SONY

SOLID-STATE MEMORY CAMCORDER

PXW-X500

XDCAM Power HAD FX SxS

MPEG HD422 HDMI XAVC DVCAM

SERVICE MANUAL

1st Edition

⚠ 警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠ WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠ WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠ AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

注意

指定以外の電池に交換すると，破裂する危険があります。
必ず指定の電池に交換してください。
使用済みの電池は，国または地域の法令に従って処理してください。

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.
When you dispose of the battery, you must obey the law in the relative area or country.

ATTENTION

Il y a danger d’explosion s’il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d’un type équivalent recommandé par le constructeur.
Lorsque vous mettez la batterie au rebut, vous devez respecter la législation en vigueur dans le pays ou la région où vous vous trouvez.

VORSICHT

Explosionsgefahr bei Verwendung falscher Batterien. Batterien nur durch den vom Hersteller empfohlenen oder einen gleichwertigen Typ ersetzen.
Wenn Sie die Batterie entsorgen, müssen Sie die Gesetze der jeweiligen Region und des jeweiligen Landes befolgen.

FÖRSIKTIGHET!

Fara för explosion vid felaktigt placerat batteri.
Byt endast mot samma eller likvärdig typ av batteri, enligt tillverkarens rekommendationer.
När du kasserar batteriet ska du följa rådande lagar för regionen eller landet.

PAS PÅ

Fare for eksplosion, hvis batteriet ikke udskiftes korrekt.
Udskift kun med et batteri af samme eller tilsvarende type, som er anbefalet af fabrikanten.
Når du bortskaffer batteriet, skal du følge lovgivningen i det pågældende område eller land.

HUOMIO

Räjähdysvaara, jos akku vaihdetaan virheellisesti.
Vaihda vain samanlaiseen tai vastaavantyyppiseen, valmistajan suosittelemaan akkuun.
Noudata akun hävittämisessä oman maasi tai alueesi lakeja.

FORSIKTIG

Eksplosjonsfare hvis feil type batteri settes i.
Bytt ut kun med samme type eller tilsvarende anbefalt av produsenten.
Kasser batteriet i henhold til gjeldende avfallsregler.

注意

如果更换的电池不正确，就会有爆炸的危险。
只更换同一类型或制造商推荐的电池型号。
处理电池时，必须遵守相关地区或国家的法律。

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Manual Structure

Purpose of this manual

This manual describes the information items that premise the service based on the block parts assuming use of system and service engineers.

Related manuals

The following manuals are available in this model.
If this manual is required, please contact your local Sony Sales Office/Service Center.

- Operation Guide (Supplied with the unit)
  This manual is necessary for application and operation of the unit.
- Factory Service Manual
  This manual describes the information items that premise the service based on the components parts.

Trademarks

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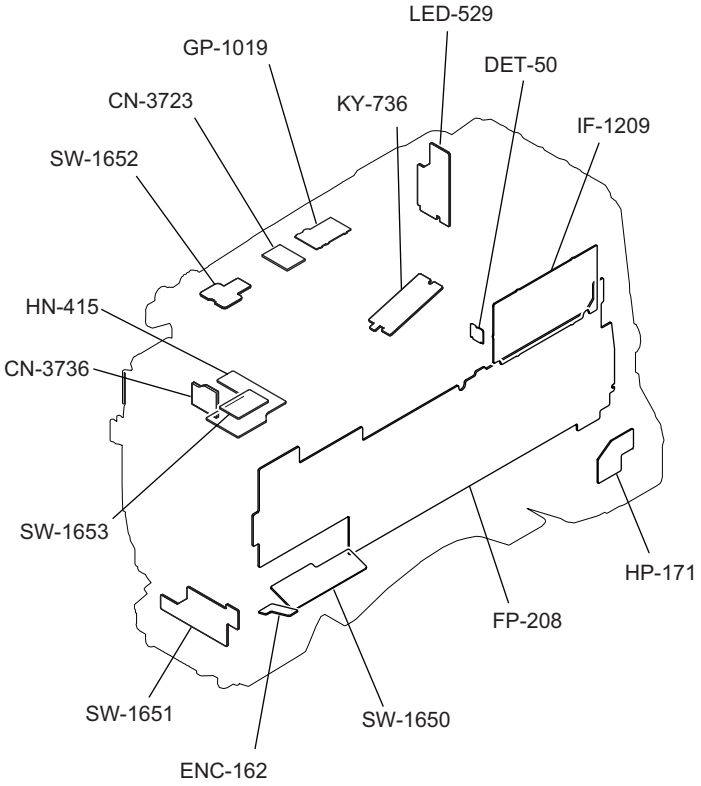
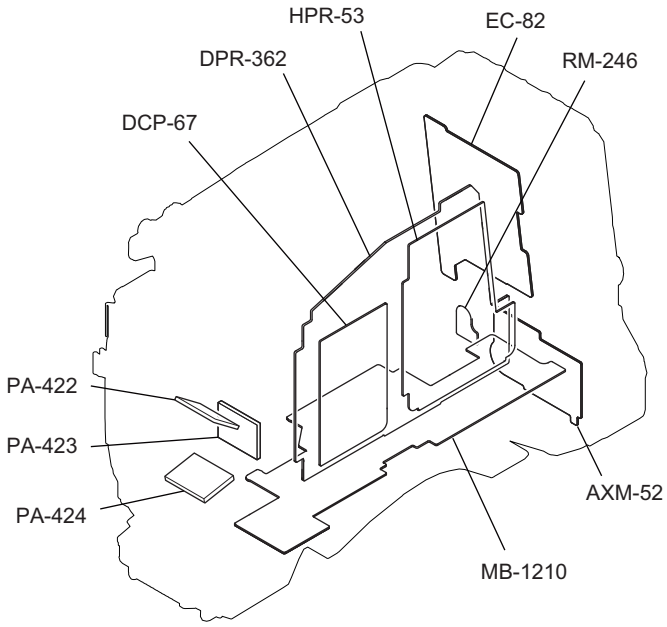
- SxS is the registered trademarks or trademarks of the Sony Corporation.

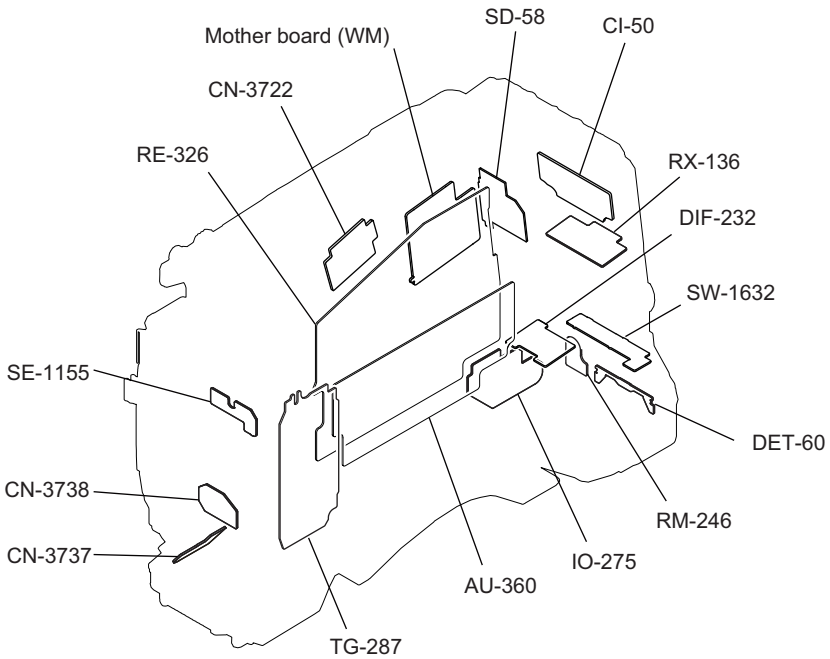
Other system names and product names written in this manual are usually registered trademarks or trademarks of respective development manufacturers.

Section 1
Service Overview

1-1. Location of Printed Circuit Boards







1-2. Circuit Description

1-2-1. CCD Block

PA-422, PA-423, PA-424 Boards

Each of these boards is provided with a power driver (IC001: H driver) that drives the CCD, IC004 and IC005 that extract and amplify video signals, and a temperature sensor (IC006).
CCD drive pulses from the TG-287 board are input to the power driver IC (IC001: H driver) to drive the CCD. CCD (IC003) output signals are input to IC004 and IC005 in which video signals are extracted by the correlative double-sampling and the internal GAIN AMP increases the gain by 0 to 12 dB.
A temperature sensor IC (IC006) is mounted only on the PA-422 board.

TG-287 Board

The TG-287 board outputs CCD drive pulses and CCD output signal sample hold pulses from IC103.
These pulses are synchronized with the HD VD signal input from the DCP-67 board based on the reference 74 MHz clock, are shaped by IC22 and IC23, and are then output to the PA-422, PA-423, and PA-424 boards.
This board is provided with a V driver circuit (Q216 to Q223) for CCD vertical transfer.
The EEPROM (IC008) stores CCD V sub voltage data and CCD sensitivity adjustment data, and other data.

1-2-2. Camera Block

DCP-67 Board

Analog video signals from the CCD block are output through the connector (CN201) to the DCP-67 board.
The analog video signals are converted to 14-bit digital video (RGB) signals by the A/D converter (IC106, IC107, IC108, IC115, IC116, and IC117). Then the converted digital RGB signals are output to the camera signal preprocessor IC (IC300).
This board also mounts an optical filter interface circuit.
In the camera signal preprocessor (IC300), the main-line video signals are transferred through the test signal switching circuit and the correction circuit for CCD imager, and then white balance and black set processing are added to the video signals. Odd pixels and even pixels are sorted. The processed video signals are output to the next-stage camera signal postprocessor and the baseband processor (IC0100: DPR-362 board). This board mounts PROM (IC503) as a peripheral device of IC300.

1-2-3. Video Signal Block

DPR-362 Board

The video signal processor ROSETTA (IC0100) incorporates the following functions for baseband processing of video and audio signals.

- Scaler function (supporting multi-format output)
- OSD
- PLL (74 MHz to 148 MHz, etc.)
- CPU

The baseband signals processed by the video signal processor ROSETTA (IC0100) are sent to the video signal distributor IC and the CN-3558 board, and are then distributed to input/output circuits.
The video signal processor ROSETTA (IC0100) has the following input/output signals.

- HD/SD video signals are output to the video signal distributor IC (IC2301) to be used for SDI/HDMI/TEST OUT outputs.
- Video signals for the MPEG CODEC are output to the MPEG codec NATH (IC1500).
- Video signals for the XAVC CODEC are output to the XAVC codec BEAUNE (IC1100).
- Audio interface signals are input to and output from the AU-360 board.

The video signal distributor IC GMON (IC2301) has the following input/output signals.

- HD/SD video signals are input from the video signal processor ROSETTA (IC0100).
- Input from the GENLOCK signal input sync separator (IC2001).
- Output to the GENLOCK signal output PLL IC (IC2002).
- Video synchronization signals are output to the video signal processor ROSETTA (IC0100).
- Input to and output from the TC input/output signal amplifier (IC2803, IC2804).
- Output to the SDI output signal cable driver (IC2602 to IC2604) for SDI1/SDI2 output and SDI output for CA.
- Output to WM board for WiFi SDI signal.
- Output to the HDMI output signal HDMI IC (IC001/DIF-232 board).

Program data of the video signal distributor IC GMON (IC2301) is stored in the SPI flash memory (IC2500).
The baseband signals that are output from the video signal processor ROSETTA (IC0100) during recording are input to the input signal processor IC ETC (IC100/HPR-53 board) that has XAVC codec BEAUNE (IC1100), the MPEG2 video codec NATH (IC1500) and SStP codec Curie (IC1000/HPR-53 board).
The playback video signals that are output from the XAVC codec BEAUNE (IC1100),the MPEG2 video codec NATH (IC1500) or SStP codec Curie (IC1000/HPR-53 board) during playback are selected in the video signal processor ROSETTA (IC0100) and the selected signals are output to the SDI/HDMI connector and the VF connector.
The XAVC codec BEAUNE (IC1100) performs real-time AVC encoding and decoding for high-resolution video signals by one chip. This IC is connected to the video signal processor ROSETTA (IC0100) with the ultrahigh-speed (5 Gbps x 8) serial interface. A large volume of video data is transmitted through this interface.
The XAVC codec BEAUNE (IC1100) is connected to the media processor DIABLO (IC2900) with the PCI Express interface. Compressed video data and control signals are transmitted bi-directionally through this PCI Express interface.
The MPEG2 video codec NATH (IC1500) performs real-time MPEG2 video encoding and decoding for HD video signals by one chip. This IC is connected to the video signal processor ROSETTA (IC0100) with the parallel bus (Y/C 10 bits × 2).
The MPEG2 video codec NATH (IC1500) is connected to the media processor DIABLO (IC2900) with the parallel bus. Compressed video data and control signals are transmitted bi-directionally through this parallel bus.
SStP codec Curie (IC1000/HPR-53 board) performs real-time SStP video encoding and decoding for HD video signals by one chip via input signal processor IC ETC (IC100/HPR-53 board). This IC is connected to the video signal processor ROSETTA (IC0100) with the ultrahigh-speed (5 Gbps x 6) serial interface. The SStP codec Curie (IC1000/HPR-53 board) is connected to the media processor DIABLO (IC2900) and PCI Express interface via input signal processor IC ETC (IC100/HPR-53 board).
Compressed video data and control signals are transmitted bi-directionally through this PCI Express interface.

DIF-232 Board

HDMI output video signal from the video signal distributor IC GMON (IC2301/DPR-362 board) and audio and control signals from video signal processor ROSETTA (IC0100/DPR-362 board) are input to the DIF-232 board. This signal is output to HDMI CN (CN002) as HDMI signal via HDMI signal generate IC (IC001).

HN-415 Board

The viewfinder (VF) output video signals and control signals from the DPR-362 board are input to the connector (CN4).
Two types of video signals: digital video signal (LVDS) and analog video signal are input to the HN-415 board.
The digital video signal (LVDS) is output to the connector (CN1) which is a dedicated connector for the separately available viewfinder.
The analog video signal is output to the connector (CN2) that relays the signal to the CN-3736 board.

Different control signals are provided respectively for digital and analog video signals.
Power voltages for the viewfinder are supplied from the MB-1210 board to the connector (CN7) on the HN-415 board with a harness.
Signal lines of the connector (CN6) on the SW-1652 board (ASSIGN switch) and of the connector (CN5) on the SW-1653 board (LIGHT switch) are connected to the MB-1120 board through the connector (CN7) on the HN-415 board.
Power voltages for the GPS are supplied from the DPR-362 board to the connector (CN51) on the HN-415 board through the relay board (CN-3723 board), and then to the GPS module (GP-1016 board) with a harness.
The GPS signals (UART, ON/OFF, and RESET) are supplied from the DPR-362 board to the connector (CN51) on the HN-415 board through the relay board (CN-3723 board), and then to the GPS module (GP-1016 board) with a harness.

CN-3736 Board

The VF output analog video signals relayed on the HN-415 board are input to the connector (CN2) on the CN-3736 board, and are then output from the HDVF-type VF connector (CN1) to the external circuit.
An EMI filter is attached to each video signal line.

1-2-4. Media Recording and Playback Block

DPR-362 Board

Description on Media Processor

Stream data compressed by each codec during recording is input to the media processor DIABLO (IC2900) through the following buses.

- XAVC-I/L codec BEAUNE (IC1100): PCI Express bus
- MPEG-2/IMX codec NATH (IC1500): Parallel bus
- SStP codec ETCx (IC100: HPR-53 board): PCI Express bus (via CN0800)

The LPCM audio data from the video signal processor ROSETTA (IC0100) is input to the media processor DIABLO (IC2900) through the GMON (IC2301).
The auxiliary data from the video signal processor ROSETTA (IC0100) is also input to the media processor DIABLO (IC2900).
The media processor DIABLO (IC2900) processes these input signals, stores them in a file, and then writes the file data to the SxS memory card on the EC-82 board through the fine-wire coaxial cable connected to the connector (CN5201).
This media processor operates reversely in the playback process.
In addition, the media processor DIABLO (IC2900) performs communication between processors of the application processor EMMA (IC4200) and the video signal processor ROSETTA (IC0100) through the serial bus, controls video/audio streams, accesses the SxS memory card, and performs mass storage operation with USB connection, according to commands from the application processor EMMA (IC4200).
The media processor DIABLO (IC2900) incorporates a CPU and a USB device controller. The SPI flash ROM (IC3101, IC3102) and the DDR2 memory (IC3001, IC3003) are connected to IC2900 as peripheral devices.
The internal CPU uses the 2GBit × 2 DDR2 memory (IC3001, IC3003) as work memory and executes the initial program of the SPI flash ROM (IC3101, IC3102).
Furthermore, this media processor performs data communication with peripheral devices and controls them through the following buses.

- PCI bus: USB2.0 host controller (IC3300)
- Host interface bus (parallel bus): MPEG-2/IMX codec NATH (IC1500)
- PCI Express bus: SATA host controller (IC3703) and USB3.0 host controller (IC3602)

Description on Peripheral Devices of the Media Processor

USB2.0 host controller (IC3300)

The USB2.0 host controller provided with a 5-channel USB2.0 port is controlled by the media processor DIABLO (IC2900) through the PCI bus. Two channels out of five channels are connected to the SxS memory card slot on the

EC-82 board. One channel is connected to the application processor EMMA (IC4200) through the USB switch IC (IC4500), and the other two channels are reserved for the system.

SATA host controller (IC3703)

The SATA host controller is connected to the SSD (IC3704) with the SATA signal. The SSD (IC3704) stores memory image data for high-speed startup. The initial operation program of the media processor DIABLO (IC2900) develops memory image data through the SATA host controller (IC3703) to the DDR2 memory (IC3001, IC3003).

USB3.0 host controller (IC3602)

The USB3.0 host controller provided with a 2-channel USB3.0 port is controlled by the media processor DIABLO (IC2900) through the PCI Express bus. One channel out of two channels is connected to the USB3.0 connector on the LED-529 board, and the other channel is not used.

HPR-53 Board

The HPR-53 board mainly consists of an FPGA ETCx (IC100) that has high-speed differential IF and PCIe IF and an SStP video codec. This board also supports external input video signals and mainly handles the following signals.

- Video data input/output (5 Gbps high-speed differential signals)
- PCI Express
- SDI input

The Video data sent from the video signal processor ROSETTA (IC0100/DPR-362 board) during recording is input to the FPGA ETCx (IC100) by the 4-lane 5 Gbps high-speed differential signal. The stream data compressed in the SStP codec Curie (IC1000) in connection with the ETCx is output to the media processor DIABLO (IC2900/DPR-362 board) through the PCI Express bus.
This board operates reversely in the playback process.
External serial SDI input signal is transferred to the connector (J500) and the equalizer (IC501), and is then converted to parallel signals in the ETCx (IC100). Then the parallel signals are divided into audio data and synchronization signal. The audio data is output to the FPGA AUDX (IC801/AU-360 board) and the synchronization signal is output to the FPGA GMON (IC2301/DPR-362 board). The video data is converted to 5 Gbps high-speed differential signal-format data, and the converted data is output to the video signal processor ROSETTA (IC0100/DPR-362 board).

EC-82 Board (SxS Memory Card Slot)

The 2-channel PCIExpress signal from the media processor DIABLO (IC2900/DPR-362 board) and the 2-channel USB host signal from the USB2.0 host controller (IC3300/DPR-362 board) are connected to the EC-82 board (provided with two memory card slots) through the fine-wire coaxial connector (CN100). The ExpressCard power controller (IC100, IC201) on the EC-82 board is controlled by the GPIO in the media processor DIABLO (IC2900/DPR-362 board). The DC/DC converter (IC101) generates a voltage of 1.5 V for the SxS memory card from 3.3 V.

LED-529 Board (USB Connector for PC)

The USB device signals that are input to and output from the USB function controller in the media processor DIABLO (IC2900/DPR-362 board) are connected to the connector (CN001) on the LED-529 board from the connector (CN5202) on the DPR-362 board with the fine-wire coaxial harness, and are then connected to the USB2.0 connector (B) (CN003).
The USB host signals that are input to and output from the USB3.0 host controller (IC3602/DPR-362 board) are connected to the connector (CN001) on the LED-529 board from the connector (CN5202) on the DPR-362 board with the fine-wire coaxial harness, and are then connected to the USB3.0 connector (A) (CN002).

1-2-5. System Control Block

DPR-362 Board

The DPR-362 board mounts a application processor EMMA (IC4200) that incorporates ARM core.
The 4GB eMMC (IC4400) that contains execution programs, the DDR2 SDRAM (IC4300, IC4301) for work memory, and the EEPROM (IC4602) for storing parameters are connected to the application processor EMMA (IC4200) as its peripheral ICs.
The application processor EMMA (IC4200) performs system control through communication between the following processors.

- Parallel communication connection to the video signal processor ROSETTA (IC0100)
- Serial communication connection to the media processor DIABLO (IC2900)
- Serial communication connection to the power controller Darwin (IC5002)
- Serial communication connection to the VF controller VF VINE (IC4903)
- Serial communication connection to the key controller KEY VINE (IC302/FP208 board), EX VINE (IC404/FP-208 board), and JKLX (IC503/FP-208 board)

Main Functions of the System Controller and Peripheral Devices

Reading key information

Information of the keys on the inside panel is sent to the KEY VINE (IC302), EX VINE (IC404), and JKLX (IC503) on the FP-208 board.
Information of the keys on the rear panel is sent through the MB-1210 board to the AUDX (IC801) on the AU-360 board.
Information of the keys on the front panel and on the handle is sent through the MB-1210 board to the VF VINE (IC4903) on the DPR-362 board.
The information of the REC S/S key on the front panel is also sent to the ROSETTA (IC0100) on the DPR-362 board to be used for Power On Rec.
Information of the keys on the top panel is sent through the MB-1210 board to the JKLX (IC503) on the FP-208 board.

SD card control (for SETUP)

The EMMA (IC4200) reads and writes SD card data through the SD card slot (CN7) on the MB-1210 board.
This SD card slot is also used for upgrading the main unit.

Power control

When power is connected, the boot signal is transferred from the RE-326 board to the power controller Darwin (IC5002) on the DPR-362 board through the MB-1210 board.
After that, the Power Save reset signal is transferred from the Darwin (IC5002) to the RE-326 board through the MB-1210 board. At the same time, information of the power switch connected through the MB-1210 board is monitored.
When the power switch is turned on, the Darwin (IC5002) controls system reset in accordance with the boot sequence.
The Darwin (IC5002) also monitors voltages in the boot process.
This Darwin (IC5002) is backed up by the lithium button battery on the FP-208 board.

700P IF

The EMMA (IC4200) is connected to the GMON (IC2301) through the serial bus to perform data communication with the 700p IF and control it.
The 700p IF has two channels: one is connected to the connector (CN2) on the RM-246 board through the MB-1210 board, and the other is connected to the 50-pin interface connector (CN4) on the CI-50 board through the HPR-53 board.

WM (WIFI MODULE) control

The EMMA (IC4200) is connected to the WM through the fine-wire coaxial connector (CN2303) to control communication.
When media data is transferred, IC4500 is controlled to disconnect the maintenance USB and connect it to the media processor DIABLO (IC2900) through the USB host controller (IC3300) for Diablo.

GPS

The EMMA (IC4200) performs serial communication with the GPS module (GP-1019 board) through the HN-415 and CN-3723 boards. Furthermore, the EMMA (IC4200) acquires position information and time information to be used for recording from the GPS module (GP-1019 board).

Real time clock (RTC)

The EMMA (IC4200) makes settings for the RTC (IC4600) connected through the serial bus and reads RTC data. This RTC (IC4600) is backed up by the lithium button battery on the FP-208 board.

Temperature sensor

The EMMA (IC4200) reads temperature information from the temperature sensor (IC4601) connected through the serial bus.

InfoLithium battery communication

The EMMA (IC4200) supports the InfoLithium battery of SMBus specifications.
The battery connector (serial connector) is connected to the EX VINE (IC404) on the FP-208 board through the RE-326 and MB-1210 boards. Battery authentication, type, remaining time, and other information are read and are sent to the EMMA (IC4200) through serial bus communication.

Fan control

The EMMA (IC4200) monitors imager temperature (PA-422 board) and main board (DPR-362 board) temperature to perform PWM control for the EX VINE (IC404) on the FP-208 board. The PWM signal is sent to the fan power supply circuit on the RE-326 board through the MB-1210 board to control fan speed.
The EMMA (IC4200) also detects the fan rotation speed and sends the detection result to the EX VINE (IC404) on the FP-208 board.
Two fans are installed and are connected through the connectors (CN8 and CN13) on the MB-1210 board.

TALLY control

The REAR TALLY (LED-529 board) is connected to the BOTTOM TALLY (AXM-52 board) in series through the MB-1210 and DPR-362 boards.
These TALLY LEDs and the VF TALLY LED are controlled by one signal and can be lit from the EMMA (IC4200) and the ROSETTA (IC0100).

1-2-6. Audio Block

AXM-52 Board

- The AXM-52 board mounts two input 2-channel analog/digital audio input connectors (3-pin XLR type) (CN101, CN102). This board mounts [LINE, AES/EBU, MIC] selection switches (S101, S102) corresponding to each connector channel.
- This board mounts an output 2-channel analog audio input connector (5-pin XLR type) (CN103).
- This board relays signals from the +48V setting switch (S101, S102) on the SW-1632 board.
- This board relays the input 2-channel XLR-type 3-pin connector detection board (DET-60 board).

RX-136 Board

The RX-136 board mounts an analog/digital wireless D-sub 15-pin connector (CN1), a circuit to support two communication formats: WRR-855 communication and asynchronous communication, and an analog audio signal amplifier. This board also controls digital audio signals. The FPGA (IC801) on the AU-360 board performs wireless control.

- The WRR_DET signal (Pin 7 of connector CN1) is used to determine which wireless receiver has been connected. D1, C6, Q3, and R13 configure a circuit to receive the signal.
  When the WRR-855 communication-format receiver is connected, a voltage of about 0.7 V is generated on Pin 7. Diode D1 is used to prevent Q3 from being turned on by this voltage.
- The WRR_CS signal (Pin 10 of connector CN1) is used as a signal line for the WRR-855 communication format from the result of determination by using Pin 7 above. In other cases, high level is output.
  R8, IC8, and R14 configure a circuit for the WRR-855 communication format.
- The WRR_CLK signal (Pin 9 of connector CN1), the WRR_DI signal (Pin 11), and the WRR_DO signal (Pin 12) are used as WRR-855 communication-format signal lines from the result of determination by using Pin 7. In other cases, these signals are used for asynchronous communication.
  R4 to R7, Q1, Q2, IC7, R10, and R11 configure a circuit that supports both communication formats (asynchronous communication and WRR-855 communication).
- When an analog wireless receiver is connected, the WL_A_CH1 signal (Pin 2 of connector CN1) is amplified in IC9 and is then sent from the connector (CN2) through the connector (CN12) on the MB-1210 board to the AU-360 board.
- The BCK signal (Pin 6 of connector CN1), the XLRCK signal (Pin 13), the WL_DT12 signal (Pin 14), and the WL_DT34 signal (Pin 15) are transmitted from digital wireless signal to digital audio signal by I²S.
  When these signals are determined to be analog wireless signals, these are closed by IC1 to IC4.

AU-360 Board

The AU-360 board has the following functions:
Switching rear MIC/LINE input level and rear MIC +48 V voltage, switching front MIC input level and front MIC +48 V voltage, input signal selection and head room level adjustment, AD/DA conversion using AUDIO CODEC, SP/HP amplification, DC-DC converter for MIC +48 V voltage.
In addition, this board mounts an FPGA (IC801) and a DSP (IC1000). The DSP provides many functions including AGC, Wind Filter, monitor potentiometer, and monitor switching control.
The FPGA (IC801) has serial audio S/P and P/S conversion, mute control, wireless control, DSP control, and other functions.

Main Blocks and Functions

Rear MIC/LINE input block

Audio input signals are sent from the AXM-52 board rear LINE/MIC input 3-pin XLR connectors (CN101, CN102) through the connector (CN23) on the MB-1210 board to the AU-360 board.
The MIC input level (-30 to -60 dBu/10 dB step, -70 dBu and -60 dBu are same setting) is common to the LINE input level (+4, 0, and -3 dBu). Input attenuator and amplifier are inserted by switches (Q104 to Q111, Q118 to Q121, Q200 to Q211).
Furthermore, 0 dBu or +4 dBu is selected by Q112 to Q117, Q122, and Q123 according to the [Line Input Ref] setting level of the menu, and is input to the balanced input amplifier (IC200, IC201).
Supply of the microphone power +48 V is also switched by switches (Q100 to Q103).

Front MIC input block

Audio signals are sent from the front MIC input 5-pin XLR connector (CN1) on the CN-3738 board through the connector (CN10) on the MB-1210 board to the AU-360 board.
The MIC input level is switched by switches (Q304 to Q315), and an input level is selected by [Front MICCH1 Ref] and [Front MIC CH2 Ref] of the menu.
Furthermore, the MIC input level (-30 to -60 dBu/10 dB step, 70 dBu and -60 dBu are same setting) and supply of the microphone power +48 V are switched by switches (Q300 to Q303).

Input signal selector

Audio signals are selected by the analog switch (IC400 to IC404) based on the side panel switch information, etc.

Head room adjuster

The head room adjustment level is switched by switches (Q400 to Q414), and an input level is selected by [Reference Level] of the menu (-12dB, -16dB, -18dB, or -20dB).

A/D, D/A converter circuit

A 24-bit AK-4621 (IC600, IC601) that has an A/D converter and a D/A converter is used.
The sampling frequency is set to 48 KHz. A differential amplifier is mounted before analog input and after analog output.
IC600 performs A/D conversion for two channels, and IC601 performs D/A conversion for two channels.

Final-stage amplifier

Audio signals are sent from the final-stage amplifier (IC421, IC422) through the MB-1210 board to the 5-pin XLR connector (CN103) on the AXM-52 board.

Monitor amplifier

The monitor amplifier consists of a monaural SP /stereo HP amplifier (IC604), a headphone jack (CN2) on the HP-171 board, and a monaural speaker connected to the FP-208 board.
Selection of HP or SP is made by the monaural SP/stereo HP amplifier (IC604), which is controlled by IC0100 on the DPR-362 board with the I²C interface.

FPGA installation function

- Audio process
  AES/EBU input decode
  ASRC control
  Input audio selector
- GPIO
- Wireless control
  Fetching status data of switches on the AXM-52 board
  Analog circuit control
  Analog/digital wireless SIO/UART control
  Wireless interface DIAG support function
- DSP control
  DSP Parallel Interface

DSP functions

- Delay
- Digital potentiometer
- High Pass Filter
- AGC/Limiter
- Output Select & Mixer
- Beep

Operation

Initial operation

When the FPGA (IC801) is activated and the FPGA configuration is completed, IC0100 on the DPR-362 board boots the DSP (IC1000) and writes necessary coefficients. Then the DSP (IC1000) starts processing.

Audio signal flow

The front MIC input signal is sent through the MB-1210 board to the analog switch (IC401 to IC404) of the input signal selector.
The rear external LINE/MIC input signal is sent from the AXM-52 board through the MB-1210 board to the analog switch (IC401 to IC404) of the input signal selector.
Analog wireless signals are sent from the RX-136 board through the MB-1210 board to the analog switch (IC400 to IC404) of the input signal selector.

The analog switch of the input signal selector is controlled by the HIF interface from IC0100 on the DPR-362 board through the FPGA. Selected signals (CH1 to CH4) are sent from the head room switching circuit to the A/D converter (IC600, IC601) in units of two channels. Converted serial digital audio signals (2 channels x 2) are input to the FPGA (IC801).
Digital wireless signals are sent from the RX-136 board through the MB-1210 board to the FPGA (IC801).
AES/EBU input signals are sent from the AXM-52 board through the MB-1210 board to the FPGA (IC801).
SDI input signals are sent from IC100 on the HPR-53 board through the MB-1210 board to the FPGA (IC801).
The FPGA (IC801) selects input signals and sends the selected signals to the DSP.
The DSP (IC1000) rapidly processes AGC, Wind Filter, and level adjustment. Signals processed by the DSP (IC1000) are sent to IC0100 on the DPR-362 board.
Serial playback/EE signals receives processing (including level adjustment) by the circuit (IC0100 to DSP (IC1000)) on the DPR-362 board, and the processed signals are input to the D/A converter (IC600, IC601) in units of two channels.
The D/A output signal from IC600 is input to the final-stage amplifier (IC421, IC422), is transferred to the MB-1210 board, and is then output from the 5-pin output XLR connector (CN103) on the AXM-52 board.
The D/A output signal from IC601 is input to the monaural SP/stereo HP amplifier (IC604) to drive the headphone jack (CN2) on the HP-171 board and the monaural speaker connected to the FP-208 board.

Control

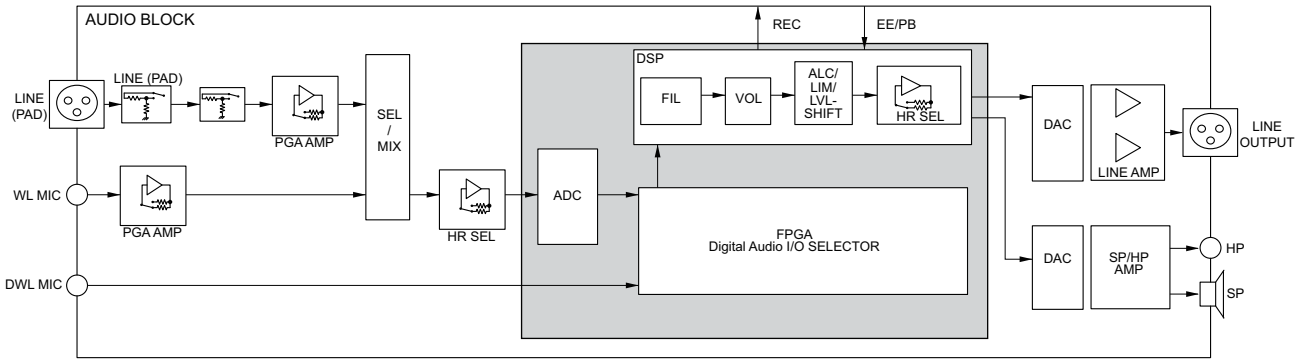
Switch/potentiometer/menu control information is sent from IC0100 on the DPR-362 board to the AU-360 board with the HIF interface and I²C interface.
On the AU-360 board:

- The I2C interface is connected to the monaural SP/stereo HP amplifier (IC604).
- The HIF interface is connected to the FPGA.

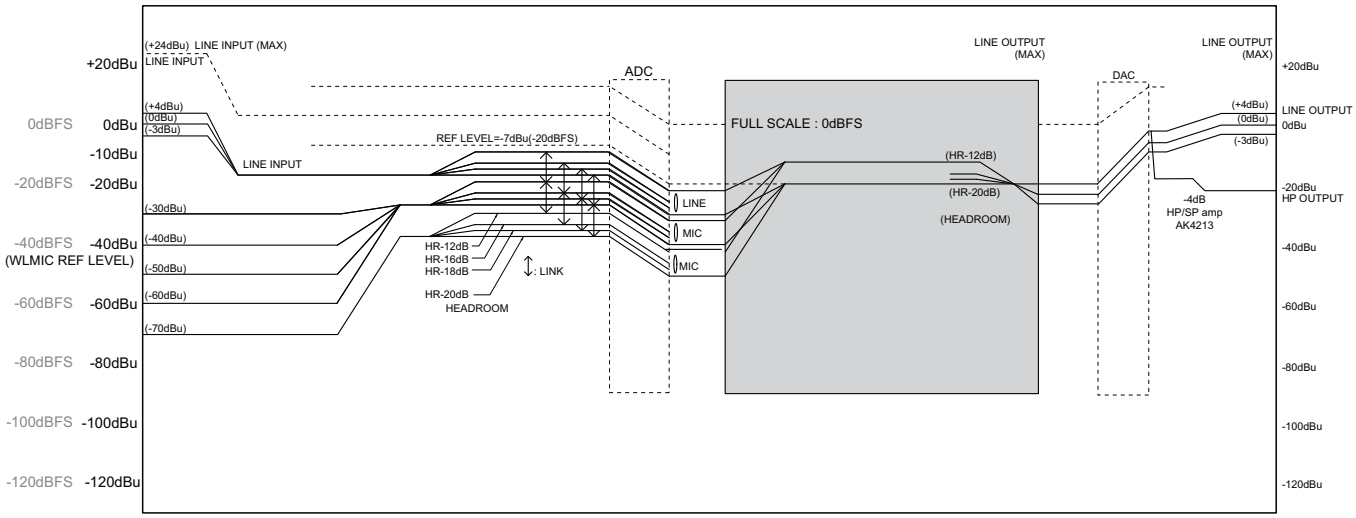
HIF interface control signals are converted to GPI signals to control analog circuits.
The DSP (IC1000) functions control set by the menu is processed by writing necessary coefficients to the DSP (IC1000) through the FPGA (IC801).

Audio Block/Level Diagram

- Audio Block Diagram

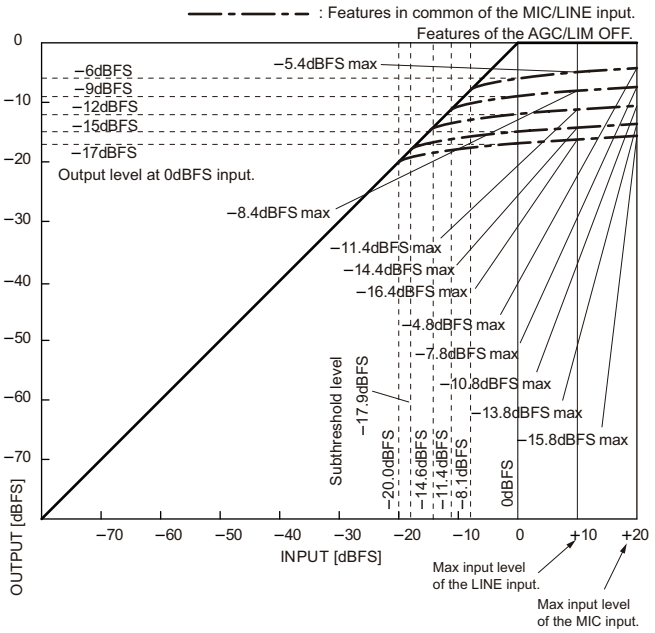


- Level Diagram



AGC/LIM Specification

• AGC/LIM Specification



1-2-7. Power Supply Block

RE-326 Board

This board switches input power, monitors and protects input voltages, and supplies power voltages.
The power control microcomputer (IC5002/DPR-362 board) controls boot, shutdown, and output sequences.

Input power (UNREG) block operation

When the input power (UNREG) is input, the camera unit enters the boot standby state. Power switch ON or OFF status can be recognized in this state. When the power control microcomputer recognizes power switch ON, the UNREG power in supplied to the power circuits and each output is activated by the signal from the power control microcomputer.
The normal value of the input power (UNREG) is within a range of approx. +10.5 to +17 V.

- Switching battery and EXT-DC
  There are two types of input power: battery power and EXT-DC power. These input voltages are monitored and are automatically switched placing a high priority on EXT-DC.
- Input overvoltage protection
  When an UNREG voltage exceeding approx. +18.6 V is input, the overvoltage protection circuit is activated to shut down the camera unit.
- Input constant-voltage protection
  When the input UNREG voltage lowers below approx. +10.5 V, the power control microcomputer shuts down the camera unit.
- Overcurrent detection
  IC107 detects the input current. When the input current exceeds approx. 12 A, the overcurrent protection circuit is activated to shut down the camera unit.
- Incorrect-power connection protection
  When a reverse voltage is input, Q104 on the RE-326 board is not turned on and the protection function is activated to block the current path.

Power voltages supply circuit (DC/DC converter, UNREG)

There are 27 voltages that are classified into to following groups.

- Step-down voltages (+5V, +3.3V, +2.5V, +1.8V, +7V, +6V, +1.5V, +1.2V, +12V, etc.)
- Step-up voltages (+16V, +24V)
- Negative voltages (-5V, -8.5V)
- UNREG voltages (LENS, VF, DC-OUT, REMORT, OTHER)

Each voltage is activated and deactivated according to the power sequence control by the power control microcomputer.

Voltage short-circuit protection

The output voltage and output current of each voltage are monitored. When an abnormal output voltage or current is detected, the camera unit is shut down. The protection circuit is not automatically reset even after short-circuit is cleared. Therefore, power must be turned off and on again.

1-2-8. Wireless Block

GPS

Position and time information is acquired from the satellite through the antenna on the GPS module (GP-1019 board). This information is transmitted to the CN-3723 and the HN-415 boards, then to the DPR-362 board through the fine-wire coaxial cable, and then to the application processor EMMA (IC4200).

- GPS module (GP-1019 board)
  The GPS module (GP-1019 board) acquires position and time information and transmits it to the DPR-362 board through the CN-3723 and HN-415 boards.
- CN-3723 board
  GPS signals from the GPS module (GP-1019 board) are sent through the relay CN-3723 board to the connector (CN51).
- HN-415 board
  Signals from the CN-3723 board are sent from the connector (CN4) to the connector (CN0400) on the DPR-362 board through the fine-wire coaxial harness.
- DPR-362 board
  The following signals are sent from the application processor EMMA (IC4200) to the connector (CN0400).
- Serial communication (with GPS) signals
- GPS ON/OFF signal
- GPS RESET signal

Wi-Fi

- DPR-362 board
  The USB Host signal and the reset signal of the application processor EMMA (IC4200) are sent through the connector (CN2303) to the WIFI MODULE (WM board) to communicate between EMMA and WM.
  SDI output signals from the GMON (IC2301) are sent through the connector (CN2303) to the WIFI MODULE (WM board) to be used for proxy recording. The WIFI MODULE (WM board) power is controlled with the power ON signal connected to the power microcomputer Darwin (IC5002) through the connector (CN2303).
- CN-3722 board (Wi-Fi USB connector)
  The Wi-Fi dongle of the Wi-Fi USB connector (CN003) is controlled by the WM board through CN001 and transmits the proxy data in the SD memory (CN002/SD-58 board) managed by the WIFI MODULE (WM board).
- SD-58 board (Proxy SD card slot)
  The SD memory in the SD card slot (CN002) is controlled by the WIFI MODULE (WM board) through the connector (CN001). Proxy data filed by the WIFI MODULE (WM board) is recorded.

1-2-9. Camera Adapter (CA) Connection Block

HPR-53 Board

The return video signal sent from the camera adapter (CA) with the 50-pin interface is transferred through the connector (J501) and the equalizer (IC502) to the FPGA ETCx (IC100) in which the serial signal is converted to parallel signal and audio data is separated.
The separated audio data is output to the FPGA AUDX (IC801/AU-360 board). The video signal is converted to the 5 Gbps high-speed differential signal format, and the converted signal is output to the video signal processor ROSETTA (IC0100/DPR-362 board). Furthermore, 50-pin interface (synchronization signals from CA, asynchronous communication data, and 700 protocol communication data) other than the return video signal is performed through the connector (CN400).
The synchronization signals are output through the ETCx (IC100) to the FPGA GMON (IC2301/DPR-362 board), and asynchronous communication data is sent to and received from the video signal processor ROSETTA (IC0100/DPR-362 board) through the ETCx (IC100).
Furthermore, 700 protocol communication data is directly input to and output from the FPGA GMON (IC2301/DPR-362 board) through the connector (CN100).

CI-50 Board

The 50-pin interface connector (CN4) on the CI-50 board is connected to the connector on the CA to send and receive main-line video data, return video signal, audio data, synchronization signals, asynchronous communication data, and 700 protocol communication data.
Main-line video SDI signals (with audio data superimposed) are output from the FPGA GMON (IC2301/DPR-362 board) through the connector (CN1) and the 50-pin interface connector (CN4) to the CA. Return video SDI signals (with audio data superimposed) are output from the CA through the 50-pin interface connector (CN4) and the connector (CN2) to the FPGA ETCx (IC100/HPR-53 board).
Synchronization signals, asynchronous communication data, and 700 protocol communication data other than video signals are individually output to the HPR-53 board through the connector (CN3).

1-3. Connectors/Cables

Use the following connectors/cables or equivalent when connecting cables to the connectors of this unit.

Connector Name	Connection Connectors/Cables	Part No.
GENLOCK IN	BNC 75 Ω, Male	1-569-370-12
TC IN		
TC OUT		
VIDEO OUT		
HD/SD SDI OUT 1		
HD/SD SDI OUT 2		
HD/SD SDI IN		
AUDIO IN CH-1, CH-2	XLR 3P, Male	1-508-084-00
AUDIO OUT	Audio cable (XLR 5P-XLR 3P, 2 m)	
DC IN	XLR 4P, Female	1-508-362-00
DC OUT 12 V	Round Type 4P, Male	1-566-425-11
EARPHONE	Mini jack (commercially available on market)	
LIGHT	Power tap (OE) Made by ANTONBAUER Inc., 33710 or equivalent	
MIC IN	XLR 5P, Male	1-508-370-11
REMOTE	Round Type 8P, Male	1-766-848-11
USB2.0 Host (Wireless)	USB cable (commercially available on market)	
USB 3.0 Host (Storage)		
USB 2.0 Device (PC)		
USB 2.0 Device (Maintenance)		
VF (LCD) (rectangular, 26-pin)	Connection cable of the optional viewfinder (CBK-VF02)	
VF (HDVF) (round, 20-pin)	Connect the cable of the optional viewfinder (HDVF-20A/200)	
WIRELESS RECEIVER IN	WRR-855S/860C/861/862, DWR-S02D (by SONY) only connectable **Note** Do not connect with a connector/cable other than above.	
HDMI	HDMI cable (commercially available on market)	
LENS (12P FEMALE)	Connector 12P, Male or HIROSE HR10-10PA-12P equivalent	1-564-360-11
EXT (50P FEMALE)	Rectangular, 50P, Male (commercially available on market)	

1-4. Connector Input/Output Signals

Input Signals

1. GENLOCK IN

BNC type 1.0 V p-p, 75 Ω, unbalanced

2. TC IN

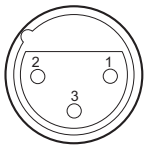
BNC type 0.5 V to 18 Vp-p, 10 kΩ

3. HD/SD SDI IN

SDI 0.8 Vp-p, 75 Ω, 270 Mbps & 1.5 Gbps

4. AUDIO IN CH-1, CH-2

XLR 3-pin, Female



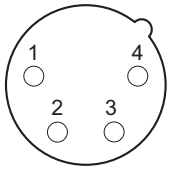
- External View -

(0 dBu = 0.775 V rms)

No.	Signal	I/O	Specifications
1	MIC/LINE (G)	—	-70 dBu/-60 dBu/-50 dBu/ -40 dBu/-30 dBu/ -3 dBu/0 dBu/+4 dBu, High impedance, Balanced
2	MIC/LINE (X)	IN	
3	MIC/LINE (Y)	IN	

5. DC IN

XLR 4-pin, Male

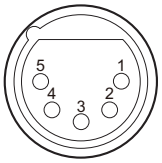


- External View -

No.	Signal	I/O	Specifications
1	GND	—	GND for DC (+)
2	—	—	No connection
3	—	—	No connection
4	DC IN (+)	IN	+11 to 17 V dc input

6. Front MIC IN

XLR 5-pin, Female



- External View -

(0 dBu = 0.775 V rms)

No.	Signal	I/O	Specifications
1	MIC IN (G)	—	- 50 dBu, High impedance, Balanced
2	MIC1 IN (X)	IN	
3	MIC1 IN (Y)	IN	
4	MIC2 IN (X)	IN	
5	MIC2 IN (Y)	IN	

Output Signals

7. VIDEO OUT

BNC type 1.0 V p-p, 75 Ω, unbalanced

8. HD/SD SDI OUT1/OUT2

BNC type SDI 0.8 V p-p, 75 Ω, 270 Mbps, 1.5 Gbps & 3 Gbps

9. TC OUT

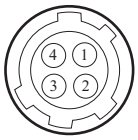
BNC type, 1.0 V p-p, 75 Ω

10. EARPHONE

-22 dBu (Volume: Center, reference level output 32 ohms loaded)

11. DC OUT 12 V

DIN, 4-pin, Female

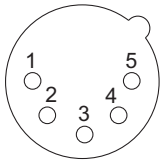


- External View -

No.	Signal	I/O	Specification
1	UNREG GND	—	GND for power
2	—	—	No connection
3	—	—	No connection
4	UNREG +12 V	OUT	+11 to 17 V dc output（Max 1.8 A）

12. AUDIO OUT

XLR, 5-pin, Male



- External View -

(0 dBu = 0.775 V rms)

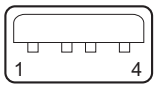
No.	Signal	I/O	Specifications
1	ANALOG GND	—	—
2	AUDIO CH-1 (X)	OUT	0 dBu
3	AUDIO CH-1 (Y)	OUT	
4	AUDIO CH-2 (X)	OUT	
5	AUDIO CH-2 (Y)	OUT	

Input/Output Signals

13. USB2.0 Host (Wireless)

USB (Series A), 4-pin

Signal standard: USB standard Ver. 2.0



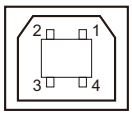
- External View -

No.	Signal	I/O
1	USB VBUS	OUT
2	DATA (-)	I/O
3	DATA (+)	I/O
4	GND	—

14. USB2.0 Device (PC)

USB (Series B), 4-pin

Signal standard : USB standard Ver. 2.0



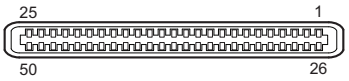
- External View -

No.	Signal	I/O
1	USB DEV VBUS	IN
2	DATA (-)	I/O
3	DATA (+)	I/O
4	GND	—

15. EXT

50-pin (Female)

Rectangular, 50-pin



- External View -

No.	Signal	I/O	Specifications
1	GND(TX_OUT_C2)	--	GND
2	GND(TX_OUT_C1)	--	GND
3	CA_EN	IN	Camera Adaptor Detect Hi : None, Low : Enable
4	GND	--	GND
5	SENSE_UNREG_OUT	OUT	+11 V to 17 V
6	SENSE_UNREG_OUT	OUT	+11 V to 17 V
7	BSY	OUT	Reserve (disuse is low) Hi : 2.5 V, Low : GND
8	CMD0	OUT	start/stop synchronization bit rate;843.75[kbps] ±2.0% 8bitLSB First
9	CMD2(RESERVE0)	OUT	Reserve (disuse is low) Hi : 2.5 V, Low : GND
10	CMD4	OUT	Reserve Hi : 2.5 V, Low : GND
11	GND	--	GND
12	GND	--	GND
13	GND	--	GND
14	GND	--	GND
15	GND	--	GND
16	CA_VD	IN	Genlock V
17	CDA0	IN	start/stop synchronization bit rate; 843.75 [kbps] ±2.0% 8bitLSB First
18	CA_HD	IN	Genlock H
19	CDA2	IN	Reserve (Pull Down) Hi : 2.5 V, Low : GND
20	+3.3V_OUT	OUT	For Power Save
21	+3.3V_OUT	OUT	For Power Save
22	GND	--	GND
23	GND	--	GND
24	GND(RX_IN_C1)	--	GND
25	GND(RX_IN_C2)	--	GND
26	TX_OUT_H	OUT	HD-SDI OUT SDI 0.8 V p-p, 75 ohms, 270 Mbps & 1.5 Gbps
27	GND(TX_OUT_C3)	--	GND
28	GND	GND	GND
29	SENSE_UNREG_OUT	OUT	+11 V to 17 V
30	SENSE_UNREG_OUT	OUT	+11 V to 17 V
31	CK	OUT	Reserve (disuse is low) Hi : 2.5 V, Low : GND
32	RX	OUT	700 Protocol (RX)
33	CMD1	OUT	Skin Gate Level3
34	CMD3	OUT	Reserve (disuse is low) Hi : 2.5 V, Low : GND

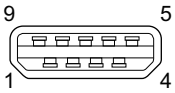
Continued

No.	Signal	I/O	Specifications
35	GND	--	GND
36	GND	--	GND
37	GND	--	GND
38	GND	--	GND
39	GND	--	GND
40	GND	--	GND
41	GND	--	GND
42	TX	IN	700 Protocol (TX)
43	CDA1(RESERVE1)	IN	Reserve (Pull Down) Hi : 2.5 V, Low : GND
44	CDA3	IN	Reserve (Pull Down) Hi : 2.5 V, Low : GND
45	CA_F	IN	Genlock F
46	CA_3.3V	IN	For Power Save
47	CA_3.3V	IN	For Power Save
48	GND	--	GND
49	GND(RX_IN_C3)	--	GND
50	RX_IN_H	IN	HD-SDI IN SDI 0.8 V p-p, 75 ohms, 270 Mbps & 1.5 Gbps

16. USB3.0 Host (Storage)

USB (Series A), 9-pin

Signal standard: USB standard Ver. 3.0

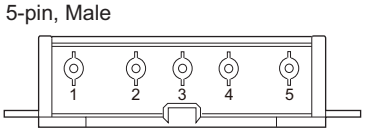


- External View -

No.	Signal	I/O
1	VBUS	+5V OUT
2	D-	I/O
3	D+	I/O
4	GND	GND
5	STDA_SSRX-	IN
6	STDA_SSRX+	IN
7	GND_DRAIN	GND
8	STDA_SSTX-	OUT
9	STDA_SSTX+	OUT

17. BATT IN

5-pin, Male



- External View -

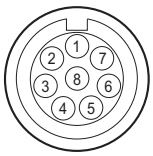
No.	Signal	I/O	Specifications
1	BATT IN (+)	IN	+11 to 17 V dc input

Continued

No.	Signal	I/O	Specifications
2	BATT SCL	OUT	Battery serial data clock signal output
3	BATT SDA	IN/OUT	Battery serial data signal input/output
4	BATT ID	IN	Battery ID signal input
5	BATT IN (-)	IN	+11 to 17 V dc

18. REMOTE

8-pin, Female



- External View -

No.	Signal	I/O	Specifications
1	TX RCP DATA (X)	OUT	SERIAL DATA OUT
2	TX RCP DATA (Y)	OUT	SERIAL DATA OUT
3	RX RCP DATA (X)	IN	SERIAL DATA IN
4	RX RCP DATA (Y)	IN	SERIAL DATA IN
5	VIDEO (G)	—	GND for VIDEO
6	UNREG +12 V	OUT	+11 V to 17 V
7	UNREG (GND)	—	GND for UNREG
8	VIDEO (X)	OUT	1.0 Vp-p, Zo = 75 Ω

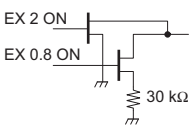
19. LENS

12-pin, Female

- External View -

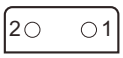
No.	Signal	I/O	Specifications
1	RET (SW)	IN	ON : 0 V, OFF : OPEN
2	VTR TRIG	IN	ON : 0 V, OFF : OPEN
3	LENS GND	—	GND for LENS
4	AUTO + 5 V	OUT	AUTO : + 5 V MANU : 0 V or OPEN
5	IRIS CONT	OUT	+ 3.4 V (F16) to + 6.2 V (F2.8)
6	UNREG + 12 V	OUT	+ 11 V to + 17 V
7	IRIS PSTN	IN	+ 3.4 V (F16) to + 6.2 V (F2.8)
8	REMOTE/LOCAL	OUT	REMOTE (MANUAL) IRIS: +5 V LOCAL (AUTO) IRIS: 0 V

Continued

No.	Signal	I/O	Specifications
9	EXTENDER	IN	EX 2 ON : 0 V EX 0.8 ON : + 1.8 V OFF : + 4.8 V 
10	ZOOM PSTN	IN	WIDE : 2 V, TELE : 7V
11	FOCUS PSTN (LENS RX)	IN	∞ : 7 V min. : 2 V
12	LENS TX	OUT	

20. LIGHT

2-pin, Female

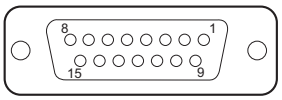


- External View -

No.	Signal	I/O	Specification
1	LIGHT +12 V	OUT	50 W MAX
2	GND	—	

21. WIRELESS RECEIVER

D-sub, 15-pin, Female

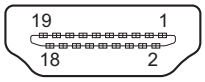


- External View -

No.	Signal	I/O	Specifications
1	GND	IN	GND for AUDIO IN
2	AUDIO CH1 IN	IN	WIRELESS RECEIVER AUDIO CH1 IN
3	AUDIO CH2 IN	IN	WIRELESS RECEIVER AUDIO CH2 IN
4	DC + 7 V OUT	OUT	+7 V
5	GND	—	GND
6	SCLK	OUT	64 FS
7	WRR855 DET	I/O	
8	GND	—	GND
9	WRR CLK	IN	WRR SERIAL CLOCK
10	CS	OUT	WRR SELECT
11	WRR DI	OUT	WRR SERIAL IN
12	WRR DO	IN	WRR SERIAL OUT
13	LRCK	OUT	FS
14	DATA 1/2	IN	AUDIO DATA 1/2 IN
15	DATA 3/4	IN	AUDIO DATA 3/4 IN

22. HDMI

19-pin, Type A

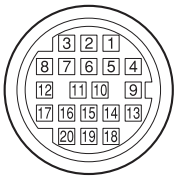


- External View -

No.	Signal	I/O	Specifications
1	TMDS DATA2+	OUT	TMDS data 2 (+) output
2	TMDS DATA2 SHIELD	--	GND for TMDS data 2
3	TMDS DATA2	OUT	TMDS data 2 (-) output
4	TMDS DATA1+	OUT	TMDS data 1 (+) output
5	TMDS DATA1SHIELD	--	GND for TMDS data 1
6	TMDS DATA1-	OUT	TMDS data 1 (-) output
7	TMDS DATA0+	OUT	TMDS data 0 (+) output
8	TMDS DATA0SHIELD	--	GND for TMDS data 0
9	TMDS DATA0-	OUT	TMDS data 0 (-) output
10	TMDS CLOCK+	OUT	TMDS clock signal (+) output
11	TMDS CLOCKSHIELD	--	GND for TMDS clock
12	TMDS CLOCK-	OUT	TMDS clock signal (-) output
13	CEC (N.C.)	--	--
14	RESERVED(N.C.)	--	No connection
15	SCL	OUT	Serial data clock signal output
16	SDA	OUT	Serial data signal input output
17	DDC/CECGND	--	GND
18	+5 V POWER	OUT	+5 V dc output
19	HPD	IN	Hot plug detect signal input

23. VF (HDVF)

Round, 20-pin



(External View)

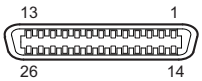
No.	Signal	I/O	Specifications
1	SDA VF	I/O	TTL level
2	--	--	No connection
3	--	--	No connection
4	SCL	OUT	TTL level
5	--	--	No connection
6	--	--	No connection
7	--	--	No connection
8	G TALLY	OUT	ON : 5 V, OFF : GND
9	--	--	No connection
10	--	--	No connection
11	--	--	No connection

Continued

No.	Signal	I/O	Specifications
12	Y VIDEO	OUT	1.0 V p-p, Zo = 75 Ω
13	Y VIDEO GND	--	GND for VIDEO
14	Pb VIDEO (Pb)	OUT	±0.35 V p-p, Zo = 75 Ω
15	Pr VIDEO (Pr)	OUT	±0.35 V p-p, Zo = 75 Ω
16	--	--	No connection
17	R TALLY (UP)	OUT	ON : 5 V, OFF : GND
18	--	--	No connection
19	UNREG GND	--	GND for UNREG
20	UNREG	OUT	+11 V to 17 V

24. VF (LCD)

Rectangular, 26-pin

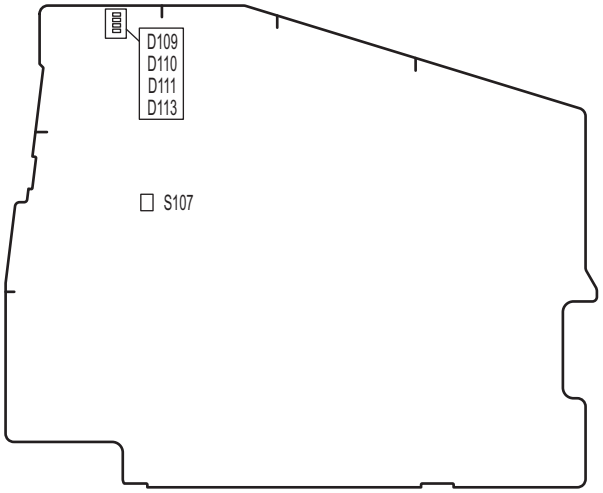


- External View -

No.	Signal	I/O
1	SHIELD GND	—
2	LVDS 1-	OUT
3	LVDS 2-	OUT
4	LVDS 3-	OUT
5	LVDS CLK-	OUT
6	LVDS 4-	OUT
7	LVDS 5-	OUT
8	VF ON	IN
9	SDAT	I/O
10	UNREG (+11 V to 17 V)	OUT
11	UNREG (+11 V to 17 V)	OUT
12	GND	—
13	GND	—
14	GND	—
15	LVDS 1+	OUT
16	LVDS 2+	OUT
17	LVDS 3+	OUT
18	LVDS CLK+	OUT
19	LVDS 4+	OUT
20	LVDS 5+	OUT
21	SDI	OUT
22	SCLK	OUT
23	UNREG (+11 V to 17 V)	OUT
24	UNREG (+11 V to 17 V)	OUT
25	GND	—
26	SHIELD GND	—

1-5. Functions of Onboard Switches and LEDs

1-5-1. RE-326 Board



RE-326 BOARD (A side)

Ref. No.	Name	Description	Normal state
D109	BATT operation indicator	Lit while the unit is operating with BATT power. Not lit with EXT_DC power.	—
D110	Overvoltage/low-voltage protection indicator	Lights when UREG voltage lowers below 10.5 V or rises above 18.6 V, and the camera unit is shut down.	Unlit
D111	EXT_DC operation indicator	Lit while the unit is operating with EXT_DC power (not lit with BATT power).	—
D113	Shut Down indicator	Blinks (at 1 Hz intervals) when a shutdown signal is generated due to abnormal load, then the camera unit is shut down.	Unlit
S107	PLD forced ON switch	When this switch is turned on, power is supplied to the PLD to forcibly operate it (for reprogramming, debug, etc.)	OFF

1-6. Note for Replacement of IC or Board

This section explains the necessary setups required when replacing ICs or parts.

- When any of the following boards is replaced, upgrade the firmware version.
  All data are written at once when upgrading the firmware version. (Refer to"1-12-1. Upgrade Firmware for Camcorder".)

Board Name	Ref. No.
AU-360	IC800
DCP-67	IC503
DPR-362	IC0703, IC2200, IC2500, IC3101, IC3102, IC3704, IC4400, IC4602, IC4903, IC5002
FP-208	IC302.IC404,IC503
HPR-53	IC800, IC801
TG-287	IC104

- When the following board is replaced, upgrade the firmware version alone. (Refer to "1-12-2. Upgrade of Proxy Recording/Wireless LAN Connection Function".)

Board Name	Ref. No.
WM	U11

- Adjusted values are stored in the following boards and parts. The values need to be readjusted when they are replaced.

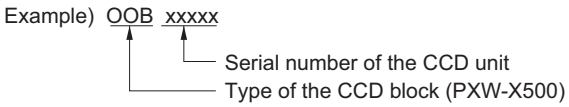
Board Name	Ref. No.
TG-287 *1	IC008
DPR-362	IC703 (The same data are stored in the IC008 on the TG-287 board), IC2002, IC3101, IC3102, IC4400, X2000
WM	U12

- Service of PA-422/423/424 boards
  The PA-422/423/424 boards cannot be replaced on the board-level service or part-level service. If parts become defective, replace the entire CCD block.

*1: The adjusted values for the CCD block are stored in the TG-287 board.

1-7. Description of CCD Block Number

All of the CCD units have their unique ID numbers. This number is called the CCD block number indicating the type of the CCD block and serial number.
The label indicating the CCD block number is attached inside of each CCD unit.



1-8. Replacing Lithium Battery

The FP-208 board (inside panel assembly) is equipped with the lithium battery for time of the internal clock.
If the message “Backup Battery End Please Change” appears in the LCD monitor or viewfinder, this battery must be exchanged.
After replacing it, refer to “Using the Unit for the First Time” of the operating instructions, and set the date and time of the internal clock.

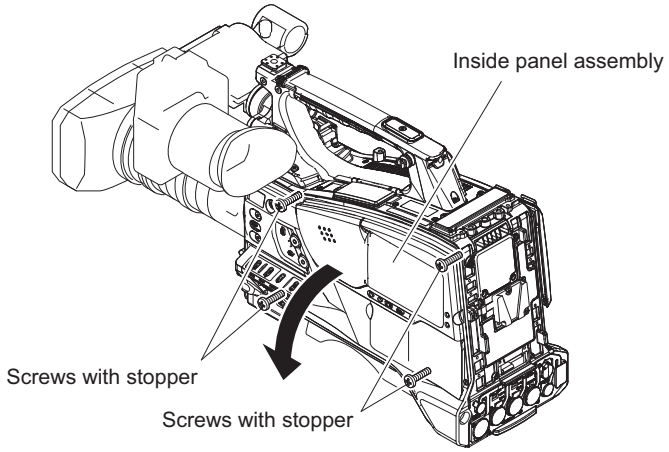
Part No.	Name	Usage
⚠ 1-528-174-72	Lithium Battery (CR2032 type)	For internal clock

Replacing procedure

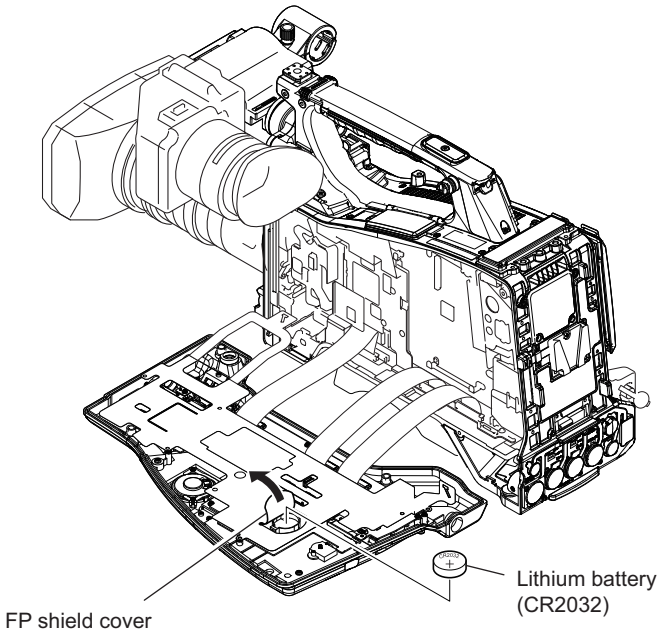
Note

In replacing, ensure that the battery is installed with “+” and “–” poles connected to the correct terminals. Improper connection may cause an explosion or leakage of fluid, resulting in injury or damage to surrounding properties.

1. Loosen the four screws with stopper and remove the inside panel.



2. Turn over the FP shield cover and replace the lithium battery (CR2032) on the FP-208 board.



3. Attach the inside panel assembly by reversing the steps of removal.

4. Set the date and time of the internal clock. (Refer to the operating instructions)

1-9. Fixtures/Measuring Equipment List

1-9-1. Fixtures

Part No.	Name	Usage/Note
Commercially available	Grayscale chart	Reflective type (16 : 9), Camera adjustment on market
Commercially available	Star chart	Reflective type, Camera adjustment on market
J-6394-080-A	Grayscale chart	Transparent type (16 : 9), Camera adjustment on market
J-6029-140-B	Pattern box PTB-500	Camera adjustment
Commercially available	Mini USB cable	For firmware version-upgrade
J-6325-110-A	Bit for torque driver (M1.4)	For tightening screw
J-6325-380-A	Bit for torque driver (M2)	For tightening screw
J-6323-430-A	Bit for torque driver (M3)	For tightening screw
J-6326-120-A	Hexagon bit (For torque screwdriver) (size 1.5)	For tightening screw
J-6325-400-A	Torque driver (3 kgf • cm) (0.3N • m)	For tightening screw
J-6252-510-A	Torque driver (6 kgf • cm) (0.6N • m)	For tightening screw
J-6252-520-A	Torque driver (10 kgf • cm) (1.0N • m)	For tightening screw
7-600-002-52	ThreeBond (TB-1401B)	For preventing screw from being loosened
Commercially available	Loctite (408)	Instant adhesives
Commercially available	BOX driver (Width across 4 mm)	For tightening hexagonal support

1-9-2. Measuring Equipment

Use the calibrated equipment or equivalent as listed below for the adjustments.

