

SONY®

PROFESSIONAL DISC CAMCORDER

PDW-850

XDCAM

MPEG HD422

Power HAD FX



Serial No. 10001 and Higher : PDW-850 (SY)

Serial No. 50001 and Higher : PDW-850 (CN)

Serial No. 60001 and Higher : PDW-850 (SY)

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可能性があります。
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 manuel 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.

Model Name	Serial No.
PDW-850 (SY)	10001 and Higher 60001 and Higher
PDW-850 (CN)	50001 and Higher

安全のために、周辺機器を接続する際は、過大電圧を持つ可能性があるコネクタを以下のポートに接続しないでください。
：NETWORK コネクタ
上記のポートについては本書の指示に従ってください。

For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to the following port(s).
：NETWORK connector
Follow the instructions for the above port(s).

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CLASS 1 LASER PRODUCT
LASER KLASSE 1 PRODUKT
LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

This PDW-850 is classified as a CLASS 1 LASER PRODUCT.

CAUTION

CLASS 2M LASER RADIATION
WHEN OPEN AND INTERLOCKS
DEFEATED, DO NOT STARE INTO
THE BEAM OR VIEW DIRECTLY
WITH OPTICAL INSTRUMENTS.

ATTENTION

RAYONNEMENT LASER CLASSE
2M EN CAS D'OUVERTURE OU DE
VERROUILLAGE DÉFECTUEUX.
NE REGARDEZ PAS LE FAISCEAU
ET NE LE REGARDEZ PAS
DIRECTEMENT AVEC DES
INSTRUMENTS OPTIQUES.

VORSICHT

KLASSE 2M-LASERSTRAHLUNG
WENN GEÖFFNET UND
SPERREN AUSSER FUNKTION.
NICHT IN DEN LASER SCHAUEN
ODER MIT OPTISCHEN
HILFSMITTELN DIREKT
HINEINSEHEN.

ADVARSEL

LASERSTRÅLING KLASSE 2M VED
ÅBNING. UNDGA AT SE IND I
STRÅLEN OG UNDGA AT SE
DIREKTE MED OPTISKE
INSTRUMENTER.

ADVARSEL

LASERSTRÅLING KLASSE 2M.
IKKE SE PÅ STRÅLEN DIREKTE
ELLER MED OPTISKE
INSTRUMENTER NÅR PRODUKTET
ER ÅPENT.

WARNING

KLASS 2M LASERUTSTRÅLNING
NÅR PRODUKTEN ÄR ÖPPEN
TITTA INTE RAKT IN I STRÅLEN
ELLER DIREKT MED OPTISKA
INSTRUMENT.

VAROITUS

AVATTUNA LUOKAN 2M
LASERSÄTELYÄ. ÄLÄ KATSO
SÄTEESEEN TAI TARKASTELE
SITÄ SUORAAN OPTISILLA
VÄLINEILLÄ.

注意

打开时有2M类激光辐射时勿直视或通过
光学仪器直接观看光束

4-546-596-0X

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。

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.

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.

PAS PÅ

Fare for explosion, 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.

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.

HUOMIO

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

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.

FORSIKTIG

Ekspløsjonsfare 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-level such as service overview, XDCAM web site, error messages, setup menu, file system, periodic maintenance and inspection, replacement of main parts, adjustment of optical drive system, and electrical adjustment, assuming use of system and service engineers.

Related manuals

The following manual is provided for this unit in addition to this “Service Manual”.

- Operation Manual (Supplied with this unit)
This manual contains information required to operate and use the unit.
- Factory Service Manual (Available on request)
Parts list, circuit diagram, and board layouts of the unit are included to provide information required for part-level service.

Trademarks

Trademarks and registered trademarks used in this manual are follows.

- FRAM is a registered trademark of Ramtron International Corporation.

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

Note on Boards

- IF-1209 board
IF-1209 board cannot be replaced on the board-level service or part-level service. If parts become defective, replace the entire 3.5 inch LCD assembly.
- DCP-65 board
In this manual, DCP-65 board is described as DCP board in some cases.

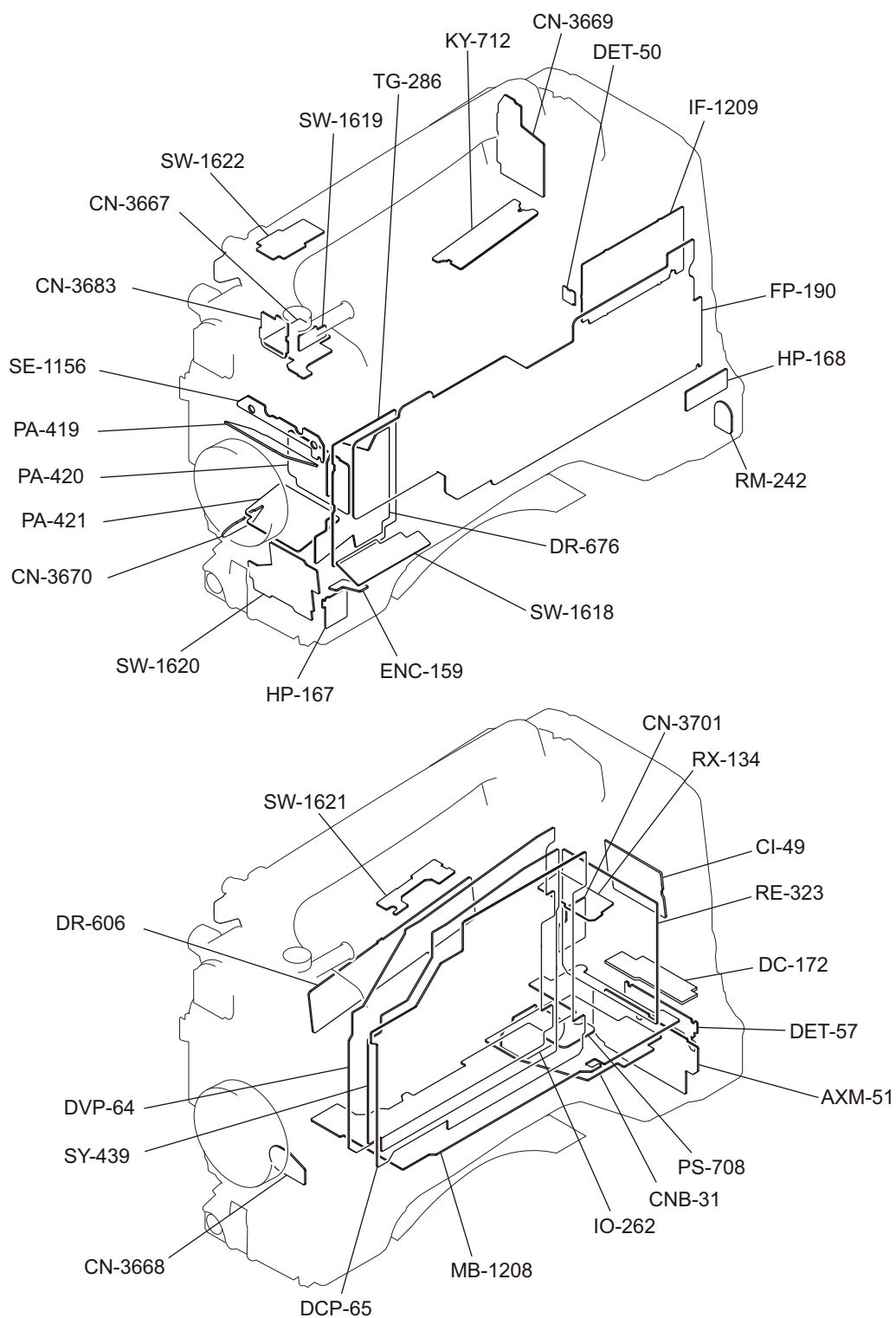
Section 1

Service Overview

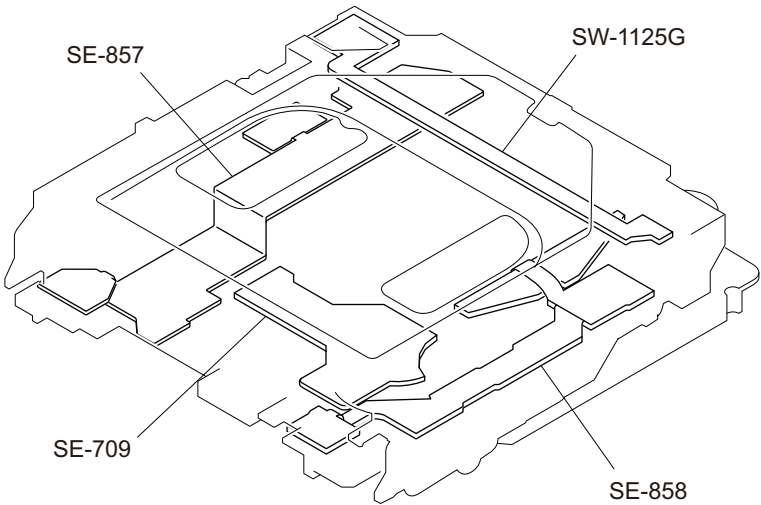
1-1. Location of Main Parts

1-1-1. Locations of the Printed Wiring Boards

Main unit



Optical drive



1-2. Circuit Description

1-2-1. Camera System

DCP-65 Board

The DCP-65 board consists of the block for A/D conversion of the analog RGB signals from the PA-419/PA-420/PA-421 boards via the feedback clamp circuit, the camera digital signal processing block, the baseband processing block, and microcomputer block that performs the camera control.

AD/DA conversion block

- After passing through the pre-filters (FL300 to FL302), the analog RGB signals input from the PA-419/PA-420/PA-421 boards are converted to 74 MHz rate 16-bit digital RGB signals by the A/D converter (IC367 to IC369), then input into the camera digital processor IC (IC400).

Camera digital signal processing block and Baseband processing block

- The camera signal processor IC (IC400) detects average values and peak values of the video signals necessary for camera's auto system operations, such as auto black balance, auto white balance, and auto iris, and then sends the detected values to the camera microcomputer (IC2400).
- After passing through black balance, white balance, white shading, and flare correction, the camera main video signal performs the Digital GAIN UP, then performs the Digital Noise Reduction. Then, the matrix signal and the detail signal are added to perform pedestal control, gamma correction, knee correction, and white clip processing.

After passing through the selector circuit with which either the camera main video signal or the color bar signal can be selected, the selected signal is input from the camera signal processing IC (IC400) to the baseband processing IC (IC1100).

- The digital Y/C signal for the viewfinder and the digital VBS signal that are output from the baseband processing IC (IC1100) are input to the D/A converter (IC1801) in which these signals are converted to analog VF signal and analog VBS signal respectively.

The analog VF-Y signal passes through the circuit to select this signal or the input video signal from the GENLOCK IN connector, and is then output to the VF connector. Furthermore, this block contains a synchronizing separator circuit to synchronize signals with the external input video signal from the GENLOCK IN connector and a PLL circuit.

- The main functions of IC1100 are the down-conversion HD to SD, the conversion 720 to 1080 for VF output, and the VF DETAIL generation processing.

IC1100 also enables 25/30PsF conversion and digital extender function by using the DDR3 SDRAM (IC1400).

- HD signals that are output from IC400 pass through the character signal multiplexer block are sent to the recording system (DVP-64 board).

Parallel HD signals and SD signals are multiplexed with character signals, audio signals, and auxiliary signals in IC1100 for conversion to SDI signal, and are then converted to serial signals. Then the serial signals pass through the buffers (IC1304, IC1305) and are output to the SDI1 and SDI2 connectors as HD-SDI and SD-SDI signals.

HD signals that are output from IC1100 are multiplexed with character signals after scaling in IC1600 and the video signals are sent to the LCD display block.

- During external input recording, the SDI signal from the SDI input is separated into audio signal and auxiliary signal in IC1100, and these separated signals are sent to the recording circuit (DVP-64 board). During RETURN VIDEO HDSDI, synchronization processing is performed in IC1100 and the SDI signal passes through the SDI signal/main-line video signal selector circuit, and is then output to the viewfinder and the LCD.

Camera microcomputer block

1. Microprocessor peripherals

The CPU (IC2400) uses SH2A (R5S7206), and the clock provides 32 MHz from an external source that is six multiplication in the CPU so that the clock runs on 192 MHz. The memory is composed of 64-Mbit flash memory (IC2410, IC2411), 16-Mbit SRAM (IC2414), and 1-Mbit FRAM (IC2413).

2. A/D input of the CPU

The A/D port equipped to the CPU is connected to the following signal lines and monitored: ND position, temperature, IRIS position of a camera lens, ZOOM position, and mic volume level.

3. Internal communication

The serial communication includes intercommunication with the BleConSh IC on the DCP-65 board, the writing controls to the character generator IC, and intercommunication with the disc.

The parallel communication is equipped with the 8-bit data line, the total 11-bit address line (A0-A7, A14-A16), control line clock, XRD, XWR, OE, DIR, CS, and (QWERTY, ZXCV, TG).

In addition, the intercommunication is performed with EEPROM on the DCP-65 board, the DAC and I/O port IC for the video signal, and the I/O port IC on the FP-190 board with the I²C line that is installed directly to the CPU.

4. External communication

The 2 channel serial communication driver in IC1100 is used and performs external communication with the remote control unit RM-B170/B750.

5. ROM tool connector (CN2300)

The connector CN2300 that can be connected to the tool for writing the boot program is included.

1-2-2. CCD Block

PA-419/PA-420/PA-421 Boards

The CCD drive pulses that are supplied from the TG-286 board are amplified so that these pulses can drive the CCD imagers directly (IC2: H Driver).

