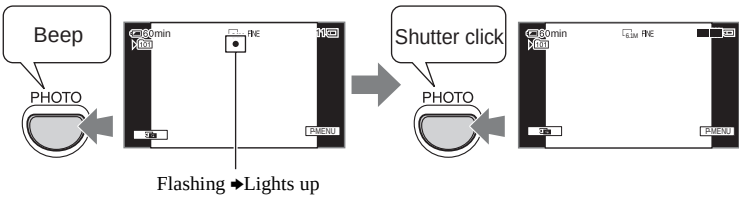
Still images are recorded on the “Memory Stick Duo.”

**1** **Remove the lens cap by pressing both knobs on its sides.**

**2** **Slide the POWER switch to MEMORY while pressing the green button.**




**3** **Press and hold PHOTO lightly to adjust the focus, then press it fully to record.**




A shutter sound is heard. When ||||||| disappears, the image has been recorded.

### To check the latest recording on a “Memory Stick Duo”

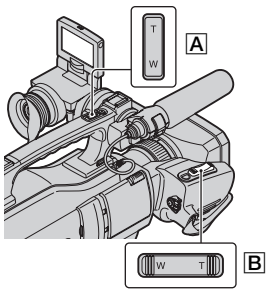
Touch [▶]. To delete the picture, touch [🗑] ⟶ [YES].

**Tips**

- See page 52 for the image quality, image size and the number of recordable pictures.

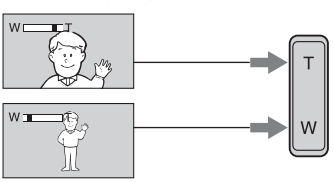
## Zooming

You can magnify images to 10 times the original size with the power zoom lever.




Power zoom lever

**Close view:** (Telephoto)




**Wider range of view:**
(Wide angle)

Move the power zoom lever B slightly for a slower zoom. Move it further for a faster zoom.

### Notes

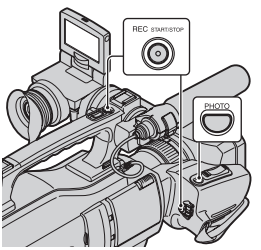
- Be sure to keep your finger on the power zoom lever. If you move your finger off the power zoom lever, the operation sound of the power zoom lever may also be recorded.
- You can not change the zoom speed of the zoom lever A on the handdle.
- The minimum possible distance between camcorder and subject while maintaining sharp focus is about 1 cm (about 13/32 in.) for wide angle and about 80 cm (about 2 5/8 feet) for telephoto.

### Tips

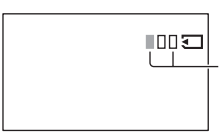
- You can set [DIGITAL ZOOM] (p. 50) if you want to zoom to a level greater than 10 ×.
- You can also adjust the setting manually using the RING (p. 31).

## Recording high quality still images during tape recording (Dual Rec)

You can record high quality still images on the “Memory Stick Duo” during tape recording.




① Slide the POWER switch to TAPE, then press START/STOP to start tape recording.
② Press PHOTO fully.
For each separate time tape recording, up to 3 still images can be recorded.



Orange color boxes indicate the number of recorded images. When recording is finished, the color changes to orange.

③ Press START/STOP to stop tape recording.
Stored still images appear one by one, and the images are stored onto the “Memory Stick Duo.” When ▮▮▮▮▮▮▮ disappears, the image has been recorded.

### Notes

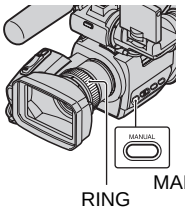
- Do not eject the “Memory Stick Duo” before tape recording is finished and the still images are stored on the “Memory Stick Duo.”

### Tips

- During the standby mode, still images will be stored in the same way as when the POWER switch is set to MEMORY.
- When the POWER switch is set to TAPE, still images will be recorded at image size 4.6M in the HDV format, 3.4M (4:3) or 4.6M (16:9) in the DV format.

## Controlling the image settings manually with the RING

It is useful to assign a frequently used menu item to the RING.
The following is an example of the procedure when the [FOCUS] setting is assigned (the default setting).



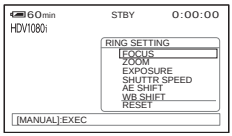

① Press the MANUAL button to activate the manual adjustment mode.
The setting mode switches between automatic and manual every time you press the MANUAL button.
② Rotate the RING to adjust the focus manually.

### Menu items that can be assigned

– [FOCUS] (p. 48)
– [ZOOM] (p. 30)
– [EXPOSURE] (p. 46)
– [SHUTTR SPEED] (p. 47)
– [AE SHIFT] (p. 47)
– [WB SHIFT] (p. 48)

### To assign the menu items to the RING

① Press and hold the MANUAL button for several seconds.
The [RING SETTING] screen appears.




② Rotate the RING and select a menu item to be assigned.
③ Press the MANUAL button.

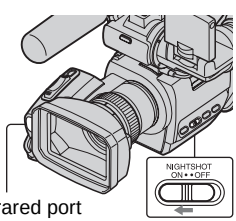
### Notes

- The menu item settings done before will be retained even if you set other menu item settings after that. If [EXPOSURE] is set after [AE SHIFT] is set manually, [EXPOSURE] will override [AE SHIFT].
- If you select [RESET] in step ②, all the settings set manually return to the default setting.

### Tips

- During playback, you can adjust the volume using the RING.
- You can also assign menu items using [RING SETTING] (p. 51).

## Recording in dark places (NightShot)




Set the NIGHTSHOT switch to ON ( and [“NIGHTSHOT”] appear).

### Notes

- The NightShot and Super NightShot functions use infrared light. Therefore, do not cover the infrared port with your fingers or other objects and remove the conversion lens (optional).
- Adjust the focus manually ([FOCUS], p. 48) when it is hard to focus automatically.
- Do not use these functions in bright places. This may cause a malfunction.

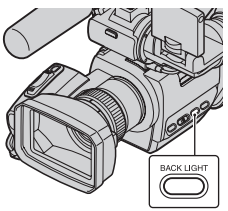


Continued ➡

**Tips**

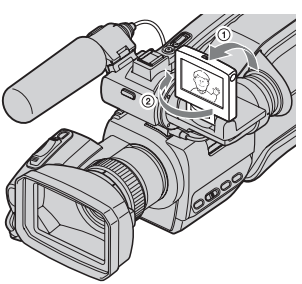
- To record an image brighter, use Super NightShot function (p. 49). To record an image more faithful to the original colors, use Color Slow Shutter function (p. 49).

## Adjusting the exposure for backlit subjects




To adjust the exposure for backlit subjects, press BACK LIGHT to display . To cancel the back light function, press BACK LIGHT again.

## Recording in mirror mode



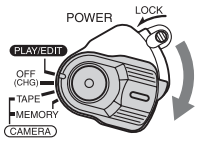

Open the LCD panel 90 degrees to the camcorder (①), then rotate it 180 degrees to the lens side (②).

**Tips**

- A mirror-image of the subject appears on the LCD screen, but the picture will be normal when recorded.

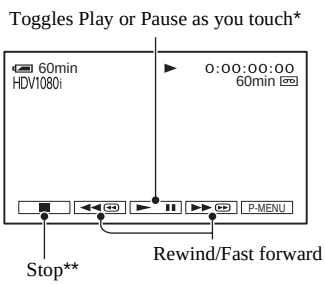
# Playback

**Slide the POWER switch to PLAY/EDIT while pressing the green button.**




## Playing movies

**Touch ◄◄ to rewind to the desired scene, then touch ►II to start playback.**




* Playback automatically stops if pause is engaged for more than 3 minutes.

** MEMORY is displayed instead of ■ when a "Memory Stick Duo" with recorded images is inserted and a tape is not being played.

### To adjust the sound volume

Touch P-MENU → [VOLUME], then − / + to adjust the volume.

**Tips**

- If you cannot find [VOLUME] in P-MENU, touch [MENU] → (STANDARD SET) → [VOLUME] (p. 61).

### To search for a scene during playback

Touch and hold ►►/◄◄ during playback (Picture Search), or ►►/◄◄ while fast forwarding or rewinding the tape (Skip Scan).

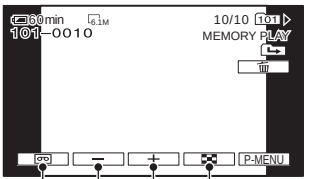
**Tips**

- You can play back in various modes ([VAR.SPD PB], p. 58).

## Viewing still images

### Touch MEMORY.

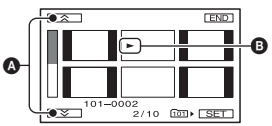
The most recently recorded image is displayed.




* MEMORY is displayed on the tape playback screen.

### To display pictures on a "Memory Stick Duo" on the Index screen

Touch . Touch one of the pictures to back to the single display mode.

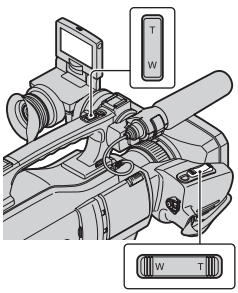



A Previous/Next 6 pictures
B The picture displayed before switching to the index screen

To view pictures in other folders, touch → SET → [PB FOLDER], select a folder with /, then touch OK (p. 54).

## Using PB zoom

You can magnify images from about 1.1 to 5 times (from about 1.5 to 5 times in still images) the original size.
Magnification can be adjusted with the power zoom lever.




① Play back the picture you want to magnify.

② Magnify the picture with T (Telephoto).

③ Touch the screen at the point you want to display in the center of the displayed frame.

④ Adjust the magnification with W (Wide angle)/T (Telephoto).

To cancel, touch [END].

### Notes

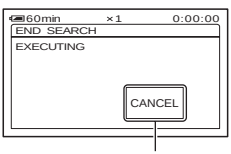
- While using PB zoom, images on the LCD panel and images that are output from the video signal are zoomed. The i.LINK output will not be affected.

# Searching for the starting point

## Searching for the last scene of the most recent recording (END SEARCH)

END SEARCH will not work once you eject the cassette after you have recorded on the tape.
Make sure that the POWER switch is set to TAPE.

**Touch → .**




Touch here to cancel the operation.

The last scene of the most recent recording is played back for about 5 seconds, and the camcorder enters the standby mode at the point where the last recording has finished.

### Notes

- END SEARCH will not work correctly when there is a blank section between recorded sections on the tape.

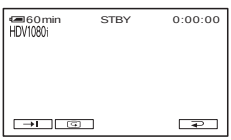
### Tips

- You can also select [END SEARCH] from the menu. When the POWER switch is set to PLAY/EDIT. select the [END SEARCH] short-cut in Personal Menu (p. 42).

## Reviewing the most recently recorded scenes (Rec review)

You can view about 2 seconds of the scene recorded just before you stopped the tape. Make sure that the POWER switch is set to TAPE.

**Touch → .**




The last 2 seconds (approx.) of the most recently recorded scene are played back. Then, your camcorder is set to standby.

# Playing the picture on a TV

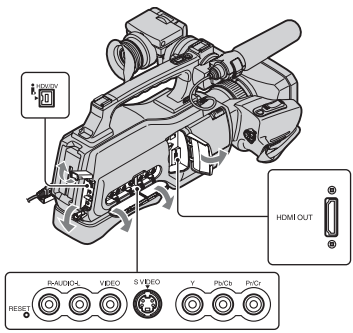
Connection methods and image quality differ depending on what type of TV is connected and connectors used.
Use the supplied AC Adaptor as the power source (p. 21).
Refer also to the instruction manuals supplied with the device to be connected.

### Notes

- Make all menu settings on your camcorder before connecting. The TV may not recognize the video signal properly if the [VCR HDV/DV] or [i.LINK CONV] setting is changed after the TV and your camcorder were connected with an i.LINK cable.
- Pictures recorded in the DV format are played back as SD (standard definition) images regardless of the connection.
- When recording, set [X.V.COLOR] to [ON] to play back on an x.v.Color-compliant TV (p. 51). Some settings may need to be adjusted on the TV when playing back.

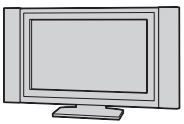
## Jacks on your camcorder

Open the jack cover in the direction of the arrow and connect the cable.



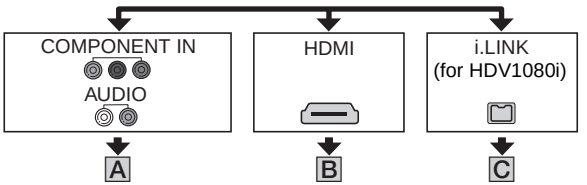

Lift up the bottom of the jack cover, then rotate in the direction of the arrow.

## Connecting to a high definition TV



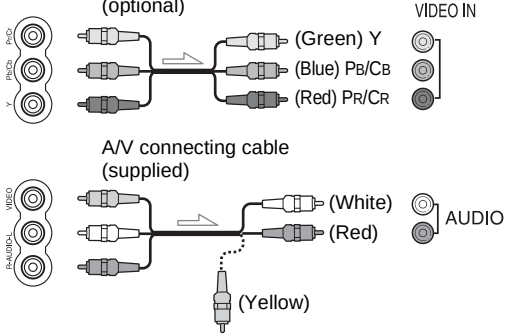
HD (high definition) image quality

- An HDV formatted picture is played back as it is (HD image quality).
- A DV formatted picture is played back as it is (SD image quality).




: Signal flow, ( ): Reference pages

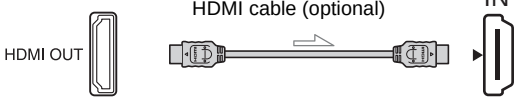
| Type | Camcorder | Cable | TV | Menu Setting |
|---|---|---|---|---|
| A | | Component video cable (optional) | COMPONENT VIDEO IN | (STANDARD SET) [VCR HDV/DV] → [AUTO] (59) [COMPONENT] → [1080i/576i] (62) |
| | | A/V connecting cable (supplied) | AUDIO | |




- An A/V connecting cable is also needed to output audio signals. Connect the white and red plugs of the A/V connecting cable to the audio input jack of your TV.

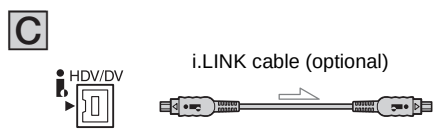
: Signal flow, ( ): Reference pages

| Type | Camcorder | Cable | TV | Menu Setting |
|---|---|---|---|---|
| B | HDMI OUT | HDMI cable (optional) | HDMI IN | (STANDARD SET) [VCR HDV/DV] → [AUTO] (59) |



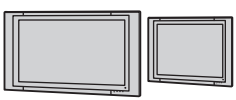
- **Use an HDMI cable with the HDMI logo (on the front cover).**
- Pictures in the DV format are not output from the HDMI OUT jack, if copyright protection signals are recorded in the pictures.
- DV format pictures input to the camcorder via i.LINK cable (p. 71) cannot be output.
- Your TVs may not function correctly (e.g., no sound or image). Do not connect the HDMI OUT jack of your camcorder and HDMI OUT jack of an external device with the HDMI cable. This may cause a malfunction.

| | | | | |
|---|---|---|---|---|
| C | HDV/DV | i.LINK cable (optional) | i.LINK | (STANDARD SET) [VCR HDV/DV] → [AUTO] (59) [DOWN CONVERT] → [i.LINK CONV] → [OFF] (62) |



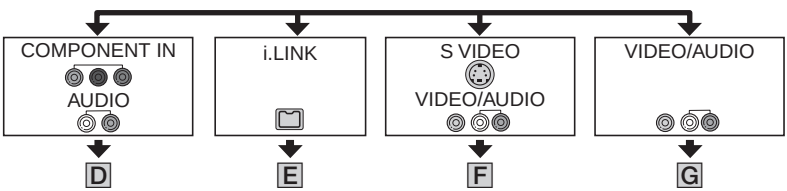
- **Your TV needs to have an i.LINK jack compatible with HDV1080i specification. For details, confirm the specifications of your TV.**
- If your TV is not compatible with HDV1080i specification, connect your camcorder and TV with the optional component video cable and supplied A/V connecting cable as illustrated in A.
- The TV needs to be set so that it recognizes that the camcorder is connected. See the instruction manuals supplied with your TV.

## Connecting to a 16:9 (wide) or 4:3 TV



SD (standard definition) image quality

- An HDV formatted picture is down converted to DV format (SD image quality) and played back.
- A DV formatted picture is played back as it is (SD image quality).



### To set the aspect ratio according to the connected TV (16:9/4:3)

Change the [VIDEO OUT] setting to match your TV.

**Notes**

- When you play back a tape recorded in the DV format on a 4:3 TV not compatible with the 16:9 signal, set [ WIDE SELECT] to [4:3] on your camcorder when recording a picture (p. 60).

: Signal flow, ( ): Reference pages

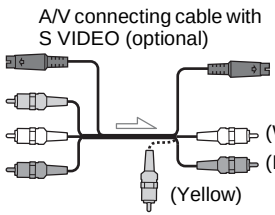
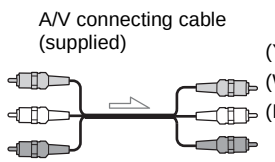
| Type | Camcorder | Cable | TV | Menu Setting |
|---|---|---|---|---|
| D | | Component video cable (optional)<br>(Green) Y<br>(Blue) PB/CB<br>(Red) PR/CR<br>A/V connecting cable (supplied)<br>(White)<br>(Red)<br>(Yellow) | COMPONENT VIDEO IN<br>AUDIO | (STANDARD SET)<br>[VCR HDV/DV] → [AUTO] (59)<br>[COMPONENT] → [576i] (62)<br>[DOWN CONVERT] → [VIDEO OUT] → [SQUEEZE]/[LETTER BOX]/[EDGE CROP](62) |

- A/V connecting cable is also needed to output audio signals. Connect the white and red plugs of the A/V connecting cable to the audio input jack of your TV.

| | | | | |
|---|---|---|---|---|
| E | | i.LINK cable (optional) | i.LINK | (STANDARD SET)<br>[VCR HDV/DV] → [AUTO] (59)<br>[DOWN CONVERT] → [i.LINK CONV] → [ON:SQUEEZE]/[ON:EDGE CROP] (62) |

- The TV needs to be set so that it recognizes that the camcorder is connected. See the instruction manuals supplied with your TV.

: Signal flow, ( ): Reference pages

| Type | Camcorder | Cable | TV | Menu Setting |
|---|---|---|---|---|
| F | |  | | (STANDARD SET) [VCR HDV/DV] → [AUTO] (59) [DOWN CONVERT] → [VIDEO OUT] → [SQUEEZE]/[LETTER BOX]/[EDGE CROP](62) |
| G | |  | | (STANDARD SET) [VCR HDV/DV] → [AUTO] (59) [DOWN CONVERT] → [VIDEO OUT] → [SQUEEZE]/[LETTER BOX]/[EDGE CROP](62) |



- When connecting only an S VIDEO plug (S VIDEO channel), audio signals are not output. To output audio signals, connect the white and red plugs of the A/V connecting cable with an S VIDEO cable to the audio input jack of your TV.
- This connection produces higher resolution pictures compared with the A/V connecting cable (Type G).



### When connecting to your TV via a VCR

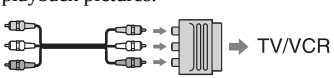
Select one of the connecting methods on page 68, according to the input jack of the VCR. Connect your camcorder to the LINE IN input on the VCR using the A/V connecting cable. Set the input selector on the VCR to LINE (VIDEO 1, VIDEO 2, etc.).

### When your TV is monaural (When your TV has only one audio input jack)

Connect the yellow plug of the A/V connecting cable to the video input jack and connect the white (left channel) or the red (right channel) plug to the audio input jack of your TV or VCR.

### If your TV/VCR has a 21-pin adaptor (EUROCONNECTOR)

Use a 21-pin adaptor (optional) to view playback pictures.




**Tips**

- The HDMI (High Definition Multimedia Interface) is an interface to send both video/audio signals. Connecting HDMI OUT jack and external device with a cable supplies high quality images and digital audio.
- If you connect your camcorder to your TV using more than one type of cable to output images from a jack other than the i.LINK jack, the order of priority of the output signals is as follows: HDMI → component video → S VIDEO → audio/video.
- See page 99 for the details of i.LINK.

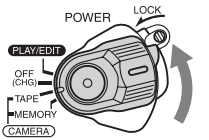
# Using the menu items

## 1 Slide the POWER switch to the desired position while pressing the green button.

TAPE: settings on a tape

MEMORY: settings on a "Memory Stick Duo"

PLAY/EDIT: settings for viewing/editing




## 2 Touch the LCD screen to select the menu item.

Unavailable items will be grayed out.

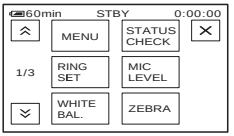
### ■ To use the short-cuts of Personal Menu

On Personal Menu, short-cuts for frequently used menu items are added.

**Tips**

- You can customize Personal Menu as you like (p. 66).

① Touch P-MENU.




② Touch the desired item.
If the desired item is not displayed on the screen, touch /  until the item is displayed.

③ Select the desired setting, then touch OK.

### ■ To use menu items

You can customize menu items that are not added to Personal Menu.

① Touch P-MENU → [MENU].

② Select the desired menu.
Touch / to select the item, then touch OK (The process in step ③ is the same as that in step ②).

③ Select the desired item.

④ Customize the item.
After finishing the settings, touch OK → (close) to hide the menu screen.
If you decide not to change the setting, touch to return to the previous screen.