Equipment	Model name
AC adapter	SONY AC-DN10/DN2B
Oscilloscope	TEKTRONIX TDS3054 or equivalent (150 MHz or more)
HD waveform monitor	TEKTRONIX WFM8300 or equivalent
Frequency counter	Advantest TR5821AK or equivalent
Digital voltmeter	Advantest TR6845 or equivalent
Color monitor	SONY LMD-A240/A220/A170 or equivalent
Luminance meter	Konica Minolta LS-110 or equivalent

1-10. Circuit Protection Parts

1-10-1. Fuse

WARNING

The fuse is critical parts to safe operation. Replace the components with Sony parts whose part number appear in the manual published by Sony. If the components are replaced by any parts other than the specified ones, this may cause a fire or electric shock.

CAUTION

If fuse is replaced while the main power is kept on, this may cause electric shock.
Before replacing fuse , not only turn off the POWER switch but also remove the power cable that is connected to the DC IN connector.

This unit is equipped with fuse. Any an excessive current flow due to abnormality inside the equipment, the fuse blow. If a fuse blows, turn off the main power of the equipment once and inspect inside of the equipment and remove the cause of excessive current. After that, replace the fuse.

Board Name	Ref. No.	Name	Part No.
RE-326	F100, F101	Fuse (15 A /65 V)	⚠ 1-576-566-21

1-10-2. Circuit Protection Element

This unit is equipped with positive-characteristic thermistors (power thermistors) as circuit protection elements.
The positive-characteristic thermistor limits the electric current flowing through the circuit as the internal resistance increases when an excessive current flows or when the ambient temperature increases.
If the positive-characteristic thermistor works, turn off the main power of the unit and inspect the internal circuit of the unit. After the cause of the fault is eliminated and the positive-characteristic thermistor is cooled down, turn on the main power again. The unit works normally. It takes about one minute to cool down the positive-characteristic thermistor after the main power is turned off.

Board Name	Ref. No.	Part No.	Holding current
CN-3737	TH1	⚠ 1-802-108-11	1.50 A/20℃
RE-326	TH001, TH600, TH601	⚠ 1-771-845-21	200mA/20℃
	TH200, TH502	⚠ 1-802-063-21	1.10 A/20℃
	TH500, TH501	⚠ 1-802-108-11	1.50 A/20℃

1-11. Lead-free Solder

All boards mounted in this unit use lead-free solder. Be sure to use lead-free solder when repairing the boards of this unit. A lead free mark (LF) indicating that the solder contains no lead is printed on each board. (Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

 : LEAD FREE MARK

Note

- The lead-free solder melts at a temperature about 40 °C higher than the ordinary solder, therefore, it is recommended to use the soldering iron having a temperature regulator.
- The ordinary soldering iron can be used but the iron tip has to be applied to the solder joint for a slightly longer time. The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful.

1-12. Firmware Upgrade

1-12-1. Upgrade Firmware for Camcorder

Upgrade for firmware of camcorder is performed to use the SD memory card that stores the upgrading data in the package file.
The aim of the time required of the upgrade is approximately 40 minutes.

Note

For how to obtain the upgrading data in the package file, contact your local Sony Sales Office/Service Center.

Equipment required

- SD memory card

  Tip

  - For the type of SD memory card are available for this unit, refer to the operating instructions.
  - Use the SD memory card formatted by the format function of this unit. For detail of the format function, refer to the operating instructions.

- AC adapter Sony AC-DN10 or AC-DN2B

  Note

  When performing the upgrade of firmware, use AC adapter (AC-DN10 or AC-DN2B).

Preparation

1. Copy the firmware.bin in the package file (compressed) for upgrading to the root folder of the SD memory card.

   Note

   Do not copy the data other than the package file for upgrading to the SD memory card.

2. Turn off the power of the unit, remove the AC adapter or the battery pack.
3. Remove connection devices of the unit (USB wireless LAN module (IFU-WLH3), SDI, HDMI, microphone, viewfinder, lens and etc.) and media which is inserted to SxS card slot.
4. Install the AC adapter to the unit and connect to AC power.
5. Turn on the power of the unit, check the unit is completely activated on the LCD monitor. (Activating required time: approximately 20seconds)
6. Insert the SD memory card which is installed the package file for upgrade to UTILITY SD card slot on the right side of the unit.

Version Confirmation

- Press the menu button to display the setup menu.
- Confirm the current version at the version of Maintenance menu.

  Tip

  Refer to the operating instructions for displaying and Maintenance menu.

Procedure

1. Press the menu button to display the setup menu.
2. Select Maintenance >Version >Version Up with SEL/SET dial and select the execute.

3. Upgrade confirmation screen [Please use the AC adapter, Upgrade Version?] is displayed, select execute. (After selecting execute, upgrade is started.)
   When upgrade is started, REC lamp is flashed, and the massage [Version Upgrade Elapsed Time XX:YY:ZZ Executing... **%] is displayed on the viewfinder or LCD monitor. (XX:YY:ZZ : Elapsed time with each stage, ** %: progress status with each stage)
   Upgrade is performed at Phase 1 and Phase 2. Phase 1 needs approximately 10 minutes. Phase 2 needs approximately 30minutes.
   Upgrade file in the SD memory card is stored to the unit at the Phase 1. Upgrade is started with using upgrade file stored in the unit at the Phase 2.

   Note

   - When changing from Phase 1 to Phase 2, the message on the viewfinder or LCD monitor is disappeared. The unit is turned off and on. At this moment, the upgrade is continued. Do not turn off the power of the unit.
   - During the upgrade, do not perform unnecessary operation(exclusion and installing of the SD memory card, off of the power switch etc.). The upgrade may be stopped. It may cause the trouble of this unit.
   - The error is occurred during the upgrade, REC lamp is flashed every 4 Hz(0.25 seconds). The upgrade is not completed when elapsed time is 30 minutes or more in Phase 1 or one hour or more in Phase 2 from the starting, refer to Error remedy method.
   - When upgrading at displaying progress and REC lamp, the aim of the progress rate and flashing display of REC lamp may be delayed.

4. The message of upgrade completion [Version Upgrade, Done] is displayed, turn off and on of the unit.
5. Confirm the upgrade version in the version of Maintenance menu.

   Tip

   Refer to the operating instructions for displaying and operation of Maintenance menu.

6. If the upgrade is not performed, check the preparation and the procedures and perform the upgrade again.

Error remedy method

Upgrade has stopped

If the package file for upgrade generates abnormal, the message [Version Upgrade NG: Cannot Read. Power Off] is displayed. Restart the camcorder, copy the correct package file for upgrade to the SD memory card. Perform the procedures from step 1.

Upgrading has failed

The message [Version Upgrade Error] is displayed. Confirm the upgrade procedures and perform the procedures from step 1 again.
After this steps, if the upgrading is not completed correctly. Contact your local Sony Sales Office/Service Center.

Package file for upgrade is not detected

The message [Version Upgrade No File] is displayed on the viewfinder or LCD monitor. Confirm the followings.

- Is there the package file for upgrade just under the root directory of SD memory card?
  Remedy: Copy the package file for upgrade to the just under the root directory of SD memory card, install the SD memory card to the unit referring the preparation and perform the upgrade from step 1 again.
- Does the package file for upgrade correspond to the unit?
  Remedy: Copy the package file for upgrade which is corresponded to the unit to the just under the root directory of SD memory card, install the SD memory card to the unit referring the preparation and perform the upgrade from step 1 again.
- Did the package file for upgrade thaw correctly?
  Thaw correctly firmware.bin file in the package file(compressed) for upgrade, copy it to the just under the root directory of SD memory card, install the SD memory card to the unit referring the preparation and perform the upgrade from step 1 again.

Upgrade is not completed

The upgrade is not completed when elapsed time is 30 minutes or more in Phase 1 or one hour or more in Phase 2 from the starting, pull out and install the plug of AC adapter.
When the unit is started correctly, perform the upgrade from step 1 again.
If the upgrade is not correct completed, Contact your local Sony Sales Office/Service Center.

1-12-2. Upgrade of Proxy Recording/Wireless LAN Connection Function

- Firmware version upgrade for proxy recording/wireless LAN connection function is performed separately from this unit.
- Upgrade for proxy recording/wireless LAN connection function is performed with using SD memory card which is installed the package file for upgrade.

  Note

  How to obtain the package file for upgrade, Contact your local Sony Sales Office/Service Center.

Equipment required

- SD memory card

  Tip

  - Refer to the operating instructions for available SD memory card.
  - Use the SD memory card which is formatted by format function of this unit. Refer to the operating instructions for formatting function.

- AC adapter Sony AC-DN10 or AC-DN2B

  Note

  When performing the firmware upgrade, use AC adapter (AC-DN10 or AC-DN2B).

Preparation

1. Copy firmware.bin file for proxy recording/wireless LAN connection function in the package file(compressed) for upgrade to the just under the root directory of SD memory card.

   Note

   Do not copy the data other than the package file for upgrading to the SD memory card.

2. Turn off the power of the unite and remove AC adapter or the battery pack.
3. Remove connection devices of the unit (USB wireless LAN module (IFU-WLH3), SDI, HDMI, microphone, viewfinder, lens and etc.) and the media which is inserted in the SxS card slot.
4. Install the AC adapter to the unit and connect to AC power.
5. Turn on the power of the unit, check the unit is completely activated on the LCD monitor. (Activating required time: approximately 20seconds)
6. Insert the SD memory card which is installed the package file for upgrade to PROXY SD card slot on the right side of the unit.

Version Confirmation

1. Press the menu button to display the setup menu.
2. Select Maintenance >Wi-Fi >Setting > Access Point with SEL/SET dial or select Operation > Proxy > Recording Mode > Setting in the Maintenance menu, then select On. Activate the proxy recording/wireless LAN connection function. (Activating required time: approximately one to two minutes)
3. Confirm the current Net-Func Version Number at the version of Maintenance menu.

   Tip

   Refer to the operating instructions for displaying and operation of Maintenance menu.

Procedure

1. Press the menu button to display the setup menu.

2. Select Operation >Proxy >Recording Mode> Setting with SEL/SET dial and select ON.
3. Close the menu, wait until state of Proxy on the monitor screen is changed from [Proxy] blinking to [Proxy] lighting. (Activating required time: approximately one to two minutes)
4. Select Maintenance >Version >Net-Func Ver.Up with SEL/SET dial and select Execute.
5. Upgrade confirmation screen [Please use the AC adapter Upgrade Version?] is displayed, select Execute. (After selecting execute, upgrade is started.)

   Note

   - During the upgrade, do not perform unnecessary operation (exclusion and installing of the SD memory card, off of the power switch etc.). The upgrade may be stopped. It may cause the trouble of this unit.
   - The error is occurred during the upgrade, REC lamp is flashed every 4 Hz (0.25 seconds). Refer to Error remedy method for remedy method of error.

   Tip

   - When upgrade is started, REC lamp is flashed, and the massage [Version Upgrade Elapsed Time XX:YY:ZZ Executing... **%] is displayed on the viewfinder or LCD monitor. (XX:YY:ZZ : Elapsed time with each stage, **%: progress status with each stage)
   - Aim of activating required time for upgrade is approximately five minutes.

6. The message for upgrade completion [Version Upgrade OK Turn Power Off] is displayed, turn off and on the power of the unit.
7. Confirm the current Net-Func Version Number at the version of Maintenance menu.

   Tip

   Refer to the operating instructions for displaying and operation of Maintenance menu.

8. If the upgrade is not performed, check the preparation and the procedures and perform the upgrade again.

Error remedy method

Upgrade has stopped

If the package file for upgrade generates abnormal, the message [Version Upgrade NG: Cannot Read. Power Off] is displayed. Restart the camcorder, copy the correct package file for upgrade to the SD memory card. Perform the procedures from step 1.

Upgrading has failed

The message [Version Upgrade Error] is displayed. Confirm the upgrade procedures and perform the procedures from step 1 again.
After this steps, if the upgrading is not completed correctly. Contact your local Sony Sales Office/Service Center.

1-13. Electrical Adjustment

When making electrical adjustment, contact your local Sony Sales Office/Service Center.

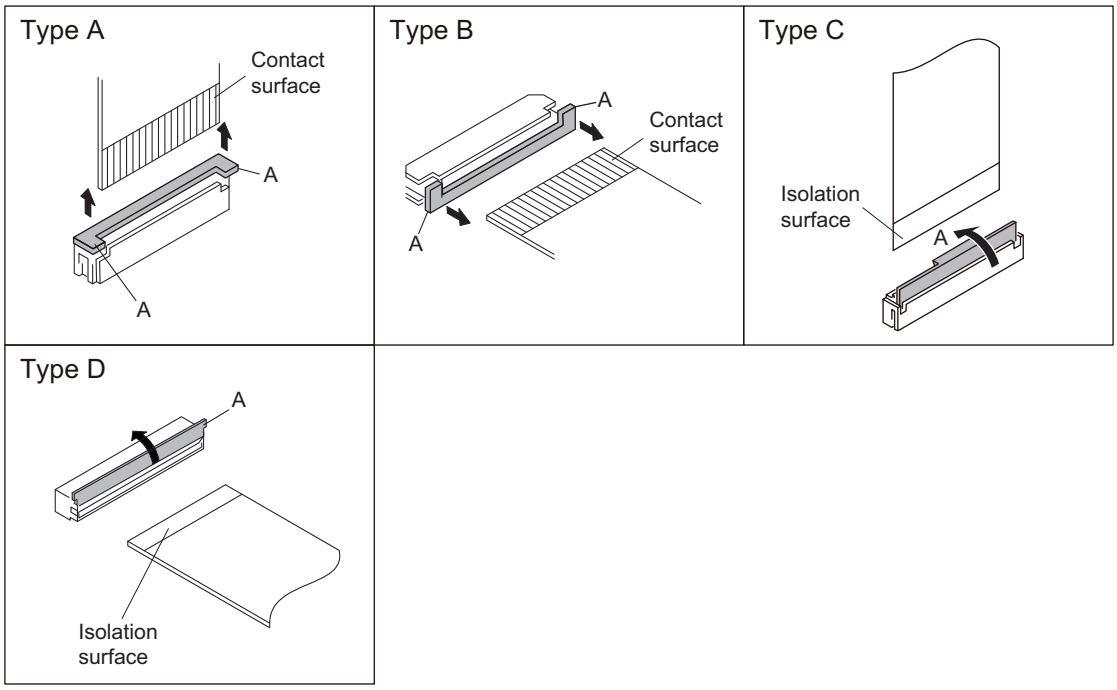
1-14. Flexible Card Wire and Fine-Wire Coaxial Cable

1-14-1. Disconnecting/Connecting Flexible Card Wire

Note

- Be very careful not to fold flexible card wires. Life of flexible card wire will be significantly shortened if it is folded.
- Each flexible card wire has conductive side and insulated side. If the flexible card wire is connected in the wrong orientation of the conductive side and the insulated side, the circuit will not function.
- Insert the flexible card wire straight.
- Check that the conductive side of the flexible card wire is not contaminated.

Type A to D



Disconnecting

1. Turn off the power.
2. Slide or lift up the portion A in the direction of the arrow to unlock and pull out the flexible card wire.

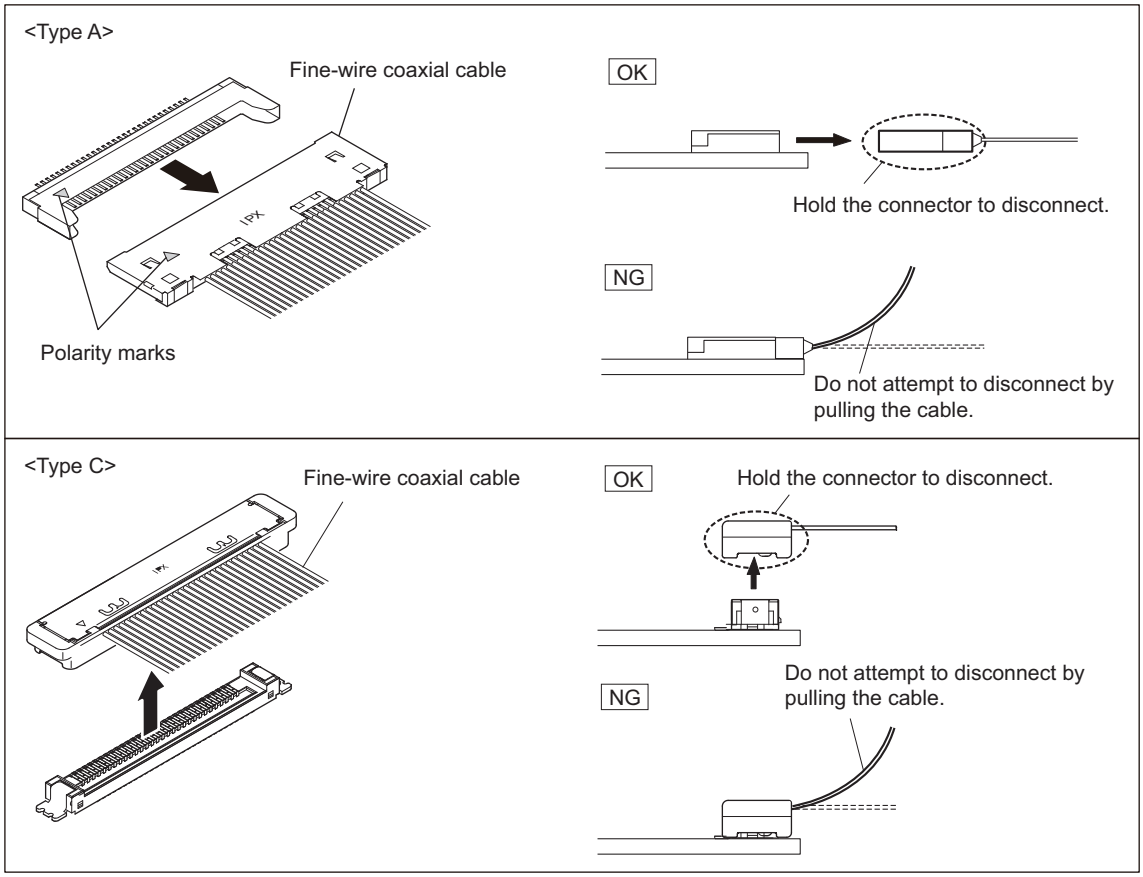
Connecting

1. Slide or lift up the portion A in the direction of the arrow and securely insert the flexible card wire into the deep end of the connector.
2. Return the portion A to its original position and lock the connector.

1-14-2. Disconnecting/Connecting Fine-Wire Coaxial Cable

Note

- Be very careful when handling the fine-wire coaxial cable so that fine wires are not disconnected.
- When disconnecting the fine-wire coaxial cable, be sure to hold the connector. Do not attempt to pull the cable.
- Check that the contact surface of the fine-wire coaxial cable connector is free from dirt or dust.



Disconnecting

1. Hold the connector and disconnect the fine-wire coaxial cable horizontally or vertically.

Connecting

1. Hold the connector and connect the fine-wire coaxial cable horizontally or vertically while matching the polarity marks.

1-15. Periodic Maintenance and Inspection

1-15-1. Periodic Check/Replacement Parts List

This table does not describe the guarantee period of each part.
The replacement period of each part is changed according to the environment and condition.

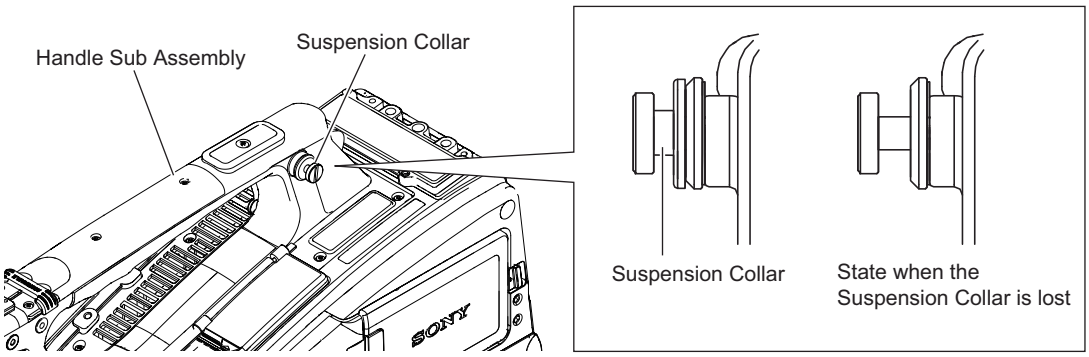
Part to Be Replaced	Part No.	Check/Replacement Period
Lithium battery (CR2032)	⚠ 1-528-174-72	When the warning message is displayed on LCD monitor/viewfinder screen.
DC fan (30 square)	⚠1-855-292-11	About 5 years **Tip** The total operating time is displayed with the Hours Meter in the System menu. For details, refer to the operating instructions.
Battery terminal (battery adapter)	1-820-459-21	About 5 years **Tip** The total operating time is displayed with the Hours Meter in the System menu. For details, refer to the operating instructions.

1-15-2. Notes on Replacement of the Battery Terminal

The battery connector in this unit is consumable parts. Replace every about 5 years.
If the terminal of connector is deformed or bends due to vibrations or shock, or if the surface of the terminal corrodes due to long-term outside use or other similar use, the unit may malfunction.
Replace the battery terminal immediately if the terminal is deformed or bends, or if the surface color changes.

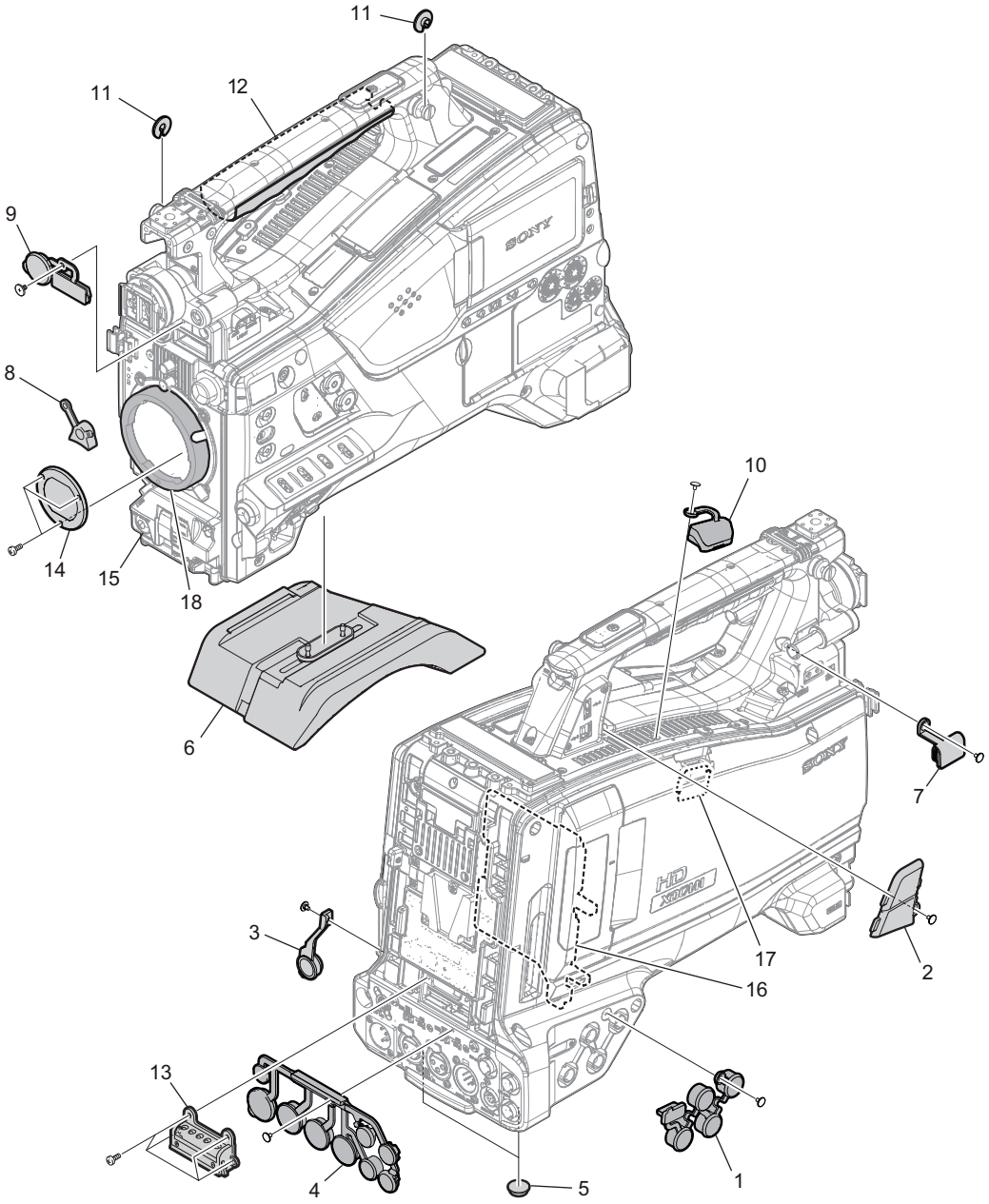
1-15-3. Precaution on Hanging Bracket of Handle

- If the Suspension Collar of the Hanging Bracket is deteriorated (abraded or damaged or lost);
  →Replace the Suspension Collar (3-654-615-02).
- If the Hanging Bracket itself is deformed or becomes loose;
  →Replace the Handle Sub Assembly (A-2061-149-A).



1-15-4. Recommended Replacement Parts

This section describes the recommended replacement parts and recommended replacement time.



ID	Part Name	Part No.	Recommended Replacement Timing
1	BNC cap	4-168-993-01	Check for deformation and deterioration (abraded or damaged or lost) from time to time. Replace it as necessary.
2	Cap (USB2)	4-264-451-01	
3	Headphone Jack Cover	4-168-991-01	
4	Drop Protection Cover (XLR)	4-545-527-01	
5	Rubber Foot	3-723-097-01	
6	Shoulder Pad Assembly	A-1752-736-B	
7	Cap (Light Connector)	4-168-996-01	
8	Lens Mount Holder	3-796-982-03	
9	Connector Cap	4-169-085-02	
10	Cover (NON DONGLE)	4-545-572-01	
11	Suspension Collar	3-654-615-02	
12	Grip	4-168-997-02	
13	Battery Connector	A-1968-119-A	

Continued

ID	Part Name	Part No.	Recommended Replacement Timing
14	Optical Filter Unit	1-788-765-21	It can become nebulous (intransparent and whitened) with elapse of time. Then it will not meet the required characteristics. Replace it as needed.
15	VTR start Button	3-986-632-02	Replace every about 3 years, or check for deformation and deterioration (abraded or damaged or lost) from time to time. Replace it as necessary.*1
16	EC-82 board	A-2052-066-A	Replace every 5 years.
17	CN-3722 board	A-2057-508-A	Replace every 5 years.
18	Bayonet Ling	3-790-043-11	Replace every 5 years.

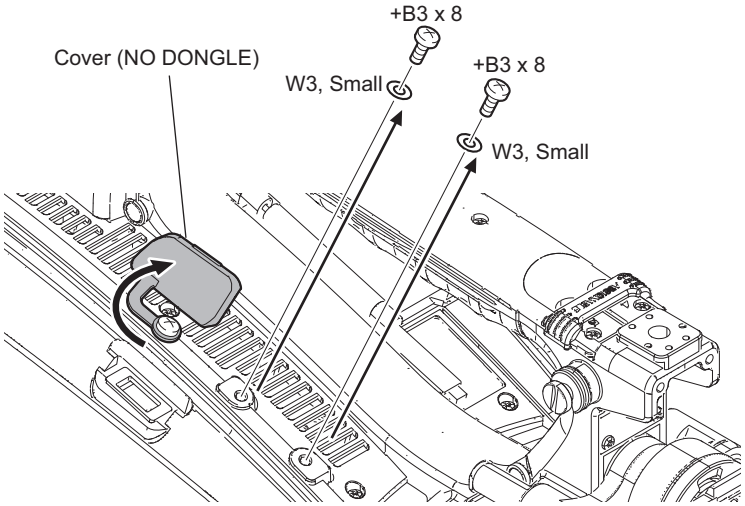
*1: When the part is replaced, apply the instant adhesive (Loctite 408 or equivalent) to the whole area of the flange from the back side with care not to ooze out to cosmetic surface.

1-16. Installation of the Guard

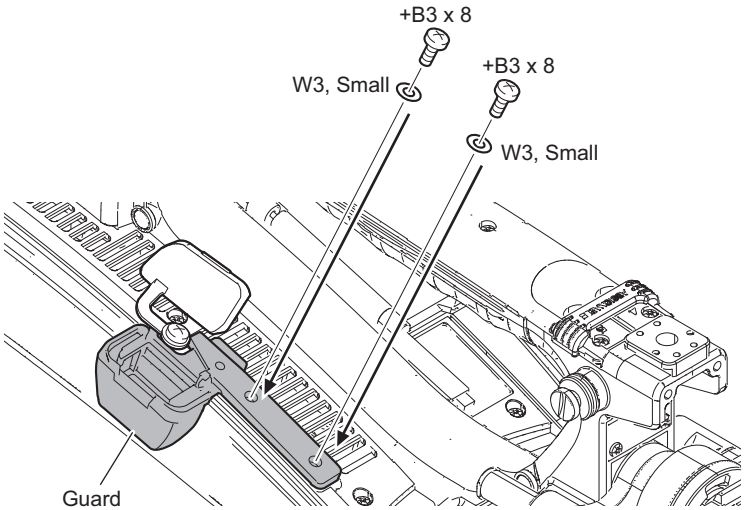
Install the guard (accessory) as the following.

Installing Procedure

1. Open the cover (NO DONGLE).
2. Remove the two screws and the two washers from the main body.



3. Install the guard.
4. Install the two washers, and tighten the two screws.



Section 2
Replacement of Main Parts

2-1. General Information for Parts Replacement

2-1-1. Basic Knowledge

Flexible card wire

When connecting flexible card wires, connect them firmly referring to"1-14-1. Disconnecting/Connecting Flexible Card Wire Type A to D Disconnecting".

Fine-wire coaxial cable

When connecting fine-wire coaxial cables, connect them firmly referring to"1-14-2. Disconnecting/Connecting Fine-Wire Coaxial Cable".

2-1-2. Tightening Torque

Torque driver and screw tightening torque

General screws are used in this unit. Be sure to use a torque driver and tighten screws to the specified tightening torque.

Tightening torque
M1.7: 0.19 ±0.01 N·m
M2: 0.2 ±0.01 N·m
M2.6: 0.53 ±0.07 N·m
M3: 0.8 ±0.12 N·m

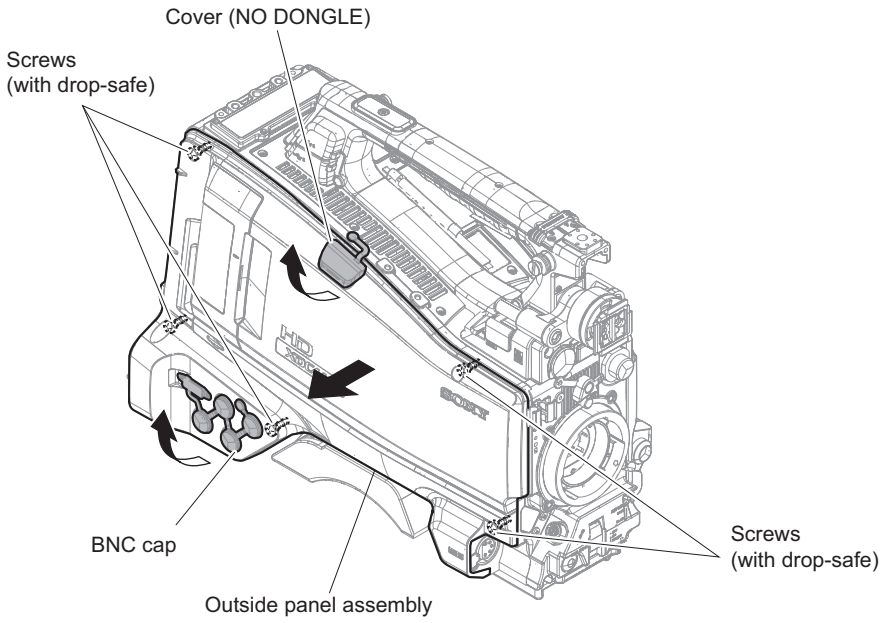
Tip

- When using the torque driver with the notation of cN· m, interpret it as follows.
  Example: 0.8 N· m = 80 cN· m
- Since small screws are used in the unit, they may fall into the unit when they are removed and installed. To prevent screws from falling, it is recommended that the bit of each torque driver be magnetized to a degree that prevents screws from falling.

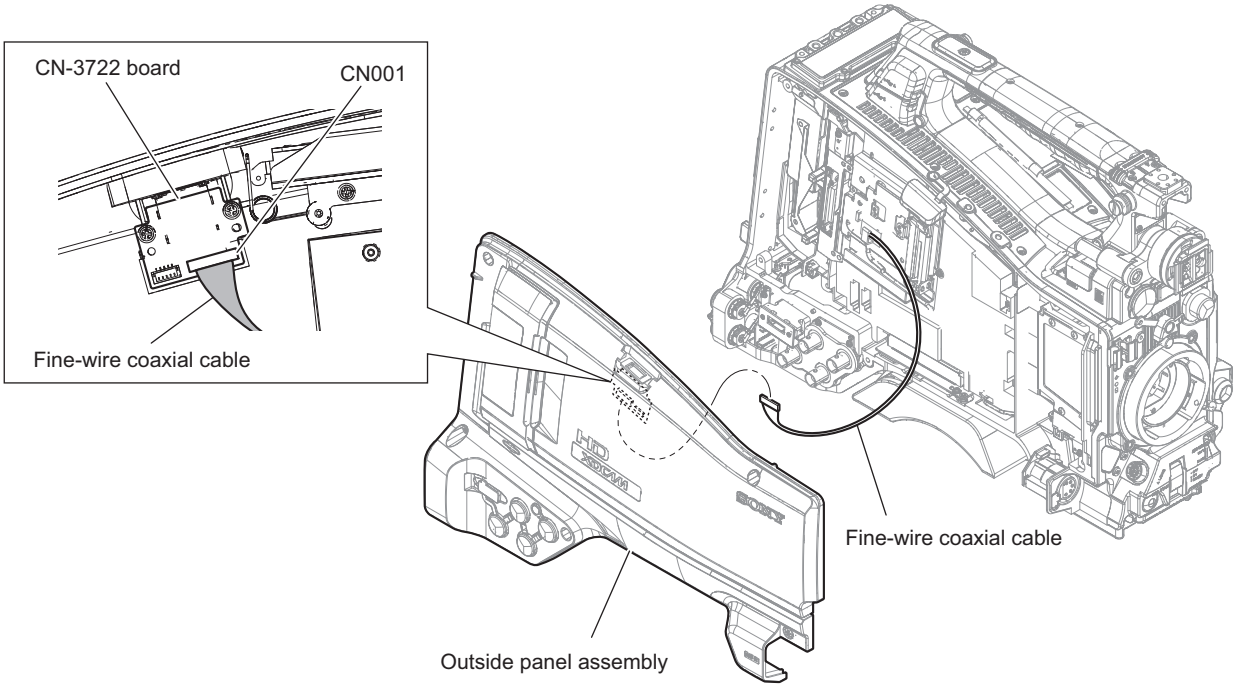
2-2. Outside Panel Assembly

Procedure

1. Draw the outside panel assembly.
   1) Open the cover (NO DONGLE) and the BNC cap.
   2) Loosen the five screws (with drop-safe) of the outside panel assembly, and draw the outside panel assembly.



2. Disconnect the fine-wire coaxial cable from the connector (CN001) on the CN-3722 board, and then remove the outside panel assembly.



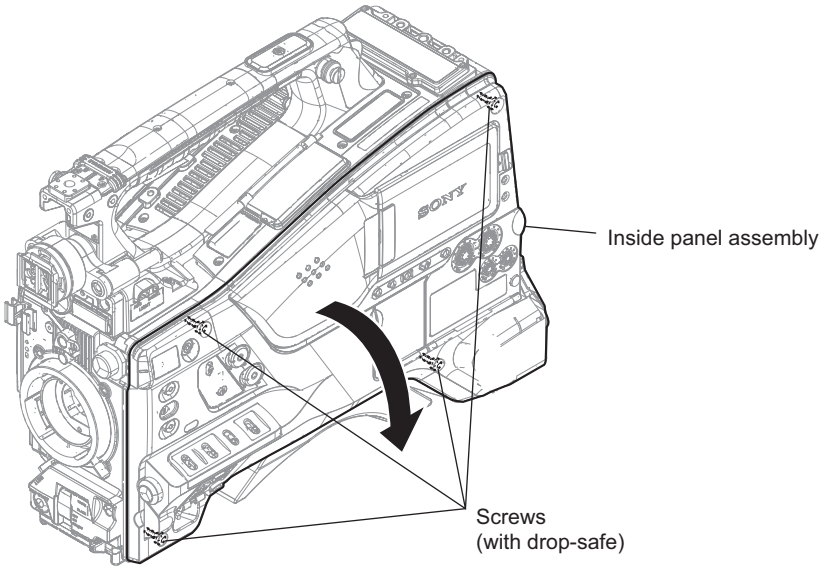
3. Install the removed parts by reversing the steps of removal.

2-3. Inside Panel Section

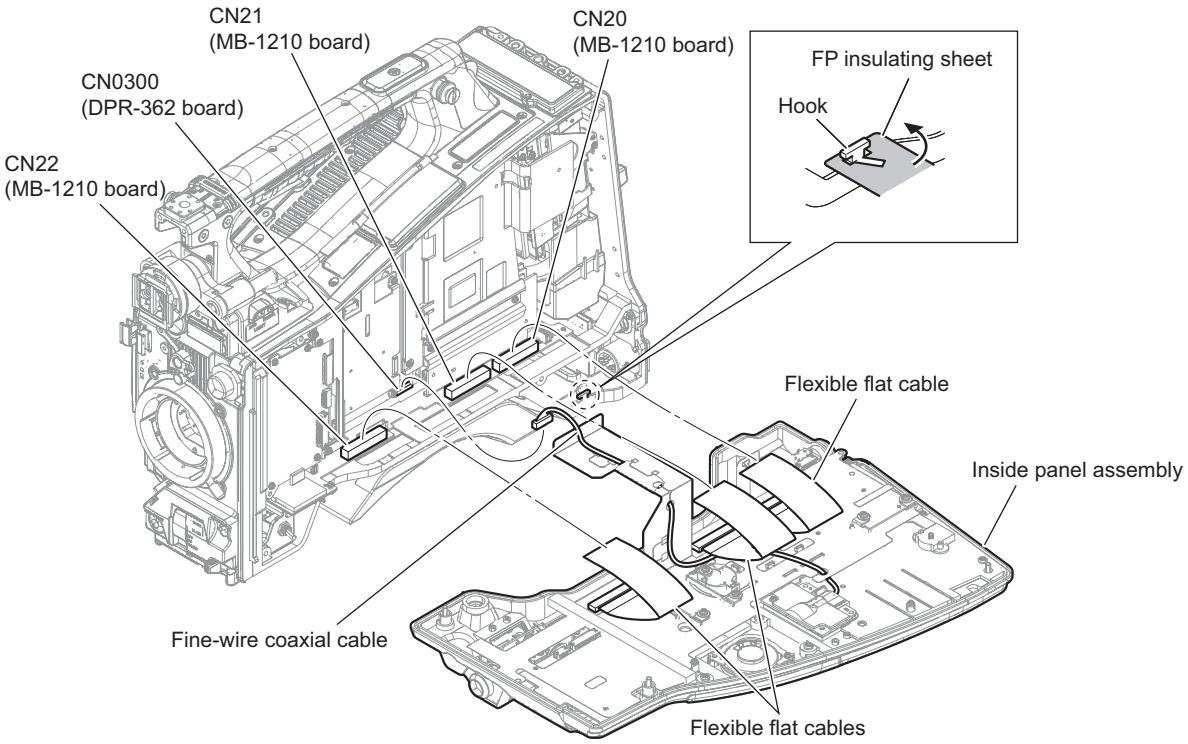
2-3-1. Inside Panel Assembly

Procedure

1. Loosen the four screws (with drop-safe) of the inside panel assembly, and open the inside panel assembly.



2. Remove the inside panel assembly.
   1) Disconnect the three flexible flat cables from the connectors (CN20, CN21, CN22) on the MB-1210 board.
   2) Disconnect the fine-wire coaxial cable from the connector (CN0300) on the DPR-362 board.
   3) Release the FP insulating sheet from the hook on the main frame, and remove the inside panel assembly.



3. Install the removed parts by reversing the steps of removal.

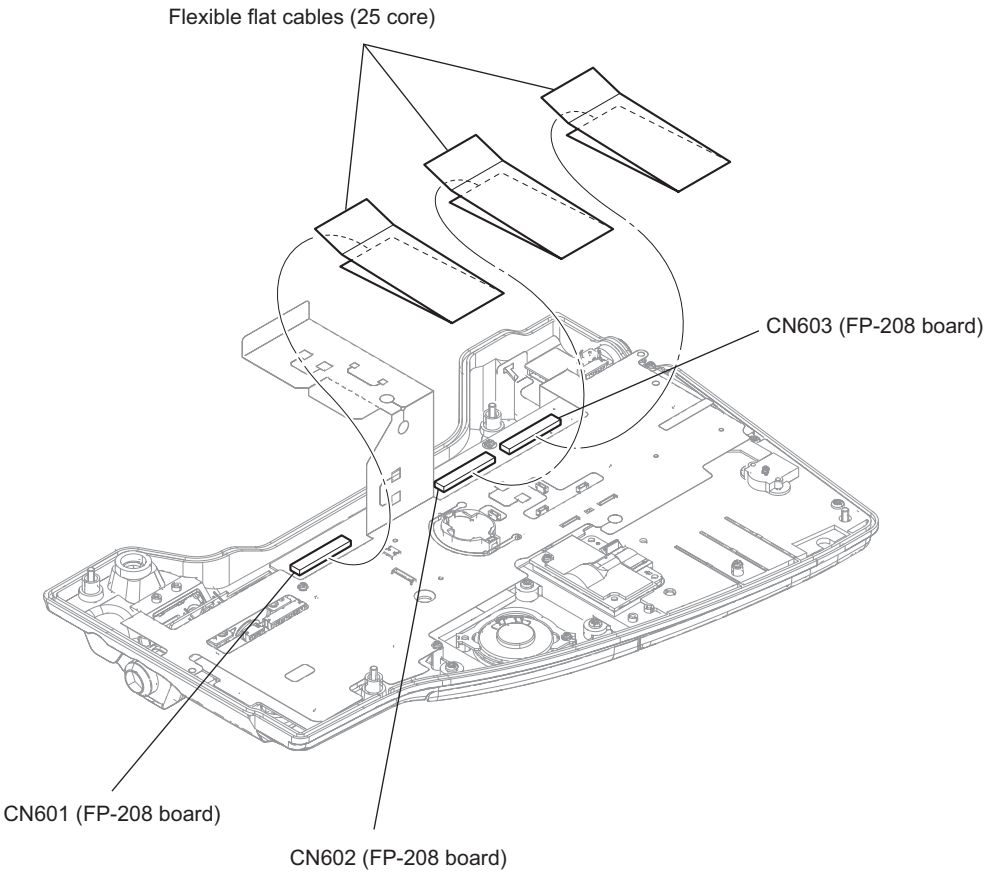
2-3-2. FP-208 Board

Preparation

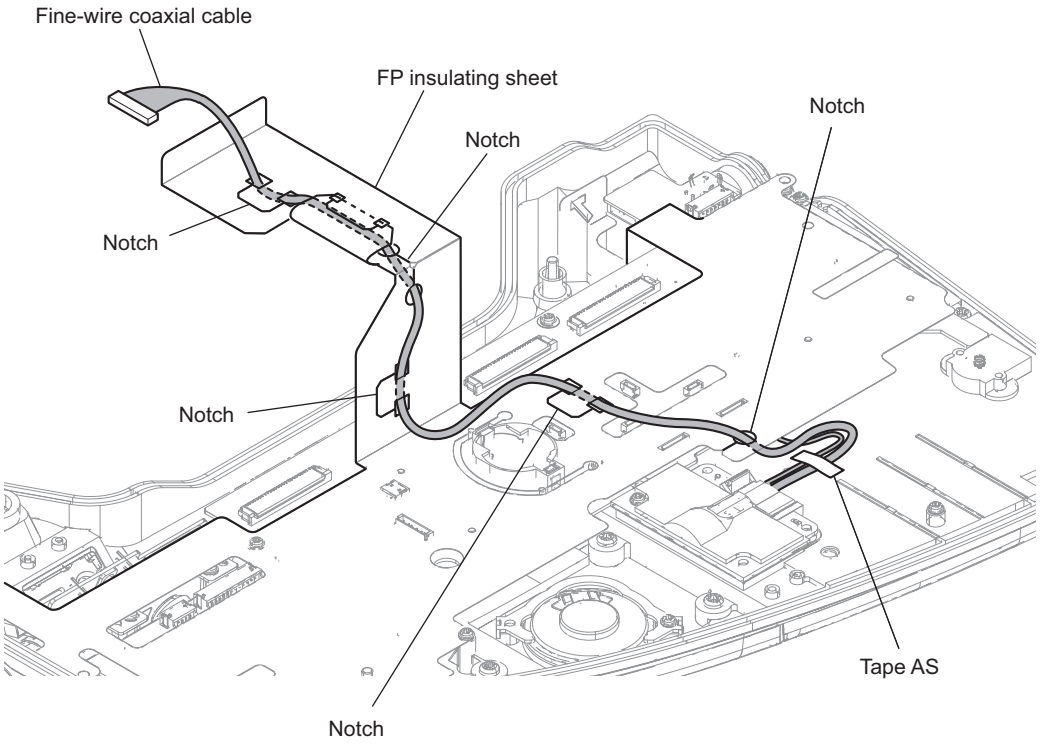
1. Remove the inside panel assembly.(Refer to "2-3-1. Inside Panel Assembly")

Procedure

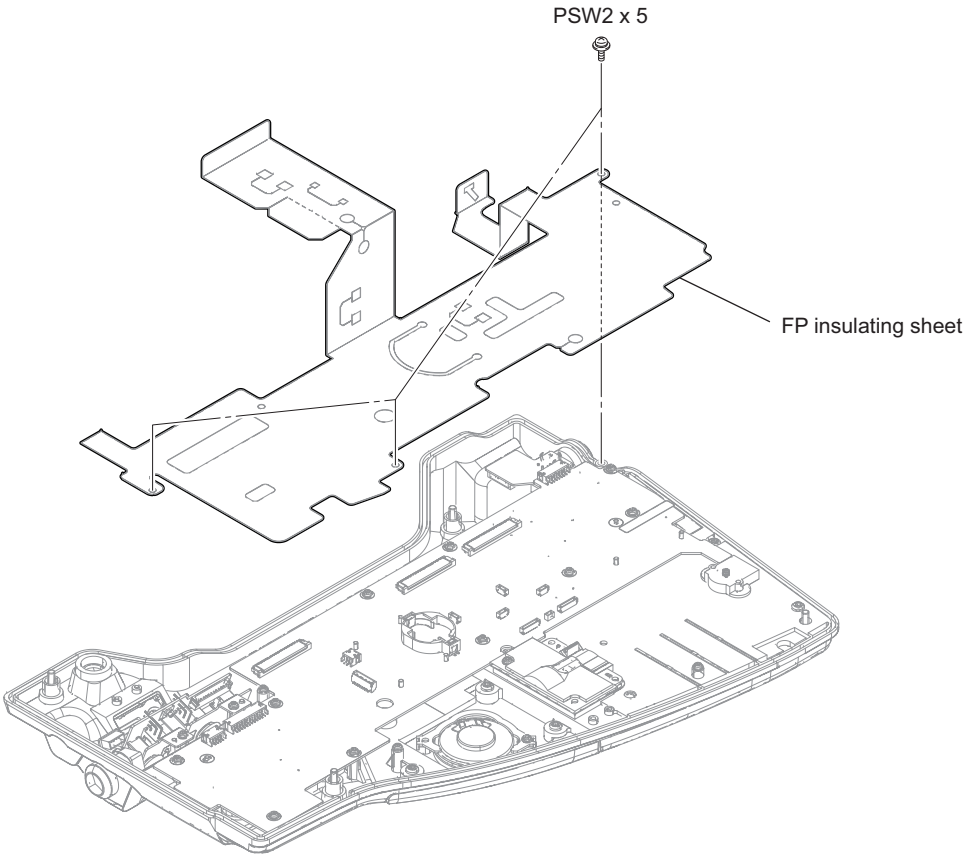
1. Disconnect the three flexible flat cables from the three connectors (CN601, CN602, CN603) on the FP-208 board.



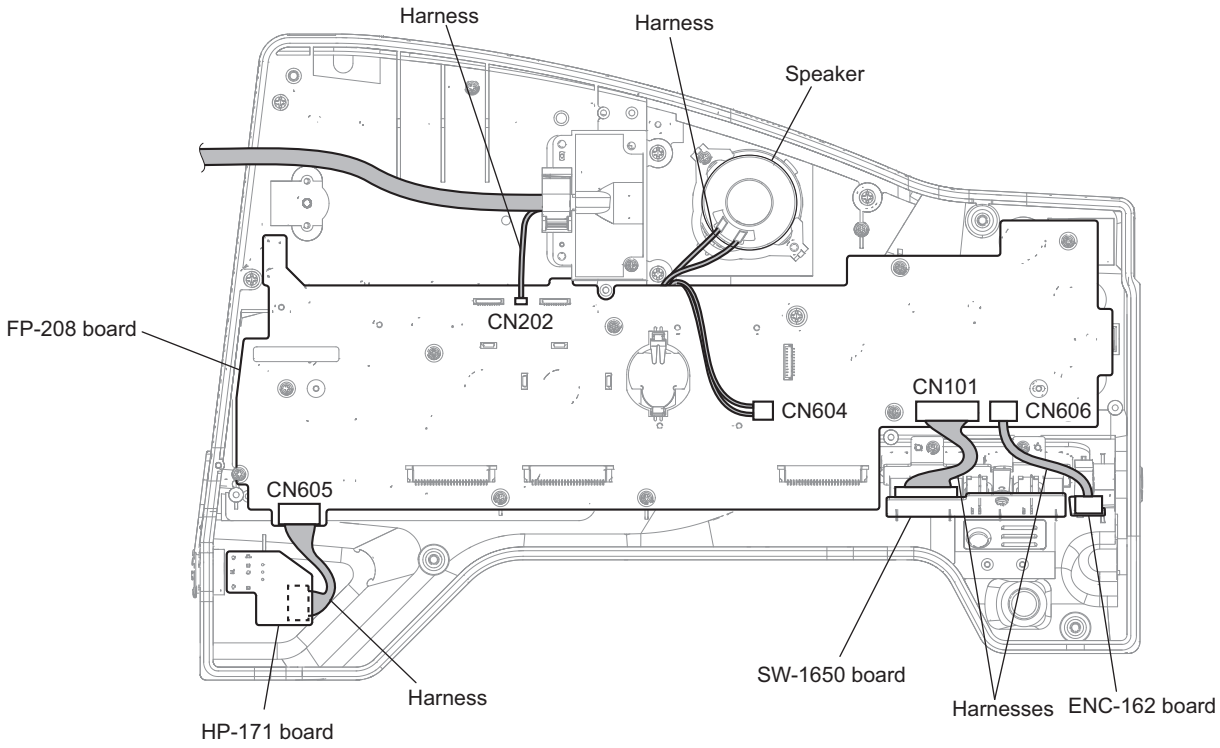
2. Release the fixing of the fine-wire coaxial cable.
   1) Release the fine-wire coaxial cable from the five notches of the FP insulating sheet.
   2) Remove the tape AS.



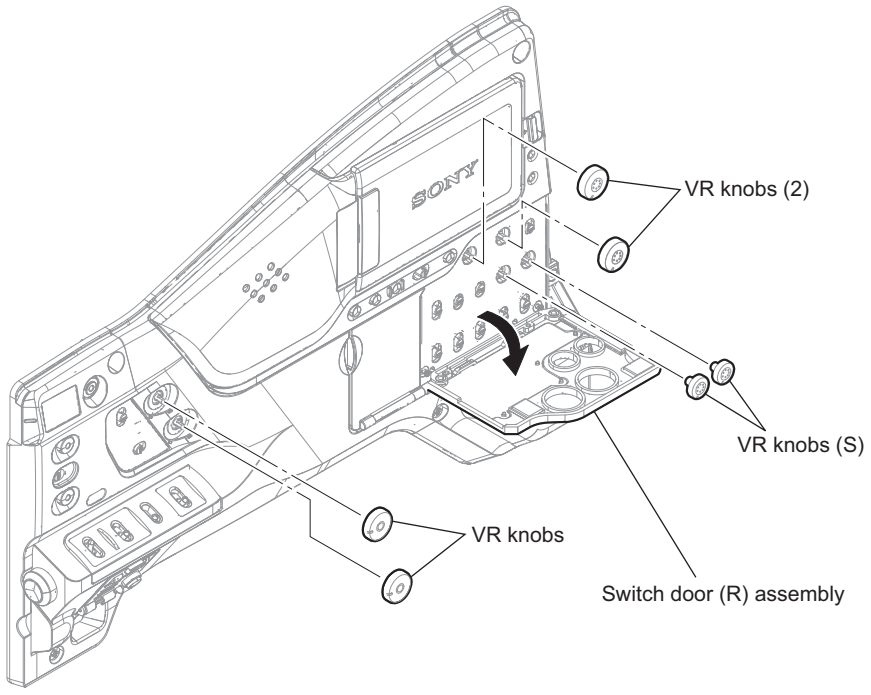
3. Remove the three screws to detach the FP insulating sheet.



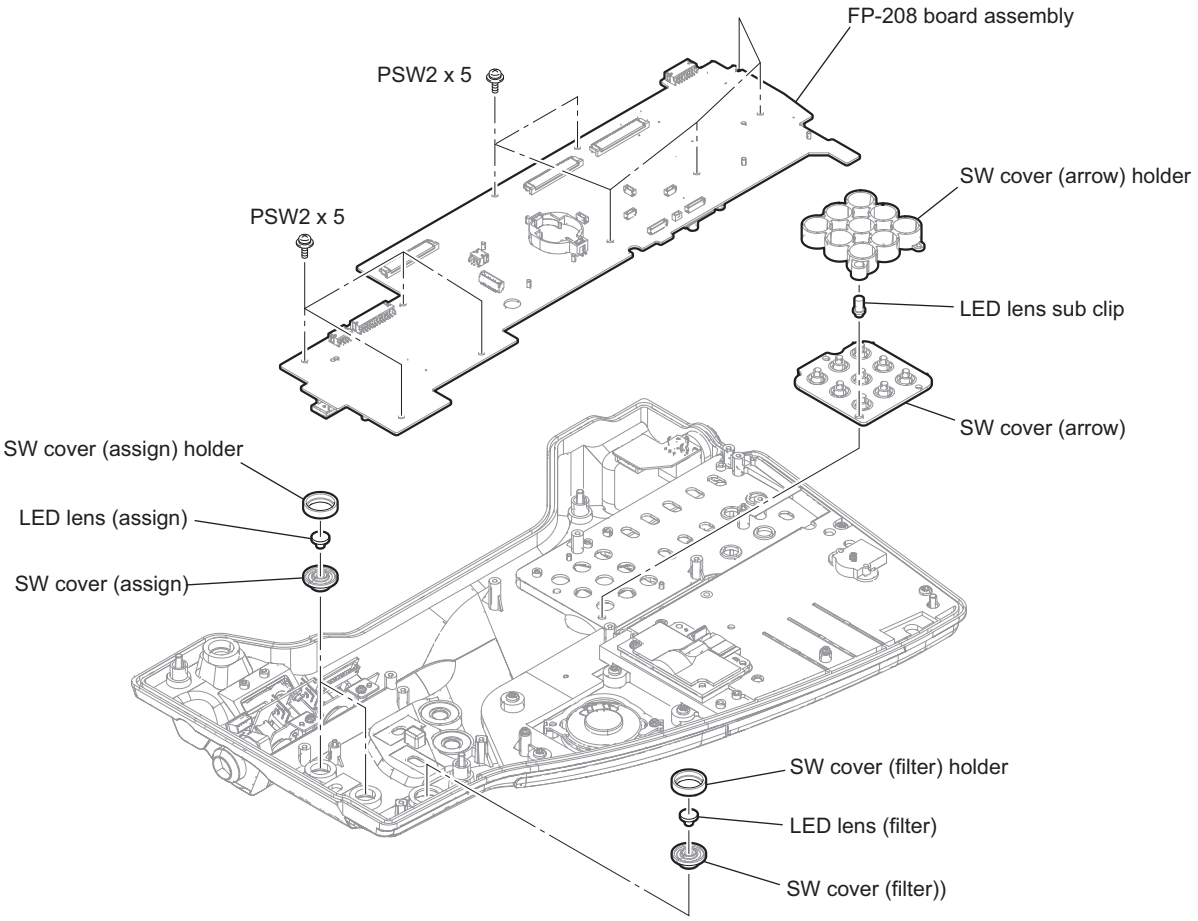
4. Disconnect the five harnesses from the five connectors (CN101, CN202, CN604, CN605, CN606) on the FP-208 board.



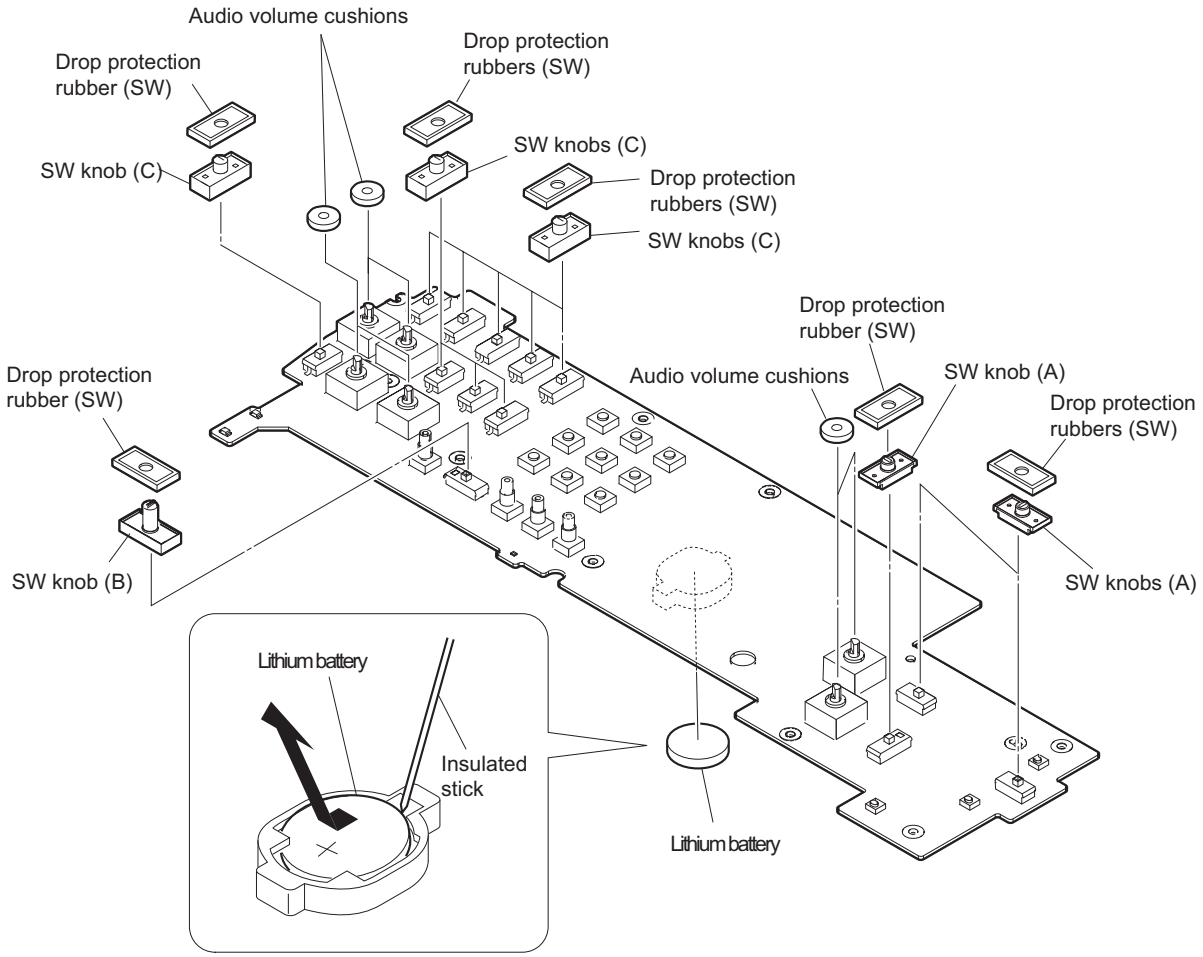
5. Remove the knobs.
   1) Remove the two VR knobs.
   2) Open the switch door (R) assembly.
   3) Remove the two VR knobs (2).
   4) Remove the two VR knobs (S).



6. Remove the FP-208 board assembly.
   1) Remove the ten screws to detach the FP-208 board assembly.
   2) Remove the two SW cover (assign) holders, two LED lens (assign), two SW covers (assign), SW cover (filter) holder, LED lens (filter), SW cover (filter), SW cover (arrow) holder, LED lens sub clip, and SW cover (arrow) that were pressed by the FP-208 board assembly.



7. Remove the six audio volume cushions, 13 drop protection rubbers (SW), nine SW knobs (C), SW knob (B), and three SW knobs (A) from the FP-208 board.



Note

When installing the lithium battery, not to mistake the orientation of the lithium battery.

8. Install the removed parts by reversing the steps of removal.

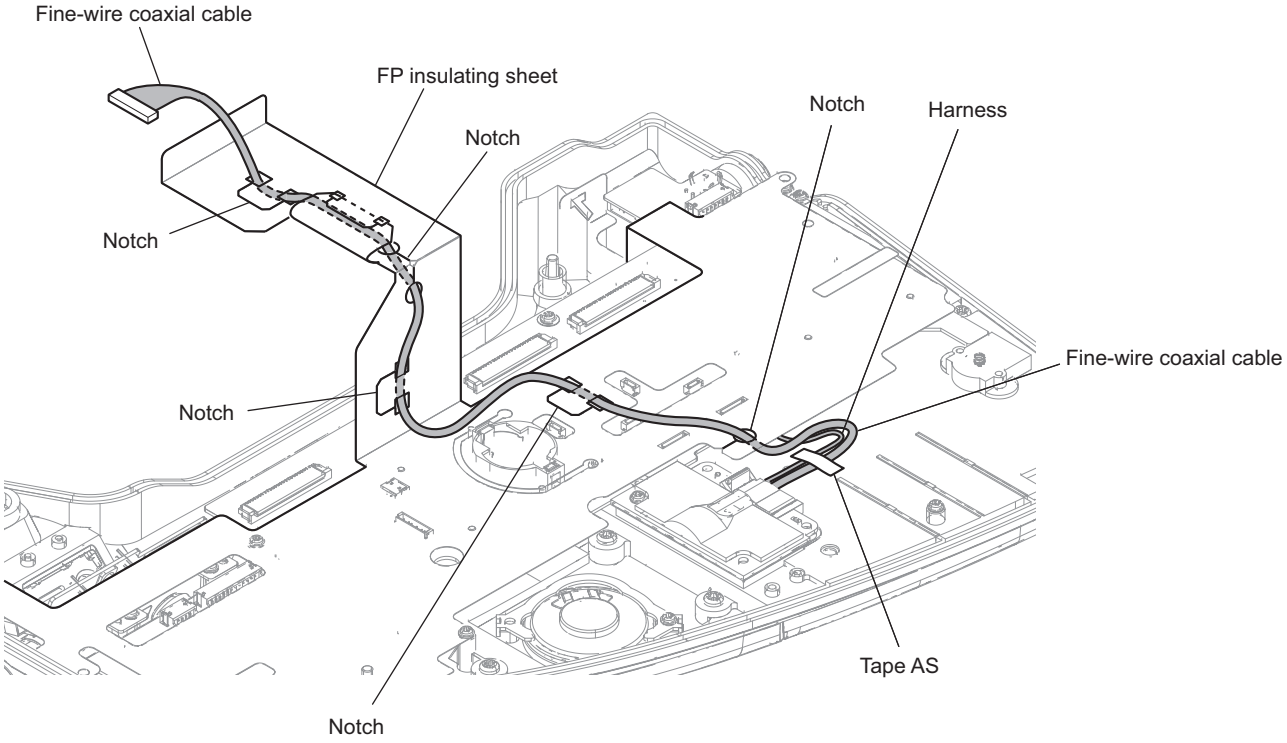
2-3-3. LCD Assembly

Preparation

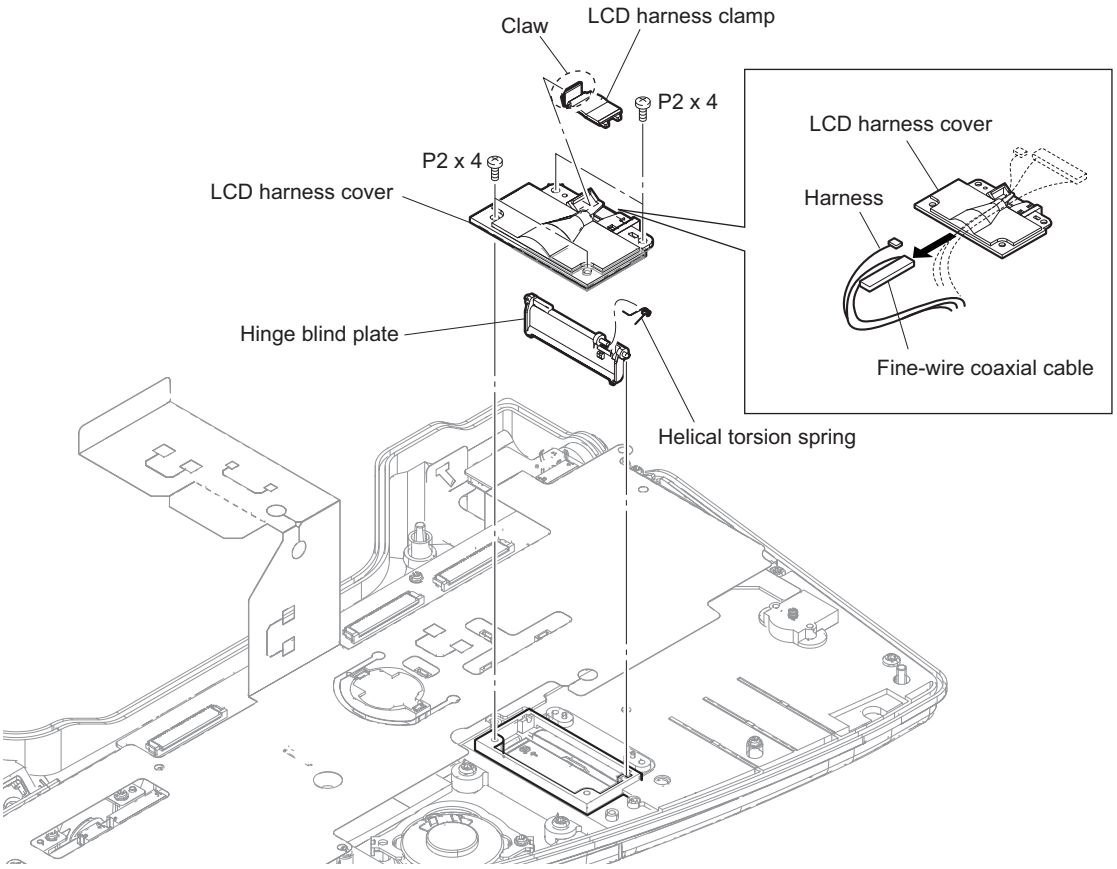
1. Remove the inside panel assembly. (Refer to"2-3-1. Inside Panel Assembly")

Procedure

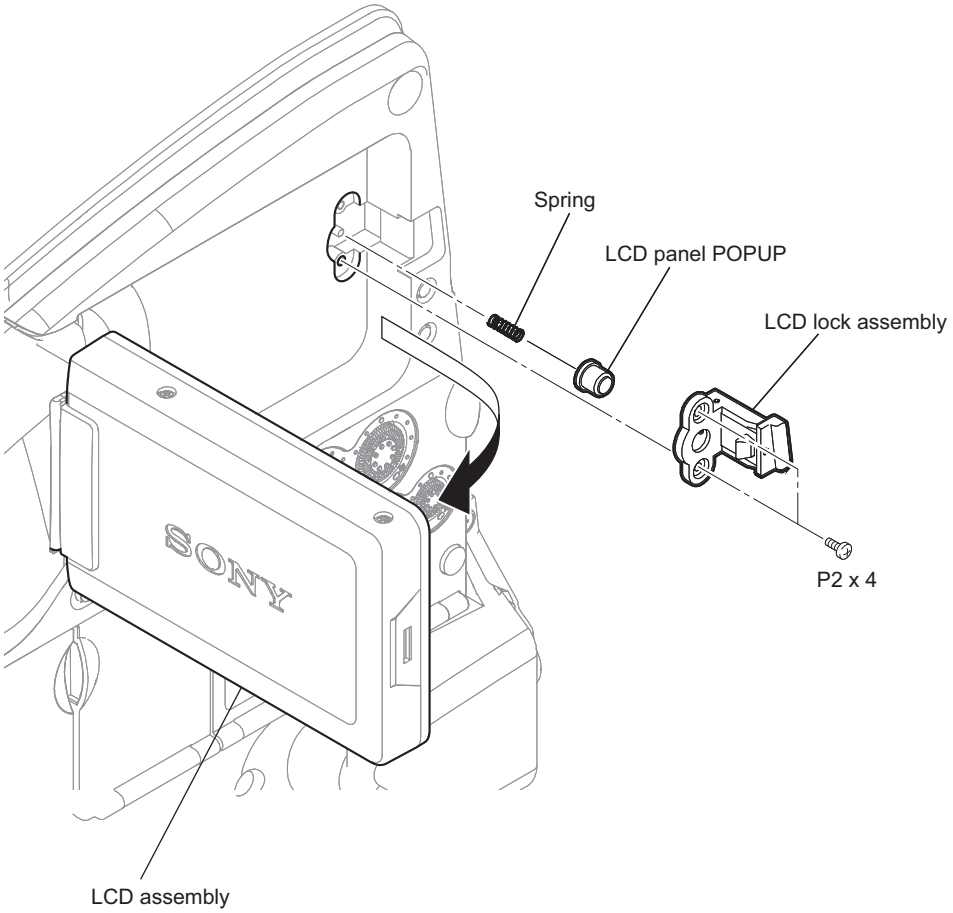
1. Release the fixing of the fine-wire coaxial cable and the harness.
   1) Release the fine-wire coaxial cable from the five notches of the FP insulating sheet.
   2) Remove the tape AS.