CCD output signals are input to IC005. The video signal is drawn by the co-related dual sampling inside IC005 and GAIN UP of 0 to 12 dB is performed by the internal GAIN AMP. In addition, the differences in the CCD sensitivity are adjusted by adjusting GAIN.

In addition to the above operations, the temperature that is detected by the temperature sensor (IC006) is converted to the voltage data and is sent to the DCP-65 board.

TG-286 Board

The pulses that drive the CCD imagers and the pulses that are used for sample-and-hold of the CCD output signals are generated by IC300 and are sent to the DR-676 board.

These pulses are generated from the 148 MHz clock in synchronization with the HD VD signal input from the DCP-65 board. In addition, the TG-286 board has an interface circuit board.

DR-676 Board

The CCD drive pulses input from the TG-286 board and the sample-and-hold pulse are latched and output to the PA-419/PA-420/PA-421 boards. In addition, the DR-676 board has the V driver of CCD.

The CCD V sub voltage and CCD sensitivity adjustment data are recorded in the EEPROM (IC308).

1-2-3. Video Signal System

DVP-64 Board

Baseband/Video signal processing system

1. Recording system
The component parallel digital video signal supplied from the video circuit of the DCP-65 board is input to LVIS (IC400) of the DVP-64 board. Signal pre-processing such as the filtering and scaling is performed in this system.
2. Playback system
The playback digital video data is loaded from LVIS (IC400) and sent to the DCP-65 board via the MB-1208 board as the component parallel digital video signal.
The component parallel digital video signal sent to the DCP-65 board is distributed to each path of HD/SD-SDI, VF, COLOR-LCD, and down-conversion and encoding to the composite video signal are performed according to the setting.

Video compression signal processing system

1. Recording system
The recording digital video signal that has undergone signal processing by the LVIS (IC400) on the DVP-64 board is sent to MPEG2-VIDEO Codec (TORINO: IC1000, IC1200, IC1400) and compressed to the MPEG-2 VIDEO format.
The compressed digital video data is sent to PIER G4 (IC1900) and written to PIER_SDRAM (IC1901 to IC1904).
The recording digital video signal is encoded to MPEG4-VIDEO format in LVIS (IC400) at the same time and generated as the Proxy video data.
The generated Proxy video data is sent to PIER G4 (IC1900) and written to PIER_SDRAM (IC1901 to IC1904).
The recording digital data via network is sent to PIER G4 (IC1900) via the PCI bus and written to PIER_SDRAM (IC1901 to IC1904).
While recording on a disc, the data in PIER_SDRAM (IC1901 to IC1904) is sent to the DR-606 board via the ATA interface.
2. Playback system
The playback video data and the Proxy video data are sent to PIER G4 (IC1900) via the ATA interface and written to PIER_SDRAM (IC1901 to IC1904).
The playback digital video data in PIER_SDRAM (IC1901 to IC1904) is sent to the MPEG2-VIDEO Codec (TORINO: IC1200, IC1400). Decode processing is performed and then the data is sent to LVIS (IC400).
The playback Proxy video data in PIER_SDRAM (IC1901 to IC1904) is sent from PIER G4 (IC1900) to LVIS (IC400) and decode processing is performed.
The Proxy video data is used as the video signal during the search.
The playback video data in PIER_SDRAM (IC1901 to IC1904) is provided to network via the PCI bus as the MXF file data.

Sync signal system

Whether the status is on record or on playback, 74/27 MHz clock, HD-F, HD-V, HD-H, HD-PB-F, SD-F, SD-V, and SD-H that are always input from the DCP-65 board are the reference signal.
Based on these reference clocks, the video sync timings and system timings are generated.

1-2-4. System Control

SY-439 Board

Disc record/playback system control

The following functions are realized using the RISC microprocessor (hereinafter refer to as CPU: IC200) as the CPU for the system control.

1. PCI bus interface

CPU is connected to PIER G4 (IC1900/DVP-64 board) and PCI-PCI Bridge (IC900) via the PCI bus interface to receive and send data with one another and perform control. The PCI bus interface communicates with the following devices by relaying through PIER G4 (IC1900/DVP-64 board).

- CAVA (IC200/DVP-64 board)
- MPEG2-VIDEO CODEC (IC1000, IC1200, IC1400/DVP-64 board)
- AUDIO REC/PB DSP (IC800, IC801/DVP-64 board) /AUDIO Low Resolution DSP (IC900/DVP-64 board)
- LVIS (IC400/DVP-64 board)
- Optical Drive (DR-606 board)
- AT microprocessor (DCP-65 board)
- FP microprocessor (FP-190 board)
- Character generator (DCP-65 board)
- LTC generator/reader (PIER G4 (IC1900) built-in)

The PCI bus interface is connected to the Linux system via the PCI-PCI Bridge (IC900) and receives and sends data to the controllers.

2. Memory controller

- SDRAM (IC201 to IC204) control (32 bit x 64 M word)
- Flash memory (IC505, IC506) control (32 bit x 16 M word)

3. Serial interface

- EEPROM control saving the setting data

4. External control bus (CPU LOCAL bus)

- IN port/OUT port control
RESET signal output on each device, loading the switch setting, and similar signals
- CAVA/PIER G4/FAM/BRIDGE each FPGA configuration
- FRAM (IC507) control

Application device control system (Linux)

This is the system that uses RISC microprocessor (hereinafter refer to as CPU: IC3100) to control the device for the application. Linux is used as the OS.

CPU and peripheral circuit configuration is almost same as that of the system control.

1. PCI bus interface

The CPU exchanges data with the USB controller (IC1500) via the PCI bus interface. In addition, the CPU exchanges the data with the CPU of the system control via the PCI-PCI Bridge (IC1500) on the same bus.

2. PCI BRIDGE (IC900)

The functions of PCI BRIDGE are data relay of the PCI bus and the I/F function to the OSD display controller on the LVIS (IC400/DVP-64 board).

3. USB HOST Controller (IC1500)

USB HOST Controller exchanged data with the USB devices such as the flash memory using the interface compatible with the USB 2.0.

4. Ether interface

Ether interface controls the Ether PHY (IC1/CN-3669 board) and connects to the network via it.

FP-190 Board

The FP-190 board has the FP_CPU (IC7012) as the sub microprocessor and the hardware consists of the synchronous and asynchronous serial communication, I²C communication bus, and the 8-bit bus. The main function is controlling the audio system.

Main functions

- Synchronous serial communication

The functions of synchronous serial communication are the color LCD monitor setting, audio D/A setting, analog wireless communication, and the ITRON communication.

- Asynchronous serial communication
Digital wireless communication.
- I²C bus
The rear connector, detection such as PLAY/STOP key, Info_BATTERY communication, Real Time Clock communication, Serial EEPROM (Memory) communication, and I/O control communication make up the 3-channel I²C bus.
- 8-bit bus
The 8-bit bus controls the serial communication bus (SDA,SCL) of the 3-channel I²C bus controller (Parallel bus to I²C_busController).
- CPU I/O
The CPU I/O loads the A/D and controls the I/O port terminal.

Main blocks

- Audio mode control
- AUDIO level indication
- STOP/PLAY keys control
- CTL/TC/UBIT control
- Real Time Clock control
- WARNING_LED control and alarm tone control
- Wireless receiver (optional equipment) control
- Software download function
- Power supply voltage measuring circuit
- Info-Battery communication circuit
- POWER OFF soft control circuit
- FP_CPU backup circuit
- Backup lithium battery voltage measurement circuit
- REAR input control
- REAR XLR automatic insertion detection circuit control (DET-57 board and sensor holder)
- Color LCD monitor drive control and switching/rotation detection circuit
- Nonvolatile memory control

Description of each block

1. Audio mode control
Audio control is performed by receiving the audio mode information and the menu setup information from the ITRON-CPU on the SY-439 board.
The switch information of the three positions is connected to the AD terminal of the CPU and processed as the AD signal of the three-valued data.
The audio is switched in the I²C bus PCA-9555 (I/O port: IC7015, 7016).
2. AUDIO level indication
The digital signal applied on the DSP is converted to 16 bits and set in the register in DSP.
ITRON-CPU reads and displays it on the color LCD monitor. The peak hold time is approx. 1400 ms.
3. STOP/PLAY keys control
Each switch on the KY-712 board is connected to PCA-9555 for I²C bus to read the ON/OFF information of the switch and turn on the LED. The switch information is transferred to ITRON-CPU.
At POWER-ON, the LED of EJECT, F REV, PLAY, F FWD are turned on, initialized, and turned off.
4. CTL/TC/UBIT control
The switch information of the three positions is connected to the AD terminal of the CPU and processed as the AD signal of the three-valued data.
The ON/OFF information of the switches are transferred to the ITRON-CPU and displayed on the color LCD monitor.

5. Real Time Clock control

The Real Time Clock IC (IC7005: RX-8025NB) uses nonadjustable clock for the I²C bus. The accuracy is ± 15 seconds per month.

When the power is turned on, the FP_CPU reads data and send it to ITRON-CPU.

ITRON-CPU sends the time data to the Camera CPU of the DCP-65 board.

The viewfinder uses the time data for displaying the time. The data for year, month, day, and time of the clock can be changed using the menu.

The settings for year, month, day, and time are sent to the FP_CPU and the year, month, day, and time are written to the Real Time Clock IC.

6. WARNING_LED control and alarm tone control

The WARNING information is supplied from the ITRON-CPU that is used to turn on and off the WARNING LED on the FP-190 board.

The 1 kHz square wave generated from the PWM generator circuit inside the FP_CPU alarm tone is used as the alarm tone.

7. Wireless Receiver Control (Optional function)

This communication circuit can control both analog and digital wireless receivers.

Analog wireless receivers use the conventional method of synchronous serial communication (200 bps). (Interval time: 80 ms)

Digital wireless receivers use 38 kbps asynchronous serial communication to handle large amounts of communication data.

With a built-in wireless receiver, when FP_CPU is in the POWER-ON state, the receiver type is determined and information such as the transmission RF sensitivity is loaded.

This data is transmitted to Camera CPU via ITRON-CPU and can be viewed on the viewfinder.

8. Software download function

FP_CPU has internal flash memory so the software can be overwritten. Load the software in the memory into the camera microcomputer and transmit the data through ITRON-CPU in the SY-439 board to the FP_CPU where it is written.

9. Power voltage measurement circuit (batteries other than the info battery)

Power voltage measurement circuit (IC839) outputs two types of DC voltage from DA output of the FP_CPU and switches voltage in the IC6000 6-pin to switch between a measurement range of +9 V to +14 V and +12 V to +17 V.

The voltage measurement is sent to ITRON-CPU as the voltage value. ITRON calculates the remaining battery charge, creates voltage display data, and returns the data to FP_CPU.

FP_CPU can be displayed the voltage display data on the status screen of the color LCD.

10. Info battery communication circuit.

This equipment supports batteries with SM Bus specifications. The serial communication bus (SDA, SCL) for IC7017 (Parallel bus to I²C_bus Controller) connected to the FP_CPU bus passes through IC7003 and IC7004 (switching switch) and connects to the serial terminal of the info battery. The Serial Clock Rate is 88 kHz.

The battery type, remaining time, and other information is loaded onto FP_CPU and transmitted to ITRON-CPU. ITRON-CPU calculates the remaining battery charge and creates remaining charge display data, and transmits the data to Camera CPU and FP_CPU. FP_CPU can be displayed the remaining charge display data on the status screen of the color LCD.

11. Power off software control circuit

FP_CPU detects the POWER-SW OFF information. When power can be turned on, the "Power OFF" command is sent from ITRON-CPU and FP_CPU controls the power OFF circuit on the CNB-31 board.

12. FP_CPU backup circuit

Even when power is turned off for FP_CPU, the data is saved for the internal RAM and Real Time Clock (RX-8025NB) through backup on a coin battery. By saving the system data, FP_CPU can be started up quickly when the power is turned on.

13. Backup lithium battery voltage measurement circuit

F FP_CPU performs voltage measurement on the backup lithium battery. When recharging is detected, the reduced voltage information is sent to ITRON-CPU. (Measurement interval time: 60 s) Current is prevented from running through FET-SW (Q6005) in order to prevent power from being lost during measurement. Furthermore, reverse current above +3 V is prevented with FET-SW (Q6004), thus extending the life of the lithium battery. The battery life is guaranteed for about 5 years.

14. REAR input control

The serial communication bus (SDA, SCL) for IC7017 (Parallel bus to I²C_bus Controller) connected to the FP_CPU bus sends control for the AXM-51 board through the motherboard with IC302 (PCA-9555: I²C_I/O_PORT) on the MB-1208 board and acquires the following information: REAR_XLR automatic insertion detection circuit control, microphone amplifier gain control, operational amplifier power control, and digital/analog input switching switch information.

15. REAR XLR automatic insertion detection circuit control (DET-57 board and sensor holder)

Combine the DET-57 board on the sensor holder and connect with the harness to the AXM-51 board.

The infrared light emitter uses one LED that connects to the CH1 and CH2 receivers positioned in the middle of the sensor holder on the left and right sides. When "Detection ON" is set from the menu and the XLR connector is inserted into the 3P-XLR connector, the infrared light is blocked, the output from the receivers changes from L to H, and insertion is detected. At this time, CH1 and CH2 operate automatically and the XLR input on the REAR area is selected. (CH3 and CH4 are not switched automatically.) Detection interval time is 200 ms.

16. Color LCD monitor drive control and opening/rotation detection circuit

The Y/C signal for video is connected to the CN5004 connector, the power supply is supplied directly into the LCD module from the FP-190 board through the CN5003.