# Menu items

Available menu items (●) vary depending on the position of the switch.

| Position | TAPE | MEMORY | PLAY/EDIT |
|---|---|---|---|
| **CAMERA SET menu** (p. 45) | | | |
| SCENE SELECT | ● | ● | – |
| SPOT METER | ● | ● | – |
| EXPOSURE | ● | ● | – |
| WHITE BAL. | ● | ● | – |
| SHARPNESS | ● | ● | – |
| SHUTTR SPEED | ● | ● | – |
| AUTOSLW SHTR | ● | – | – |
| AE SHIFT | ● | ● | – |
| CAMERA COLOR | ● | ● | – |
| WB SHIFT | ● | ● | – |
| SPOT FOCUS | ● | ● | – |
| FOCUS | ● | ● | – |
| TELE MACRO | ● | ● | – |
| SUPER NS | ● | – | – |
| NS LIGHT | ● | ● | – |
| COLOR SLOW S | ● | ● | – |
| ZEBRA | ● | ● | – |
| HISTOGRAM | ● | ● | – |
| SELF-TIMER | ● | ● | – |
| DIGITAL ZOOM | ● | – | – |
| STEADYSHOT | ● | ● | – |
| CONV.LENS | ● | ● | – |
| RING SETTING | ● | ● | – |
| X.V.COLOR | ● | – | – |
| **MEMORY SET menu** (p. 52) | | | |
| STILL SET | – | ● | ● |
| ALL ERASE | – | – | ● |
| FORMAT | – | ● | ● |
| FILE NO. | – | ● | ● |
| NEW FOLDER | – | ● | ● |
| REC FOLDER | – | ● | ● |
| PB FOLDER | – | – | ● |
| **PICT.APPLI. menu** (p. 55) | | | |
| FADER | ● | – | – |
| INT.REC-STL | – | ● | – |
| SLIDE SHOW | – | – | ● |
| D.EFFECT | ● | – | ● |
| PICT.EFFECT | ● | – | ● |
| SMTH SLW REC | ● | – | – |
| PictBridge PRINT | – | – | ● |



*Continued* ➡

| Position | TAPE | MEMORY | PLAY/EDIT |
|---|---|---|---|
| USB SELECT | – | – | ● |
| **EDIT/PLAY menu** (p. 58) | | | |
| VAR.SPD PB | – | – | ● |
| REC CTRL | – | – | ● |
| END SEARCH | ● | – | ● |
| **STANDARD SET menu** (p. 59) | | | |
| VCR HDV/DV | – | – | ● |
| REC FORMAT | ● | – | – |
| DV SET DV | ● | – | ● |
| VOLUME | ● | ● | ● |
| MIC LEVEL | ● | – | – |
| AU.LVL DISP | ● | – | – |
| LCD/VF SET | ● | ● | ● |
| COMPONENT | ● | ● | ● |
| DOWN CONVERT | ● | ● | ● |
| STATUS CHECK | ● | – | ● |
| GUIDEFRAME | ● | ● | – |
| COLOR BAR | ● | – | – |
| DATA CODE | – | – | ● |
| REMAINING | ● | – | ● |
| REC LAMP | ● | ● | – |
| BEEP | ● | ● | ● |
| DISP OUTPUT | ● | ● | ● |
| MENU ROTATE | ● | ● | ● |
| CALIBRATION | – | – | ● |
| QUICK REC HDV1080i | ● | – | – |
| **TIME/LANGU. menu** (p. 65) | | | |
| CLOCK SET | ● | ● | ● |
| WORLD TIME | ● | ● | ● |
| LANGUAGE | ● | ● | ● |

# CAMERA SET menu

**Settings to adjust your camcorder to the recording conditions**

The default settings are marked with ►. The indicators in parentheses appear when the items are selected.
**See page 42 for details on selecting menu items.**

## SCENE SELECT

You can record pictures effectively in various situations with the [SCENE SELECT] function.

### ►AUTO

Select to automatically record pictures effectively without the [SCENE SELECT] function.

### TWILIGHT* ( )

Select to maintain the darkening atmosphere of the distant surroundings in twilight scenes.

### CANDLE ( )

Select to maintain the dim atmosphere of a candlelit scene.

### SUNRSE SUNSET (Sunrise and sunset)* ( )

Select to maintain the atmosphere of situations such as sunsets and sunrises.

### FIREWORKS* ( )

Select to record all the splendor of fireworks.

### LANDSCAPE* ( )

Select to shoot distant subjects clearly. This setting also prevents your camcorder from focusing on glass or metal mesh in windows between the camcorder and the subject.

### PORTRAIT (Soft portrait) ( )

Select to bring out the subject such as people or flowers while creating a soft background.

### SPOTLIGHT** ( )

Select to prevent people's faces from appearing excessively white when subjects are lit by strong light.

### BEACH** ( )

Select to prevent people's faces from appearing dark in strong light or reflected light, such as at a beach in midsummer.

### SNOW** ( )

Select this when shooting in very bright, white conditions, such as on a ski slope; otherwise picture may appear too dark.

* Adjusted to focus on subjects farther away only.

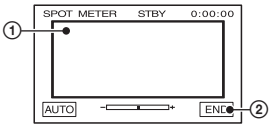
** Adjusted not to focus on subjects a short distance away.

### Notes

- If you set [SCENE SELECT], the settings of [SHUTTR SPEED] and [WHITE BAL.] are canceled.

## SPOT METER (Flexible spot meter)

You can adjust and fix the exposure to the subject, so that it is recorded in suitable brightness even when there is strong contrast between the subject and the background, such as subjects in the spotlight on stage.




① Touch the point where you want to fix and adjust the exposure on the screen.
appears.
② Touch [END].

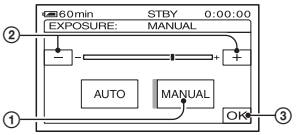
To return the setting to automatic exposure, touch [AUTO] → [END].

### Notes

- If you set [SPOT METER], [EXPOSURE] is automatically set to [MANUAL].

## EXPOSURE

You can fix the brightness of a picture manually. Adjust the brightness when the subject is much brighter or darker than the background.




① Touch [MANUAL].
appears.
② Adjust the exposure by touching [−] / [+].
③ Touch [OK].

To return the setting to automatic exposure, touch [AUTO] → [OK].

### Tips

- You can also adjust the setting manually using the RING (p. 31).

## WHITE BAL. (White balance)

You can adjust the color balance to the brightness of the recording environment.

**►AUTO**

The white balance is adjusted automatically.

**OUTDOOR (☀)**

The white balance is appropriately adjusted for the following recording conditions:

– Outdoors
– Night views, neon signs and fireworks
– Sunrise or sunset
– Under daylight fluorescent lamps

**INDOOR (💡)**

The white balance is appropriately adjusted for the following recording conditions:

– Indoors
– At party scenes or studios where the lighting conditions change quickly
– Under video lamps in a studio, or under sodium lamps or incandescent-like color lamps

**ONE PUSH**

The white balance will be adjusted according to the ambient light.

① Touch [ONE PUSH].
② Frame a white object such as a piece of paper, to fill the screen under the same lighting conditions as you will shoot the subject.

③ Touch [▫].
▫ flashes quickly. When the white balance has been adjusted and stored in the memory, the indicator stops flashing.

### Notes

- Set [WHITE BAL.] to [AUTO] or adjust the color in [ONE PUSH] under white or cool white fluorescent lamps.
- When you select [ONE PUSH], keep framing white objects while ▫ is flashing quickly.
- ▫ flashes slowly if [ONE PUSH] could not be set.
- When [ONE PUSH] was selected, if ▫ keeps flashing after touching [OK], set [WHITE BAL.] to [AUTO].
- If you set [WHITE BAL.], [SCENE SELECT] returns to [AUTO].

### Tips

- If you have changed the battery pack while [AUTO] was selected, or taken your camcorder outdoors after inside use (or vice versa), select [AUTO] and aim your camcorder at a nearby white object for about 10 seconds for better color balance adjustment.
- When the white balance has been set with [ONE PUSH], if you change the [SCENE SELECT] settings, or bring your camcorder outdoors from inside the house, or vice versa, you need to redo the [ONE PUSH] procedure to readjust the white balance.

## SHARPNESS

You can adjust the sharpness of the image outline with [−]/[+]. ◧ appears when the sharpness is anything other than the default setting.

## SHUTTR SPEED

You can manually adjust and fix the shutter speed for your convenience. Depending on the shutter speed, you can make the subject look still, or emphasize movement of the subject.

**►AUTO**

Select to adjust the shutter speed automatically.

**MANUAL(Ⓢ)**

Adjust the shutter speed using [−]/[+].

You can select a shutter speed between 1/3 and 1/10000 second when the POWER switch is set to TAPE, and between 1/3 and 1/425 second when the POWER switch is set to MEMORY.

### Notes

- When the shutter speed is set between 1/600 to 1/10000 second, still images cannot be recorded.
- For example, if you select 1/100 second, [100] appears on the screen.
- At a slow shutter speed, automatic focus may be lost. Adjust the focus manually, using a tripod, etc.
- When recording under a discharge tube such as a fluorescent lamp, sodium lamp or mercury lamp, horizontal bands may appear in the screen depending on the shutter speed.

### Tips

- You can also adjust the setting manually using the RING (p. 31).

## AUTOSLW SHTR (Auto slow shutter)

When you set [AUTOSLW SHTR] to [ON], the shutter speed is slowed down automatically to 1/25 second in dark places.

## AE SHIFT

You can adjust the exposure using [−] (dark)/[+] (bright). AS and the setting value appear when [AE SHIFT] is anything other than the default setting.



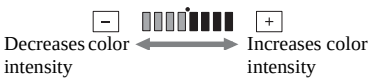
Continued ➡

### Tips

- Touch [+] if the subject is white or the backlight is bright, or touch [−] if the subject is black or the light is dim.
- You can adjust the automatic exposure level to brighter or darker when [EXPOSURE] is set to [AUTO].
- You can also adjust the setting manually using the RING (p. 31).

## CAMERA COLOR

You can adjust the color intensity with [−]/[+]. appears when [CAMERA COLOR] is anything other than the default setting.




## WB SHIFT (White Balance Shift)

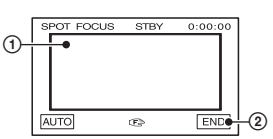
You can adjust the white balance to the desired setting using [−]/[+]. WS and the setting value appear when [WB SHIFT] is anything other than the default setting.

### Tips

- When the white balance is set to a lower value, pictures appear bluish, and when set to a higher value, pictures appear reddish.
- You can also adjust the setting manually using the RING (p. 31).

## SPOT FOCUS

You can select and adjust the focal point to a subject not located in the center of the screen.




① Touch the subject on the screen.
appears.
② Touch [END].

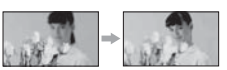
To adjust the focus automatically, touch [AUTO] → [END] in step ①.

### Notes

- If you set [SPOT FOCUS], [FOCUS] is automatically set to [MANUAL].

## FOCUS

You can adjust the focus manually. You can select this function also when you want to focus on a certain subject intentionally.



① Touch [MANUAL].
appears.
② Touch [→] (focusing on close subjects)/[→▲] (focusing on distant subjects) to sharpen the focus. appears when the focus cannot be adjusted any closer, and appears when the focus cannot be adjusted farther away.
③ Touch [OK].

To adjust the focus automatically, touch [AUTO] → [OK] in step ①.

### Notes

- The minimum possible distance between camcorder and subject while maintaining sharp focus is about 1 cm (about 13/32 in.) for wide angle and about 80 cm (about 2 5/8 feet) for telephoto.

### Tips

- It is easier to focus on the subject by moving the power zoom lever towards T (telephoto) to adjust the focus, then towards W (wide angle) to adjust the zoom for recording. When you want to record a subject at close range, move the power zoom lever to W (wide angle), then adjust the focus.
- You can also adjust the focus manually using the RING (p. 31).

## TELE MACRO

This is useful to shoot small subjects, such as flowers or insects. You can blur out backgrounds and the subject stands out clearer.
When you set [TELE MACRO] to [ON] (T), the zoom (p. 30) moves to the top of the T (Telephoto) side automatically and allows for recording subjects at a close distance as down to about 45 cm (17 3/4 in.).

To cancel, touch [OFF], or zoom to wide-angle (W side).

### Notes

- When recording a distant subject, focusing may be difficult and can take some time.
- Adjust the focus manually ([FOCUS], p. 48) when it is hard to focus automatically.

## SUPER NS (Super NightShot)

The picture will be recorded at a maximum of 16 times the sensitivity of NightShot recording if you set [SUPER NS] to [ON] while the NIGHTSHOT switch (p. 31) is also set to ON.
S and ["SUPER NIGHTSHOT"] appear on the screen.

To return to the normal setting, set [SUPER NS] to [OFF], or set the NIGHTSHOT switch to OFF.

### Notes

- Do not use NightShot/[SUPER NS] in bright places. This may cause a malfunction.
- Do not cover the infrared port with your fingers or other objects.
- Remove the conversion lens (optional).
- Adjust the focus manually ([FOCUS], p. 48) when it is hard to focus automatically.
- The shutter speed of your camcorder changes depending on the brightness. The motion of the picture may slow down in this case.

## NS LIGHT (NightShot Light)

When using either the NightShot (p. 31) or [SUPER NS] (p. 49) function to record, you can record clearer pictures by setting [NS LIGHT], which emits infrared light (invisible), to [ON] (the default setting).

### Notes

- Do not cover the infrared port with your fingers or other objects.
- Remove the conversion lens (optional).
- The maximum shooting distance using [NS LIGHT] is about 3 m (10 feet).

## COLOR SLOW S (Color Slow Shutter)

When you set [COLOR SLOW S] to [ON], you can record an image brighter in color even in dark places.
[ ] and [COLOR SLOW SHUTTER] appear on the screen.

To cancel [COLOR SLOW S], touch [OFF].

### Notes

- Adjust the focus manually ([FOCUS], p. 48) when it is hard to focus automatically.
- The shutter speed of your camcorder changes depending on the brightness. The motion of the picture may slow down at this time.

## ZEBRA

Diagonal stripes appear in portions of the screen where brightness is at a preset level. This is useful as a guide when adjusting the brightness. When you change the default setting, ▨ is displayed. The zebra pattern is not recorded.

**► OFF**

The zebra pattern is not displayed.

**70**

The zebra pattern appears at a screen brightness level of about 70 IRE.

**100**

The zebra pattern appears at a screen brightness level of about 100 IRE or higher.

### Notes

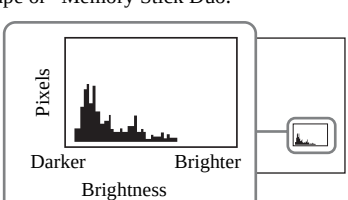
- Portions of the screen where brightness is about 100 IRE or higher may appear overexposed.

### Tips

- IRE represents the screen brightness.

## HISTOGRAM

When you set [HISTOGRAM] to [ON], the [HISTOGRAM] (a graph to display a distribution of tones in your picture) window appears on the screen.
This item is useful when you adjust exposure. You can adjust the [EXPOSURE] or [AE SHIFT] checking the [HISTOGRAM] window. The [HISTOGRAM] will not be recorded on a tape or "Memory Stick Duo."




### Tips

- The left area on the graph shows the darker areas of the picture while the right area shows the brighter areas.

## SELF-TIMER

A still image is recorded after about 10 seconds.

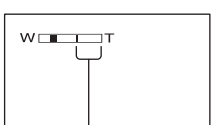
Press PHOTO when [SELF-TIMER] is set to [ON] and ⏲ appears.

To cancel the count down, touch [RESET].

To cancel the self-timer, select [OFF].

## DIGITAL ZOOM

You can select the maximum zoom level in case you want to zoom to a level greater than 10 × (the default setting) while recording on a tape. Note that the image quality decreases when you are using the digital zoom.




The right side of the bar shows the digital zooming factor. The zooming zone appears when you select the zooming level.

**► OFF**

Up to 10 × zoom is performed optically.

**20 ×**

Up to 10 × zoom is performed optically, and after that, up to 20 × zoom is performed digitally.

## STEADYSHOT

You can compensate for camera shake (The default setting is [ON]). Set [STEADYSHOT] to [OFF] ( ) when using a tripod (optional), then the image becomes natural.

## CONV.LENS

When using an optional conversion lens, use this function to record using the optimum compensation for camera shake for each lens.

► **OFF**

Select this when the conversion lens (optional) is not used.

**WIDE CONV. (W)**

Select this to use the wide conversion lens (optional).

**TELE CONV. (T)**

Select this to use the tele conversion lens (optional).

## RING SETTING

You can select a menu items to assign to the RING. For details, see page 31.

## X.V.COLOR HDV1080i

When recording, set to [ON] to capture wider range of colors.
Various colors such as the brilliant color of flowers and turquoise blue of the sea can be more faithfully reproduced.

### Notes

- Set [X.V.COLOR] to [ON] only when the recorded content will be played back on an x.v.Color-compliant TV. Otherwise, set to [OFF] (the default setting).
- If the movie recorded with this function [ON] is played back on a non-x.v.Color-compliant TV, the color may not be reproduced correctly.
- [X.V.COLOR] cannot be set to [ON] when:
  - Recording in DV format
  - A movie is being recorded.

# MEMORY SET menu

**Settings for the "Memory Stick Duo"**

The default settings are marked with ►.
The indicators in parentheses appear when the items are selected.
**See page 42 for details on selecting menu items.**

## STILL SET

### ■ QUALITY

**►FINE (FINE)**
Records still images at the fine image quality level.

**STANDARD (STD)**
Records still images at the standard image quality level.

### ■ IMAGE SIZE

**►6.1M (6.1M)**
Records still images clearly.

**4.6M (4.6M)**
Records still images clearly in the 16:9 (wide) ratio.

**3.1M (3.1M)**
Allows you to record more still images in relatively clear quality.

**VGA (0.3M) (VGA)**
Allows for the maximum number of images to be recorded.

### Notes

- [■ IMAGE SIZE] can be set only when the POWER switch is set to MEMORY.

## Capacity of the "Memory Stick Duo" (MB) and the number of recordable pictures

### When the POWER switch is set to MEMORY

| | 6.1M 2848 × 2136 6.1M | 4.6M 2848 × 1602 4.6M | 3.1M 2048 × 1536 3.1M | VGA 640 × 480 VGA |
|---|---|---|---|---|
| 128MB | 41 | 55 | 80 | 780 |
| | 98 | 130 | 185 | 1970 |
| 256MB | 75 | 95 | 140 | 1400 |
| | 175 | 235 | 335 | 3550 |
| 512MB | 150 | 200 | 295 | 2850 |
| | 360 | 480 | 690 | 7200 |
| 1GB | 310 | 415 | 600 | 5900 |
| | 730 | 980 | 1400 | 14500 |
| 2GB | 630 | 850 | 1200 | 12000 |
| | 1500 | 2000 | 2850 | 30000 |
| 4GB | 1250 | 1650 | 2400 | 23500 |
| | 2950 | 3950 | 5700 | 59000 |
| 8GB | 2500 | 3350 | 4900 | 48000 |
| | 6000 | 8000 | 11000 | 115000 |

### When the POWER switch is set to TAPE*

| | 4.6M 2848 × 1602 4.6M | 3.4M 2136 × 1602 3.4M |
|---|---|---|
| 128MB | 55 | 74 |
| | 130 | 170 |
| 256MB | 95 | 130 |
| | 235 | 305 |
| 512MB | 200 | 270 |
| | 480 | 630 |
| 1GB | 415 | 550 |
| | 980 | 1250 |
| 2GB | 850 | 1100 |
| | 2000 | 2600 |
| 4GB | 1650 | 2250 |
| | 3950 | 5200 |
| 8GB | 3350 | 4500 |
| | 8000 | 10000 |

**When the POWER switch is set to PLAY/EDIT***

| | 1.2M 1440 × 810 1.2M | VGA 640 × 480 VGA | 0.2M 640 × 360 0.2M |
|---|---|---|---|
| 128MB | 205 | 780 | 980 |
| | 490 | 1970 | 1970 |
| 256MB | 370 | 1400 | 1750 |
| | 890 | 3550 | 3550 |
| 512MB | 760 | 2850 | 3600 |
| | 1800 | 7200 | 7200 |
| 1GB | 1550 | 5900 | 7300 |
| | 3650 | 14500 | 14500 |
| 2GB | 3150 | 12000 | 15000 |
| | 7500 | 30000 | 30000 |
| 4GB | 6300 | 23500 | 29500 |
| | 14500 | 59000 | 59000 |
| 8GB | 12500 | 48000 | 60000 |
| | 30000 | 115000 | 115000 |

* [IMAGE SIZE] is fixed to [1.2M] in HDV format, [0.2M] in DV format (16:9) and [VGA (0.3M)] in DV format (4:3).

### Notes

- All numbers measured at the following settings: Top: [FINE] is selected for image quality. Bottom: [STANDARD] is selected for image quality.
- When using a "Memory Stick Duo" made by Sony Corporation. The number of pictures you can record varies depending on the recording environment and the recording media.
- The unique pixel array of Sony's ClearVid CMOS sensor and image processing system (new Enhanced Imaging Processor) allows for still image resolution equivalent to the sizes described.

## ALL ERASE

Deletes all the pictures without image protection on a "Memory Stick Duo" or in the selected folder.

① Select [ALL FILES] or [CURRNT FOLDER].

**[ALL FILES]:** Deletes all the images on the "Memory Stick Duo."

**[CURRNT FOLDER]:** Deletes all the images in the selected folder.

② Touch [YES] twice → [X].

### Notes

- The folder will not be deleted even when you delete all the pictures in the folder.
- Do not do any of the following while [Erasing all data…] is displayed:
  - Operate the POWER switch/operation buttons.
  - Eject the "Memory Stick Duo."

## FORMAT

The "Memory Stick Duo" has been formatted at the factory, and does not require formatting at purchase.

To execute formatting, touch [YES] twice → [X].
Formatting is completed, and all the images will be deleted.

### Notes

- Do not do any of the following while [Formatting…] is displayed:
  - Operate the POWER switch/operation buttons.
  - Eject the "Memory Stick Duo."
- Formatting erases everything on the "Memory Stick Duo" including protected image data and newly created folders.

## FILE NO.

**► SERIES**

Assigns file numbers in sequence even if the "Memory Stick Duo" is replaced with another one. The file number is reset when a new folder is created or the recording folder is replaced with another.

**RESET**

Resets the file number to 0001 each time the "Memory Stick Duo" is changed.

## NEW FOLDER

You can create a new folder (102MSDCF to 999MSDCF) on a “Memory Stick Duo.” When 9,999 images are stored in the current folder, a new folder is automatically created for storing subsequent images.

Touch [YES] → [X].

### Notes

- You cannot delete the created folders using your camcorder. You will have to format the “Memory Stick Duo” (p. 53), or delete them using your computer.
- The number of recordable pictures on a “Memory Stick Duo” may decrease as the number of folders increases.

## REC FOLDER (Recording folder)

Select the folder to be used for recording with [▲]/[▼], then touch [OK].

### Notes

- As the default setting, pictures are saved in the 101MSDCF folder.
- Once you record a picture in a folder, the same folder will be set as the default folder for playback.