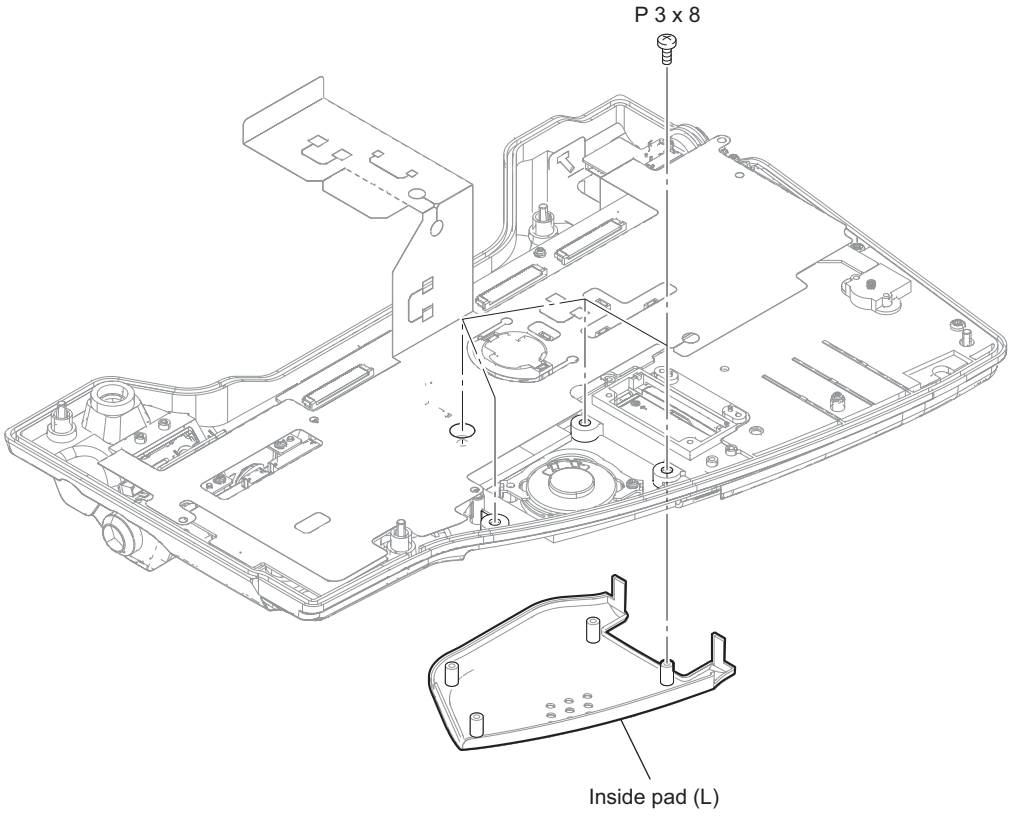
2. Remove the LCD harness cover.
   1) Release the claw to detach the LCD harness clamp.
   2) Remove the four screws to detach the LCD harness cover.
   3) Release the fine-wire coaxial cable and the harness from the hole of the LCD harness cover.
   4) Remove the hinge blind plate and helical torsion spring.



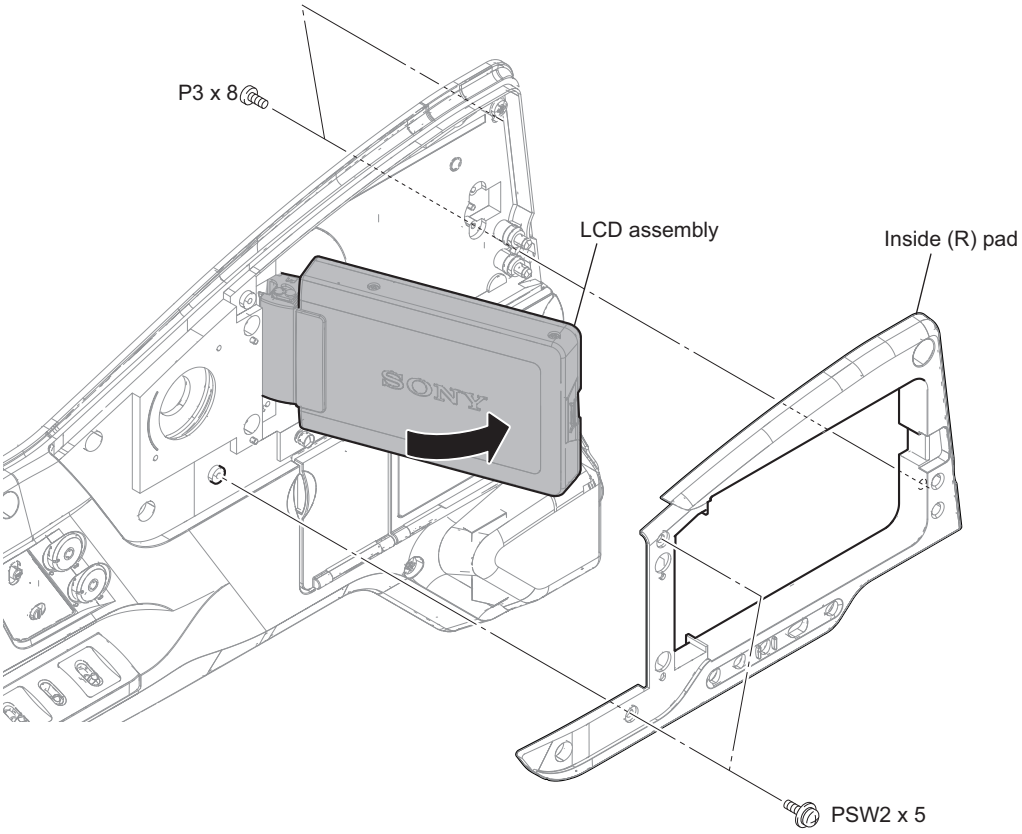
3. Remove the two screws to detach the LCD lock assembly, LCD panel POPUP, and spring.



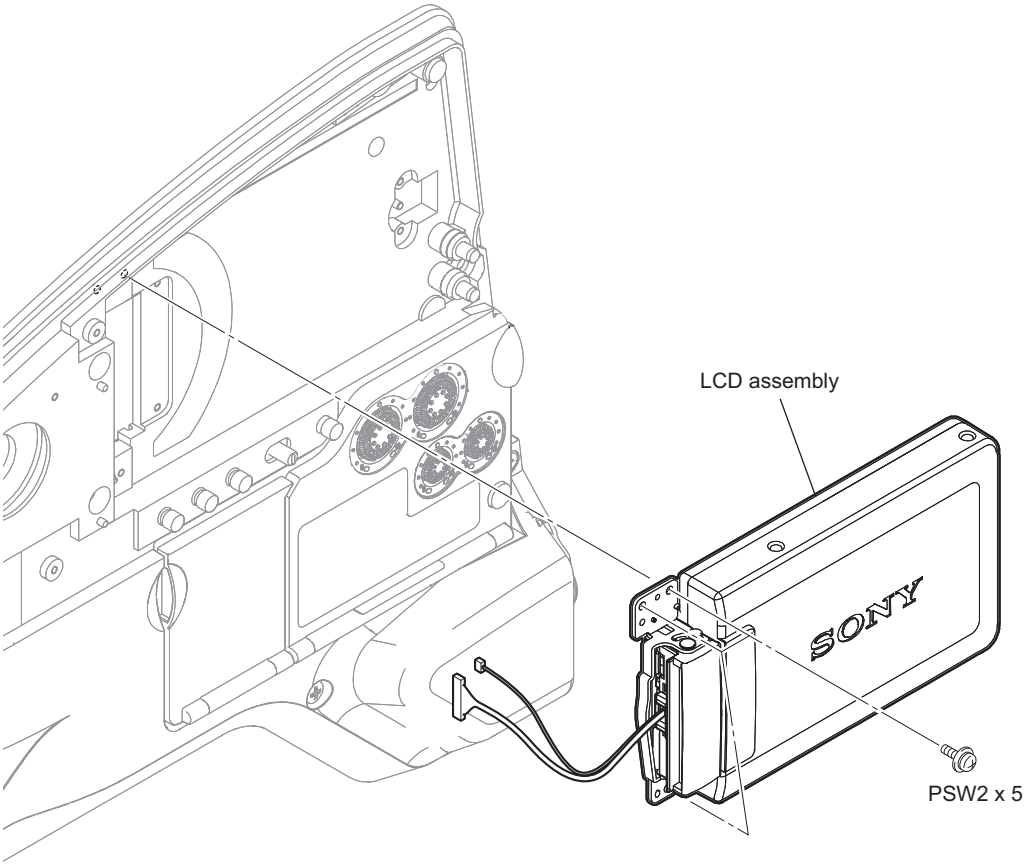
4. Remove the four screws, and remove the inside pad (L).



5. Remove the inside (R) pad.
   1) Turn the LCD assembly as shown in the figure.
   2) Remove the two screws (PSW2 x 5) and the two screws (P3 x 8), and remove the inside (R) pad.



6. Remove the three screws to detach the LCD assembly.



7. Install the removed parts by reversing the steps of removal.

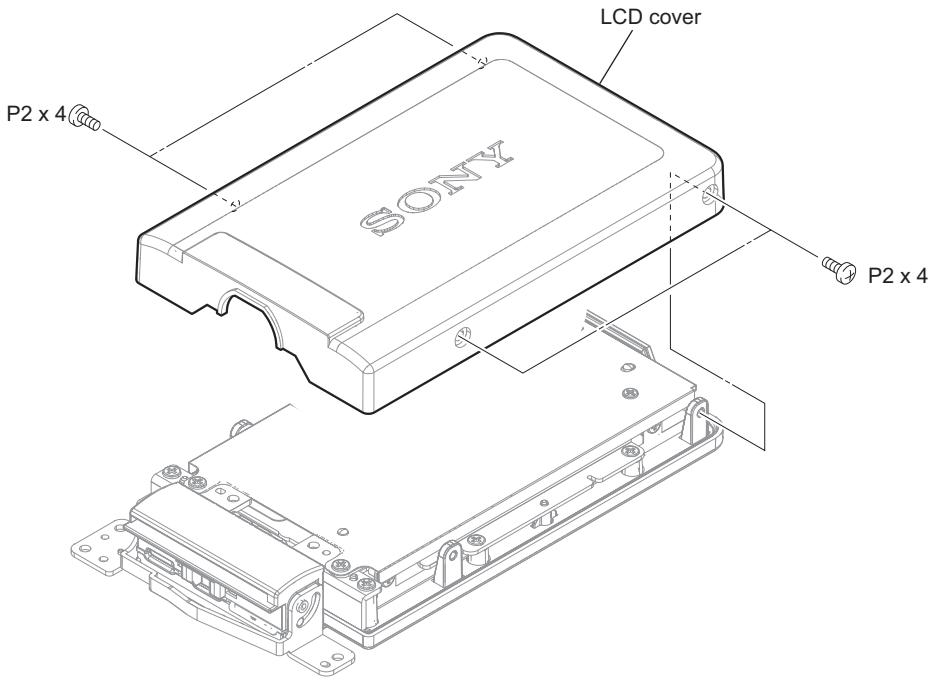
2-3-4. 3.5 inch LCD Assembly

Preparation

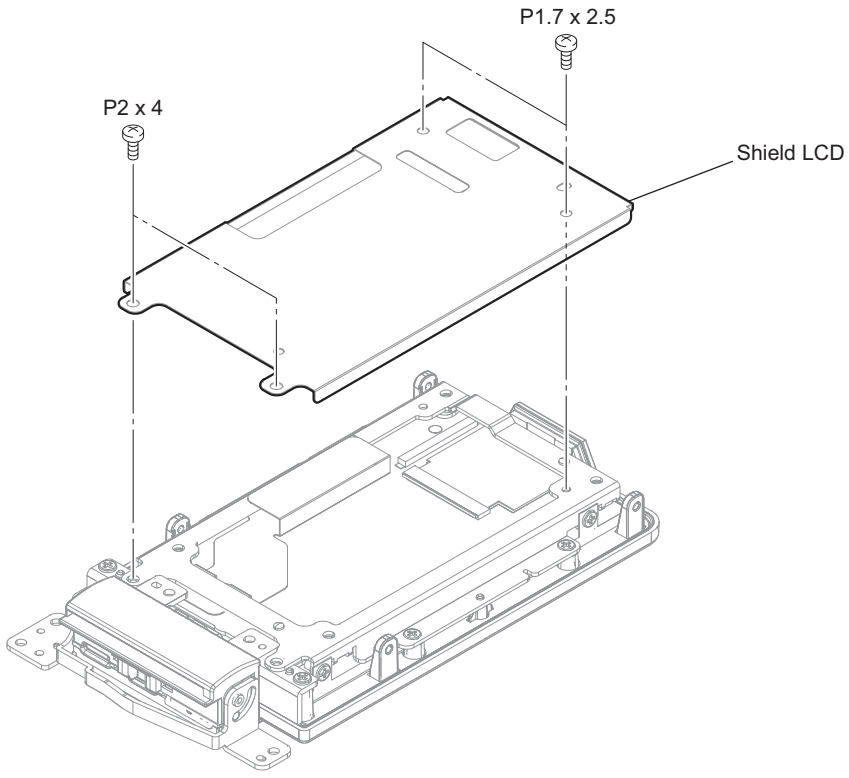
1. Remove the inside panel assembly. (Refer to "2-3-1. Inside Panel Assembly")
2. Remove the LCD assembly. (Refer to "2-3-3. LCD Assembly")

Procedure

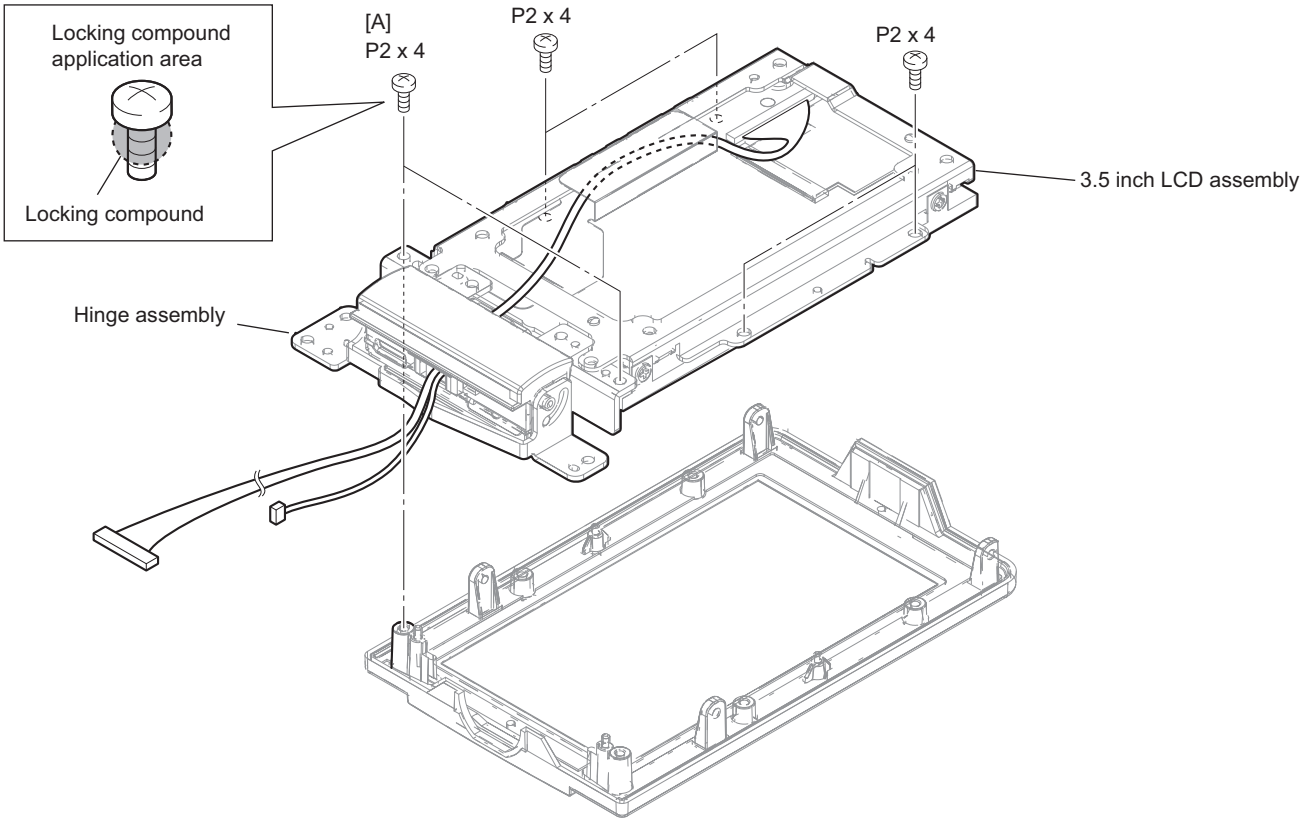
1. Remove the four screws to detach the LCD cover.



2. Remove the two screws (P2 x 4) and the two screws (P1.7 x 2.5), and remove the shield LCD.



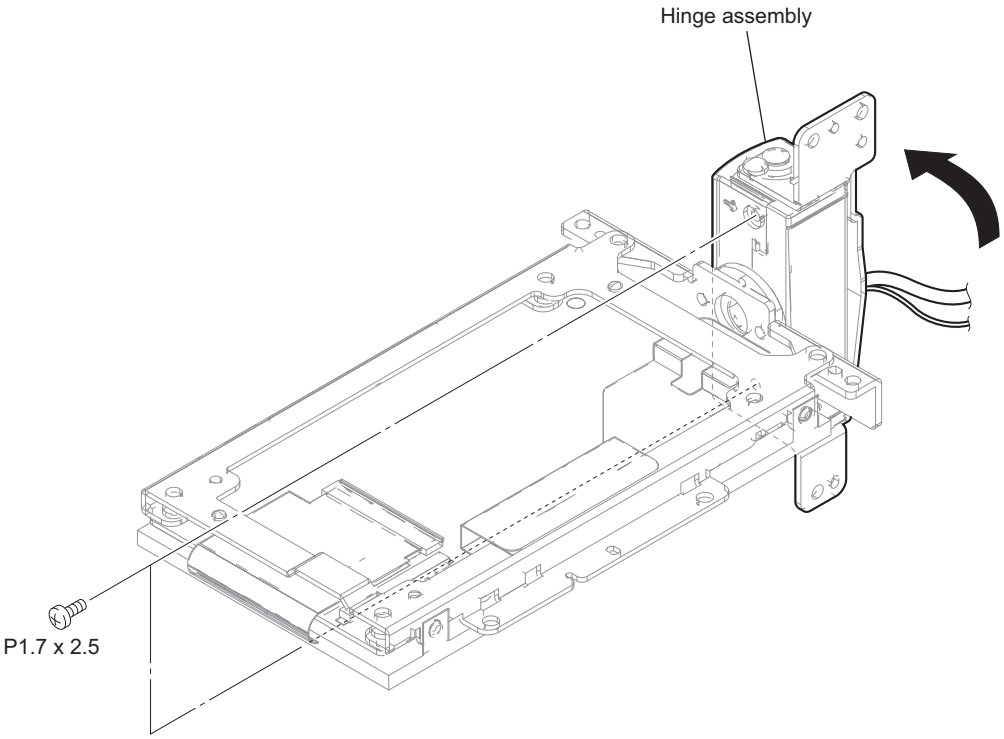
3. Remove the six screws, and remove the hinge assembly and the 3.5 inch LCD assembly.



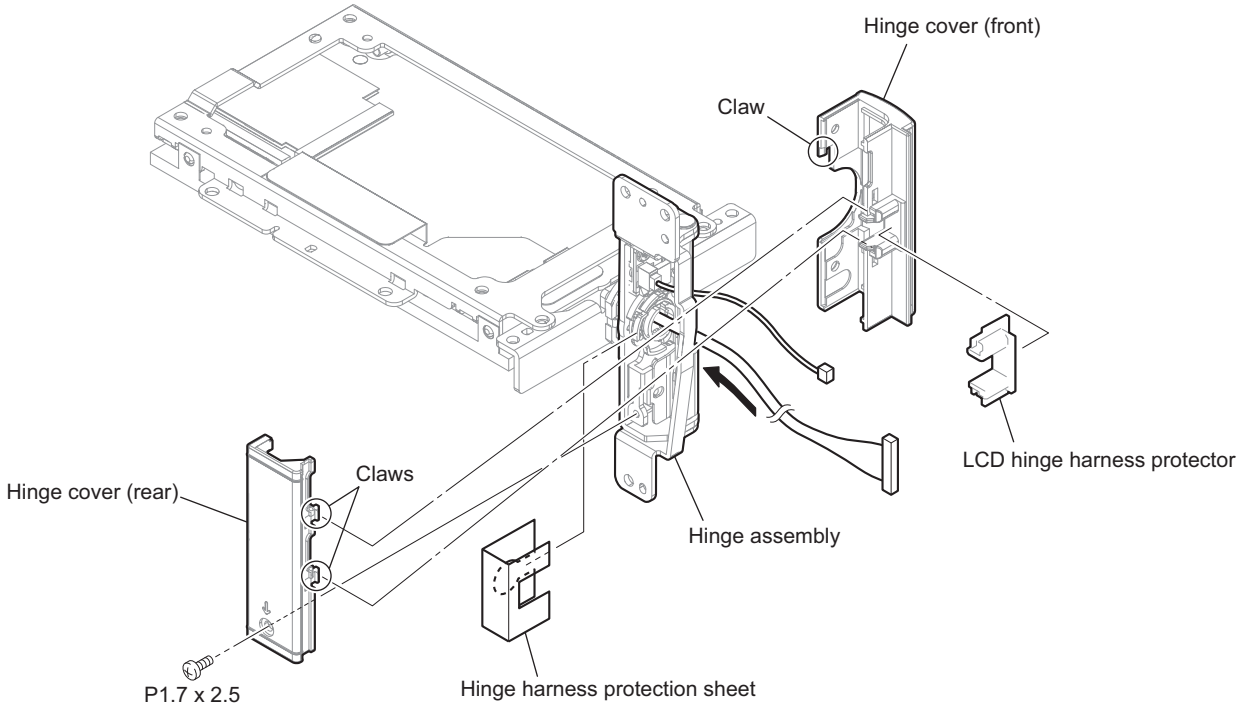
Note

When installing the two screws [A], apply locking compound (about rice grain quantity) to them.

4. Turn the hinge assembly, and remove the two screws.

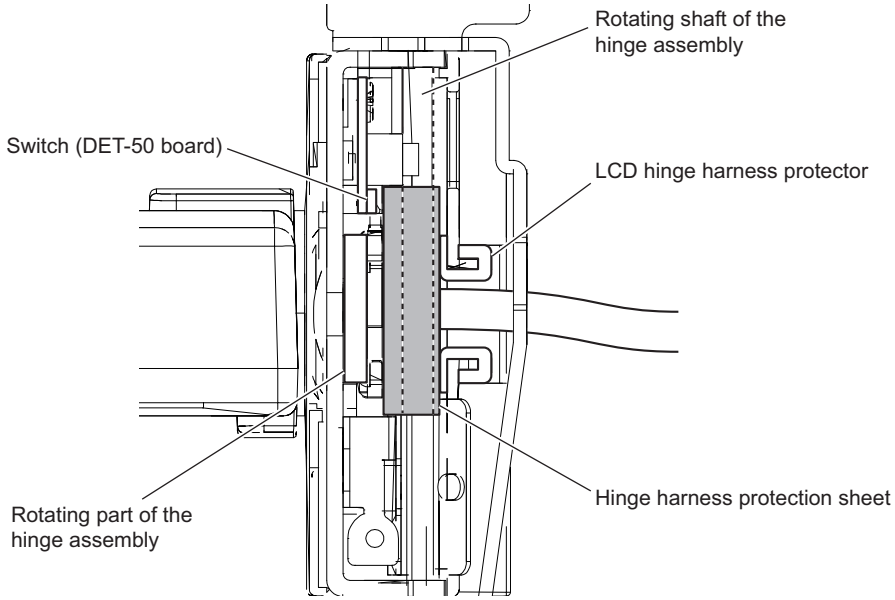


5. Remove the hinge covers.
   1) Remove the screw.
   2) Release the three claws, and remove the hinge cover (rear), the hinge cover (front) and the LCD hinge harness protector.
   3) Remove the hinge harness protection sheet.

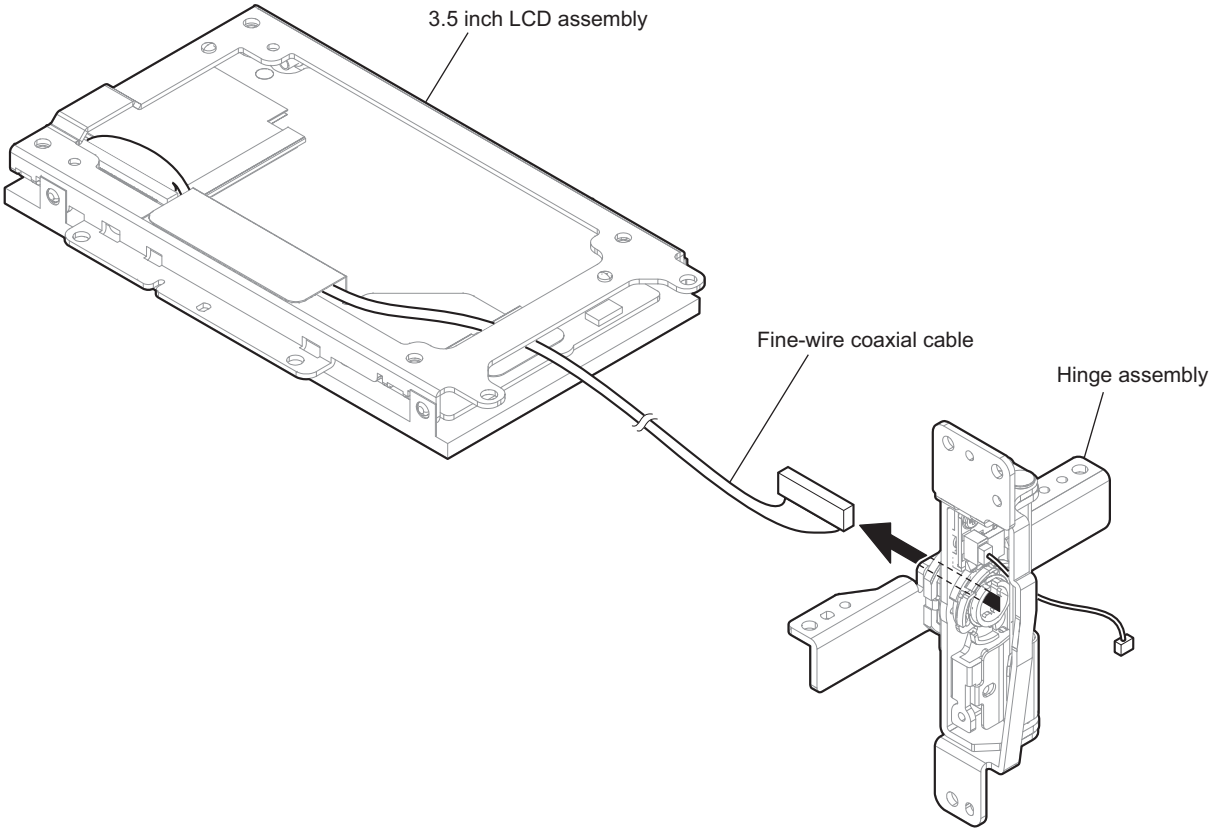


Note

When installing the hinge harness protection sheet, install it to inside between the switch (DET-50 board) and LCD hinge harness protector.



6. Release the fine-wire coaxial cable from the hinge assembly, remove the 3.5 inch LCD assembly.



7. Install the removed parts by reversing the steps of removal.

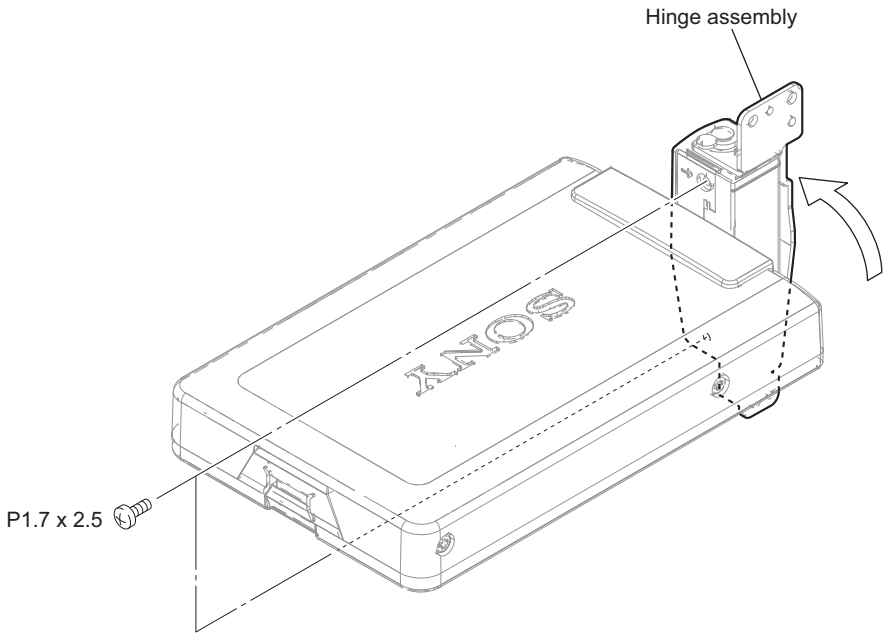
2-3-5. DET-50 Board

Preparation

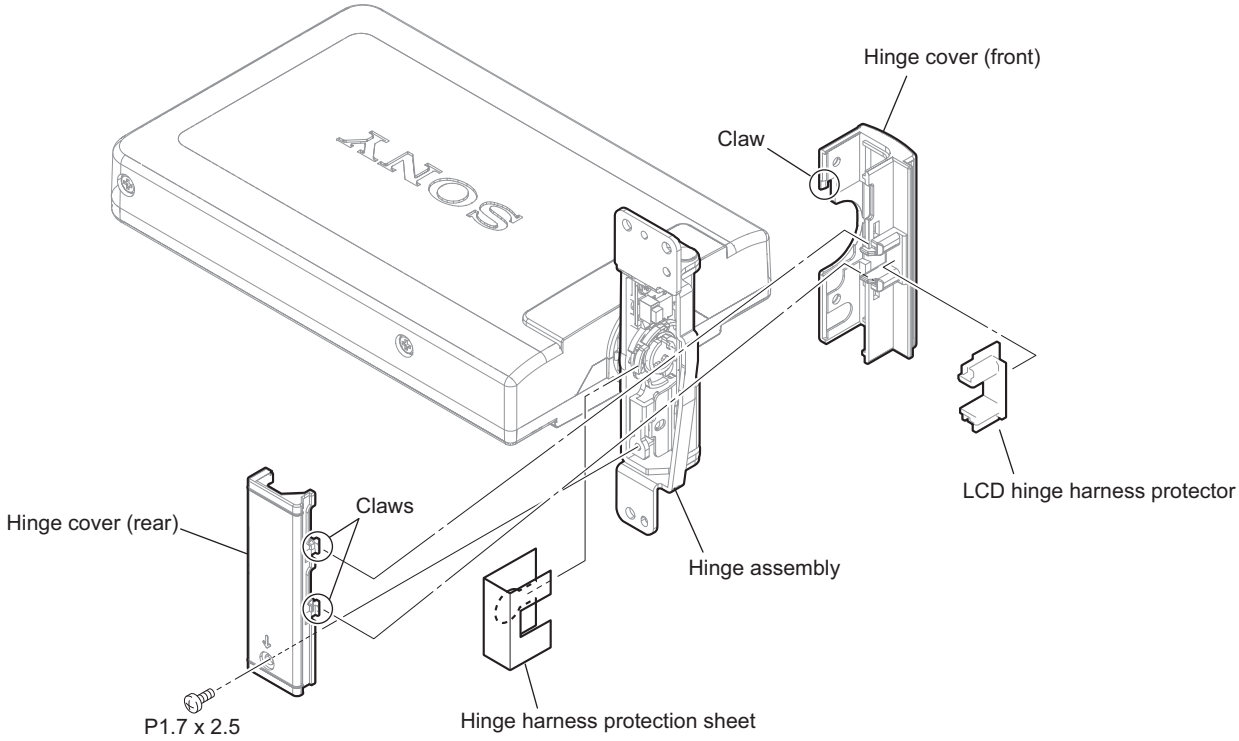
1. Remove the inside panel assembly. (Refer to "2-3-1. Inside Panel Assembly")
2. Remove the LCD assembly. (Refer to "2-3-3. LCD Assembly")

Procedure

1. Turn the hinge assembly, and remove the two screws.

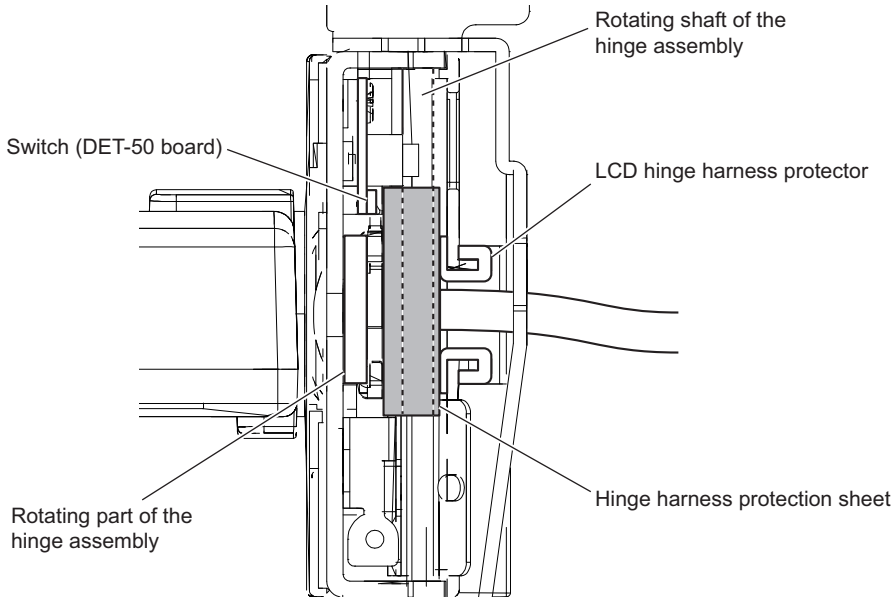


2. Remove the hinge covers.
   1) Remove the screw.
   2) Release the three claws and remove the hinge cover (rear), the hinge cover (front) and the LCD hinge harness protector.
   3) Remove the hinge harness protection sheet.

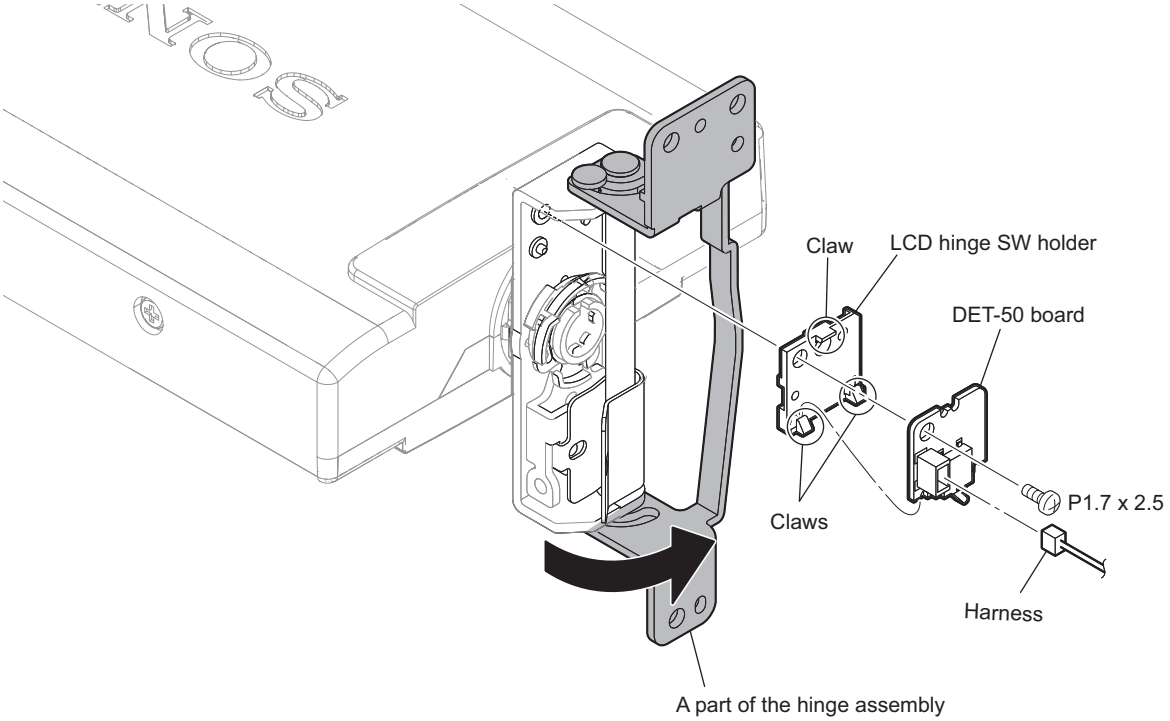


Note

When installing the hinge harness protection sheet, install it to inside between the switch (DET-50 board) and LCD hinge harness protector.



3. Remove the DET-50 board.
   1) Turn the A part of the hinge assembly.
   2) Disconnect the harness from the connector on the DET-50 board.
   3) Remove the screw, and remove the DET-50 board and the LCD hinge SW holder.
   4) Release the three claws, and remove the DET-50 board from the LCD hinge SW holder.



4. Install the removed parts by reversing the steps of removal.

2-4. Front Section

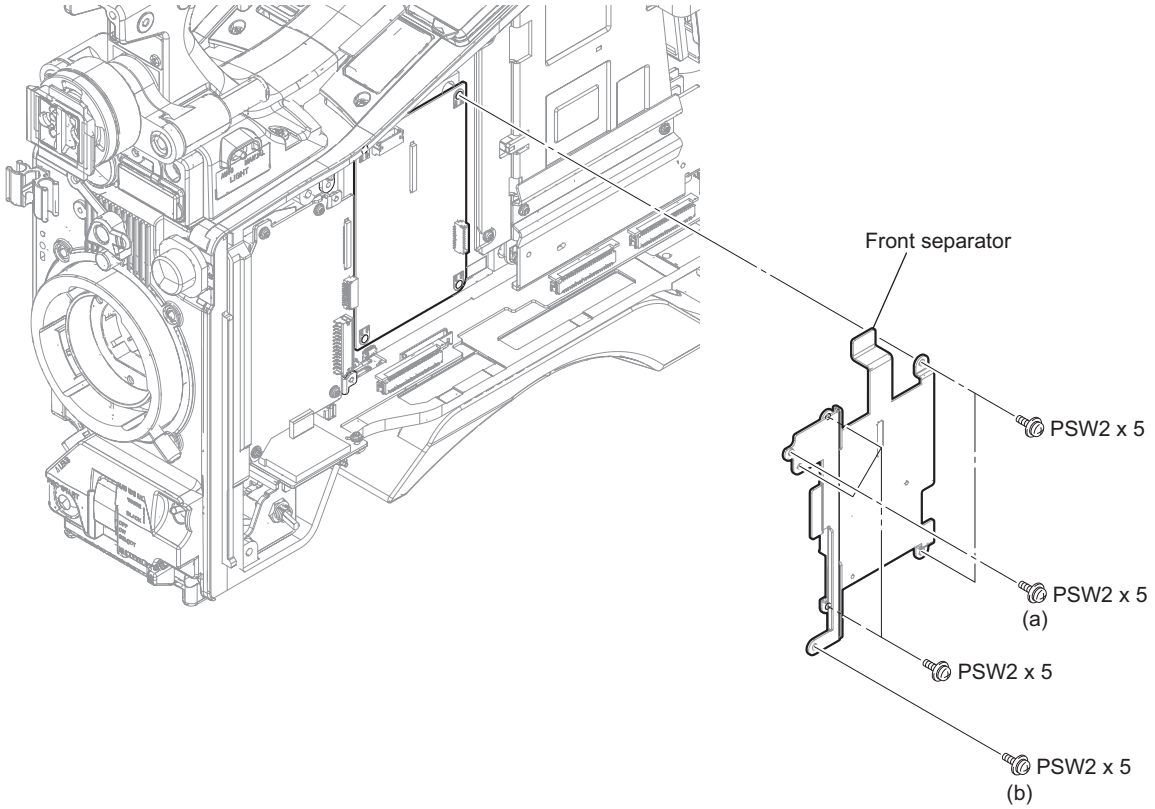
2-4-1. Front Assembly

Preparation

1. Remove the outside panel assembly. (Refer to "2-2. Outside Panel Assembly")
2. Remove the inside panel assembly. (Refer to "2-3-1. Inside Panel Assembly")

Procedure

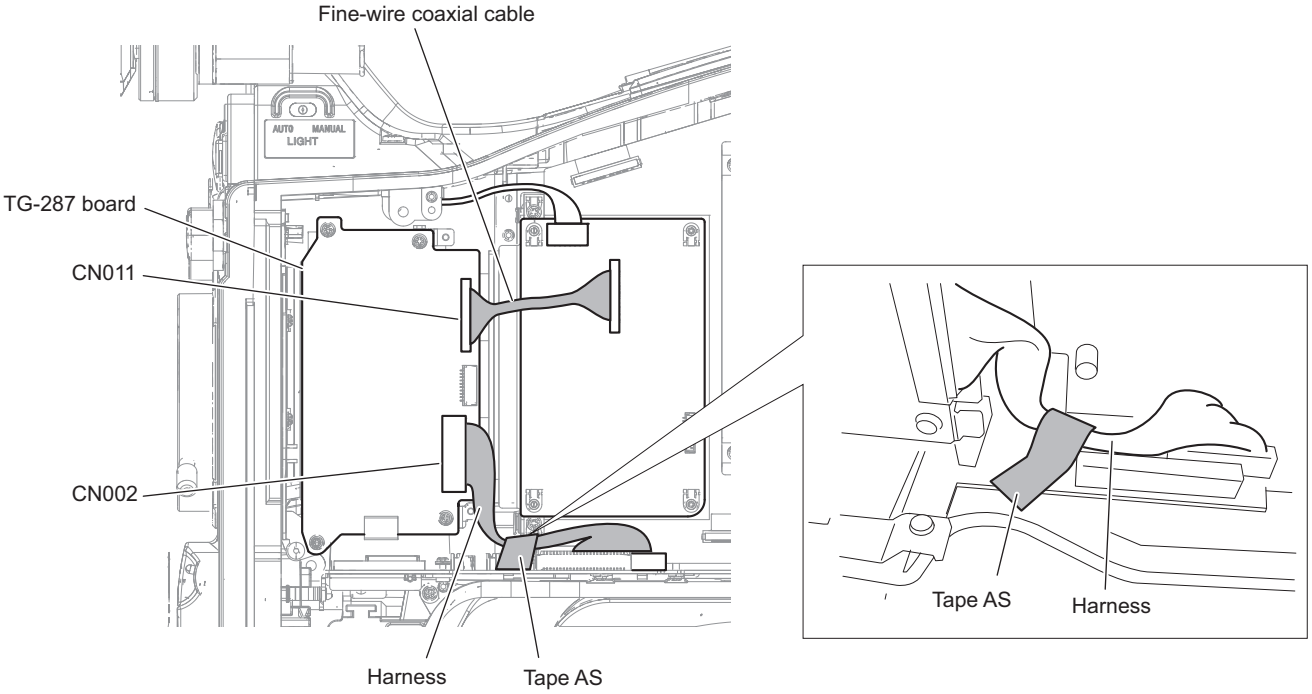
1. Remove the seven screws to detach the front separator.



Note

When installing the front separator, tighten the screws in order of (a), (b) and others.

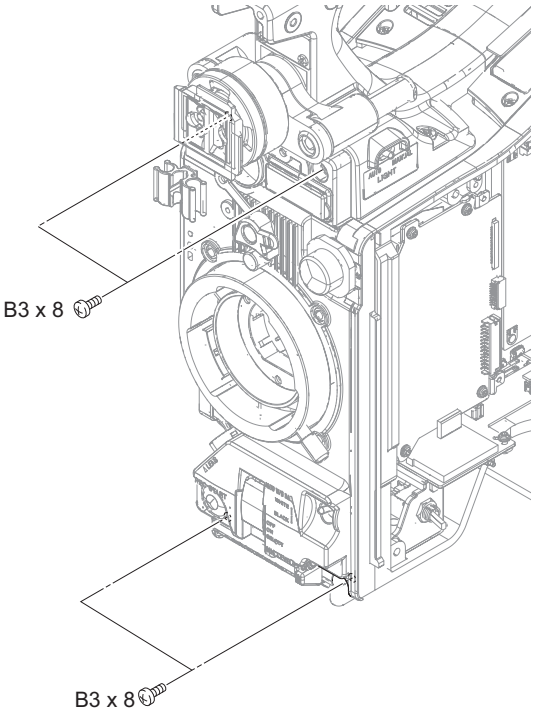
2. Disconnect the harness and the fine-wire coaxial cable.
   1) Remove the tape AS.
   2) Disconnect the fine-wire coaxial cable from the connector (CN011) on the TG-287 board.
   3) Disconnect the harness from the connector (CN002) on the TG-287 board.



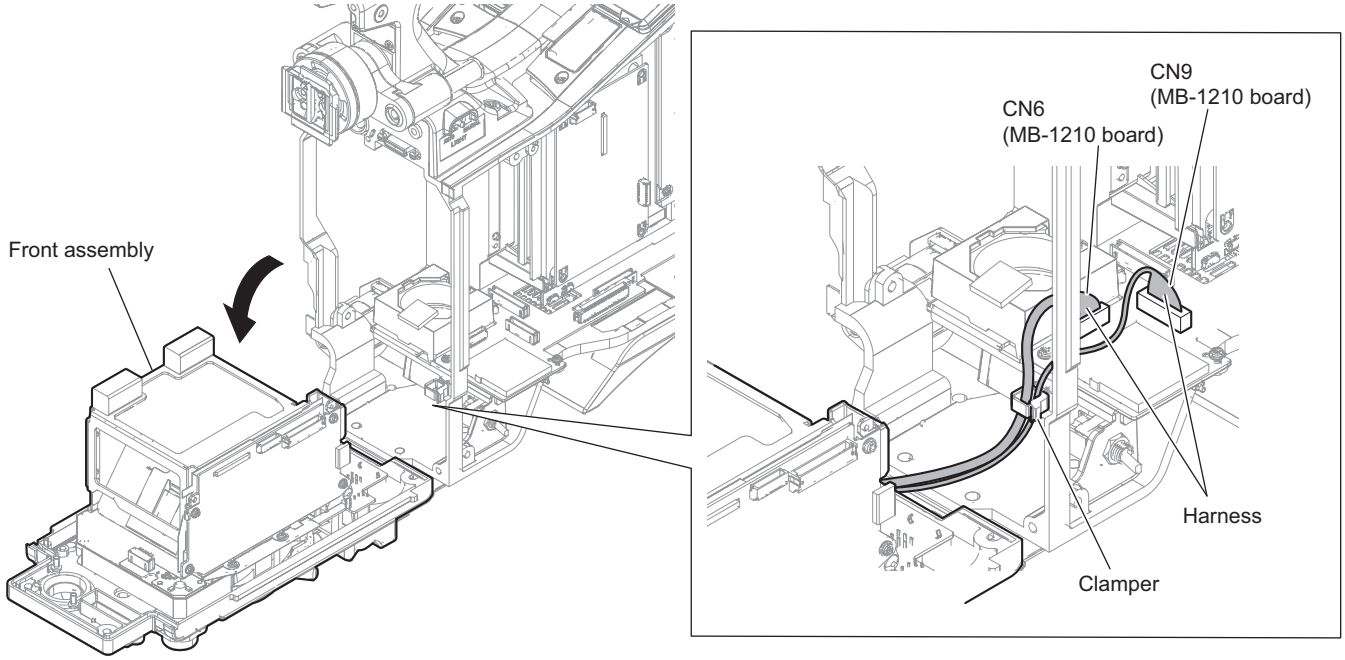
Note

When installing the tape AS, fixing the harness as shown in the figure.

3. Remove the four screws.



4. Remove the front assembly.
   1) Open the front assembly.
   2) Release the two harnesses from the clamper.
   3) Disconnect the two harnesses from the two connectors (CN6, CN9) on the MB-1210 board, and remove the front assembly.



5. Install the removed parts by reversing the steps of removal.

2-4-2. CCD Block Assembly

Note

Hexagonal wrenches (Width across : 1.5 mm, 2.5 mm) are necessary as tools.

Preparation

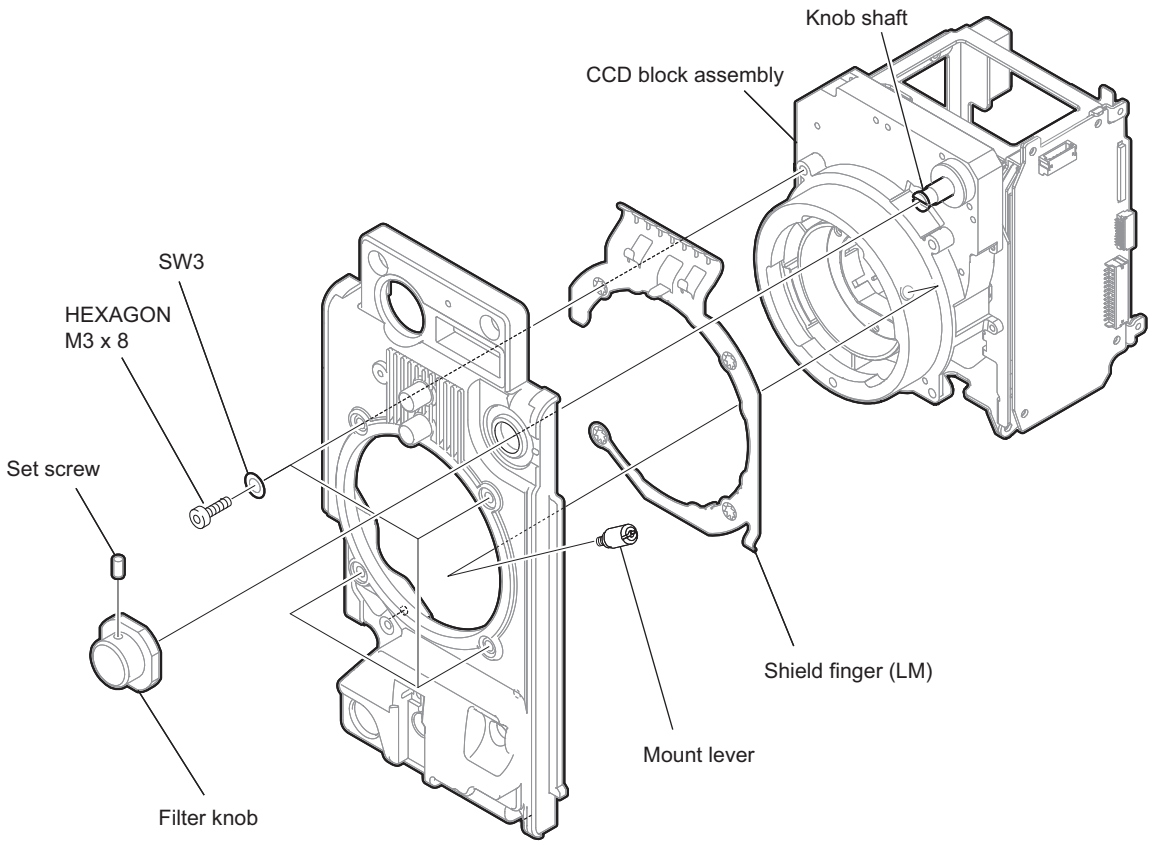
1. Remove the outside panel assembly. (Refer to "2-2. Outside Panel Assembly")
2. Remove the inside panel assembly. (Refer to "2-3-1. Inside Panel Assembly")
3. Remove the front assembly. (Refer to "2-4-1. Front Assembly")

Removing Procedure

1. Remove the CCD block assembly.
   1) Remove the set screw and remove the filter knob from the knob shaft.
   2) Remove the mount lever.
   3) Remove the four hexagon socket head bolts and four spring washers, and remove the CCD block assembly and the shield finger (LM).

   Note

   Do not directly touch shield finger (LM). Be careful not to get hurt with the edges when handling them.

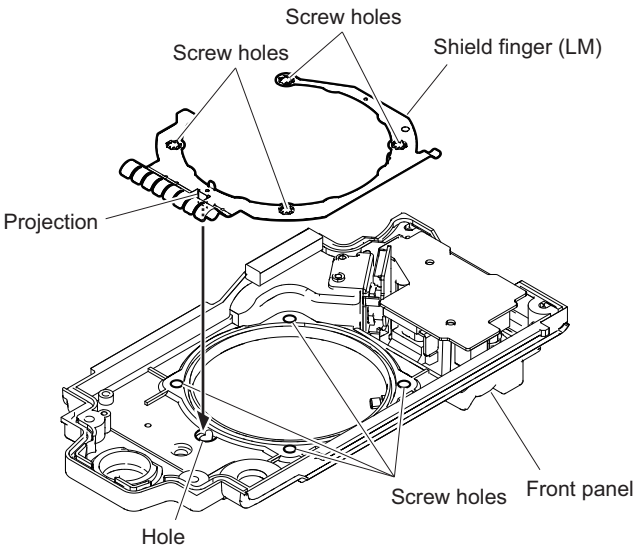


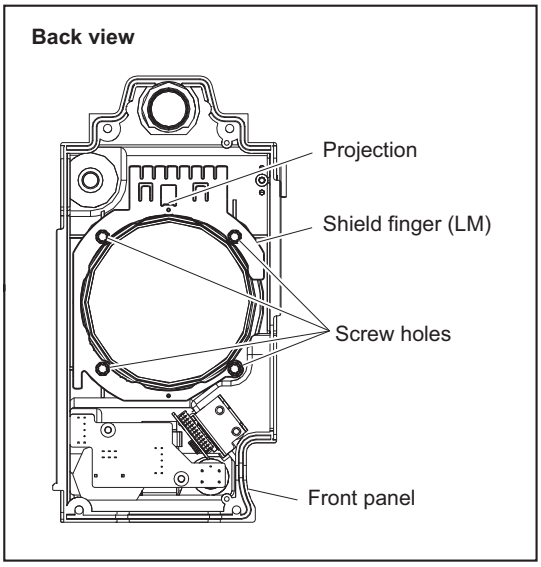
Installing Procedure

2. Install the shield finger (LM) to the front panel.
   1) Insert the projection of the shield finger (LM) to the hole of the front panel.
   2) Align the four screw holes of the shield finger (LM) with the four screw holes of the front panel.

Note

Do not directly touch shield finger (LM). Be careful not to get hurt with the edges when handling them.

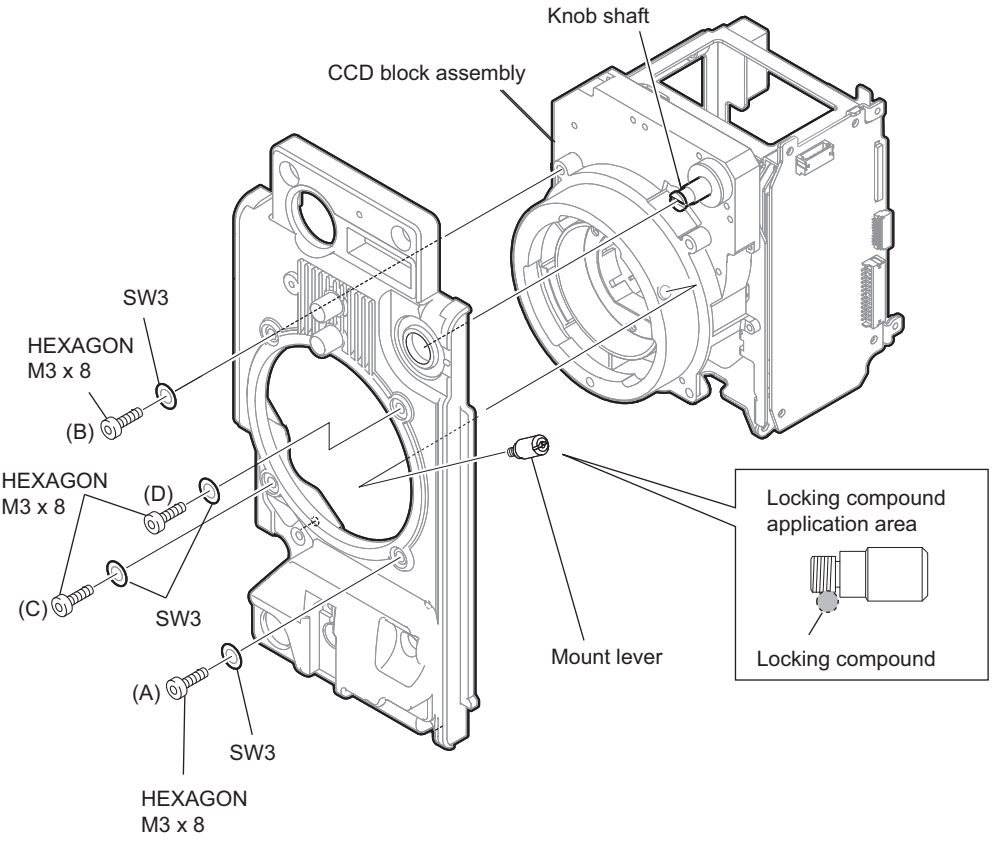




3. Install the CCD block assembly.
   1) Install the CCD block assembly to the front panel.
   2) Tighten the four hexagon socket head bolts and four spring washers in the order of (A) to (D).
   3) Apply the locking compound on the thread of the mount lever, and install the mount lever.

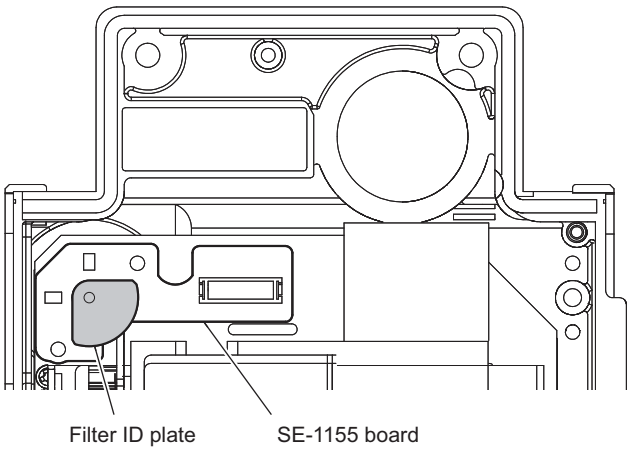
Note

When installing the CCD block, be careful so that the optical axis does not tilt (misaligned) due to a play. If a picture on the monitor screen tilts, loosen the screws of the CCD block and adjust the installation so that the picture becomes horizontal.



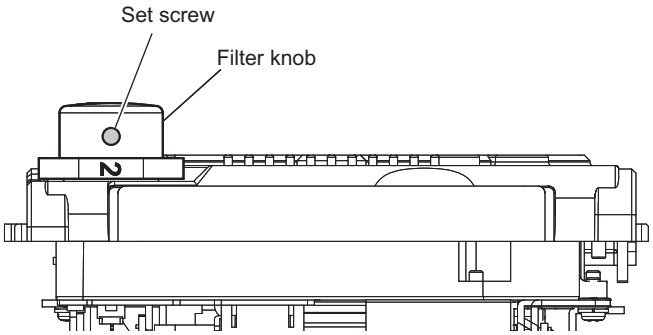
4. Turn the knob shaft and set the filter ID plate on the SE-1155 board to the orientation as shown in the figure.

Back view



5. Set the filter knob at a position where a number “2” faces up and secure it with a set screw.

Top view



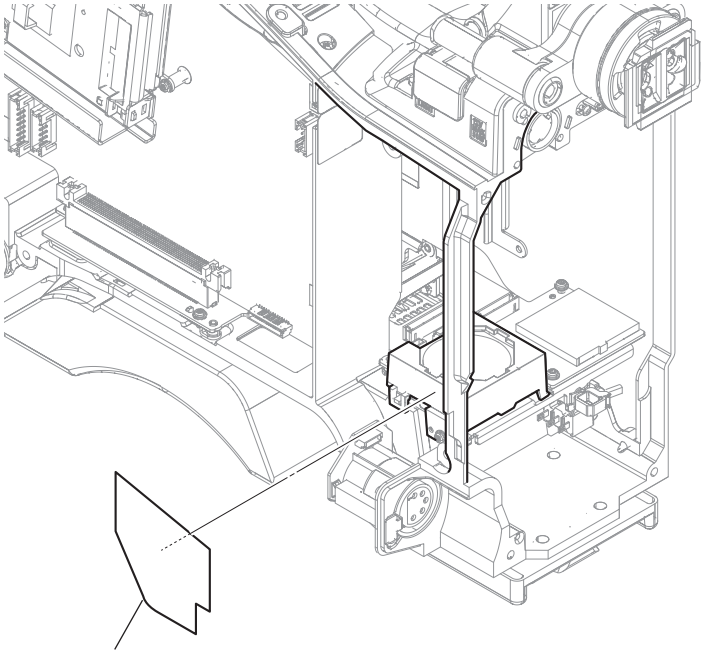
2-5. DC Fan (30 Square)

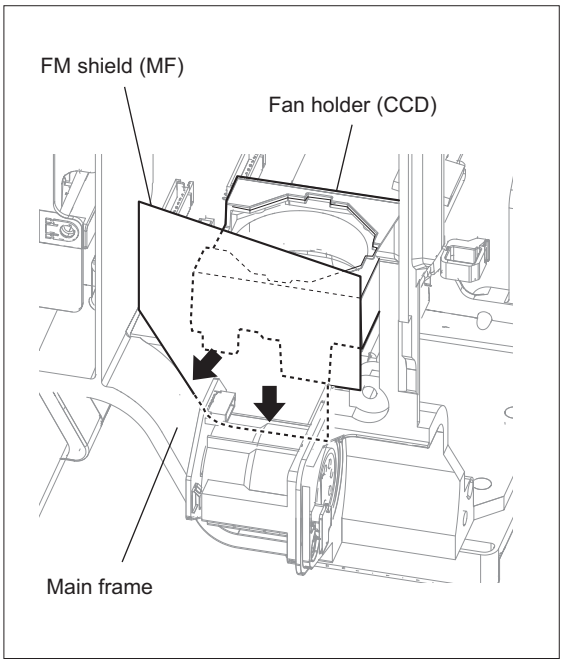
Preparation

1. Remove the outside panel assembly. (Refer to "2-2. Outside Panel Assembly")
2. Remove the inside panel assembly. (Refer to "2-3-1. Inside Panel Assembly")
3. Remove the front assembly. (Refer to "2-4-1. Front Assembly")

Procedure

1. Remove the FM shield (MF).

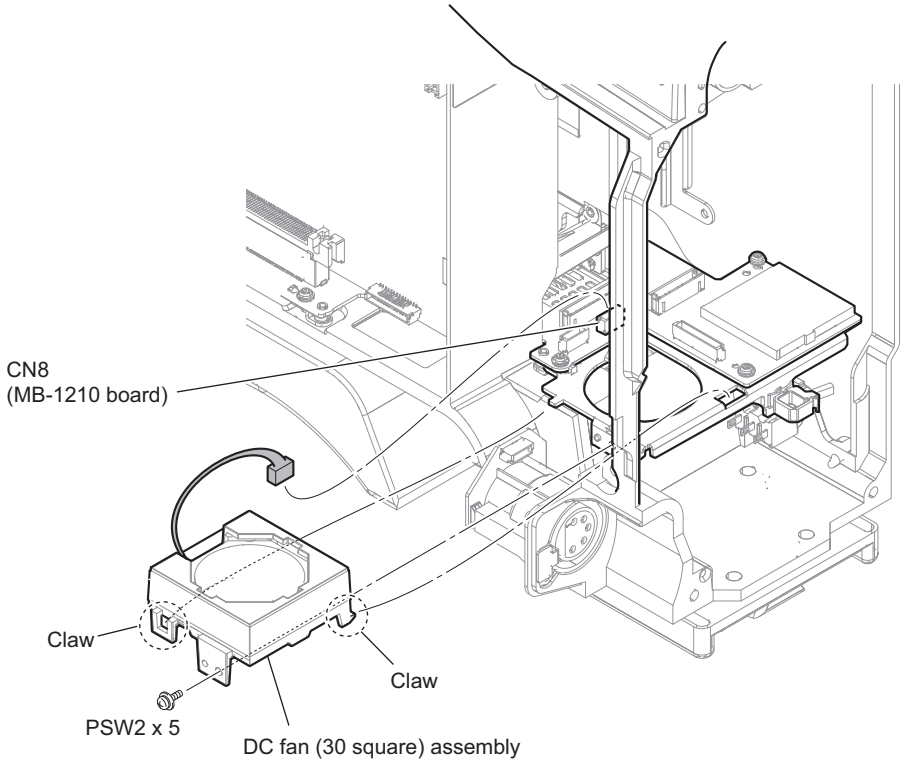




Note

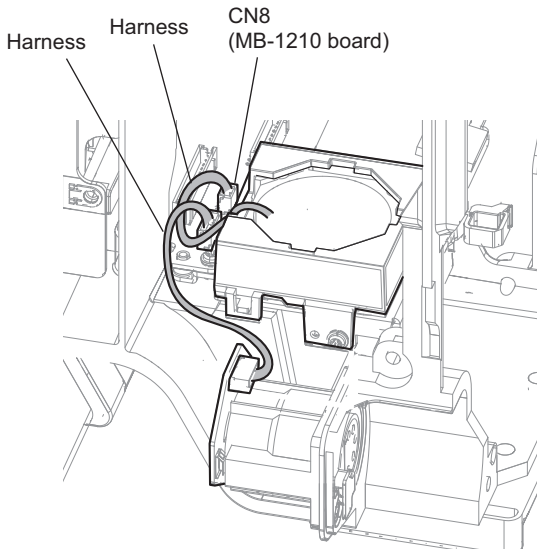
When installing the FM shield (MF), press the lower edge of the FM shield (MF) against the main frame in the direction of the arrow.