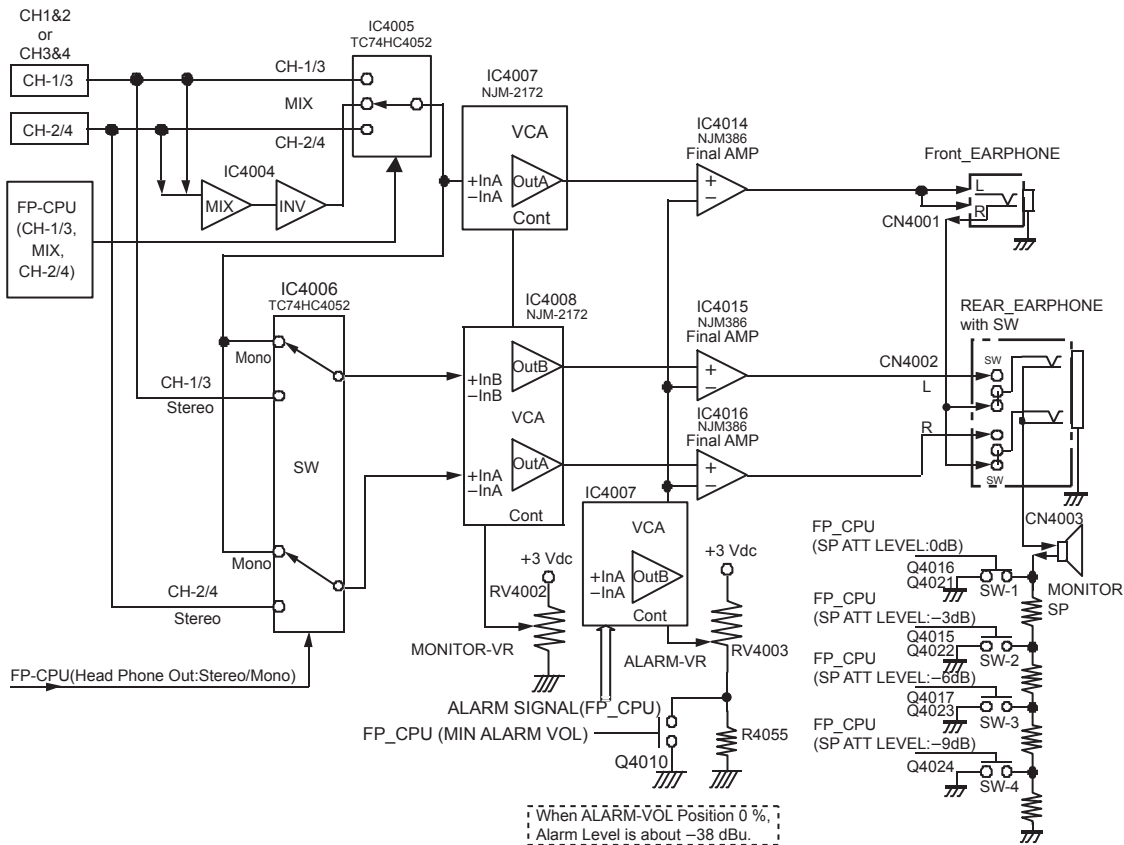
The brightness of LCD module is controlled by the PWM signal from the FP-190 board.

Rotation is detected by the rotation sensor switch in DET-50 after passing through CN5000. Opening and closing is detected from the hole terminal (H801) on the FP-190 board and the field intensity from the permanent magnet (neodymium: Ne-FeB).

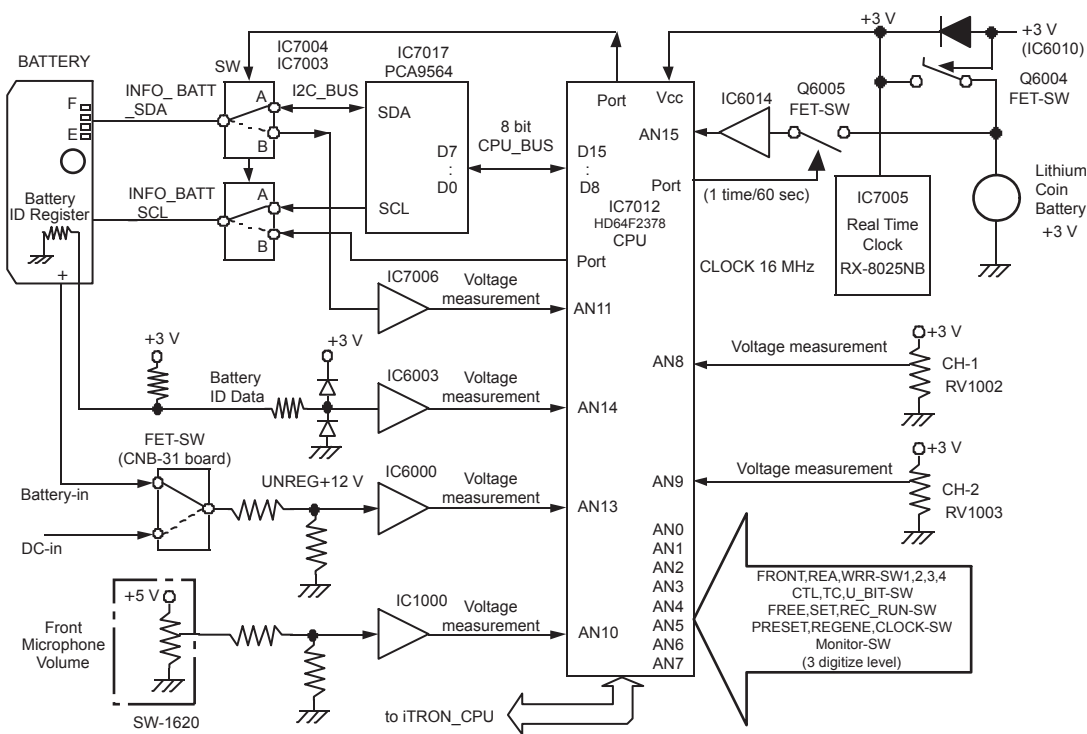
17. Nonvolatile memory control

IC7007 on the FP-190 board is nonvolatile memory that supports the I²C bus.

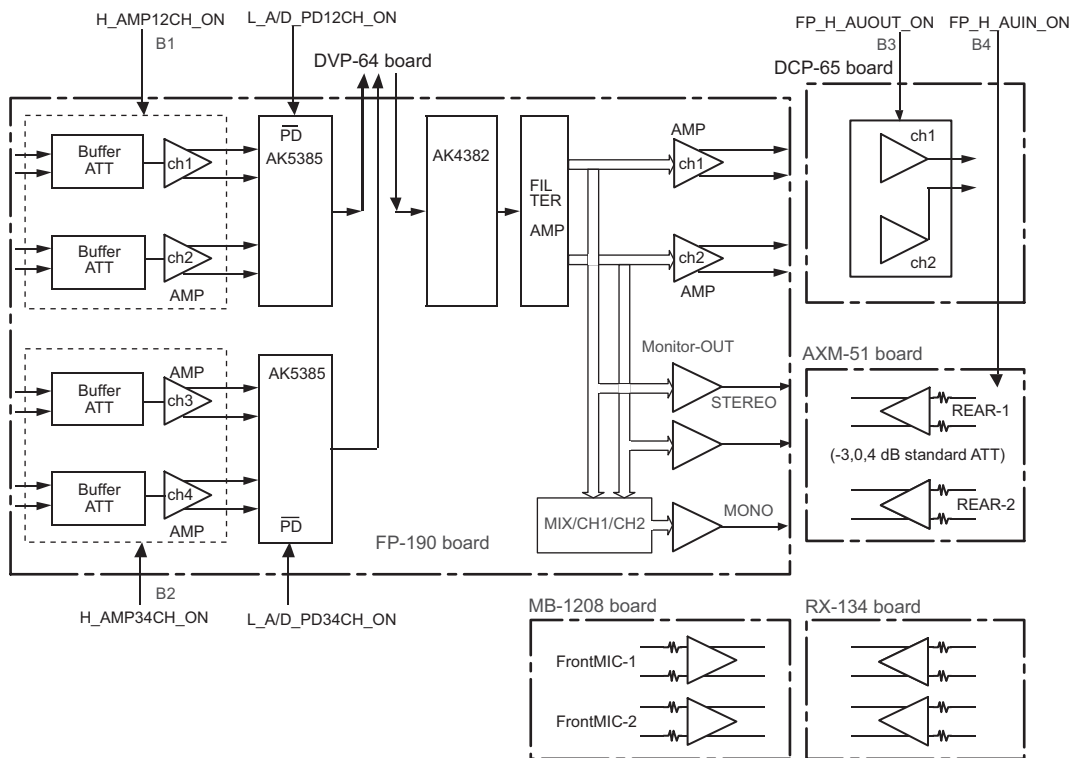
This memory stores system information such as the A/D and D/A error compensation values. During POWER-ON, this information is sent to ITRON-CPU.



Audio Monitor Block



Voltage Measurement Block overview



Audio Power Save Block

1-2-5. Digital Audio System

DVP-64 Board

Audio signal processing system

1. Recording system

The analog audio signal input from the AUDIO IN connector is converted into a serial digital audio signal (two channels) with the AUDIO A/D converter on the FP-190 board. The digital audio signal enters CAVA (IC200) of the DVP-64 board through the MB-1208 board.

The serial digital audio signal (four channels) input from the AES/EBU INPUT connector undergoes level conversion in the AXM-51 board and is input into CAVA (IC200) of the DVP-64 board. After the signal is decoded in CAVA (IC200), it is synchronized and converted to the same sampling rate as the recorded video signal with the sampling rate converter (IC700, IC703).

Digital audio signals (eight channels) that include input HD-SDI signal are decoded with the DCP-65. Then, the signals are converted into serial digital audio signals and entered into CAVA (IC200) of the DVP-64 board via the MB-1208 board.

CAVA (IC200) selects the above entered digital audio signal and sends it as the recorded audio data to AUDIO REC DSP (IC800).

2. Playback system

The playback digital audio signal that underwent playback signal processing in AUDIO PB DSP (IC801) is entered into CAVA (IC200), then separated and converted into the serial digital audio signals for analog output systems and digital output systems.

The analog output system serial digital audio signal is sent to the AUDIO D/A converter in the FP-190 board via the MB-1208 board. After it is converted into an analog audio signal, the signal is output to the AUDIO OUT connector, headphone, and monitor speaker.

The digital output system serial digital audio signal is sent to the DCP-65 board via the MB-1208 board. The signal is combined with the video signal in the DCP-65 board and output as the HD/SD-SDI audio signal.

Digital signal processing system

1. Recording system

The recording audio data from CAVA (IC200) undergoes signal processing such as recording level control, muting process, and MIX/SWAP in AUDIO REC DSP (IC800) and then it is sent to PIER G4 (IC1900) as recording digital audio data.

The recording digital audio data is sent to AUDIO Low Resolution DSP (IC900) through CAVA (IC200). Proxy audio data is generated in compressed A-Low format, and the data is sent to PIER G4 (IC1900).

The above recording digital audio data and recording compressed Proxy audio data are written to PIER_SDRAM (IC1901 to IC1904).

The recording digital data from the network is sent to PIER G4 (IC1900) via the PCI bus and written to the PIER_SDRAM (IC1901 to IC1904).

While recording to a disc, the data in PIER_SDRAM (IC1901 to IC1904) is sent to the DR-606 board via the TA interface.

2. Playback system

The audio data and the Proxy audio data are sent to PIER G4 (IC1900) via the ATA interface and written to the PIER_SDRAM (IC1901 to IC1904).

The playback digital audio data in PIER_SDRAM (IC1901 to IC1904) is sent from PIER G4 (IC1900) to AUDIO PB DSP (IC801). After performing signal processing such as limiter, playback level control, and muting process, the signal is input to CAVA (IC200).

The audio data and Proxy audio data in PIER_SDRAM (IC1901 to IC1904) is provided to network via the PCI bus as the MXF file data.

Sync signal system

The reference signal is always the 24.576 MHz clock entered from the DCP-65 board, whether recording or playing back.

This reference clock is divided and timing signal for 256 FS, 64 FS and FS audio processing is generated.

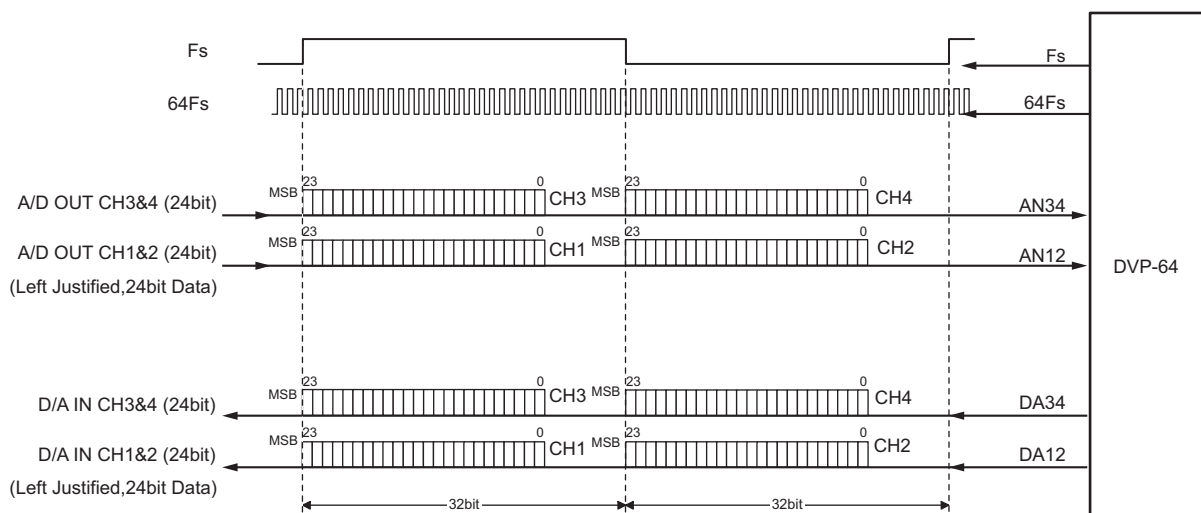
1-2-6. Audio System

Block structure

- Front microphone amp: MB-1208 board
- Input signal selector: FP-190 board
- A/D circuit (CH1&2): FP-190 board
- A/D circuit (CH3&4):FP-190 board
- D/A circuit: FP-190 board
- Final amp: DCP-65 board
- Monitor amp: FP-190 board
- Rear input: AXM-51 board
- DSP operation processing: DVP-64 board

Description of each part

1. Front microphone amp
The front microphone amp on the MA-162 board comes with a gain switch. (30 dB/20 dB/10 dB)
Gain switching can be performed from the menu. (−60 dBu/ −50 dBu/ −40 dBu)
2. Input signal selector
The audio signal can be selected with the analog switch(IC1001 to IC1004) based on the side panel switch information.
3. A/D circuit
A/D uses 24-bit AK-5385. The sampling frequency is 48 kHz.
The first has an ATT circuit for head room level adjustment.
4. D/A circuit
D/A uses 24-bit AK-4382A. The sampling frequency is 48 kHz.
The latter has a differential LPF circuit and an output level amp circuit.