## PB FOLDER (Playback folder)

Select the playback folder with [▲]/[▼], then touch [OK].

# PICT.APPLI. menu

**Special effects on pictures or additional functions on recording/playback**

The default settings are marked with ▶. The indicators in parentheses appear when the items are selected.
**See page 42 for details on selecting menu items.**

## FADER

You can record a transition with the following effects adding to the interval between scenes.

① Select the desired effect in [STBY] (to fading in) or [REC] (to fading out) mode, then touch [OK].
② Press START/STOP.
The fader indicator stops flashing and disappears when the fade is complete.

To cancel before starting the operation, touch [OFF] in step ①.
Once you press START/STOP, the setting is canceled.

Fading out Fading in

### WHITE FADER

### BLACK FADER

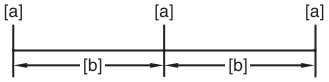
### MOSAIC FADER

### MONOTONE

When fading in, the picture gradually changes from black and white to color. When fading out, it gradually changes from color to black and white.

## INT.REC-STL (Interval photo recording)

You can record still images on the "Memory Stick Duo" at a selected interval. This function is useful to observe the movement of clouds or the changes in daylight, etc.




**[a]**: Recording
**[b]**: Interval

① Touch [SET] → a desired interval time (1, 5 or 10 minutes) → [OK] → [ON] → [OK] → [X].
② Press PHOTO fully.
stops flashing and the interval still image recording starts.

To cancel [INT.REC-STL], select [OFF] in step ①.

## SLIDE SHOW

Plays back in sequence the images stored on a "Memory Stick Duo," or in a folder (slide show).

① Touch [SET] → [PB FOLDER].
② Select [ALL FILES (all)] or [CURRNT FOLDER (1)], then touch [OK].
If you select [CURRNT FOLDER (1)], all the images in the current playback folder selected in [PB FOLDER] (p. 54) are played back in sequence.
③ Touch [REPEAT].
④ Select [ON] or [OFF], then [OK].
To repeat the slide show, select [ON] (↻).
To execute the slide show only once, select [OFF].
⑤ Touch [END] → [START].

To cancel [SLIDE SHOW], touch [END].
To pause, touch [PAUSE].

### Tips

- You can select the first picture for the slide show with [−]/[+] before touching [START].

## D.EFFECT (Digital effect)

You can add digital effects to recording/playback.

① Touch the desired effect.
② Adjust the effect with [−]/[+], then touch [OK].

| Effect | Items to adjust |
|---|---|
| CINEMA EFECT* | No adjustment necessary |
| STILL | The degree of transparency of the still image you want to superimpose under a movie |
| FLASH | The interval of frame-by-frame recording/playback |
| TRAIL | The fade time of the incidental image |
| OLD MOVIE* | No adjustment necessary |

* Available during tape recording only.

③ Touch [OK].
[D✦] appears.

To cancel [D.EFFECT], touch [OFF] in step ①.

**►OFF**

Does not use [D.EFFECT] setting.

**CINEMA EFECT (Cinematic effect)**

You can add a cinematic atmosphere to pictures by adjusting the image quality.

**STILL**

Records/plays back a movie while superimposing it on a still image memorized by touching [STILL].

**FLASH (flash motion)**

Records/plays back a movie with a serial-still-image effect (strobe effect).

**TRAIL**

When recording/playback, trailing after images are left in the picture.

**OLD MOVIE**

Adds an old movie effect with a sepia hue to pictures.

### Notes

- You cannot change to another digital effect while recording pictures on a tape with [CINEMA EFECT] selected.
- Effects added to the playback pictures are not output via the i HDV/DV Interface (i.LINK). Only the original pictures can be output.
- While using [D.EFFECT], you cannot use the review button for still images on the "Memory Stick Duo" [MS].
- If you set [CINEMA EFECT], [SPOT METER] and [EXPOSURE] return to [AUTO].

### Tips

- You can save pictures edited using special effects on a "Memory Stick Duo" (p. 73) or record them on VCR or DVD/HDD recorders (p. 68).

## PICT.EFFECT (Picture effect)

You can add special effects to a picture during recording or playback. P✦ appears.

**►OFF**

Does not use [PICT.EFFECT] setting.

**SKINTONE***

Makes skin texture look more smoother and more appealing.

**NEG.ART**

The color and brightness are reversed.

**SEPIA**

Pictures appear in sepia.

**B&W (Black and white)**

Pictures appear in black and white.

**SOLARIZE**

Pictures appear as an illustration with strong contrast.

**PASTEL***

Pictures appear as a pale pastel drawing.

**MOSAIC***

Pictures appear mosaic-patterned.

* Available during tape recording only.

### Notes

- Effects added to the playback pictures are not output via the HDV/DV Interface (i.LINK). Only the original pictures can be output.

### Tips

- You can save pictures edited using special effects on a "Memory Stick Duo" (p. 73) or record them on VCR or DVD/HDD recorders (p. 68).

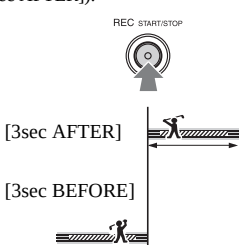
## SMTH SLW REC (Smooth slow recording)

Fast moving subjects and actions, which cannot be captured under general shooting conditions, can be shot in smooth moving slow-motion for about 3 seconds.
This is useful to shoot fast actions such as a golf or tennis swing.

Press START/STOP on the [SMTH SLW REC] screen.
A 3 second-movie (approx.) is recorded as a 12 second slow-motion movie.
[Recording···] disappears, when recording is finished.

Touch SET to set the following.

– [TIMING]
Select the recording start point from the time START/STOP is pressed (The default setting is [3sec AFTER]).




– [RECORD SOUND]
If you set to [ON] (🎙♪), you can record additional dialog, etc. to the slow-motion movie (The default setting is [OFF]).
Sounds are recorded while [Recording···] is displayed.

### Notes

- Sounds cannot be recorded while shooting a 3 second-movie (approx.).

• The image quality of [SMTH SLW REC] is somewhat less than normal recording.

To cancel [SMTH SLW REC], select [END].

## PictBridge PRINT

See page 75.

## USB SELECT

You can connect the camcorder to a personal computer with a USB cable and import pictures to the computer. You can also connect the camcorder to a PictBridge compatible printer (p. 75) using this function.

**►Memory Stick**

Select this to view pictures on a "Memory Stick Duo" on the computer or to import them to the computer.

**PictBridge PRINT**

Select this when you connect the camcorder to a PictBridge compatible printer to print out directly (p. 75).

# EDIT/PLAY menu

**Settings for editing or playing back in various modes**

**See page 42 for details on selecting menu items.**

## VAR.SPD PB (Various speed playback)

You can play back in various modes while viewing movies.

① Touch the following buttons during playback.

| To | Touch |
|---|---|
| change the playback direction* | ◄II< (frame) |
| play back slowly** | SLOW►<br>To reverse direction:<br>◄II< (frame) →<br>SLOW► |
| play back frame by frame | >II► (frame) during playback pause.<br>To reverse direction:<br>◄II< (frame) during frame playback. |

* Horizontal lines may appear at the top, bottom, or in the center of the screen. This is not a malfunction.

**Pictures output from the HDV/DV Interface (i.LINK) cannot be played back smoothly in slow mode.

② Touch ⮌ → ✕.

To return to the normal playback mode, touch ►II (Play/Pause) twice (once from frame playback).

**Notes**

- You will not hear the recorded sound. You may see mosaic-like images of the previously played picture.
- Pictures in the HDV format are not output from the HDV/DV Interface (i.LINK) when they are paused or played back in any mode other than normal playback mode.
- Pictures in the HDV format may appear distorted during:

– Picture search
– Reverse playback

• Playing back slowly to the reverse direction and playing back frame by frame to the reverse direction are not available in HDV format.

## REC CTRL (Movie recording control)

See page 71.

## END SEARCH

**EXEC**

The most recently recorded picture is played back for about 5 seconds and then stops automatically.

**CANCEL**

Stops [END SEARCH].

### Notes

• [END SEARCH] will not work once you eject the cassette after you have recorded on the tape.

# STANDARD SET menu

**Settings while recording on a tape or other basic settings**

The default settings are marked with ►. The indicators in parentheses appear when the items are selected.
**See page 42 for details on selecting menu items.**

## VCR HDV/DV

Select the playback signal. Normally select [AUTO].
When your camcorder is connected to another device using an i.LINK cable, select the signal to input/output from the i, HDV/DV Interface (i.LINK). The selected signal is recorded or played back.

**►AUTO**

Switches the signals between HDV and DV format automatically when playing back a tape.

With an i.LINK connection, switches the signals between HDV and DV formats automatically, and inputs/outputs from the i, HDV/DV Interface (i.LINK).

**HDV**

Plays back only the portions recorded in HDV format.

With an i.LINK connection, inputs/outputs only HDV formatted signals from the i, HDV/DV Interface (i.LINK), and records/plays back. You can also select this when connecting the camcorder to a computer, etc.

**DV**

Plays back only the portions recorded in DV format.

With an i.LINK connection, inputs/outputs only DV formatted signals from the i, HDV/DV Interface (i.LINK), and records/plays back. You can also select this when connecting the camcorder to a computer, etc.

### Notes

• Disconnect the i.LINK cable before changing the [VCR HDV/DV] setting. Otherwise, the connected device, such as a VCR, may not be

able to recognize the video signal from your camcorder.
- When [AUTO] is selected, if the signal switches between HDV and DV formats, the picture and sound are interrupted temporarily.
- When [i.LINK CONV] is set to [ON:SQUEEZE]/[ON:EDGE CROP], pictures are output as follows:
  – at [AUTO], an HDV signal is converted to the DV format and output; a DV signal is output as it is.
  – at [HDV], an HDV signal is converted to the DV format and output; a DV signal is not output.
  – at [DV], a DV signal is output as it is; an HDV signal is not output.

## REC FORMAT

You can select a recording format.

**►HDV1080i (HDV1080i)**
Records in the HDV1080i specification.

**DV (DV)**
Records in the DV format.

**Notes**
- If you output the recording picture using an i.LINK cable, set [i.LINK CONV] accordingly.

## DV SET DV

The following functions are available when recording in DV format.

### REC MODE (Recording mode)

**►SP (SP)**
Records in the SP (Standard Play) mode on a cassette.

**LP (LP)**
Increases the recording time to 1.5 times the SP mode (Long Play).

**Notes**
- If you record in the LP mode, pictures may appear mosaic-like or sound may be interrupted when you play back the tape on other camcorders or VCRs.
- When you mix recordings in the SP mode and in the LP mode on one tape, the playback picture may be distorted or the time code may not be written properly between the scenes.

### WIDE SELECT

You can select the aspect ratio according to the TV connected when recording. Refer also to the instruction manuals supplied with your TV.

**►16:9 WIDE**
Records pictures in the full screen for a 16:9 (wide) TV screen.

**4:3 (4:3)**
Records pictures in the full screen for a 4:3 TV screen.

**Notes**
- Set [VIDEO OUT] correctly according to the TV connected for playback.

### AUDIO MODE

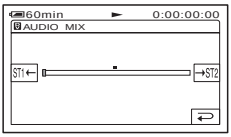
**►12BIT**
Records in the 12-bit mode (2 stereo sounds).

**16BIT (♪16b)**
Records in the 16-bit mode (1 stereo sound with high quality).

**Notes**
- When recording in the HDV format, sound is automatically recorded in [16BIT] mode.

### AUDIO MIX

During tape playback, you can monitor the sound recorded by other camcorders using audio dubbing or 4ch microphone recording.




Touch ST1/ST2 to adjust the balance of the original sound (ST1) and the sound recorded afterwards (ST2), then touch OK.

**Notes**

- The original sound (ST1) is output at the default setting.

## VOLUME

Touch − / + to adjust the volume (p. 33).

## MIC LEVEL

You can adjust the recording sound level manually.

**►AUTO**

Select to adjust the recording sound level automatically.

**MANUAL**

When the MIC LEVEL is set to MANUAL, the ♪M icon is displayed.

Touch − / + to adjust the recording sound level during recording or standby.

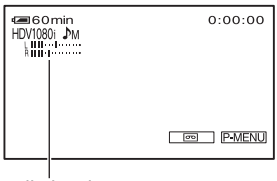
The recording sound level adjustment bars appear on the screen. The recording sound level increases as the bar goes to the right. The recording level meter appears when the recording sound level is other than default setting.

**Notes**

- Use headphones to monitor the sound when adjusting it.

## AU.LVL DISP (Audio level display)

Since the default setting is [ON], the audio level meter is displayed.




## LCD/VF SET

The recorded picture will not be affected by this operation.

### ■ LCD BRIGHT

You can adjust the brightness of the LCD screen.

① Adjust the brightness with − / +.
② Touch OK.

### ■ LCD BL LEVEL

You can adjust the brightness of the LCD screen's backlight.

**►NORMAL**

Standard brightness.

**BRIGHT**

Brightens the LCD screen.

**Notes**

- When you connect your camcorder to outside power sources, [BRIGHT] is automatically selected for the setting.
- When you select [BRIGHT], battery life is slightly reduced during recording.

### ■ LCD COLOR

You can adjust the color on the LCD screen with − / +.

### ■ VF B.LIGHT

You can adjust the brightness of the viewfinder.

►**NORMAL**

Standard brightness.

**BRIGHT**

Brightens the viewfinder screen.

### ■ VF COLOR

►**ON**

Display pictures in the viewfinder in color.

**OFF**

Display pictures in the viewfinder in black and white.

**Notes**

- When you connect your camcorder to outside power sources, [BRIGHT] is automatically selected for the setting.
- When you select [BRIGHT], battery life is slightly reduced during recording.

## COMPONENT

Select [COMPONENT] when connecting your camcorder to a TV with the component input jack.

**576i**

Select when connecting your camcorder to a TV with the component input jack.

►**1080i/576i**

Select when connecting your camcorder to a TV that has the component input jack and is capable of displaying the 1080i signal.

## DOWN CONVERT

You can set an output video signal type from HDV format signals.

### ■ i.LINK CONV

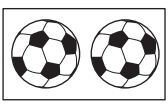
When set to [ON:SQUEEZE]/[ON:EDGE CROP], converts the HDV signal to the DV format and output it from the i, HDV/DV Interface (i.LINK). The DV format signal is output unchanged.

►**OFF**

**ON:SQUEZE**

Output signals to a 16:9 wide TV or a TV compatible with 16:9 wide mode.

On a 16:9 wide TV

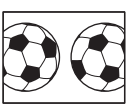


On a 4:3 TV compatible with 16:9 wide mode

**ON:EDGE CROP**

Display the center of the picture in 4:3 aspect ratio by cropping the both sides of the picture.

On a 4:3 standard TV



**Notes**

- For an i.LINK input, refer to “VCR HDV/DV” (p. 59).
- Be sure to disconnect the i.LINK cable before changing the setting. Otherwise, the connected device may not be able to recognize the video signal properly.

### ■ VIDEO OUT

You can set the HDV output format for the following outputs.

– COMPONENT (576i)
– S VIDEO
– AUDIO/VIDEO

►**SQUEZE**

Output signals to a 16:9 wide TV or a TV compatible with 16:9 wide mode.

On a 16:9 wide TV

On a 4:3 TV compatible with 16:9 wide mode

### LETTER BOX

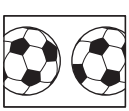
Output signals to a TV that is not compatible with 16:9 wide mode.

On a 4:3 standard TV

### EDGE CROP

Display the center of the picture in 4:3 aspect ratio by cropping the both sides of the picture.

On a 4:3 standard TV



**Notes**

- When you view pictures that were recorded in the DV format with [ WIDE SELECT] set to [16:9 WIDE] on a 4:3 standard TV, pictures may appear as they are in height, but are compressed in width depending on the TV. If you view the recorded pictures on such type of 4:3 standard TV, set [ WIDE SELECT] to [4:3] before recording.

## STATUS CHECK

You can check the setup value of the following items.

### OUTPUT

– [VCR HDV/DV](when the POWER switch is set to PLAY/EDIT) (p. 59)
– [COMPONENT] (p.64)
– [i.LINK CONV] (p. 62)
– [VIDEO OUT] (p. 62)
– HDMI OUT (p. 107)

### HOURS METER

The cumulative operation time of your camcorder will be displayed with the total hours of operation, drum rotation, tape running, or the total number of tape unthreading operations.

– OPERATION

Displays the total hours of operation in 10-hour increments.

– DRUM RUN

Displays the total hours of drum rotation in 10-hour increments.

– TAPE RUN

Display the total hours of tape running in 10-hour increments.

– THREADING

Displays the total number of tape unthreading operations in 10-operation increments.

## GUIDEFRAME

You can display the frame and check that the subject is horizontal or vertical by setting [GUIDEFRAME] to [ON].
The frame is not recorded. Press DISPLAY/BATT INFO to make the frame disappear.

**Tips**

- Placing the subject at the cross point of the guide frame makes a balanced composition.

## COLOR BAR

You can display the color bar or record it on the tape by setting [COLOR BAR] to [ON]. It is convenient to adjust the color on the monitor connected.

## DATA CODE

During playback, displays the information (data code) recorded automatically at the time of recording.

**►OFF**

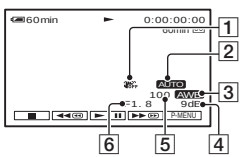
Data code is not displayed.

**DATE/TIME**

Displays the date and time.

**CAMERA DATA (below)**

Displays camera setting data.




1 SteadyShot off
2 Exposure
3 White balance
4 Gain
5 Shutter speed
6 Aperture value

**Notes**

- The exposure adjustment value (0EV), a shutter speed, and the aperture value appear when still images on a "Memory Stick Duo" are played back.
- In the DATE/TIME data display, the date and time are displayed in the same area. If you record a picture without setting the clock, [-- -- ----] and [--:--:--] will appear.

## REMAINING

**►AUTO**

Displays the remaining tape indicator for about 8 seconds in situations such as those described below.

- When you set the POWER switch to PLAY/EDIT or TAPE with a cassette inserted.
- When you touch ►II (Play/Pause).

**ON**

Always displays the remaining tape indicator.

## REC LAMP (Recording lamp)

The camera recording lamp will not light up during recording when you set this to [OFF] (The default setting is [ON]).

## BEEP

**►ON**

A beeping sound starts when you start/stop recording, or operate the touch panel.

**OFF**

Cancels the beeping sound and shutter sound.

## DISP OUTPUT (Display output)

**►LCD PANEL**

Shows displays such as the time code on the LCD screen and in the viewfinder.

**V-OUT/PANEL**

Shows displays such as the time code on the TV screen, LCD screen, and in the viewfinder.

## MENU ROTATE

**►NORMAL**

Scrolls the menu items downwards by touching ▲.

**OPPOSITE**

Scrolls the menu items upwards by touching ▲.

## CALIBRATION

See page 102.

## QUICK REC (Quick recording) HDV1080i

You can slightly reduce the recording start point time when you start recording by

pressing START/STOP. This function is useful to compensate for time lapse at the click of the shutter.

**► OFF**

Takes more time to reach the recording start point, but a smooth transition can be recorded.

**ON (Q.REC)**

Slightly reduces the time it takes to start recording when you attempt to record right after you switch on the camcorder (set the POWER switch to TAPE from the OFF (CHG) position), or when you attempt to record when the recording stanby mode is canceled.

### Notes

- If [QUICK REC] is set to [ON], the interval between scenes freezes for a moment (editing on your computer is recommended).

### Tips

- If the recording standby mode continues more than approximately 3 minutes, the drum will stop rolling, and the standby mode is canceled. This is to protect the tape and to prevent from unnecessarily battery exhausting.

## TIME/LANGU. menu

**See page 42 for details on selecting menu items.**

### CLOCK SET

See page 24.

### WORLD TIME

When using your camcorder abroad, you can set the time difference by touching [−]/[+], the clock will be adjusted in accordance with the time difference.
If you set the time difference to 0, the clock returns to the originally set time.

### LANGUAGE

You can select the language to be used on the LCD screen.

- Your camcorder offers [ENG[SIMP]] (simplified English) for when you cannot find your native tongue among the options.

# Customizing Personal Menu

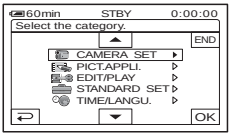
You can add desired menu items to any Personal Menu, and customize Personal Menu settings for each POWER switch position. This is convenient if you add frequently used menu items to Personal Menu.

## Adding a menu item

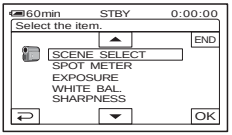
You can add up to 28 menu items for each POWER switch position. Delete a less important menu item, if you want to add more.

**1 Touch P-MENU → [P-MENU SET UP] → [ADD].**

If the desired menu item is not displayed, touch ⏫/⏬.




**2 Touch ▲/▼ to select a menu category, then touch OK.**



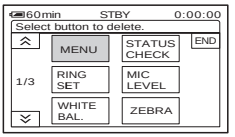

**3 Touch ▲/▼ to select a menu item, then touch OK → [YES] → ✕.**

The menu item is added to the end of the list.

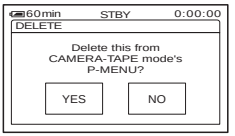
## Deleting a menu item

**1 Touch P-MENU → [P-MENU SET UP] → [DELETE].**

If the desired menu item is not displayed, touch ⏫/⏬.




**2 Touch the menu item that you want to delete.**




**3 Touch [YES] → ✕.**

### Notes

- You cannot delete [MENU] and [P-MENU SET UP].

## Arranging the order of menu items displayed on Personal Menu

**1 Touch P-MENU → [P-MENU SET UP] → [SORT].**

If the desired menu item is not displayed, touch ⏫/⏬.

**2 Touch the menu item you want to move.**

**3 Touch ▲/▼ to move the menu item to the desired place.**

**4 Touch OK.**

To sort more items, repeat steps **2** to **4**.

**5 Touch [END] → ✕.**

**Notes**

- You cannot move [P-MENU SET UP].

## Initializing the Personal Menu settings (Reset)

**Touch P-MENU → [P-MENU SET UP] → [RESET] → [YES] → [YES] → ✕.**

If the desired menu item is not displayed, touch ⏫/⏬.

# Dubbing to VCR or DVD/HDD recorders

Connect your camcorder to the wall outlet (wall socket) using the supplied AC Adaptor for this operation (p. 21). Refer also to the instruction manuals supplied with the devices to be connected.