2. Remove the DC fan (30 square) assembly.
   1) Disconnect the harness from the connector (CN8) on the MB-1210 board.
   2) Remove the screw.
   3) Release the two claws, and remove the DC fan (30 square).

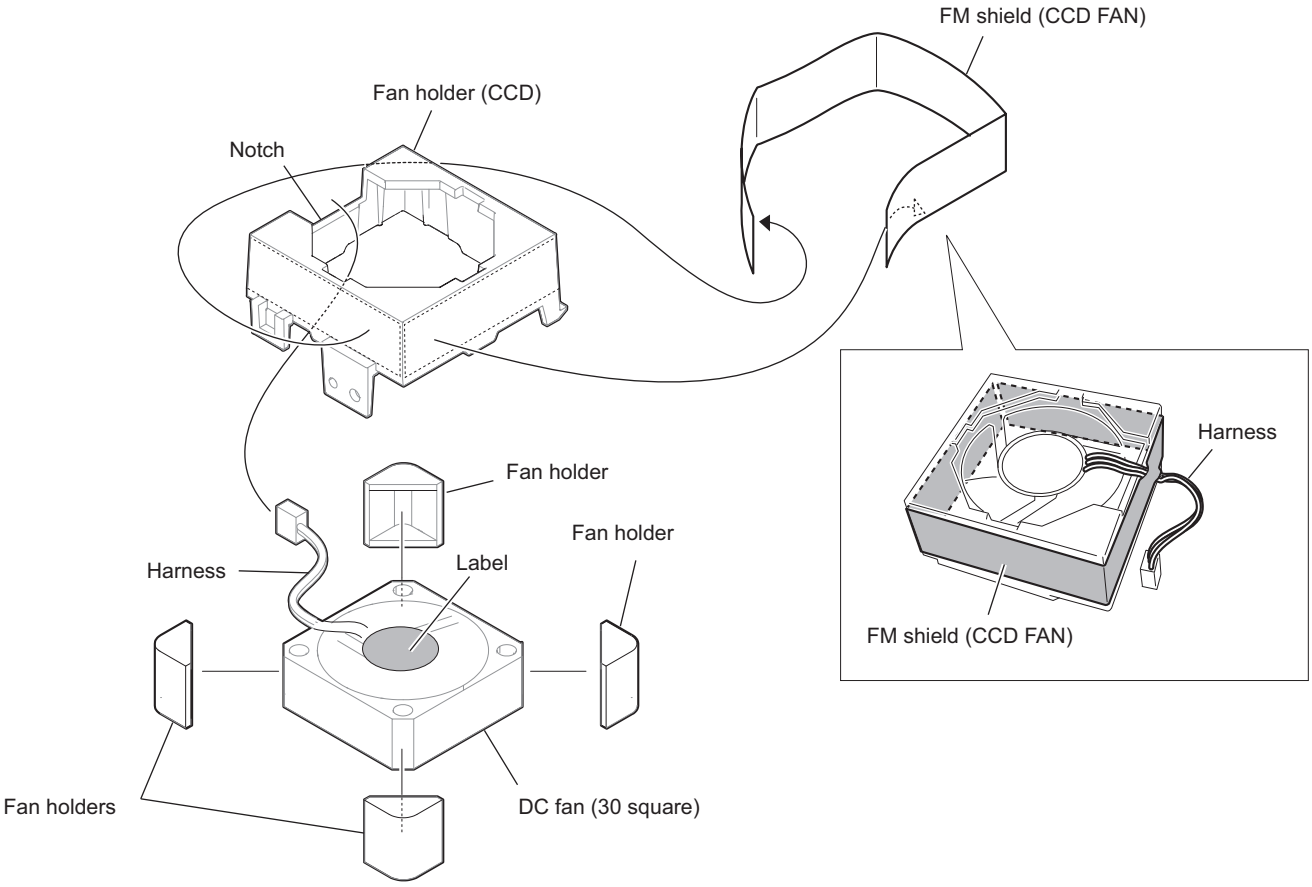


Note

When installing the harness, arrange the harnesses as shown in the figure.



3. Remove the DC fan (30 square).
   1) Remove the FM shield (CCD FAN).
   2) Remove the fan holder (CCD).
   3) Remove the four fan holdrs.



Note

Pay attention to the following when installing the fan holder (CCD).

- Pay attention to the position of label of the DC fan (30 square).
- Align the notch of the fan holder (CCD) with the harness of the DC fan (30 square).
- Fold the harness by the FM shield (CCD FAN).

4. Install the removed parts by reversing the steps of removal.

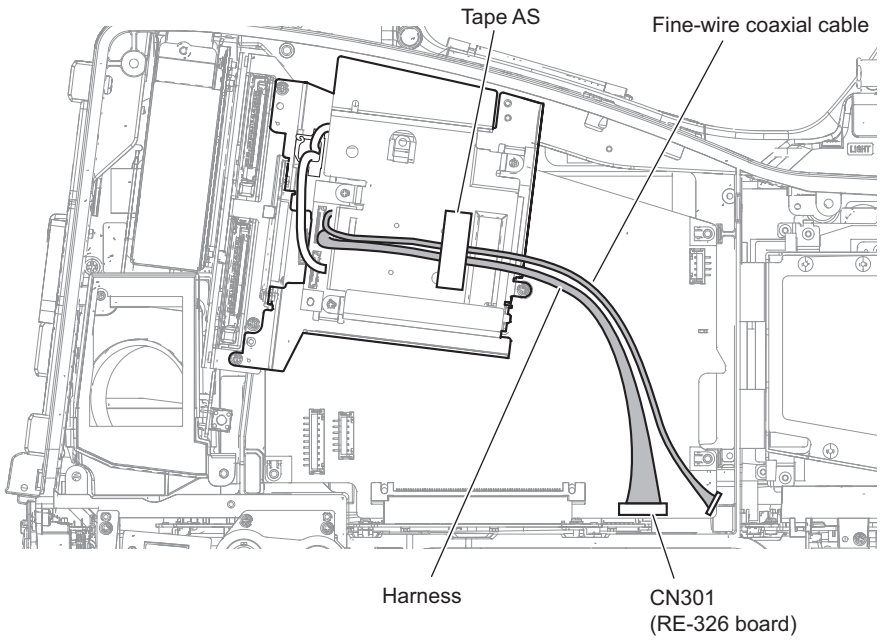
2-6. Wi-Fi Module/SD-58 Board

Preparation

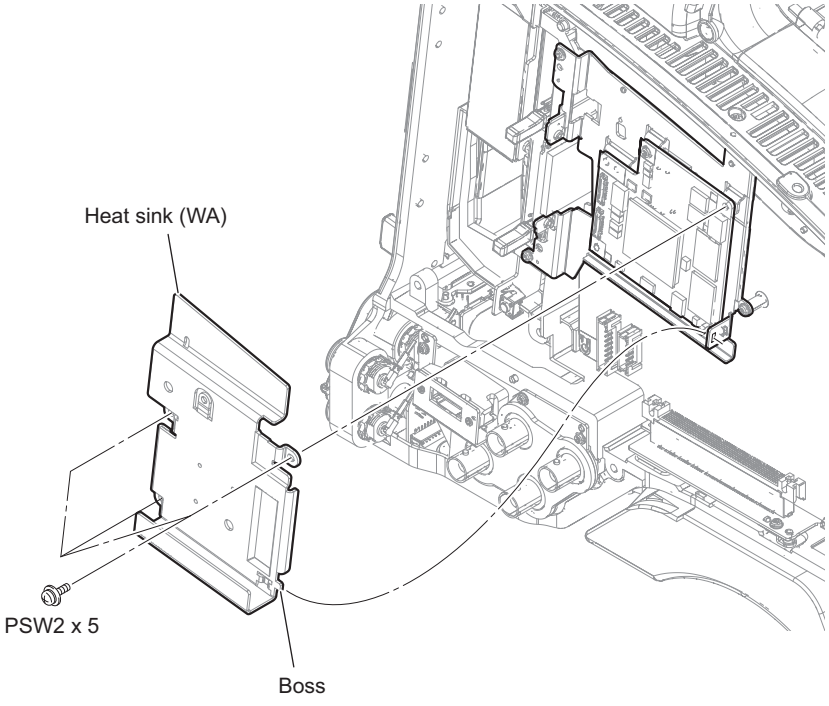
1. Remove the outside panel assembly. (Refer to "2-2. Outside Panel Assembly")

Procedure

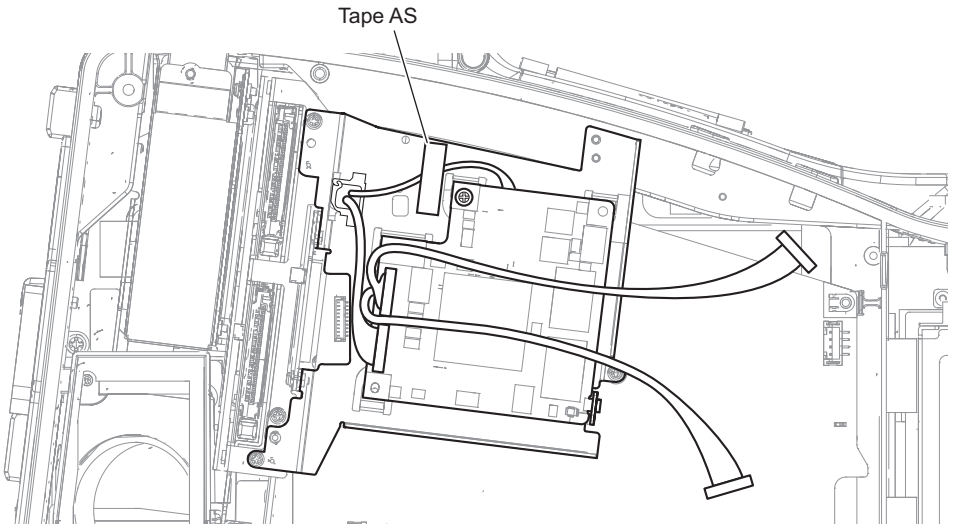
1. Remove the tape AS, disconnect the fine-wire coaxial cable and the harness.
   1) Disconnect the harness from the connector (CN301) on the RE-326 board.
   2) Remove the tape AS, and release the fine-wire coaxial cable and the harness.



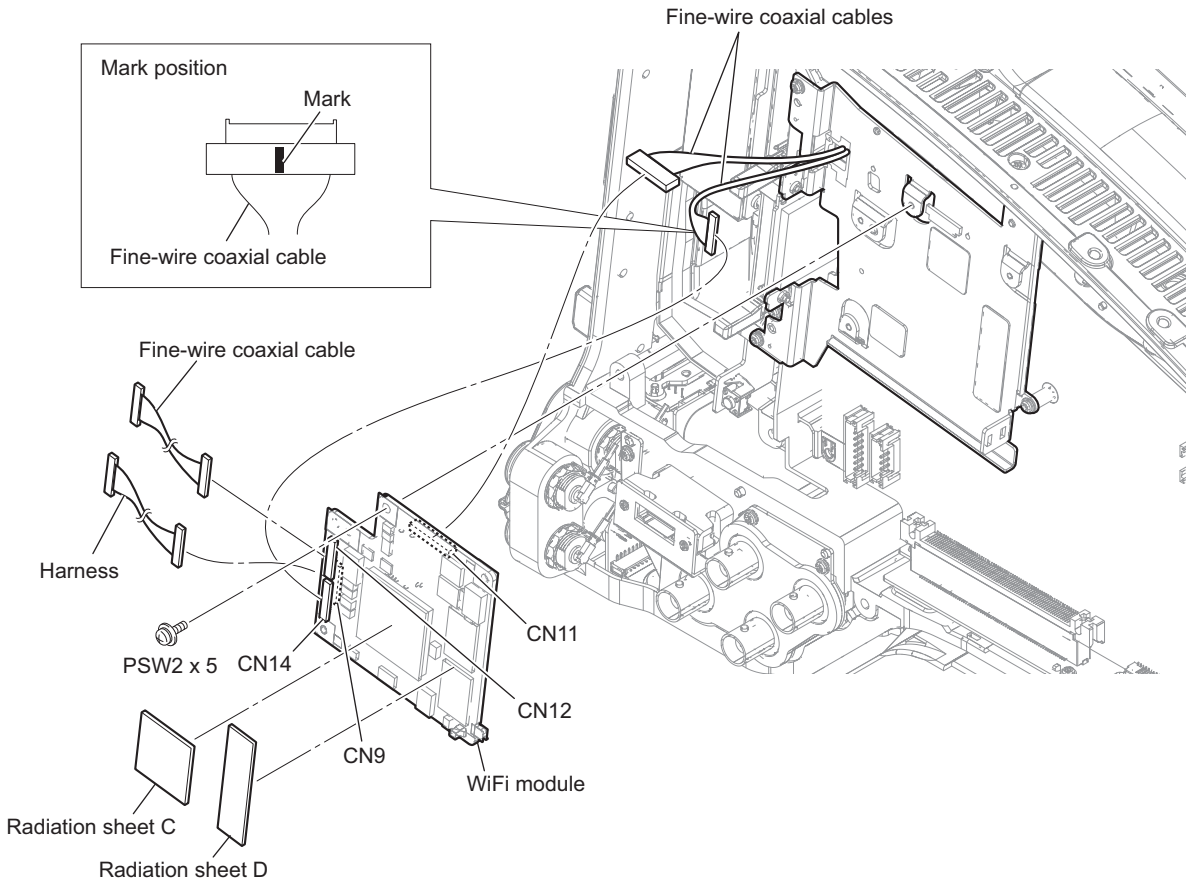
2. Remove the heat sink (WA).
   1) Remove the three screws.
   2) Remove the heat sink (WA), while releasing the boss from the hole.



3. Remove the tape AS.



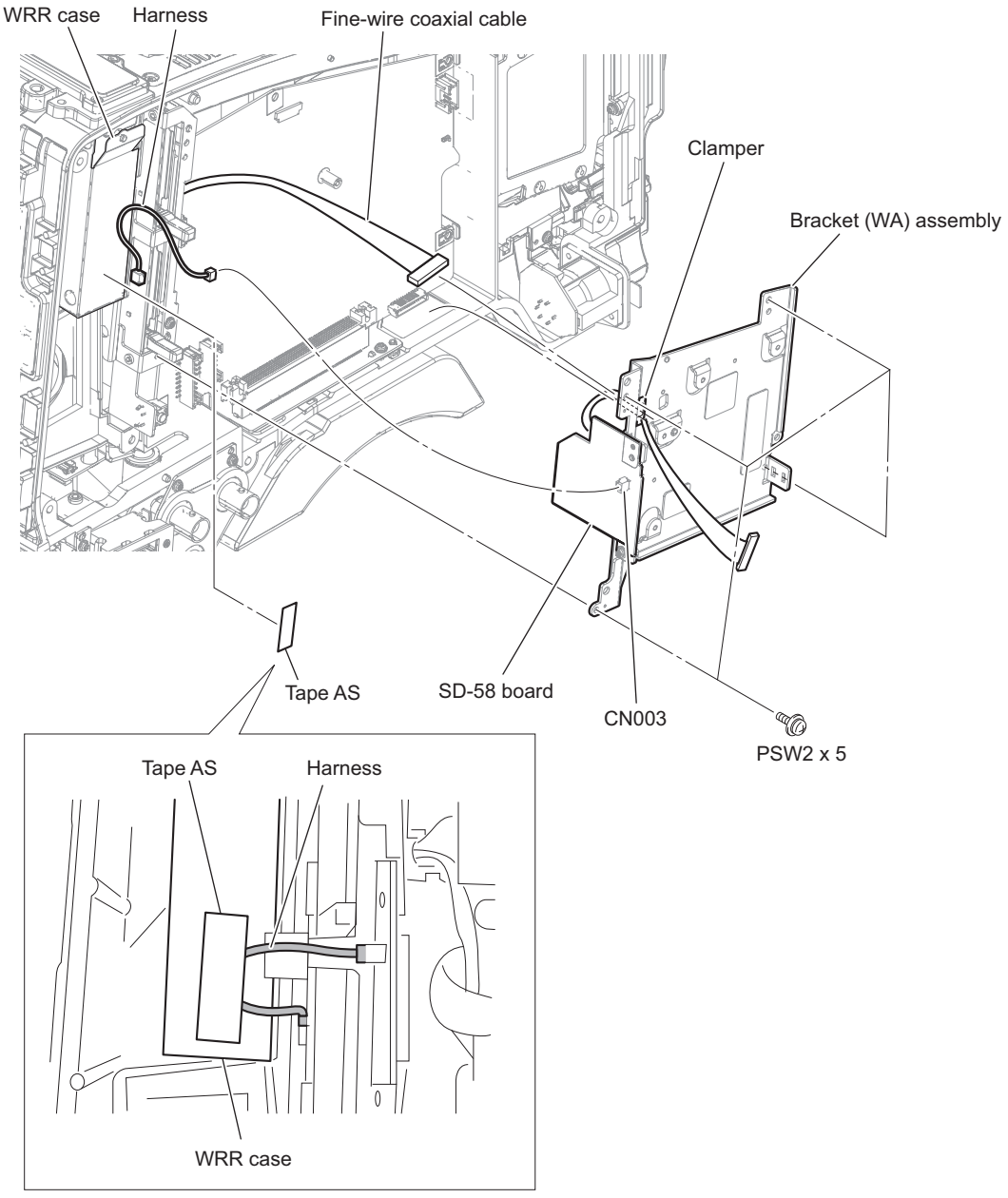
4. Remove the Wi-Fi module.
   1) Disconnect the two fine-wire coaxial cables from the two connectors (CN12, CN14) on the Wi-Fi module.
   2) Remove the screw, and draw the Wi-Fi module.
   3) Disconnect the fine-wire coaxial cable from the connector (CN11) on the Wi-Fi module, and remove the Wi-Fi module.
   4) Disconnect the harness from the connector (CN9) on the Wi-Fi module.
   5) Remove the radiation sheets C and D.



Note

When connecting the fine-wire coaxial cable, connect the fine-wire coaxial cable which is marked to the connector (CN14).

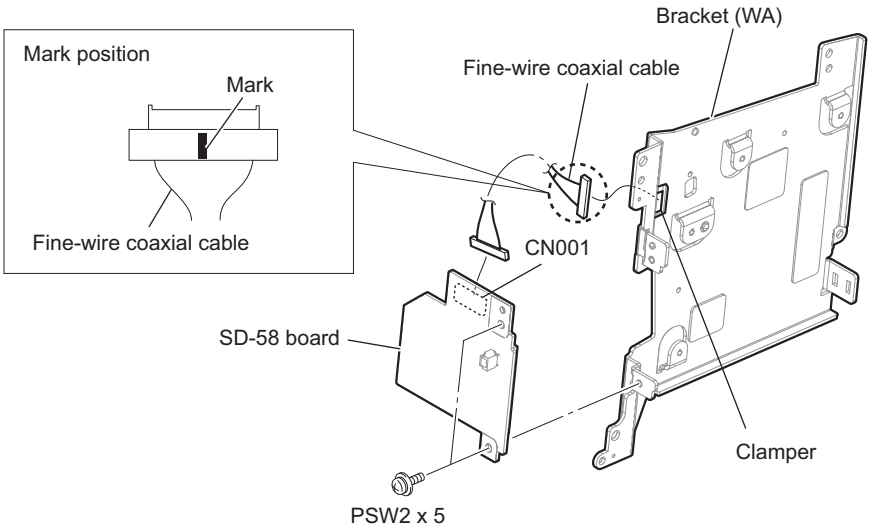
5. Remove the bracket (WA) assembly.
   1) Remove the tape AS.
   2) Disconnect the harness from the connector (CN003) on the SD-58 board.
   3) Remove the four screws.
   4) Release the fine-wire coaxial cable from the clamper, and remove the bracket (WA) assembly.



Note

When installing the tape AS, arrange the harness as shown in the figure.

6. Remove the SD-58 board.
   1) Disconnect the fine-wire coaxial cable from the connector (CN001) on the SD-58 board.
   2) Release the fine-wire coaxial cable from the clamper.
   3) Remove the two screws to detach the SD-58 board.



Note

Pay attention to the following when connecting the fine-wire coaxial cable.

- Connect the connector portion which is not marked of one of the two to the connector (CN001) on the SD-58 board.
- When the fine-wire coaxial cable is replaced, mark at the connector portion of one of the two.

7. Install the removed parts by reversing the steps of removal.

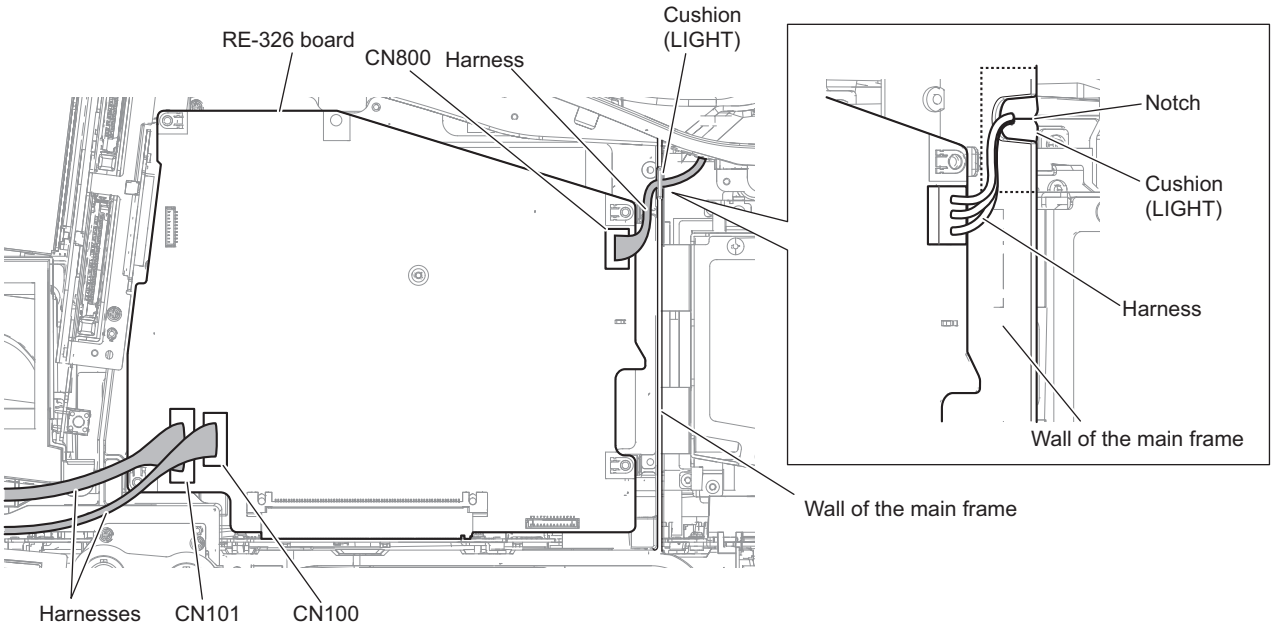
2-7. RE-326 Board

Preparation

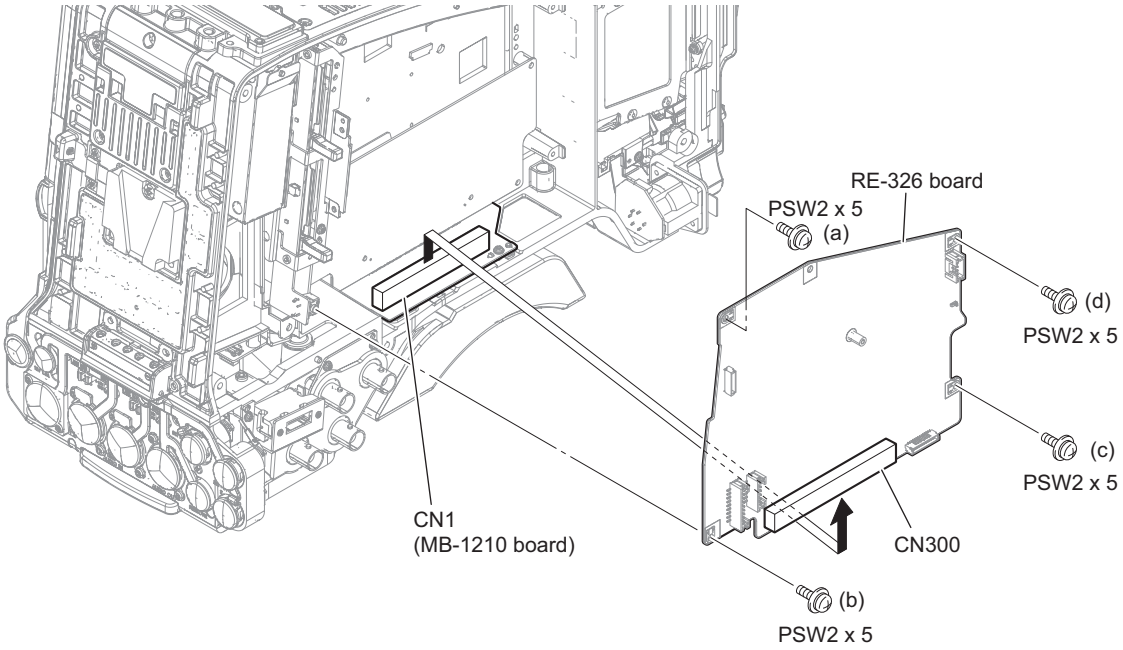
1. Remove the outside panel assembly. (Refer to "2-2. Outside Panel Assembly")
2. Remove the bracket (WA) assembly. (Refer to "2-6. Wi-Fi Module/SD-58 Board")

Procedure

1. Disconnect the harnesses.
   1) Release the harness from the notch of the cushion (LIGHT).
   2) Disconnect the three harnesses from the three connectors (CN100, CN101, CN800) on the RE-326 board.



2. Remove the four screws, and disconnect the RE-326 board from the connector (CN1) on the MB-1210 board.



Note

When installing the RE-326 board, tighten the screws in the order of (a) to (d).

3. Install the removed parts by reversing the steps of removal.

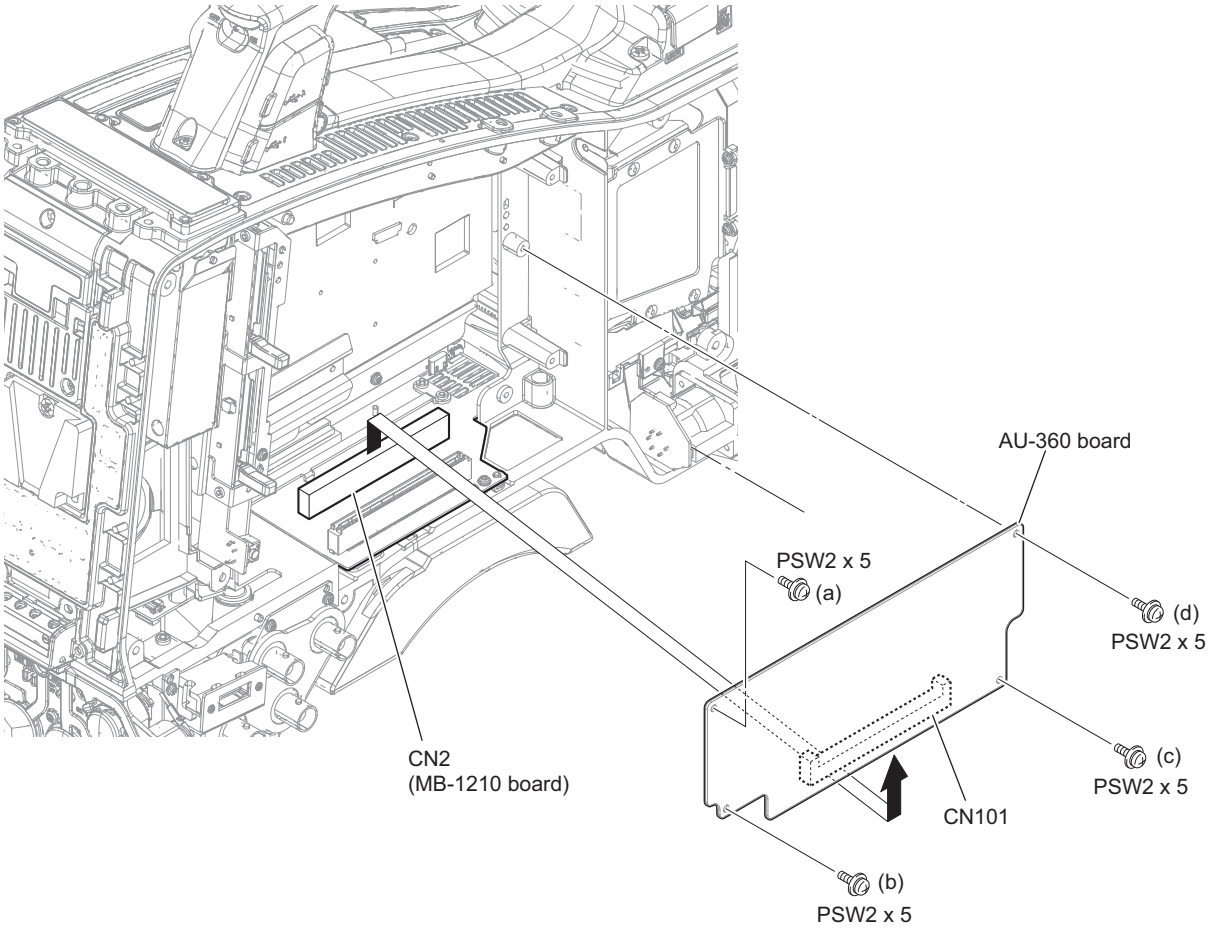
2-8. AU-360 Board

Preparation

1. Remove the outside panel assembly. (Refer to "2-2. Outside Panel Assembly")
2. Remove the bracket (WA) assembly. (Refer to"2-6. Wi-Fi Module/SD-58 Board")
3. Remove the RE-326 board. (Refer to"2-7. RE-326 Board")

Procedure

1. Remove the four screws, and disconnect the AU-360 board from the connector (CN2) on the MB-1210 board.



Note

When installing the AU-360 board, tighten the screws in the order of (a) to (d).

2. Install the removed parts by reversing the steps of removal.

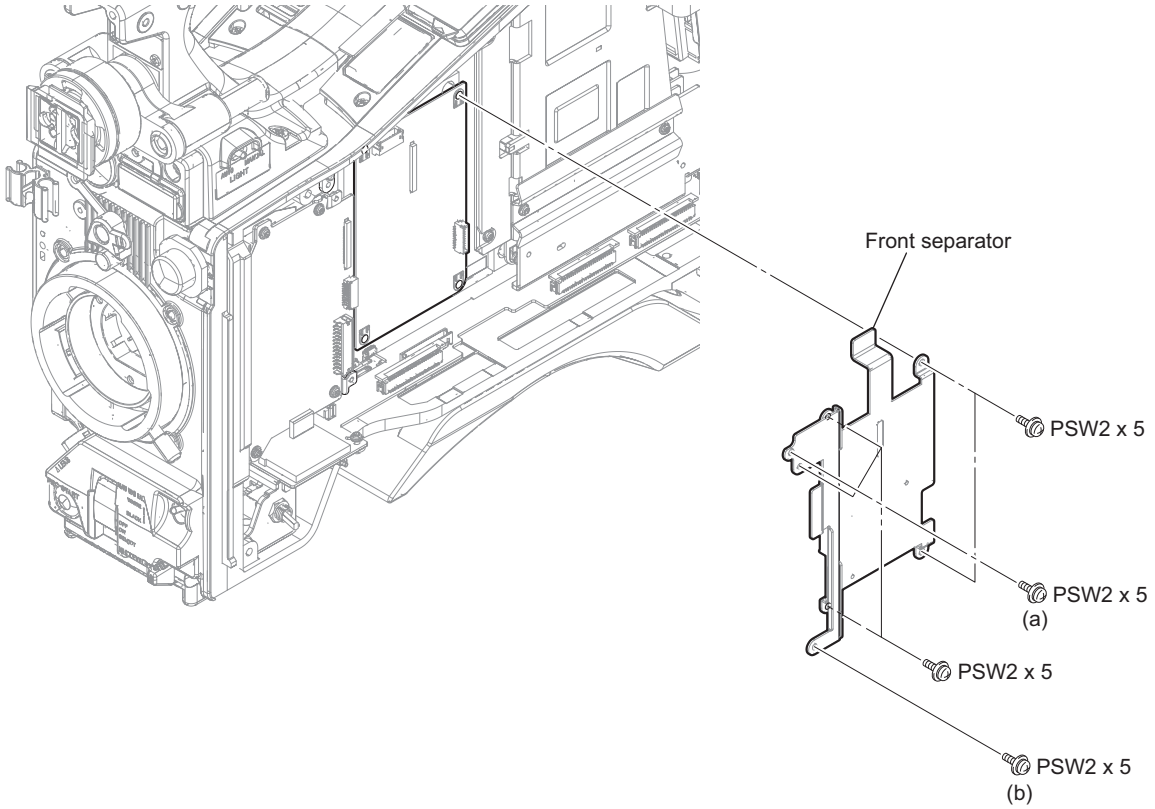
2-9. DCP-67 Board

Preparation

1. Remove the inside panel assembly. (Refer to "2-3-1. Inside Panel Assembly")

Procedure

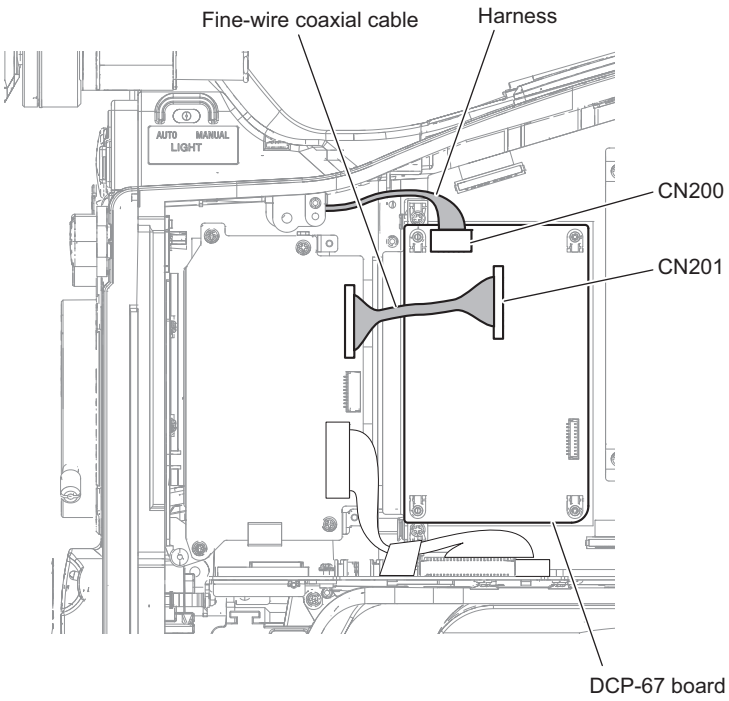
1. Remove the seven screws to detach the front separator.



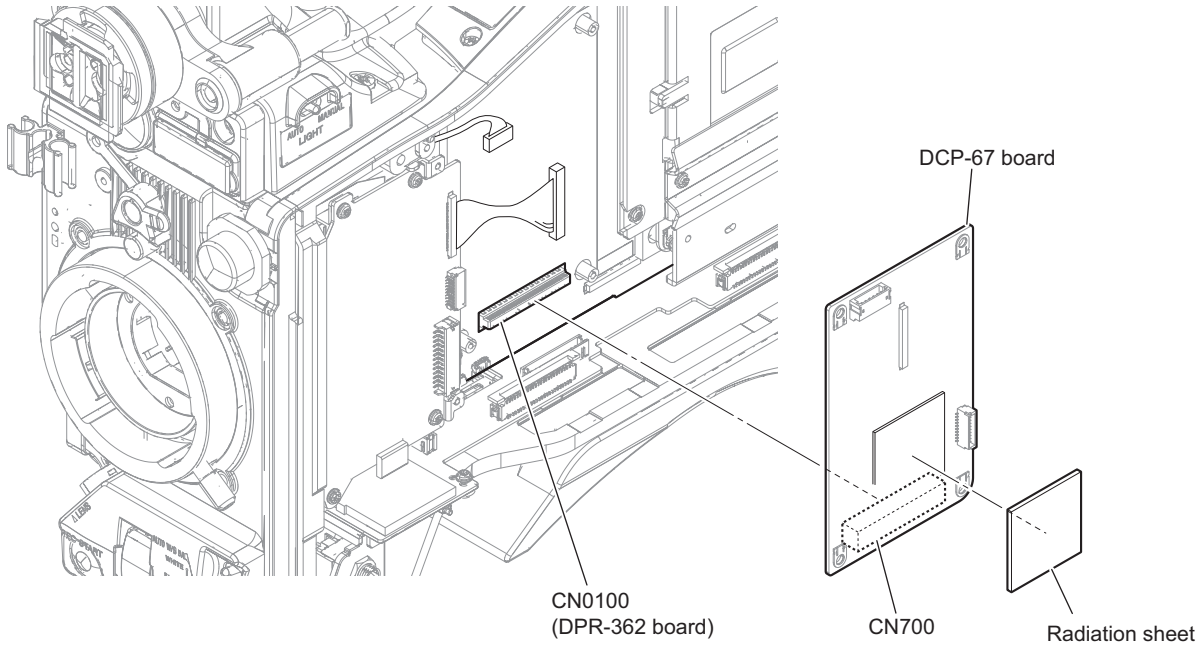
Note

When installing the front separator, tighten the screws in the order of (a), (b) and others.

2. Disconnect the harness and the fine-wire coaxial cable.
   1) Disconnect the harness from the connector (CN200) on the DCP-67 board.
   2) Disconnect the fine-wire coaxial cable from the connector (CN201) on the DCP-67 board.



3. Remove the DCP-67 board.
   1) Disconnect the DCP-67 board from the connector (CN100) on the DPR-362 board.
   2) Remove the radiation sheet.



4. Install the removed parts by reversing the steps of removal.

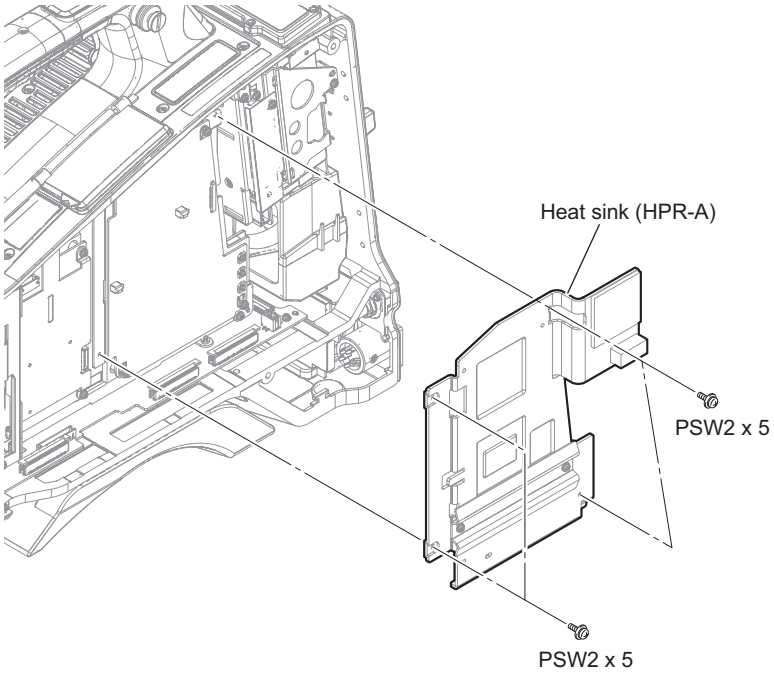
2-10. HPR-53 Board

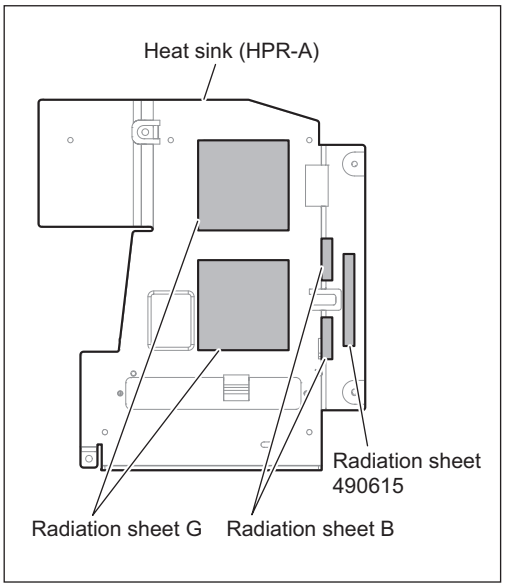
Preparation

1. Remove the inside panel assembly. (Refer to "2-3-1. Inside Panel Assembly")

Procedure

1. Remove the four screws to detach the heat sink (HPR-A).

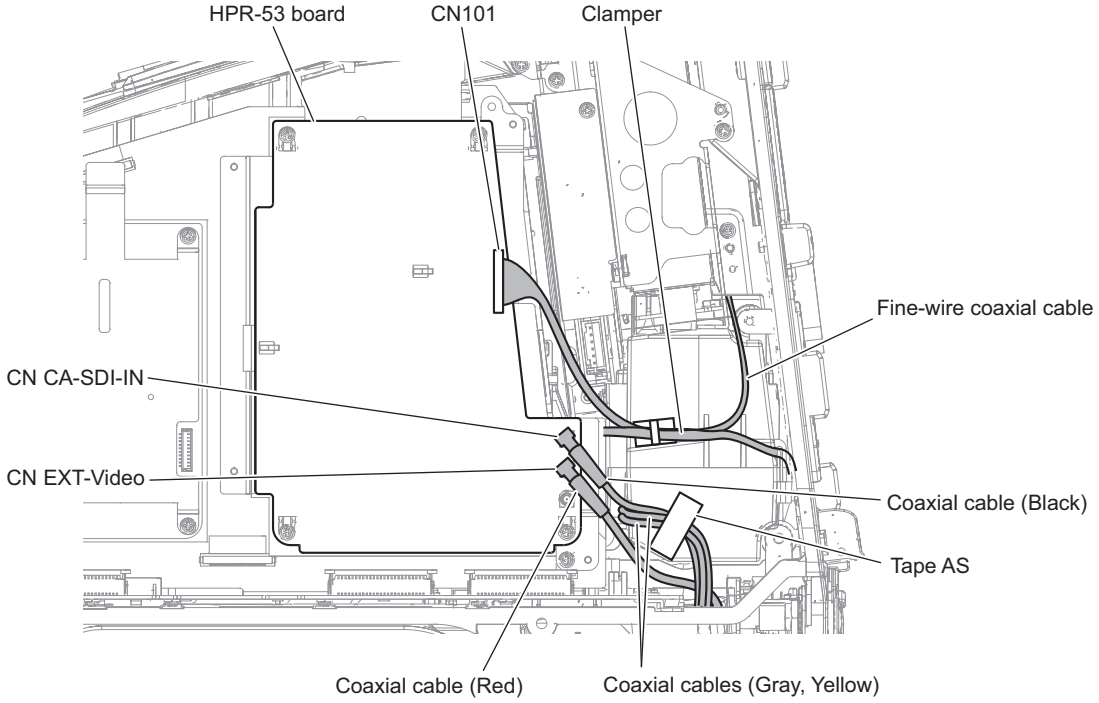




Note

In the case of dropping of the radiation sheet G, the radiation sheet B and the radiation sheet 490615, attach their parts to the heat sink (HPR-A) as shown in the figure.

2. Disconnect the fine-wire coaxial cables and the coaxial cable.
   1) Remove the tape AS.
   2) Release the fine-wire coaxial cable from the clamper.
   3) Disconnect the fine-wire coaxial cable from the connector (CN101) on the HPR-53 board.
   4) Disconnect the two coaxial cables from the two connectors (CN CA-SDI-IN, CN EXT-Video) on the HPR-53 board.



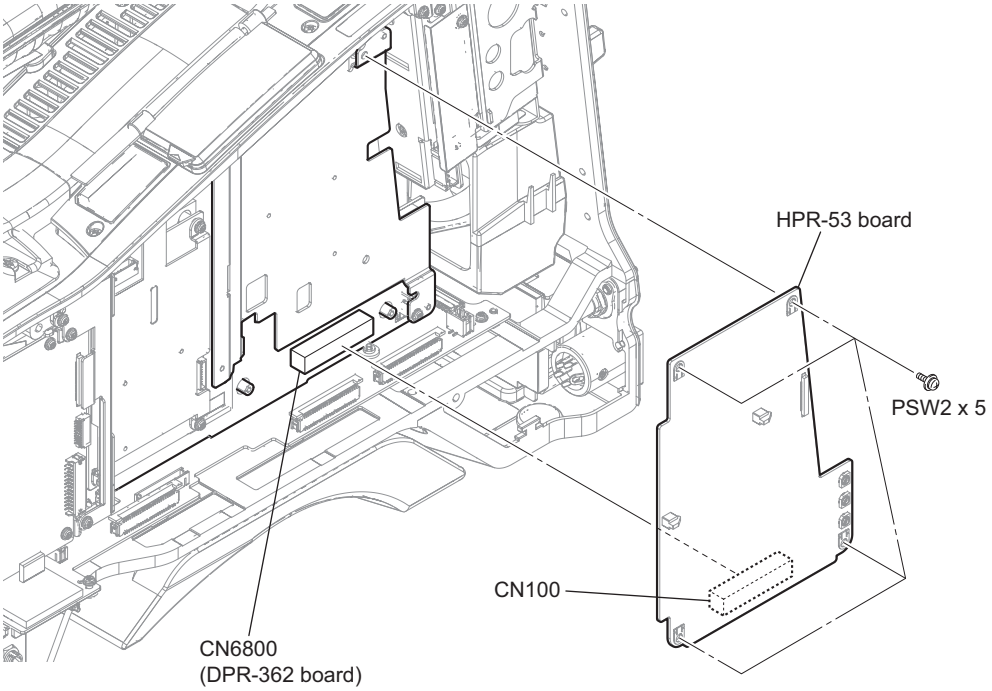
Note

When connecting the coaxial cables, connect the coaxial cables to correct connectors.

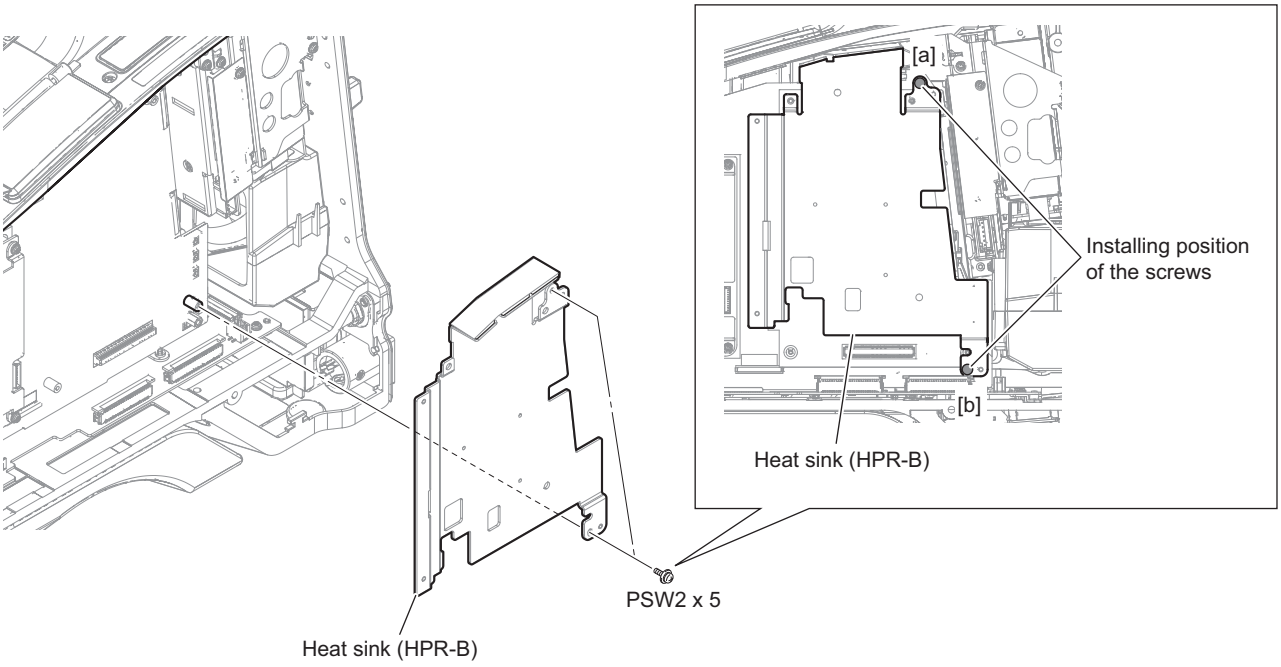
Note

When installing the tape AS, fix the coaxial cables as shown in the figure.

3. Remove the four screws, and disconnect the HPR-53 board from the connector (CN6800) on the DPR-362 board.



4. Remove the two screws to detach the heat sink (HPR-B).



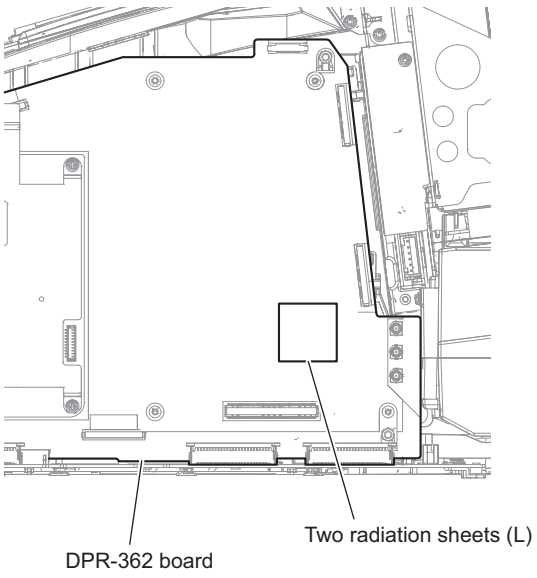
Note

Pay attention to the following when installing the heat sink (HPR-B).

- Pay attention to the installing position of the screws.
- Tighten the screws in the order of (a) to (b).

Note

In the case of dropping the two radiation sheets (E), attach their sheets at the location as shown in the following figure.



5. Install the removed parts by reversing the steps of removal.

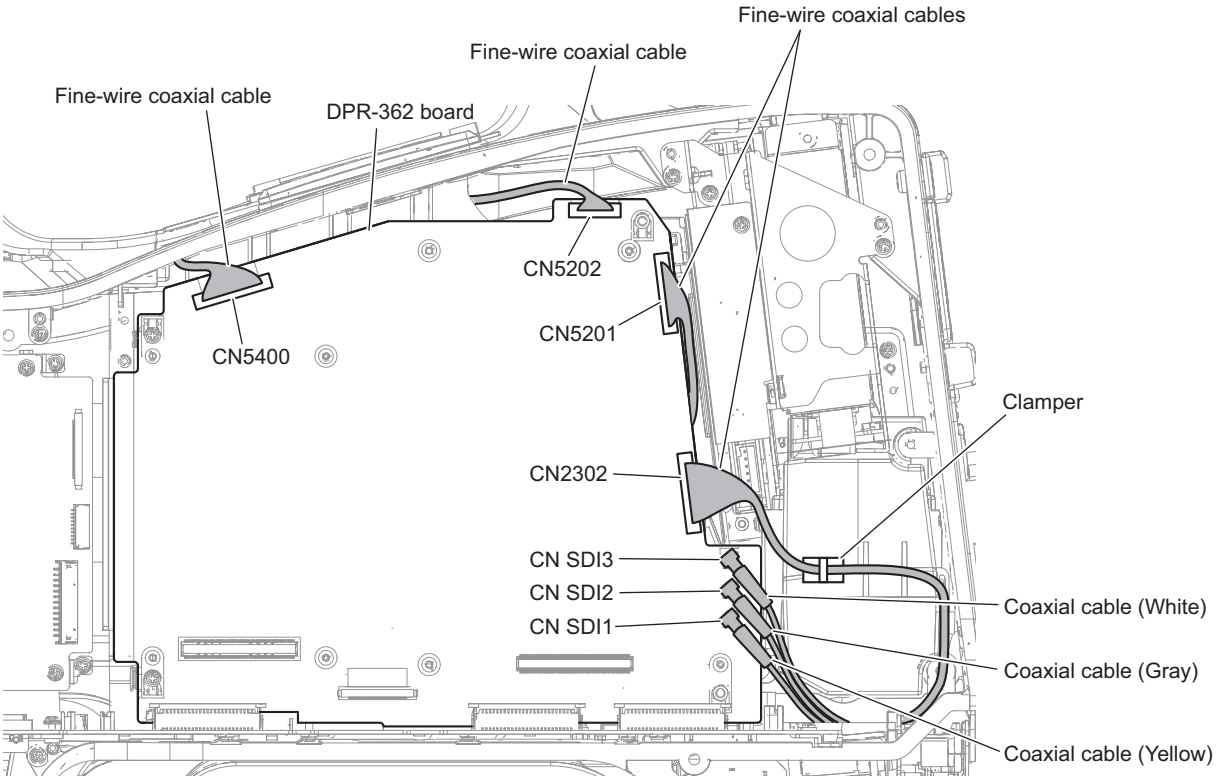
2-11. DPR-362 Board

Preparation

1. Remove the outside panel assembly. (Refer to "2-2. Outside Panel Assembly")
2. Remove the bracket (WA) assembly. (Refer to "2-6. Wi-Fi Module/SD-58 Board")
3. Remove the inside panel assembly. (Refer to "2-3-1. Inside Panel Assembly")
4. Remove the DCP-67 board. (Refer to "2-9. DCP-67 Board")
5. Remove the HPR-53 board. (Refer to "2-10. HPR-53 Board")

Procedure

1. Disconnect the fine-wire coaxial cables and the coaxial cables.
   1) Release the fine-wire coaxial cable from the clamper.
   2) Disconnect the four fine-wire coaxial cables from the four connectors (CN2302, CN5201, CN5202, CN5400) on the DPR-362 board.
   3) Disconnect the three coaxial cables from the three connectors (CN SDI1, CN SDI2, CN SDI3) on the DPR-362 board.

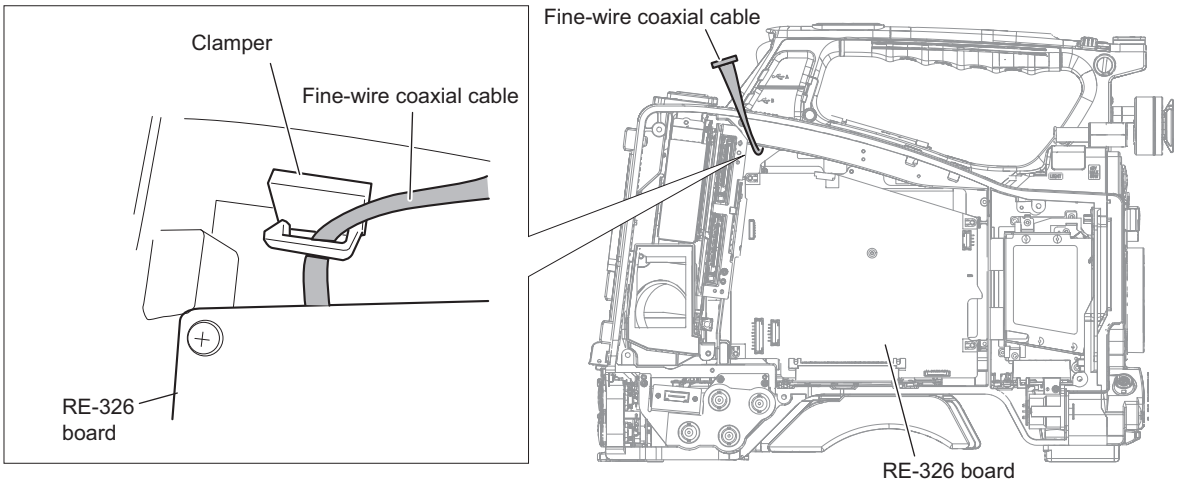


Note

When connecting the coaxial cables, connect the coaxial cables to correct connectors.

2. Release the fine-wire coaxial cable from the clamper.

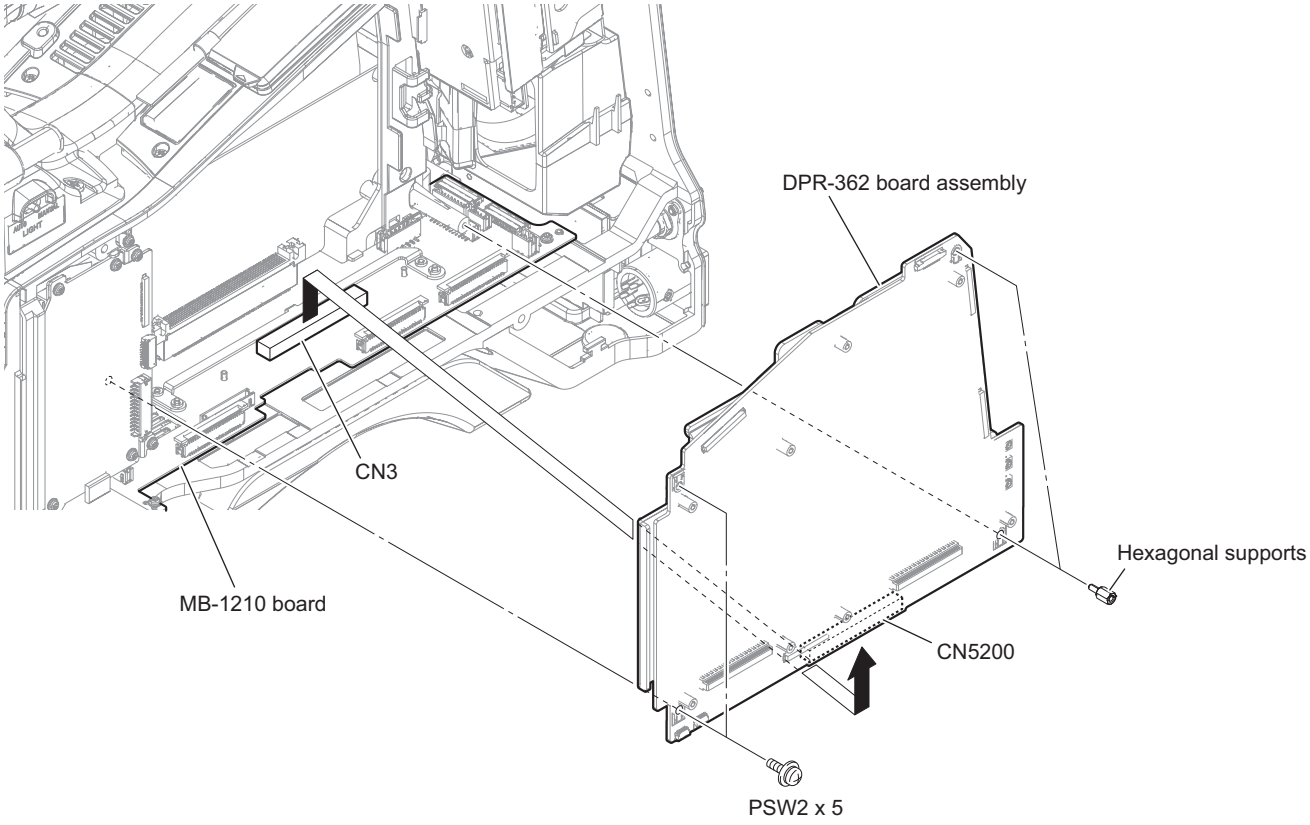
Outside side



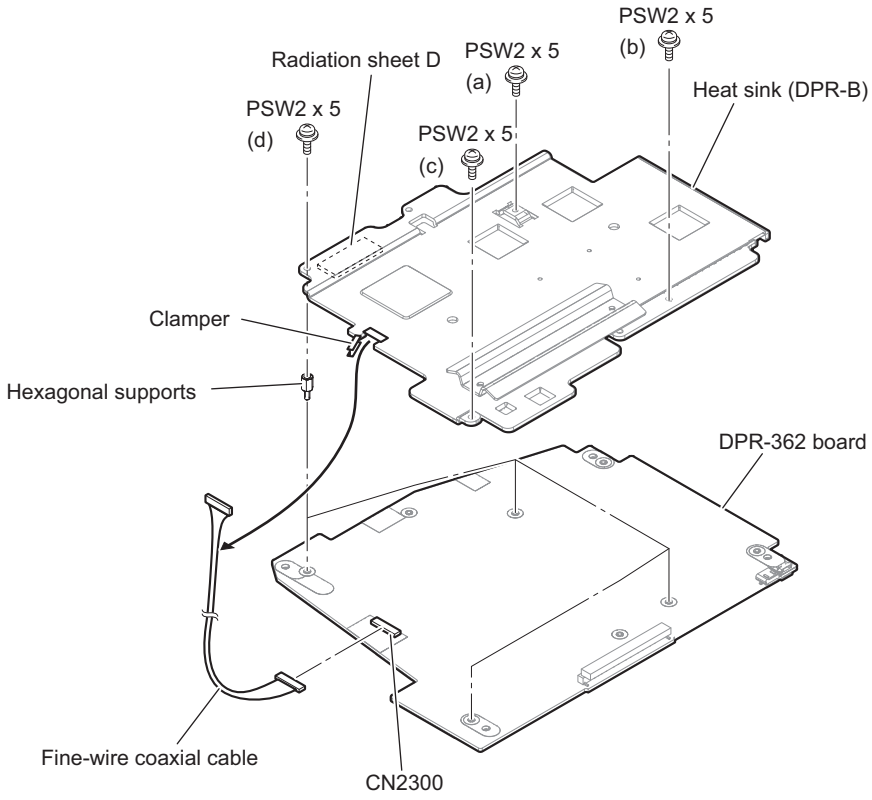
Note

When fixing the fine-wire coaxial cable to the clamper, pass the fine-wire coaxial cable into the clamper and draw out it to outside.

3. Remove the two screws and the two hexagonal supports, and disconnect the DPR-362 board assembly from the connector (CN3) on the MB-1210 board.



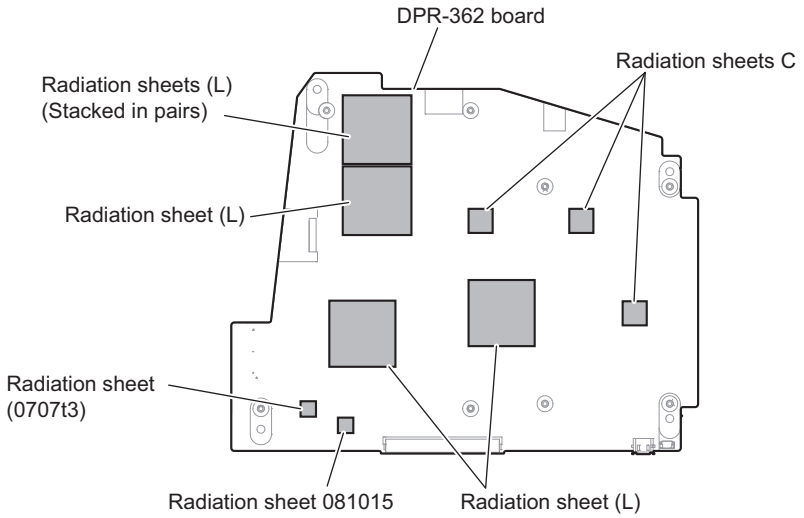
4. Remove the heat sink (HPR-B).
   1) Remove the four screws to detach the heat sink (DPR-B).
   2) Release the fine-wire coaxial cable from the clamper.
   3) Disconnect the fine-wire coaxial cable from the connector (CN2300) on the DPR-362 board.
   4) Remove the four hexagonal supports.



Note

Pay attention to the following when installing the heat sink (DPR-B).

- Tighten the screws in the order of (a) to (d).
- In the case of dropping the radiation sheet, the radiation sheet C, radiation sheet 081015 and the radiation sheets (L), attach their sheets at the location as shown in the following figure.