5. Final amp
The final amp is located on the DCP-65 board and is connected to the AXM-51 board via the MB-1208 board. The CH1 and CH2 output signals are output from the 5-pin XLR connector.
The output level can be selected as −3 dBu, 0 dBu, or + 4 dBu from the menu.
6. Monitor amp
Composed of the monaural amp for the front earphone and stereo amp for the rear earphone, the volume control is performed with the operational amp with electronic volume (NJM2172).

7. Rear input

The rear input is composed of the following: a switch for Line In, AES/EBU, and MIC-IN; +48 V ON/OFF-SW; automatic detection circuit (DET-57 board) for the 3-pin input XLR connector; and the microphone amp (10 dB/20 dB/30 dB).

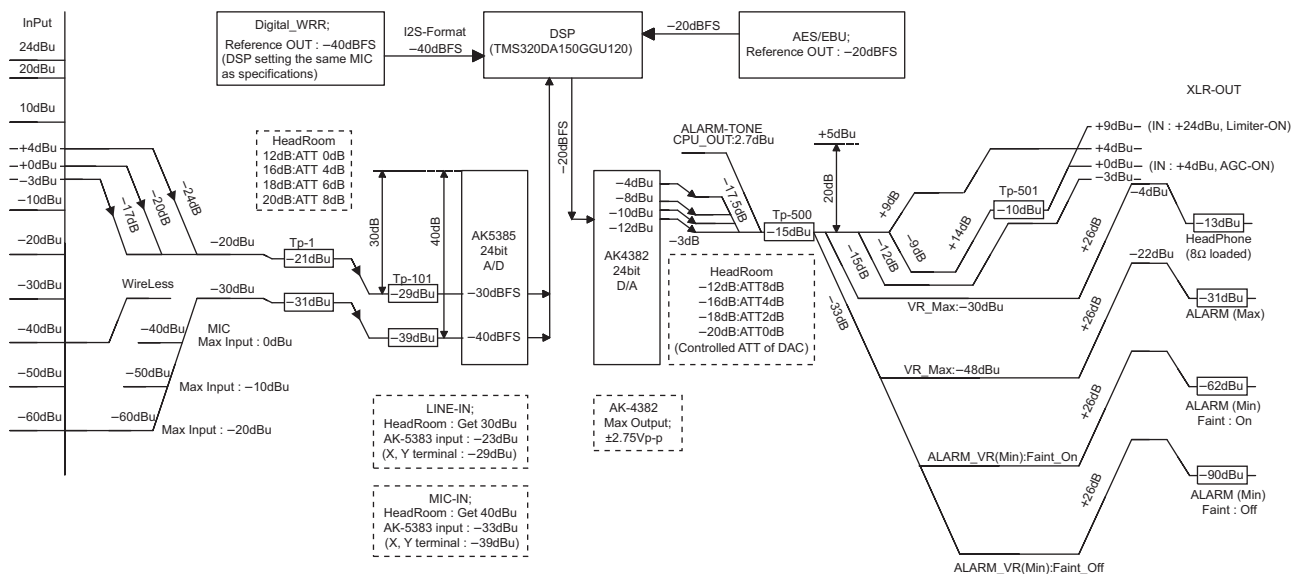
Gain switching can be performed from the menu. (–60 dBu/ –50 dBu/ –40 dBu)

Line In input level setting can be switched to +4 dBu, 0 dBu, –3 dBu with the slide switch on the AXM-51 board.

(Open the inside panel.)

Operation description

- After the power to the device is turned on, each port in the FP-190 board CPU is initialized, the necessary resistor data is set, and muting is cancelled. (After approximately 3 seconds, the digital EE sound can be monitored.)
- The front mic signal passes through the MB-1208 board before entering the input signal selector (analog switch: IC1001 to IC1004) of the FP-190 board.
- The rear input signal passes through the AXM-51 board and MB-1208 board before entering the input signal selector (analog switch: IC1001 to IC1004) of the FP-190 board.
- The information from the FRONT/REAR/WIRELESS switch position can be obtained by loading the three signals from the switch connected to each A/D terminal in the FP_CPU (S1002 to S1005).
FP_CPU sends the switch position information to ITRON-CPU of the SY-439 board, and then selects the audio signal by receiving the audio mode information from the ITRON-CPU.
- The selected CH1 and CH2 system signals enter the differential amp (IC1005, IC1006: balance-to-unbalance converter) and pass through the head room level switching circuit and balance-to-unbalance conversion amp for A/D. Then, the signals are applied to the A/D converter IC (IC2007, IC2008: 24-bit). The serial digital audio signal (2 channels) converted to digital is entered to VAX (IC200) of the DVP-64 board via the MB-1208 board. VAX (IC200) selects the entered digital audio signal and sends it as the recorded audio data to AUDIO REC DSP (IC800).
- DSP for audio performs high-speed processing for operations such as gain processing during manual operations, AUTO processing, LIMITER processing, 67 Hz notch filter while using the front mic, LPF (15 KHz) ON/OFF, internal SG, and audio level detection.
- On the other hand, the front volume and side volume are connected to the A/D terminal in the CPU and the volume voltage is converted into digital with the internal 10-bit A/D. After being converted into a multiplication value for DSP, the signal is sent to ITRON-CPU.
ITRON-CPU performs operation processing on the combined front and side volumes and sends the results to DSP.
- The D/A serial signal for playback passes through the DVP-64 board and MB-1208 board and enters the digital switch (IC3003) of the FP-190 board. In the monitor CHSW, CH1&2 or CH3&4 is selected and applied to the 24-bit D/A converter (IC3006).
- The D/A converter output passes through the differential LPF, ATT balance-to-unbalance conversion amp (IC3010, IC3011), and MB-1208 board. It is applied to the final amp (IC2707, IC2708) of the DCP-65 board and output from the 5-pin XLR connector (AXM-51 board).
- The audio signal for the monitor passes from IC3013 output through the monaural, mix, and stereo switching switch (IC4004, IC4005). Then, the signal is applied to the operation amp (NJM2172) with electronic volume.
The rear earphone can be switched between stereo and mono from the menu.
The monitor speaker output level can be lowered from the volume. Select one of the following for the ATT value: 0, –3 dB, –6 dB, –9 dB.



1-2-7. Audio DSP Operation Processing

Main functions

- AUTO-AMP: Two to four types of characteristics can be selected depending on each headroom.
- LIMITER characteristics: Two to four types of characteristics can be selected depending on each headroom.
- OUT_PUT_LIMITER characteristics: Performs LIMITER processing on the PB and EE_OUT. ON/ OFF.
- Turns on and off the HPF (67 Hz) and LPF (15 KHz; -24 dB). (Runs automatically during front microphone selection)
- Performs gain control when CH1 and CH2 are on MANUAL status. (VR-MAX: +12 dB)
- CH3 and CH4 turn on and off the AUTO operation.
- Internal SG: Four types of 1 KHz/-12, -16, -18, -20 dBFS.
- Recording error correction: +0 to -2 dB (started from the terminal)
- Playback error correction: +0 to -2 dB (started from the terminal)
- INPUT delay amount: Performs delay processing to match the VIDEO and AUDIO phases of each CH.

Description of each part

1. DIGITAL AUTO_AMP Processing

Selects the AUTO level from the menu.

AU AUTO SPEC: -6 dB/-9 dB/-12 dB/-15 dB/-17 dB

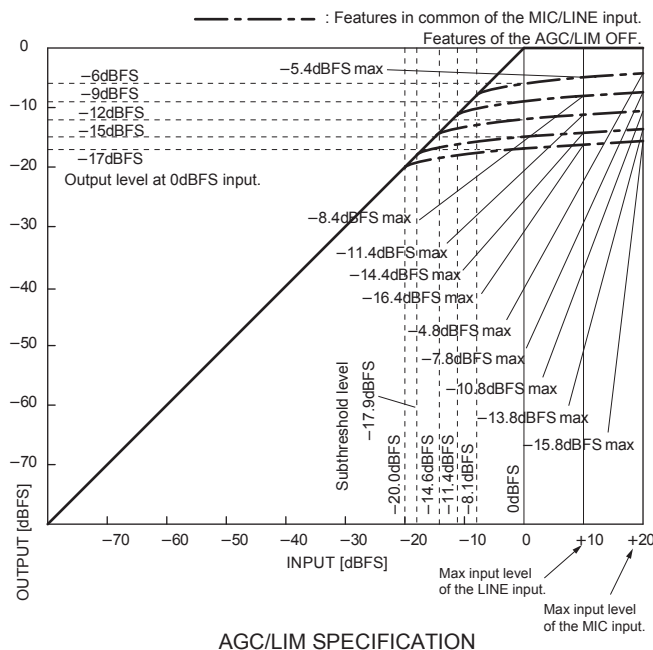
- 6 dB: Linear operation until approx. -9 dBFS. Approx. -6 dBFS at Max.
- 9 dB: Linear operation until approx. -12 dBFS. Approx. -9 dBFS at Max.
- 12 dB: Linear operation until approx. -15 dBFS. Approx. -12 dBFS at Max.
- 15 dB: Linear operation until approx. -18 dBFS. Approx. -15 dBFS at Max.
- 17 dB: Linear operation until approx. -20 dBFS. Approx. -17 dBFS at Max.

2. DIGITAL In Put LIMITER characteristics (only during MANUAL)

Selects the LIMITER level from the menu.

AU AUTO SPEC: -6 dB/-9 dB/-12 dB/-15 dB/-17 dB

- -6 dB: Linear operation until approx. -9 dBFS. Approx. -6 dBFS at Max.
- -9 dB: Linear operation until approx. -12 dBFS. Approx. -9 dBFS at Max.
- -12 dB: Linear operation until approx. -15 dBFS. Approx. -12 dBFS at Max.
- -15 dB: Linear operation until approx. -18 dBFS. Approx. -15 dBFS at Max.
- -17 dB: Linear operation until approx. -20 dBFS. Approx. -17 dBFS at Max.



3. DIGITAL Out Put LIMITER characteristics

Turn the LIMITER ON/OFF from the menu.

- ON: Linear operation until approx. -12 dBFS, approx. -11 dBFS (at Max.)
- OFF: Turn off LIMITER at 0 dBFS.

4. Gain control during MANUAL

The A/D converted VR value is converted into a DSP multiplication value at FP-CPU and synchronized with the VIDEO1 frame, then handed over to the CPU of the DVP-64 board to set in the register of the DSP. The maximum variable for volume is +12 dB. ($-\infty$ to +12 dB)

5. Recording error correction

For error correction on the A/D converter for audio, the multiplication value is corrected in the range +0 to -2 dB. Starts from the terminal with the standard signal level applied. (fully automatic)

6. Playback error correction

For error correction on the D/A converter for audio, the multiplication value is corrected in the range +0 to -2 dB. The correction is performed after the playback error correction is completed. Starts from the terminal. (semiautomatic)

The internal SG is used as the standard signal, and the inside panel for each LEVEL-VR is turned and fine-tuned.

1-2-8. Optical Drive System

Recording System

Recording data sent from the DVP-64 board through the ATA bus (Ultra ATA33) is sent to the Blu-ray Disc Controller BDC (IC300) on the DR-606 board.

The BDC performs signal processing to conform to recording format, such as ATA interface, ECC coding and 17PP (Parity Preserve/Prohibit RMTR) modulation.

The recording data is converted to multi-pulse in the BDC, and the multi-pulse data is sent through the flexible card wire to the optical block to be written into the disc.

Playback System

1. Data Playback System

The RF signal played back from the disc is sent from the optical block to the Front End Processor FEP (IC200) on the DR-606 board where equalizing and asymmetry correction are performed after the RF signal passes through the AGC.

After A/D conversion by the read clock played back in the PLL, the signal is sent to the BDC (IC300).

In the BDC, the signal passes through the adaptive digital filter, and Viterbi demodulation, 17PP demodulation, and ECC decoding are applied to the signal. Then the signal is sent through the ATA bus to the DVP-64 board as played back data.

2. Address restoration system

The address data restored from the disc is sent from the optical block to the FEP (IC200) on the DR-606 board.

The analog address data passes through the AGC and BPF and is converted to digital data in the FEP. The digital data is then sent to the BDC (IC300) for address decoding.

The PLL in the FEP generates a wobble clock (WCK).