## Connecting to external devices

The connection method and the image quality will differ depending on the VCR or DVD/HDD recorders and the connectors used.

: Signal flow

| Camcorder | Cable | External device |
|---|---|---|
| HDV/DV | i.LINK cable (optional) — i.LINK | HDV1080i compatible device* → **HD quality** |
| HDV/DV | i.LINK cable (optional) — i.LINK | AV device with i.LINK jack → **SD quality** |
| S VIDEO / VIDEO / AUDIO | A/V connecting cable with S VIDEO (optional) — S VIDEO / VIDEO / AUDIO (White) (Red) (Yellow) | AV device with S VIDEO jack → **SD quality** |
| VIDEO / AUDIO | A/V connecting cable (supplied) — (Yellow) (White) (Red) VIDEO / AUDIO | AV device with audio/video jacks** → **SD quality** |

* An i.LINK jack which is compatible with HDV1080i specification is required. For details, refer to the instruction manuals supplied with the device to be connected.

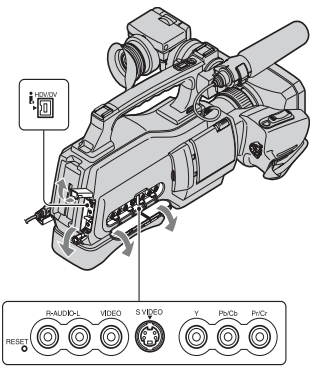
** When connecting your camcorder to a monaural device, connect the yellow plug of the A/V connecting cable to the video jack on the device, and the white (left channel) or red (right channel) plug to the audio jack on the device.

### Notes

- You cannot dub pictures using the HDMI cable.
- Pictures recorded in the DV format are dubbed as SD (standard definition) images, regardless of the connection.

## Jacks on your camcorder

Open the jack cover and connect the cable.




## Using an i.LINK cable (optional)

Select the required settings from the table below and make the menu settings.

### Notes

- Disconnect the i.LINK cable before changing these menu settings, otherwise the VCR or DVD/HDD recorders may not correctly identify the video signal.

| Recorded format | Dubbing format | Menu setting | |
|---|---|---|---|
| | | [VCR HDV/DV] | [i.LINK CONV] |
| HDV only | HDV*1 | [AUTO] or HDV | [OFF] |
| | DV | [AUTO] | [ON: SQUEEZE]/ [ON: EDGE CROP] |
| Mixed HDV and DV | HDV*1 | [AUTO] or HDV*2 | [OFF] |
| | DV | [AUTO]*3 | [ON: SQUEEZE]/ [ON: EDGE CROP] |
| DV only | DV | [AUTO] or DV | – |

*1 The VCR or DVD/HDD recorders need to be compliant with HDV1080i specification.

*2 Parts recorded in DV format cannot be dubbed.

*3 Parts recorded in both DV and HDV format can be dubbed.

### Notes

- When [VCR HDV/DV] is set to [AUTO], and the signal switches between HDV and DV formats, the picture and sound are interrupted temporarily.
- When the player and the recorder are both HDV1080i compatible devices such as HVR-HD1000E/HD1000P and are connected with the i.LINK cable, after pausing or stopping and then resuming the recording, the images will be unstable or rough at that point.
- Set [DISP OUTPUT] to [LCD PANEL] (default setting) when connecting with an A/V connecting cable (p. 64).

## When connecting with the A/V connecting cable with an S VIDEO (optional)

Connect with S VIDEO jack instead of the video plug (yellow). This connection produces pictures more faithfully. The audio will not be output when you connect with the S VIDEO cable alone.

## Dubbing to another device

### 1 Prepare your camcorder for playback.

Insert the recorded cassette.
Slide the POWER switch to PLAY/EDIT.

### 2 When dubbing to the VCR, insert a cassette for recording. When dubbing to the DVD recorder, insert a DVD for recording.

If your recording device has an input selector, set it to the appropriate input (such as video input1 and video input2).

### 3 Connect your recording device (VCR or DVD/HDD recorder) to your camcorder.

See page 68 for connection details.

### 4 Start playback on your camcorder, and recording on the recording device.

Refer to the operating instructions supplied with your recording device for details.

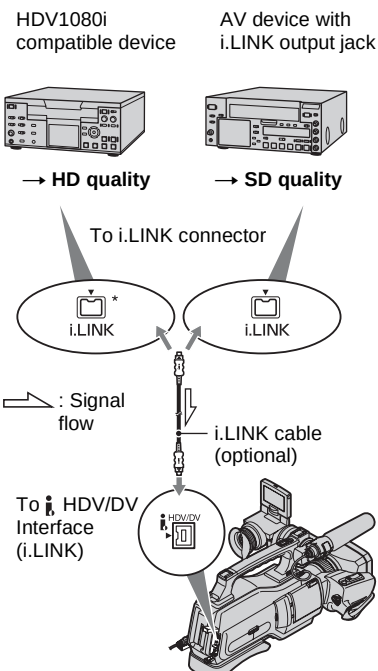
### 5 When dubbing is complete, stop your camcorder and the recording device.

**Notes**

- When connecting with an A/V connecting cable, set [VIDEO OUT] according to the playback device (TV, etc.).
- To record the date/time and camera settings data when connected by the A/V connecting cable, display them on the screen (p. 64).
- The following cannot be output via the i, HDV/DV interface (i.LINK):
  - Indicators
  - Pictures edited with [PICT.EFFECT] (p. 57) or [D.EFFECT] (p. 56)
  - Titles that are recorded on other camcorders
- Pictures recorded in the HDV format are not output from the i, HDV/DV Interface (i.LINK) during playback pause or in any playback mode other than normal playback.
- Note the following when connecting with an i.LINK cable:
  - The recorded picture becomes rough when a picture is paused on your camcorder while recording to a VCR or DVD/HDD recorder.
  - Data codes (date/time/camera settings data) may not be displayed or recorded depending on the device or application.
  - You cannot record the picture and sound separately.
- When dubbing to a DVD recorder from your camcorder through an i.LINK cable, you may not operate your camcorder on your DVD recorder even if its instruction manual says you can.
  If you can set the input mode to HDV or DV on your DVD recorder and can input/output pictures, follow the steps in "Dubbing to another device."
- When you use an i.LINK cable, the video and sound signals are transmitted digitally, producing high quality pictures.
- When an i.LINK cable is connected, the format of the output signal (HDVOUT i.LINK or DVOUT i.LINK) will be indicated on the LCD screen of your camcorder.

# Recording pictures from a VCR i.LINK

You can record movies from a VCR on a tape. You can record a scene as a still image on a "Memory Stick Duo." Be sure to insert a cassette or a "Memory Stick Duo" for recording in your camcorder beforehand. You can connect your camcorder to a VCR device using an i.LINK cable.
Connect your camcorder to the wall outlet (wall socket) using the supplied AC Adaptor for this operation (p. 21). Refer also to the instruction manuals supplied with the devices to be connected.




* An i.LINK jack which is compatible with HDV1080i specification is required.

## Recording movies

### 1 Slide the POWER switch to PLAY/EDIT.

### 2 Set the input signal of your camcorder.

Set [VCR HDV/DV] to [AUTO] when recording from an HDV format compatible device.

Set [VCR HDV/DV] to [DV] or [AUTO] when recording from a DV format compatible device (p. 59).

### 3 Connect your VCR as a player to your camcorder.

**Notes**

- When an i.LINK cable is connected, the format of the input signal (HDV IN i.LINK or DV IN i.LINK) will be indicated on the LCD screen of your camcorder (This indicator may appear on the screen of the playback device, however, it will not be recorded).

### 4 Insert a cassette into the VCR.

### 5 Operate your camcorder to record movies.

Touch P-MENU → [REC CTRL] → [REC PAUSE].

If the desired item is not displayed on the screen, touch ⌃/⌄ until the item is displayed.

**6 Start playing the cassette on your VCR.**

The picture played on the connected device appears on the LCD screen of your camcorder.

**7 Touch [REC START] at the point you want to start recording.**

**8 Stop recording.**

Touch ■ (Stop) or [REC PAUSE].

**9 Touch ⮌ → ✕.**

**Notes**

- You need an i.LINK cable for this operation.
- You cannot record TV programs from the i, HDV/DV Interface (i.LINK).
- You can record pictures from DV devices only in the DV format.
- Note the following when connecting with an i.LINK cable:
  - The recorded picture becomes rough when a picture is paused on a VCR while recording to your camcorder.
  - You cannot record the picture and sound separately.
  - If you pause or stop the recording and restart it, the picture may not be recorded smoothly.
- When a 4:3 video signal is input, it appears with black bands on the right and left sides on the screen of your camcorder.

## Recording still images

**1 Perform steps 1 to 4 in “Recording movies”.**

**2 Start playing the cassette.**

The pictures on the VCR appear on the screen of your camcorder.

**3 Press PHOTO lightly at the scene you want to record. Check the image and press it fully.**

# Dubbing pictures from a tape to a “Memory Stick Duo”

You can record a desired scene onto a “Memory Stick Duo” as a still image, from a movie you recorded on a tape. Make sure you have a recorded tape and a “Memory Stick Duo” inserted into your camcorder.

### 1 Slide the POWER switch to PLAY/EDIT.

### 2 Search and record the scene you want to record.

Touch ► II (Play) to play back the tape, then press PHOTO lightly at the scene you want to record. Check the image and press it fully.

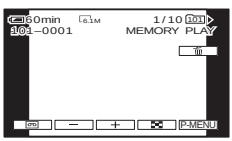
#### Notes

- The date and time the picture is recorded on the tape and stored on the “Memory Stick Duo” are recorded. On your camcorder, the date and time the picture is recorded on the tape are displayed. Camera setting data recorded on the tape cannot be stored on the “Memory Stick Duo.”
- Still images will be fixed to image size [ 1.2M] when playing back in the HDV format. Still images will be fixed to image size [ 0.2M] (16:9) or [VGA (0.3M)] (4:3) when playing back in the DV format (p. 53).
- You cannot record still images while using PB zoom.

# Deleting recorded pictures from the “Memory Stick Duo”

### 1 Slide the POWER switch to PLAY/EDIT.

### 2 Touch MEMORY.




### 3 Select a picture you want to delete with −/+.

### 4 Touch 🗑 → [YES].

#### Notes

- The pictures cannot be restored once they are deleted.
- Pictures cannot be deleted when a “Memory Stick Duo” with the write-protect tab is set to the write-protect position (p. 96), or when the selected picture is protected (p. 74).

#### Tips

- To delete all pictures at once, select [ ALL ERASE] (p. 53).
- You can delete pictures on the index screen (p. 34). You can easily search for the picture to be deleted by displaying 6 pictures at once. Touch SET → [🗑 DELETE] → the picture you want to delete → OK → [YES].

# Marking images on the “Memory Stick Duo” with specific information (Print mark/Image protection)

When you are using a “Memory Stick Duo” with the write-protect tab, make sure the write-protect tab on the “Memory Stick Duo” is not set to the write-protect position (p. 96).

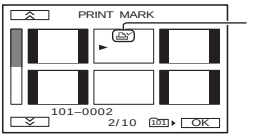
## Selecting still images for printing (Print mark)

The DPOF (Digital Print Order Format) standard is used to select images for printing on your camcorder.
By marking images that you want to print out, you do not need to reselect them when you print them out (You cannot specify the number of printouts).

**1** **Slide the POWER switch to PLAY/EDIT.**

**2** **Touch MEMORY → ▦ → SET → [PRINT MARK].**

**3** **Touch the image that you want to print out later.**



appears.

**4** **Touch OK → [END].**

### Notes

- To cancel Print mark, touch the image again to cancel Print mark in step **3**.
- Do not mark images on your camcorder if the “Memory Stick Duo” already has some images with the Print mark put on using other devices. This may change the information of the images with the Print mark put on using the other device.

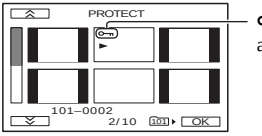
## Preventing accidental erasure (Image protection)

You can select and mark images to prevent accidental erasure.

**1** **Slide the POWER switch to PLAY/EDIT.**

**2** **Touch MEMORY → ▦ → SET → [PROTECT].**

**3** **Touch the image that you want to protect.**



appears.

**4** **Touch OK → [END].**

### Notes

- To cancel image protection, touch the image again to cancel image protection in step **3**.

# Printing recorded images (PictBridge compliant printer)

You can print out pictures using a PictBridge compliant printer without connecting the camcorder to a computer.

PictBridge

Connect your camcorder to the AC Adaptor to obtain power from the wall outlet (wall socket) (p. 21).
Insert the "Memory Stick Duo" containing still images into your camcorder and turn on the printer.

## Connecting your camcorder to the printer

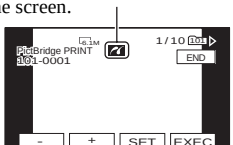
**1 Slide the POWER switch to PLAY/EDIT.**

**2 Connect the (USB) jack of your camcorder to the printer using the USB cable.**

[USB SELECT] appears on the screen automatically.

**3 Touch [PictBridge PRINT].**

When connection is complete, (PictBridge connecting) appears on the screen.




One of the images stored on the "Memory Stick Duo" will be displayed.

### Notes

- We cannot guarantee the operation of models that are not PictBridge compatible.

### Tips

- You can also operate by selecting in the following orders:
  - – P-MENU → [MENU] → (PICT.APPLI.) → [USB SELECT] → [PictBridge PRINT].
  - – P-MENU → [MENU] → (PICT.APPLI.) → [PictBridge PRINT].

## Printing

**1 Select the image to be printed with – / +.**

**2 Touch SET → [COPIES].**

**3 Select the number of copies to be printed with – / +.**

A maximum of 20 copies of the image can be printed.

**4 Touch OK → [END].**

To print the date/time on the image, touch SET → [DATE/TIME] → [DATE] or [DAY&TIME] → OK.

**5 Touch [EXEC] → [YES].**

When printing is finished, [Printing…] disappears and the image selection screen appears again.

Touch [END] when printing is completed.

### Notes

- Refer also to the operating instructions for the printer to be used.
- Do not attempt the following operations when is on the screen. The operations may not be performed properly.
  - – Operate the POWER switch.

– Disconnect the USB cable from the printer.
– Remove the “Memory Stick Duo” from your camcorder.

- If the printer stops working, disconnect the USB cable, turn the printer off and on again and restart the operation from the beginning.
- Some printers may cut off left, right, top and lower parts of the image. Especially, when the image is recorded with a 16:9 (wide) ratio, left and right parts may be largely cut off.
- Some printer models may not support the date/time printing function. Refer to your printer’s operating instructions for details.
- We cannot guarantee the printing of images recorded with a device other than your camcorder.
- PictBridge is an industry standard established by the Camera & Imaging Products Association (CIPA). You can print still images without using a computer by connecting a printer directly to a digital video camera or digital still camera, regardless of model or manufacturer.

# Connecting to a computer

When connecting your camcorder to a computer, the following operations are available:
Copying the still images on a “Memory Stick Duo” to the computer → p. 77
Copying the movie on a tape in the HDV format to the computer → p. 80
Copying the movie on a tape in the DV format to the computer → p. 80

## About connection

There are 2 ways to connect your camcorder to a computer:

– USB cable
To copy still images on a “Memory Stick Duo”
– i.LINK cable
To copy movies on a tape

### Notes on connecting to a computer

- When you are using a USB cable or an i.LINK cable to connect your camcorder to a computer, make sure to connect the connector in the correct direction. If you insert the connector forcibly, it may be damaged, and cause a malfunction of your camcorder.
- You cannot do the following:
  - Copying pictures on a tape to a computer with a USB cable.
  - Copying pictures on a “Memory Stick Duo” to a computer with an i.LINK cable.
- Remove the USB cable according to the correct procedure when disconnecting it from the computer (p. 79).

# Copying still images to a computer

## System requirements

### For Windows users

- OS: Windows 2000 Professional/Windows XP Home Edition/Windows XP Professional/ Windows Vista*

  * Except for 64-bit version

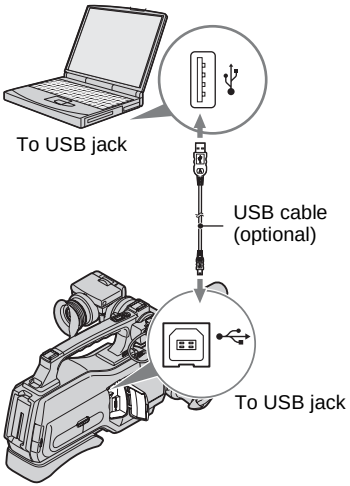
  It is necessary that your OS is factory-installed. Operations are not guaranteed if your OS has been upgraded or is being used in a multi-boot environment.
- CPU: MMX Pentium 200MHz or faster
- Others: USB port (provided as standard).

### For Macintosh users

- OS: Mac OS 9.1/9.2 or Mac OS X (v10.1/v10.2/ v10.3/v10.4)
- Others: USB port (provided as standard).

## Step:1 Using the USB cable

- You can do this operation with the standard driver on your computer. You do not need to install any software.
- If your computer has a Memory Stick slot, insert the “Memory Stick Duo” on which pictures are recorded into the Memory Stick Duo adaptor (optional), then insert it into the Memory Stick slot on your computer to copy still images to the computer.
- When using a “Memory Stick PRO Duo” and your computer is not compatible with it, connect your camcorder with the USB cable instead of using the Memory Stick slot on the computer.




- Do not connect your camcorder to the computer at this point.
- The computer may not recognize the camcorder if you connect them with the USB cable before turning on your camcorder.
- See page 105 for the recommended connection.

**1 Turn on the computer.**

Close down all applications running on the computer.

**For Windows 2000/Windows XP/ Windows Vista**

Log on as an Administrator.

**2 Insert a "Memory Stick Duo" into your camcorder.**

**3 Prepare the power source for your camcorder.**

Use the supplied AC Adaptor to obtain AC power (p. 21).

**4 Set the POWER switch to PLAY/ EDIT.**

**5 Touch [P-MENU] → [MENU] → (PICT.APPLI.) → [USB SELECT] → [Memory Stick].**

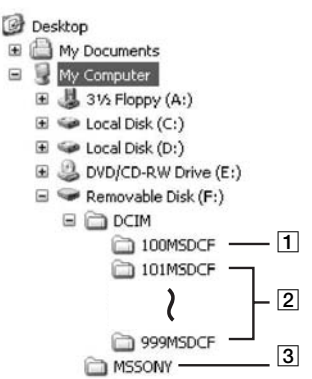
**6 Connect the USB cable to the (USB) jacks on your camcorder and your computer.**

It may take a while until your computer recognizes your camcorder for the first time.

## Step:2 Copying the pictures

### For Windows users

Double-click the [Removable Disk] icon displayed in [My Computer]. Then, drag and drop a picture in the folder onto the hard disk drive of your computer.



1 Folder containing image files recorded by other camcorders without the folder creation function (for playback only).

2 Folder containing image files recorded by your camcorder when no new folders have been created, only [101MSDCF] is displayed.

3 Folder containing movie data recorded by other camcorders without the folder creation function (for playback only)

| Folder | File | Meaning |
|---|---|---|
| 101MSDCF (up to 999 MSDCF) | DSC0□□ □□.JPG | Still image file |

□□□□ are numbers between 0001 and 9999.

### For Macintosh users

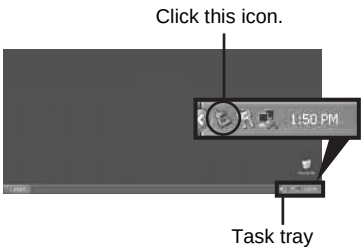
Double-click the drive icon, then drag and drop the desired picture file onto the hard disk of your computer.

## Disconnecting the USB cable

### For Windows users

If [USB CONNECTING] appears on the LCD screen, follow the procedure below to disconnect the USB cable.

① Click the [Unplug or eject hardware] icon on the task tray.




② Click [Safely remove USB Mass Storage Device-Drive].

③ Click [OK].

④ Disconnect the USB cable from the camcorder and computer.

If [USB CONNECTING] does not appear on the LCD screen, do only step ④.

#### Notes

- Remove the USB cable according to the correct procedure, otherwise files in the "Memory Stick Duo" may not be updated correctly. Also, this may cause a malfunction of the "Memory Stick Duo."

### For Macintosh users

① Close down all applications running on the computer.

② Drag and drop the drive icon on the desktop onto the [Trash] icon.

③ Disconnect the USB cable from the camcorder and computer.

**Notes**

- If you are using Mac OS X, turn off the computer before disconnecting the USB cable and ejecting the “Memory Stick Duo.”
- Do not disconnect the USB cable while the access lamp is lit.
- Make sure to disconnect the USB cable before turning off your camcorder.

### Recommended connection

Observe the following points when connecting to ensure the camcorder operates correctly.

- Connect the camcorder to a computer via the USB cable. Make sure no other USB devices are connected to the computer.
- If your computer has a USB keyboard and a USB mouse as standard equipment, leave them connected and connect the camcorder to an available USB jack with the USB cable.
- Operation is not guaranteed if you connect two or more USB devices to the computer.
- Operation is not guaranteed if you connect the USB cable to the USB jack on a keyboard or USB hub.
- Make sure to connect the cable to the USB jack on the computer.
- Operation is not guaranteed even for the recommended environments.

# Copying movies on a tape to a computer

Connect your camcorder to the computer with an i.LINK cable.
The computer needs to have an i.LINK connector and be installed with editing software that can copy video signals. The software required depends on the format of the recorded pictures and the format for copying to the computer (HDV or DV) as shown in the table below.

| Recorded format | Format for copying to the computer | Required software |
|---|---|---|
| HDV | HDV | Editing software capable of copying HDV signal |
| HDV | DV | Editing software capable of copying DV signal |
| DV | DV | Editing software capable of copying DV signal |

**Notes**

- You cannot copy movies using a USB cable.
- Refer to the operating instructions of the software for the details on image copying.
- Refer to the operating instructions of the editing software for the recommended connection.
- Some editing software on the computer may not work correctly.
- You cannot change format DV to HDV.