5. Install the removed parts by reversing the steps of removal.

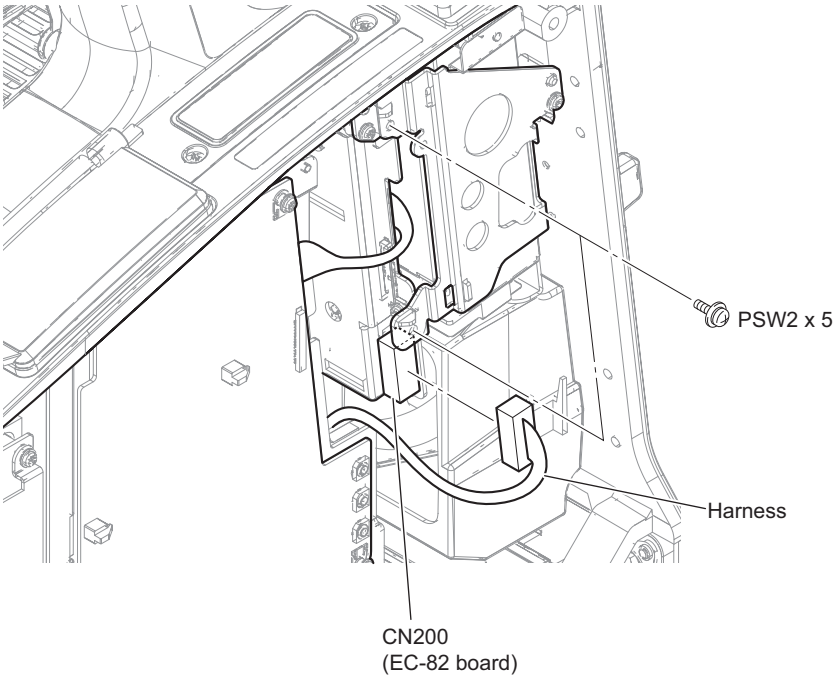
2-12. EC-82 Board

Preparation

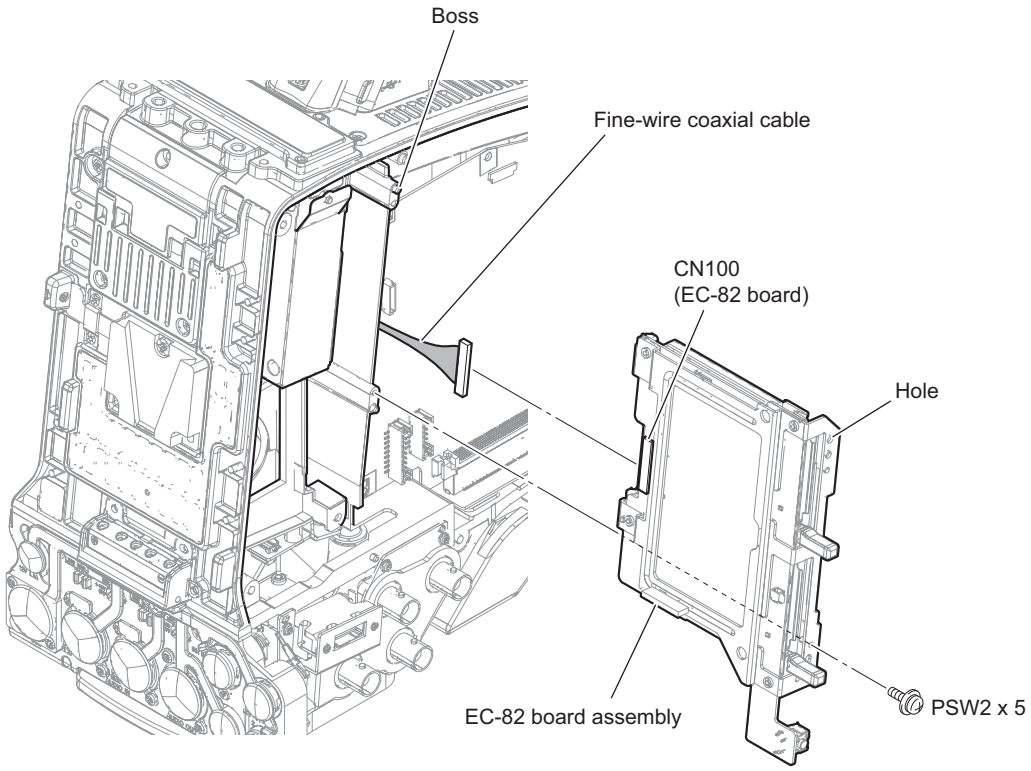
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the bracket (WA) assembly.(Refer to “2-6. Wi-Fi Module/SD-58 Board”)
3. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
4. Remove the heat sink (HPR-A). (Refer to “2-10. HPR-53 Board”)

Procedure

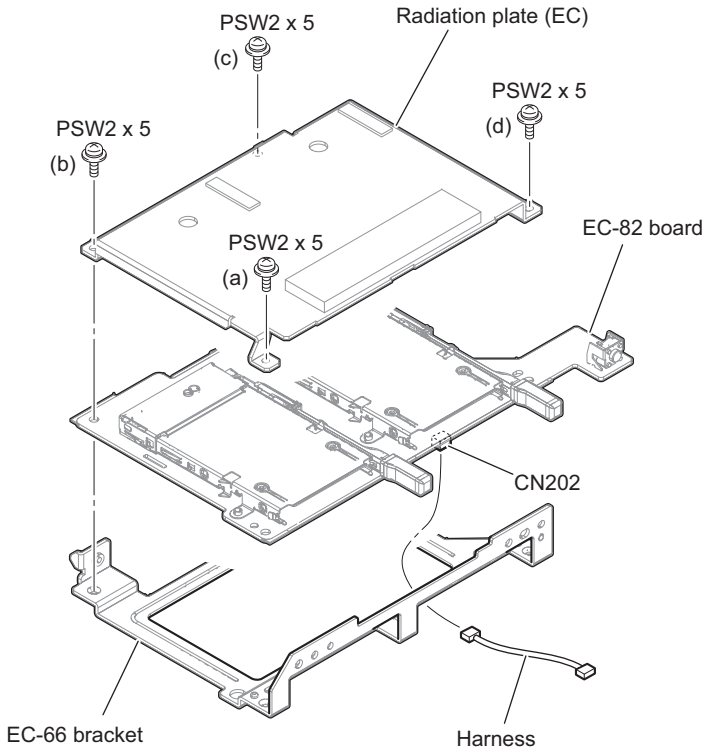
1. Remove the two screws, and disconnect the harness from the connector (CN200) on the EC-82 board.



2. Remove the EC-82 board assembly.
   1) Remove the screw, and draw the EC-82 board assembly.
   2) Disconnect the fine-wire coaxial cable from the connector (CN100) on the EC-82 board.



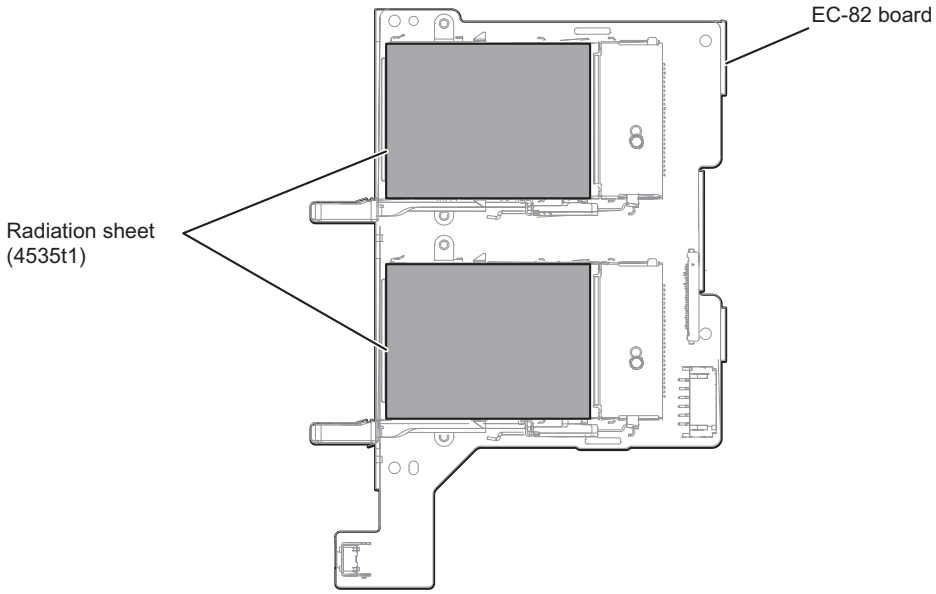
3. Remove the EC-82 board.
   1) Remove the four screws to detach the radiation plate (EC) and the EC-66 bracket.
   2) Disconnect the harness from the connector (CN202) on the EC-82 board.



Note

Pay attention to the following when installing the radiation plate (EC).

- Tighten the screws in the order of (a) to (d).
- In the case of dropping the two radiation sheets (4535t1), attach their sheets at the location as shown in the following figure.



4. Install the removed parts by reversing the steps of removal.

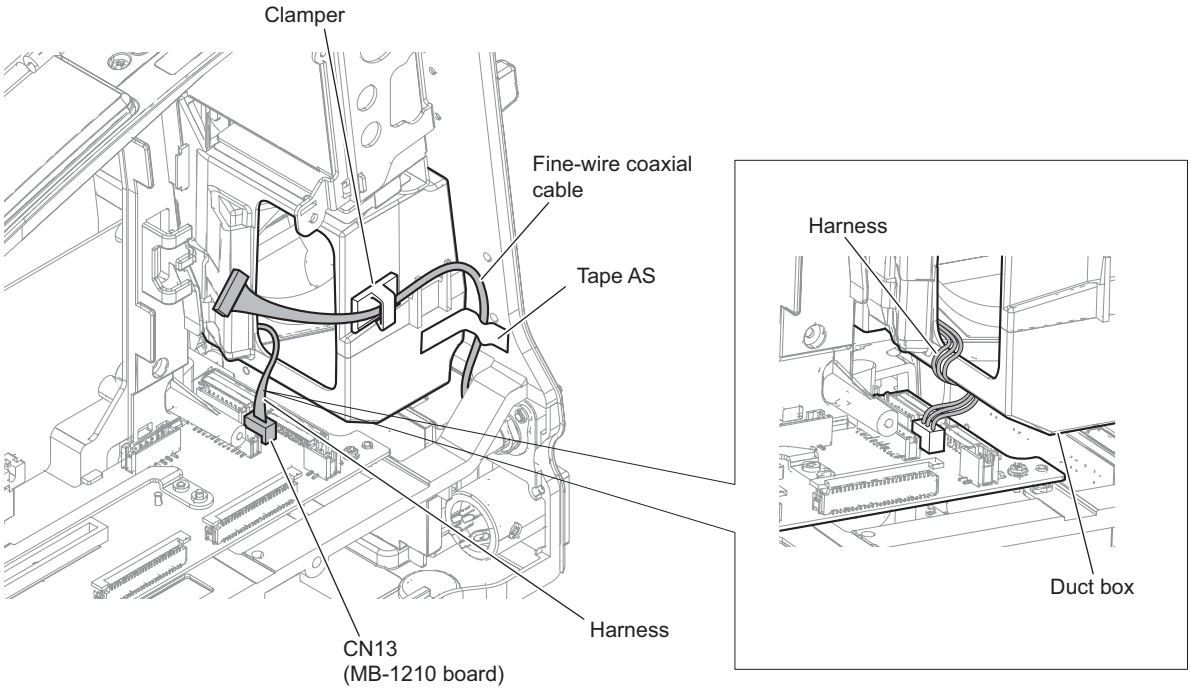
2-13. DC Fan (40 Square)

Preparation

1. Remove the outside panel assembly. (Refer to "2-2. Outside Panel Assembly")
2. Remove the bracket (WA) assembly. (Refer to "2-6. Wi-Fi Module/SD-58 Board")
3. Remove the inside panel assembly. (Refer to "2-3-1. Inside Panel Assembly")
4. Remove the DCP-67 board. (Refer to "2-9. DCP-67 Board")
5. Remove the HPR-53 board. (Refer to "2-10. HPR-53 Board")
6. Remove the DPR-362 board. (Refer to "2-11. DPR-362 Board")
7. Remove the EC-82 board. (Refer to "2-12. EC-82 Board")

Procedure

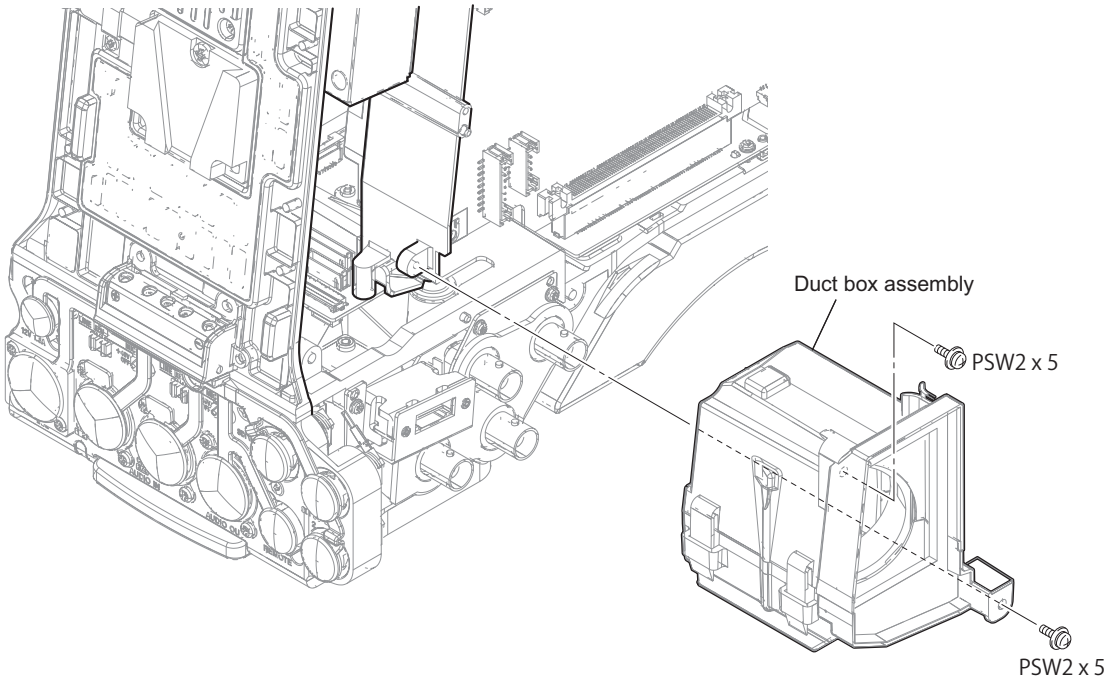
1. Release the fine-wire coaxial cable from the clamper, and disconnect the harness.
   1) Remove the tape AS.
   2) Release the fine-wire coaxial cable from the clamper.
   3) Disconnect the harness from the connector (CN13) on the MB-1210 board.



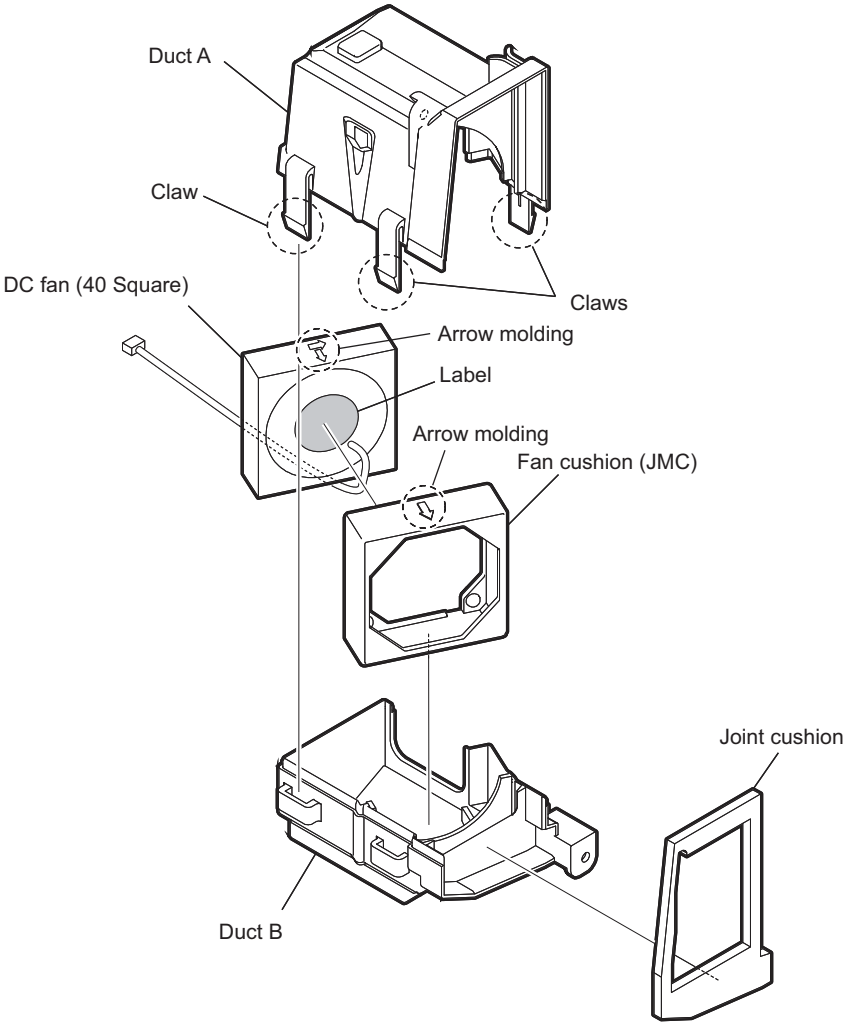
Note

When connecting the harness, arrange the harness under the duct box as shown in the figure.

2. Remove the two screws, and draw the duct box assembly.

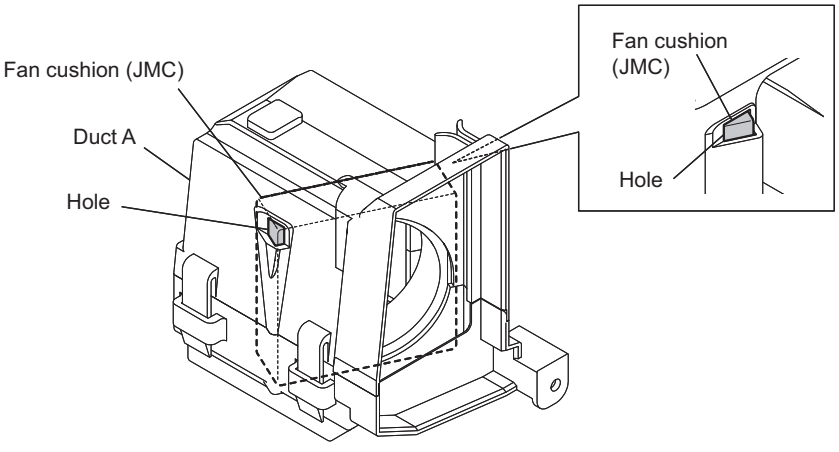


3. Remove the DC fan (40square).
   1) Remove the joint cushion.
   2) Remove the four claws to detach the duct A.
   3) Remove the DC fan (40 square) from the fan cushion (JMC).



Note

- Confirm the corner of the fan cushion (JMC) in two places looks from the hole of duct A as shown in the figure.
- Confirm the direction of the label of DC fan (40 square) and the position of the arrow molding. Confirm the position of the arrow molding on the fan cushion (JMC).



4. Install the removed parts by reversing the steps of removal.

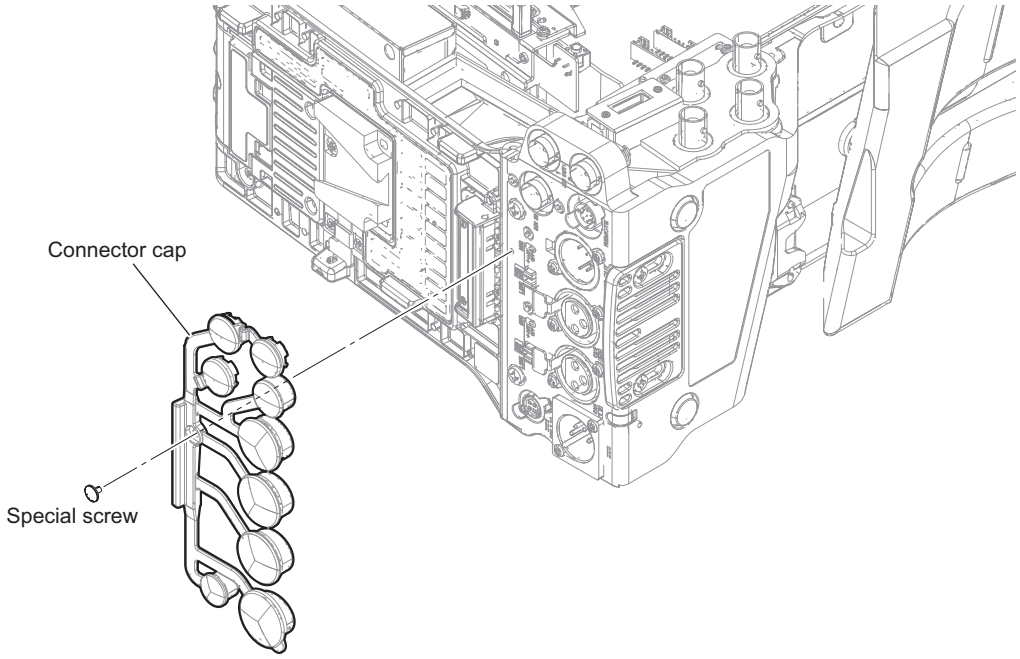
2-14. IO-275 Board, DIF-232 Board

Preparation

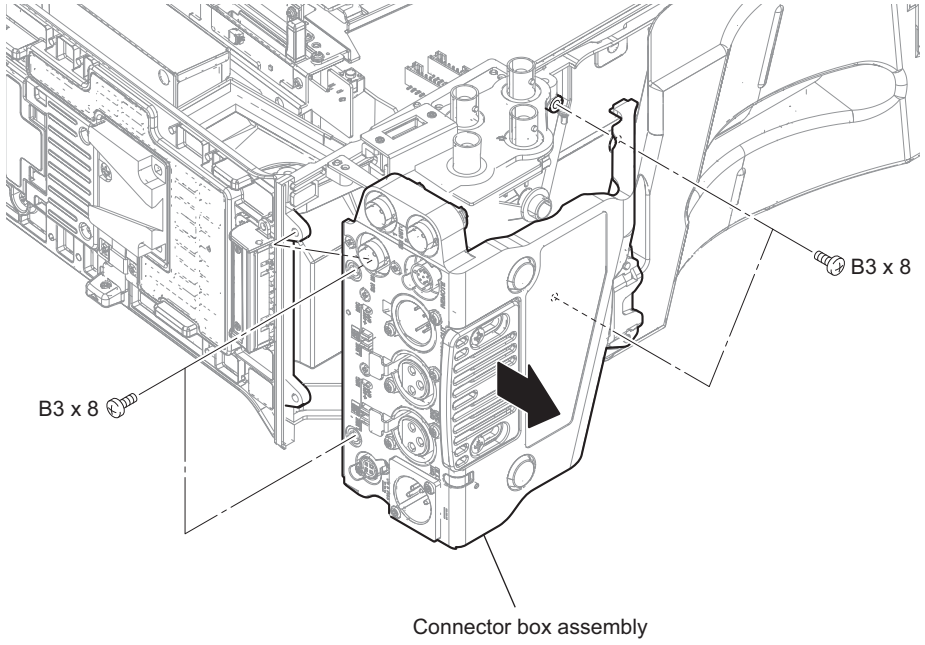
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)

Procedure

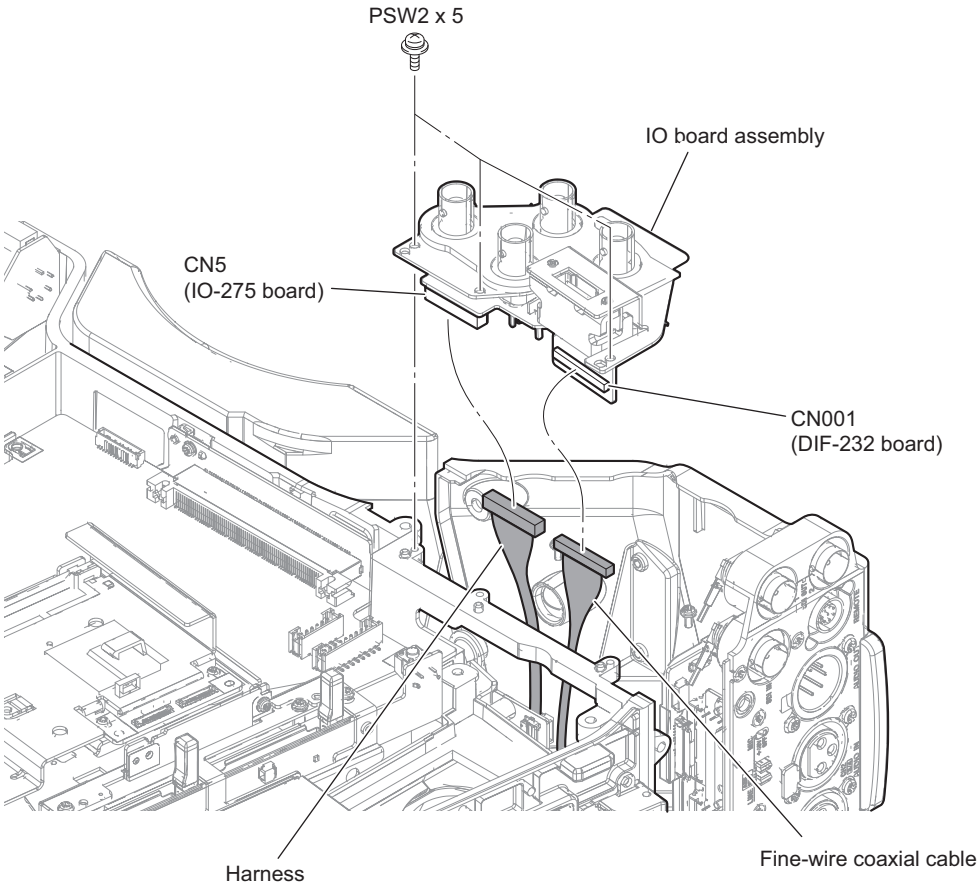
1. Remove the screw to detach the connector cap.



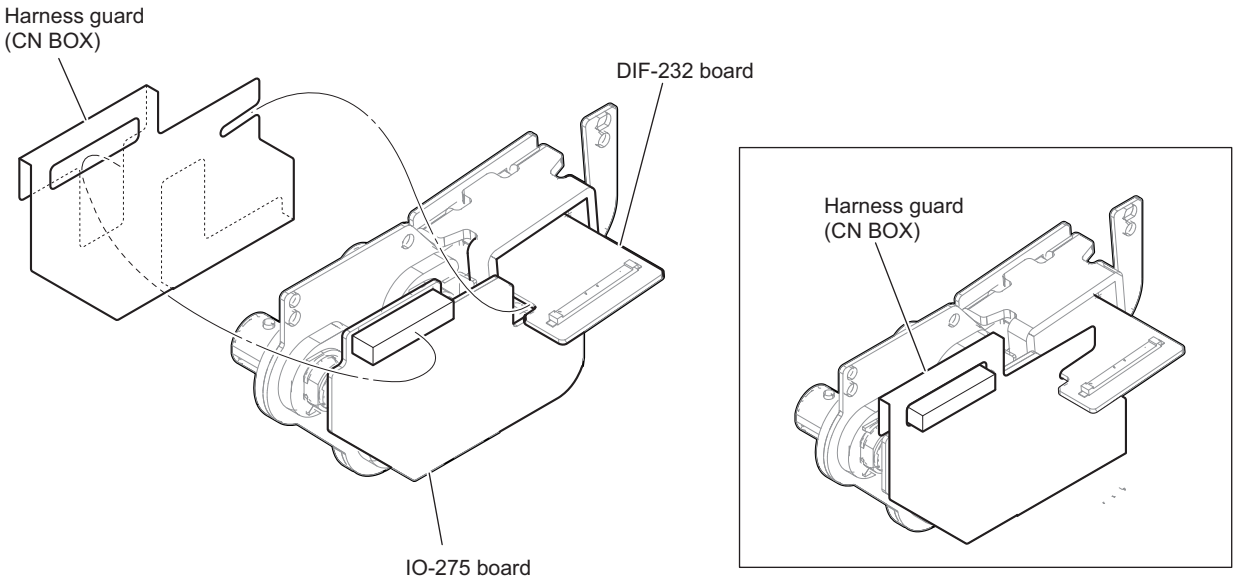
2. Remove the four screws, and draw the connector box assembly in the direction of the arrow.



3. Remove the IO board assembly.
   1) Remove the three screws, and pull up the IO board assembly.
   2) Disconnect the harness from the connector (CN5) on the IO-275 board.
   3) Disconnect the fine-wire coaxial cable from the connector (CN001) on the IO-275 board, and remove the IO board assembly.



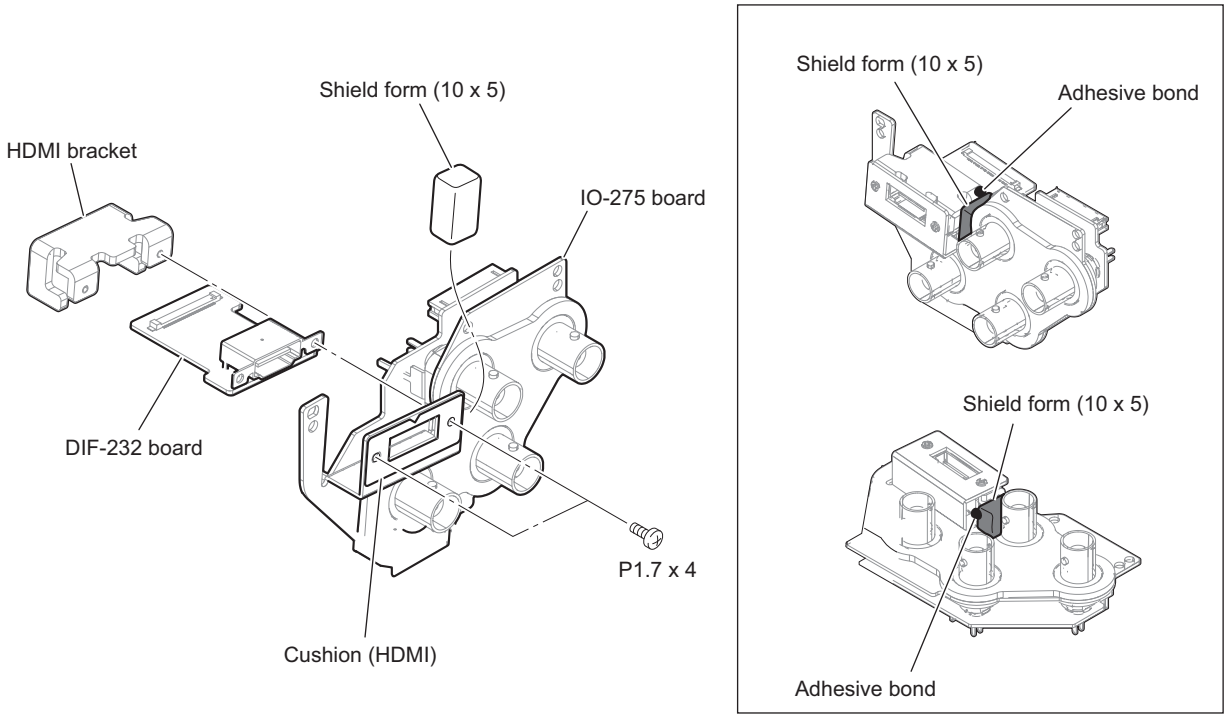
4. Remove the harness guard (CN BOX).



Note

When installing the harness guard (CN BOX), install it as shown in the figure.

5. Remove the IO-275 board and the DIF-232 board.
   1) Remove the two screws.
   2) Remove the DIF-232 board and the HDMI bracket from the IO-275 board.
   3) Remove the cushion (HDMI) and shield form (10x5) from the IO-275 board.



Note

When installing the shield form (10x5), apply the adhesive bond at the locations as shown in the figure.

6. Install the removed parts by reversing the steps of removal.

2-15. Connector Box Section

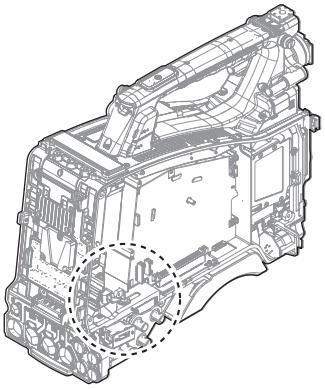
2-15-1. Connector Box Assembly

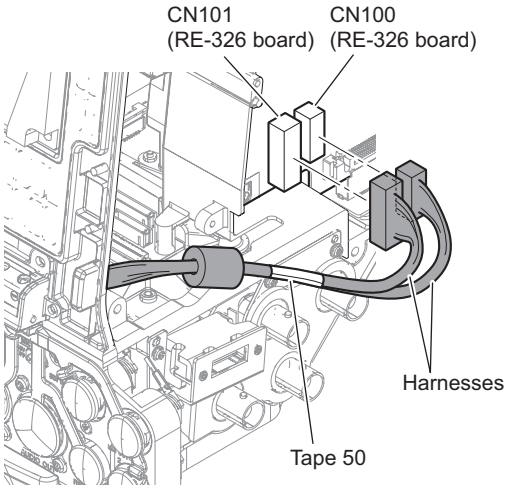
Preparation

1. Remove the outside panel assembly. (Refer to "2-2. Outside Panel Assembly")
2. Remove the bracket (WA) assembly.(Refer to "2-6. Wi-Fi Module/SD-58 Board")
3. Remove the inside panel assembly. (Refer to "2-3-1. Inside Panel Assembly")
4. Remove the DCP-67 board. (Refer to "2-9. DCP-67 Board")
5. Remove the HPR-53 board. (Refer to "2-10. HPR-53 Board")
6. Remove the DPR-362 board. (Refer to "2-11. DPR-362 Board")
7. Remove the EC-82 board. (Refer to "2-12. EC-82 Board")
8. Remove the duct box assembly . (Refer to "2-13. DC Fan (40 Square)")

Procedure

1. Disconnect the harnesses.
   1) Disconnect the two harnesses from the two connectors (CN100, CN101) on the RE-326 board.
   2) Remove the Tape 50.



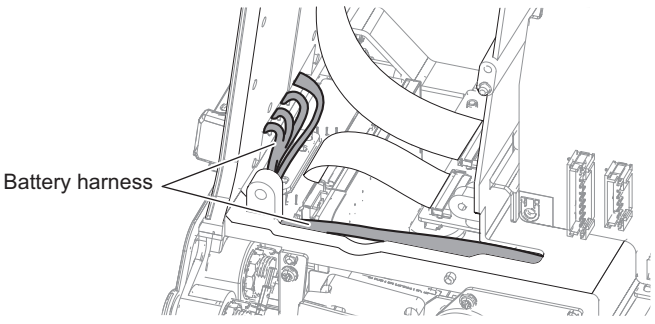


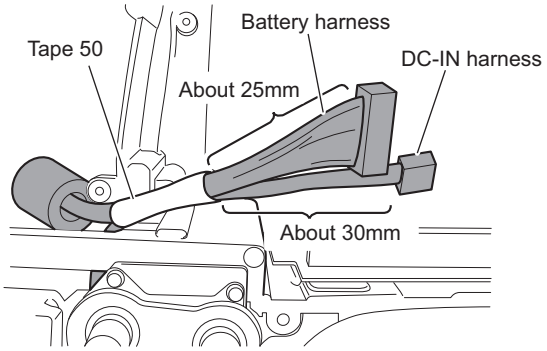
Note

When installing the tape 50, install it at the location as shown in the following figure.

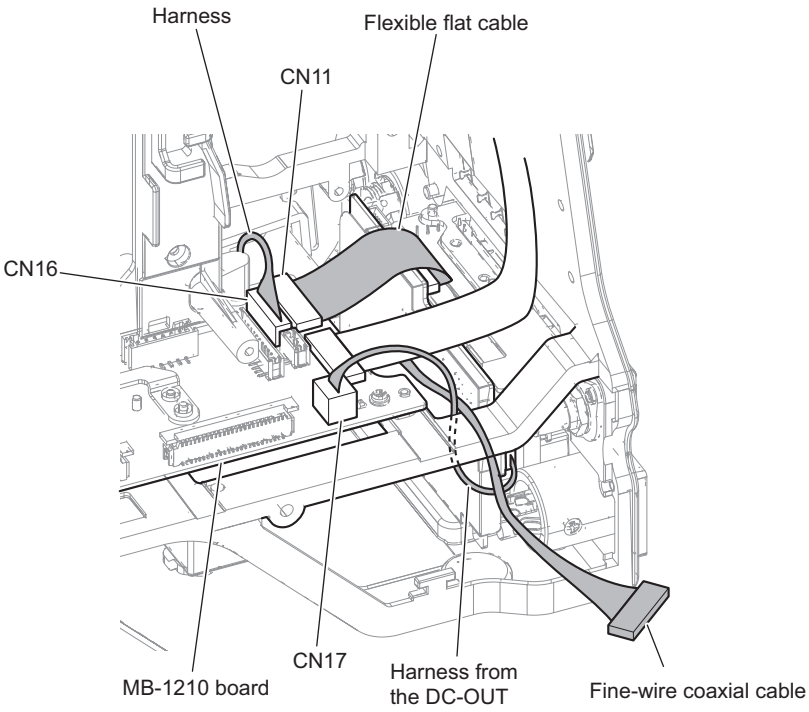
Note

When connecting the harnesses, arrange the harnesses as shown in the following figure.





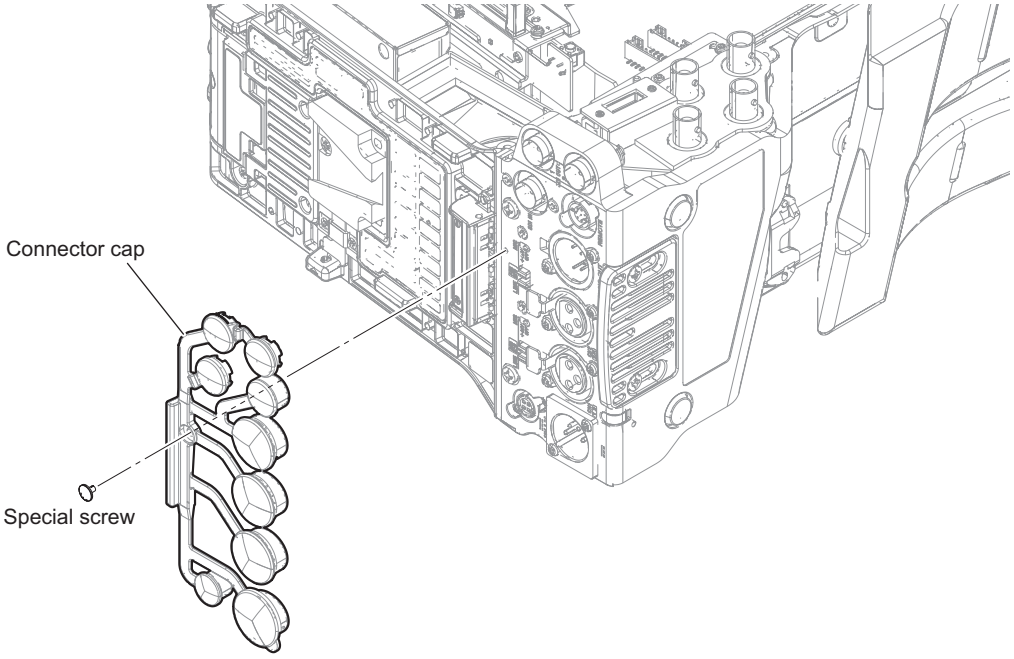
2. Disconnect the harnesses and the flexible flat cable.
   1) Disconnect the two harnesses from the two connectors (CN16, CN17) on the MB-1210 board.
   2) Disconnect the flexible flat cable from the connector (CN11) on the MB-1210 board.



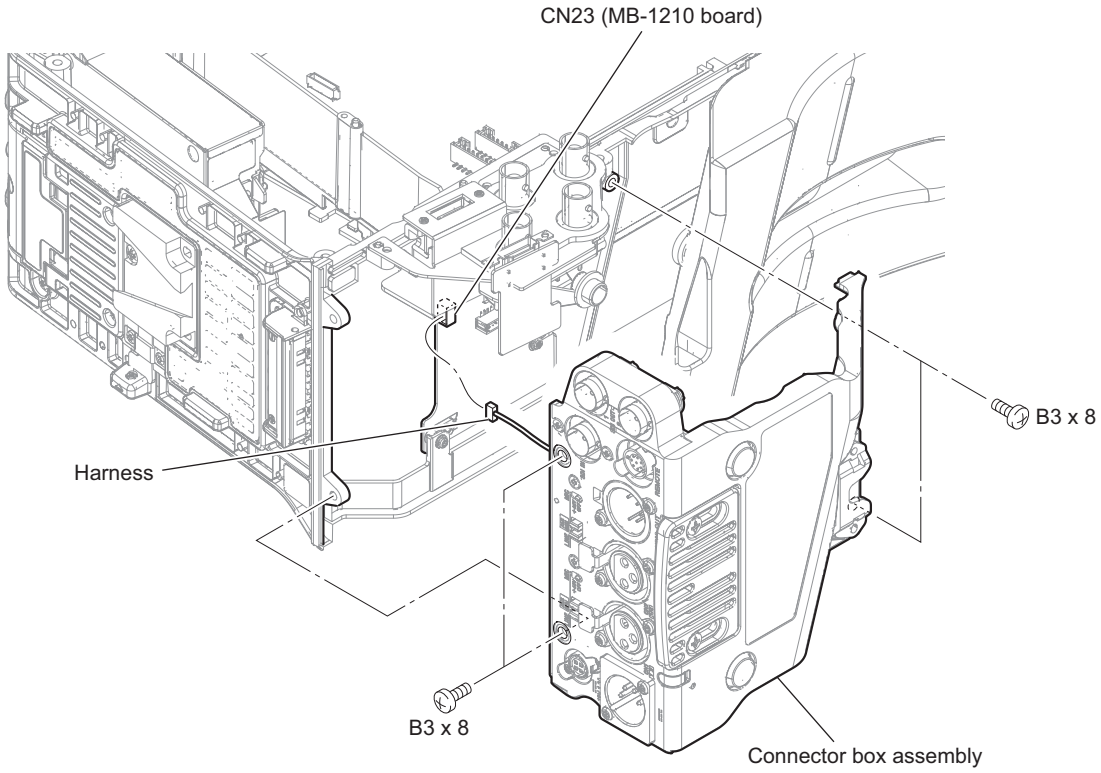
Note

When connecting the harnesses and flexible flat cable, arrange the fine-wire coaxial cable as shown in the figure.

3. Remove the screw to detach the connector cap.



4. Remove the connector box assembly.
   1) Remove the four screws, and draw the connector box assembly.
   2) Disconnect the harness from the connector (CN23) on the MB-1210 board, and remove the connector box assembly.



5. Install the removed parts by reversing the steps of removal.

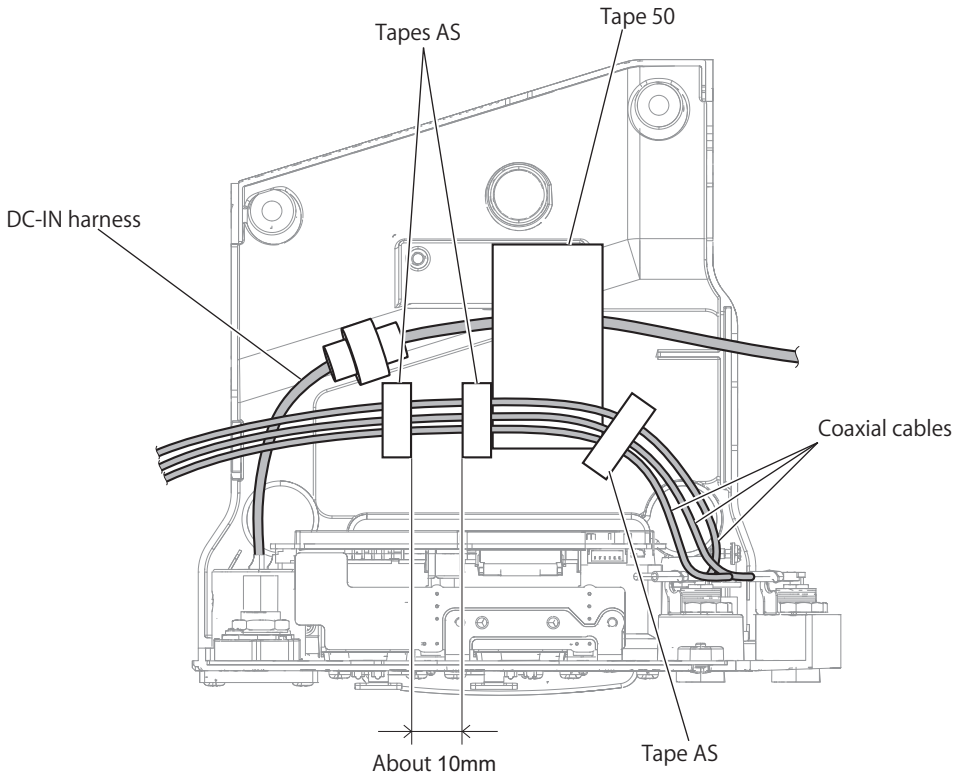
2-15-2. SW-1632 Board, AXM-52 Board

Preparation

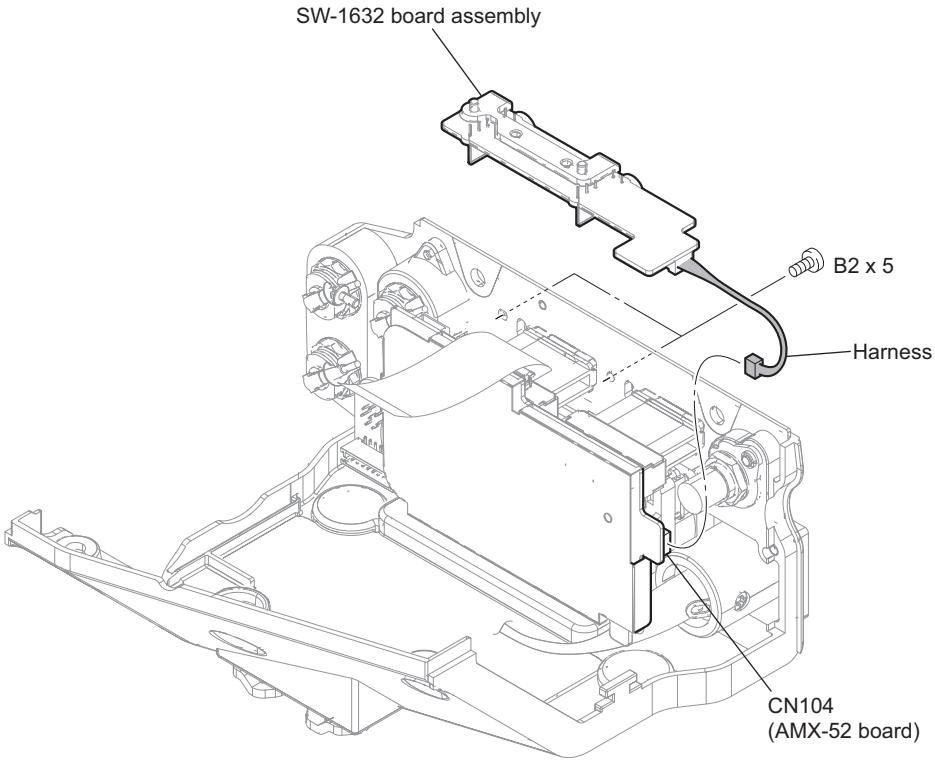
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the bracket (WA) assembly. (Refer to “2-6. Wi-Fi Module/SD-58 Board”)
3. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
4. Remove the DCP-67 board. (Refer to “2-9. DCP-67 Board”)
5. Remove the HPR-53 board. (Refer to “2-10. HPR-53 Board”)
6. Remove the DPR-362 board. (Refer to “2-11. DPR-362 Board”)
7. Remove the EC-82 board. (Refer to “2-12. EC-82 Board”)
8. Remove the duct box assembly . (Refer to “2-13. DC Fan (40 Square)”)
9. Remove the connector box assembly . (Refer to “2-15-1. Connector Box Assembly”)

Procedure

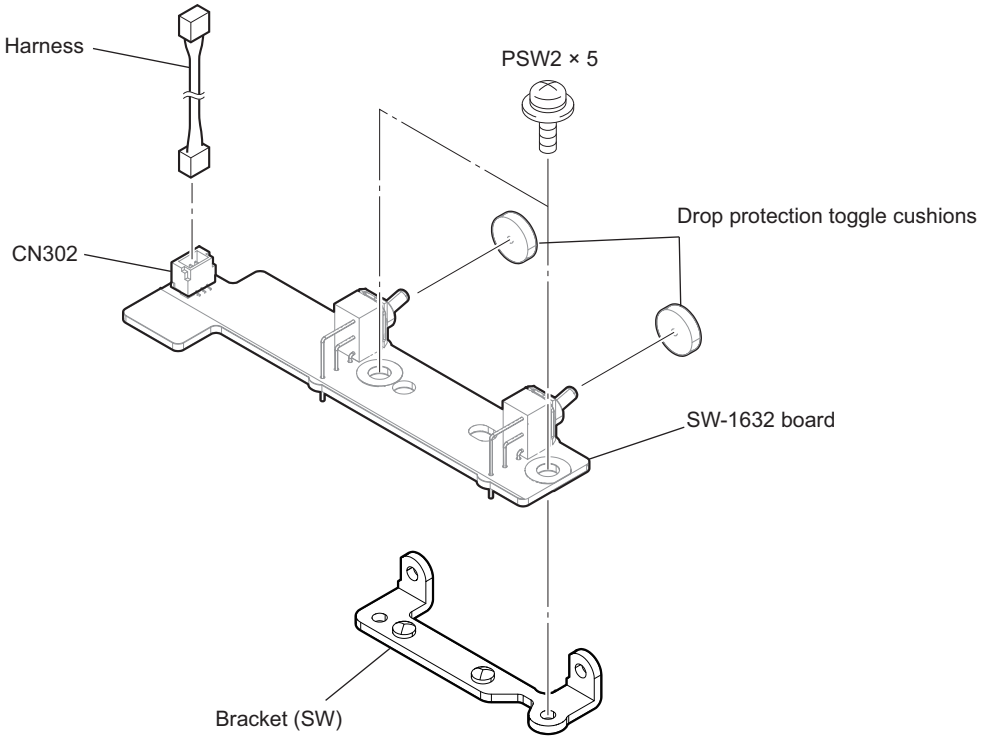
1. Remove the tape 50 and the three tapes AS, and release the DC-IN harness and the three coaxial cables.



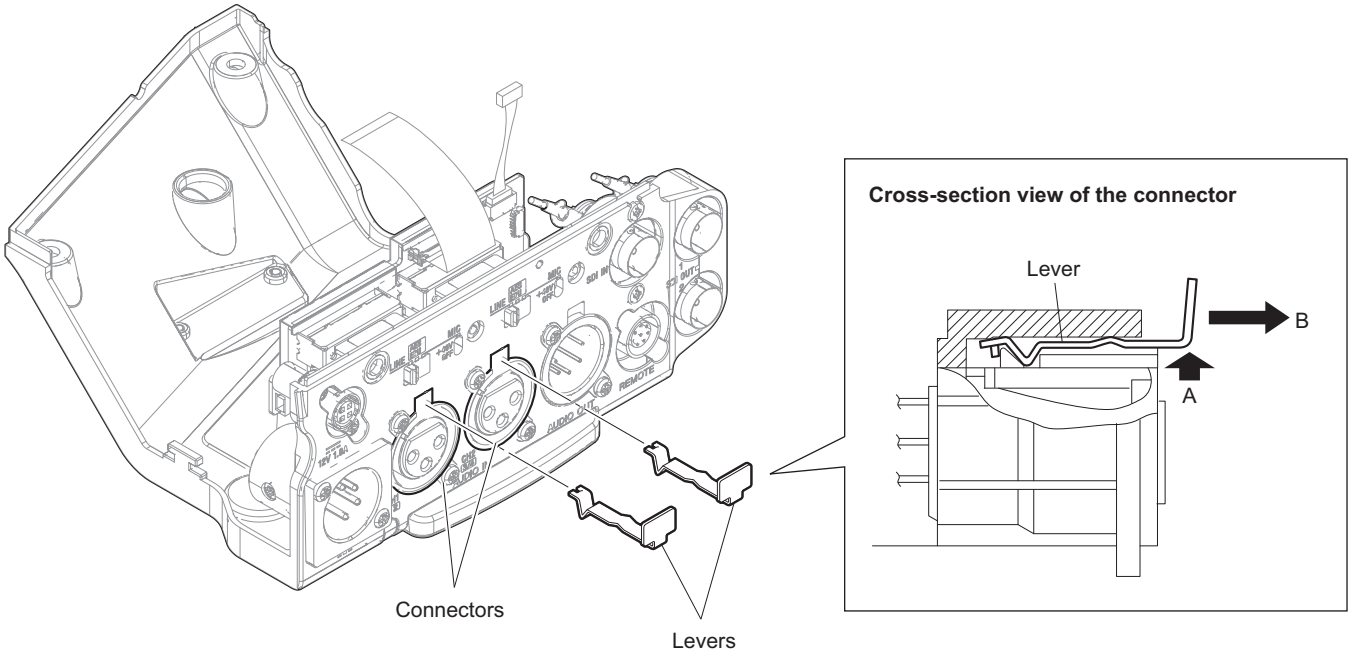
2. Remove the SW-1632 board assembly.
   1) Disconnect the harness from the connector (CN104) on the AXM-52 board.
   2) Remove the two screws to detach the SW-1632 board assembly.



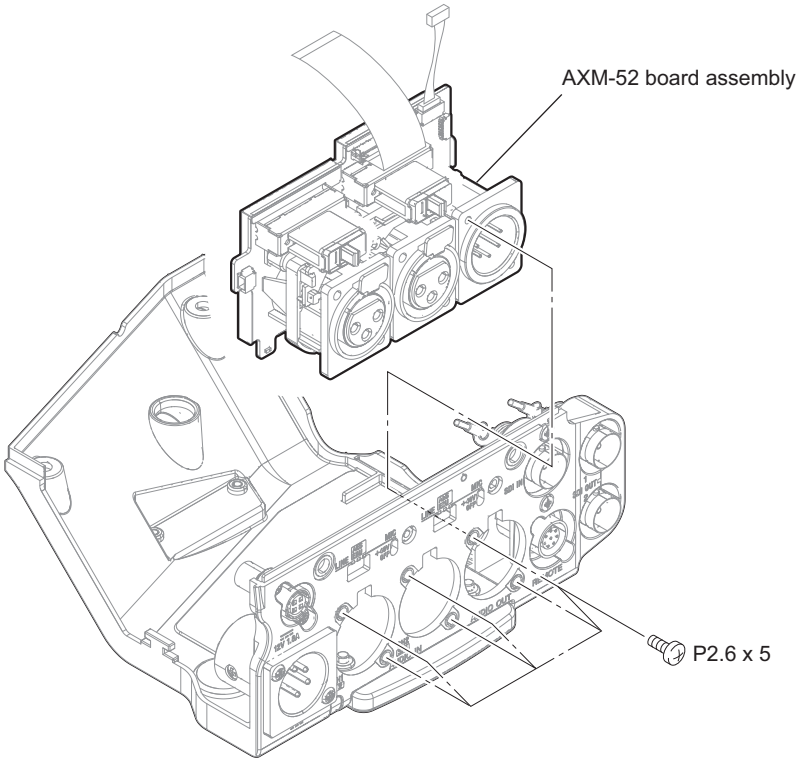
3. Remove the SW-1632 board.
   1) Disconnect the harness from the connector (CN302) on the SW-1632 board.
   2) Remove the two drop protection toggle cushions.
   3) Remove the two screws to detach the bracket (SW).



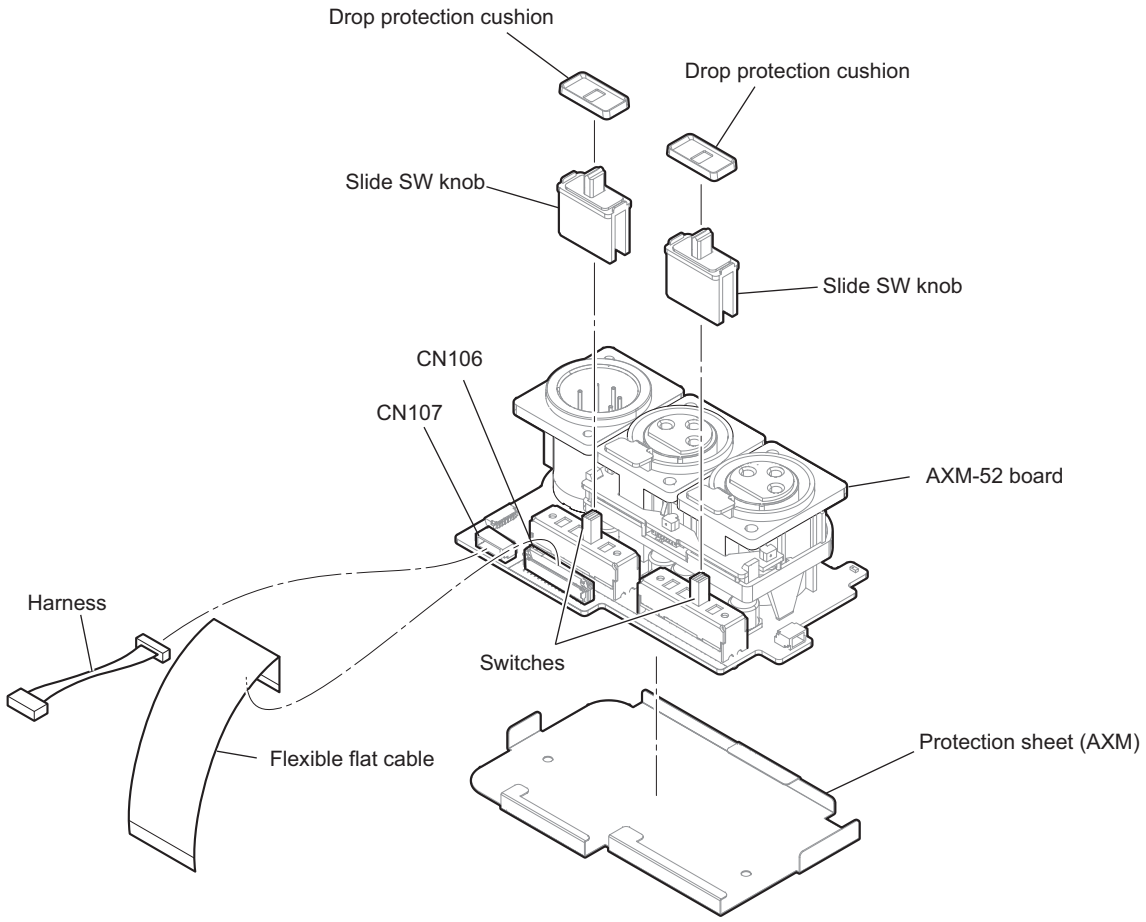
4. Strongly pull the lever in the direction of arrow B while pushing the it in the direction of arrow A, to remove the lever.



5. Remove the six screws to detach the AXM-52 board assembly.



6. Remove the AXM-52 board.
   1) Disconnect the flexible flat cable from the connector (CN106) on the AXM-52 board.
   2) Disconnect the harness from the connector (CN107) on the AXM-52 board.
   3) Remove the protection sheet (AXM).
   4) Remove the two drop protection cushions and the two slide SW knobs from the two switches on the AXM-52 board.



7. Install the removed parts by reversing the steps of removal.

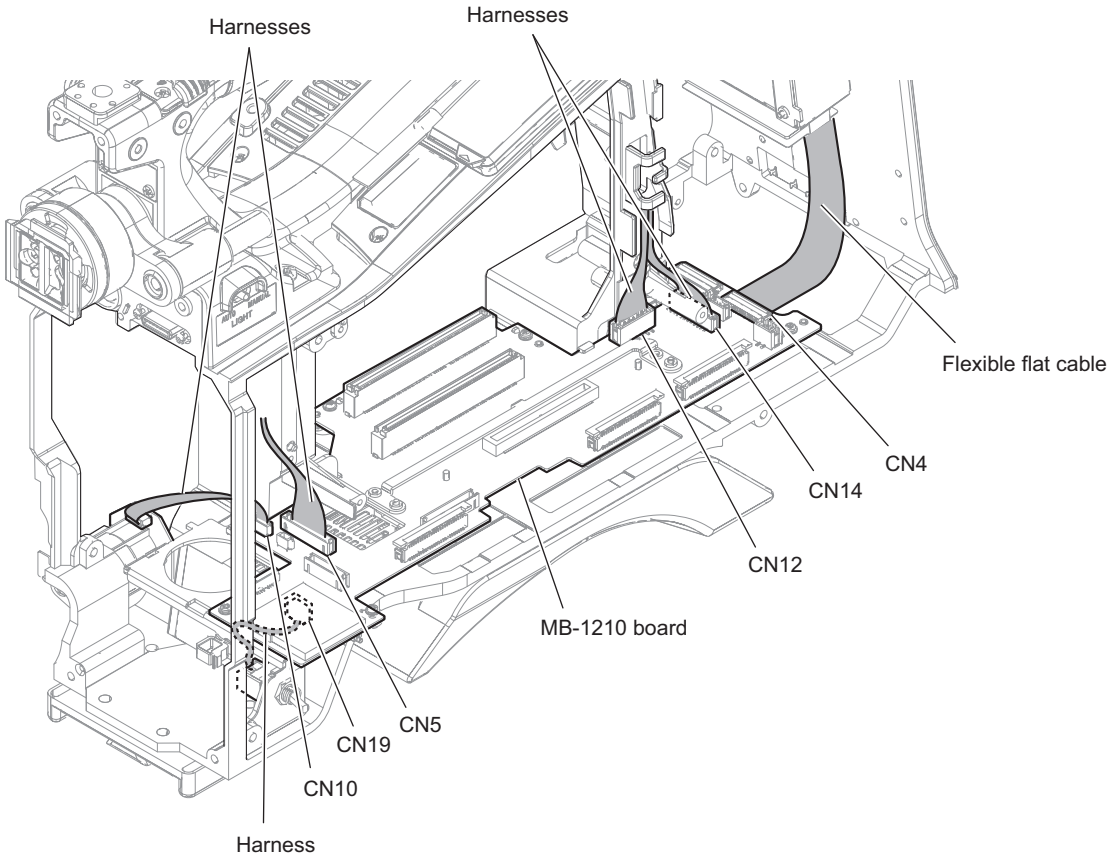
2-16. MB-1210 Board

Preparation

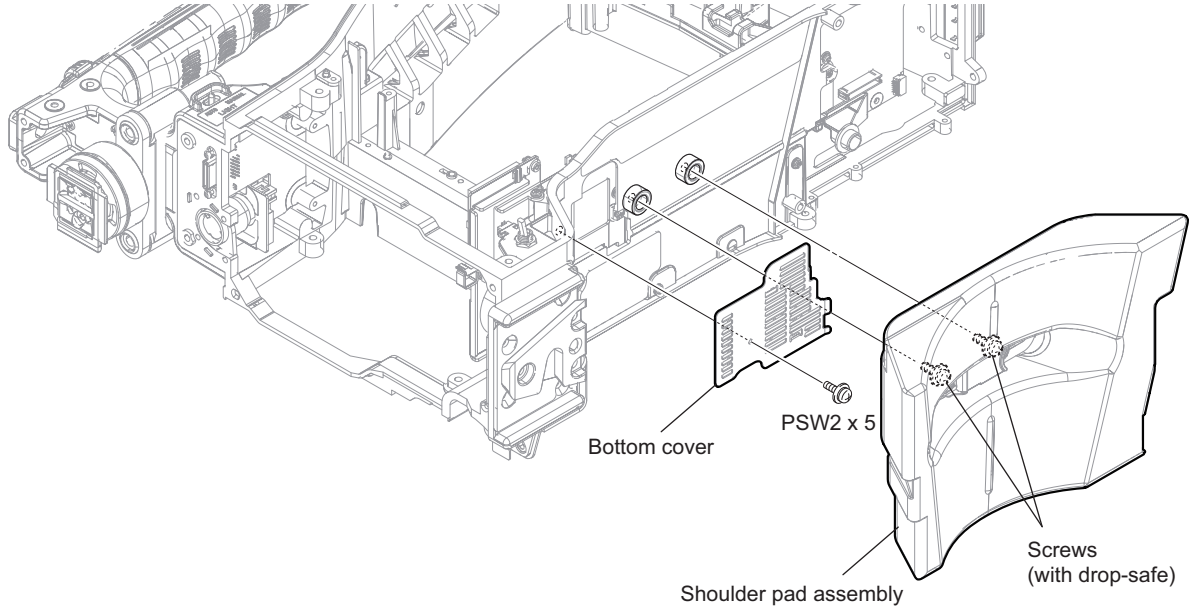
1. Remove the outside panel assembly. (Refer to "2-2. Outside Panel Assembly")
2. Remove the bracket (WA) assembly. (Refer to "2-6. Wi-Fi Module/SD-58 Board")
3. Remove the RE-326 board. (Refer to "2-7. RE-326 Board")
4. Remove the AU-360 board. (Refer to "2-8. AU-360 Board")
5. Remove the inside panel assembly. (Refer to "2-3-1. Inside Panel Assembly")
6. Remove the front assembly. (Refer to "2-4-1. Front Assembly")
7. Remove the DC fan (30 square). (Refer to "2-5. DC Fan (30 Square)")
8. Remove the DCP-67 board. (Refer to "2-9. DCP-67 Board")
9. Remove the HPR-53 board. (Refer to "2-10. HPR-53 Board")
10. Remove the DPR-362 board. (Refer to "2-11. DPR-362 Board")
11. Remove the EC-82 board. (Refer to "2-12. EC-82 Board")
12. Remove the duct box assembly. (Refer to "2-13. DC Fan (40 Square)")
13. Remove the IO board assembly . (Refer to "2-14. IO-275 Board, DIF-232 Board")
14. Remove the connector box assembly. (Refer to "2-15-1. Connector Box Assembly")

Procedure

1. Disconnect the harnesses and flexible flat cable.
   1) Disconnect the five harnesses from the five connectors (CN5, CN10, CN12, CN14, CN19) on the MB-1210 board.
   2) Disconnect the flexible flat cable from the connector (CN4) on the MB-1210 board.

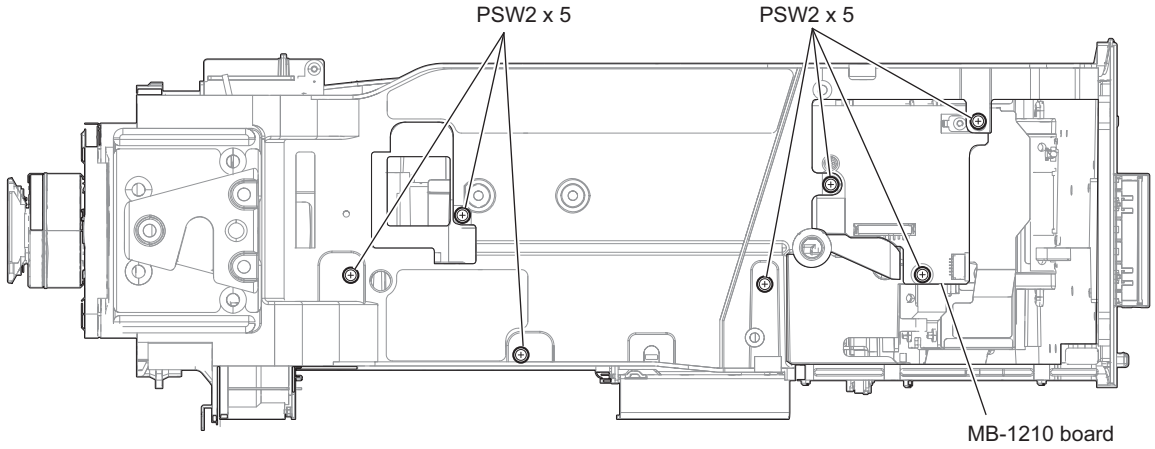


2. Remove the shoulder pad assembly and the bottom cover.
   1) Loosen the two screws (with drop-safe) and remove the shoulder pad assembly.
   2) Remove the screw to detach the bottom cover.