Servo System

1. Tri-Axis Actuator and SA Actuator

The object lens of the optical block is controlled for focus direction, track direction, and tilt angle by the tri axis actuator.

The light reflected from the disc is converted to the electrical signal by the optical block. The electrical signal is input to the FEP IC200, and the focus error signal and the track error signal are detected. The SV DSP IC400 outputs the control data based on the errors to the driver IC501 and controls the focus actuator and the track actuator through the driver.

The tilt actuator is controlled for its angle against the disc to be optimum based on the tilt adjustment result for output of the angular velocity sensor.

The SA actuator position is controlled for the spherical aberration to be optimum at the start-up adjustment when the disc is inserted. The SA actuator for the double layer disc is controlled to the optimum position every time to jump the layer.

2. Seek Motor

The seek motor controls the position of the optical block so that the track to be recorded or played back is kept within the object lens driving range.

3. ND Filter

The transmission factor of the ND filter is selectable to reduce the laser noise that occurs when the read power light is emitted for the single layer disc.

4. Spindle Motor

The FG generated by the spindle motor is amplified and shaped on the SE-857 board, and is then input into the SV DSP (IC400) on the DR-606 board.

The SV DSP compares the FG frequency with the target frequency, and then controls the spindle motor via the driver (IC500).

System Control

The SY CPU (IC600) on the DR-606 board performs system control. It controls ATA interface, Data Manager, RF-related ICs, servo ICs, and loader. It also carries out interlocking control, maintenance and error log management of each device including the optical block.

Firmware programs of the SY CPU and DSP as well as sources of each PLD are stored in the flash memory (IC602), and the CPU loads them to each device when the power is turned on.

The BDC (IC300) and SV DSP (IC400) are controlled by the parallel CPU bus, while RF-related ICs are controlled by the serial port through SYS PE (IC700).

Adjustment values and hours meter data are stored in the EEPROM (IC4) on the SE-857 board.

1-2-9. Power Supply Systems

CNB-31 Board

The board checks the input voltage +12 V, and controls distribution of the input power to each circuit board.

1. Power ON/OFF Control

The ON/OFF control is performed in IC7 and IC8.

The IC7 input signals include L PWR SW ON signal, H POWERW HOLD signal, EXTDC detection signal, battery detection, excess voltage detection, and low voltage detection. During normal operation, when LPWR SW ON signal is turned to “L”, Q7, Q8, Q9, and Q10 or Q11, Q12, Q13, and Q14 are turned on, and the battery or EXT DC IN +12 V is supplied to respective circuit.

The H POWERW HOLD signal is sent from the FP-190 board after the main power of this unit is turned on.

Therefore, the power is kept on even if the L PWR SW ON (L) signal is set to OFF (H).

In order to turn off the main power of this unit, the L PWR SW must be turned off (H) and the H POWERW HOLD signal must be opened and set to “L”.

When the FP-190 board detects that the POWER switch is turned OFF, it sets the POWERW HOLD signal to “L” to turn off the power after a disc operation is completed if the equipment is in the midst of operating a disc.

2. Battery/EXT DC selector

The EXT DC voltage is detected and either battery or EXT DC is selected with priority given to the EXT DC.

The IC8 performs the control and Q7, Q8, Q9, and Q10 are turned on when a battery is selected and Q11, Q12, Q13, and Q14 are turned on when the EXT DC is selected.

In this IC8 a step-up circuit ($V_{cc} + 8.5$ V) that drives the N-CH MOS FET gate is employed.

3. Protection from Excess Input Voltage

VOLTAGE DETECT (IC3) monitors the input +12 V. If the voltage exceeds approximately +18 V, the output of the IC3-1 is set to “H”. This is input to IC1 to start the protection from the excess voltage and turn on the +12 V output. (SHUT DOWN)

Since this function is a latch operation, the main power of the unit needs to be turned off once and back on after the input power is set to below 18 V.

4. Excess current detection

The output circuit of the UNREG +12 V has excess current detection resistors R85, R86 and R87. A voltage drop at the resistors is detected by the IC8.

When the voltage drop at the resistors exceeds 200 mV, the +12 V output is turned off. (SHUT DOWN)

Another SHUT DOWN signal is the H SHUT DOWN signal that is supplied from the RE-246 board. If any one of the DC-DC converter outputs is shorted, the output 12 V enters the SHUT DOWN state except UN SW + 12 V. (SHUT DOWN)

Since this function is a latch operation, the main power of the unit needs to be turned off once and back on after the cause of the excess current is removed.

5. Protection against input power connection of reverse polarity

If the input power is connected in reverse polarity, FET (Q1 and Q17) is turned off so that the GND lines of the control system circuits are disconnected. Thus the control circuits are protected and supply of + 12 V power to the respective circuits is stopped.

6. FAN voltage control

The Q5 and Q6 are controlled by the FAN CONT signal from the DCP-65 board and the PWM wave is converted to the DC voltage according to the DUTY.

The voltage controls the FAN and reduces the temperature increase.

1-2-10. Others

CN-3667 Board

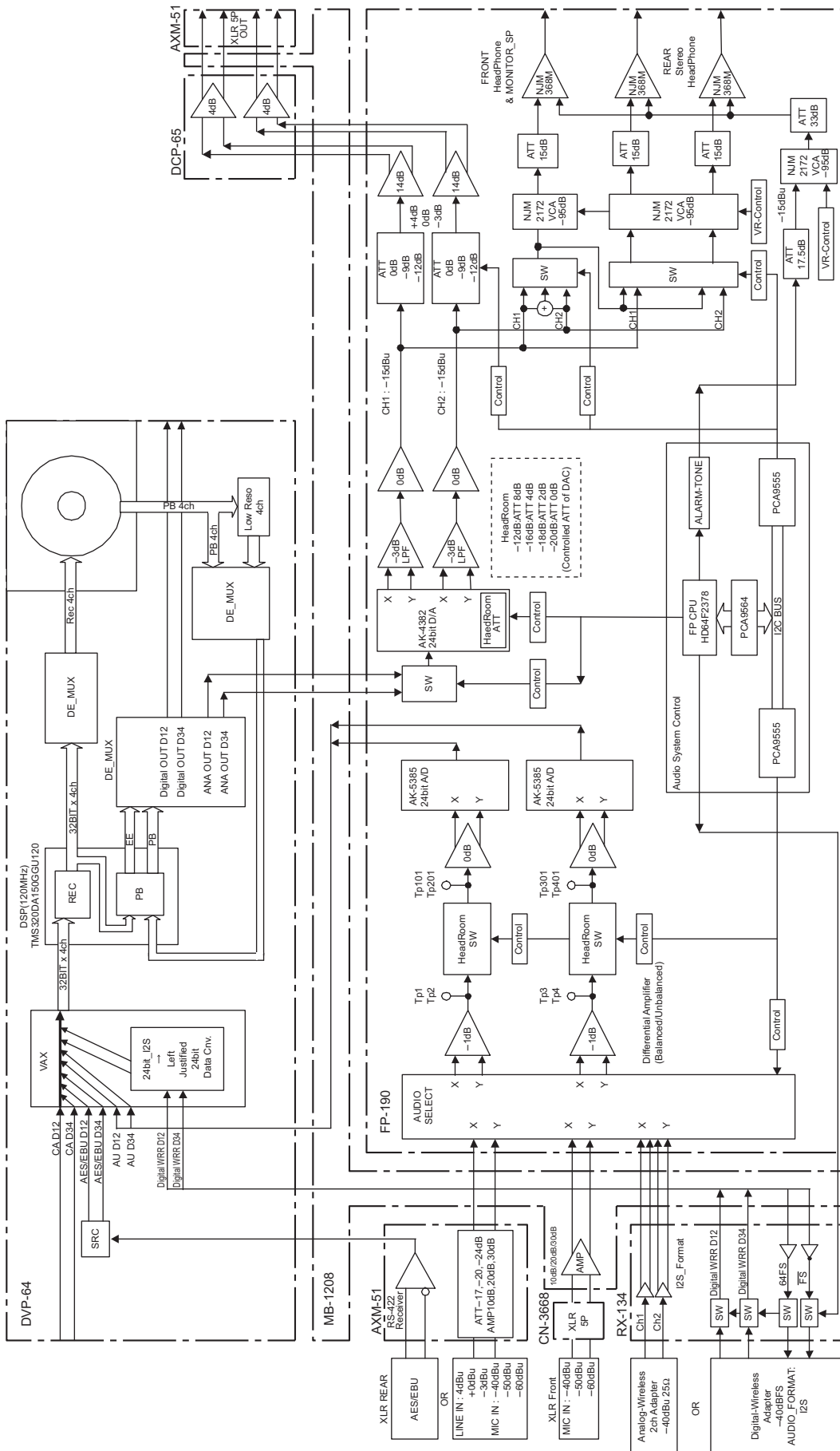
This board includes the relay of the VF power supply, light power supply, light switch signal, handle switch signal and GPS module communication, and the EEPROM circuit that stores system information.

1. The relay of the Handle switch signal and GPS module
Input and output the handle switch signal and GPS communication signal (CN12).
2. Light switch signal relay
Relays the light switch signal (CN4).
3. EEPROM
The system information is written to the EEPROM (IC2) by the I²C communication to control.

CI-49 Board

This board performs the 50-pin interface communication relay.

Long-distance transmission of input/output signals between camera body and camera control unit is enabled by attaching a camera adapter to the camera body on the 50-pin interface communication relay board.



Audio Block Overview

1-3. Connectors and Cables

1-3-1. Connection Connectors/Cables

Connection made with the connector panels during installation or service, should be made with the connectors/complete cable assemblies specified in the following list, or equivalent parts.

Connector Name	Connection Connector/Cable
- GEN LOCK IN - TC IN - TC OUT - TEST OUT - SDI IN - SDI OUT 1 - SDI OUT 2	Plug, BNC (Part No.: 1-569-370-12)
AUDIO IN CH-1/ CH-2	XLR, 3P, Male (Part No.: 1-508-084-00)
AUDIO OUT	Audio cable (XLR 5P-XLR 3P, 2 m) CCXA-53 made by Sony or equivalent
DC IN	XLR, 4P, Female (Part No.: 1-508-362-00)
DC OUT 12 V	Round Type, 4P, Male (Part No.: 1-566-425-11)
EARPHONE	Mini jack (commercially available)
LIGHT	Power tap (OE) Made by ANTONBAUER Inc., 33710 or equivalent
MIC IN	XLR, 5P, Male (Part No.: 1-568-370-11)
NETWORK	100 BASE-TX
REMOTE	Round Type, 8P, Male (Part No.: 1-766-848-11)
LENS	Connector, 12P, Male Hirose HR 12-14PA-20PC or equivalent
VF	Connector, 20P, Male Hirose HR 12-14PA-20PC or equivalent
WIRELESS RE- CEIVER IN	WRR-855A, DWR-S01D (by Sony) only connectable Note Do not connect with a connector/cable other than above.

1-3-2. Connector Input/Output Signals

Input Signals

GEN LOCK IN

BNC type 1.0 Vp-p, 75 Ω, unbalanced

TC IN

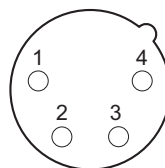
BNC type 0.5 V to 18 Vp-p, 10 kΩ

SDI IN

BNC type

DC IN

XLR 4-pin, Male

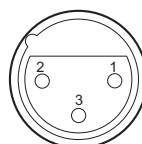


- External View -

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

AUDIO IN CH-1, CH-2

XLR 3-pin, Female



- External View -

(0 dBu = 0.775 V rms)

MIC/LINE INPUT

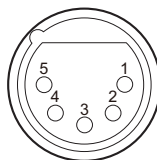
No.	Signal	I/O	Specifications
1	MIC/LINE (G)	—	-60 dBu/+4 dBu, selectable High impedance, Balanced
2	MIC/LINE (X)	IN	
3	MIC/LINE (Y)	IN	

AES/EBU INPUT

No.	Signal	I/O	Specifications
1	AES/EBU (G)	—	1.0 Vp-p, 110 Ω, Balanced
2	AES/EBU (X)	IN	
3	AES/EBU (Y)	IN	

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

TEST OUT

BNC type 1.0 Vp-p, 75 Ω , unbalanced

SDI OUT 1/2

BNC type

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

TC OUT

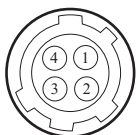
BNC type 1.0 Vp-p, 75 Ω

EARPHONE

8 Ω or more, $-\infty$ type to –18 dBu variable

DC OUT 12 V

DIN, 4-pin, Female

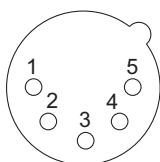


- External View -

No.	Signal	I/O	Specifications
1	UNREG GND	—	GND for POWER
2	—	—	No connection
3	—	—	No connection
4	UNREG +12 V	OUT	+11 to 17 V dc

AUDIO OUT

XLR, 5-pin, Male



- External View -
(0 dBu = 0.775 V rms)

No.	Signal	I/O	Specifications
1	ANALOG GND	—	

Continued

No.	Signal	I/O	Specifications
2	AUDIO CH-1 (X)	OUT	0 dBm (600 Ω terminated)
3	AUDIO CH-1 (Y)	OUT	
4	AUDIO CH-2 (X)	OUT	
5	AUDIO CH-2 (Y)	OUT	

LIGHT

2-pin, Female



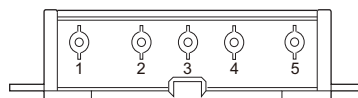
- External View -

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

Input/Output Signals

BATT IN

5-pin, Male

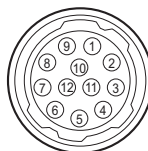


- External View -

No.	Signal	I/O	Specifications
1	BATT (–)	IN	
2	BATT ID	IN	
3	BATT REM	IN	
4	LIGHT CONT	OUT	
5	BATT (+)	IN	+11 to 17 V dc