The required menu settings vary depending on the recorded images and the format (HDV or DV) to be copied to the computer.

| Recorded format | Format for copying to the computer | Menu setting* |
|---|---|---|
| HDV | HDV | [VCR HDV/DV] → [HDV] [i.LINK CONV] → [OFF] |

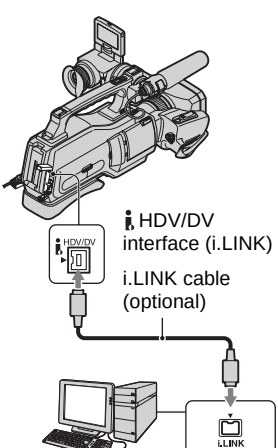
| Recorded format | Format for copying to the computer | Menu setting* |
|---|---|---|
| HDV | DV | [VCR HDV/DV] → [HDV] [i.LINK CONV] → [ON:SQUEEZE]/ [ON:EDGE CROP] |
| DV | DV | [VCR HDV/DV] → [DV] [i.LINK CONV] → [OFF] |

* See page 42 for menu settings.

### Tips

- To copy HDV format images as they are without changing their format, an HDV compatible environment is required.
  For details, refer to your software instruction manual or contact the software manufacturer.
- To play movies by a regular DVD player, you need to create DVD video in the SD format. the DVD video is not in the HDV format.

## Step:1 Connect an i.LINK cable




### Notes on connecting to the computer

- Connect the i.LINK cable to the computer first, then to your camcorder. Connecting in the opposite order may cause static electricity to build up, resulting in a malfunction of your camcorder.
- The computer may freeze or may not recognize the signal from your camcorder in the following situations.
  – Connecting your camcorder to a computer that does not support the video signal formats appearing on the LCD screen of your camcorder display (HDV or DV).
  – Changing [VCR HDV/DV] (p. 59) and [i.LINK CONV] (p. 62) settings while connected with an i.LINK cable.
  – Changing [REC FORMAT] setting while connected with an i.LINK cable with the POWER switch set to TAPE or MEMORY (p. 60).
  – Changing the POWER switch position while connected with an i.LINK cable.

The format (HDV or DV) of input/output signal appears on the LCD screen of your camcorder while connected with an i.LINK cable.

## Step:2 Copying the movies

Use the supplied AC Adaptor to obtain AC power (p. 21).

① Prepare editing software (not provided).

② Turn on your computer.

③ Insert a tape into your camcorder and set the POWER switch to VCR.

④ Set the menu of your camcorder.
The menu settings vary depending on the copying image.

⑤ Copy images to the computer with your software.

### Notes

- If images are copied in HDV format but not recognized, your editing software may not support HDV format. Convert the images to DV format according to step 4 and copy again.
- A tape recorded in DV format cannot be copied to a computer in HDV format.

**Tips**

- When images recorded in HDV format are copied to a computer, the file size is about 2GB (almost the same as a DV file) for a 10-minute movie if the video compression format is MPEG2.

### When copying the movie in the HDV format from the computer to your camcorder

Set [VCR HDV/DV] to [HDV] and [i.LINK CONV] to [OFF] (p. 59).

**Notes**

- To copy an HDV format movie edited on a computer back onto a tape in HDV format is possible so long as your editing software supports copying HDV movies onto tape. For details, contact the software manufacturer.

### When copying the movie in the DV format from the computer to your camcorder

Set [VCR HDV/DV] to [DV] (p. 59).

# Troubleshooting

If you run into any problems using your camcorder, use the following table to troubleshoot the problem. If the problem persists, disconnect the power source and contact your Sony dealer.


- Overall operations ..... 83
- Batteries/Power sources ..... 83
- LCD screen/viewfinder ..... 84
- Cassette tapes/“Memory Stick Duo” ..... 84
- Recording ..... 85
- Playback ..... 86
- Playing back on TV ..... 87
- Dubbing/Editing/Connecting to other devices ..... 88
- Functions that cannot be used together ..... 89


## Overall operations

### The power does not turn on.

- Attach a charged battery pack to the camcorder (p. 21).
- Use the AC Adaptor to connect to a wall outlet (wall socket) (p. 21).

### The camcorder does not operate even when the power is set to on.

- Disconnect the AC Adaptor from the wall outlet (wall socket) or remove the battery pack, then reconnect it after about 1 minute.
- Press the RESET button using a sharp-pointed object (If you press the RESET button, all settings are reset, except Personal Menu items).

### The camcorder gets warm.

- The camcorder may get warmer while you use it. This is not a malfunction.

## Batteries/Power sources

### The power abruptly turns off.

- Charge the battery pack (p. 21).

### The CHG (charge) lamp does not light while the battery pack is being charged.

- Slide the POWER switch to OFF (CHG) (p. 21).
- Attach the battery pack to the camcorder correctly (p. 21).
- Connect the power cord (mains lead) to the wall outlet (wall socket) properly.
- The battery charge is completed (p. 21).

### The CHG (charge) lamp flashes while the battery pack is being charged.

- Attach the battery pack to the camcorder correctly (p. 21). If the problem persists, disconnect the AC Adaptor from the wall outlet (wall socket) and contact your Sony dealer. The battery pack may be damaged.

### The remaining battery time indicator does not indicate the correct time.

- Ambient temperature is too high or too low, or the battery pack has not been charged enough. This is not a malfunction.
- Fully charge the battery again. If the problem persists, the battery may be worn-out. Replace it with a new one (p. 21, 98).
- The indicated time may not be correct in certain circumstances. For example, when you open or close the LCD panel, it takes about 1 minute to display the correct remaining battery time.

### The battery pack discharges too quickly.

- Ambient temperature is too high or low, or the battery pack has not been charged enough. This is not a malfunction.
- Fully charge the battery again. If the problem persists, the battery may be worn-out. Replace it with a new one (p. 21, 98).

## LCD screen/viewfinder

### Menu items are grayed out.

- You cannot select grayed items in the current recording/playback situation.
- Depending on the functions, you may not be able to use them together (p. 89).

### You cannot turn off the indicator.

- You cannot turn off [ⓘ]. Touch [ⓘ] to check the warning messages (p. 92).

### The buttons do not appear on the touch panel.

- Touch the LCD screen lightly.
- Press DISPLAY/BATT INFO on your camcorder (p. 25).

### The buttons on the touch panel do not work correctly or do not work at all.

- Adjust the touch panel ([CALIBRATION]) (p. 102).

### The picture in the viewfinder is not clear.

- Move the viewfinder lens adjustment lever until the picture appears clearly (p. 25).

### The LCD screen does not turn on.

- Set the LCD ON/OFF switch to ON.

## Cassette tapes/“Memory Stick Duo”

### The cassette cannot be ejected from the compartment.

- Make sure the power source (battery pack or AC Adaptor) is connected correctly (p. 21).
- Moisture condensation has occurred inside the camcorder (p. 101).

### The Cassette Memory indicator or title display does not appear while using a cassette with Cassette Memory.

- This camcorder does not support Cassette Memory, so the indicator does not appear.

### The remaining tape indicator is not displayed.

- Set [REMAINING] to [ON] to always display the remaining tape indicator (p. 64).

### The cassette is noisier during rewinding or fast-forwarding.

- When using the AC Adaptor, rewind/fast forward speed increases (compared with battery operation) and therefore increases noise. This is not a malfunction.

### You cannot operate functions using a “Memory Stick Duo,” even if a “Memory Stick Duo” is inserted.

- Slide the POWER switch to MEMORY or PLAY/EDIT (p. 24).
- If you use a “Memory Stick Duo” formatted on a computer, format it again on your camcorder (p. 53).

### You cannot delete the recorded picture on the tape.

- You cannot delete a recorded picture on tape; you can only rewind the tape and record again. The new recording overwrites the existing one.

### You cannot delete pictures or format a “Memory Stick Duo.”

- Cancel image protection on the picture (p. 74).
- The maximum number of pictures that you can delete on the index screen at one time is 100.

### Image protection cannot be applied, or you cannot mark pictures for print.

- Release the lock on the write-protect tab of the “Memory Stick Duo” if there is one (p. 96).
- Perform the operation again on the index screen (p. 34, 74).
- The maximum number of pictures you can mark for print is 999.

### The data file name is not indicated correctly, or flashes.

- The file is damaged.
- Use the file format compatible with your camcorder (p. 96).

## Recording

Refer also to “Cassette tapes/“Memory Stick Duo”” section (p. 84).

### The tape does not start when you press START/STOP.

- Slide the POWER switch to TAPE (p. 28).
- The tape has reached the end. Rewind it, or insert a new cassette.
- Set the write-protect tab to REC or insert a new cassette (p. 95).
- The tape is stuck to the drum due to moisture condensation. Remove the cassette and leave your camcorder for at least 1 hour, then reinsert the cassette (p. 101).

### You cannot record on the “Memory Stick Duo.”

- The “Memory Stick Duo” is full. Insert another “Memory Stick Duo” or format the “Memory Stick Duo” (p. 53). Or, delete unnecessary pictures recorded on the “Memory Stick Duo” (p. 73).
- When the POWER switch is set to TAPE, you cannot record still images on the “Memory Stick Duo” with:
  - When [SHUTTR SPEED] is set between 1/600 to 1/10000 second
  - While executing [FADER]
  - [D.EFFECT]
  - [PICT.EFFECT]
  - [SMTH SLW REC]
  - [COLOR BAR]

### The recording image view looks different.

- The recording image view may look different depending on the condition of your camcorder. This is not a malfunction.

### You cannot record a smooth transition on a tape from the last recorded scene to the next.

- Perform END SEARCH (p. 36).
- Do not remove the cassette (The picture will be recorded continuously without a break even when you turn the power off).
- Do not record pictures in the HDV and DV formats on the same tape.
- Do not record pictures in SP mode and LP mode on the same tape. DV
- Avoid stopping then recording a movie in the LP mode. DV
- When [QUICK REC] is set to [ON], you cannot record a smooth transition (p. 64). HDV1080i

### [END SEARCH] does not work.

- Do not eject the cassette after recording (p. 36).
- There is nothing recorded on the cassette.

- There is a blank section between recorded sections of the tape. This is not a malfunction.

### [COLOR SLOW S] does not operate correctly.

- [COLOR SLOW S] may not operate correctly in total darkness. Use NightShot or [SUPER NS].

### You cannot use [SUPER NS].

- The NIGHTSHOT switch is not set to ON (p. 31).

### The auto focus does not function.

- Set [FOCUS] to [AUTO] (p. 48).
- The recording conditions are not suitable for auto focus. Adjust the focus manually (p. 48).

### [STEADYSHOT] does not function.

- Set [STEADYSHOT] to [ON] (p. 50).

### Tiny spots in white, red, blue, or green appear on the screen.

- The spots appear when the shutter speed is slow or when you are recording in [SUPER NS] or [COLOR SLOW S]. This is not a malfunction.

### The subjects passing fast by the frame might appear crooked.

- This is called the focal plane phenomenon. This is not a malfunction. Because of the way the image device (CMOS sensor) reads out image signals, the subjects passing by the lens rapidly might appear crooked depending on the recording conditions.

### The color of the picture is not correctly displayed.

- Deactivate the NightShot function (p. 31).

### The screen picture is bright, and the subject does not appear on the screen.

- Set the NIGHTSHOT switch (p. 31) to OFF, or cancel the BACK LIGHT function (p. 32).

### Horizontal bands appear.

- This may occur when recording pictures under lighting from a discharge tube, such as a fluorescent lamp, sodium lamp, or mercury lamp. This is not a malfunction.
- This may be alleviated by adjusting the shutter speed (p. 47).

### Black bands appear when you record a TV screen or computer screen.

- Adjust [SHUTTR SPEED] (p. 47).

## Playback

Refer also to “Cassette tapes/“Memory Stick Duo”” section (p. 84).

### You cannot play back a tape.

- Slide the POWER switch to PLAY/EDIT.
- Rewind the tape (p. 33).

### You cannot play back in reverse direction.

- Reverse playback is not possible with the tape recorded in the HDV format.

### Image data stored on a “Memory Stick Duo” cannot be played back.

- Image data cannot be played back if you have modified file names or folders, or have edited the data on a computer (In this case, the file name flashes). This is not a malfunction (p. 97).

- Pictures recorded on other devices may not be played back or may not appear in their actual size. This is not a malfunction (p. 97).

### Horizontal lines appear on the picture. The displayed pictures are not clear or do not appear.

- Clean the head using the cleaning cassette (optional) (p. 101).

### You cannot hear the sound recorded with 4CH MIC REC on another camcorder. DV

- Adjust [ AUDIO MIX] (p. 60).

### Fine patterns flicker, diagonal lines look jagged.

- Adjust [SHARPNESS] to the [ — ] (soften) side (p. 47).

### No sound or only a low sound is heard.

- Turn up the volume (p. 33).
- Adjust [ AUDIO MIX] from the [ST2] (additional sound) side until the sound is heard appropriately (p. 60).
- If you are using an S VIDEO plug or component video plug, make sure the red and white plugs of the A/V connecting cable are also connected (p. 37).
- Sounds cannot be recorded while shooting a 3 second-movie (approx.) using [SMTH SLW REC].

### The picture or sound breaks off.

- The tape was recorded in both the HDV and DV formats. This is not a malfunction.

### The movies freeze for a while, or the sound breaks off.

- This occurs if the tape or video head is dirty (p. 101).
- Use the Sony mini DV cassette.

### "---" is displayed on the screen.

- The tape you are playing was recorded without setting the date and time.
- A blank section on the tape is being played.
- The data code on a tape with a scratch or noise cannot be read.

### Noises appear and NTSC or 60i is displayed on the screen.

- The tape was recorded in a TV color system other than that of your camcorder (PAL). This is not a malfunction (p. 94).

### No picture appears during [END SEARCH] or Rec Review.

- The tape was recorded in both HDV and DV formats. This is not a malfunction.

### ♪4ch-12b appears on the LCD screen.

- This appears when you play back a tape recorded on other recording devices using a 4ch microphone (4CH MIC REC). This camcorder does not comply with the 4ch microphone recording standard.

## Playing back on TV

### You cannot view the picture on the TV connected with the i.LINK cable.

- You cannot view the picture in the HD (high definition) image quality on the TV which is not compatible with the HDV1080i specification (p. 37). Refer to the instruction manuals supplied with your TV.
- Down convert the pictures recorded in HDV format to DV format and play back in SD (standard definition) image quality (p. 62).
- Play back pictures using another connecting cable (p. 37).

### You cannot view the picture or hear the sound on the TV connected with the component video cable.

- Set [COMPONENT] on the (STANDARD SET) menu according to the requirements of the connected device (p. 62).
- When you are using the component video cable, make sure the red and white plugs of the A/V connecting cable are connected (p. 37).

### You cannot view the picture or hear the sound on the TV connected with the HDMI cable.

- Pictures in the DV format are not output from the HDMI OUT jack, if copyright protection signals are recorded in the pictures.
- DV format pictures input to the camcorder via i.LINK cable (p. 71) cannot be output.
- This occurs if you record on a tape in both HDV and DV formats. Disconnect and connect the HDMI cable, or slide the POWER switch to turn on your camcorder again.

### The picture appears distorted on a 4:3 TV.

- This happens when viewing a picture recorded in the 16:9 (wide) mode on a 4:3 TV. Set [VIDEO OUT] on the (STANDARD SET) menu and play back the picture.

### Black bands appear at the top and bottom on a 4:3 TV.

- This happens when viewing a picture recorded in 16:9 (wide) mode on a 4:3 TV. This is not a malfunction.

## Dubbing/Editing/Connecting to other devices

### Pictures from connected devices cannot be zoomed.

- You cannot zoom pictures from connected devices on your camcorder (p. 35).

### Time code and other information appear on the display of the connected device.

- Set [DISP OUTPUT] to [LCD PANEL] while connected with an A/V connecting cable (p. 64).

### You cannot dub correctly using the A/V connecting cable.

- You cannot input externally from a device connected with the A/V connecting cable.
- The A/V connecting cable is not connected properly.
  Make sure that the A/V connecting cable is connected to the input jack of the other device for dubbing a picture from your camcorder.

### When connected using an i.LINK cable, no picture appears on the monitor screen or the picture is distorted during dubbing.

- Set [VCR HDV/DV] on the (STANDARD SET) menu according to the requirements of the connected device (p. 59).
- If the device to be connected is not compatible with HDV1080i specification, you cannot dub in HD (high definition) image quality (p. 68). For details, refer to the instruction manuals supplied with the device to be connected.
- Down convert the pictures recorded in HDV format to DV format and dub in SD (standard definition) image quality (p. 68).

### You cannot add sound to the recorded tape.

- You cannot add sound to the recorded tape on this unit.

### You cannot dub correctly using the HDMI cable.

- You cannot dub pictures using the HDMI cable.

### New sound added to a recorded tape on another camcorder is not heard.

DV

- Adjust [AUDIO MIX] from the [ST1] (original sound) side until the sound is heard appropriately (p. 60).

### Still pictures cannot be dubbed from a tape to a "Memory Stick Duo."

- You cannot record or a distorted picture may be recorded if the tape has been used repeatedly for recording.

## Functions that cannot be used together

Depending on the functions, you may not be able to use them together. The following list shows examples of menu items and functions that cannot be used at the same time.

| Not available | If this function is set |
|---|---|
| BACK LIGHT function | [FIREWORKS], [SPOT METER], [MANUAL] of [EXPOSURE] |
| [SCENE SELECT] | NightShot, [TELE MACRO], [CINEMA EFECT], [OLD MOVIE], [COLOR SLOW S] |
| [SPOT METER] | NightShot, [CINEMA EFECT] |
| [EXPOSURE] | NightShot |
| [WHITE BAL.] | NightShot |
| [SHARPNESS] | [CINEMA EFECT] |
| [SHUTTR SPEED] of the RING | NightShot, [CINEMA EFECT], [OLD MOVIE], [SMTH SLW REC] |
| [AE SHIFT] | [FIREWORKS], [MANUAL] of [EXPOSURE], [CINEMA EFECT] |
| [SPOT FOCUS] | [SCENE SELECT] |
| [TELE MACRO] | [SCENE SELECT], during tape recording |
| [COLOR SLOW S] | NightShot, [SCENE SELECT], [MANUAL] of [SHUTTR SPEED] , [FADER], [D.EFFECT] |
| [HISTOGRAM] | [DIGITAL ZOOM], [D.EFFECT], while displaying the date and time |
| [DIGITAL ZOOM] | [TELE MACRO] |
| [FADER] | [CANDLE], [FIREWORKS], [SUPER NS], [COLOR SLOW S], [D.EFFECT] |
| [D.EFFECT] | [SUPER NS], [COLOR SLOW S], [FADER] |
| [OLD MOVIE] of [D.EFFECT] | [SCENE SELECT], [PICT.EFFECT], when [WIDE SELECT] is set to [4:3] |

| Not available | If this function is set |
|---|---|
| [CINEMA EFECT] of [D.EFFECT] | [SCENE SELECT], [SPOT METER], [MANUAL] of [EXPOSURE], other than 0 in [AE SHIFT], [PICT.EFFECT], when [ WIDE SELECT] is set to [4:3] |
| [SMTH SLW REC] | [CANDLE], [FIREWORKS], [MANUAL] of [SHUTTR SPEED] , [SUPER NS], [COLOR SLOW S], [D.EFFECT], [PICT.EFFECT] |

• When [COLOR BAR] is set, all the “Not available” menu items on the list are not available.

# Warning indicators and messages

## Self-diagnosis display/Warning indicators

If indicators appear on the LCD screen or in the viewfinder, check the following. Some symptoms you can fix by yourself. If the problem persists even after you have tried a couple of times, contact your Sony dealer or local authorized Sony service facility.

### C:(or E:) □□:□□ (Self-diagnosis display)

#### C:04:□□

- The battery pack is not an "InfoLITHIUM" battery pack (L series). Use an "InfoLITHIUM" battery pack (L series) (p. 98).
- Connect the DC plug of the AC Adaptor to the DC IN jack of your camcorder securely (p. 21).

#### C:21:□□

- Moisture condensation has occurred. Remove the cassette and leave your camcorder for at least 1 hour, then re-insert the cassette (p. 101).

#### C:22:□□

- Clean the head using a cleaning cassette (optional) (p. 101).

#### C:31:□□ / C:32:□□

- Symptoms that are not described above have occurred. Remove and insert the cassette, then operate your camcorder again. Do not perform this procedure if moisture condensation has occurred (p. 101).
- Remove the power source. Reconnect it and operate your camcorder again.
- Change the cassette. Press RESET, and operate your camcorder again.

#### E:61:□□ / E:62:□□ / E:91:□□

- Contact your Sony dealer or local authorized Sony service facility. Inform them of the 5-digit code, which starts from "E."

### 101-1001(Warning indicator pertaining to files)

- The file is damaged.
- The file is unreadable (p. 96).

### (Battery level warning)

- The battery pack is nearly used up.
- Depending on the operating, environment, or battery conditions, may flash, even if there are approximately 5 to 10 minutes remaining.

### (Moisture condensation warning)*

- Eject the cassette, remove the power source, and then leave it for about 1 hour with the cassette lid open (p. 101).

### (Warning indicator pertaining to "Memory Stick Duo")

- A "Memory Stick Duo" is not inserted (p. 26).

### (Warning indicators pertaining to "Memory Stick Duo" formatting)*

- The "Memory Stick Duo" is damaged.
- The "Memory Stick Duo" is not formatted correctly (p. 53, 96).

### (Warning indicator pertaining to incompatible "Memory Stick Duo")*

- An incompatible "Memory Stick Duo" is inserted (p. 96).

**(Warning indicators pertaining to the tape)**

**Slow flashing:**

- There is less than 5 minutes remaining on the tape.
- No cassette is inserted.*
- The write-protect tab on the cassette is set to lock (p. 95).*

**Fast flashing:**

- The tape has run out.*

**⏏ (Eject cassette warning)***

**Slow flashing:**

- The write-protect tab on the cassette is set to lock (p. 95).

**Fast flashing:**

- Moisture condensation has occurred (p. 101).
- The self-diagnosis display code is displayed (p. 91).

**(Warning indicator pertaining to image deletion)***

- The image is protected (p. 74).

**(Warning indicator pertaining to the write-protect of the "Memory Stick Duo")***

- The write-protect tab on the "Memory Stick Duo" is set to lock (p. 96).

**(Warning indicator pertaining to camera-shake warning)**

- The camcorder is unsteady, so camera-shake easily occurs. Hold the camcorder steady with both hands and shoot the image. However, note that the camera-shake warning indicator does not disappear.

* You hear a melody when the warning indicators appear on the screen (p. 64).