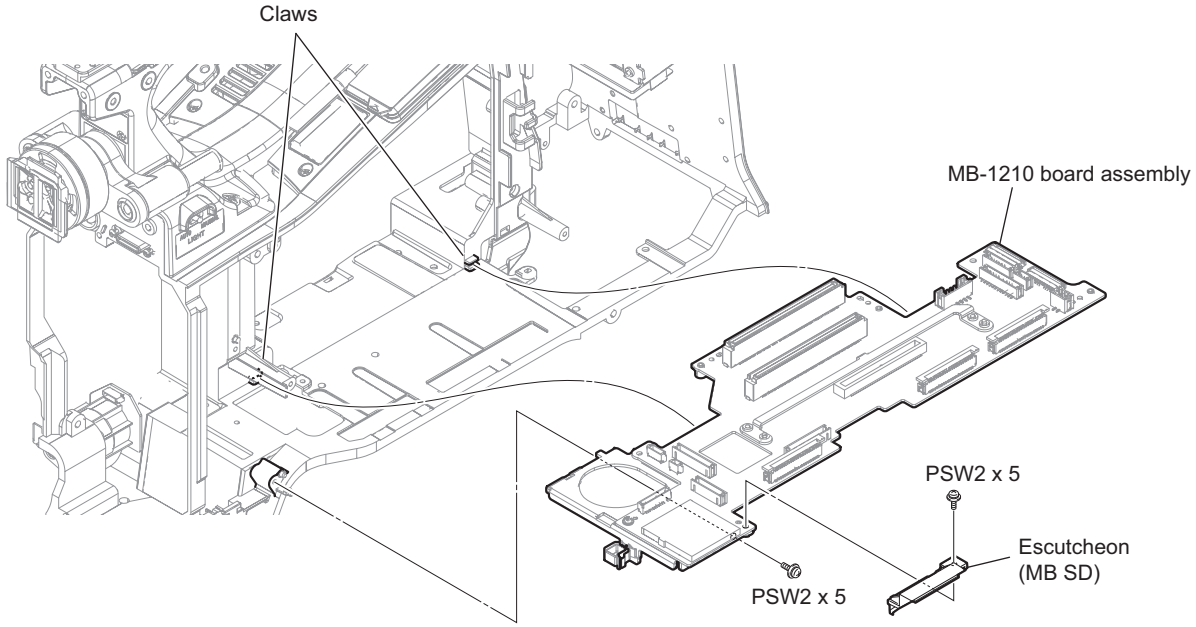


3. Remove the seven screws.

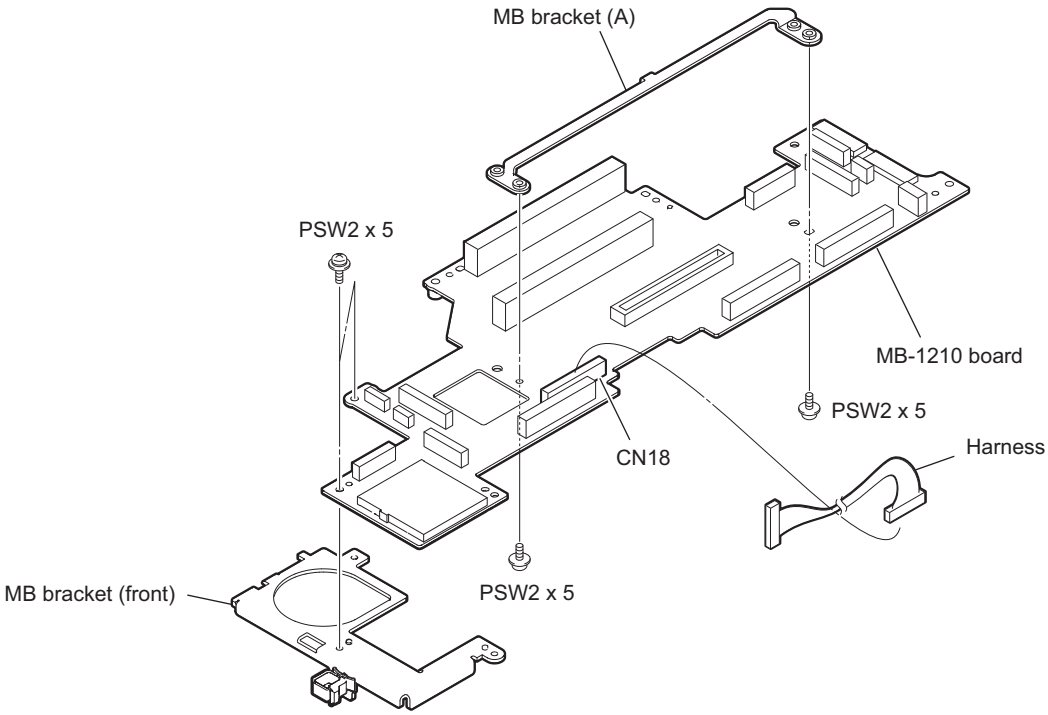
Bottom view



4. Remove the MB-1210 board assembly.
   1) Remove the screw to detach the escutcheon (MB SD).
   2) Remove the screw.
   3) Release the two claws to detach the MB-1210 board assembly.



5. Remove the MB-1210 board.
   1) Disconnect the harness from the connector (CN18) on the MB-1210 board.
   2) Remove the two screws to detach the MB bracket (front).
   3) Remove the two screws to detach the MB bracket (A).

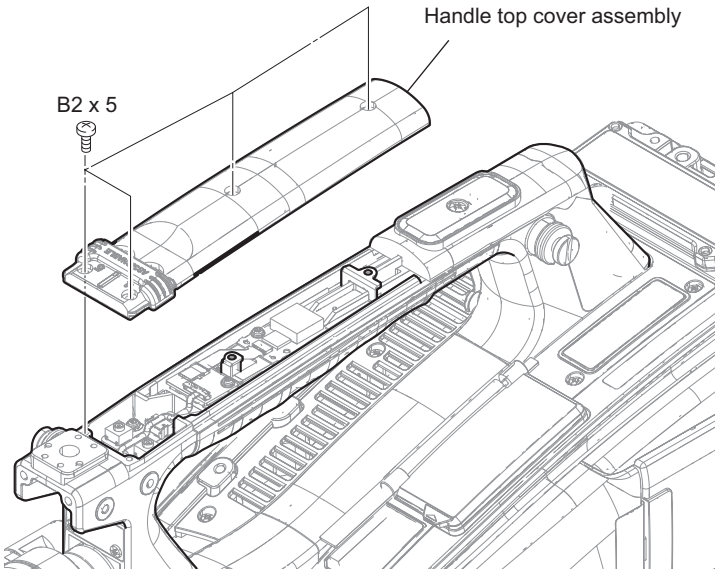


6. Install the removed parts by reversing the steps of removal.

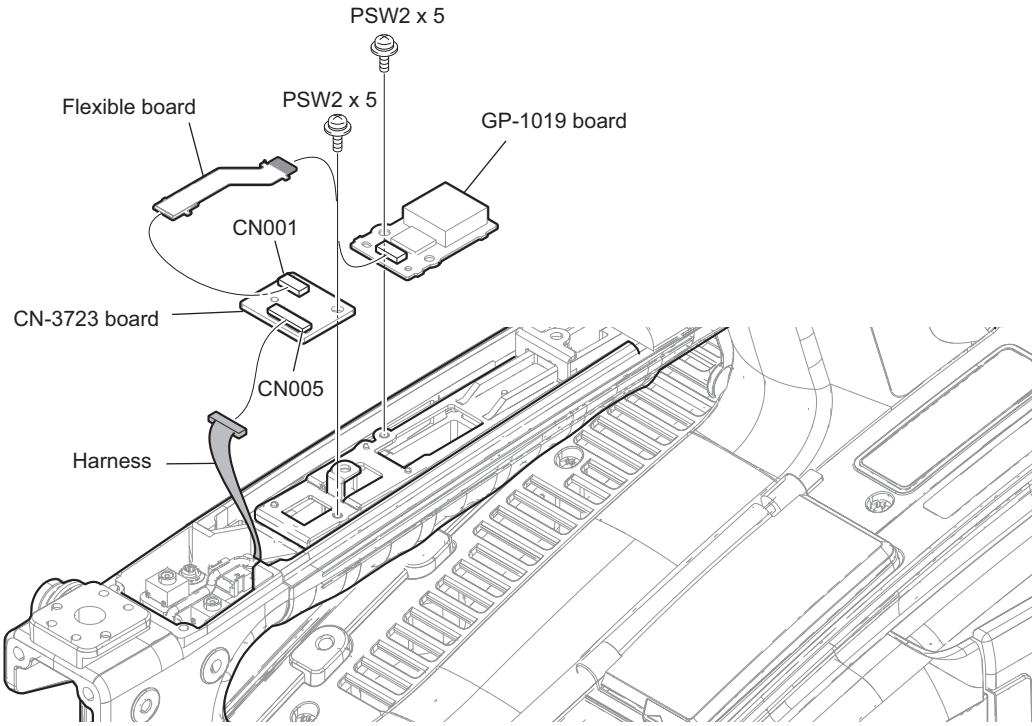
2-17. GP-1019 Board, CN-3723 Board

Procedure

1. Remove the four screws to detach the handle top cover assembly.



2. Remove the GP-1019 board and the CN-3723 board.
   1) Disconnect the flexible board from the connector on the GP-1019 board.
   2) Remove the screw to detach the GP-1019 board.
   3) Disconnect the harness from the connector (CN005) on the CN-3723 board.
   4) Disconnect the flexible board the connector (CN001) on the CN-3723 board.
   5) Remove the screw to detach the CN-3723 board.

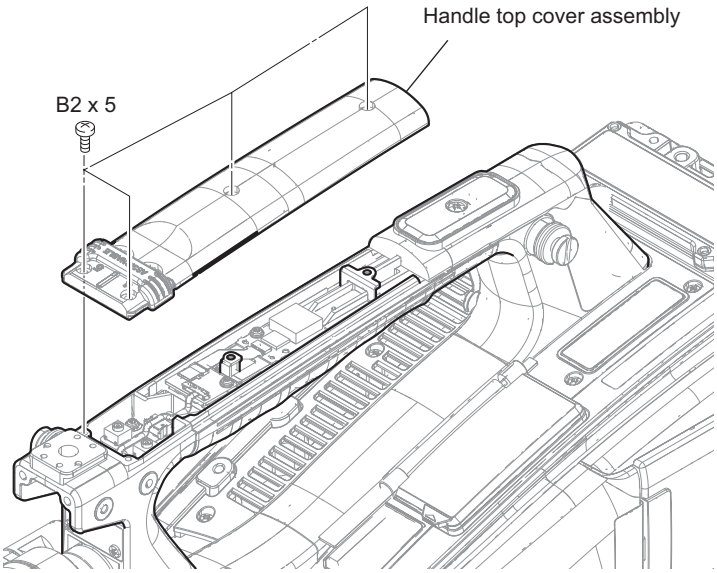


3. Install the removed parts by reversing the steps of removal.

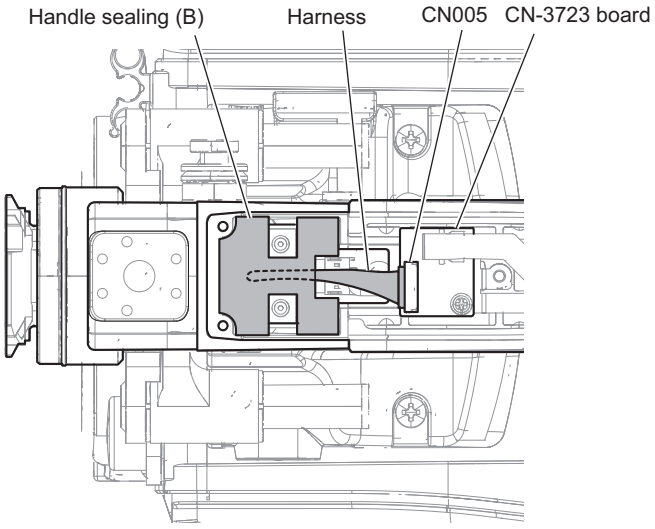
2-18. SW-1652 Board

Procedure

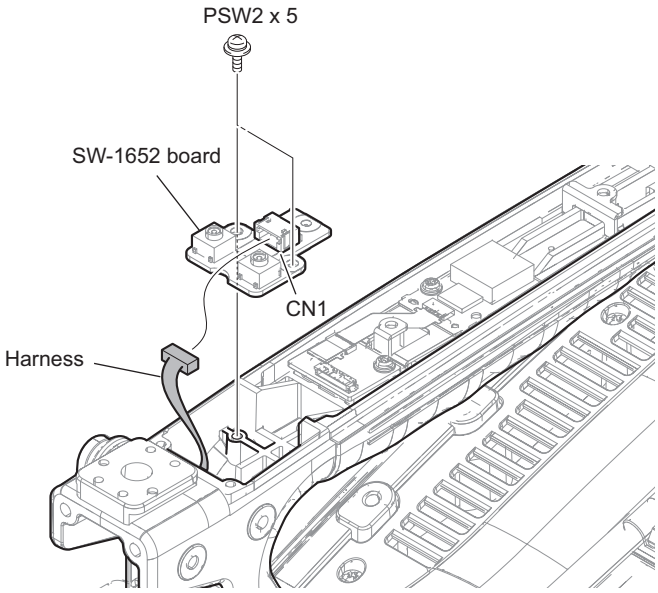
1. Remove the four screws to detach the handle top cover assembly.



2. Remove the handle sealing (B), and disconnect the harness.
   1) Remove the handle sealing (B).
   2) Disconnect the harness from the connector (CN005) on the CN-3723 board.



3. Remove the SE-1652 board.
   1) Disconnect the harness from the connector (CN1) on the SE-1652 board.
   2) Remove the two screws to detach the SE-1652 board.

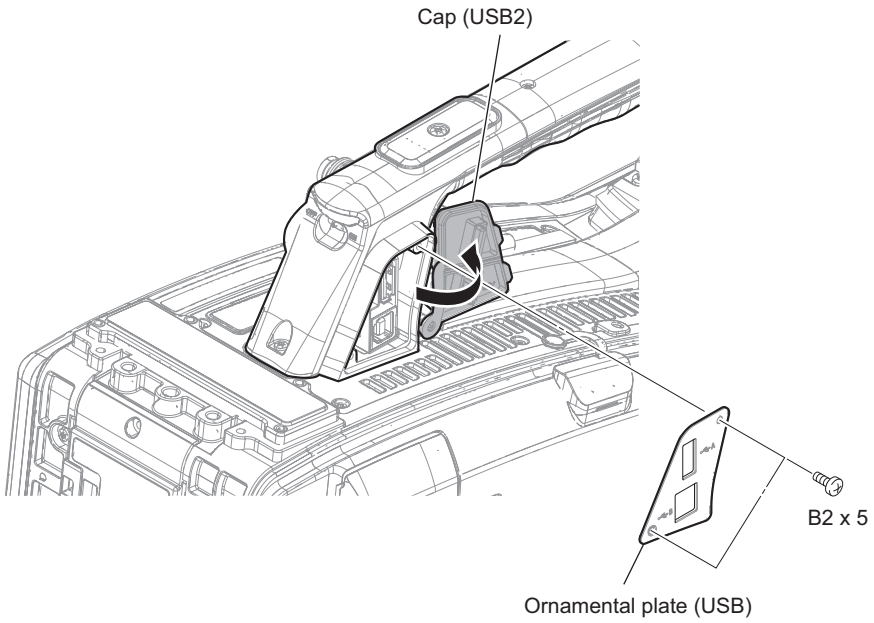


4. Install the removed parts by reversing the steps of removal.

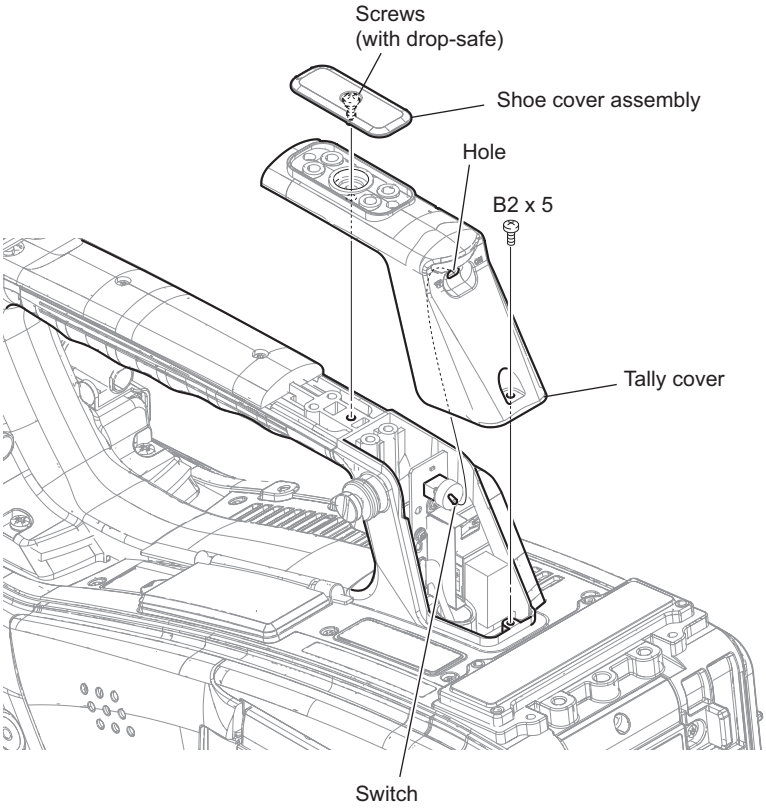
2-19. LED-529 Board

Procedure

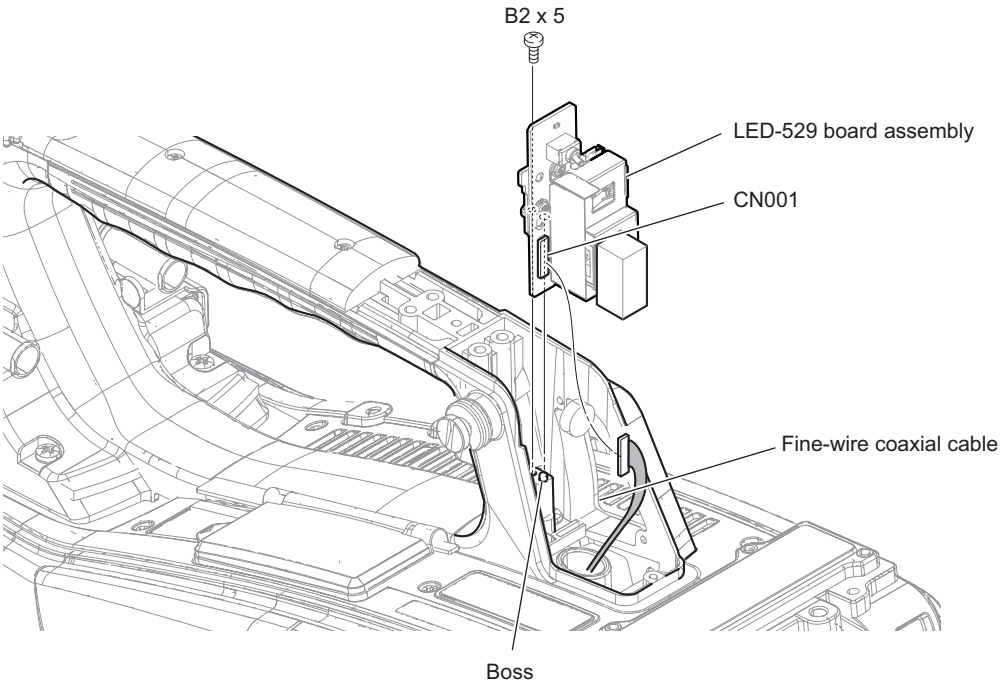
1. Remove the ornamental plate (USB).
   1) Open the cap (USB2).
   2) Remove the two screws to detach the ornamental plate (USB).



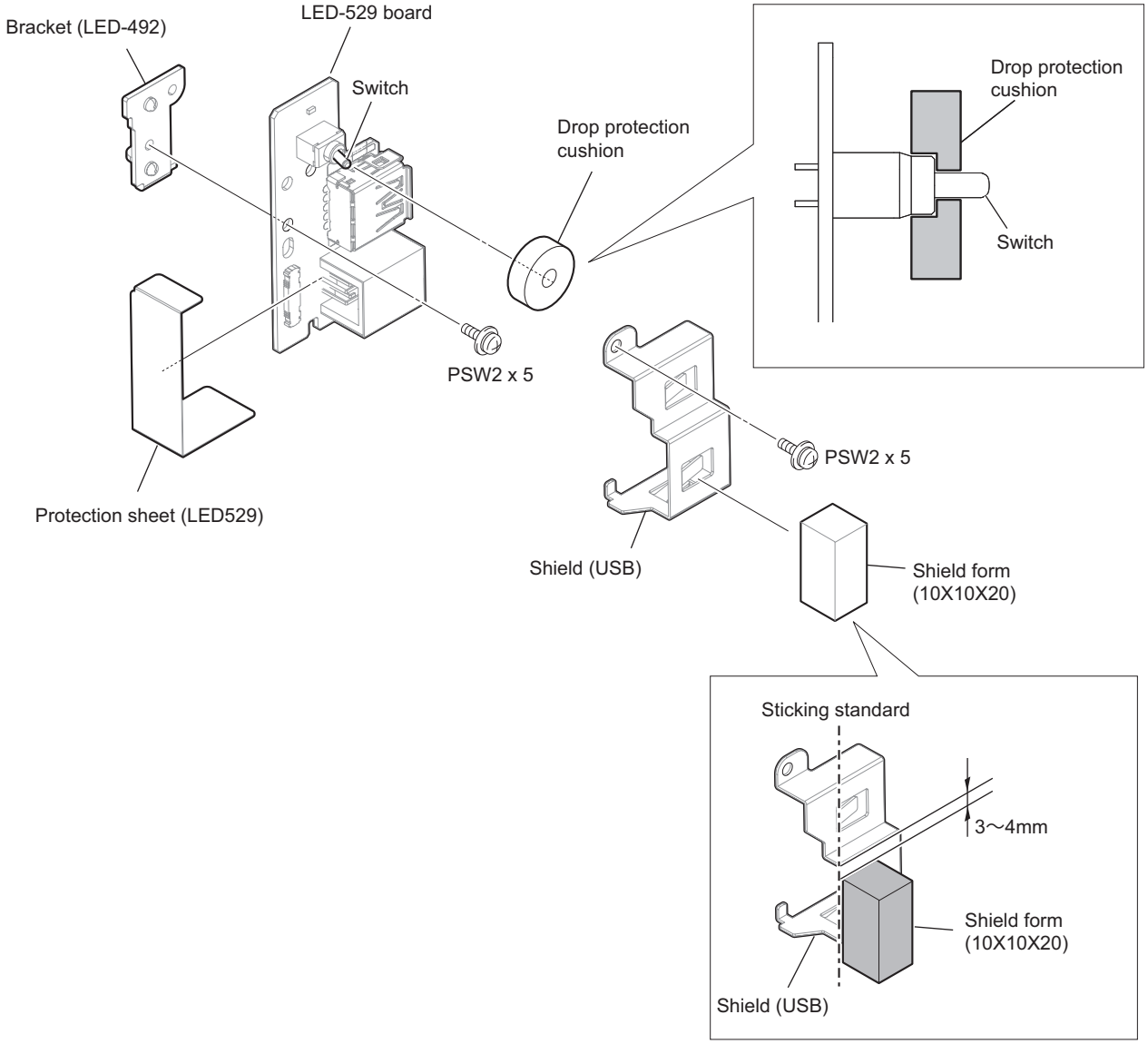
2. Remove the shoe cover assembly and tally cover.
   1) Loosen the screw (with drop-safe) and remove the shoe cover assembly.
   2) Remove the screw.
   3) Remove the tally cover, while avoiding the switch.



3. Remove the LED-529 board assembly.
   1) Remove the screw.
   2) Release the boss, and pull up the LED-529 board assembly.
   3) Disconnect the fine-wire coaxial cable from the connector (CN001) on the LED-529 board, and remove the LED-529 board assembly.



4. Remove the LED-529 board.
   1) Remove the shield form (10X10X20).
   2) Remove the protection sheet (LED529).
   3) Remove the drop protection cushion from the switch on the LED-529 board.
   4) Remove the screw to detach the shield (USB).
   5) Remove the screw to detach the bracket (LED-492).



Note

Install the drop protection cushion to the toggle switch as shown in the figure.

Note

Install the shield form (10X10X20) to the shield (USB) as shown in the figure.

5. Install the removed parts by reversing the steps of removal.

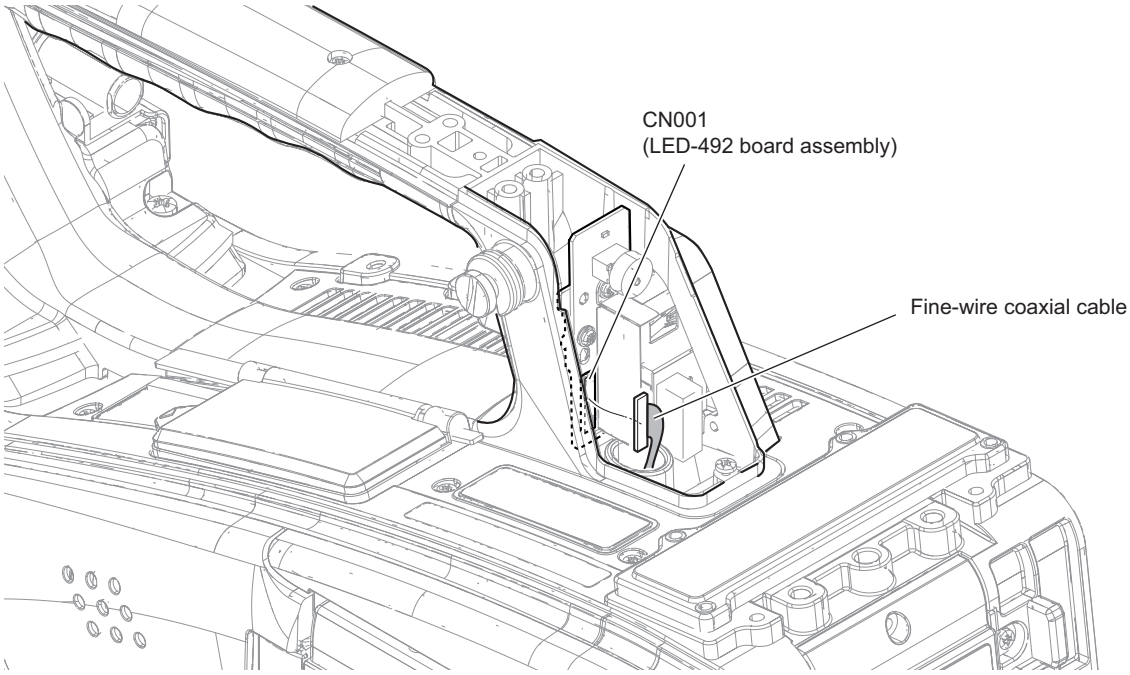
2-20. Handle Assembly

Preparation

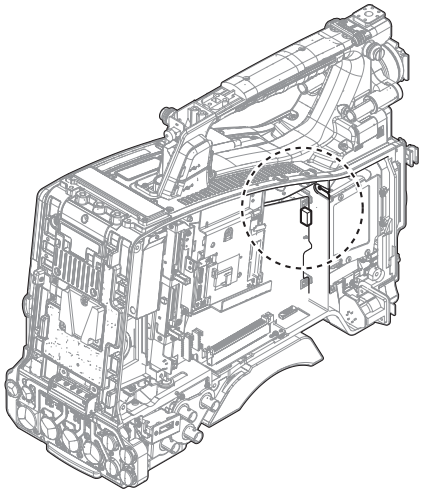
1. Remove the outside panel assembly. (Refer to "2-2. Outside Panel Assembly")
2. Remove the tally cover. (Refer to "2-19. LED-529 Board")

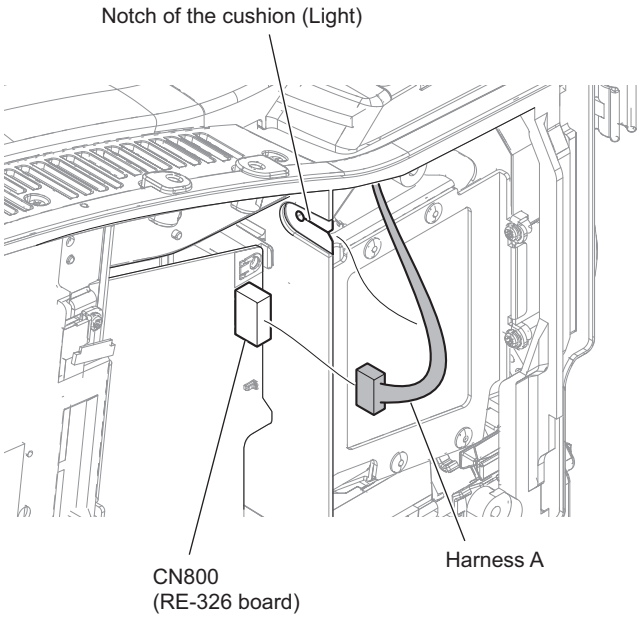
Procedure

1. Disconnect the fine-wire coaxial cable from the connector (CN001) on the LED-492 board.

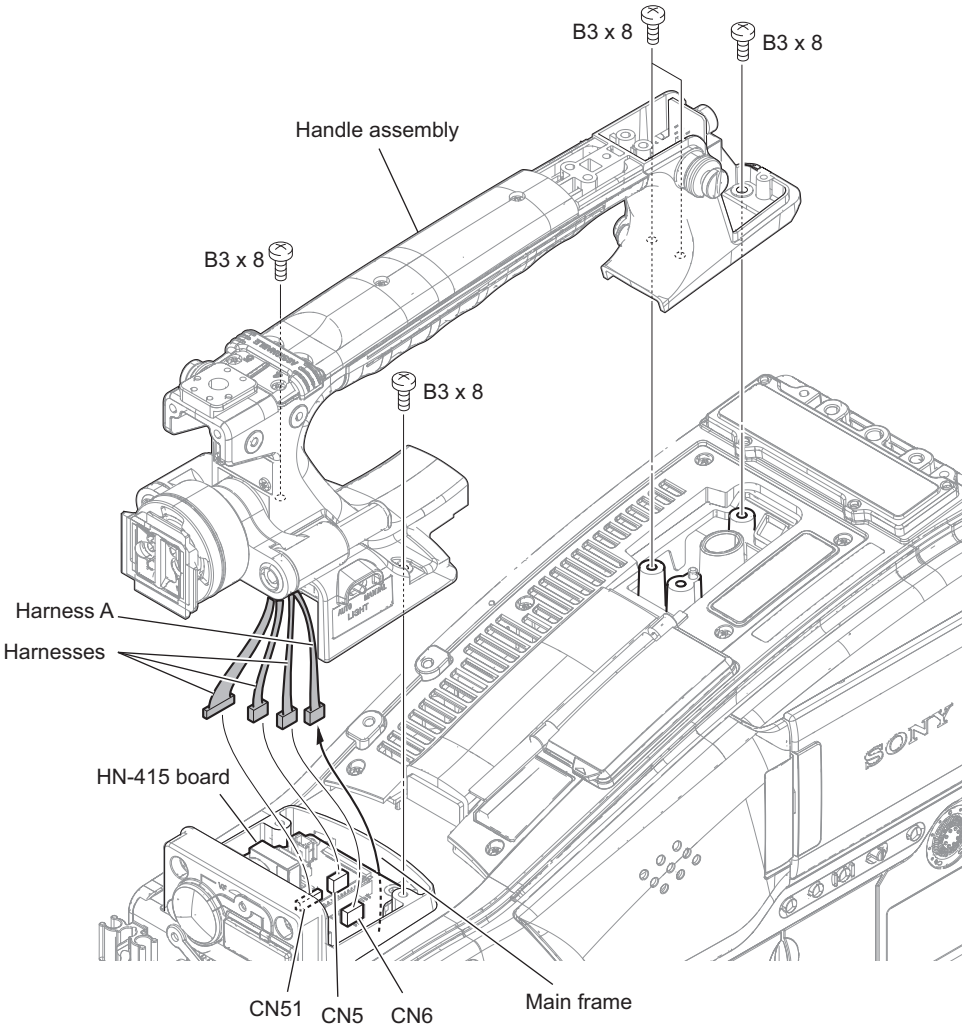


2. Disconnect the harness A.
   1) Disconnect the harness A from the connector (CN800) on the RE-326 board.
   2) Release the harness A from the notch of the cushion (Light).





3. Remove the handle assembly.
   1) Remove the five screws.
   2) Pull up the handle assembly.
   3) Disconnect the three harness from the three connectors (CN5, CN6, CN51) on the HN-415 board.
   4) Draw out the harness A from space between the HN-415 board and the main frame, and remove the handle assembly.



4. Install the removed parts by reversing the steps of removal.

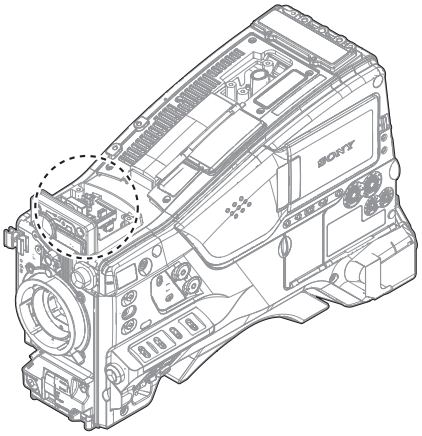
2-21. HN-415 Board

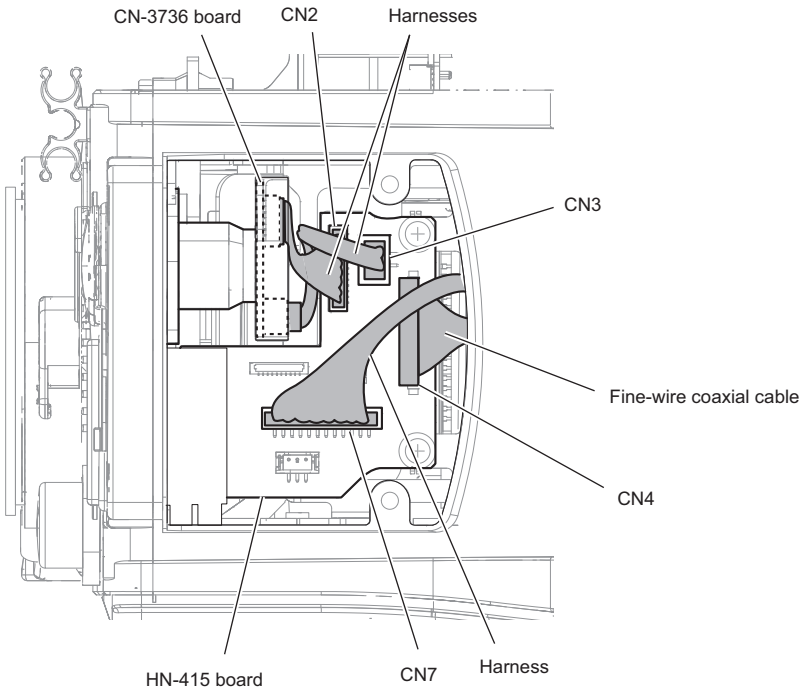
Preparation

1. Remove the outside panel assembly. (Refer to "2-2. Outside Panel Assembly")
2. Remove the tally cover. (Refer to "2-19. LED-529 Board")
3. Remove the handle assembly. (Refer to "2-20. Handle Assembly")

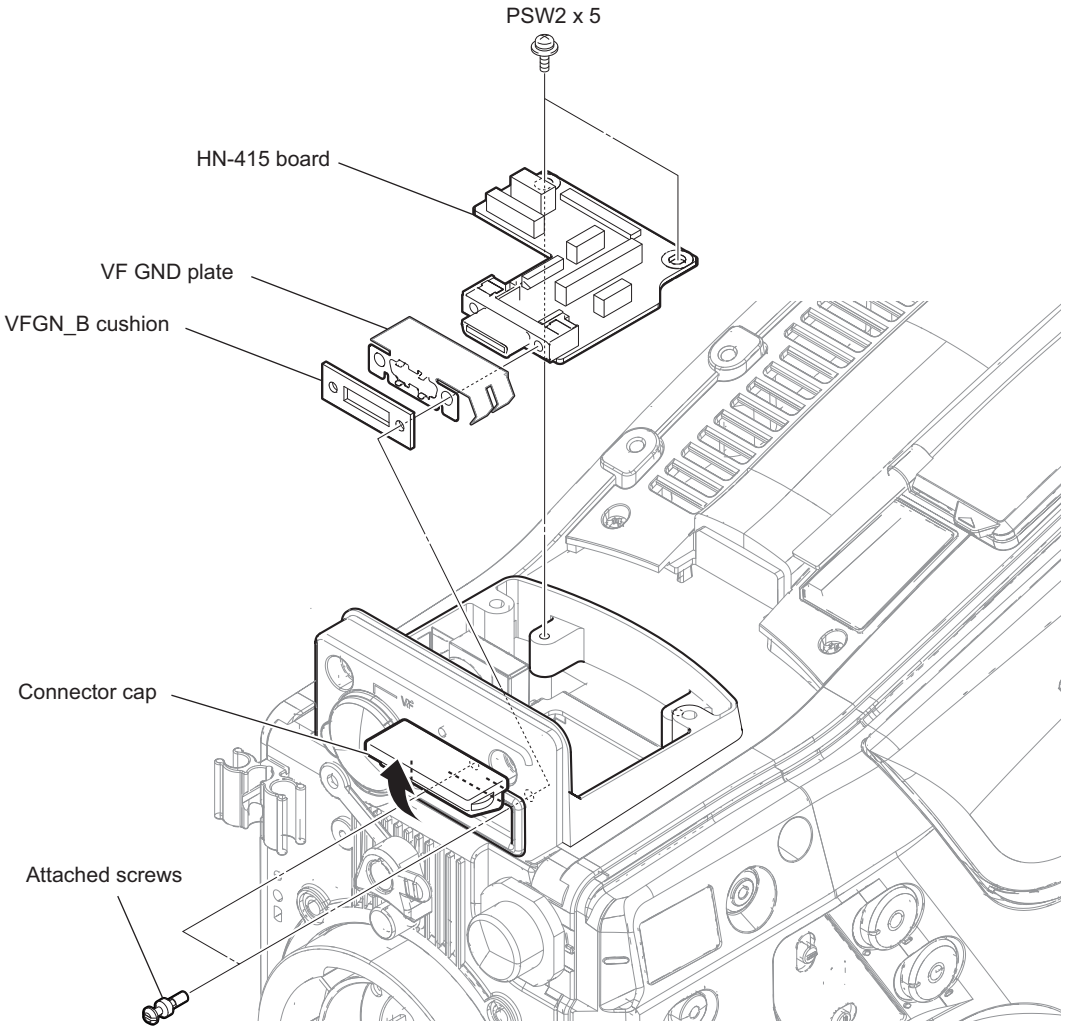
Procedure

1. Disconnect the harnesses and the fine-wire coaxial cable.
   1) Disconnect the three harnesses from the three connectors (CN2, CN3, CN7) on the HN-415 board.
   2) Disconnect the fine-wire coaxial cable from the connector (CN4) on the HN-415 board.





2. Remove the HN-415 board.
   1) Open the connector cap, and remove the two attached screws.
   2) Remove the two screws (PSW2 x 5) to detach the HN-415 board, the VF GND plate and the VFGN_B cushion.
   3) Remove the VF GND plate and the VFGN_B cushion from the HN-415 board.



3. Install the removed parts by reversing the steps of removal.

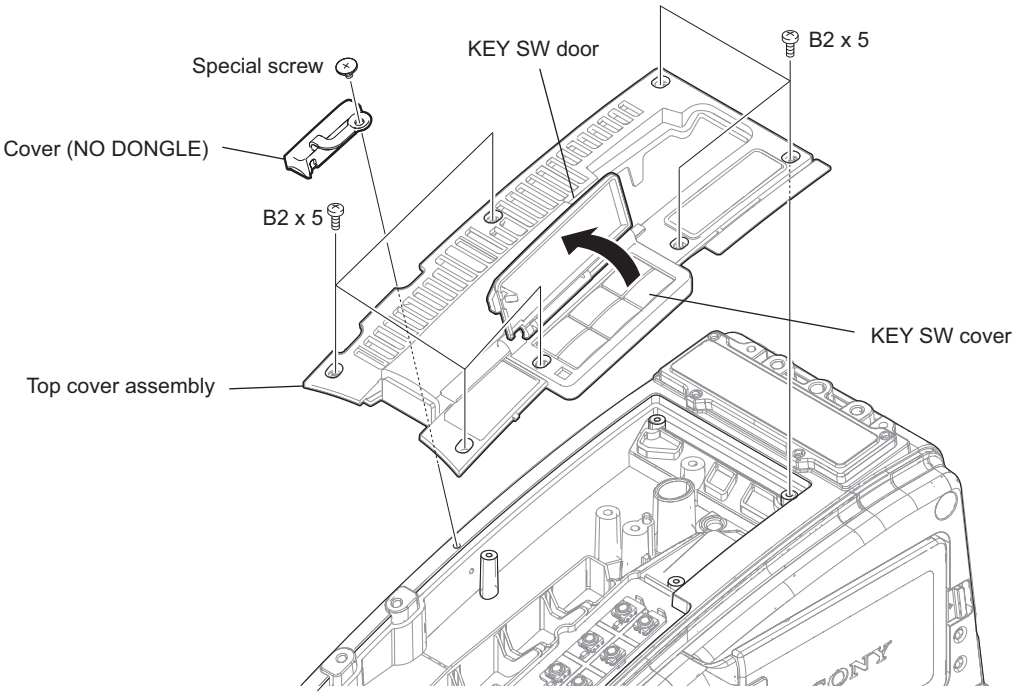
2-22. KY-736 Board

Preparation

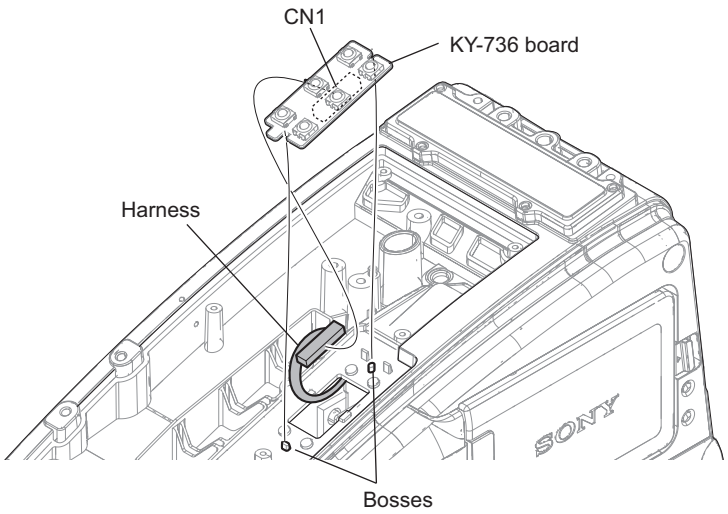
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the tally cover. (Refer to “2-19. LED-529 Board”)
3. Remove the handle assembly. (Refer to “2-20. Handle Assembly”)

Procedure

1. Remove the top cover assembly.
   1) Remove the special screw to detach the cover (NO DONGLE).
   2) Open the KEY SW door.
   3) Remove the seven screws to detach the top cover assembly and the KEY SW cover.



2. Remove the KY-736 board.
   1) Pull up the KY-736 board from the two bosses.
   2) Disconnect the harness from the connector (CN1) on the KY-736 board, and remove the KY-736 board.



3. Install the removed parts by reversing the steps of removal.

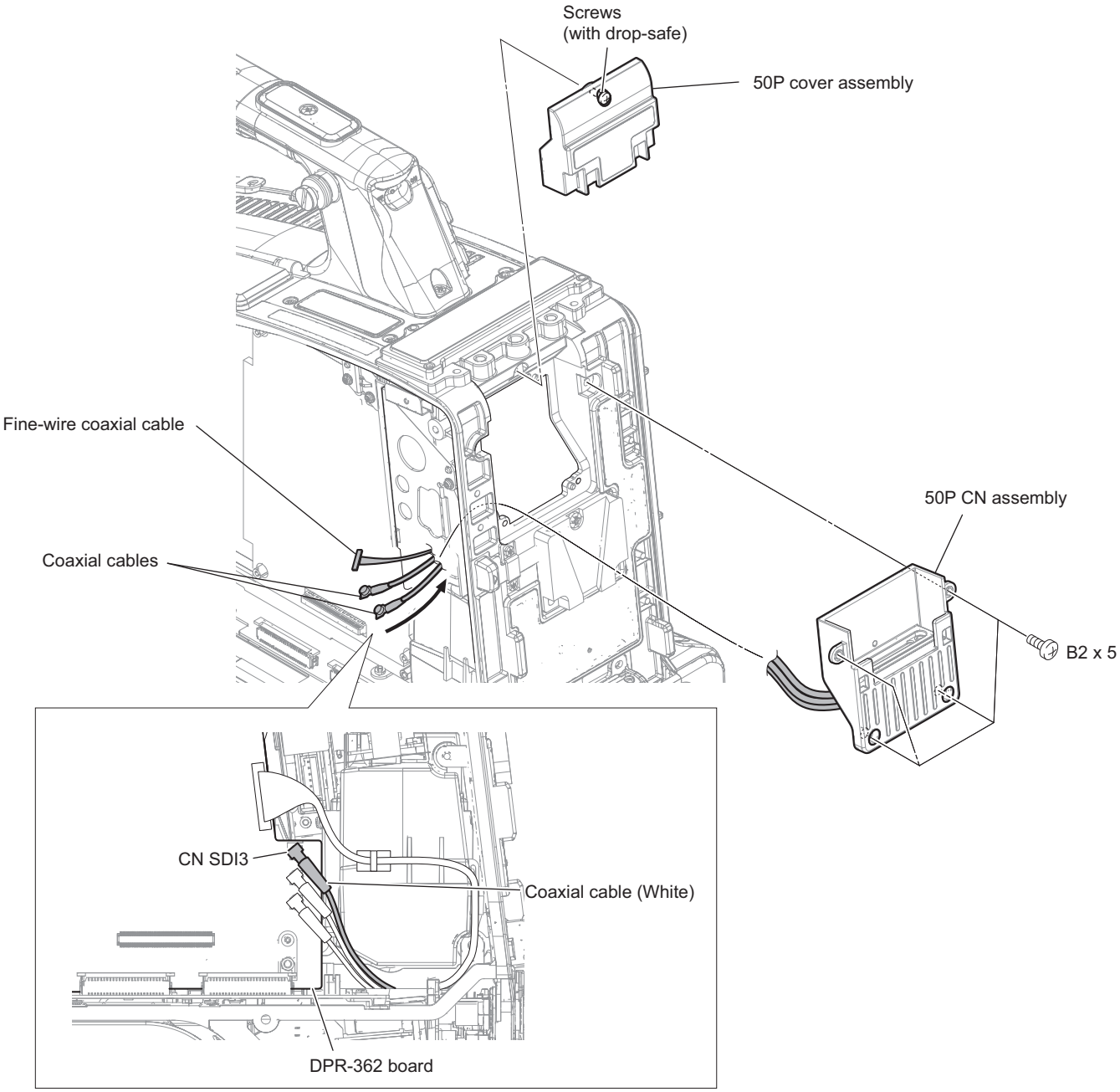
2-23. CI-50 Board

Preparation

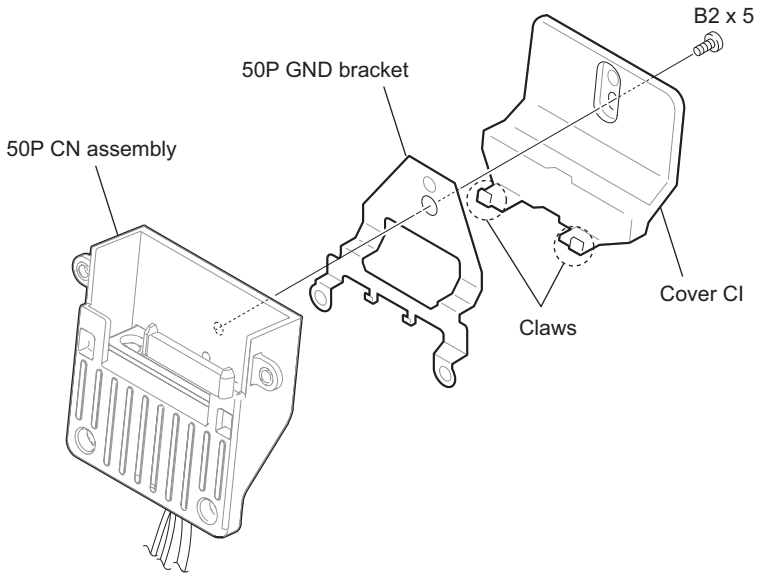
1. Remove the inside panel assembly. (Refer to "2-3-1. Inside Panel Assembly")
2. Remove the HPR-53 board. (Refer to "2-10. HPR-53 Board")

Procedure

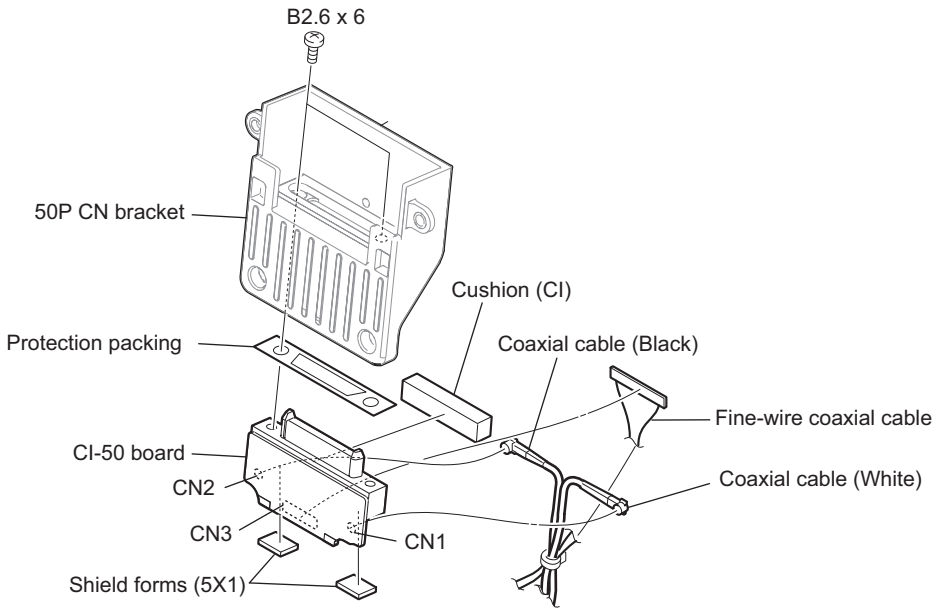
1. Remove the 50P cover assembly and the 50P CN assembly.
   1) Loosen the screw (with drop-safe) to detach the 50P cover assembly.
   2) Disconnect the coaxial cable (white) from the connector (CN SDI3) on the DPR-362 board.
   3) Remove the four screws (B2 x5).
   4) Draw out the two coaxial cables and the fine-wire coaxial cable, and remove the 50P CN assembly.



2. Remove the cover CI and the 50P GND bracket.
   1) Remove the screw.
   2) Release the two claws to detach the cover CI and the 50P GND bracket.



3. Remove the CI-50 board.
   1) Disconnect the fine-wire coaxial cable from the connector (CN3) on the CI-50 board.
   2) Disconnect the two coaxial cables from the two connectors (CN1, CN2) on the CI-50 board.
   3) Remove the two screws to detach the CI-50 board and the protection packing.
   4) Remove the shield form (5X1) and the two cushions (CI) from the CI-50 board.



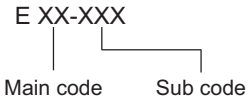
Note

When connecting the coaxial cables, connect the coaxial cables to correct connectors.

4. Install the removed parts by reversing the steps of removal.

Section 3
Error Code

When an error is detected in the unit, the error code is displayed on the viewfinder and the LCD monitor.
An error code consists of a 2-digit main code and a 3-digit sub code.



Group of Main Codes

- 91: An error between host CPU and peripheral devices interface
- 92: An error of synchronization system detection
- 95: An error of video/audio signal processing devices interface
- A0: An error of system by software originating

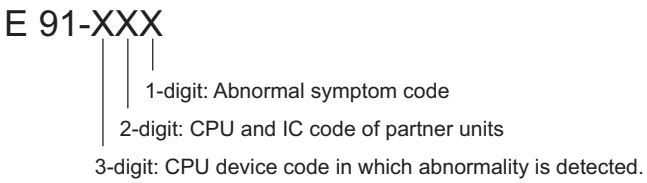
For details of sub codes, refer to respective “Main Code xx”.

If Multiple Errors Occur Simultaneously

The highest-priority error is displayed. When a higher-priority error is cleared, the following-priority error code is displayed.

3-1. Main Code 91

When interface (between CPU and peripheral devices) errors are detected, the following error codes are displayed.



CPU Device Code in which Abnormality is Detected (3-digit Sub Code)

3-digit Sub Code	Description
1	EMMA: Application processor IC4200 (DPR-362 board)
2	DIABLO: Media processor IC2900 (DPR-362 board)
3	ROSETTA: Video signal processor IC0100 (DPR-362 board)

CPU and IC code of Partner Units (2-digit Sub Code)

When detecting with EMMA (IC4200: DPR-362 board) (When the 3-digit of the sub code is “1”):

2-digit Sub Code	Description
1	EMMA: Application processor IC4200 (DPR-362 board)
2	DIABLO: Media processor IC2900 (DPR-362 board)
3	ROSETTA: Video signal processor IC0100 (DPR-362 board)
4	DARWIN: Power controller IC5002 (DPR-362 board)
5	GMON: Monitor FPGA IC2301 (DPR-362 board)
6	ETC: Interface FPGA IC100 (HPR-53 board)
7	Audio block
8	VF VINE: IC4903 (DPR-362 board)
9	KEY VINE: IC302 (FP-208 board)

Continued

2-digit Sub Code	Description
A	Sub display module
B	USB module
C	Wi-Fi module
D	GPS module
E	GMON: Monitor FPGA IC2301 (DPR-362 board)
F	GMON: Monitor FPGA IC2301 (DPR-362 board)

When detecting with DIABLO (IC2900: DPR-362 board) (When the 3-digit of the sub code is “2”):

2-digit Sub Code	Description
1	EMMA: Application processor IC4200 (DPR-362 board)
2	DIABLO: Media processor IC2900 (DPR-362 board)
3	ROSETTA: Video signal processor IC0100 (DPR-362 board)
4	NATH: MPEG2 video codec IC1500 (DPR-362 board)
5	BEAUNE: XAVC video codec IC1100 (DPR-362 board)

When detecting with ROSETTA (IC0100: DPR-362 board) (When the 3-digit of the sub code is “3”):

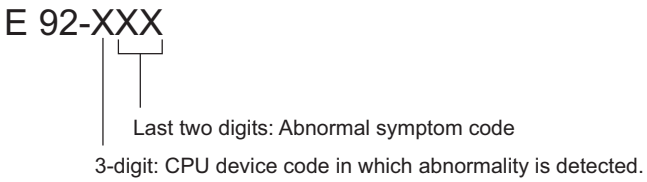
2-digit Sub Code	Description
1	EMMA: Application processor IC4200 (DPR-362 board)
2	DIABLO: Media processor IC2900 (DPR-362 board)
3	ROSETTA: Video signal processor IC0100 (DPR-362 board)
4	VUP CPLD: IC2200 (DPR-362 board)
5	GMON: Monitor FPGA IC2301 (DPR-362 board)
6	ETC: Interface FPGA IC100 (HPR-53 board)
7	Audio block
8	ADV7320: Digital video encoder IC0403 or IC2700 (DPR-362 board)
9	MN864716: HDMI encoder IC001 (DIF-232 board)
A	Lens interface
B	EXT interface
C	GMON (700P): Monitor FPGA IC2301 (DPR-362 board)
D	ETC (EQ DRIVE): Interface FPGA IC100 (HPR-53 board)
E	Imager block
F	ETC: Interface FPGA IC100 (HPR-53 board)

Abnormal Symptom Code (1-digit Sub Code)

1-digit Sub Code	Description
0	Error of communication between CPU and peripheral devices (or interface hardware error) (Two or more causes or irregularity is included.)
3	Data parity error or data verify error between CPU and peripheral devices
5	Communication between CPU and peripheral devices is not completed in the specified time period.
7	Failure of flash memory configuration
8	Communication error of flash memory (or eMMC)
9	Communication error of EEPROM
A	Communication error of SDRAM
B	Communication error of recording media
C	Error of temperature sensor
D	Communication error of RTC

3-2. Main Code 92

When synchronization system errors are detected, the following error codes are displayed.



CPU Device Code in which Abnormality is Detected (3-digit Sub Code)

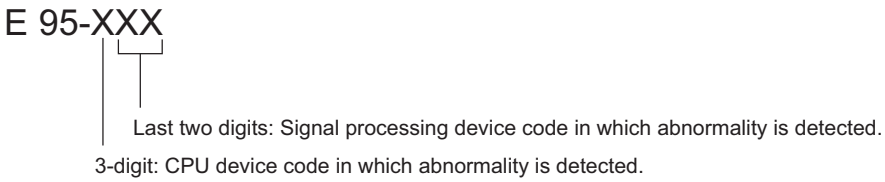
3-digit Sub Code	Description
1	EMMA: Application processor IC4200 (DPR-362 board)
2	DIABLO: Media processor IC2900 (DPR-362 board)
3	ROSETTA: Video signal processor IC0100 (DPR-362 board)

Abnormal Symptom Code (Last Two Digits Sub Code)

Last Two Digits Sub Code	Description
01	Error of reference frame pulse
02	Communication error of RTC (Real Time Clock) IC4600 (DPR-362 board)
03	Communication error of reference clock generator IC2002 (DPR-362 board)
04	Interrupt signal “VFSYNC_A to C” does not come.
05	Interrupt signal “VFSYNC_A to C” does not come.
06	Interrupt signal “VFSYNC_A to C” does not come.

3-3. Main Code 95

When video/audio signal processing devices interface errors are detected, the following error codes are displayed.



CPU Device Code in which Abnormality is Detected (3-digit Sub Code)

3-digit Sub Code	Description
1	EMMA: Application processor IC4200 (DPR-362 board)
2	DIABLO: Media processor IC2900 (DPR-362 board)
3	ROSETTA: Video signal processor IC0100 (DPR-362 board)

Signal Processing Device Code in which Abnormality is Detected (Last Two Digits Sub Code)

Last Two Digits Sub Code	Description
01	DIABLO (IC2900/DPR-362 board) GIF error
02	DIABLO (IC2900/DPR-362 board) codec error
03	DIABLO (IC2900/DPR-362 board) multiplexer error
04	DIABLO (IC2900/DPR-362 board) media interface error
05	BEAUNE (IC1100/DPR-362 board) fatal error
06	BEAUNE (IC1100/DPR-362 board) internal operation error
07	BEAUNE (IC1100/DPR-362 board) error (warning)
08	NATH (IC1500/DPR-362 board) error (caution)
09	NATH (IC1500/DPR-362 board) error (exception)
0A	VBS error in LVCMOS communication path (DIABLO to NATH)
0B	VBS error in LVCMOS communication (NATH to DIABLO)
11	Image sensor block internal error
12	Communication error (Image sensor to ROSETTA)
13	Communication error (ETC to ROSETTA)
14	Communication error (BEAUNE to ROSETTA)
15	Communication error (ROSETTA to GMON)
16	Communication error (ROSETTA to ETC)
17	Communication error (ROSETTA to viewfinder)
18	Audio DSP register error, communication timeout
19	-
20	SHEDAX to Flash Memory Boot error (IC503/DCP-67 board)
21	SHEDAX to Flash Memory Verify error (IC503/DCP-67 board)
22	TGX to Flash Memory Verify error (IC104/TG-287 board)
23	Communication error (ROSETTA to wireless audio receiver)
24	Wireless DSP to SD Card Memory Verify error (U11/WM board)

3-4. Main Code A0

When errors of the system of the software originating are detected, the following error codes are displayed.

E A0-000

3-5. Main Code 01

When Diablo and Curie (IC1000/HPR-53 board) interface is abnormal, the following error codes are displayed.

E01-035

Section 4
SERVICE Menu

4-1. Service Menu List

4-1-1. Description of SERVICE Menu

Menu Item	Submenu Item	Choice (Default Setting)	Factory Default Setting	Function
CCD Adjustment	R CCD Gain	-99 to +99	±0	Adjusts R channel CCD sensitivity.
	G CCD Gain	-99 to +99	±0	Adjusts G channel CCD sensitivity.
	B CCD Gain	-99 to +99	±0	Adjusts B channel CCD sensitivity.
	DC Offset Adjustment	Execute/Cancel	Cancel	Adjust DC dispersion of each channel.
	Gain Offset Adjustment	Execute/Cancel	Cancel	Adjust Gain dispersion of each channel.
	R V SUB	9.0 V to 18.0 V (0.1 V step)	14.0 V	Sets R channel CCD V substrate voltage value.
	G V SUB	9.0 V to 18.0 V (0.1 V step)	14.0 V	Sets G channel CCD V substrate voltage value.
	B V SUB	9.0 V to 18.0 V (0.1 V step)	14.0 V	Sets B channel CCD V substrate voltage value.
	R CCD H Regi	-0.100 % to 0.1 % (0.002 % step)	0.00%	Adjusts R channel CCD registration (H direction).
	R CCD V Regi	-0.100 % to 0.1 % (0.002 % step)	0.00%	Adjusts R channel CCD registration (V direction).
	B CCD H Regi	-0.100 % to 0.1 % (0.002 % step)	0.00%	Adjusts B channel CCD registration (H direction).
	B CCD V Regi	-0.100 % to 0.1 % (0.002 % step)	0.00%	Adjusts B channel CCD registration (V direction).
White Shading	Channel Select	Red/Green/Blue	Red	Adjust white shading. Select a channel. (The H Saw, H Para, V Saw, and V Para values change to the current values of the selected channel.)
	White H Saw	-99 to +99	±0	White shading H Saw correction amount adjustment
	White H Para	-99 to +99	±0	White shading H Para correction amount adjustment
	White V Saw	-99 to +99	±0	White shading V Saw correction amount adjustment
	White V Para	-99 to +99	±0	White shading V Para correction amount adjustment
	White Saw/ Para	On/Off	On	White shading correction On/Off
Black Shading	Channel Select	Red/Green/Blue	Red	Adjust black shading. Select a channel. (The H Saw, H Para, V Saw, and V Para values change to the current values of the selected channel.)
	Black H Saw	-99 to +99	±0	Black shading H Saw correction amount adjustment
	Black H Para	-99 to +99	±0	Black shading H Para correction amount adjustment
	Black V Saw	-99 to +99	±0	Black shading V Saw correction amount adjustment
	Black V Para	-99 to +99	±0	Black shading V Para correction amount adjustment
	Black Saw/Para	On/Off	On	Black shading correction On/Off

Continued

Menu Item	Submenu Item	Choice (Default Setting)	Factory Default Setting	Function
	Master Black	-99 to +99	±0	Set the black level of master.
	Master Gain (TMP)	-6dB/-3dB/0dB/3dB/6dB/9dB/12dB/18dB/24dB/30dB/36dB/42dB	0 dB	Select the master gain value.
Auto Shading	Auto White Shading	Execute/Cancel	Cancel	Executes the auto white shading function.
	Reset White Shading	Execute/Cancel	Cancel	Return to default value.
	Auto Black Shading	Execute/Cancel	Cancel	Executes the auto black shading function.
	Reset Black Shading	Execute/Cancel	Cancel	Return to default value.
	Master Gain (TMP)	-6dB/-3dB/0dB/3dB/6dB/9dB/12dB/18dB/24dB/30dB/36dB/42dB	0 dB	Select the master gain value.
Flare	R Flare	-99 to +99	±0	Adjustment for services of the R-channel flare correction.
	G Flare	-99 to +99	±0	Adjustment for services of the G-channel flare correction.
	B Flare	-99 to +99	±0	Adjustment for services of the B-channel flare correction.
RPN	APR	Execute/Cancel	Cancel	Execute the auto fault correction (Auto pixel noise reduction).
	Channel	R/G/B	R	Select and display the channel (color) of the RPN correction.
	Cursor	On/Off	Off	Turns On or Off the RPN correction point indicator cursor.
	Cursor H Position	1 to 1950	975	Displays and move the horizontal address of the RPN correction point indicator cursor.
	Cursor V Position	1 to 1094	547	Displays and move the vertical address of the RPN correction point indicator cursor.
	Cursor Next	—	—	Moves the RPN correction point indicator cursor to the next RPN point.
	Cursor Prev	—	—	Moves the RPN correction point indicator cursor to the previous RPN point.
	Record	Execute/Cancel	Cancel	Registers the RPN.
	Delete	Execute/Cancel	Cancel	Deletes the RPN.
	Reset	Execute/Cancel	Cancel	Deletes all the RPN that are registered after shipment from the factory.
Knee	Blue Knee Saturation	0/-1/-2/-3/-4	0	Weaken the Blue Knee Saturation effective, Blue Fringe is made inconspicuous.
VCO Adjustment	Clock Out Select	On/Off	Off	Outputs the master-clock from the TEST OUT connector.
	Clock Frequency	-99 to +99	±0	Master-clock frequency adjustment.
Fan Control	Fan Control Mode	Normal/Max/Min/Off	Normal	Fan control mode setting.
Factory Reset	Reset	Execute/Cancel	Cancel	Execute a factory reset.
Password Reset	Reset	Execute/Cancel	Cancel	Execute a password reset.
Information	Serial Number	xxxxxx (Display only)	(Display only)	Shows the serial number
	Imager Temperature	xx℃ (Display only)	(Display only)	Displays the temperature of the image sensor
	Main Board Temperature	xx℃ (Display only)	(Display only)	Displays the internal temperature (around main board)
	Net-Func Log Dump	Execute/Cancel	Cancel	Save the log of the Wireless Module

Continued

Menu Item	Submenu Item	Choice (Default Setting)	Factory Default Setting	Function
	Log Dump	Execute/Cancel	Cancel	Records the error log to media
Version 1	Package	x.xx_xxxx (Display only)	(Display only)	Displays the package version number.
	EMMA	xx.xx (Display only)	(Display only)	Displays the device (EMMA) version.
	DiabloL	xx.xx (Display only)	(Display only)	Displays the device (DiabloL) version.
	DiabloT	xx.xx (Display only)	(Display only)	Displays the device (DiabloT) version.
	Rosetta	xx.xx (Display only)	(Display only)	Displays the device (Rosetta) version.
	NATH	xx.xx (Display only)	(Display only)	Displays the device (NATH) version.
	Beaune	xx.xx (Display only)	(Display only)	Displays the device (Beaune) version.
Version 2	VUP3	xx.xx (Display only)	(Display only)	Displays the device (VUP3) version.
	GMON	xx.xx (Display only)	(Display only)	Displays the device (GMON) version.
	AUDI	xx.xx (Display only)	(Display only)	Displays the device (AUDI) version.
	ETC	xx.xx (Display only)	(Display only)	Displays the device (ETC) version.
	JKLX	xx.xx (Display only)	(Display only)	Displays the device (JKLX) version.
Version 3	Darwin	xx.xx (Display only)	(Display only)	Displays the device (Darwin) version.
	ExVine	xx.xx (Display only)	(Display only)	Displays the device (ExVine) version.
	VFVine	xx.xx (Display only)	(Display only)	Displays the device (VFVine) version.
	KYVine	xx.xx (Display only)	(Display only)	Displays the device (KYVine) version.
	SHDX	xx.xx (Display only)	(Display only)	Displays the device (SHDX) version.
	TGX	xx.xx (Display only)	(Display only)	Displays the device (TGX) version.
	WM	xx.xx (Display only)	(Display only)	Displays the device (WM) version.

4-2. Description of Menu

4-2-1. Basic Menu Operation

Basic menu operation

Set the MENU ON/OFF switch to ON or press the MENU button to enable the menu mode.

Note

If the unit is in the FOCUS MAGNIFICATION mode, no menu operation is enabled. Press the FOCUS MAGNIFICATION button to reset the FOCUS MAGNIFICATION mode.

1. Set the MENU ON/OFF switch to ON or press the MENU button.
   The menu mode is activated.
2. Turn the MENU knob or press the arrow buttons to set the cursor at the item you want to set.
3. Press the MENU button or SET button.