LENS

12-pin, Female



- External View -

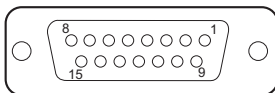
No.	Signal	I/O	Specifications
1	RET (SW)	IN	• ON: 0 V • OFF: OPEN
2	VTR TRIG	IN	• ON: 0 V • OFF: OPEN

Continued

No.	Signal	I/O	Specifications
3	LENS GND	—	
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	- AUTO IRIS: 0 V - MANUAL IRIS: +5 V
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: 7 V
11	LENS RX		
12	LENS TX		

WIRELESS RECEIVER IN

D-sub, 15-pin, Female

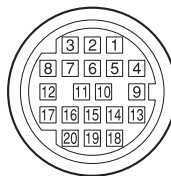


- External View -

No.	Signal	I/O	Specifications
1	GND	—	GND for AUDIO IN
2	AUDIO CH1 IN	IN	WIRELESS RECEIVER AUDIO CH1 IN
3	—	—	No connection
4	DC + 7 V OUT	OUT	
5	GND	—	
6	SCLK	OUT	64 FS
7	WRR855 DET	I/O	
8	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

VF

20-pin, Female



- 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
12	Y VIDEO	OUT	1.0 V p-p, $Z_o = 75 \Omega$
13	Y VIDEO GND	—	GND for VIDEO
14	Pb VIDEO (Pb)	OUT	± 0.35 Vp-p, $Z_o = 75 \Omega$
15	Pr VIDEO (Pr)	OUT	± 0.35 Vp-p, $Z_o = 75 \Omega$
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

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

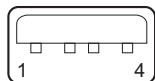
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No.	Signal	I/O	Specifications
6	UNREG +12 V	OUT	+11 V to 17 V
7	UNREG (GND)	—	GND for UNREG
8	VIDEO (X)	OUT	1.0 V _{p-p} , Z _o = 75 Ω
	CHASSIS GND	—	CHASSIS GND

MAINTENANCE

USB (Series A), 4-pin

Signal standard: USB standard Ver. 2.0

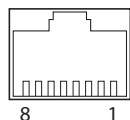


- External View -

No.	Signal
1	USB_VBUS
2	USB_D-
3	USB_D+
4	GND

NETWORK

8-pin, RJ-45, 10Base-T/100Base-TX

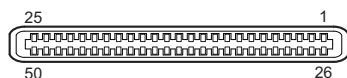


- External View -

No.	Signal	I/O	Specifications
1	TX (+)	I/O	Transmitted data (+)
2	TX (-)	I/O	Transmitted data (-)
3	RX (+)	I/O	Received data (+)
4	—	—	No connection
5	—	—	No connection
6	RX (-)	I/O	Received data (-)
7	—	—	No connection
8	—	—	No connection

CA

Rectangular, 50-pin



- External View -

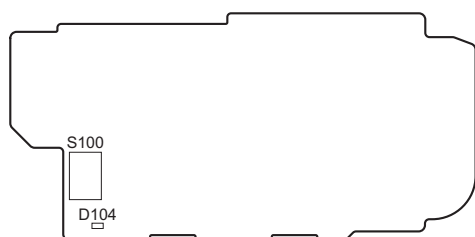
No.	Signal	I/O	Specifications
1	TX OUT C2	—	GND for TX OUT H
2	TX OUT C1		
3	CA EN	IN	Connect to ground
4	GND	—	GND
5, 6	UNREG OUT	OUT	+12 V
7	BSY	—	No connection

Continued

No.	Signal	I/O	Specifications
8	CMD0	OUT	Start-stop synchronization RX signal output
9	CMD2	OUT	—
10	CMD4	OUT	—
11 to 15	GND	—	GND
16	CA VD	IN	Vertical synchronizing signal input
17	CDA0	IN	Start-stop synchronization TX signal input
18	CA HD	IN	Horizontal synchronizing signal input
19	CDA2	IN	—
20, 21	+3.3V OUT	OUT	+3.3 V
22, 23	GND	—	GND
24	RX IN C1	—	GND for RX IN H
25	RX IN C2	—	
26	TX OUT H	OUT	HD-SDI signal output
27	TX OUT C3	—	GND for TX OUT H
28	GND	—	GND
29, 30	UNREG OUT	OUT	+12 V
31	CK	—	No connection
32	RX	OUT	700 protocol signal output
33	CMD1	OUT	—
34	CMD3	OUT	—
35 to 41	GND	—	GND
42	TX	IN	700 protocol signal input
43	CDA1	IN	—
44	CDA3	IN	—
45	CA F	IN	—
46, 47	3.3V IN	IN	+3.3 V
48	GND	—	GND
49	RX IN C3	—	GND for RX IN H
50	RX IN H	IN	HD-SDI signal input

1-4. Functions of Onboard Switches/LED Indicators

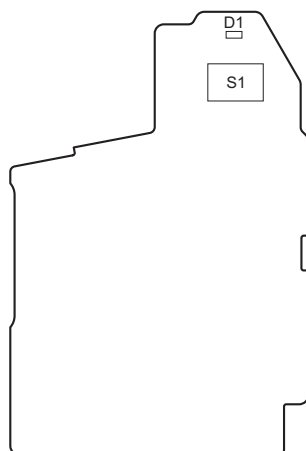
1-4-1. AXM-51 Board



AXM-51 board (A side)

Ref. No.	Bit	Name	Function	Factory setting
D104	—	TALLY (Back tally) indicator	Lights during recording when the TALLY switch is turned on ^{*1}	—
S100	—	INPUT REFERENCE	Sets the input reference level • +4 dB: Sets the input reference level to +4 dB • 0 dB: Sets the input reference level to 0 dB • -3 dB: Sets the input reference level to -3 dB	+4 dB

1-4-2. CN-3669 Board

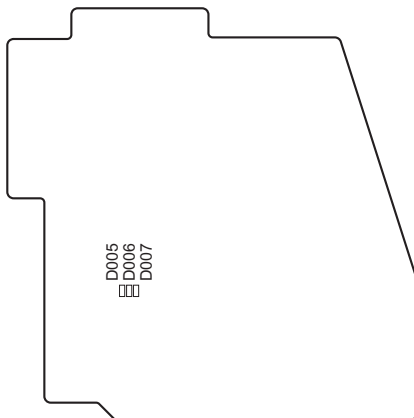


CN-3669 board (A side)

Ref. No.	Bit	Name	Function	Factory setting
D1	—	TALLY (Back tally) indicator	Lights during recording when the TALLY switch is turned on ^{*1}	—
S1	—	TALLY switch	Turns ON/OFF the TALLY indicator ^{*1}	ON

^{*1}: Refer to the "Operation Manual".

1-4-3. CNB-31 Board

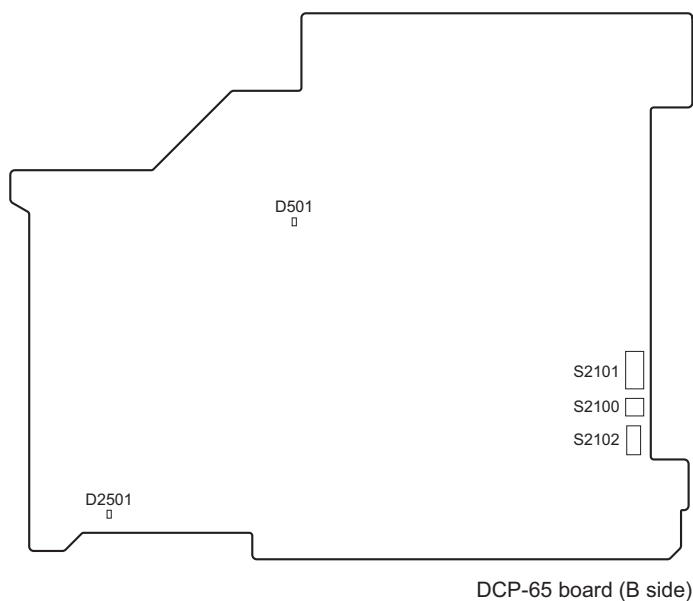


CNB-31 board (B side)

Ref. No.	Bit	Name	Function	Factory setting
D005	—	Overvoltage protection indicator	Lights when the overvoltage protection starts to operate when the input voltage of EXT DC or BATT reaches approx. 19.5 V or more. This shuts down the unit* ¹	—
D006	—	Low voltage protection indicator	Lights when the operation of the low voltage protection circuit of CNB-31 board is repeated several times due to some error. This shuts down the unit* ¹	—
D007	—	Shut Down signal from RE-323	Lights when the Shut Down signal is sent from the RE-323 board due to a load error of the RE-323 board. This shuts down the unit* ¹	—

*1: When the unit is shut down under the condition above this level, the overvoltage protection for the entire unit may start. In this case, the indicator does not light.

1-4-4. DCP-65 Board



DCP-65 board (B side)

Tip

Each LED is used for adjustment and check in the manufacturing process.

Note

Do not change the setting of “Factory use” switch.

Ref. No.	Bit	Name	Function	Factory setting
S2100	1 to 4	—	Factory use	All OFF
S2101	1	—	Service mode setting - ON: Service mode (The SERVICE menu is displayed) - OFF: Normal mode	OFF
	2	—	Disables displaying SERVICE menu by “ Method 2 ” in “ 4-1-2. How to Display the SERVICE Menu ” - ON: Disable - OFF: Enable	OFF
	3 to 7	—	Factory use	All OFF
	8	—	FRAM initialization - ON: Initializes the FRAM/DCP-65 board - OFF: Normal mode	OFF
S2102	—	TOP menu	Display select switch - ON: The TOP menu is displayed. - OFF: The TOP menu is not displayed.	ON

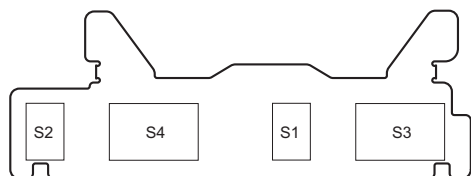
1-4-5. DET-50 Board



DET-50 board (A side)

Ref. No.	Bit	Name	Function	Factory setting
S1	—	SW	Color LCD turn switch	—

1-4-6. DET-57 Board



DET-57 board (A side)

Ref. No.	Bit	Name	Function	Factory setting
S1	—	CH1 (ON/OFF)	Turns ON/OFF the +48 V ^{*1}	OFF
S2	—	CH2 (ON/OFF)	Turns ON/OFF the +48 V ^{*1}	OFF
S3	—	AUDIO IN (CH1)	LINE/AES/EBU/MIC (CH1) selector switch ^{*1}	—
S4	—	AUDIO IN (CH2)	LINE/AES/EBU/MIC (CH2) selector switch ^{*1}	—

1-4-7. DR-606 Board



DR-606 board (A side)

Note

Do not change the setting of “Factory use” switch.

Ref. No.	Bit	Name	Function	Factory setting
S600	—	System reset	Factory use	—

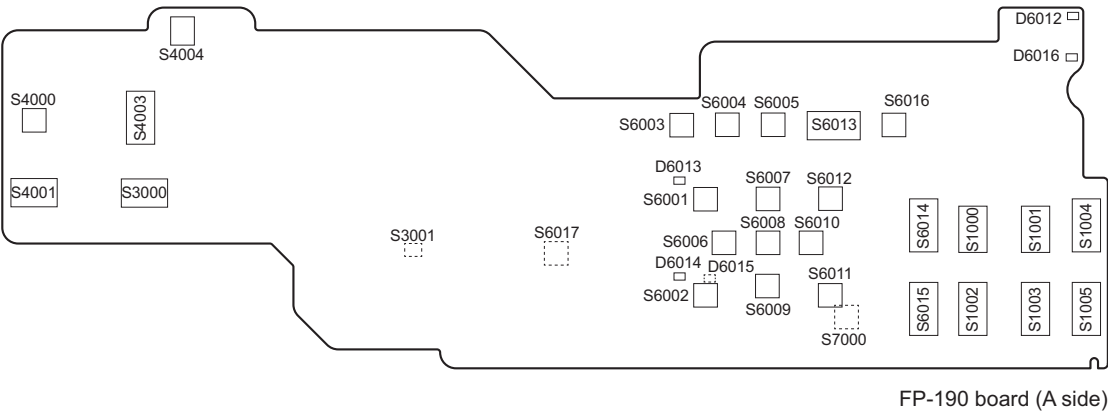
*1: Refer to the “Operation Manual”.

1-4-8. DVP-64 Board



- Tip
- Each LED is used for adjustment and check in the manufacturing process.

1-4-9. FP-190 Board



- Note
- Do not change the setting of “Factory use” switch.

Ref. No.	Bit	Name	Function	Factory setting
D6012	—	WARNING	Warning light. Lights when FP-CPU is abnormal*1	—
D6013	—	THUMBNAIL	Displays thumbnails*1	—
D6014	—	SUB CLIP	Lights during the clip playback	—
D6015	—	TEST	Lights during the FP-CPU initialization*1	—

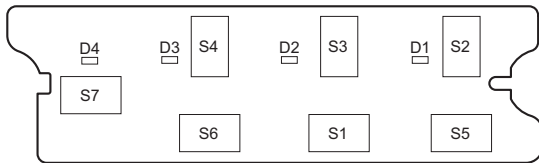
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*1: Refer to the “Operation Manual”.