## Description of warning messages

If messages appear on the screen, follow the instructions.

**Tips**

- When OK is displayed, the message can be turned into ⓘ by touching OK. Touch ⓘ to display the message again.

### ■ Moisture condensation

**Moisture condensation. Eject the cassette** (p. 101)

**Moisture condensation. Turn off for 1H.** (p. 101)

### ■ Cassette/Tape

**⏏ Reinsert the cassette.** (p. 26)

- Check if the cassette is damaged.

**⏏ The tape is locked - check the tab.** (p. 95)

### ■ "Memory Stick Duo"

**Reinsert the Memory Stick.** (p. 26)

- Reinsert the "Memory Stick Duo" a few times. If even then the indicator flashes, the "Memory Stick Duo" might be damaged. Try with another "Memory Stick Duo."

**This Memory Stick is not formatted correctly.**

- Check the format, then format the "Memory Stick Duo" as necessary (p. 53, 96).

**Memory Stick folders are full.**

- You cannot create folders exceeding 999MSDCF. You cannot delete created folders using your camcorder.
- You will have to format the “Memory Stick Duo” (p. 53), or delete them using your computer.

## ■ Dual Rec

**Cannot save still picture.**

- Do not eject “Memory Stick Duo” while still images are being stored onto it (p. 30).

## ■ PictBridge compliant printer

**Check the connected device.**

- Switch off the printer and switch it on again, then disconnect the USB cable and reconnect it.

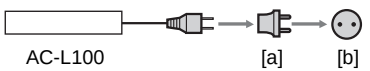
**Cannot print. Check the printer.**

- Switch off the printer and switch it on again, then disconnect the USB cable and reconnect it.

# Using your camcorder abroad

## Power supply

You can use your camcorder in any country/region using the AC Adaptor supplied with your camcorder within the AC 100 V to 240 V, 50/60 Hz range. Use a commercially available AC plug adaptor [a], if necessary, depending on the design of the wall outlet [b].




## On TV color systems

Your camcorder is PAL system, so its picture can only be viewed on a PAL system TV with an AUDIO/VIDEO input jack.

| System | Used in |
|---|---|
| PAL | Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Holland, Hong Kong, Hungary, Italy, Kuwait, Malaysia, New Zealand, Norway, Poland, Portugal, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, United Kingdom, etc. |
| PAL - M | Brazil |
| PAL - N | Argentina, Paraguay, Uruguay. |
| SECAM | Bulgaria, France, Guiana, Iran, Iraq, Monaco, Russia, Ukraine, etc. |
| NTSC | Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Guyana, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc. |

## Viewing HDV format pictures recorded in HDV format HDV1080i

You need an HDV1080i compatible TV (or monitor) with a component jack and AUDIO/VIDEO input jack. A component video cable and A/V connecting cable are also needed.

## Viewing DV format pictures recorded in DV format DV

You need a TV (or monitor) with the AUDIO/VIDEO input jack. A connecting cable is also needed.

## Simple setting of the clock by time difference

You can easily set the clock to the local time abroad by entering the time difference between where you live and where you are. Select [WORLD TIME] in the (TIME/LANGU.) menu, then set the time difference (p. 65).

# Maintenance and precautions

## Usable cassette tapes

Your camcorder is capable of recording in both HDV and DV formats.
You can use mini DV format cassettes only. Use a cassette with the Mini DV mark.
Your camcorder is not compatible with the Cassette Memory function.

### What is the HDV format?

The HDV format is a video format developed to record and play back digital high definition (HD) video signals on a DV cassette.
Your camcorder adopts the Interlace mode with 1,080 effective scan lines of screen ruling (1080i, number of pixels 1,440 × 1,080 dots).
The video bit rate for recording is about 25 Mbps.
i.LINK is adopted for the digital interface, enabling a digital connection with an HDV compatible TV or computer.

**Tips**

- HDV signals are compressed in MPEG2 format, which is adopted in BS (broadcast satellite) digital, terrestrial digital HDTV broadcastings, in Blu-ray Disc recorders, etc.

### Playback

Your camcorder can play back pictures in both the DV format and HDV1080i specification.
Your camcorder can play back pictures recorded in the HDV 720/30p format, but cannot output it from the i HDV/DV Interface (i.LINK).

### To prevent a blank section from being created on the tape

Go to the end of the recorded section using END SEARCH (p. 36) before you begin the next recording when you have played back the tape.

### Copyright signal

**■ When you play back**

If the cassette you play back on your camcorder contains copyright signals, you cannot copy it to a tape in another video camera connected to your camcorder.

**■ When you record**

You cannot record software on your camcorder that contains copyright control signals for copyright protection of software. [Cannot record due to copyright protection.] appears on the LCD screen, or on the viewfinder if you try to record such software. Your camcorder does not record copyright control signals on the tape when it records.

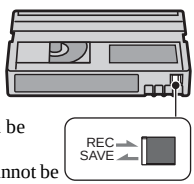
### Notes on use

**■ When not using your camcorder for a long time**

Remove the cassette and store it.

**■ To prevent accidental erasure**

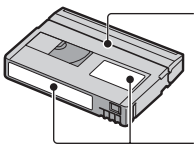
Slide the write-protect tab on the cassette to set it to SAVE.




REC: The cassette can be recorded.
SAVE: The cassette cannot be recorded (write-protected).

### ■ When labeling the cassette

Be sure to place the label only on the locations shown in the following illustration so as not to cause a malfunction of your camcorder.




### ■ After using the cassette

Rewind the tape to the beginning to avoid distortion of the picture or the sound. The cassette should then be put in its case, and stored in an upright position.

### ■ When cleaning the gold-plated connector

Generally, clean the gold-plated connector on a cassette with a cotton-wool swab after every 10 times it has been ejected.
If the gold-plated connector on the cassette is dirty or dusty, the remaining tape indicator may not show correctly.

Gold-plated connector

## About the “Memory Stick”

A “Memory Stick” is a compact, portable IC recording medium with a large data capacity.
You can use the following types of “Memory Stick” listed below on the camcorder. However, we do not guarantee the operation of all types of “Memory Stick” on your camcorder. (See the list below for more details.)

| Types of “Memory Stick” | Recording/ Playback |
|---|---|
| “Memory Stick Duo” (with MagicGate) | ○ |
| “Memory Stick PRO Duo” | ○ |
| “Memory Stick PRO-HG Duo” | ○* |

* This camcorder does not support 8-bit parallel data transfer, but supports 4-bit parallel data transfer as is the case with “Memory Stick PRO Duo”.

- This product cannot record or play data that uses “MagicGate” technology. “MagicGate” is a copyright protection technology that records and transfers the contents in an encrypted format.
- This product is compatible with “Memory Stick Micro” (“M2”). “M2” is the abbreviation for the “Memory Stick Micro.”
- Still image format: Your camcorder compresses and records image data in the JPEG (Joint Photographic Experts Group) format. The file extension is “.JPG.”
- File names of still images:
  - 101-0001: This file name appears on the screen of your camcorder.
  - DSC00001.JPG: This file name appears on the display of a computer.
- A “Memory Stick Duo” formatted by a computer (Windows OS/Mac OS) does not have guaranteed compatibility with your camcorder.
- Data read/write speed may vary depending on the combination of the “Memory Stick Duo” and “Memory Stick Duo” compliant product you use.
- You can prevent accidental erasure of images when you slide the write-protect tab on the “Memory Stick Duo” with a small tapered object, to the write-protect position.
- Damaged or lost image data will not be compensated for, and may occur in the following cases:
  - If you eject the “Memory Stick Duo,” turn the power off on your camcorder, or remove the battery pack for replacement while your camcorder is reading or writing image files on the “Memory Stick Duo” (while the access lamp is lit or flashing).
  - If you use the “Memory Stick Duo” near magnets or magnetic fields.
- It is recommended to make a back-up of important data on the hard disk of a computer.

- Be careful not to apply excessive force when writing on a memo area on a “Memory Stick Duo.”
- Do not attach a label or the like on a “Memory Stick Duo” or a Memory Stick Duo adaptor.
- When you carry or store a “Memory Stick Duo,” put it in its case.
- Do not touch, or allow metallic objects to come into contact with the terminals.
- Do not bend, drop or apply strong force to the “Memory Stick Duo.”
- Do not disassemble or modify the “Memory Stick Duo.”
- Do not let the “Memory Stick Duo” get wet.
- Be careful to keep “Memory Stick Duo” media out of the reach of small children. There is danger that a child might swallow it.
- Do not insert anything other than a “Memory Stick Duo” into the Memory Stick Duo slot. Doing so may cause a malfunction.
- Do not use or keep the “Memory Stick Duo” in the following locations:
  - Places subject to extremely high temperature, such as a car parked outside in the summer.
  - Places under direct sunlight.
  - Places with extremely high humidity or subject to corrosive gases.

### ■ On the Memory Stick Duo adaptor

- When using a “Memory Stick Duo” with a “Memory Stick” compliant device, make sure to insert the “Memory Stick Duo” into a Memory Stick Duo adaptor.
- When inserting a “Memory Stick Duo” into a Memory Stick Duo adaptor, make sure the “Memory Stick Duo” is inserted facing in the correct direction, then insert it all the way in. Note that improper use may cause a malfunction. Also, if you force the “Memory Stick Duo” into the Memory Stick Duo adaptor in the wrong direction, it may be damaged.
- Do not insert a Memory Stick Duo adaptor without a “Memory Stick Duo” attached. Doing so may result in malfunctions of the unit.

### ■ On a “Memory Stick PRO Duo”

- The maximum memory capacity of a “Memory Stick PRO Duo” that can be used on your camcorder is 8 GB.

## Notes on using “Memory Stick Micro”

- To use a “Memory Stick Micro” with the camcorder, you need a Duo-sized M2 Adaptor. Insert the “Memory Stick Micro” into the Duo-sized M2 Adaptor, then insert the adaptor into the Memory Stick Duo slot. If you insert a “Memory Stick Micro” into the camcorder without using a Duo-sized M2 Adaptor, you might not be able to remove it from the camcorder.
- Do not leave the “Memory Stick Micro” within the reach of small children. They might accidentally swallow it.

## On image data compatibility

- Image data files recorded on a “Memory Stick Duo” by your camcorder conform to the “Design rule for Camera File system” universal standard established by the JEITA (Japan Electronics and Information Technology Industries Association).
- On your camcorder, you cannot play back still images recorded on other devices (DCR-TRV900E or DSC-D700/D770) that do not conform to the universal standard. (These models are not sold in some regions.)
- If you cannot use a “Memory Stick Duo” that has been used with another device, format it with your camcorder (p. 64). Note that formatting erases all information on the “Memory Stick Duo.”
- You may not be able to play back images with your camcorder:
  - When playing back image data modified on your computer.
  - When playing back image data recorded with other devices.

## About the "InfoLITHIUM" battery pack

This unit is compatible with an "InfoLITHIUM" battery pack (L series). Your camcorder operates only with an "InfoLITHIUM" battery pack. "InfoLITHIUM" L series battery packs have the InfoLITHIUM L SERIES mark.

### What is an "InfoLITHIUM" battery pack?

An "InfoLITHIUM" battery pack is a lithium-ion battery pack that has functions for communicating information related to operating conditions between your camcorder and an optional AC Adaptor/charger.
The "InfoLITHIUM" battery pack calculates the power consumption according to the operating conditions of your camcorder, and displays the remaining battery time in minutes.
With an AC Adaptor/charger, the remaining battery time and charging time appear.

### To charge the battery pack

- Be sure to charge the battery pack before you start using your camcorder.
- We recommend charging the battery pack in an ambient temperature of between 10 °C to 30 °C (50 °F to 86 °F) until the CHG (charge) lamp turns off. If you charge the battery pack outside of this temperature range, you may not be able to charge it efficiently.
- After charging is complete, disconnect the cable from the DC IN jack on your camcorder or remove the battery pack.

### To use the battery pack effectively

- Battery pack performance decreases when the surrounding temperature is 10 °C (50 °F) or below, and the length of time you can use the battery pack becomes shorter. In that case, do one of the following to use the battery pack for a longer time.
  – Put the battery pack in a pocket to warm it up, and insert it in your camcorder right before you start taking shots.
  – Use a large capacity battery pack: NP-F770/NP-F970 (optional).
- Frequent use of the LCD screen or a frequent playback, fast forward or rewind operation wears out the battery pack faster.
  We recommend using a large capacity battery pack: NP-F770/NP-F970 (optional).
- Be sure to set the POWER switch to OFF (CHG) when not recording or playing back on your camcorder. The battery pack is also consumed when your camcorder is in recording standby or playback pause.
- Have spare battery packs ready for two or three times the expected recording time, and make trial recordings before making the actual recording.
- Do not expose the battery pack to water. The battery pack is not water resistant.

### About the remaining battery time indicator

- When the power goes off even though the remaining battery time indicator indicates that the battery pack has enough power to operate, charge the battery pack fully again. Remaining battery time will be indicated correctly. Note, however, that the battery indication will not be restored if it is used in high temperatures for a long time, or if left in a fully charged state, or when the battery pack is frequently used. Use the remaining battery time indication as a rough guide only.
- The mark that indicates low battery flashes even if there are still 5 to 10 minutes of battery time remaining, depending on the operating conditions or ambient temperature.

### About storage of the battery pack

- If the battery pack is not used for a long time, fully charge the battery pack and use it up on your camcorder once a year to maintain proper function. To store the battery pack, remove it from your camcorder and put it in a dry, cool place.

### About battery life

- Battery capacity decreases over time and through repeated use. If decreased usage time between charges becomes significant, it is probably time to replace it with a new one.

• Each battery's life is governed by storage, operating and environmental conditions.

## About i.LINK

The HDV/DV Interface on this unit is an i.LINK-compliant Interface. This section describes the i.LINK standard and its features.

### What is i.LINK?

i.LINK is a digital serial interface for transferring digital video, digital audio, and other data to other i.LINK-compatible devices. You can also control other devices using the i.LINK.
i.LINK-compatible devices can be connected using an i.LINK cable. Possible applications are operations and data transactions with various digital AV devices.
When two or more i.LINK-compatible devices are daisy-chained with the unit, operation becomes possible from any device in the chain. Note that operation method may vary, or data transactions may not be possible, depending on specifications and characteristics of the connected devices.

#### Notes

- Normally, only one device can be connected to this unit with an i.LINK cable. When connecting this unit to an HDV/DV compatible device having two or more HDV/DV Interfaces, refer to the operating instructions of the device to be connected.

#### Tips

- i.LINK is a more familiar term for the IEEE1394 data transport bus proposed by Sony, and is a trademark approved by many corporations.
- IEEE1394 is an international standard standardized by the Institute of Electrical and Electronics Engineers.

### About the i.LINK Baud rate

i.LINK's maximum baud rate varies according to the device. There are 3 types.

S100 (approx. 100 Mbps*)
S200 (approx. 200 Mbps)
S400 (approx. 400 Mbps)

The baud rate is listed under "Specifications" in the operating instructions of each piece of equipment. It is also indicated near the i.LINK interface on some devices.
The baud rate may differ from the indicated value when the unit is connected to a device with a different maximum baud rate.

*** What is Mbps?**

Mbps stands for "megabits per second," or the amount of data that can be sent or received in one second. For example, a baud rate of 100 Mbps means that 100 megabits of data can be sent in one second.

### To use i.LINK functions on this unit

For details on how to dub when this unit is connected to other video devices having an i.LINK Interface, see page 68.
This unit can also be connected to other i.LINK-compatible devices made by Sony (e.g. a VAIO series personal computer) as well as to video devices.
Some i.LINK compatible video devices, such as Digital Televisions, DVD, MICROMV or HDV recorders/players are not compatible with this unit. Before connecting to other devices, be sure to confirm whether the device is compatible with an HDV/DV device or not. For details on precautions and compatible application software, refer also to the operating instructions for the device to be connected.

**Notes**

- When connecting your camcorder to another i.LINK-compatible device, be sure to turn off the power of the device and disconnect the AC Adaptor from the wall outlet (wall socket) before connecting or disconnecting the i.LINK cable.

### About the required i.LINK cable

Use the Sony i.LINK 4-pin-to-4-pin cable (during HDV/DV dubbing).

## About x.v.Color

- x.v.Color is a more familiar term for the xvYCC standard proposed by Sony, and is a trademark of Sony.
- xvYCC is an international standard for color space in video. This standard can express a wider color range than the currently used broadcast standard.

## On using your camcorder

### On use and care

- Do not use or store the camcorder and accessories in the following locations.
  - Anywhere extremely hot or cold. Never leave them exposed to temperatures above 60 °C (140 °F), such as under direct sunlight, near heaters or in a car parked in the sun. They may malfunction or become deformed.
  - Near strong magnetic fields or mechanical vibration. The camcorder may malfunction.
  - Near strong radio waves or radiation. The camcorder may not be able to record properly.
  - Near AM receivers and video equipment. Noise may occur.
  - On a sandy beach or anywhere dusty. If sand or dust gets in your camcorder, it may malfunction. Sometimes this malfunction cannot be repaired.
  - Near windows or outdoors, where the LCD screen, the viewfinder, or the lens may be exposed to direct sunlight. This damages the inside of the viewfinder or the LCD screen.
  - Anywhere very humid.
- Operate your camcorder on DC 6.8 V (battery pack) or DC 8.4 V (AC Adaptor).
- For DC or AC operation, use the accessories recommended in these operating instructions.
- Do not let your camcorder get wet, for example, from rain or sea water. If your camcorder gets wet, it may malfunction. Sometimes this malfunction cannot be repaired.
- If any solid object or liquid gets inside the casing, unplug your camcorder and have it checked by a Sony dealer before operating it any further.
- Avoid rough handling, disassembling, modifying, physical shock, or impact such as hammering, dropping or stepping on the product. Be particularly careful of the lens.
- Keep the POWER switch setting to OFF (CHG) when you are not using your camcorder.
- Do not wrap your camcorder with a towel, for example, and operate it. Doing so might cause heat to build up inside.
- When disconnecting the power cord (mains lead), pull it by the plug and not the cord (lead).
- Do not damage the power cord (mains lead) such as by placing anything heavy on it.
- Keep metal contacts clean.
- If the battery electrolytic liquid has leaked,
  - consult your local authorized Sony service facility.
  - wash off any liquid that may have contacted your skin.
  - if any liquid gets in your eyes, wash with plenty of water and consult a doctor.

#### ■ When not using your camcorder for a long time

- Periodically turn on the camcorder and play a cassette for about 3 minutes.
- Use up the battery pack completely before storing it.

## Moisture condensation

If your camcorder is brought directly from a cold place to a warm place, moisture may condense inside your camcorder, on the surface of the tape, or on the lens. In this state, the tape may stick to the head drum and be damaged or your camcorder may not operate correctly. If there is moisture inside your camcorder, [ Moisture condensation. Eject the cassette] or [ Moisture condensation. Turn off for 1H.] appears. The indicator will not appear when the moisture condenses on the lens.

### ■ If moisture condensation has occurred

None of the functions except cassette ejection will work. Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette lid open. Your camcorder can be used again when both of the following conditions are met:

- The warning message does not appear when the power is turned on.
- Neither or flash when a cassette is inserted and video operation buttons are touched.

If moisture starts to condense, your camcorder sometimes cannot detect condensation. If this happens, the cassette is sometimes not ejected for 10 seconds after the cassette lid is opened. This is not a malfunction. Do not close the cassette lid until the cassette is ejected.

### ■ Note on moisture condensation

Moisture may condense when you bring your camcorder from a cold place into a warm place (or vice versa) or when you use your camcorder in a humid place as shown below.

- When you bring your camcorder from a ski slope into a place warmed up by a heating device.
- When you bring your camcorder from an air conditioned car or room into a hot place outside.
- When you use your camcorder after a squall or a shower.
- When you use your camcorder in a hot and humid place.

### ■ How to avoid moisture condensation

When you bring your camcorder from a cold place into a warm place, put your camcorder in a plastic bag and seal it tightly. Remove the bag when the air temperature inside the plastic bag has reached the surrounding temperature (after about one hour).

## Video head

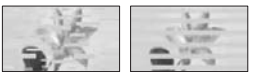
If you play back a tape recorded in HDV format, the image and sound may freeze for a while (about 0.5 seconds).
This occurs if the HDV signals cannot be recorded or played back correctly because of dirt on the tape or video head. Depending on the cassette, this fairly infrequently occurs even if the cassette is brand new or is not used a lot.
If this freezing point is created while playing back, you can solve this problem and see the pictures by rewinding after slightly forwarding. Such a freezing point cannot be recovered if it was created while recording.
To prevent such a problem, use the Sony mini DV cassette.

- If the following problem occurs, clean the video heads for 10 seconds with the cleaning cassette.
  - Playback pictures do not move.
  - Playback pictures do not appear.
  - The sound breaks off.
  - [ Dirty video head. Use a cleaning cassette.] appears on the screen during recording.
  - The following phenomenon occurs in HDV format.

The playback screen pauses.

The playback screen goes blank. (Solid blue screen)

– The following phenomenon occurs in DV format.



Block-noise appears.

The playback screen goes blank. (Solid blue screen)

- The video heads will degrade after long use. If you cannot obtain a clear image even after using a cleaning cassette (optional), it might be because the video heads are worn out. Please contact your Sony dealer or local authorized Sony service facility to have the video heads replaced.

## LCD screen

- Do not exert excessive pressure on the LCD screen, as it may cause damage.
- If your camcorder is used in a cold place, a residual image may appear on the LCD screen. This is not a malfunction.
- While using your camcorder, the back of the LCD screen may heat up. This is not a malfunction.

### ■ To clean the LCD screen

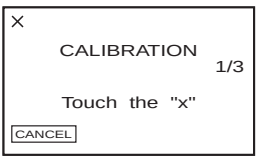
If fingerprints or dust make the LCD screen dirty, it is recommended you use a soft cloth to clean it. When you use the LCD Cleaning Kit (optional), do not apply the cleaning liquid directly to the LCD screen. Use cleaning paper moistened with the liquid.

### ■ On adjustment of the touch panel (CALIBRATION)

The buttons on the touch panel may not work correctly. If this happens, follow the procedure below. It is recommended you connect your camcorder to the wall outlet (wall socket) using the supplied AC Adaptor during the operation.

① Slide the POWER switch repeatedly to PLAY/EDIT.