To exit the menu mode

Set the MENU ON/OFF switch to OFF or press the MENU button again.
The menu mode is reset and the unit returns to the normal shooting mode.

4-2-2. Service Menu

Service menu types

Menu name	Description
SERVICE	Parameter adjustment, operation about RPN correction, display of unit information.

4-2-3. How to Display the Service Menu

1. Set the MENU ON/OFF switch to ON to display the menu mode screen. (Refer to “4-2-1. Basic Menu Operation”)
2. Set the cursor at the Hours Meter item of the Maintenance menu.
3. Depress the MENU ON/OFF switch while pressing the MENU knob and Assign 1 button simultaneously.
   The service menu is displayed in menu list.

   Tip

   Once the service menu is displayed, it is displayed only by pressing the MENU button unless power is turned off.

   Note

   When the service menu is displayed by only pressing the MENU button, do not perform the operation of file menu. (The items in save and load may not be able correctly.)

4-3. Description of SERVICE Menu

4-3-1. SERVICE Menu

The service menu allows parameter adjustment (such as correction of individual differences of image pickup device and lens) that varies from unit to unit.

CCD Adjustment

The CCD Adjustment menu allows the CCDs and their peripheral circuits to be adjusted and set.

R/G/B CCD GAIN

The R CCD GAIN, G CCD GAIN, and B CCD GAIN submenus are used to adjust the R/G/B CCD sensitivity. Adjust the CCD sensitivity so that the video output becomes white (color difference level = 0) when White is set to Preset and a white subject is shot under a black body illumination with a color temperature of 3200 K.

DC Offset Adjustment

After lens is closed, when one of carrier leak is bigger about G-ch, B-ch or R-ch, and execute. Adjusts automatically so that the carrier leak becomes minimum.

GAIN Offset Adjustment

After CCDE becomes 100 % with clear chart, when one of carrier leak is bigger about G-ch, B-ch or R-ch, and execute. Adjusts automatically so that the carrier leak becomes minimum.

R/G/B VSUB

The R VSUB, G VSUB, and B VSUB submenus are used to set the V substrate voltage value of the R, G, and B CCDs. Usually set the V substrate voltage to the voltage specified for each CCD image pickup device.

R/B CCD Regi

The R CCD Regi and B CCD Regi submenus are used to adjust the deviation of registration in R and B channels to the G channel. Only horizontal centering is adjustable.

CCD Gain Adjustment

Note

- Use a reflective chart (reflectance: 89.9%) for this adjustment wherever possible.
- If a 16:9 chart cannot be prepared, use a 4:3 chart and shoot it so that the horizontal width is aligned with the underscanned monitor frame.

Equipment/tools

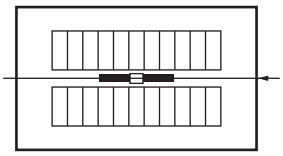
- Oscilloscope
- Waveform monitor
- Grayscale chart (16:9)

Preparation

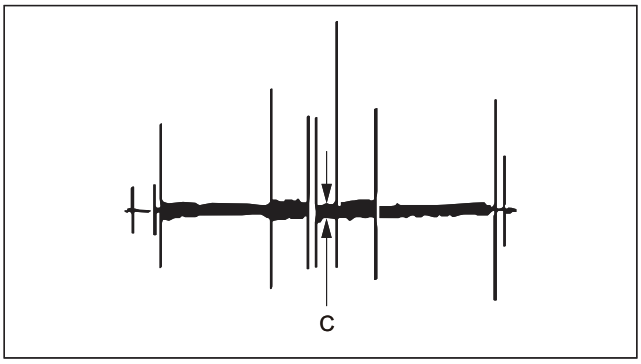
1. Connect a waveform monitor to the unit.
2. OUTPUT/DCC switch (inside panel) → CAM
3. WHITE BAL switch (inside panel) → PRST
4. Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.

Adjustment procedure:

1. AUTO W/B BAL switch (front panel) → BLACK
   (Execute black balance auto adjustment.)
2. Make the following settings with the menu.
   MENU： MAINTENANCE
   PAGE： Preset White
   ITEM： Color Temp <P>：3200 K
   ITEM： Color Temp Balance <P>：?0
   MENU： PAINT
   PAGE： Switch Status
   ITEM： Gamma → Off
   ITEM： Detail → Off
3. Select line at the center with the waveform monitor.



4. Set the waveform monitor to the CHROMA mode.
5. Measuring equipment: Waveform monitor
   Adjusting point: Make the following adjustments with the menu.
   MENU： SERVICE
   PAGE： CCD adjustment
   ITEM： R CCD GAIN
   ITEM： B CCD GAIN
   Specification: Adjust the CCD gain alternately to minimize carrier leak C.



Settings after adjustment

- Make the following settings with the menu.
  MENU： PAINT
  PAGE： Switch Status
  ITEM： Gamma → On
  ITEM： Detail → On

White Shading Adjustment

The white Shading menu enables the adjustment of the horizontal and vertical Saw correction level and parabola correction level.

Note

- The White Shading adjustment cannot be executed for the correct adjustment values if the object pattern has non-uniformity or if other conditions such as lens iris setting and zoom setting are not correctly satisfied.
- Use a full white pattern for the White Shading adjustment having uniform brightness over the entire area.
- If a full white pattern having uniform brightness over the entire area is not available, do not execute the G-channel White shading adjustment. Instead of it, execute the White shading adjustment in the way of aligning the R-channel waveform and the B-channel waveform to the waveform of G-channel.

White Saw/Para

The White Saw/Para menu can be used to turn White Shading correction On or Off. The White Saw/Para is turned On automatically when the power is turned On.

Channel Sel

The Channel Sel menu enables selection of the channel (G-ch or B-ch or R-ch) to execute the H Saw, H Para, V Saw, and V Para white shading adjustments on.
When the Channel Sel menu selects any other channel, the displays of the H Saw, H Para, V Saw, and V Para setup values are changed to the current setup values of the channel selected by the Channel Sel menu. The changes are reflected on the H Saw, H Para, V Saw, and V Para setup values.

White H Saw

The H Saw menu enables the horizontal Saw white shading correction (linear increase and decrease) level.

White H Para

The H Para menu enables the horizontal Parabola white shading correction (sensitivity correction at the horizontal center with respect to both ends) level.

White V Saw

The V Saw menu enables the vertical Saw white shading correction (linear increase and decrease) level.

White V Para

The V Para menu enables the vertical Parabola white shading correction (sensitivity correction at the vertical center with respect to both ends) level.

White shading adjustment method

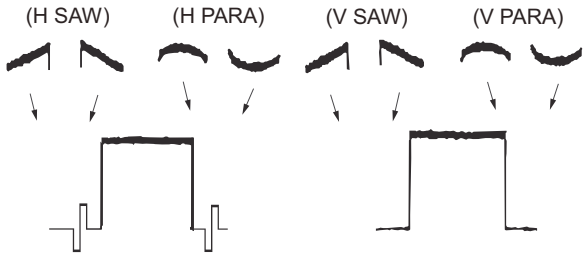
Preparation

1. Connect an HD waveform monitor to the SDI OUT terminal.
2. HD waveform monitor setting: RGB mode
3. Focus: ∞
4. Shoot an all white pattern over the entire frame of monitor screen.

Adjustment Procedure

1. Adjust lens iris until white level becomes approximately 80%.
2. If the lens iris value is larger than F5.6, adjust the incoming light intensity by using electronic shutter for the lens iris setting of smaller than F5.6.

3. Adjust H Saw, H Para, V Saw and V Para for the respective channels of G-ch, B-ch and R-ch until waveform on the waveform monitor becomes flat.



Black Shading Adjustment

The Black Shading menu enables the adjustment of the horizontal and vertical Saw correction level and parabola correction level.

Black Saw/Para

The Black Saw/Para menu can be used to turn Black Shading correction On or Off. The Black Saw/Para is turned On automatically when the power is turned On.

Channel Sel

The Channel Select menu enables selection of the channel (G-ch or B-ch or R-ch) to execute the H Saw, H Para, V Saw, and V Para black shading adjustments on.
When the Channel Select menu selects any other channel, the displays of the H Saw, H Para, V Saw, and V Para setup values are changed to the current setup values of the channel selected by the Channel Select menu. The changes are reflected on the H Saw, H Para, V Saw, and V Para setup values.

Black H Saw

The H Saw menu enables the horizontal Saw black shading correction (linear increase and decrease) level.

Black H Para

The H Para menu enables the horizontal Parabola black shading correction (black level correction at the horizontal center with respect to both ends) level.

Black V Saw

The V Saw menu enables the vertical Saw black shading correction (linear increase and decrease) level.

Black V Para

The V Para menu enables the vertical Parabola black shading correction (black level correction at the vertical center with respect to both ends) level.

Master Black

Master black level is set.

Master Gain (TMP)

Master gain value is selected.

Black Shading Adjustment Method

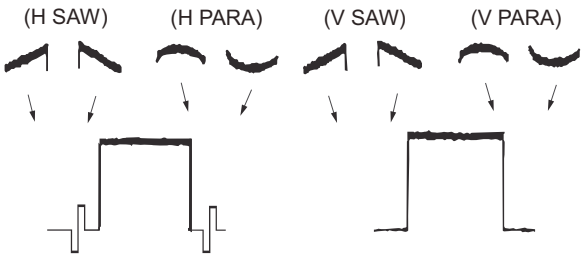
Preparation

1. Connect an HD waveform monitor to the SDI OUT terminal.
2. HD waveform monitor setting: RGB mode

3. Lens iris: CLOSE

Adjustment Procedure

1. Adjust GAIN and BLK level for easy viewing to observe.
2. Adjust H Saw, H Para, V Saw and V Para for the respective channels of G-ch, B-ch and R-ch until waveform on the waveform monitor becomes flat.



Auto Shading Adjustments

The Auto Shading menu can execute auto-shading (auto-adjustment of shading correction).

Auto White Shading

When Auto White Shading is selected, "Execute" and "Cancel" appear. When "Execute" is selected, auto white shading is executed.
When the CANCEL/PRST/ESCAPE switch is set to CANCEL while auto white shading is in execution, the auto white shading is suspended and the state before execution of auto white shading is restored.
When the auto white shading ends successfully, “OK” appears. If the auto white shading fails, “NG” and the cause appear for three seconds.

Reset White Shading

When Reset White Shad is selected, "Execute" and "Cancel" appear. When "Execute" is selected, the auto-white shading result is reset to the default value.

Auto Black Shading

When Auto Black Shading is selected, "Execute" and "Cancel" appear. When "Execute" is selected, auto-black shading is executed.
When the CANCEL/PRST/ESCAPE switch is set to CANCEL while auto-black shading is in execution, the auto-black shading is suspended and the state before execution of auto-black shading is restored.
When the auto-black shading ends successfully, "OK" appears. If the auto-black shading fails, "NG" and the cause appear for three seconds.

Reset Black Shading

When Reset Black Shad is selected, "Execute" and "Cancel" appear. When "Execute" is selected, the auto-black shading result is reset to the default value.

Master Gain (TMP)

When Master Gain (TMP) is selected, gain can be increased temporarily so that the auto-white shading and auto-black shading execution results can be monitored in this menu.
The gain value set here is negated by pressing the GAIN switch or executing AWB, ABB, or AGC.

Flare Adjustment

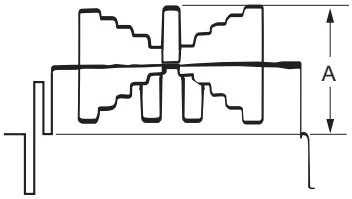
The Flare adjustment menu enables flare compensation for the respective channels of G-channel, B-channel and R-channel.

Preparation

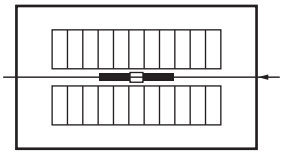
1. Connect an HD waveform monitor to the SDI OUT terminal.
2. HD waveform monitor setting: RGB mode
3. Shoot a gray-scale chart to fill the entire screen of the picture frame and execute the white balance.
4. Set the Knee to the Auto or Off.

Adjustment Procedure

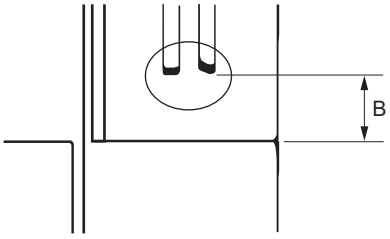
1. Adjust lens iris until white level (portion A) becomes approximately 100%. After that, open the lens iris by two stops.



2. Select waveform of the signal at the center of grayscale signal on a waveform monitor.



3. Adjust R Flare, G Flare and B Flare until the black levels on both sides of the center white in all of the R, G and B channels to a unity level.
   (Align black level all channels to that of the channel having the lowest black level.)



Notes

- The flare adjustment can be performed only when there is a correct grayscale chart.
- When there is no correct grayscale chart, adjust the values of R Flare, G Flare and B Flare to ±0.

RPN Menu

The RPN menu enables various operations such as manual registration, deletion and automatic detection of the RPN compensation point.

Execution of APR (Auto Pixel Registration)

- In APR, white point auto detection and register about RPN (Residual Point Noise) correction by concealment can be executed.
- When APR is selected, "Execute" and "Cancel" appear. When "Execute" is selected, APR is executed.

- Detected RPN by APR adds to correction target.
- APR is executed by following operations.
  Start from [Service] menu
  Execute from [Maintenance] menu
  During auto black balance execution
- APR is not executed by following condition. Change the setting.
  During recording
  Displaying the color bar
  Displaying the test saw signal
  [Rec Format] in operation menu [Format] is [SStP SR-Lite] (Before Ver.Up2.0)
- RPN setting can be performed by input picture that is only imaging screen of camera. Followings need change the setting.
  During playback
  Displaying the thumbnail
  During external input (Pool Feed)

Manual register of RPN

- Correction target RPN by concealment can also be manually registered and deleted one by one.
  When the following conditions apply to even one, the correction point is not correctly recognized, a button does gray out.
  Op Setting of [Rec Format] in operation menu [Format] is
  1080i format
  720P format
  DVCAM format
  MPEG IMX 50 format (Ver.Up2.0)
  Setting of [Slow & Quick] in operation menu [Rec Function] is
  [On]
  Setting of [Output Format] in operation menu [Input/Output] is
  Including 1280 x 720P
  Including 720x486i
  Including 720x480i
  Including 720x576i

  Note

  When APR is executed during the cross-hairs cursor displayed, APR is failed and not corrected.
  Hide the cross-hairs cursor and execute.

Channel Setting

The Channel menu enables selection of the channel (Rch or G-ch or B-ch) to execute Record of RPN pixel on, in the manual registration of RPN.
When the RPN cursor is moved to an already-registered RPN correction point by the Cursor Next or Cursor Prev operation, the correction mode selected for the RPN point is displayed automatically.

Cursor Setting

The Cursor menu enables turning On or Off the crosshair cursor display indicating the RPN correction position in the manual registration of RPN.
When the Cursor menu is turned On, the crosshair cursor indicating the RPN correction position is displayed superimposed on the video signal.
Signal of the pixel located at the center of the crosshair cursor is replaced by black.
The Cursor setting is always turned Off when the power is turned On.

Cursor H Position Setting

The Cursor H Position menu enables the user to change the horizontal position of the RPN point within the effective period of video signal in the manual registration of RPN.
When the RPN cursor (indicating the location of a RPN pixel to register) is moved to an already-registered RPN correction point by the Cursor Next or Cursor Prev operation, the display automatically switches to the numeric value of the horizontal position of the RPN point.

Cursor V Position Setting

The Cursor V Position menu enables the user to change the vertical position of the RPN point within the effective period of video signal in the manual registration of RPN.
When the RPN cursor (indicating the location of a RPN pixel to register) is moved to an already-registered RPN correction point by the Cursor Next or Cursor Prev operation, the display automatically switches to the numeric value of the vertical position of the RPN point.

Operating Cursor Next

The Cursor Next menu enables the user to move the RPN cursor position to the next already-registered RPN correction point after the present position in the ascending order of the addresses during the manual registration of RPN. (If multiple RPN positions have the same address in the ascending order of the Cursor V Position, the RPN cursor moves in the ascending order of the Cursor H Position.)

Operating Cursor Prev

The Cursor Prev menu enables the user to move the RPN cursor position to the next already-registered RPN correction point after the present position in the descending order of the addresses during the manual registration of RPN. (If multiple RPN positions have the same address in the descending order of the Cursor V Position, the RPN cursor moves in the descending order of the Cursor H Position.)

Executing Record

The Record menu enables the manual registration of RPN.
When Record menu is selected, the Execute and Cancel appear. Selecting Execute starts the registration of RPN.

RPN manual registration procedure

1. Set [Rec Format] in Operation menu [Format] to 1080P format.
2. Set the lens iris to CLOSE.
3. Adjust GAIN and Black Level to the settings that facilitate viewing the RPN position on a monitor screen.
4. Set Channel to the RPN color that is going to be registered.
5. Set Cursor to On.
6. Move the crosshair cursor to the RPN that is going to be registered by using Cursor H Position and Cursor V Position. (When the crosshair cursor is moved on top of the desired RPN, the RPN becomes invisible.)
7. Execute the Record.

Executing Delete

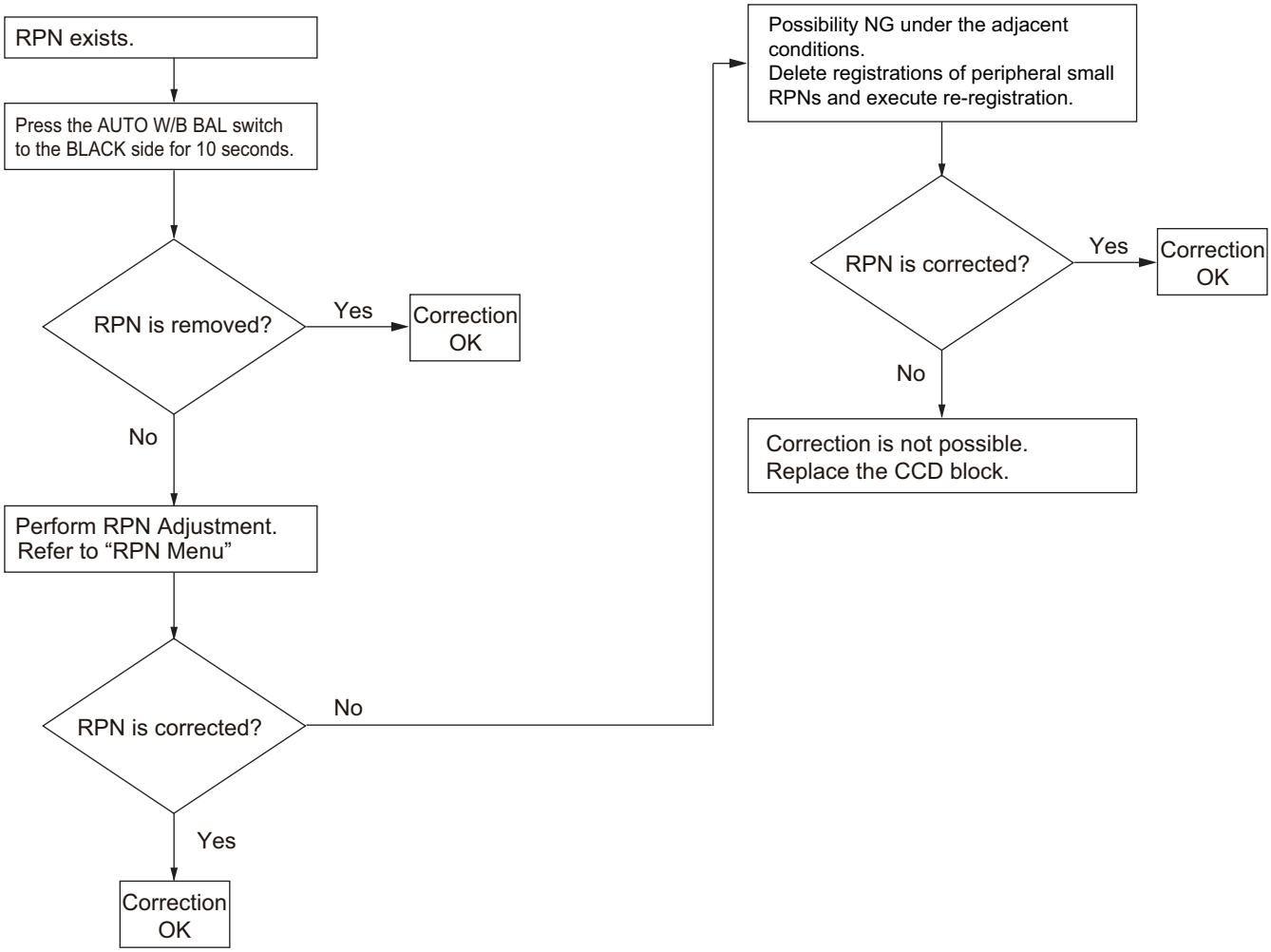
The Delete menu enables manual deletion of RPN.
When the Delete menu is executed, the RPN registration of a pixel at an address specified by the Cursor H Position and Cursor V Position is deleted from RPN data.
When the Delete menu is selected, the Execute and Cancel appear. Selecting Execute starts deletion of RPN.

Executing Reset

The Reset menu enables the user to delete the RPN correction point data that is registered by Auto Detect and Auto Black Balance after the equipment is shipped from the factory.
The RPN data that is registered at the factory and the RPN data is manually registered cannot be deleted by the Reset.
When the Reset menu is selected, the Execute and Cancel appear. In addition, selecting Execute starts reset of RPN.

RPN Correction Procedure

The RPN correction procedure is shown below.



Knee Adjustment

Weaken Blue Knee Station effective, Blue Fringe is made inconspicuous.
Blue Fringe is the most made inconspicuous at "-4".

VCO Adjustment

The VCO Adjustment menu allows adjustment of VCO frequency.

Clock Out Select

Set the Clock Out Select to ON, master clock signal can be output to VIDEO OUT connector.

Clock Frequency

The Clock Frequency setting allows adjustment of the 27 MHz master clock frequency.

Adjusting VCO

Preparation

Connect a frequency counter to the VIDEO OUT connector.

Adjustment procedure

1. Check that a signal of the specification below is output from the VIDEO OUT connector.
   - Condition: Adjust VCO one hour after power-on.
   - Specification: 27 MHz (upper limit: +100 Hz, lower limit: -100 Hz)
2. When the VCO does not meet this specification, change the setting of clock frequency so that the specification is obtained.
   If the specification is obtained, press the MENU button to confirm the setting.

Fan Control Setting

The internal fan of the unit is automatically controlled by detecting the internal temperature. The fan operation can be confirmed with fan control menu.

- Normal : Mode(default) according to menu setting of [Maintenance]/[Fan Control]
- Max : Drive at maximum rotation speed (forcibly On)
- Min : Drive at fixed low speed rotation
- Off : Stop the fan

Factory Preset

The Factory Preset menu is used to return all settings to the default values. While Factory Preset is in execution, a message “Factory Preset/Executing” appears. When a message “Factory Preset/Power Off > On” appears after execution of Factory Preset, turn on the power again.

Password Reset

When the software key in software option is installed, in case input password of this time became missing. All installed software key password is reset to "0000".

INFORMATION Menu

The Information menu is used to display the information and status of the unit.

Displaying the Serial Number

Selecting Serial Number of the Information menu display the serial number of the unit.

Displaying Internal Temperature

The internal temperature of the unit can be monitored by Imager Temperature and Main Board Temperature of the Information menu.

- Imager Temperature: Internal temperature of the imager board
- Main Board Temperature: Internal temperature of the DPR-362 board

Executing Log Dump

Executing Log Dump acquires the error log information and saves it to the active, writable media.
Select Log Dump under the INFORMATION menu, and execute it with Execute. The process is complete when “Dump OK” is displayed as a result. Do not remove the media until this message appears.

Executing Net-Func Log Dump

Executing Net-Func Log Dump save log data in the wireless module to the media in the SD memory card (Proxy) for Proxy data recording. Select Net-Func Log Dump under the INFORMATION menu, and execute it. The display of executing is [Executing...], do not pull out the media.

Note

In case the followings, [Dump OK] is displayed, but Log is not recorded.

- If SD memory card is wright protected.
- SD memory card has no empty.

Version Menu

The Version 1 - 3 menu is used to check the firmware versions and IC versions of the unit.

Version 1 Menu

- Package: Firmware version
- EMMA: IC4400 (DPR-362 board) version
- DiabloL: IC3101, IC3102 (DPR-362 board) version
- DiabloT: IC3101, IC3102 (DPR-362 board) version
- Rosetta: IC0703 (DPR-362 board) version
- NATH: IC1500 (DPR-362 board) version
- Beaune: IC1100 (DPR-362 board) version

  Note

  The version of Beaune is displayed when only recording format is XAVC-L or XAVC-I.

Version 2 Menu

- VUP3: IC2200 (DPR-362 board) version
- GMON: IC2500 (DPR-362 board) version
- AUDI: IC800 (AU-360 board) version
- ETC: IC800, IC801 (HPR-53 board) version
- JKLX: IC503 (FP-208 board) version

  Note

  When loading the version 2, camera EE picture may flash.
  If camera EE picture flashes, turn off and on the power of the unit, enter the service menu, perform the adjustment avoid scroll to version 2 section.

Version 3 Menu

- Darwin: IC5002 (DPR-362 board) version
- ExVine: IC404 (FP-208 board) version
- VFVine: IC4903 (DPR-362 board) version
- KYVine: IC302 (DPR-362 board) version
- SHDX: IC503 (DCP-67 board) version
- TGX: IC103 (TG-287 board) version
- WM: U11 (WM board) version

  Note

  Version (Ver up 2.0 before) may be displayed by mistake. Check the proxy recording/wireless LAN connection function (WM) by Maintenance→Version →Net-Func Version.

Section 5
Spare Parts

5-1. Note on Repair Parts

1. Safety Related Components Warning

WARNING

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.

3. Stock of Parts

Parts marked with “o” at SP (Supply Code) column of the spare parts list may not be stocked. Therefore, the delivery date will be delayed.

4. Harness

Harnesses with no part number are not registered as spare parts.

1. 安全重要部品

⚠警告

⚠印のついた部品は安全性を維持するために重要な部品です。したがって，交換する時は必ず指定の部品を使ってください。

2. 部品の共通化

ソニーから供給する補修用部品は，セットに使われているものと異なることがあります。
これは部品の共通化，改良等によるものです。

3. 部品の在庫

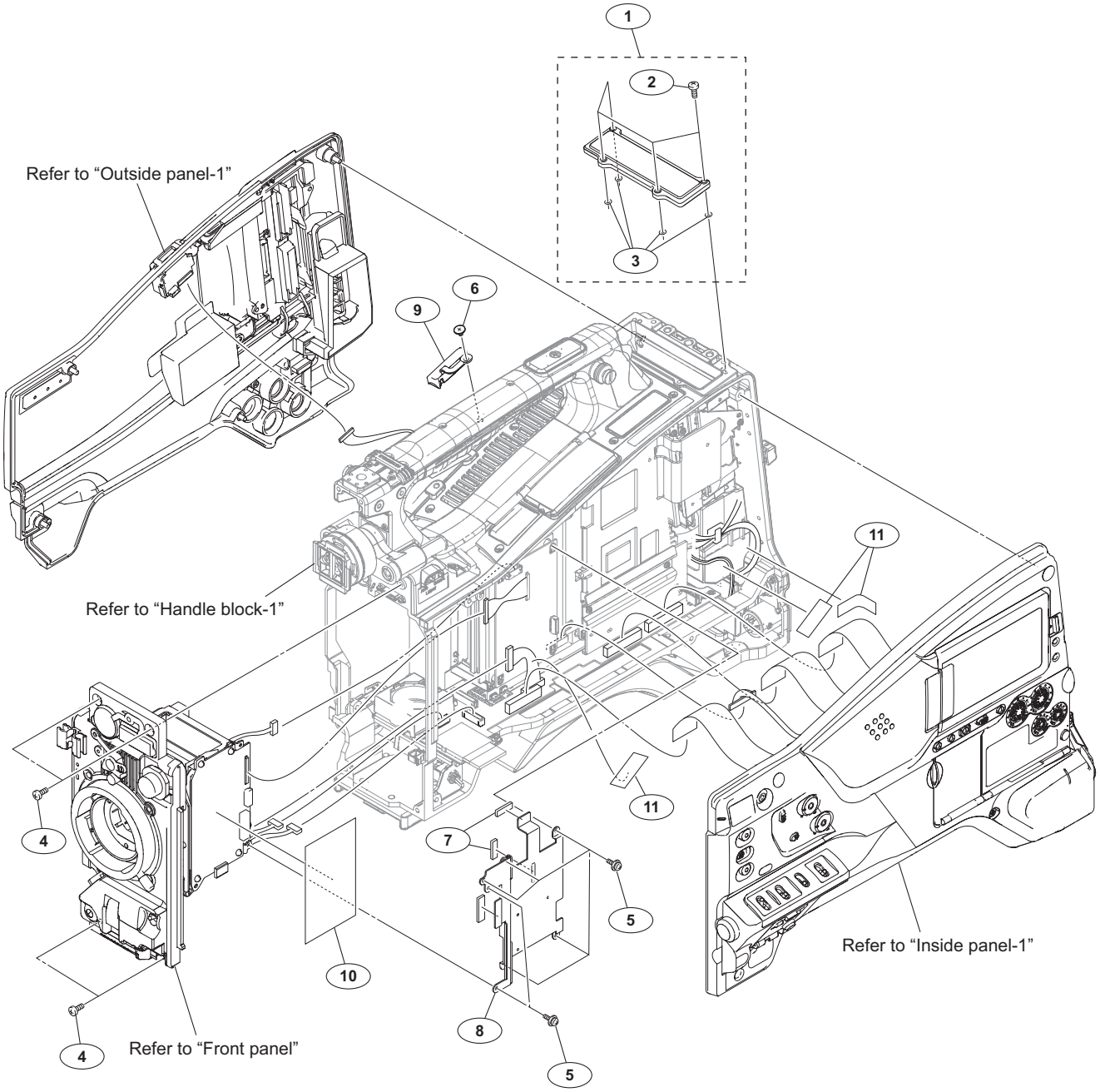
部品表の SP（Supply code）欄に “o” で示される部品は在庫していないことがあり，納期が長くなることがあります。

4. ハーネス

部品番号の記載されていないハーネスは，サービス部品として登録されていません。

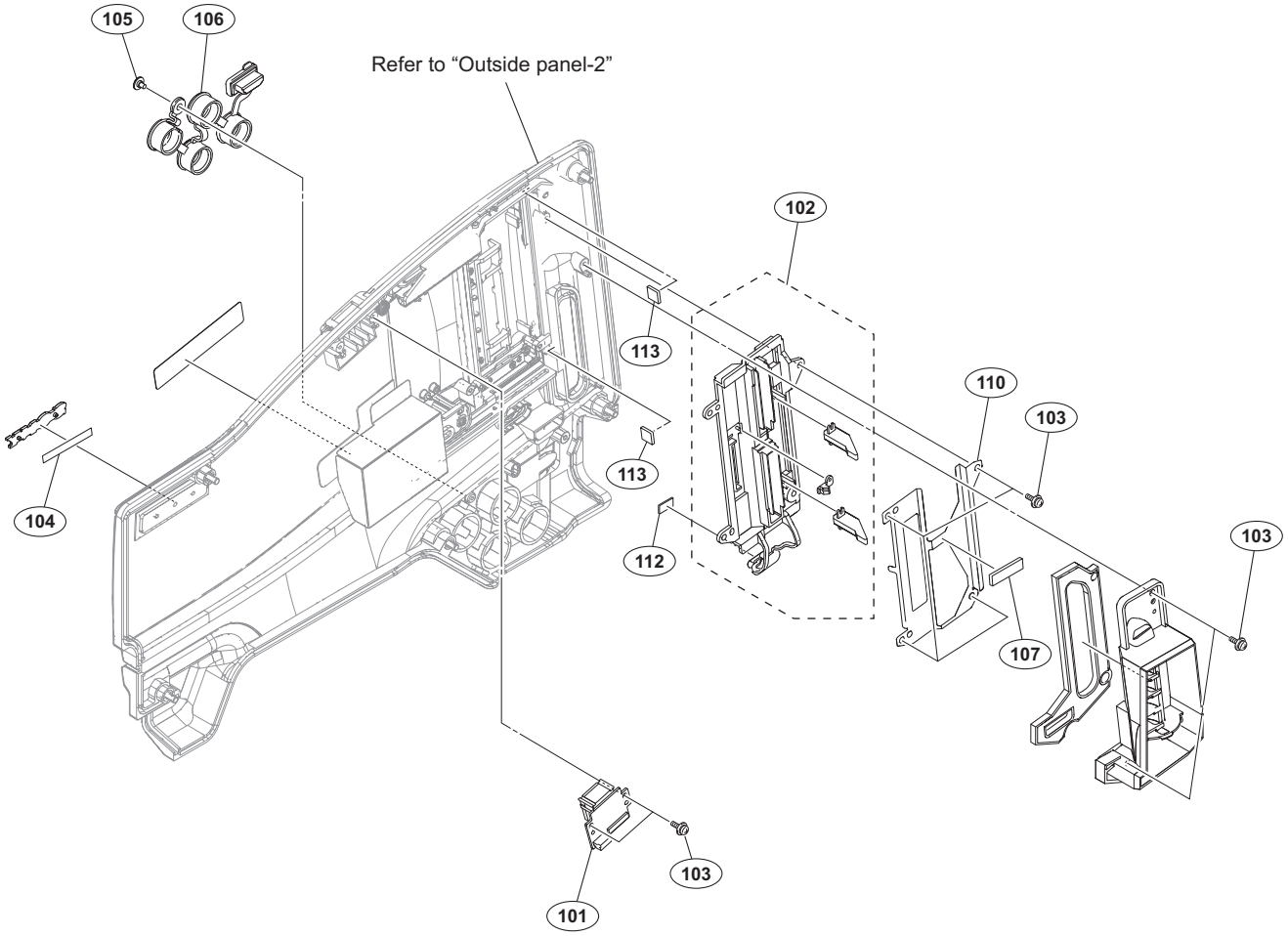
5-2. Exploded Views

Overall



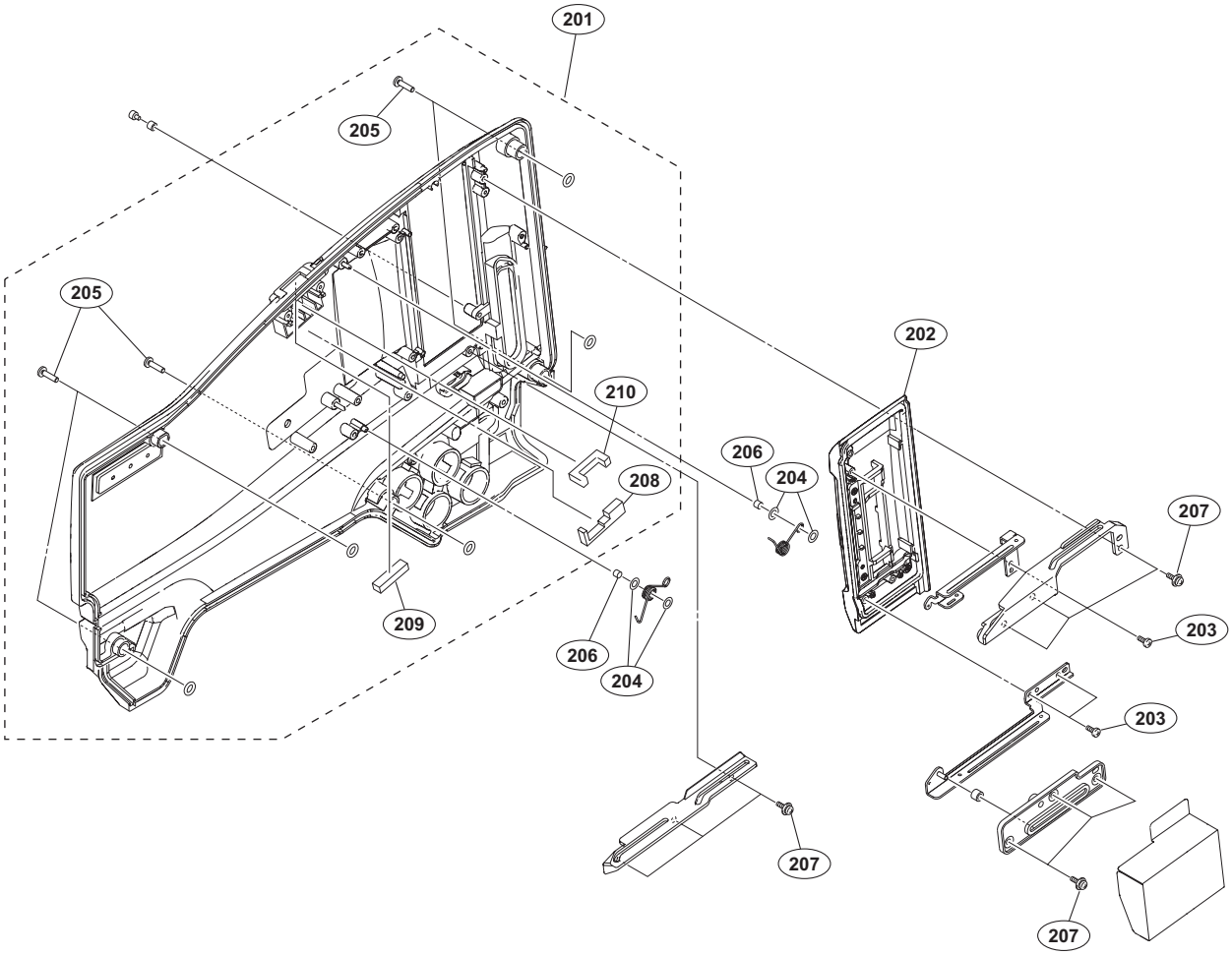
No.	Part No.	SP	Description
1	A-2061-139-A	s	PLATE (WRR) ASSY, BLIND
2	3-294-192-02	s	+P M2.6X10
3	3-742-004-01	s	RING, NYLON
4	3-742-074-13	s	SCREW (+B 3X8)
5	3-855-938-01	s	SCREW [+PSW 2x5]
6	3-965-077-02	s	SCREW, SPECIAL (M2) [M2x2.4]
7	4-265-547-01	s	GASKET UA
8	4-545-523-01	s	SEPARATOR, FRONT
9	4-545-572-01	s	COVER (NO DONGLE)
10	4-549-570-01	s	SHEET (70X40), MG09
11	4-446-014-01	s	TAPE AS (2040)

Outside-1



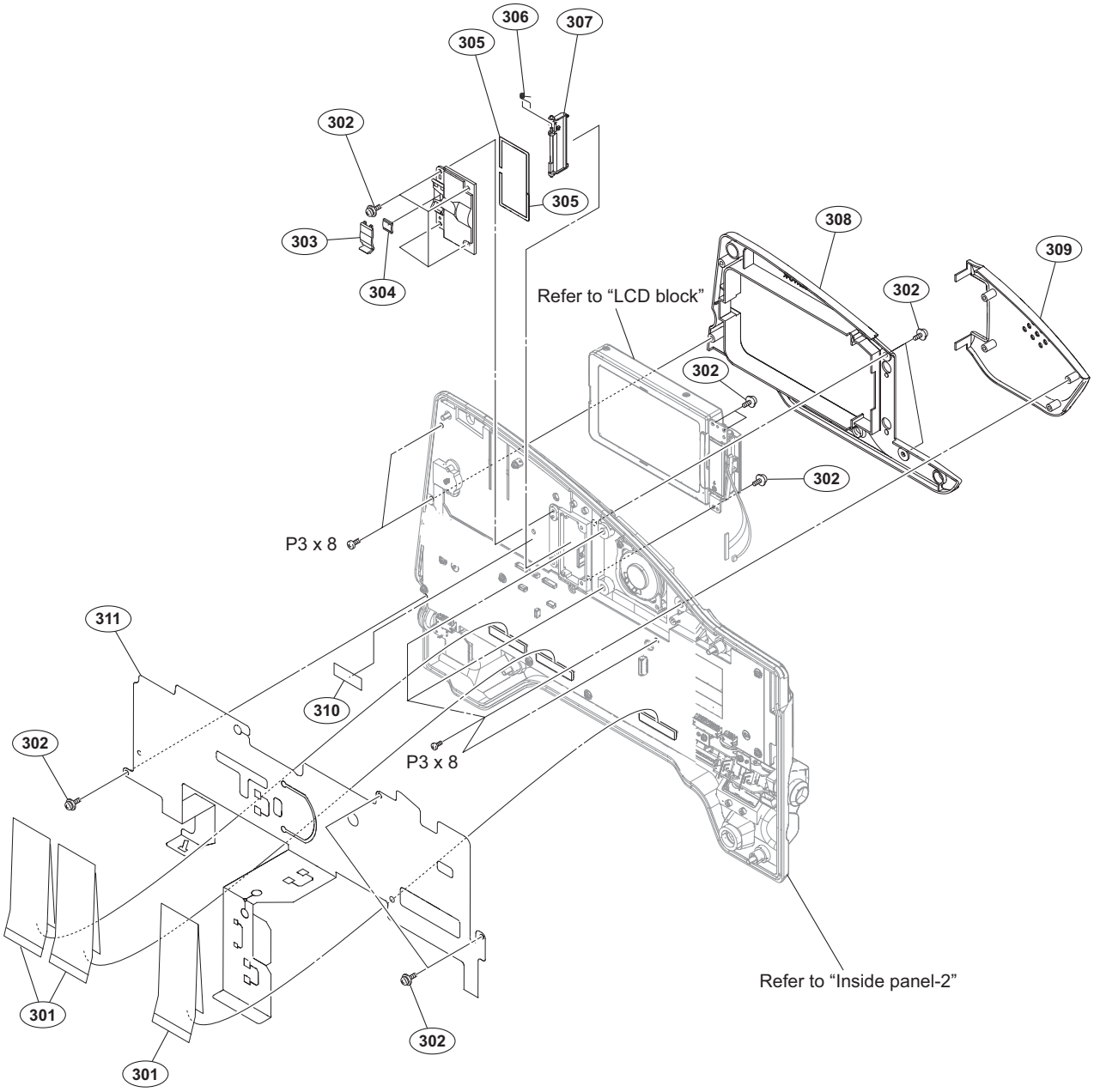
No.	Part No.	SP	Description
101	A-2057-508-A	s	MOUNTED CIRCUIT BOARD, CN-3722
102	X-2590-311-1	s	ESCUTCHEON (EC) ASSY
103	3-855-938-01	s	SCREW [+PSW 2x5]
104	3-870-153-11	s	SHEET (4.5X30), ADHESIVE
105	3-965-077-02	s	SCREW, SPECIAL (M2) [M2x2.4]
106	4-168-993-01	s	CAP, BNC
107	4-281-496-01	s	GASKET , PRISM BLOCK
110	4-545-569-01	s	PLATE, SLOT SHIELD
112	4-549-831-01	s	SPACER (ESCUTCHEON)
113	4-558-874-01	s	STOPPER (OPEN) 2

Outside-2



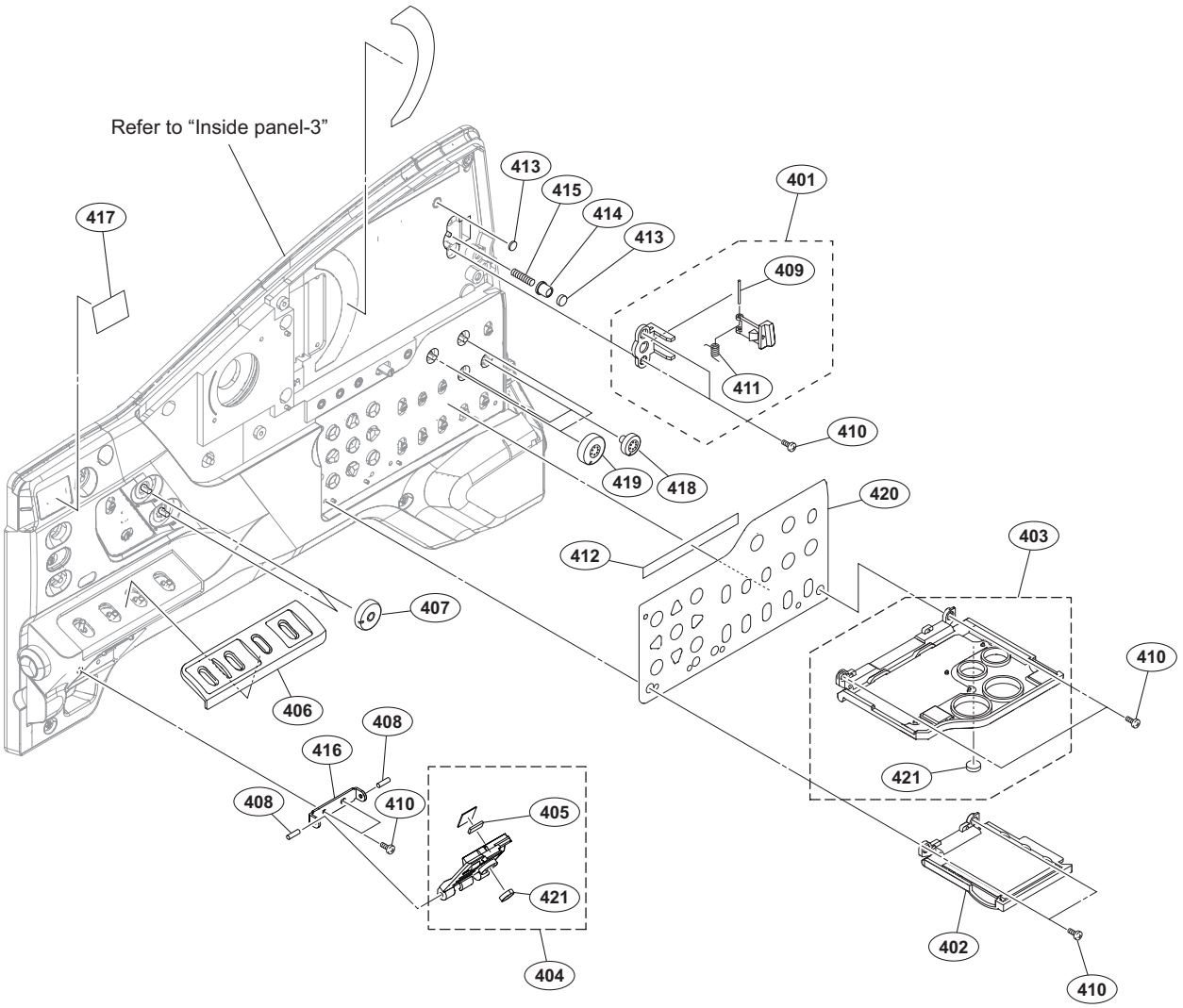
No.	Part No.	SP	Description
201	A-2061-159-A	s	PANEL SUB ASSY, OUTSIDE
202	A-2061-160-A	s	LID ASSY, SLOT
203	3-080-206-21	s	SCREW, TAPPING, P2
204	3-223-464-01	s	SPACER (SLIDER)
205	3-603-680-02	s	STAINLESS SCREW +B3X12
206	3-657-841-31	s	SPACER (2X2.5)
207	3-855-938-01	s	SCREW [+PSW 2x5]
208	4-545-566-01	s	SHEET (USB), WP
209	4-562-622-01	s	SHEET (S), WP
210	4-562-623-01	s	SHEET (L), WP

Inside Panel-1



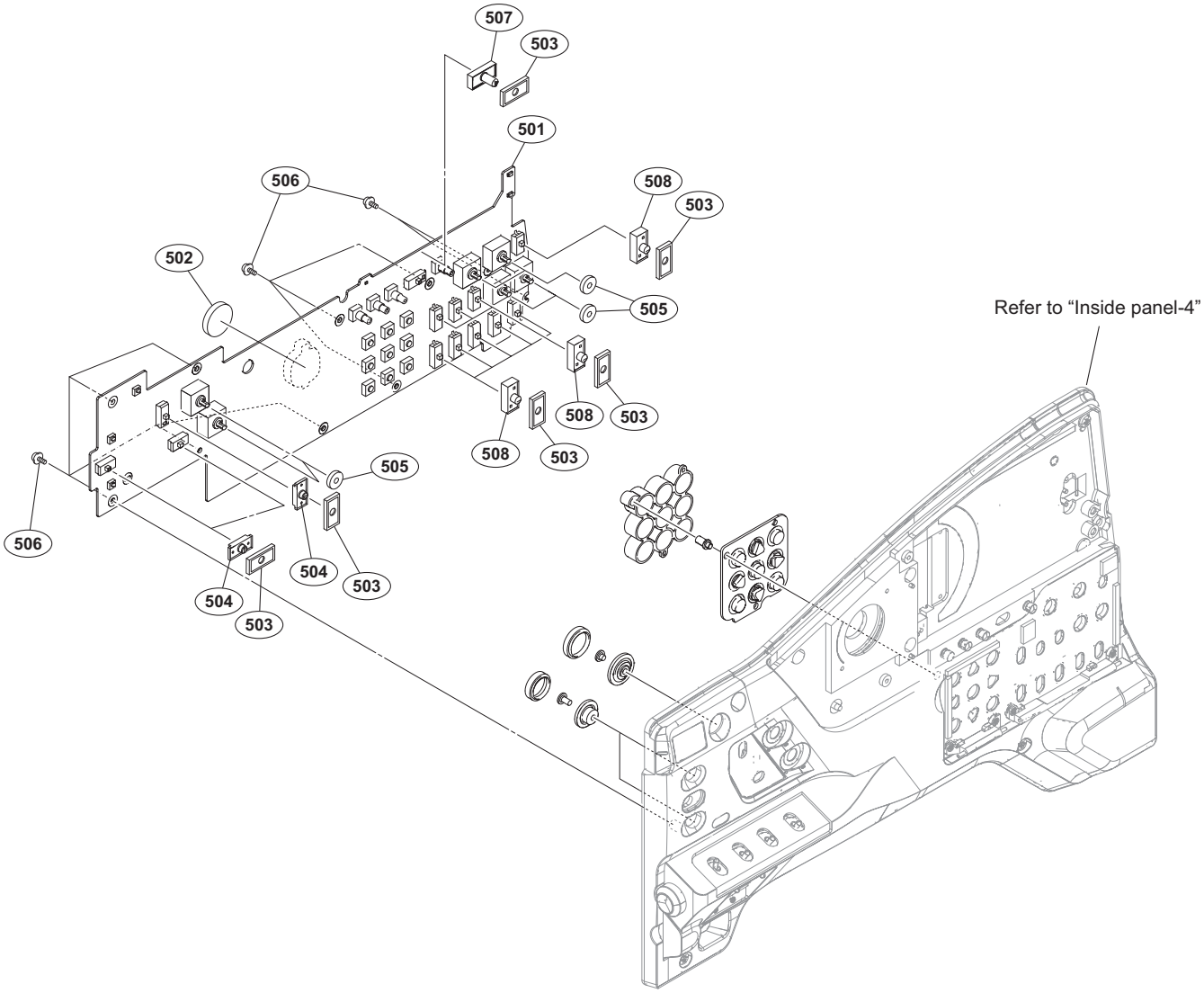
No.	Part No.	SP	Description
301	1-837-294-11	s	CABLE, FLEXIBLE FLAT (25 CORE)
302	3-855-938-01	s	SCREW [+PSW 2x5]
303	3-868-599-01	s	CLAMP HARNESS LCD
304	3-868-991-11	s	SHEEL HARNESS LCD
305	3-870-138-11	s	SHEET,HARNESS DROP PROTECTION
306	3-870-139-01	s	SPRING, HELICAL TORSION
307	4-264-413-01	s	PLATE BLIND, HING
308	4-264-414-11	s	PAD, INSIDE(R)
309	4-264-430-01	s	PAD(L), INSIDE
310	4-446-014-01	s	TAPE AS (2040)
311	4-545-555-01	s	INSULATING SHEET, FP
	7-685-146-11	s	SCREW +P 3X8 TYPE2 NON-SLIT

Inside Panel-2



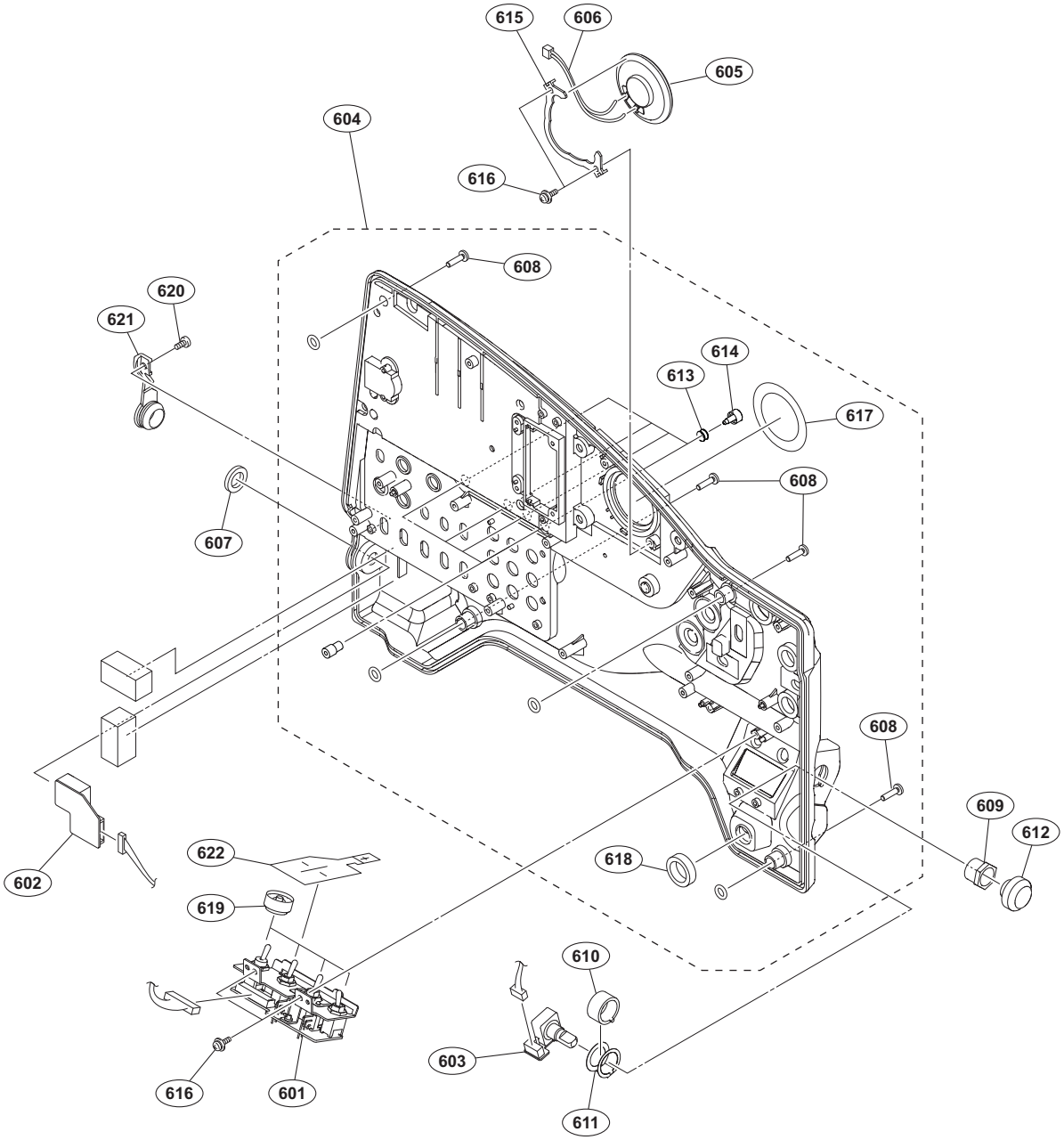
No.	Part No.	SP	Description
401	A-1799-766-A	s	LCD LOCK ASSY
402	A-2061-154-A	s	DOOR (L) ASSY, SWITCH
403	A-2061-155-A	s	DOOR (R) ASSY, SWITCH
404	A-2061-156-A	s	DOOR ASSY, MENU
405	1-471-483-11	s	MAGNET, LCD
406	3-629-768-52	s	ORNAMENTAL PLATE(3),SW,CAMERA
407	3-680-219-03	s	KNOB,VR
408	3-703-357-03	s	PIN, PARALLEL (DIA. 1.6X6)
409	3-703-575-01	s	PIN (DIA. 1.2), PARALLEL
410	3-719-381-02	s	SCREW (M2X4)
411	3-869-457-01	s	SPRING TORSION
412	3-879-092-01	s	SHEET, SW PANEL
413	3-969-387-01	s	FOOT, RUBBER
414	4-264-412-01	s	LCD PANEL POPUP
415	4-264-416-01	s	SPRING, COMPRESSION
416	4-467-510-01	s	HINGE, MENU DOOR
417	4-468-152-01	s	LABEL, FILTER INDICATION
418	4-472-861-01	s	VR KNOB (S)
419	4-472-862-01	s	VR KNOB (2)
420	4-562-472-01	s	PLATE, SW ORNAMENTAL
421	4-644-879-11	s	FOOT (B-2)

Inside Panel-3



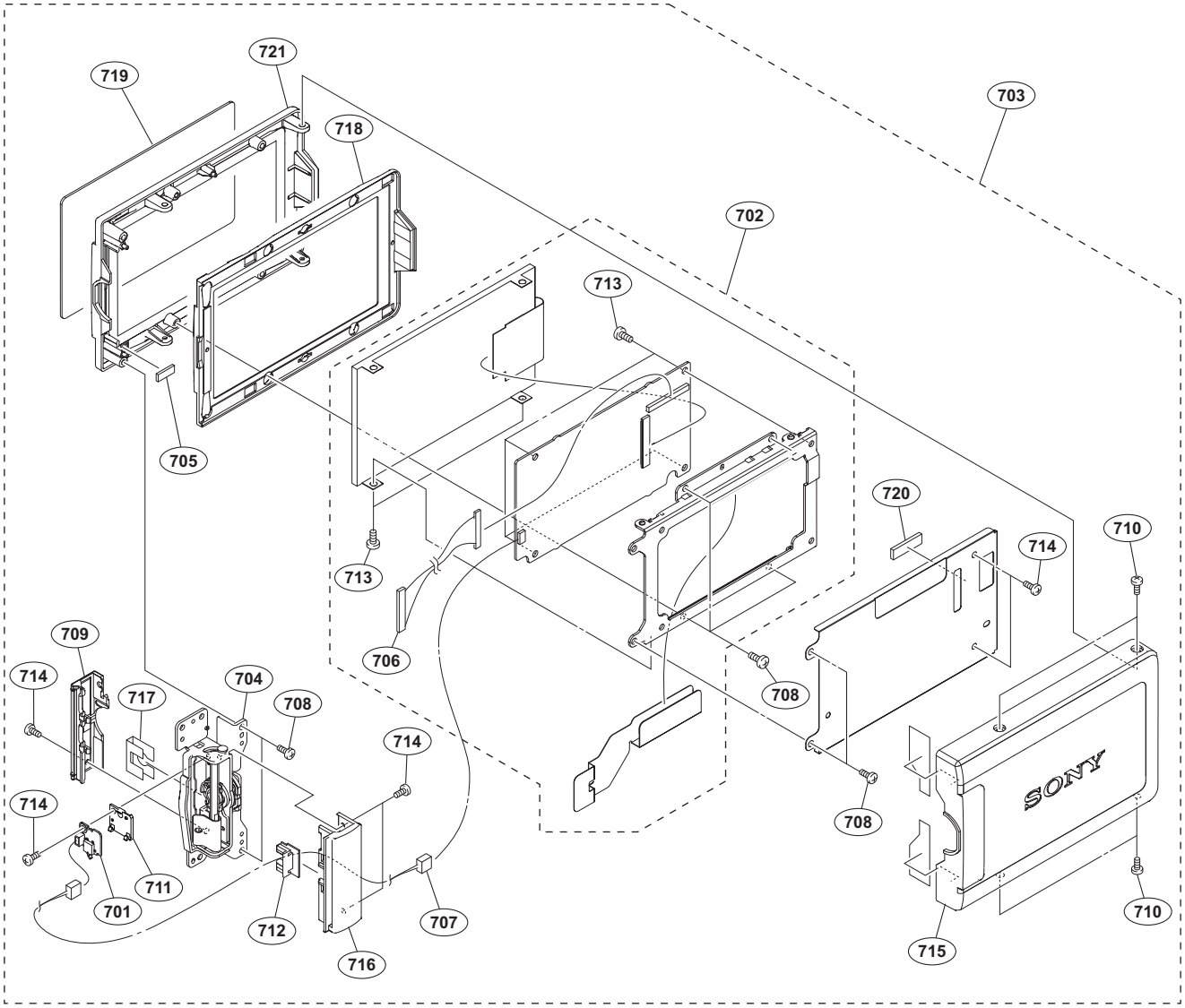
No.	Part No.	SP	Description
501	A-2058-611-A	s	MOUNTED CIRCUIT BOARD, FP-208
502	⚠ 1-528-174-72	s	BATTERY, LITHIUM (CR2032 TYPE)
503	3-796-995-01	s	DROP PROTECTION(SW)
504	3-796-996-03	s	KNOB(A),SW
505	3-797-016-11	s	CUSHION VOLUME AUDIO
506	3-855-938-01	s	SCREW [+PSW 2x5]
507	4-472-863-01	s	KNOB (B), SWITCH
508	4-472-864-01	s	KNOB (C), SWITCH

Inside Panel-4



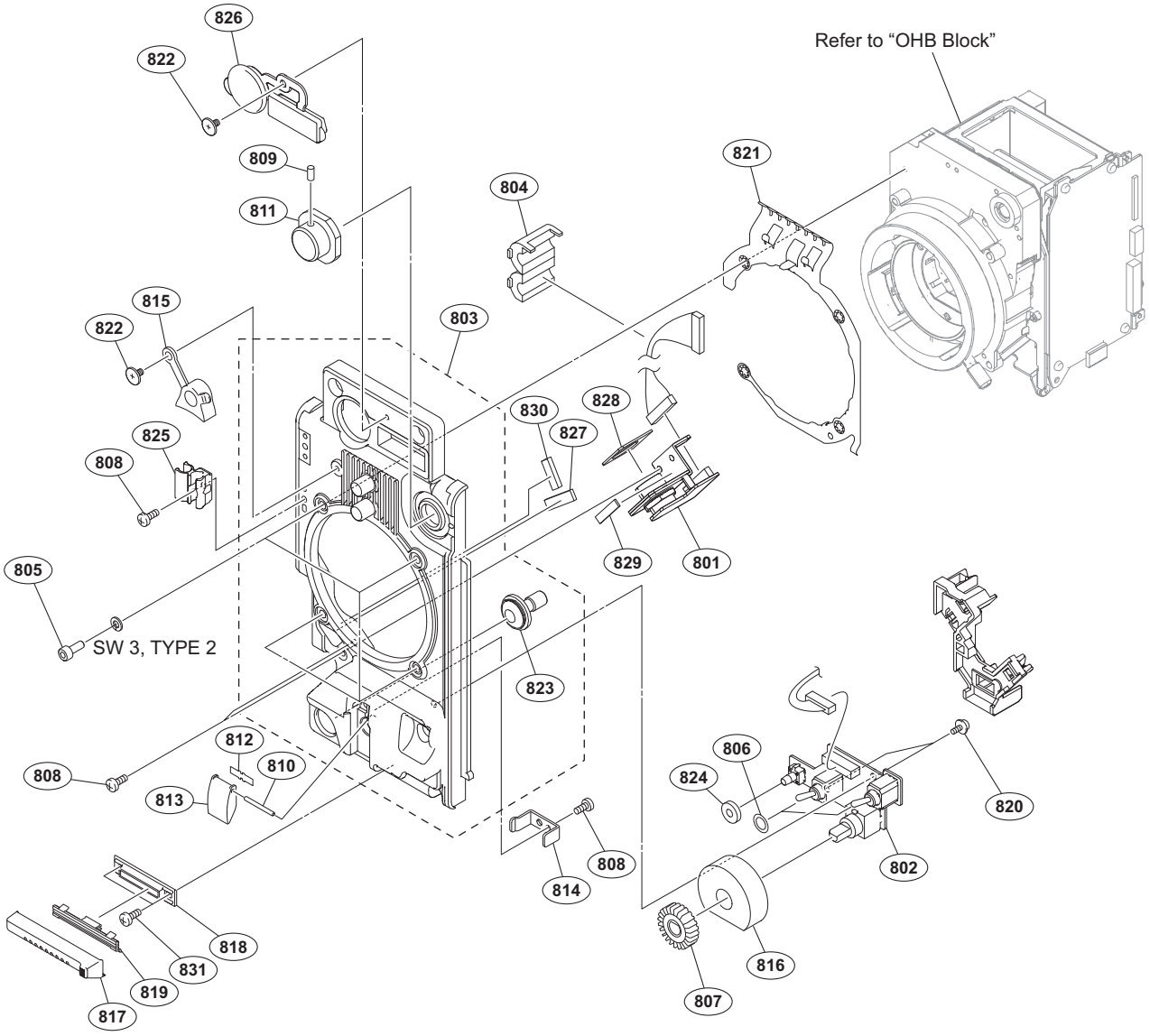
No.	Part No.	SP	Description
601	A-2054-873-A	s	MOUNTED CIRCUIT BOARD, SW-1650
602	A-2054-875-A	s	MOUNTED CIRCUIT BOARD, HP-171
603	A-2054-876-A	s	MOUNTED CIRCUIT BOARD, ENC-162
604	A-2061-153-A	s	PANEL SUB ASSY, INSIDE
605	1-503-293-12	s	SPEAKER
606	1-967-045-12	s	HARNESS, SUB (SPEAKER)
607	3-061-234-01	s	NUT (M6X0.5)
608	3-603-680-02	s	STAINLESS SCREW +B3X12
609	3-629-446-04	s	SLEEVE(ENC2)
610	3-629-447-03	o	SLEEVE(ENC1)
611	3-647-917-02	s	PLATE,EARTH
612	3-692-111-02	s	KNOB,RE
613	3-724-758-02	s	RUBBER (PUSH), DROP PROTECTION
614	3-797-073-01	s	RES,SW PUSE
615	3-797-084-01	s	HOLDER SPEAKER
616	3-855-938-01	s	SCREW [+PSW 2x5]
617	3-868-597-11	s	SHEET(SP),DROP PROTECTION
618	3-870-098-11	s	CUSHION, POWER SWITCH
619	3-870-137-02	s	CAP, DROP PROTECTION
620	3-965-077-02	s	SCREW, SPECIAL (M2) [M2x2.4]
621	4-168-991-01	s	COVER, HEADPHONE JACK
622	4-435-386-01	s	SW CONDUCTIVITY SHEET