Ref. No.	Bit	Name	Function	Factory setting
D6016	—	ACCESS	Lights when the disc drive is being accessed* ¹	—
S1000	—	AUTO1 (ON: H/OFF: L)	Selects the adjustment method of the audio level for audio channel 1* ¹	—
S1001	—	AUTO2 (ON: H/OFF: L)	Selects the adjustment method of the audio level for audio channel 2* ¹	—
S1002	—	CH1	FRONT/REAR/WRR	FRONT
S1003	—	CH2		
S1004	—	CH3		
S1005	—	CH4		
S3000	—	MONITOR (CH1/2, CH3/4)	Audio monitor selector switch* ¹	—
S3001	—	—	Turns on when 5P XLR of the AUDIO output of the AXM-51 board is changed to 3P* ¹	OFF
S4000	—	ASSIGN1	Allocates the switch functions* ¹	OFF
S4001	—	ASSIGN2	Turns ON/OFF the assigned function* ¹	OFF
S4003	—	MONITOR (CH-L/MIX/CH-R)	Audio monitor selector switch* ¹	
S4004	—	CCC SW	Changes the color temperature* ¹	
S6001	—	THUMBNAIL/ESSENCE MARK	Thumbnail* ¹	
S6002	—	SUB CLIP	Plays the clip list* ¹	—
S6003	—	DISP SEL/EXPAND	Switches the display contents* ¹	—
S6004	—	HOLD/CHAPTER	Displays the display hold/chapter function* ¹	—
S6005	—	RESET	Resets the time counter display* ¹	
S6006	—	LEFT	LEFT* ¹	—
S6007	—	UP	UP* ¹	—
S6008	—	SET/S.SEL	SET* ¹	—
S6009	—	DOWN	DOWN* ¹	—
S6010	—	RIGHT	RIGHT* ¹	—
S6011	—	SHIFT	SHIFT* ¹	—
S6012	—	CLIP MENU	MENU* ¹	—
S6013	—	DISPLAY (CTL/TC/U_BIT)	Switches the counter display* ¹ - COUNTER: Displays the counter for the elapsed record/playback time - TC: Displays time-code - U-BIT: Displays user-bit	
S6014	—	F_RUN/SET/R_RUN	- F-RUN: Continuous time-code steps*¹ - SET: Sets the time-code and user-bit - R-RUN: Time-code steps while recording	
S6015	—	RESET/REGEN/CLOCK	Reset/regenerate/clock button* ¹	
S6016	—	BRIGHT	Brightness adjustment* ¹	—
S6017	—	CPU RESET	Resets the CPU	—
S7000	1 to 4	—	Factory use	All OFF

*1: Refer to the "Operation Manual".

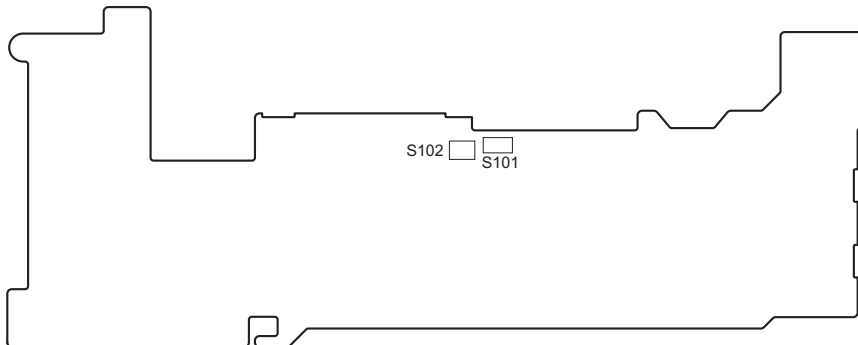
1-4-10. KY-712 Board



KY-712 board (A side)

Ref. No.	Bit	Name	Function	Factory setting
D1	—	FF	Lights during fast-forward playback* ¹	—
D2	—	PLAY	Lights during playback of the disc* ¹	—
D3	—	REW	Lights during fast-rewind playback* ¹	—
D4	—	EJECT	Blinks during disc ejection* ¹	—
S1	—	STOP	Stops playback* ¹	—
S2	—	FF	Fast forward* ¹	—
S3	—	PLAY	Disc playback* ¹	—
S4	—	REW	Fast rewind* ¹	—
S5	—	NEXT	Moves to the next clip* ¹	—
S6	—	PREV	Moves to the previous clip* ¹	—
S7	—	EJECT	Ejects the disc* ¹	—

1-4-11. MB-1208 Board



MB-1208 board (B side)

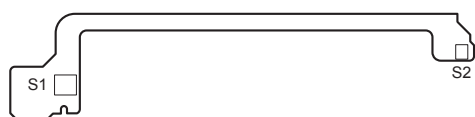
Ref. No.	Bit	Name	Function	Factory setting
S101	—	TOP menu	Display selector switch • ON: The TOP menu is displayed. • OFF: The TOP menu is not displayed.	OFF

Continued

*1: Refer to the "Operation Manual".

Ref. No.	Bit	Name	Function	Factory setting
S102	1	—	Service mode setting - ON: Service mode (The SERVICE menu is displayed) - OFF: Normal mode	OFF
	2	—	Disables displaying SERVICE menu by “ Method 2 ” in “ 4-1-2. How to Display the SERVICE Menu ” - ON: Disable - OFF: Enable	OFF
	3	Normal boot	Starts iTRON-CPU mandatorily in normal mode	OFF
	4	Recovery boot	Starts iTRON-CPU mandatorily in recovery mode	OFF

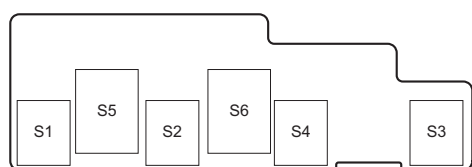
1-4-12. SW-1125G Board



SW-1125G board (A side)

Ref. No.	Bit	Name	Function	Factory setting
S1	—	IN SENSE	Cartridge presence	OFF
S2	—	STBY OFF	Cartridge chucking state	OFF

1-4-13. SW-1618 Board



SW-1618 board (A side)

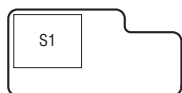
Ref. No.	Bit	Name	Function	Factory setting
S1	—	VDR (SAVE/STBY)	Switches the VDR operation state (SAVE/STBY)* ¹	SAVE
S2	—	GAIN (L/M/H)	Switches gain (L/M/H)* ¹	L=0 dB, M=6 dB, H=12 dB
S3	—	WHITE BAL (B-A-PRESET/ATW)	Switches the white balance memory PRST: Adjusts the color temperature to the preset value A/B: Calls the saved white balance value ATW: Switches the ATW operations	PRST=3200K
S4	—	OUTPUT (DCC: ON_OFF/BARS_CAM)	Switches the output signal* ¹ Turns on/off the dynamic contrast control* ¹ BARS: Outputs the color bar signal* ¹ CAM: Turns on/off the DCC function* ¹	—
S5	—	MENU (ON/OFF)	Turns on/off the MENU switch* ¹	OFF

Continued

*1: Refer to the “Operation Manual”.

Ref. No.	Bit	Name	Function	Factory setting
S6	—	MENU (ON/OFF)	Turns on/off the MENU switch*1	OFF

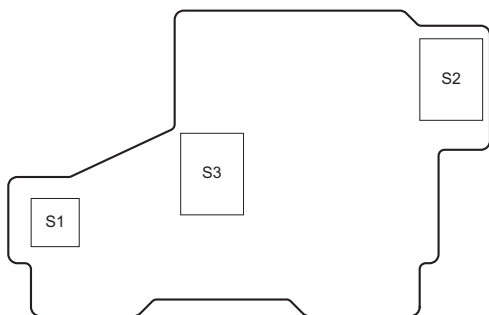
1-4-14. SW-1619 Board



SW-1619 board (A side)

Ref. No.	Bit	Name	Function	Factory setting
S1	—	AUTO/MANUAL	- AUTO: Lights EXT LIGHT along with the REC operation*1 - MANUAL: Turns ON/OFF EXT LIGHT manually*1	—

1-4-15. SW-1620 Board

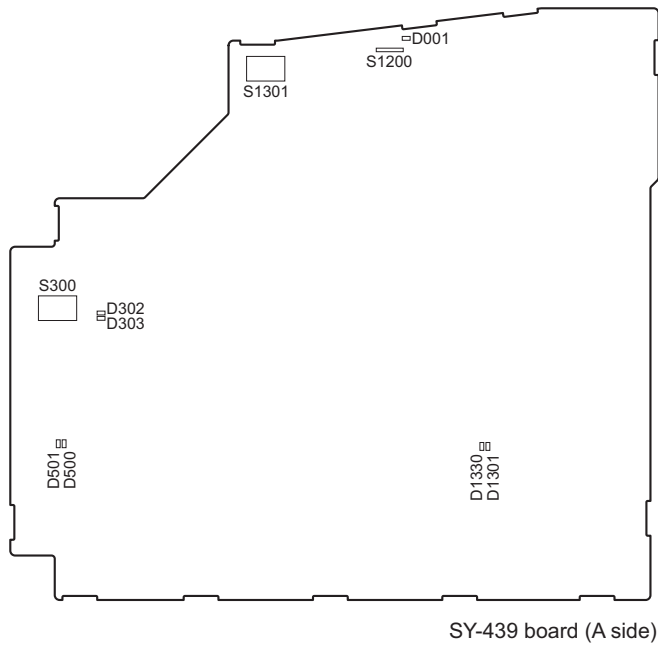


SW-1620 board (A side)

Ref. No.	Bit	Name	Function	Factory setting
S1	—	REC START	The button used to start/stop recording*1	—
S2	—	AUTO_W/B_BAL	The switch used to automatically adjust white balance/black balance.*1	—
S3	—	SHUTTER	Turns on/off the electronic shutter*1	—

*1: Refer to the "Operation Manual".

1-4-16. SY-439 Board



Tip

- Each LED is used for adjustment and check in the manufacturing process.
 - Each switch is used for adjustment and check in the manufacturing process.
- They are all set to off when shipped from the factory.

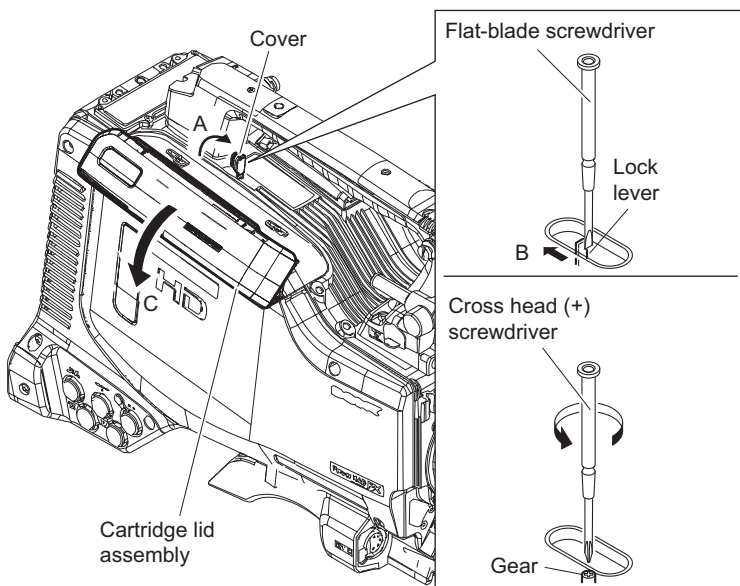
1-5. How to Take Out a Cartridge Manually

1-5-1. Taking Out a Cartridge at Power-off

1. Open the cover in the direction of the arrow A.
 2. Push the lock lever in the direction of the arrow B with a screwdriver. The cartridge lid assembly is opened in the direction of the arrow C.
 3. Rotate the gear counterclockwise with a crosshead screwdriver to eject the cartridge.
- If a cartridge cannot be taken out, turn the gear clockwise until it will go and then turn it counterclockwise again.

Note

- Turn the gear slowly and gently. Be careful not to force the gear past their stopping points.
- Be sure not to touch or forcibly take out the cartridge until it is completely ejected.
- Even when the cartridge cannot be ejected with this procedure, do not rotate the gear with an excessive force. This error may be caused by a problem in the loader assembly. In this case, refer to [“1-5-2. When You Cannot Take Out a Cartridge Even If Pressing the EJECT Button at Power-on”](#).

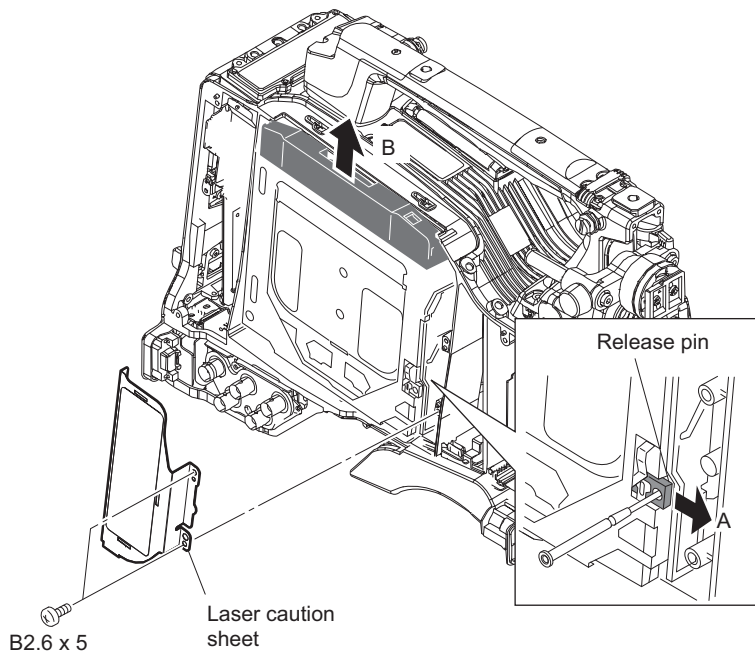


1-5-2. When You Cannot Take Out a Cartridge Even If Pressing the EJECT Button at Power-on

1. Remove the outside panel. (Refer to [“7-2. Outside Panel”](#))
2. Remove the two screws and remove the laser caution sheet.
3. Push the release pin in the direction arrow A, and pull out the cartridge from the unit in the direction of the arrow B.