② Touch P-MENU → [MENU] → (STANDARD SET) → [CALIBRATION] → OK.




③ Touch the “×” displayed on the screen with the corner of the “Memory Stick Duo” or the like.

The position of the “×” changes.

To cancel, touch [CANCEL].

If you did not press the right spot, start from step ③ again.

### Notes

- You cannot calibrate the LCD screen if it is rotated.

## On handling the casing

- If the casing is soiled, clean the camcorder body with a soft cloth lightly moistened with water, and then wipe the casing with a dry soft cloth.
- Avoid the following to avoid damage to the finish.
  - Using chemicals such as thinner, benzine, alcohol, chemical cloths, repellent, insecticide and sunscreen.
  - Handling with above substances on your hands.
  - Leaving the casing in contact with rubber or vinyl objects for a long period of time.

## About care and storage of the lens

- Wipe the surface of the lens clean with a soft cloth in the following instances:
  - When there are fingerprints on the lens surface.
  - In hot or humid locations
  - When the lens is exposed to salty air such as at the seaside.
- Store in a well-ventilated location subject to little dirt or dust.

• To prevent mold, periodically clean the lens as described above. It is recommended that you operate your camcorder about once a month to keep it in optimum state for a long time.

## On charging the pre-installed rechargeable battery

Your camcorder has a pre-installed rechargeable battery to retain the date, time, and other settings even when the POWER switch is set to OFF (CHG). The pre-installed rechargeable battery is always charged while your camcorder is connected to the wall outlet (wall socket) via the AC Adaptor or while the battery pack is inserted. The rechargeable battery will be fully discharged in about **3 months** if you do not use your camcorder at all without the AC Adaptor connected or the battery pack attached. Use your camcorder after charging the pre-installed rechargeable battery.
However, even if the pre-installed rechargeable battery is not charged, the camcorder operation will not be affected as long as you are not recording the date.

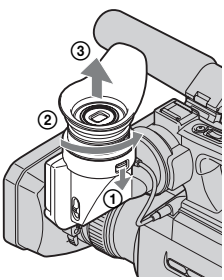
### ■ Procedures

Connect your camcorder to a wall outlet (wall socket) using the supplied AC Adaptor, and leave it with the POWER switch set to OFF (CHG) for more than 24 hours.

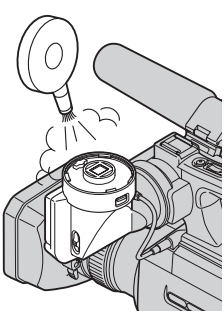
## Removing dust from inside the viewfinder

**1 Remove the viewfinder.**

While sliding the viewfinder release lever downward ①, turn the viewfinder counterclockwise until the ▌ markings on the left side are aligned ②, then remove the viewfinder upward ③.




**2 Remove dust from inside the viewfinder and the part shown below with a blower.**



**3 Follow the reverse procedure of step 1. Align the ▌ markings on the left side and attach the viewfinder by pressing it downward lightly. Then turn it clockwise until it is clicked.**

# Specifications

## System

**Video recording system (HDV)**
2 rotary heads, Helical scanning system
**Video recording system (DV)**
2 rotary heads, Helical scanning system
**Still image recording system**
Exif Ver. 2.2*1
**Audio recording system (HDV)**
Rotary heads, MPEG-1 Audio Layer -2,
Quantization: 16 bits (Fs 48 kHz, stereo)
transfer rate: 384 kbps
**Audio recording system (DV)**
Rotary heads, PCM system
Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits (Fs 48 kHz, stereo)
**Video signal**
PAL color, CCIR standards
1080/50i specification
**Usable cassette**
Mini DV cassette with the Mini DV mark printed
**Tape speed (HDV)**
Approx. 18.81 mm/s
**Tape speed (DV)**
SP: Approx. 18.81 mm/s
LP: Approx. 12.56 mm/s
**Recording/playback time (HDV)**
60 min (using a DVM60 cassette)
**Recording/playback time (DV)**
SP: 60 min (using a DVM60 cassette)
LP: 90 min (using a DVM60 cassette)
**Fast forward/rewind time**
Approx. 2 min 40 s (using a DVM60 cassette and rechargeable battery pack)
Approx. 1 min 45 s (using a DVM60 cassette and AC Adaptor)
**Viewfinder**
Electric viewfinder (color)
**Image device**
6.3 mm (1/2.9 type) CMOS sensor
Recording pixels (still, 4:3):
Max. 6.1 mega (2 848 × 2 136) pixels*2
Gross: Approx. 3 200 000 pixels
Effective (movie, 16:9):
Approx. 2 280 000 pixels
Effective (movie, 4:3):
Approx. 1 710 000 pixels
Effective (still, 16:9):
Approx. 2 280 000 pixels
Effective (still, 4:3):
Approx. 3 040 000 pixels
**Lens**
Carl Zeiss Vario-Sonnar T∗
10 × (Optical), 20 × (Digital)
**Focal length**
f=5.4 ~ 54 mm (7/32 ~ 2 1/4 in.)
When converted to a 35 mm still camera
In TAPE: 40 ~ 400 mm (1 5/8 ~ 15 3/4 in.) (16:9), 49 ~ 490 mm (1 15/16 ~ 19 3/8 in.) (4:3)
In MEMORY: 40 ~ 400 mm (1 5/8 ~ 15 3/4 in.) (16:9), 37 ~ 370 mm (1 1/2 ~ 14 5/8 in.) (4:3)
F1.8 ~ 2.9
Filter diameter: 37 mm (1 1/2 in.)
**Color temperature**
[AUTO], [ONE PUSH], [INDOOR] (3 200 K),
[OUTDOOR] (5 800 K)
**Minimum illumination**
5 lx (lux) ([AUTOSLW SHTR] [ON], Shutter speed 1/25 sec)
0 lx (lux) (during NightShot function)

*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.

*2 The unique pixel array of Sony's ClearVid CMOS sensor and image processing system (new Enhanced Imaging Processor) allows for still image resolution equivalent to the sizes described.

## Input/Output connectors

**VIDEO OUT jack**
Pin jack
1 Vp-p, 75 Ω (ohms)

**S VIDEO OUT jack**
4pin mini DIN
Luminance signal: 1 Vp-p, 75 Ω (ohms)
Chrominance signal: 0.3 Vp-p, 75 Ω (ohms)

**AUDIO OUT jack**
Pin jack
Audio signal: 327 mV (at load impedance 47 kΩ (kilohms)), Output impedance with less than 2.2 kΩ (kilohms)

**COMPONENT OUT jack**
Y: 1 Vp-p, 75 Ω (ohms)
PB/PR, CB/CR: ± 350 mV, 75 Ω (ohms)

**HDMI OUT jack**
Type A (19-pin)

**Headphone jack**
Stereo minijack (Ø 3.5 mm)

**LANC jack**
Stereo mini-minijack (Ø 2.5 mm)

**USB jack**
B

**MIC (PLUG IN POWER) jack**
Stereo minijack (Ø 3.5 mm)

**HDV/DV jack**
i.LINK Interface (IEEE1394, 4-pin connector S100)

## LCD screen

**Picture**
6.7 cm (2.7 type, aspect ratio 16:9)

**Total dot number**
211 200 (960 × 220)

## General

**Power requirements**
DC 7.2 V (battery pack)
DC 8.4 V (AC Adaptor)

**Average power consumption**
During camera recording using the viewfinder with normal brightness:
HDV recording 4.4 W
DV recording 4.2 W
During camera recording using the LCD & viewfinder with normal brightness:
HDV recording 4.8 W
DV recording 4.6 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.)**
265 × 231 × 460 mm
(10 4/8 × 9 1/8 × 18 1/8 in.) (w/h/d) including the projecting parts
265 × 231 × 460 mm
(10 4/8 × 9 1/8 × 18 1/8 in.) (w/h/d) including the projecting parts with the supplied battery pack NP-F570 attached

**Mass (approx.)**
2.7 kg (6 lb 0 oz) main unit only
3.0 kg (6 lb 10 oz) including the NP-F570 rechargeable battery pack and cassette (PHDVM-63DM), and lens hood with lens cover , microphone.

**Supplied accessories**
See page 18.

## AC Adaptor AC-L100

**Power requirements**
AC 100 V - 240 V, 50/60 Hz

**Current consumption**
0.35 - 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-F570)

**Maximum output voltage**
DC 8.4 V
**Output voltage**
DC 7.2 V
**Capacity**
15.8 Wh (2 200 mAh)
**Dimensions (approx.)**
38.4 × 20.6 × 70.8 mm
(1 9/16 × 13/16 × 2 7/8 in.)
**Mass (approx.)**
100 g (3.5 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.

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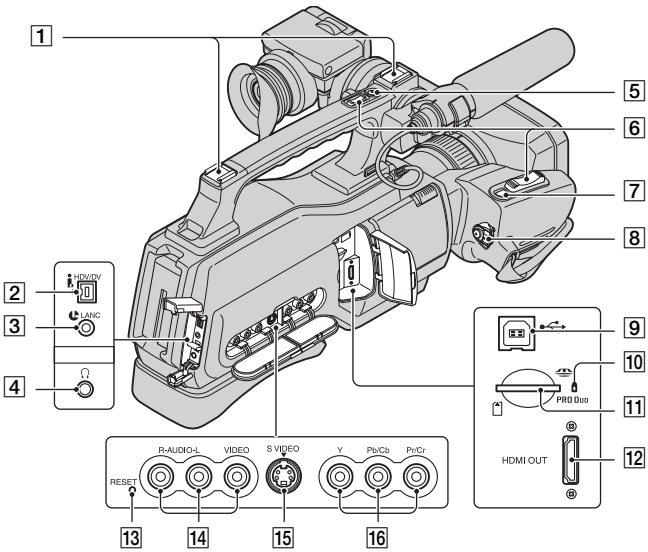
# Identifying parts and controls

The numbers in ( ) are reference pages.




1 Cold shoe

2 HDV/DV Interface (i.LINK) (37, 69, 71)

3 LANC jack (blue)
The LANC control jack is used for controlling the tape transport of video devices and peripherals connected to it.

4 (Headphone) jack

5 REC START/STOP button (28)

6 Power zoom lever (30)

7 PHOTO button (29)

8 POWER switch (24)

9 (USB) jack (75)

10 Access lamp (26, 96)

11 “Memory Stick Duo” slot (26)

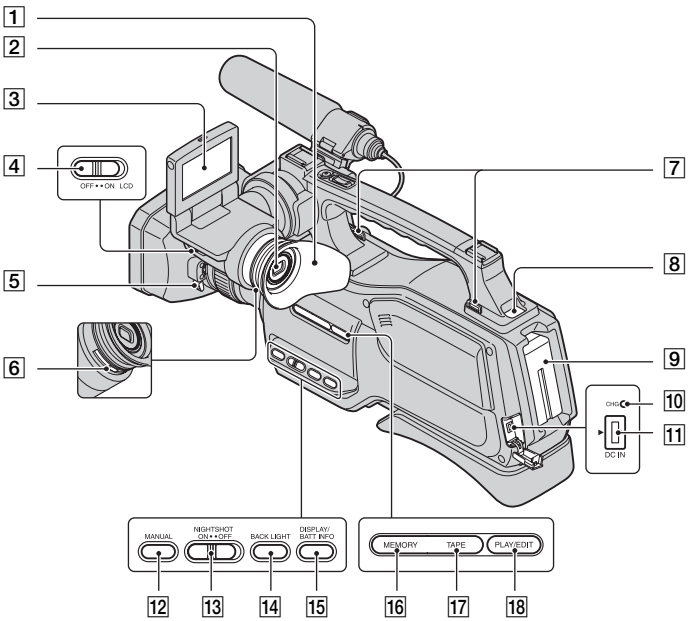
12 HDMI OUT jack (Output only) (37)
- The available video signals are read, and the appropriate output format is selected and output automatically.
- You can check the setup value of HDMI OUTPUT on [STATUS CHECK] (p. 63).

13 RESET button
Initializes all the settings, including the setting of the date and time (Menu items customized on Personal Menu are not initialized).

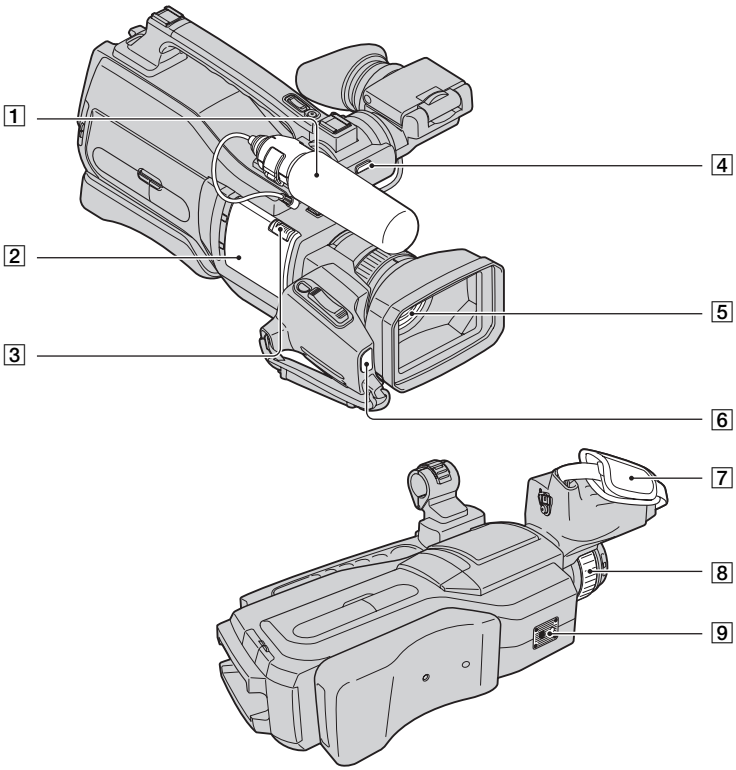
14 A/V (audio/video) OUT jack (37, 69)

15 S VIDEO OUT jack (37)

16 COMPONENT OUT jack (37)




1 Eyecup
2 Viewfinder (25)
3 LCD screen/touch panel (13, 25)
4 LCD ON/OFF switch (25)
5 Lens hood release lever (20)
6 Viewfinder lens adjustment lever (25)
7 Hook for the Shoulder belt
Attach the Shoulder belt (optional).
8 BATT (battery) RELEASE button (22)
9 Battery pack (21)
10 CHG (charge) lamp (21)
11 DC IN jack (21)
12 MANUAL button (31)
13 NIGHTSHOT switch (31)
14 BACK LIGHT button (32)
15 DISPLAY/BATT INFO button (25)
16 MEMORY mode lamp (24)
17 TAPE mode lamp (24)
18 PLAY/EDIT mode lamp (24)




1 Microphone (19)

2 Cassette compartment lid (26)

3 ⌐ OPEN/EJECT lever (26)

4 REC lamp (Camera recording lamp)

- The REC lamp lights up in red during recording (p. 64).
- The REC lamp flashes if the remaining tape or battery power is low.

5 Lens (Carl Zeiss Lens) (14)

6 Infrared port

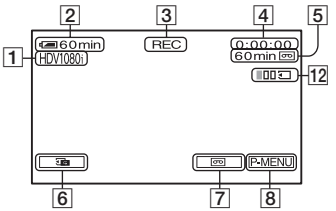
7 Grip belt

8 RING (31)

9 Tripod receptacle
Attach the tripod (optional: the length of the screw must be less than 5.5 mm (7/32 in.)) to the tripod receptacle using a tripod screw.

# Indicators displayed during recording/playback

## Recording movies




1 Recording format (HDV1080i or DV) (60)
Recording mode (SP or LP) is also displayed in the DV format.

2 Remaining battery (approx.)

3 Recording status ([STBY] (standby) or [REC] (recording))

4 During recording:
Tape counter (hour: minute: second)
During playback:
Time code (hour: minute: second: frame)

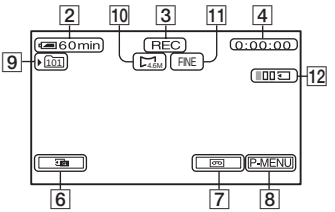
5 Recording capacity of the tape (approx.) (64)

6 Review button for still images on the "Memory Stick Duo" (29)
Appears when "Memory Stick Duo" is inserted.

7 END SEARCH/Rec review display switch button (36)

8 Personal Menu button (42)

### Recording still images during tape recording (Dual Rec)



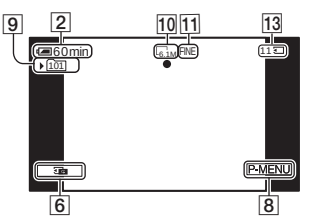

9 Recording folder (54)

10 Image size (52)

11 Quality ([FINE] or [STD]) (52)

12 Number of recorded still images (30)

## Recording still images

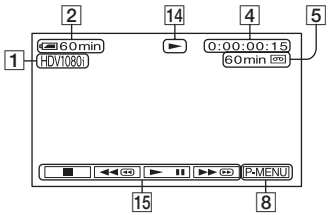



13 "Memory Stick Duo" indicator and the number of images that can be recorded (approx.)

## Data code during recording

The date/time during recording and the camera setting data will be recorded automatically. They do not appear on the screen during recording, but you can check them as [DATA CODE] during playback (p. 64).

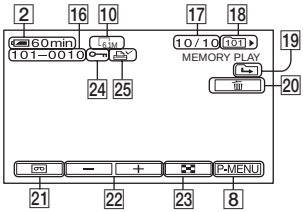
## Viewing movies




14 Tape transport indicator

15 Video operation buttons (33)

## Viewing still images




16 Data file name

17 Picture number/Total number of recorded pictures in the current playback folder

18 Playback folder (54)

19 Previous/Next folder icon

The following indicators appear when the first or last picture of the current folder is displayed and when there are multiple folders on the same "Memory Stick Duo."

: Touch [−] to move to the previous folder.

: Touch [+] to move to the next folder.

: Touch [−]/[+] to move to either the previous or the next folder.

20 Image delete button (73)

21 Tape playback select button (34)

22 Previous/Next image button (34)

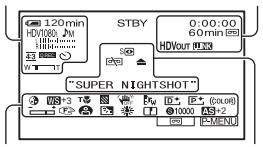
23 Index screen display button (34)

24 Image protection mark (74)

25 Print mark (74)

## Indicators when you made changes

Upper left Upper right




Bottom Center

### Upper left

| Indicator | Meaning |
|---|---|
| HDV1080i DV | Recording format (60) |
| ♪M | Manual sound level adjustment (61) |
| ♪16b | AUDIO MODE* (60) |
| SP LP | Recording mode* (60) |
| ⏲ | Self-timer recording (50) |
| 4:3 | WIDE SELECT* (60) |
| Q.REC | QUICK REC** (64) |
| | Interval photo recording (55) |

### Upper right

| Indicator | Meaning |
|---|---|
| HDVIN DVIN | HDV input/ DV input (71) |
| HDVOUT DVOUT | HDV output/ DV output (37, 70) |
| i.LINK | i.LINK connection (37, 70, 71) |
| all 1 | Slide show (55) |

### Center

| Indicator | Meaning |
|---|---|
| | Color Slow Shutter (49) |
| | PictBridge connecting (75) |
| | Warning (91) |
| | NightShot (31) |
| S | Super NightShot (49) |

### Bottom

| Indicator | Meaning |
|---|---|
| AS | AE SHIFT (47) |
| WS | WB SHIFT (48) |
| P | Picture effect (57) |
| D | Digital effect (56) |
| | Manual focus (48) |
| | SCENE SELECT (45) |
| | Sharpness (47) |
| | Backlight (32) |
| | White balance (46) |
| | SteadyShot off (50) |
| | Zebra (50) |
| T | Tele macro (49) |
| | CAMERA COLOR (48) |
| | CONV.LENS (51) |
| (COLOR) | X.V.COLOR** (51) |
| | SPOT METER (46)/ EXPOSURE (46) |
| S | SHUTTR SPEED (47) |
| | ZOOM by RING SETTING(31) |

* The settings can be made only for the pictures in the DV format.

** The setting can be made only for the pictures in the HDV format.

### Notes

• Indicators and their positions are approximate and differ from what you actually see.