LCD Block



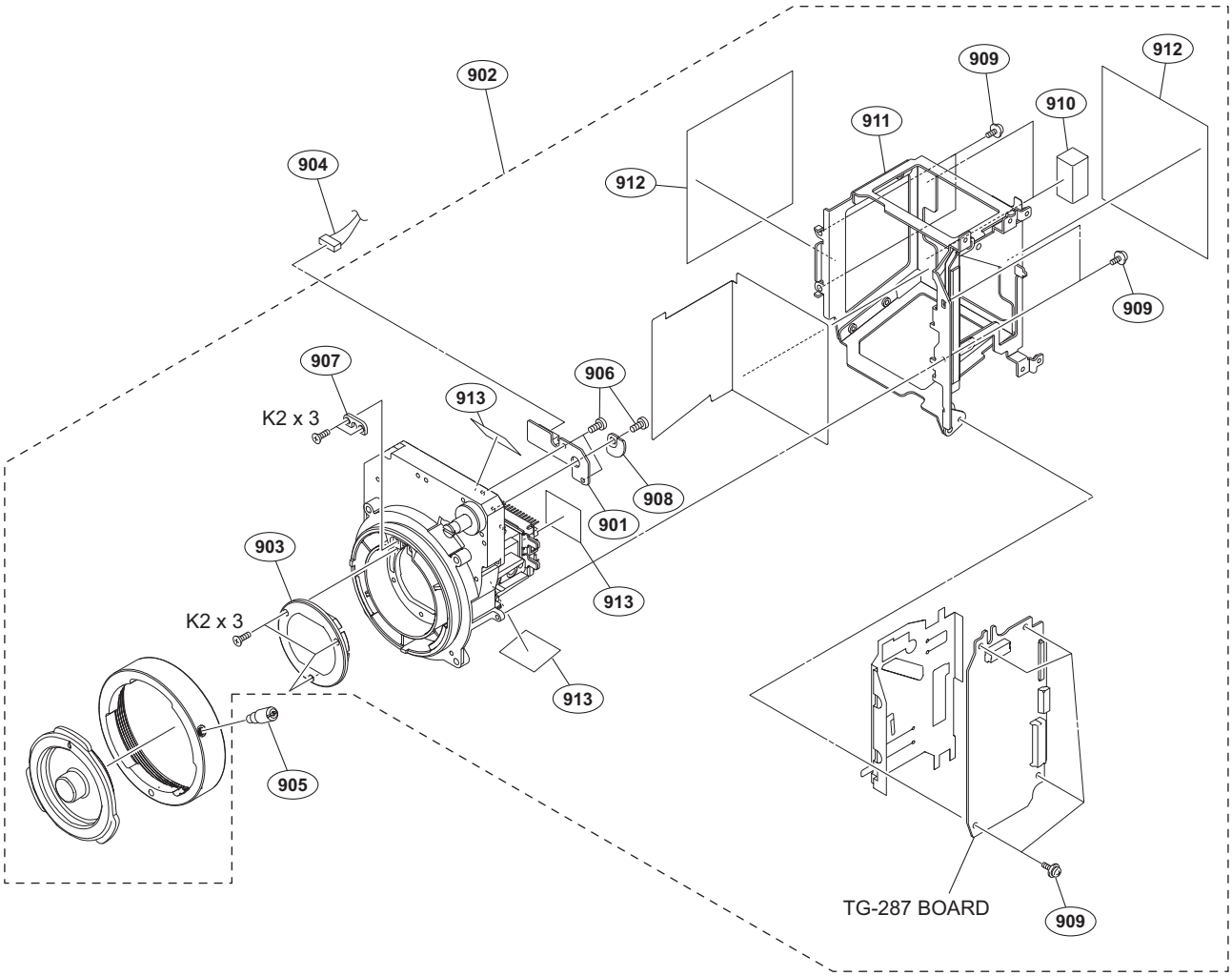
No.	Part No.	SP	Description
701	A-1786-301-A	s	MOUNTED CIRCUIT BOARD, DET-50
702	A-2061-551-A	s	3.5 INCH LCD ASSY
703	A-2069-071-A	s	LCD ASSY (RP)
704	X-2560-679-1	s	HINGE ASSY
705	1-471-483-11	s	MAGNET, LCD
706	1-967-538-11	s	HARNESS(LCD)
707	1-970-224-11	s	SUB HARNESS(DET)
708	3-056-233-21	s	SCREW (M2), LOCK ACE, P2 [P2x4]
709	3-060-694-11	s	COVER (REAR), HINGE
710	3-719-381-02	s	SCREW (M2X4)
711	3-870-082-01	s	LCD HINGE SW HOLDER
712	3-870-088-01	s	PROTECTOR, LCD HINGE HARNESS
713	3-964-010-32	s	SCREW (M2), 0 PART-NO. P2 MAIN [P2x2.5]
714	3-989-735-11	s	SCREW (M1.7), LOCK ACE, P2 [P 1.7x2.5]
715	4-264-420-01	s	COVER, LCD
716	4-264-422-01	s	(FRONT)COVER HINGE
717	4-300-095-11	s	SHEET,HINGE HARNESS PROTECTION
718	4-540-345-01	s	LCD SEALING
719	4-540-346-01	s	LCD WINDOW
720	4-549-568-01	s	GASKET (T3X5X15)
721	4-558-188-01	s	BEZEL, LCD

Front Block



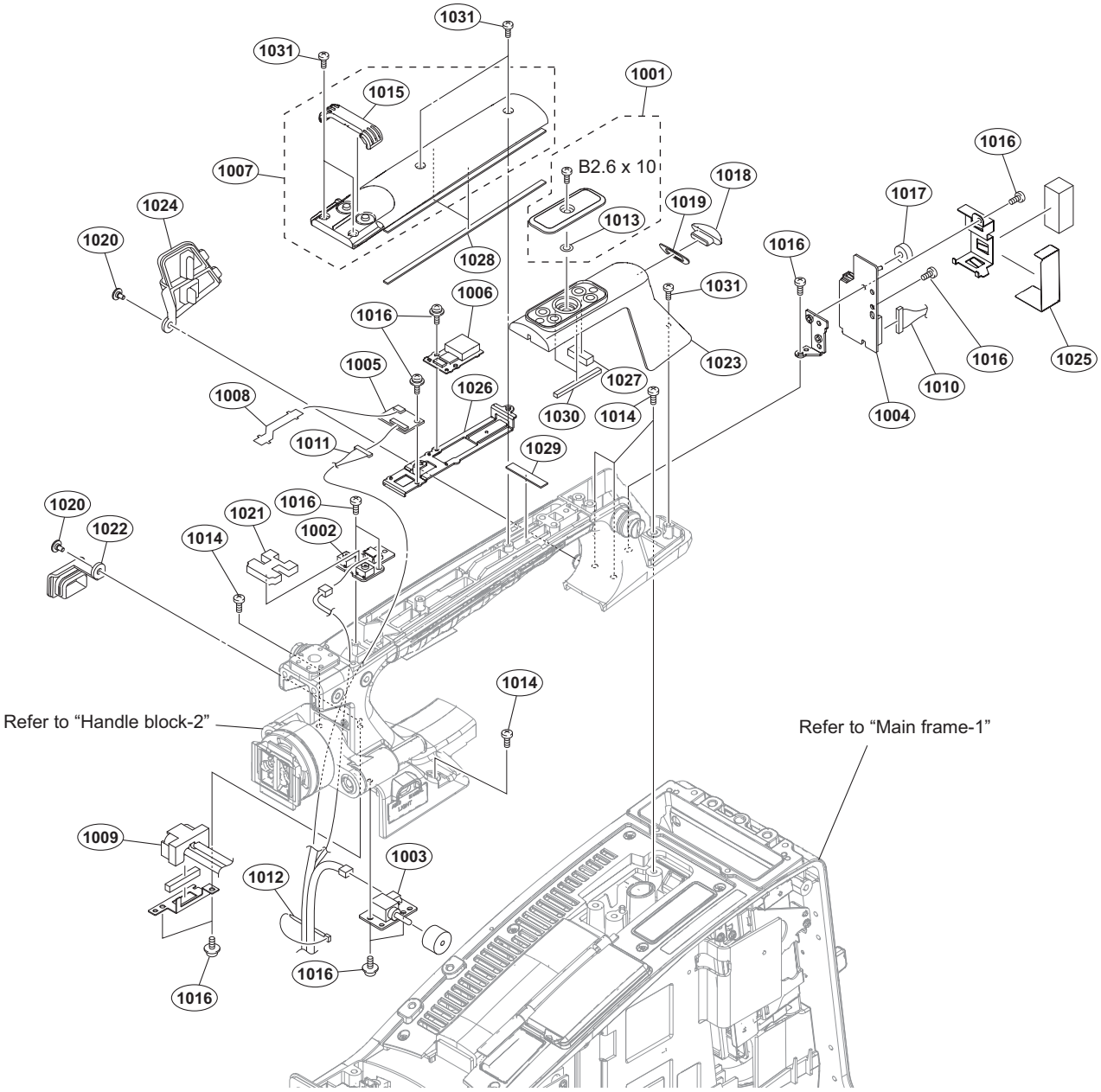
No.	Part No.	SP	Description
801	A-2054-862-A	s	MOUNTED CIRCUIT BOARD, CN-3737
802	A-2054-863-A	s	MOUNTED CIRCUIT BOARD, SW-1651
803	A-2061-145-A	s	PANEL SUB ASSY, FRONT
804	1-500-082-11	o	CLAMP, SLEEVE FERRITE
805	2-623-773-11	s	BOLT (M3X8), STAINLESS
806	3-312-823-02	s	PACKING, KNOB
807	3-624-135-01	s	KNOB,VR(AUDIO)
808	3-637-901-11	s	SCREW M2.6X5
809	3-701-505-01	s	SET SCREW, DOUBLE POINT 3X3
810	3-703-357-05	s	PIN, PARALLEL (DIA. 1.6X8)
811	3-710-054-01	s	KNOB, FILTER
812	3-742-066-11	o	SPRING, SHUTTER
813	3-742-067-06	s	LID, SHUTTER
814	3-796-965-01	s	BRACKET,SHUTTER
815	3-796-982-03	s	HOLDER, LENS MOUNT
816	3-797-080-01	s	DROP PROTECTION(MIC VR)
817	3-854-361-01	s	GUARD VOLUME FRONT
818	3-854-362-01	s	HOLDER GUARD
819	3-854-363-01	s	SLIDER
820	3-855-938-01	s	SCREW [+PSW 2x5]
821	3-879-494-02	s	FINGER (LM), SHIELD
822	3-965-077-02	s	SCREW, SPECIAL (M2) [M2x2.4]
823	3-986-632-02	s	BUTTON,VTR START
824	3-990-897-11	s	CUSHION REC(SW)
825	4-138-678-01	s	CLAMP, CABLE
826	4-169-085-02	s	CAP, CONNECTOR
827	4-433-494-02	s	GASKET (F), MAIN
828	4-468-156-01	s	CUSHION, DROPPROTECTION CONNEC
829	4-468-157-01	s	CUSHION, DROP PROTECTION 2
830	4-549-568-01	s	GASKET (T3X5X15)
831	4-654-273-02	s	ACE (M2), LOCK [B2x5]
	7-623-208-22	s	SW 3,TYPE 2

OHB Block



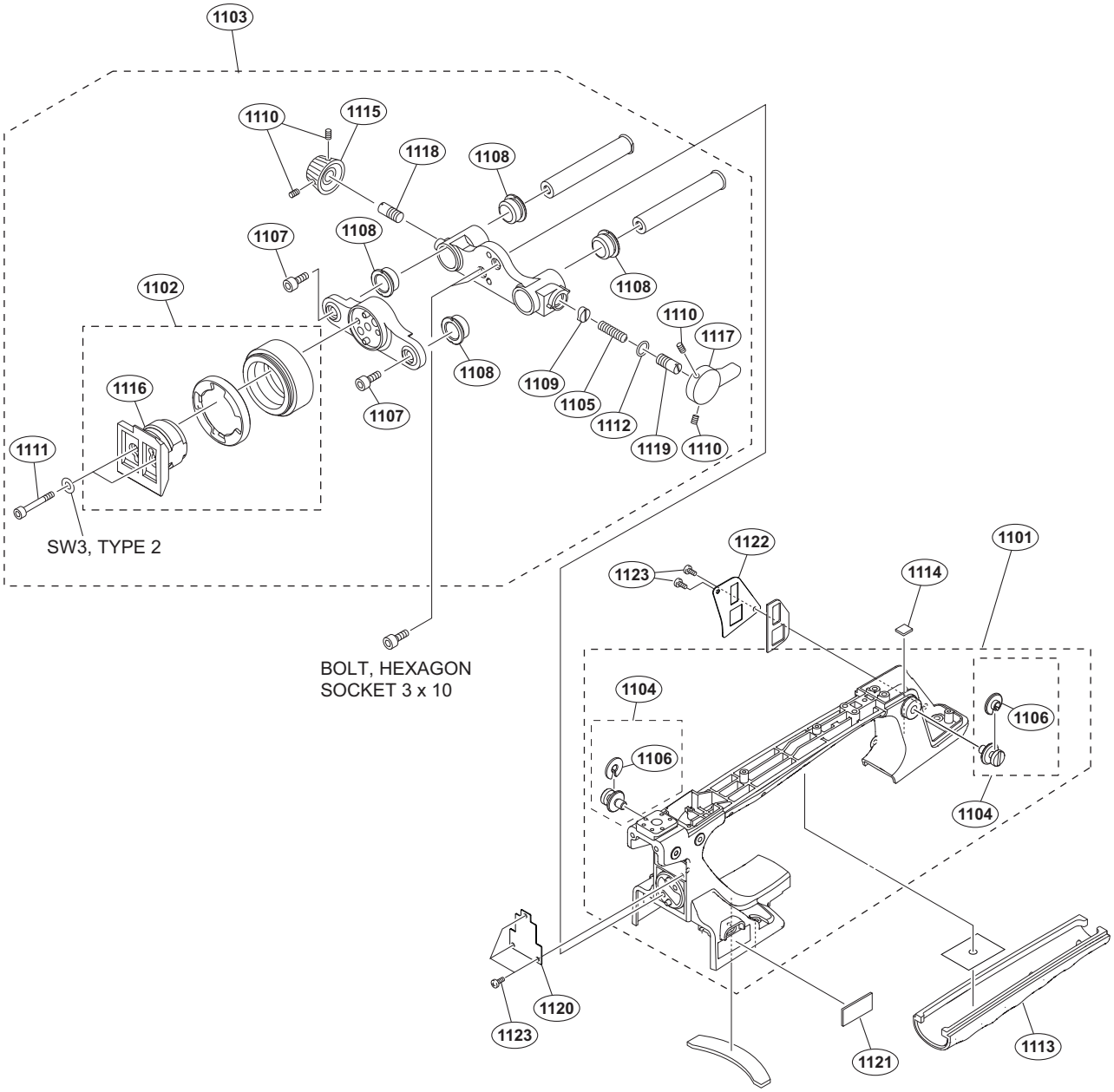
No.	Part No.	SP	Description
901	A-2057-590-A	s	MOUNTED CIRCUIT BOARD, SE-1155
902	A-2069-065-A	s	CCD BLOCK ASSY (RP)
903	1-788-765-21	s	FILTER UNIT, OPTICAL
904	1-967-049-11	s	HARNESS, SUB (SE)
905	3-678-629-04	s	LEVER, MOUNT
906	3-729-076-11	s	SCREW (+B) (2X4)
907	3-776-897-02	s	GUIDE PLATE
908	3-854-378-01	s	PLATE,FILTER ID
909	3-855-938-01	s	SCREW [+PSW 2x5]
910	4-119-228-01	s	GASKET (VF)
911	4-264-432-01	s	CHB CASE
912	4-549-569-01	s	SHEET (70X60), MG10
913	4-478-477-01	s	MG SHEET (30X30)
	7-627-452-18	s	SCREW,PRECISION +K 2X3

Handle Block-1



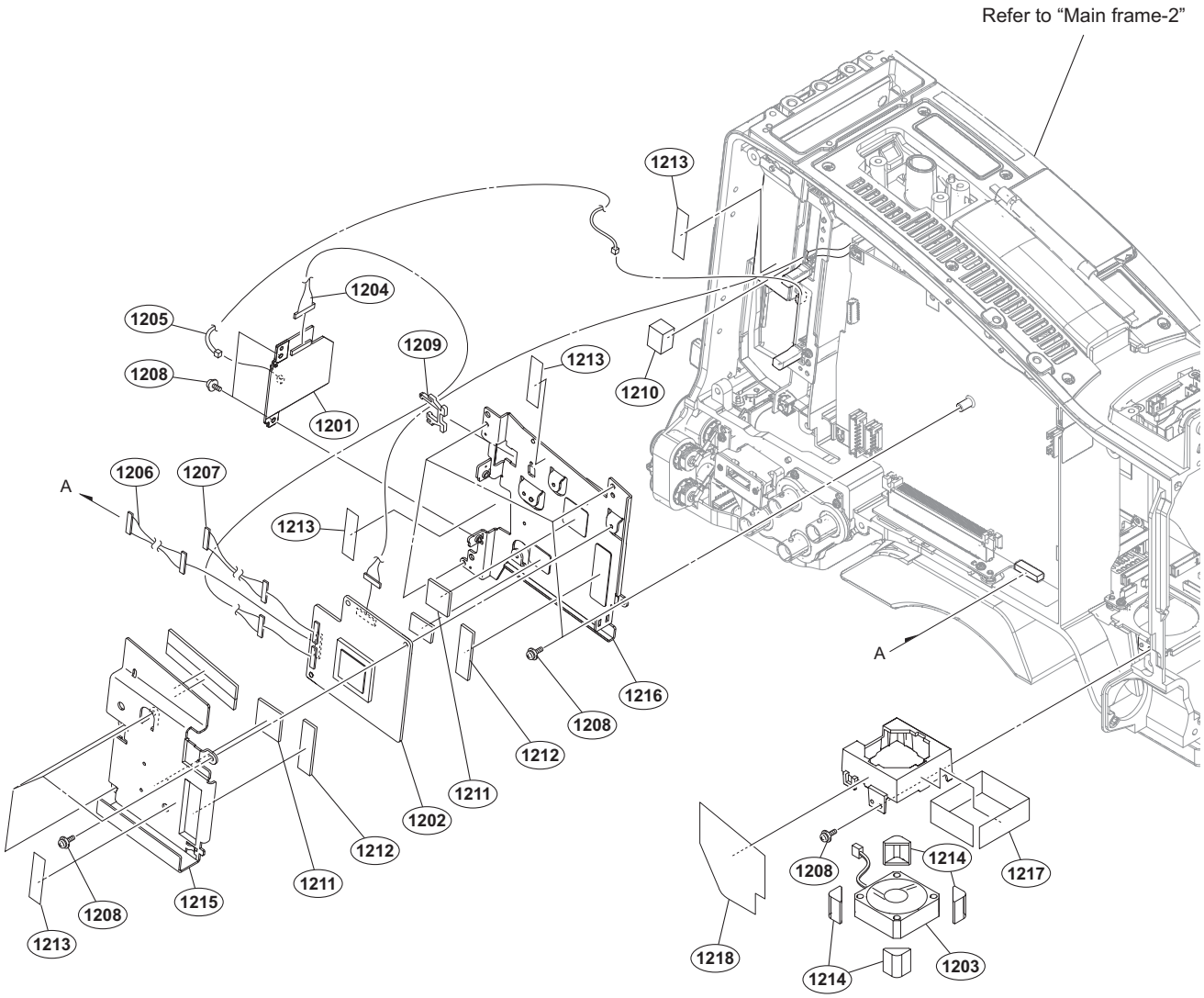
No.	Part No.	SP	Description
1001	A-1106-989-A	s	COVER ASSY, SHOE
1002	A-2054-864-A	s	MOUNTED CIRCUIT BOARD, SW-1652
1003	A-2054-865-A	s	MOUNTED CIRCUIT BOARD, SW-1653
1004	A-2054-870-A	s	MOUNTED CIRCUIT BOARD, LED-529
1005	A-2057-509-A	s	MOUNTED CIRCUIT BOARD, CN-3723
1006	A-2059-048-A	s	MOUNTED CIRCUIT BOARD, GP-1019
1007	X-2541-837-4	s	COVER ASSY, HANDLE (TOP)
1008	1-893-019-11	s	FP-2231 FLEXIBLE PWB
1009	1-967-028-11	s	HARNESS, SUB (LIGHT)
1010	1-967-783-11	s	HARNESS (COAXIAL CABLE)
1011	1-970-443-11	s	SUB HARNESS (GPS)
1012	3-337-402-01	o	BAND, BINDING
1013	3-742-004-01	s	RING, NYLON
1014	3-742-074-13	s	SCREW (+B 3X8)
1015	3-805-990-01	s	HANDLE TOP COVER LID
1016	3-855-938-01	s	SCREW [+PSW 2x5]
1017	3-868-631-01	s	CUSHION,DROP PROTECTION
1018	3-870-241-02	s	COVER, LAMP
1019	3-870-243-02	s	SEAL, LAMP COVER
1020	3-965-077-02	s	SCREW, SPECIAL (M2) [M2x2.4]
1021	4-000-665-01	s	SEALING (B), HANDLE
1022	4-168-996-01	s	CAP (LIGHT CONNECTOR)
1023	4-168-998-02	s	COVER, TALLY
1024	4-264-451-01	s	CAP (USB2)
1025	4-545-528-01	s	SHEET (LED529), PROTECTION
1026	4-545-545-01	s	BRACKET (GPS)
1027	4-549-673-01	s	CUSHION (TAC)
1028	4-549-672-01	s	CUSHION (HTC A)
1029	4-549-674-01	s	CUSHION (H MID)
1030	4-549-937-01	s	CUSHION (HTC B)
1031	4-654-273-02	s	ACE (M2), LOCK [B 2x5]
	7-621-775-50	s	SCREW +B 2.6X10

Handle Block-2



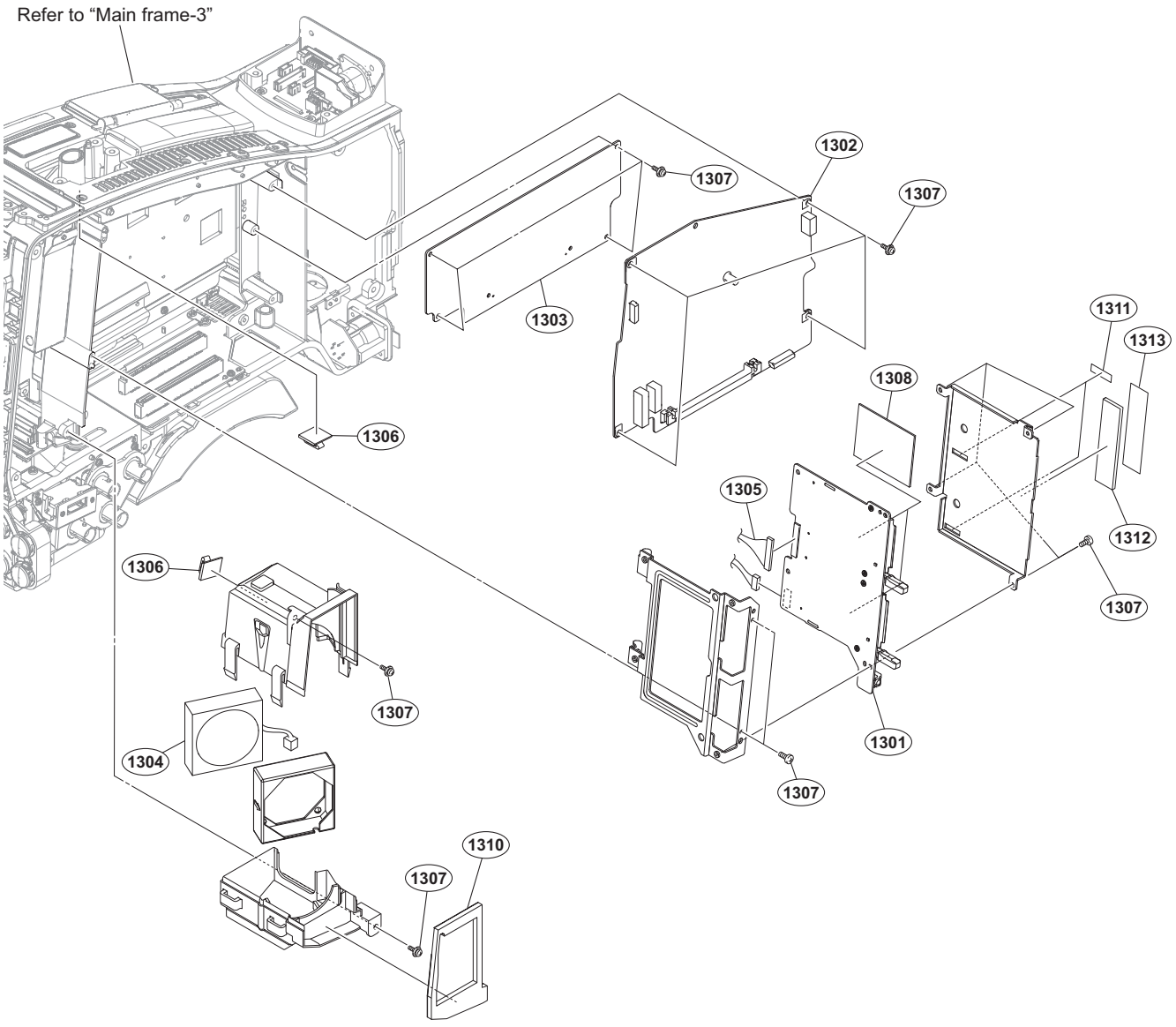
No.	Part No.	SP	Description
1101	A-2061-149-A	s	HANDLE SUB ASSY
1102	A-2065-043-A	s	SHOE ASSY,VF
1103	A-2065-046-A	s	SLIDE ASSY,VF
1104	X-3710-037-1	s	SUSPENSION ASSY (C)
1105	3-612-822-01	s	SPRING,COMPRESSION
1106	3-654-615-02	s	COLLAR, SUSPENSION
1107	3-657-705-91	s	BOLT (M4X8), HEXAGON HOLE
1108	3-679-684-01	o	REST,ARM
1109	3-679-702-01	o	CUSION,STOPPER
1110	3-701-507-01	s	SET SCREW, DOUBLE POINT,(M3X5)
1111	3-711-765-01	s	BOLT (M3), HEXAGON SOCKET
1112	3-895-622-01	s	RING (DIA. 5), O
1113	4-168-997-02	s	GRIP
1114	4-446-005-12	s	GASKET MAIN L
1115	4-549-633-01	s	KNOB, LOCK
1116	4-558-057-01	s	SHOE,SLIDE
1117	4-558-058-01	s	LEVER, LOCK
1118	4-558-190-01	s	LOCK,SCREW
1119	4-559-455-01	s	PIN, STOPPER
1120	4-562-473-01		COVER, FRONT
1121	4-562-474-01		PLATE (LIGHT SW), ORNAMENTAL
1122	4-562-475-01		PLATE (USB), ORNAMENTAL
1123	4-654-273-02	s	ACE (M2), LOCK [B 2x5]
	7-623-208-22	s	SW 3,TYPE 2
	7-683-405-04	s	BOLT,HEXAGON SOCKET 3X10

Main Frame-1



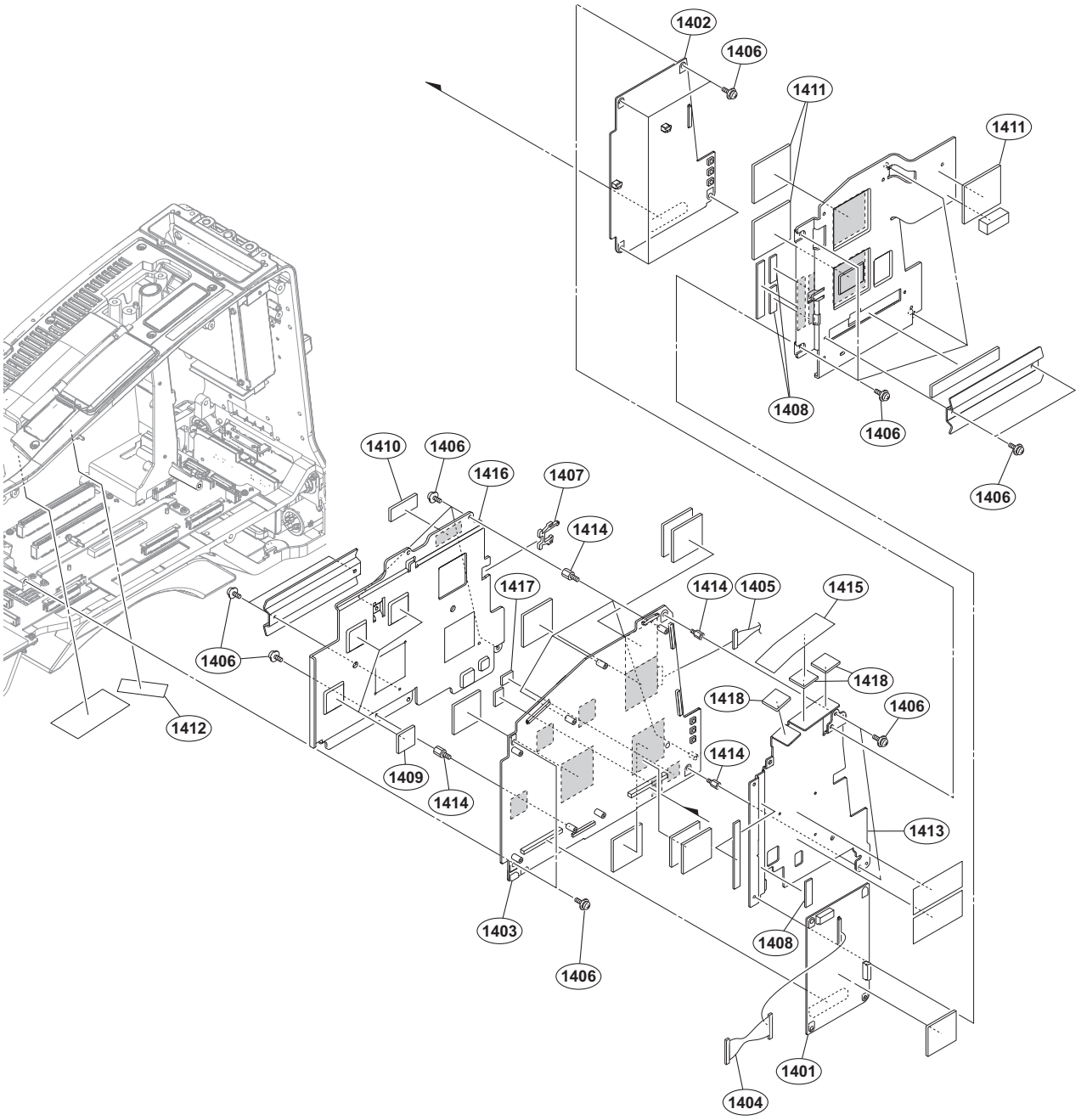
No.	Part No.	SP	Description
1201	A-2057-507-A	s	MOUNTED CIRCUIT BOARD, SD-58
1202	A-2063-702-B	s	BOARD, WM COMPLETE PC(RP)
1203	⚠ 1-855-292-11	s	FAN, DC (30 SQUARE)
1204	1-963-577-61	s	HARNESS (COAXIAL CABLE)
1205	1-970-442-11	s	SUB HARNESS (EC-SD)
1206	1-970-444-11	s	SUB HARNESS (WA_POWER2)
1207	1-970-445-11	s	HARNESS (CN-WA)
1208	3-855-938-01	s	SCREW [+PSW 2x5]
1209	4-137-926-01	s	SADDLE (LES-0505), EDGE
1210	4-284-134-11	s	GASKET (B)
1211	4-427-951-02	s	RADIATION SHEET C
1212	4-427-952-02	s	RADIATION SHEET D
1213	4-446-014-01	s	TAPE AS (2040)
1214	4-458-849-01	s	FAN HOLDER
1215	4-545-524-01	s	HEAT SINK (WA)
1216	4-545-534-01	s	BRACKET (WA)
1217	4-547-233-01	s	FM SHIELD (CCD FAN)
1218	4-547-234-01	s	FM SHIELD (MF)

Main Frame-2



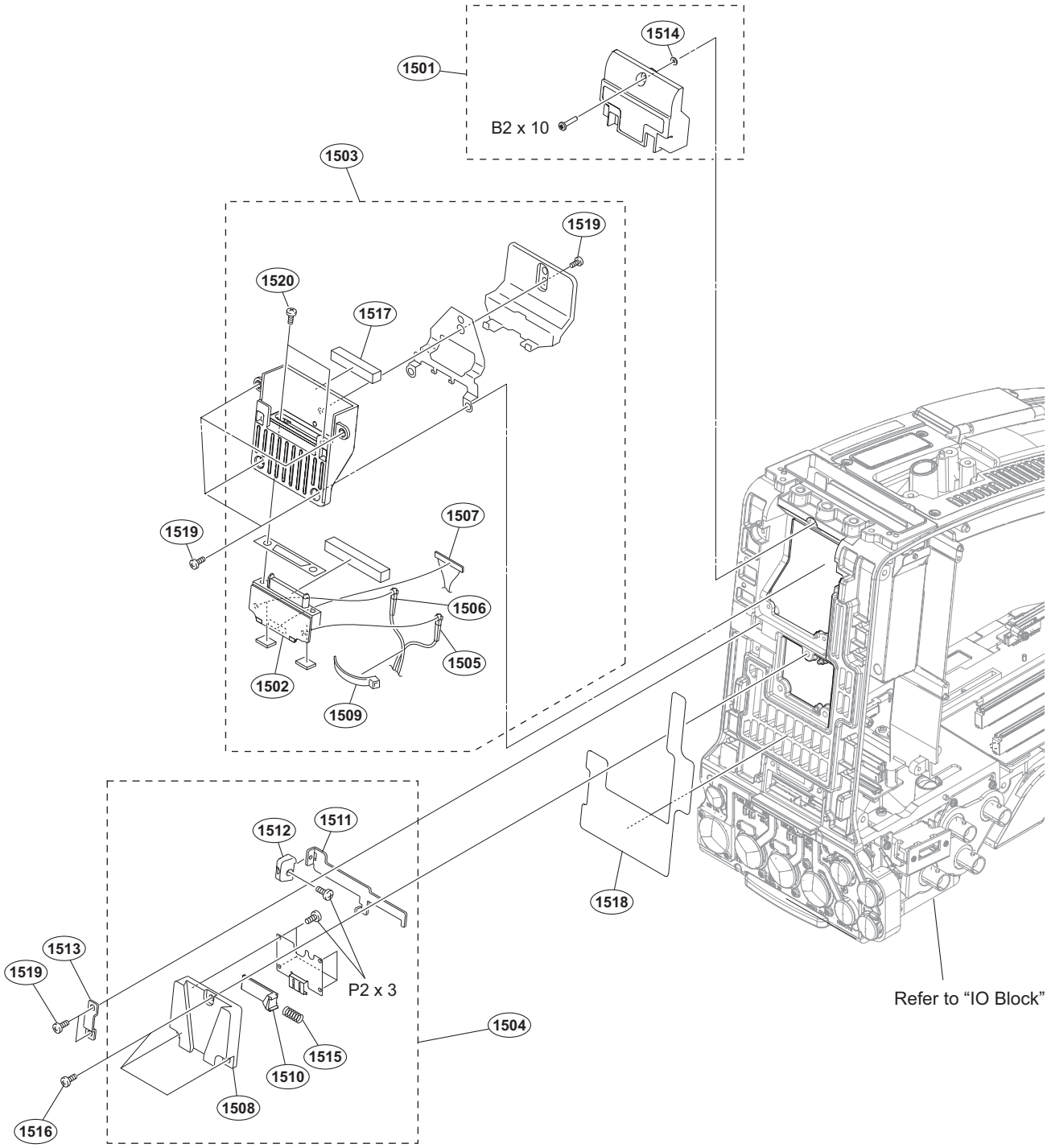
No.	Part No.	SP	Description
1301	A-2057-066-A	s	MOUNTED CIRCUIT BOARD, EC-82
1302	A-2058-419-A	s	MOUNTED CIRCUIT BOARD, RE-326
1303	A-2061-111-A	s	MOUNTED CIRCUIT BOARD, AU-360
1304	⚠ 1-855-024-11	s	FAN, DC (40 SQUARE)
1305	1-967-037-11	s	HARNESS (DPR-EC)
1306	3-257-200-01	s	CLAMP, CORD
1307	3-855-938-01	s	SCREW [+PSW 2x5]
1308	4-165-223-01	o	SHEET (4535T1), RADIATION
1310	4-468-131-01	s	CUSHION, JOINT
1311	4-468-147-01	s	SHEET (EC)
1312	4-545-551-01	s	SHEET (SXS-MF), RADIATION
1313	4-545-552-01	s	SHEET (SXS-MF), SLIDE

Main Frame-3



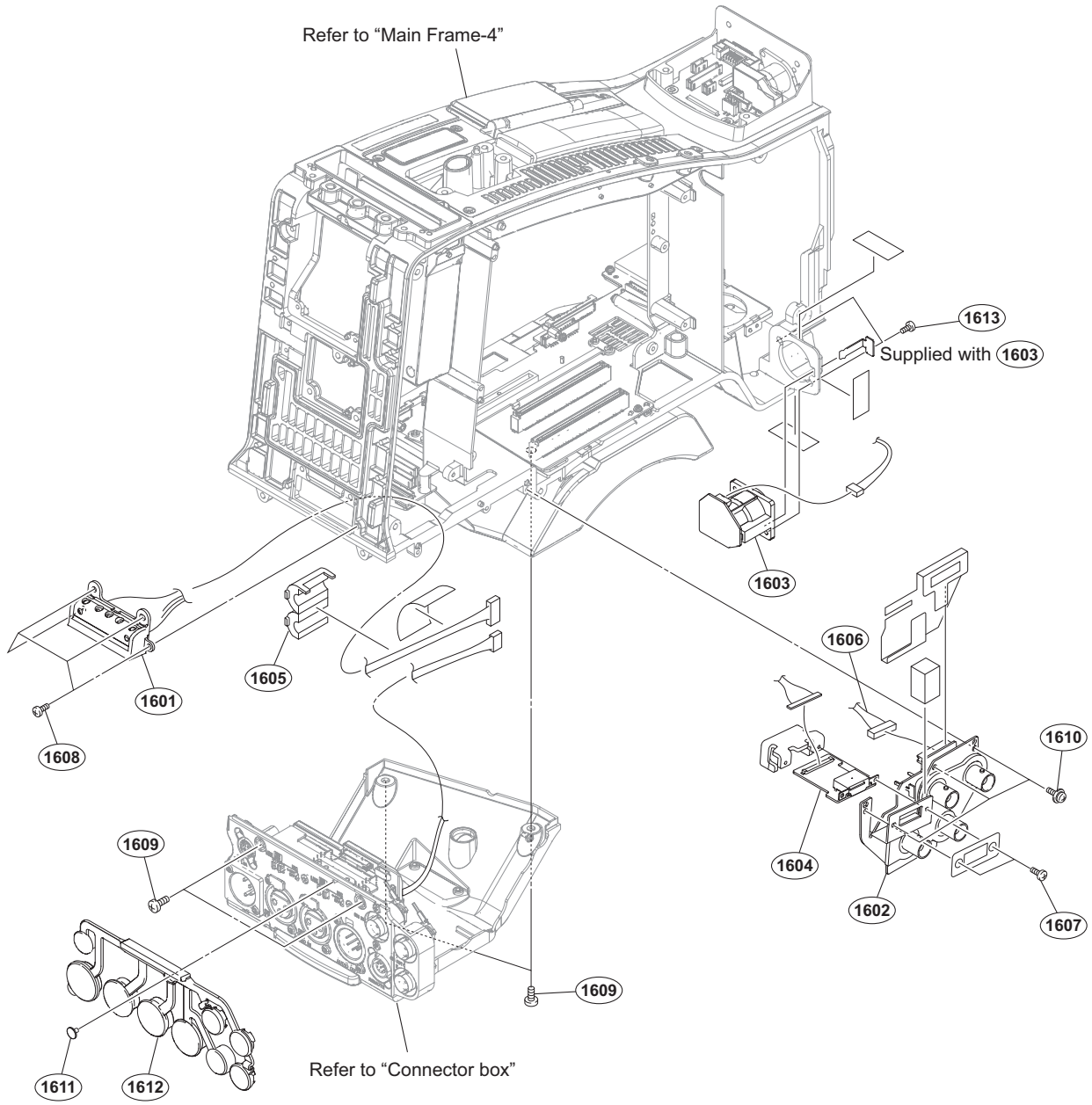
No.	Part No.	SP	Description
1401	A-2063-283-A	s	MOUNTED CIRCUIT BOARD, DCP-67
1402	A-2063-284-A	s	MOUNTED CIRCUIT BOARD, HPR-53
1403	A-2063-285-A	s	MOUNTED CIRCUIT BOARD, DPR-362
1404	1-967-533-11	s	HARNESS(TG-DCP)
1405	1-970-445-11	s	HARNESS (CN-WA)
1406	3-855-938-01	s	SCREW [+PSW 2x5]
1407	4-137-926-01	s	SADDLE (LES-0505), EDGE
1408	4-427-950-02	s	RADIATION SHEET B
1409	4-427-951-02	s	RADIATION SHEET C
1410	4-427-952-02	s	RADIATION SHEET D
1411	4-427-955-02	s	RADIATION_SHEET_G
1412	4-446-014-01	s	TAPE AS (2040)
1413	4-545-521-01	s	HEAT SINK (HPR-B)
1414	4-545-526-01	s	SPACER (BSB-2005_5E)
1415	4-545-529-01	s	SHEET (HPR-B), SLIDE
1416	4-545-533-01	s	HEAT SINK (DPR-B)
1417	4-558-398-01	s	SHEET (0707T3), RADIATION
1418	4-558-873-01	s	SHEET (2.5 (12X12)), RADIATION

Rear Block



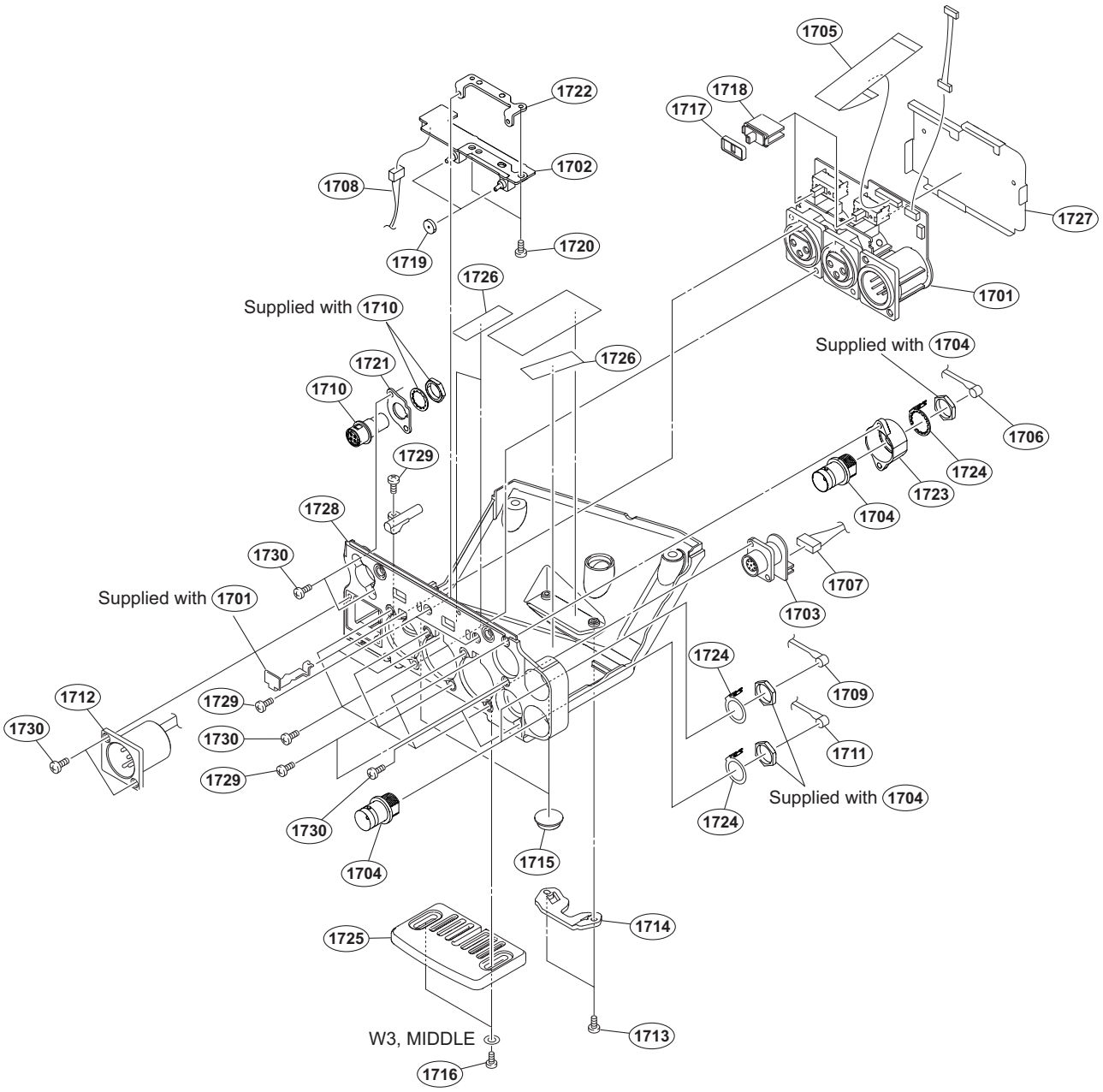
No.	Part No.	SP	Description
1501	A-1787-923-A	s	50P COVER ASSY
1502	A-2061-110-A	s	MOUNTED CIRCUIT BOARD, CI-50
1503	A-2061-138-A	s	50P CN ASSY
1504	A-8279-091-D	s	MOUNT ASSY,V
1505	1-829-055-11	s	CABLE ASSEMBLY, COAXIAL [White]
1506	1-830-737-11	s	CABLE ASSEMBLY, COAXIAL [Black]
1507	1-967-537-11	s	HARNESS(CI)
1508	3-616-721-02	o	MOUNT (2),V
1509	3-671-893-01	s	CLAMP (LOW TYPE)
1510	3-679-687-02	s	LOCK,SLIDE
1511	3-679-688-03	s	LEVER,RELEASE
1512	3-680-952-02	o	KNOB,RELEASE LEVER
1513	3-697-119-03	s	RETAINER
1514	3-701-436-21	s	WASHER, POLYEHTHYLENE
1515	3-704-964-01	s	SPRING,COMPRESSION
1516	3-742-074-13	s	SCREW (+B 3X8)
1517	4-129-038-01	s	FOAM (MOF), SHIELD
1518	4-468-130-01	s	SHEET, REAR
1519	4-654-273-02	s	ACE (M2), LOCK [B 2x5]
1520	4-674-315-01	s	SCREW (M2.6X6)
	7-621-772-50	s	SCREW +B 2X10
	7-627-553-38	s	SCREW,PRECISION +P 2X3

IO Block



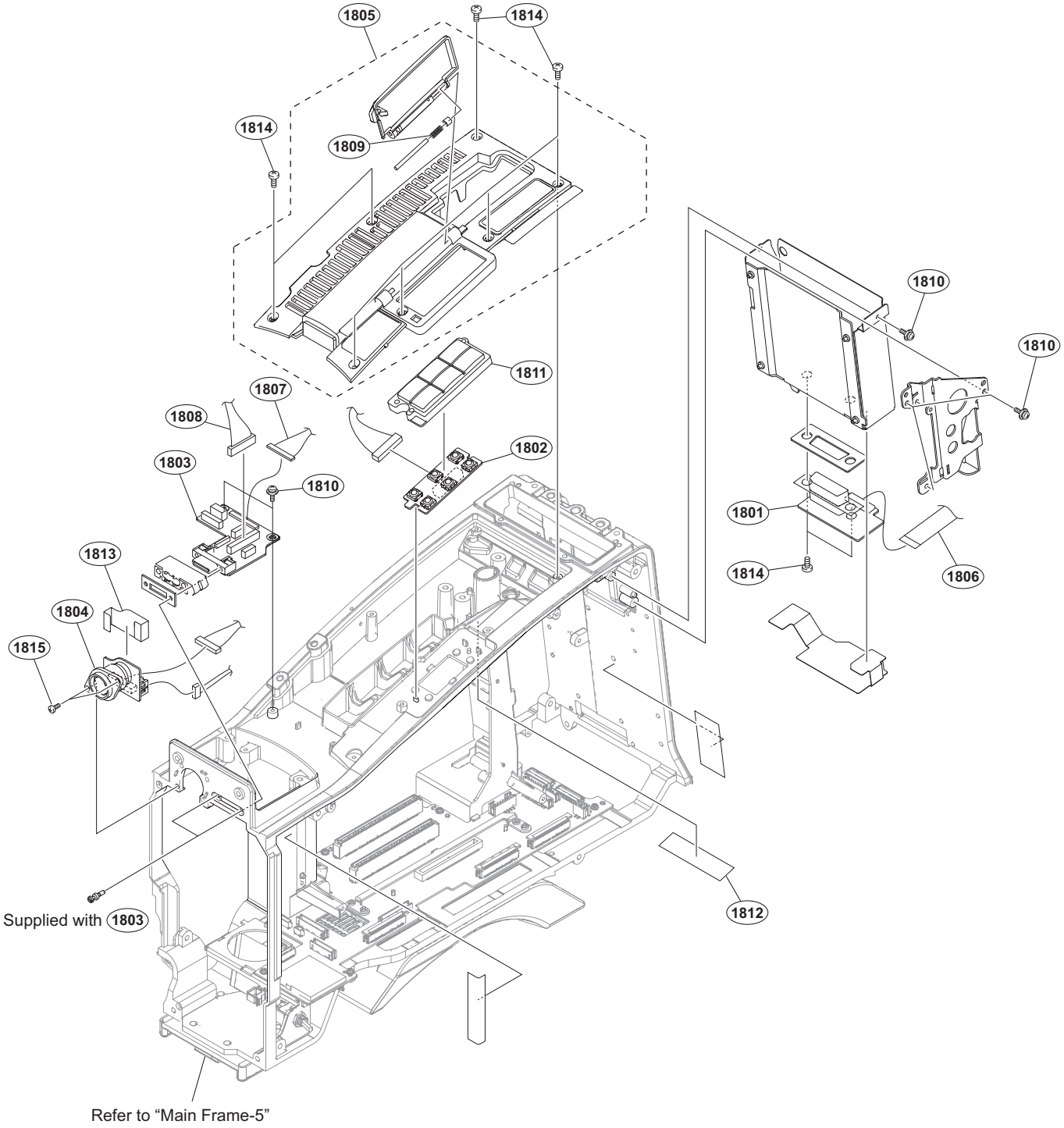
No.	Part No.	SP	Description
1601	A-1968-119-A	s	BATTERY HARNESS ASSY
1602	A-2054-866-A	s	MOUNTED CIRCUIT BOARD, IO-275
1603	A-2058-420-A	s	MOUNTED CIRCUIT BOARD, CN-3738
1604	A-2063-286-A	s	MOUNTED CIRCUIT BOARD, DIF-232
1605	1-500-082-11	o	CLAMP, SLEEVE FERRITE
1606	1-970-440-11	s	SUB HARNESS (IO)
1607	2-635-562-31	s	SCREW(M1.7) [P 1.7x4]
1608	3-694-181-03	s	TYPE1,AROCK PRECISION +P2.6X5
1609	3-742-074-13	s	SCREW (+B 3X8)
1610	3-855-938-01	s	SCREW [+PSW 2x5]
1611	3-965-077-02	s	SCREW, SPECIAL (M2) [M2x2.4]
1612	4-545-527-01	s	CAP, CN, REAR
1613	4-674-315-01	s	SCREW (M2.6X6)

Connector Box



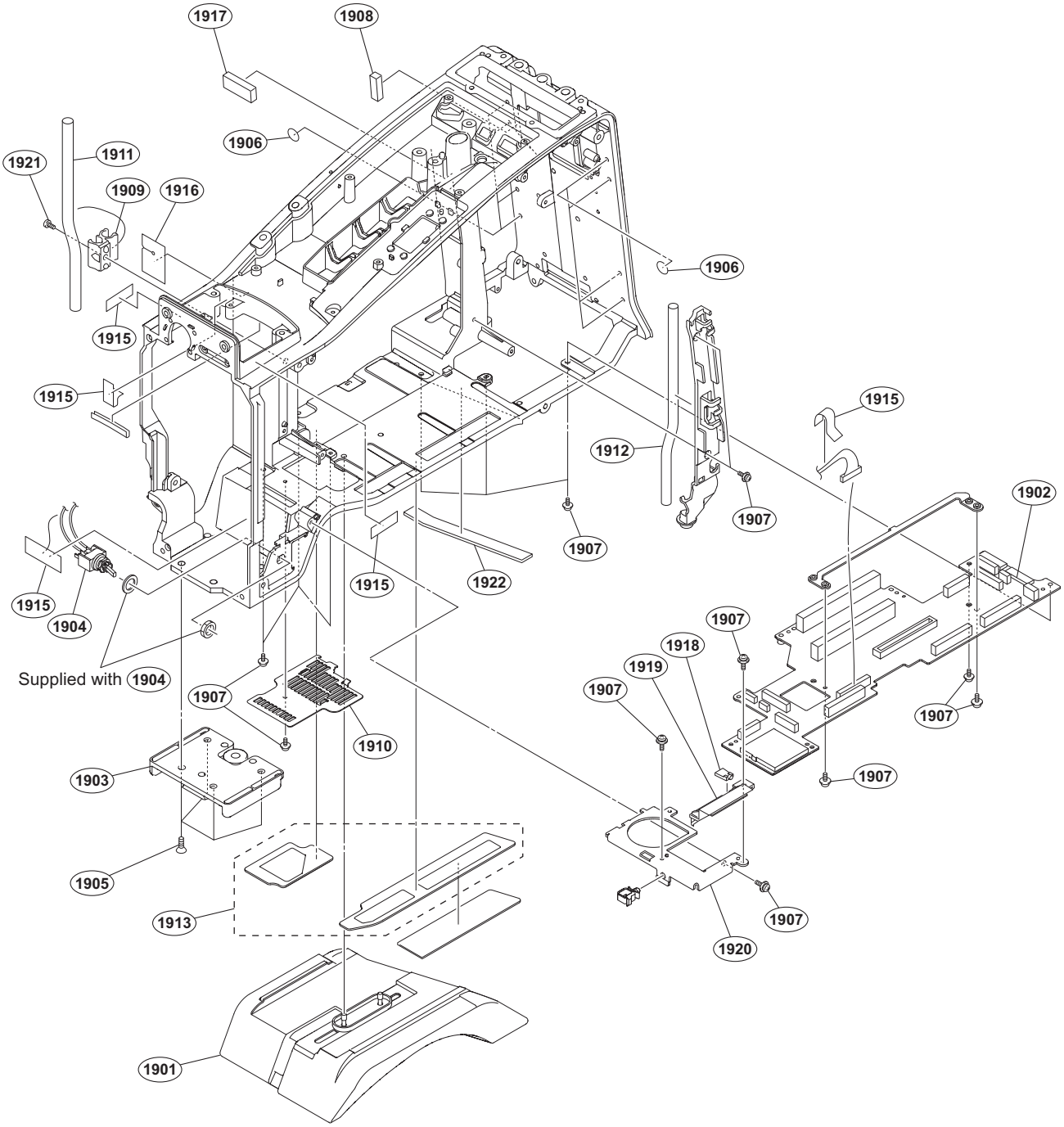
No.	Part No.	SP	Description
1701	A-2057-067-A	s	MOUNTED CIRCUIT BOARD, AXM-52
1702	A-2057-510-A	s	MOUNTED CIRCUIT BOARD, SW-1632
1703	A-2058-421-A	s	MOUNTED CIRCUIT BOARD, RM-246
1704	1-784-240-11	s	CONVERTER, COAXIAL CONNECTOR
1705	1-837-296-11	s	CABLE, FLEXIBLE FLAT (30 CORE)
1706	1-837-331-11	s	CABLE ASSY, COAXIAL (HDSDI) [Red]
1707	1-967-026-12	s	HARNESS, SUB (RM)
1708	1-970-438-11	s	SUBHARNESS (AXM-SW)
1709	1-970-439-11	s	COAXIALCABLE (DPR-HD/SDI_OUT1) [Yellow]
1710	1-970-441-11	s	SUB HARNESS (DC OUT)
1711	1-970-449-11	s	COAXIALCABLE (DPR-HD/SDI_OUT2) [Blue]
1712	1-970-499-11	s	SUBHARNESS (DC-IN)
1713	3-364-941-01	s	SCREW (+B) (2.6X5), NYLOK
1714	3-626-781-03	s	STOPPER
1715	3-723-097-01	o	FOOT, RUBBER
1716	3-742-074-13	s	SCREW (+B 3X8)
1717	3-796-985-02	s	CUSHION,DROP PROTECTION
1718	3-796-986-02	s	KNOB,SLIDE SW
1719	3-796-993-11	s	CUSION DROP PROTEICTION TOGGLE
1720	3-855-938-01	s	SCREW [+PSW 2x5]
1721	3-870-176-02	s	BRACKET (DC OUT)
1722	3-870-177-01	s	BRACKET (SW)
1723	3-991-412-01	s	BRACKET,BNC(S)
1724	4-136-517-01	s	WASHER, BNC COAXIAL FIXED
1725	4-176-668-01	s	BOTTOM GUARD
1726	4-446-014-01	s	TAPE AS (2040)
1727	4-545-544-01	s	SHEET (AXM), PROTECTION
1728	4-545-554-01	s	BOX, CONNECTOR
1729	4-654-273-02	s	ACE (M2), LOCK [B 2x5]
1730	4-674-315-01	s	SCREW (M2.6X6)
	7-688-003-12	s	W 3, MIDDLE

Main Frame-4



No.	Part No.	SP	Description
1801	A-2054-861-A	s	MOUNTED CIRCUIT BOARD, RX-136
1802	A-2054-867-A	s	MOUNTED CIRCUIT BOARD, KY-736
1803	A-2054-868-A	s	MOUNTED CIRCUIT BOARD, HN-415
1804	A-2054-872-A	s	MOUNTED CIRCUIT BOARD, CN-3736
1805	A-2061-152-A	s	COVER ASSY, TOP
1806	1-837-297-11	s	CABLE, FLEXIBLE FLAT (30 CORE)
1807	1-967-683-11	s	HARNESS (HDMI)
1808	1-970-446-11	s	SUB HARNESS (MB-HN)
1809	3-234-710-01	o	SPRING (OPEN),COMPRESSION COIL
1810	3-855-938-01	s	SCREW [+PSW 2x5]
1811	4-169-111-01	s	KEYSW COVER
1812	4-488-383-01	s	TAPE (13X50) //C
1813	4-545-550-01	s	SHEET, CN3736
1814	4-654-273-02	s	ACE (M2), LOCK [B 2x5]
1815	4-674-315-01	s	SCREW (M2.6X6)

Main Frame-5



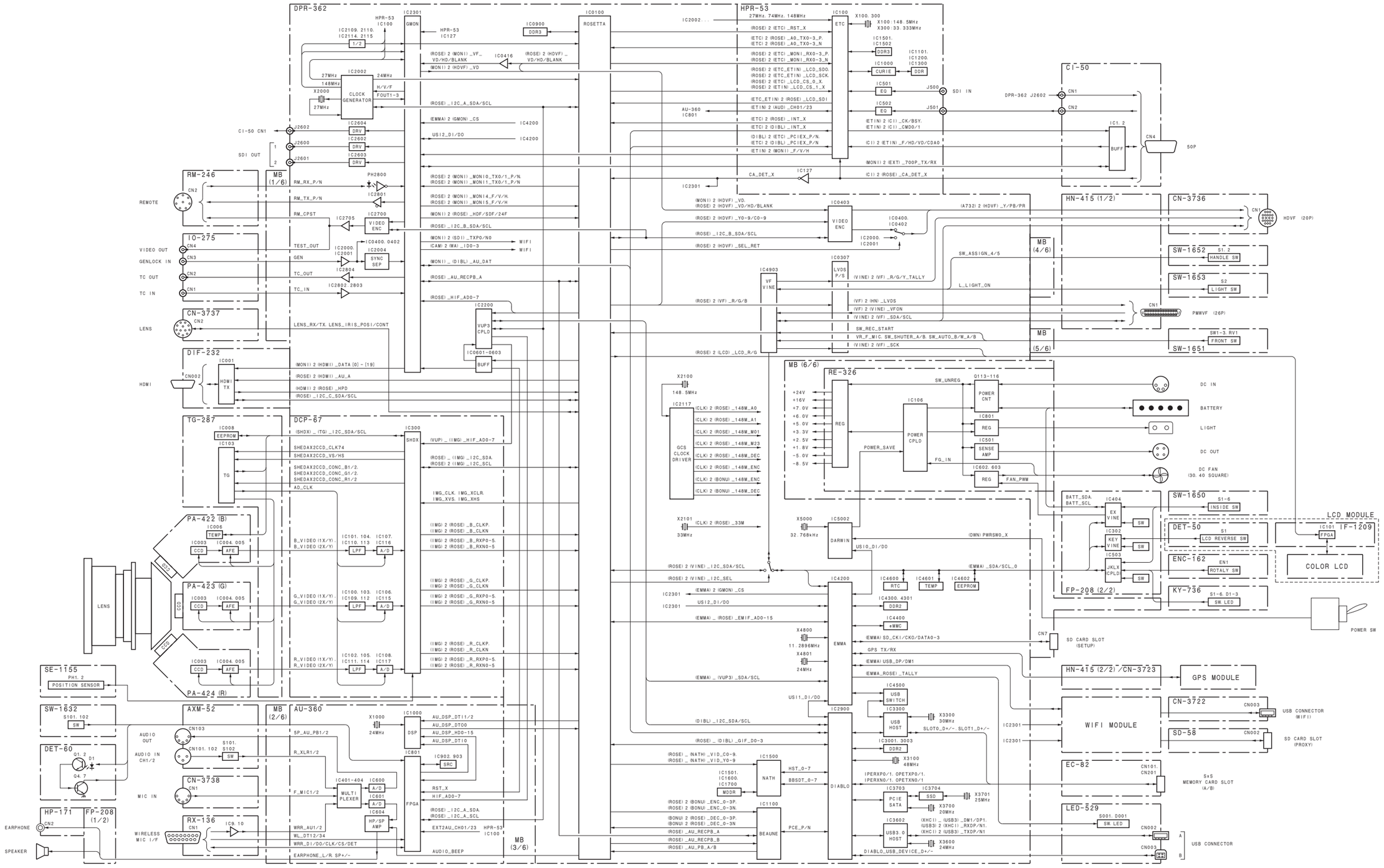
No.	Part No.	SP	Description
1901	A-1752-736-B	s	SHOULDER PAD ASSY
1902	A-2058-423-A	s	MOUNTED CIRCUIT BOARD, MB-1210
1903	A-8279-993-D	s	SHOE(D)ASSY,V
1904	1-967-041-12	s	HARNESS, SUB (POWER SW)
1905	3-729-072-02	s	SCREW, +K (4X8)
1906	3-796-946-03	s	TAPE(A)
1907	3-855-938-01	s	SCREW [+PSW 2x5]
1908	4-000-497-02	s	FOAM (ILI), SHIELD
1909	4-138-678-01	s	CLAMP, CABLE
1910	4-168-987-02	s	COVER BOTTOM
1911	4-169-108-21	s	TUBE,DRAIN
1912	4-169-108-31	s	TUBE,DRAIN
1913	4-169-114-03	s	MESH,BOTTOM
1915	4-446-014-01	s	TAPE AS (2040)
1916	4-468-127-01	s	CUSHION (LIGHT)
1917	4-468-137-02	s	FOAM (10X6), SHIELD
1918	4-545-547-01	s	LIGHT GUIDE (MB SD)
1919	4-545-549-01	s	ESCUTCHEON (MB SD)
1920	4-545-553-01	s	MB BRACKET (FRONT)
1921	4-674-315-01	s	SCREW (M2.6X6)
1922	4-468-138-02	s	FOAM(7X2), SHIELD

5-3. Supplied Accessories

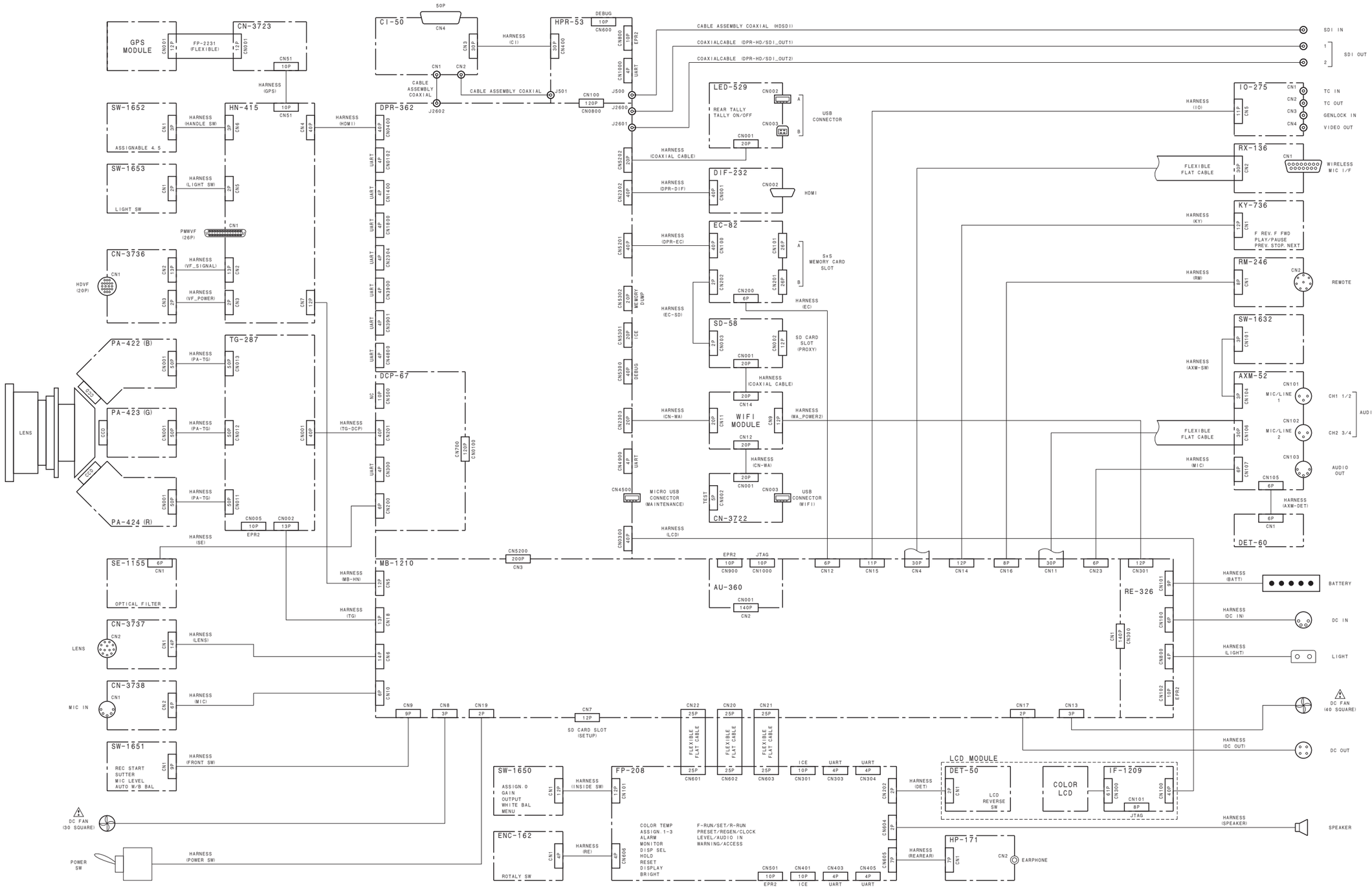
Q'ty	Part No.	SP	Description
1pc	A-6772-374-C	s	BELT ASSY, SHOULDER
1pc	X-2546-633-1	s	KIT,COLD SHOE
1pc	1-845-063-11	s	LAN MODULE, WIRELESS(IFU-WLM3)
1pc	3-080-203-31	s	SCREW(M2),LOCK ACE,P2
1pc	3-688-754-11	s	SPRING
1pc	3-688-755-13	s	SHOE, ACCESSORY
1pc	3-704-295-01	o	BAG, PROTECTION (550X500)
2pcs	4-279-469-01	s	CAP (USB), WATERPROOF
1pc	⚠ 4-545-573-01	s	GUIDE, OPERATION
1pc	⚠ 4-545-574-01	s	CD-ROM (OPERATION MANUAL)
1pc	4-559-711-01	s	WIFI GUARD

Section 6
Diagrams

Overall



Frame Wiring



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