## Other indicator

| Indicator | Meaning |
|---|---|
| [i] | Information (92) |

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SONY *Digital HD Video Camera Recorder* GB

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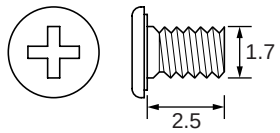
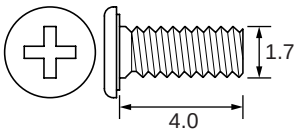
3279638120

# HARDWARE LIST (1/6)

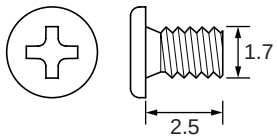
#1: M1.7 X 2.5
(Black)
2-635-562-11



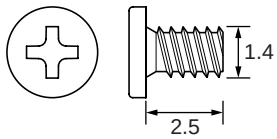

#2: M1.7 X 4.0
(Black)
2-635-562-31



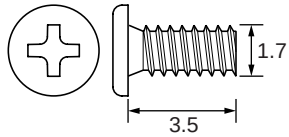

#3: M1.7 X 2.5
(Red)
2-660-401-01



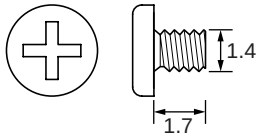

#4: M1.4 X 2.5 (Tapping)
(Dark Silver)
3-348-998-81



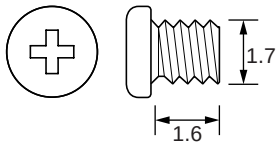

#5: M1.7 X 3.5 (Tapping)
(Black)
3-080-204-01



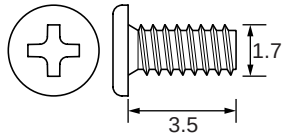

#6: M1.4 X 1.7
(Silver)
2-598-474-01



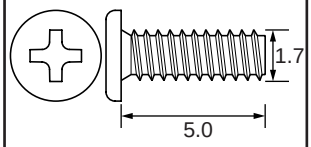

#7: M1.7 X 1.6
(Black)
7-627-552-18



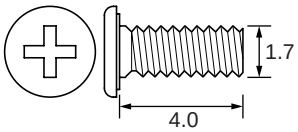

#8: M1.7 X 3.5 (Tapping)
(Silver)
3-078-890-01



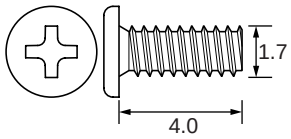

#9: M1.7 X 5.0 (Tapping)
(Silver)
3-078-890-21



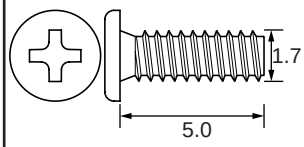

#10: M1.7 X 4.0
(Silver)
2-599-475-31



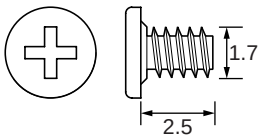

#11: M1.7 X 4.0 (Tapping)
(Silver)
3-078-890-11



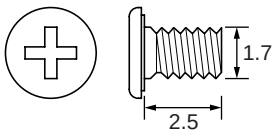

#12: M1.7 X 5.0 (Tapping)
(Black)
3-080-204-21



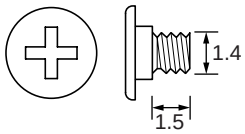

#13: M1.7 X 2.5 (Tapping)
(Silver)
3-085-397-01



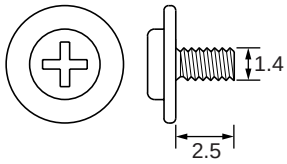

#14: M1.7 X 2.5
(Silver)
2-599-475-11



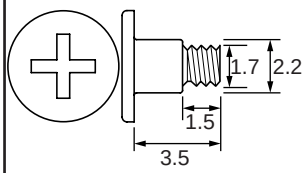

#15: M1.4 X 1.5
(Silver)
3-062-214-01



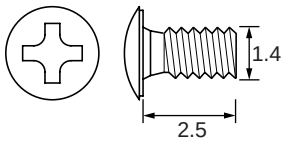

#16: M1.4 X 2.5
(Silver)
2-586-337-01



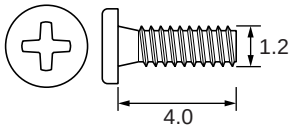

#17: M1.7 X 1.5
(Silver)
2-586-389-01



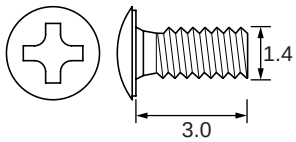

#18: M1.4 X 2.5
(Silver)
2-635-591-21




#19: M1.2 X 4.0 (Tapping)
(Red)
3-086-156-21

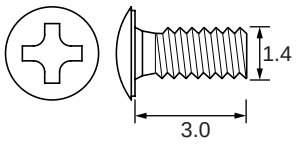



#20: M1.4 X 3.0
(Silver)
2-635-591-31

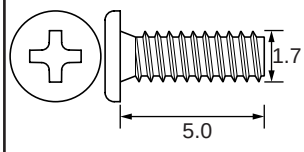


# HARDWARE LIST (2/6)

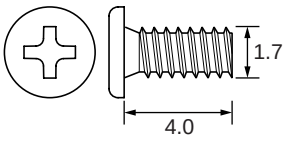
#21: M1.4 X 3.0
(Black)
2-662-396-21



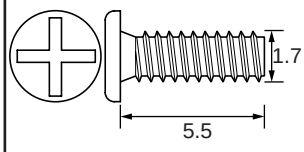

#22: M1.7 X 5.0 (Tapping)
(Silver)
3-083-261-01



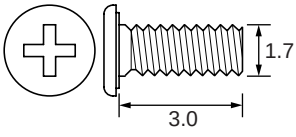

#23: M1.7 X 4.0 (Tapping)
(Black)
3-080-204-11



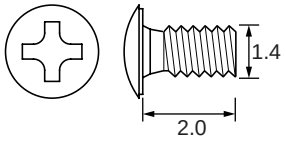

#24: B1.7 X 5.5 (Tapping)
(Black)
4-679-805-11



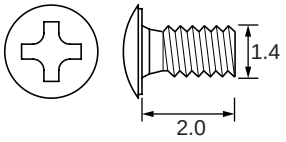

#25: M1.7 X 3.0
(Black)
2-635-562-21



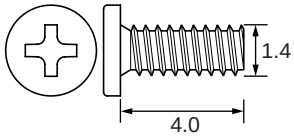

#26: M1.4 X 2.0
(Silver)
2-635-591-11



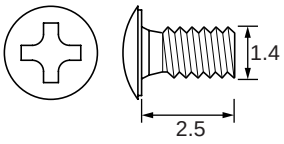

#27: M1.4 X 2.0
(Black)
2-662-396-11



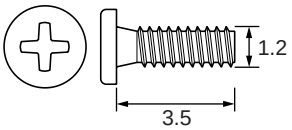

#28: M1.4 X 4.0 (Tapping)
(Dark Silver)
3-348-998-61



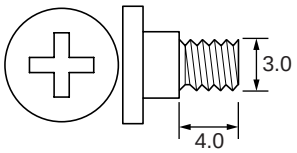

#29: M1.4 X 2.5
(Black)
2-662-396-01



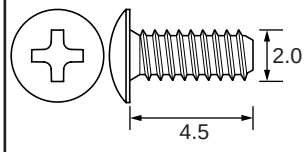

#30: M1.2 X 4.0 (Tapping)
(White)
3-086-156-11



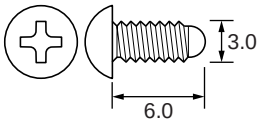

#31: M3.0 X 4.0
(Silver)
2-102-434-01



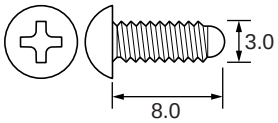

#32: M2.0 X 4.5 (Tapping)
(Silver)
2-102-498-01



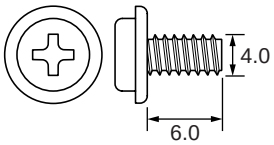

#33: M3.0 X 6.0
(Silver)
3-077-331-21



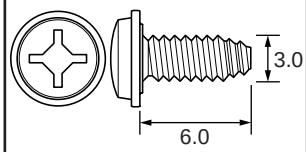

#34: M3.0 X 8.0
(Black)
3-077-331-41



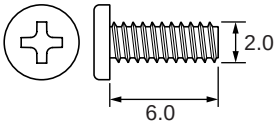

#35: M4.0 X 6.0 (Tapping)
(Silver)
3-975-291-02



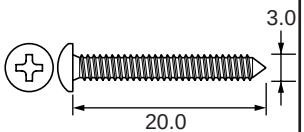

#36: M3.0 X 6.0
(Silver)
4-886-821-11



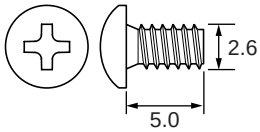

#37: M2.0 X 6.0 (Tapping)
(Black)
3-080-206-31



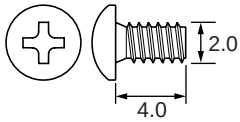

#38: M3.0 X 20.0 (Tapping)
(Silver)
7-685-651-79




#39: M2.6 X 5.0 (Tapping)
(Black)
7-685-791-09

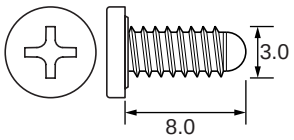



#40: M2.0 X 4.0 (Tapping)
(Silver)
7-685-851-04

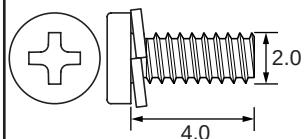


# HARDWARE LIST (3/6)

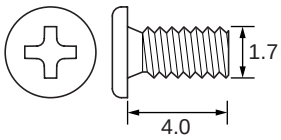
#41: M3.0 X 8.0 (Tapping)
(Silver)
3-065-748-01



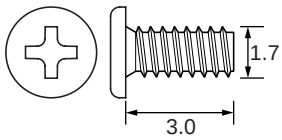

#42: M2.0 X 4.0 (Tapping)
(Silver)
7-628-253-00



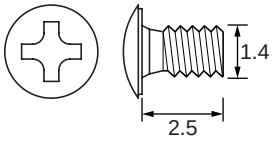

#43: M1.7 X 4.0
(Red)
2-660-401-31



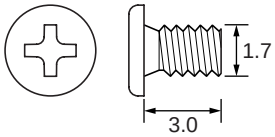

#44: M1.7 X 3.0 (Tapping)
(Silver)
3-078-890-61



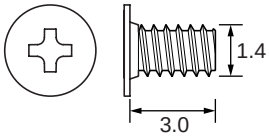

#45: M1.4 X 2.5
(Silver)
2-587-151-01



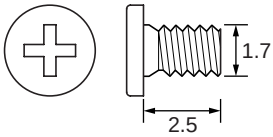

#46: M1.7 X 3.0
(Red)
2-660-401-11



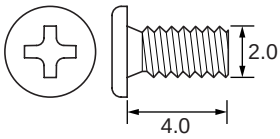

#47: M1.4 X 3.0 (Tapping)
(Silver)
2-665-774-01



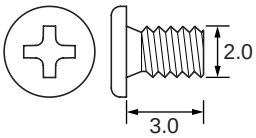

#48: M1.7 X 2.5
(Silver)
3-973-497-91



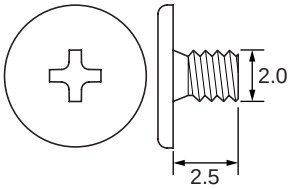

#49: M2.0 X 4.0
(Black)
2-630-005-31



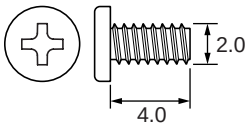

#50: M2.0 X 3.0
(Red)
2-891-494-11



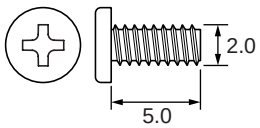

#51: M2.0 X 2.5
(Silver)
3-073-686-01



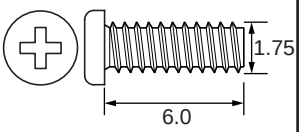

#52: M2.0 X 4.0 (Tapping)
(Black)
3-080-206-11



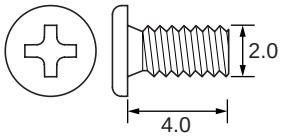

#53: M2.0 X 5.0 (Tapping)
(Black)
3-080-206-21



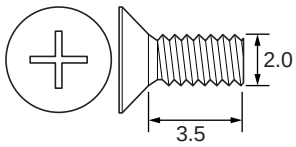

#54: M1.75 X 6.0 (Tapping)
(Black)
3-318-203-11



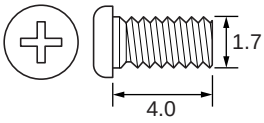

#55: M2.0 X 4.0
(Silver)
2-655-582-11



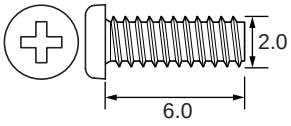

#56: M2.0 X 3.5
(Silver)
3-067-187-11



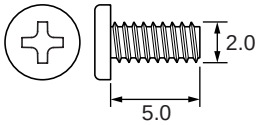

#57: M1.7 X 4.0
(Black)
7-627-852-18



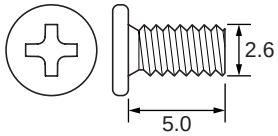

#58: M2.0 X 6.0 (Tapping)
(Silver)
3-719-408-11




#59: M2.0 X 5.0 (Tapping)
(Silver)
3-080-205-21

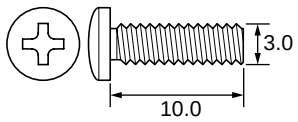



#60: M2.6 X 5.0
(Black)
3-061-062-11

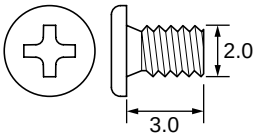


# HARDWARE LIST (4/6)

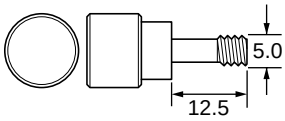
#61: M3.0 X 10.0
(Black)
7-682-549-09



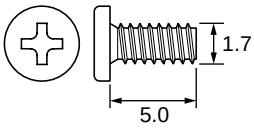

#62: M2.0 X 3.0
(Silver)
3-080-202-21



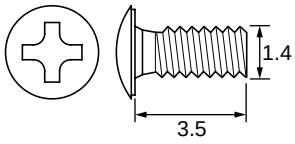

#63: M5.0 X 12.5
(Black)
3-060-811-21



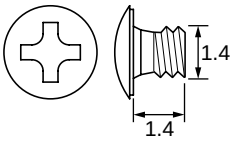

#64: M1.7 X 5.0 (Tapping)
(Silver)
2-666-551-21



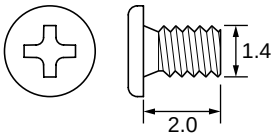

#65: M1.4 X 3.5
(Silver)
2-635-591-01



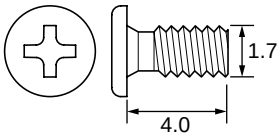

#66: M1.4 X 1.4
(Silver)
2-635-591-41



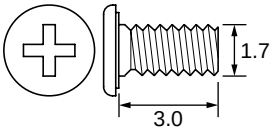

#67: M1.4 X 2.0
(Silver)
3-389-523-16



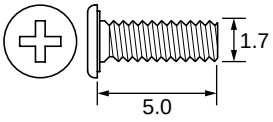

#68: M1.7 X 4.0
(Silver)
2-655-581-01



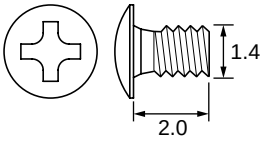

#69: M1.7 X 3.0
(Silver)
2-599-475-21



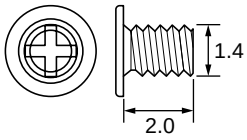

#70: M1.7 X 5.0
(Silver)
2-599-475-41



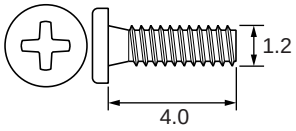

#71: M1.4 X 2.0
(Red)
3-208-537-01



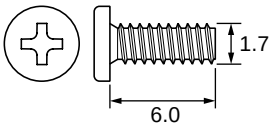

#72: M1.4 X 2.0
(Silver)
4-663-621-41



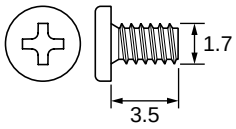

#73: M1.2 X 4.0 (Tapping)
(Black)
3-086-156-61



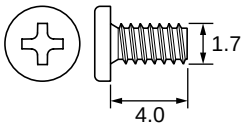

#74: M1.7 X 6.0 (Tapping)
(Silver)
2-666-551-31



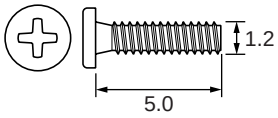

#75: M1.7 X 3.5 (Tapping)
(Silver)
2-666-551-01



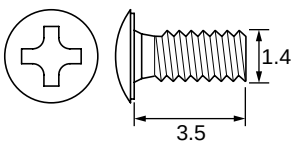

#76: M1.7 X 4.0 (Tapping)
(Silver)
2-666-551-11



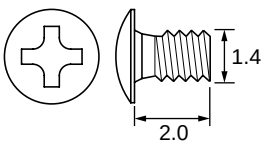

#77: M1.2 X 5.0 (Tapping)
(Silver)
3-086-156-31



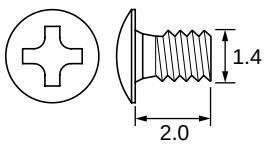

#78: M1.4 X 3.5
(Red)
3-208-537-11




#79: M1.4X 2.0
(Silver)
2-587-151-11

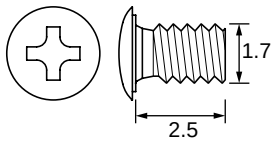



#80: M1.4X 2.0
(Black)
3-279-411-01

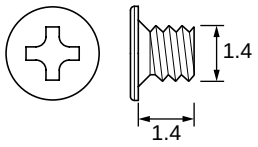


# HARDWARE LIST (5/6)

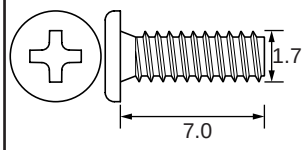
#81: M1.7 X 2.5
(Silver)
2-515-756-01



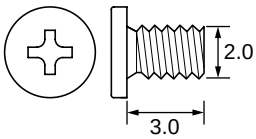

#82: M1.4 X 1.4
(Silver)
3-272-251-01



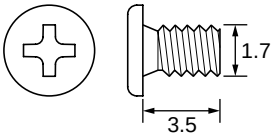

#83: M1.7 X 7.0 (Tapping)
(Black)
3-080-204-41



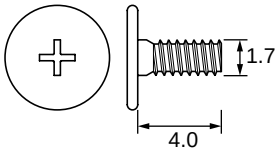

#84: M2.0 X 3.0
(Silver)
3-072-453-11



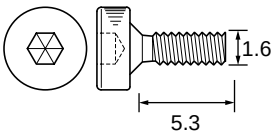

#85: M1.7 X 2.5
(Black)
2-515-483-11



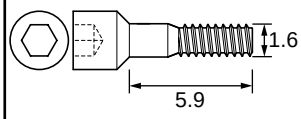

#86: M1.7 X 4.0 (Tapping)
(Silver)
2-695-434-21



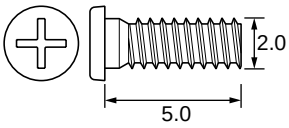

#87: M1.6 X 5.3
(Black)
2-689-328-01



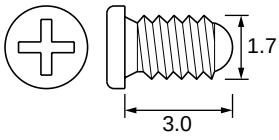

#88: M1.6 X 5.9 (Tapping)
(Silver)
2-689-015-01



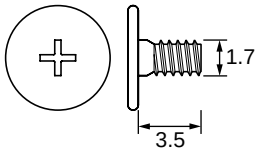

#89: M2.0 X 5.5 (Tapping)
(Silver)
2-695-575-01



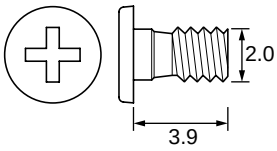

#90: M1.7 X 3.0
(Silver)
3-271-395-01



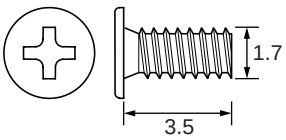

#91: M1.7 X 3.0 (Tapping)
(Silver)
2-695-434-11



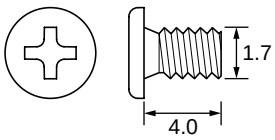

#92: M2.0 X 3.9
(Black)
3-268-954-01



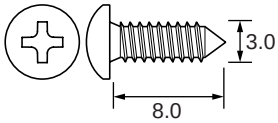

#93: M1.7 X 3.5 (Tapping)
(Silver)
3-254-082-01



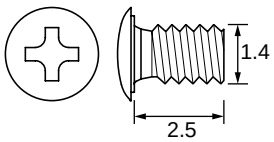

#94: M1.7 X 4.0
(Black)
2-515-483-31



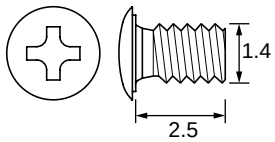

#95: M3.0 X 8.0 (Tapping)
(Black)
7-685-646-79



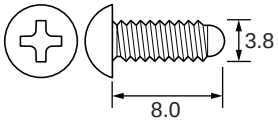

#96: M1.4 X 2.5
(Silver)
2-587-151-21



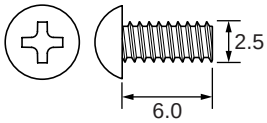

#97: M1.4 X 2.5
(Black)
2-662-396-31



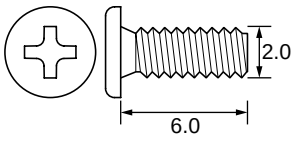

#98: M3.0 X 8.0
(Silver)
3-077-331-01




#99: M2.5 X 6.0 (Tapping)
(Silver)
3-776-750-02

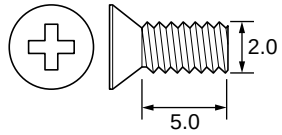



#100: M2.0 X 6.0
(Black)
3-080-203-51

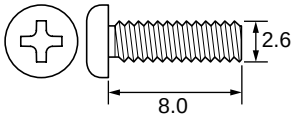


# HARDWARE LIST (6/6)

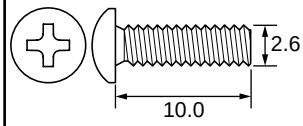
#101: M2.0 X 5.0
(Silver)
7-621-555-39



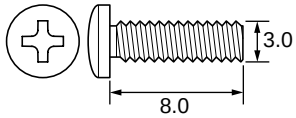

#102: M2.6 X 8.0
(Black)
7-621-284-30



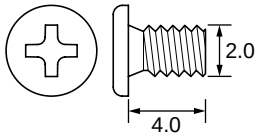

#103: M2.6 X 10.0
(Silver)
7-685-794-09



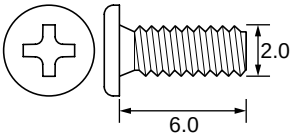

#104: M3.0 X 8.0
(Black)
7-682-548-09



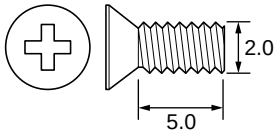

#105: M2.0 X 4.0
(Red)
2-891-494-31




#106: M2.0 X 6.0
(Black)
3-713-786-11




#107: M2.0 X 5.0
(Silver)
3-032-750-01



# Revision History

| Ver. | Date | History | Contents | S.M. Rev. issued |
|---|---|---|---|---|
| 1.0 | 2007.11 | Official Release | — | — |
| 1.1 | 2007.12 | Revised-1<br>(A1 DI07-244) | • Correction of Block Diagrams<br>• Correction of Schematic Diagrams<br>• Correction of Printed Wiring Boards<br>• Correction of Repair Parts<br>• Correction of Adjustments<br>S.M. correction: Page 3-6, Page 3-7, Page 4-5, Page 4-36, Page 4-52, Page 4-54, Page 4-55, Page 4-58, Page 4-59, Page 5-2, Page 5-16, Page 5-34, Page 6-5, Page 6-69, Page 6-71, Page 6-74, Page 6-79, Page 6-94, Page 6-99, Page 6-100, Page 6-102, Page 6-103, Page 6-104, HELP (Apply grease (1)), HELP (Apply grease (2)), Page 6-107, Page 6-108, Page 6-112 | Yes |
| | | | | |