Note

Be careful not to touch the disc surface in the cartridge.



1-6. Fixtures/Measuring Equipments List

1-6-1. Service Tools

Part No.	Name	Usage/Note
Commercially available	Grayscale chart	Reflective type (4 : 3, 16 : 9), Camera adjustment on market
J-6026-130-B		Transparent type (4 : 3), Camera adjustment
J-6394-080-A		Transparent type (16 : 9), Camera adjustment
J-6029-140-B	Pattern box PTB-500	Camera adjustment
J-6323-530-A	Stop washer fastening tool	Stop washer installation
J-6570-130-A	Alignment disc (PFD23A-RS)	Servo adjustment and Skew adjustment
J-6325-110-A	Torque screwdriver's bit (M1.4)	Screw tightening
J-6325-380-A	Torque screwdriver's bit (M2)	Screw tightening
J-6323-430-A	Torque screwdriver's bit (M3)	Screw tightening
J-6325-400-A	Torque screwdriver (3 kg•cm) (0.3•N m)	Screw tightening
J-6252-510-A	Torque screwdriver (6 kg•cm) (0.6•N m)	Screw tightening
J-6252-520-A	Torque screwdriver (12 kg•cm) (1.2 N•m)	Screw tightening
3-184-527-01	Cleaning cloth	For cleaning
3-703-358-08	Parallel pin (2 x 20)	For gear replacement, two pins required
7-432-114-11	Locking compound	Inhibits loosening of screws
7-600-000-48	Sony bond (SC608LVZ-180ML)	For bonding
9-919-573-01	Cleaning liquid	For cleaning
Commercially available	USB memory	Saving data (Up to 4.0 GB)
Commercially available	Flat-blade screwdriver (2.3 mm)	Skew adjustment
Commercially available	Weight (50 to 100 g)	Servo adjustment and Skew adjustment
7-640-021-77	Sony BC oil	For lubrication
7-651-000-10	Sony grease (SGL-601) 50 g	For lubrication

1-6-2. Measuring Equipments

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

Equipment	Name
AC adaptor	Sony AC-DN10
Viewfinder	Sony HDVF-20A
Disc	Sony professional disc PFD23A-RS
Oscilloscope	Tektronix TDS3054 or equivalent (150 MHz or more)
HD waveform monitor	LEADER ELECTRONICS CORP. LV5152DA or equivalent
SD waveform monitor	Tektronix 1755A or equivalent
Frequency counter	Advantest TR5821AK or equivalent
Digital voltmeter	Advantest TR6845 or equivalent
Color monitor	Sony HDM-20E1U/14E1U/14E5U or equivalent
Signal generator	Tektronix SG-5010/TG-2000 or equivalent
Luminance meter	Konica Minolta LS-110 or equivalent
Luxmeter	Konica Minolta T-10 or equivalent
Regulated power supply	(Output current: More than 10 A)
Audio level-meter	Tektronix AM700 or Audio Precision System Two Cascade Plus 2722 or equivalent

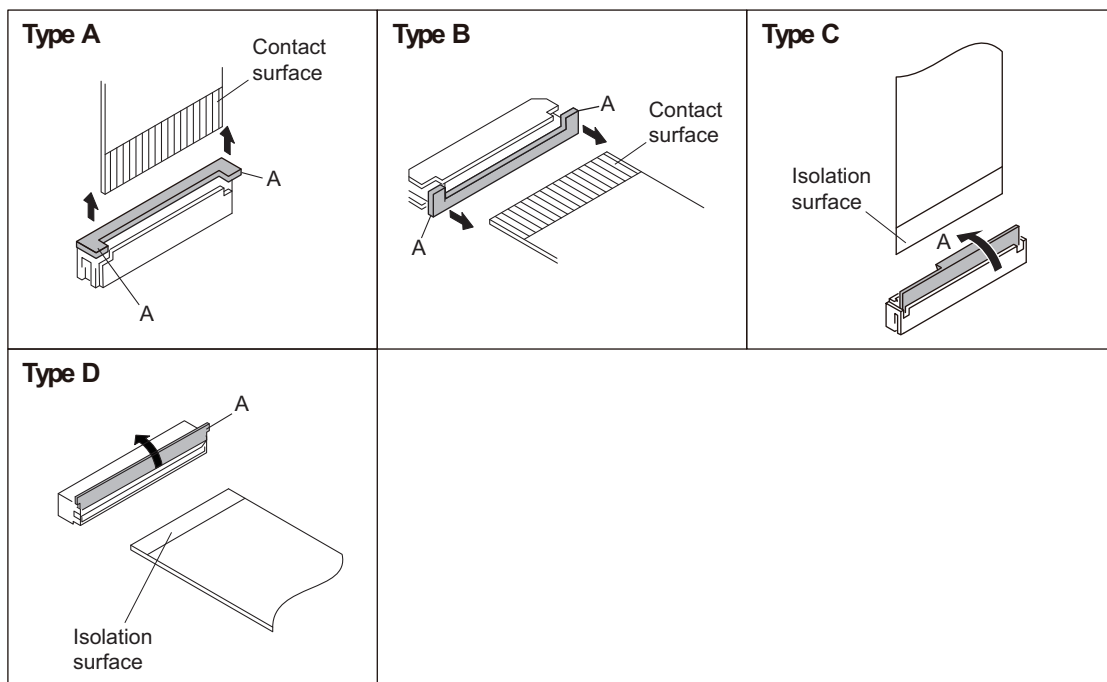
1-7. Flexible Card Wire and Fine-Wire Coaxial Cable

1-7-1. Connecting/Disconnecting 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 conductor side and insulated side. If the flexible card wire is connected in the wrong orientation of the conductor side and the insulated side, the circuit will not function.
- Insert the flexible card wire straight.
- Check that the conductive surface 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.

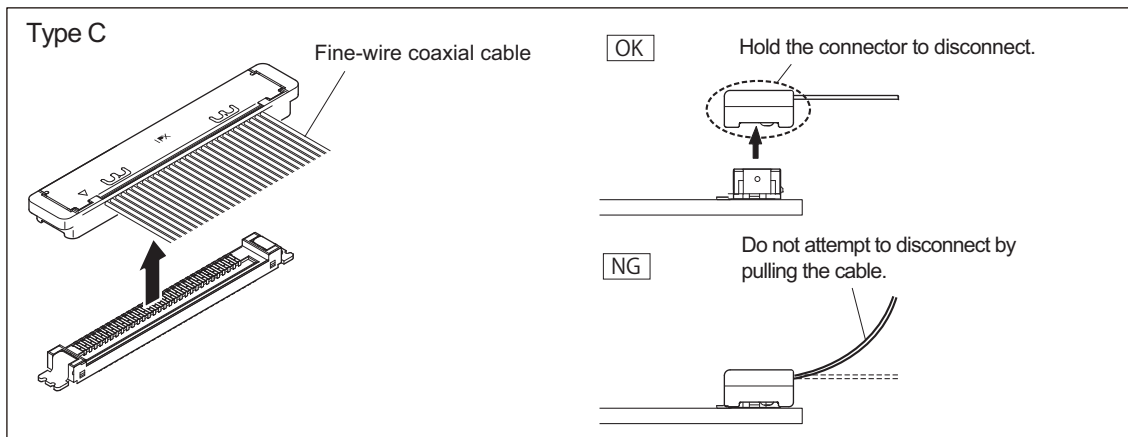
Connecting

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.

1-7-2. 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.

1-8. Firmware/Software

1-8-1. EEPROM/FRAM List

Board name	Ref. No.	Type	Saving data	Action to be taken when replacing
CN-3667	IC2	EEPROM	Model name, Serial No., Model code, MAC address	Required Refer to “1-11-3. CN-3667 Board”.
DCP-65	IC2511	EEPROM	Backup data of the CN-3667 board, DCP-65 board adjustment value in the production factory	Replacement not required
	IC2413	FRAM	All setting values of the menu, ABB/AWB adjustment data	Replacement not required
DR-676	IC308	EEPROM	PA-419/PA-420/PA-421 boards adjustment value in the production factory, CCD Block specific data	Replacement not required
SY-439	IC300	EEPROM	Hours Meter. Operation Hours (Back Up) Serial No. Model ID (same as the data saved in EEPROM on the CN-3667 board) Network setting (same as the data saved in FRAM on the DCP-65 board)	Not required
	IC507	FRAM	Hours Meter. Operation Hours, System Information (same as the data saved in FRAM on the DCP-65 board) GUI relevant data, NRT Metadata relevant data, Error Log, Salvage information	Not required
FP-190	IC7007	EEPROM	Audio A/D adjustment DSP multiplication value, Audio D/A adjustment DSP multiplication value, Power voltage calibration value, SIDE VOLUME adjustment value	Required Refer to “1-11-5. FP-190 Board”.
SE-857	IC4	EEPROM	Adjustment data, digital hours meter data, Error log	Required Refer to “8-2-3. Adjustment after Replacing the SE-857 Board”.
LCD Module	—	EEPROM	LCD Module adjustment value in the production factory	Required

1-8-2. Firmware Update Using the USB memory

When the firmware update is performed, all types of firmware are updated.

There are two methods of upgrading the firmware. One is the method by using the USB memory and the other is the method by accessing the XDCAM website. This section describes the method by using the USB memory.

For the method of accessing the XDCAM website, refer to “2-4-1. Software Update”.

For the method of upgrading by using the USB memory, the USB memory in which the firmware package file of the latest version is saved is required.

For the firmware package file, please contact your local Sony Sales Office/Service Center.

Note

- A general USB memory used for PCs can be used. But when the USB memory is connected to the USB connector, if the screen shows “Unknown USB”, or the message screen shows “NO USB MEMORY” during the update, the connected USB memory may have a problem or it may be misrecognized as an unsupported device. In such a case, connect another USB memory and try again.
- It takes about 40 minutes to complete the update.
- When the USB memory is removed during the update, the USB memory may be damaged. Make sure not to remove the USB memory during the update.

- Do not turn off the power during the update.
- When a disc is inserted, eject it.
- Set the VDR SW in the inside panel to “STBY”.
- Nothing is displayed on the LCD on the inside panel during update of LABY.
Check the progress of update on the viewfinder.
- If the update fails while the LABY update is in progress, picture and character may not be displayed in some cases.
In such case, repeat update by following the procedure described below.
 1. Insert a USB memory that contains the package file (extension: pkg) in its root directory.
 2. While pressing the REC START button and the MENU knob at the same time, turn ON the power.
 3. Wait approximately 30 seconds after power-on. Then, the tally changes from the flashing at 4 Hz to the flashing at 1 Hz. (Flashing indicates that update is in progress.)
It takes approximately 40 minutes until the update is complete.
 4. The tally changes from flashing to lighting. (It indicates that update is complete.)
 5. Turn OFF the power and reboot the Camcorder. It boots up with new version.

Procedure

1. Copy the firmware package file (extension: pkg) to the USB memory of the root and plug it into the USB connector of the unit.
2. Move the arrow to the DIAGNOSIS category page named “ROM VERSION 1”, and press and hold the MENU knob.
“SEARCHING PACKAGE FILE” blinks about 10 seconds.

```

→D03●ROM VERSION 1 TOP
  SEARCHING PACKAGE FILE
  PACKAGE: 1.00

  SY1      : 1.00
  SY2K     : 1.00
  SY2U     : 1.00
  DRV      : 1.00

  AT       : 1.00
  FP       : 1.00
  
```

When the firmware package file exists in the root, the following display appears.

```

D03●ROM VERSION 1 TOP
→PACKAGE: 1.00 → 1.10

  SY1      : 1.00
  SY2K     : 1.00
  SY2U     : 1.00
  DRV      : 1.00

  AT       : 1.00
  FP       : 1.00
  
```

3. Press the MENU knob while the arrow is pointing at “PACKAGE”.
The YES/NO confirmation menu appears.

```

  PACKAGE UPDATE
  VERSION UP OK? YES → NO

  CURRENT      NEW
  VERSION      VERSION
  1.00         → 1.10

  UPDATING     : ----
  Total time   : --:--
  
```

4. When YES is selected.

The firmware update starts.

During the firmware update, the tally blinks at 1 Hz.

“UPDATING” indicates the firmware being updated, and “Total time” indicates the elapsed time.

```

      PACKAGE UPDATE

CURRENT  NEW
VERSION  VERSION
 1.00    →   1.10

UPDATING : SY1
Total time : 00:00

```

When the update is completed normally, the following message that prompts you to turn on/off the power appears.

Tally changes from blinking to light on.

```

      PACKAGE UPDATE
Valid after power off.

CURRENT  NEW
VERSION  VERSION
 1.00    →   1.10

      COMPLETED.
Total time : 20:00

```

5. When the power is turned off and the unit is restarted.

The firmware version is updated.

Note

If the firmware could not be updated to new version or if an error is displayed upon completion of version update, it indicates that the firmware version update has failed. Repeat the version update by following step 2 through step 5 again.

1-9. Replacing Lithium Battery

1-9-1. Note on Replacement of Lithium Battery

A lithium battery is mounted on the FP-190 board to back up the real time clock (RTC). If a battery comes to the lifetime, then RTC stops. Therefore, the battery must be replaced.

- FP-190 board/lithium battery (CR-2032 type): Sony Part No. △ 1-528-174-31

CAUTION

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.

For how to replace a lithium battery, refer to “[7-3. Lithium Battery](#)”.

1-10. Service Action after Replacing the CCD Block Assembly

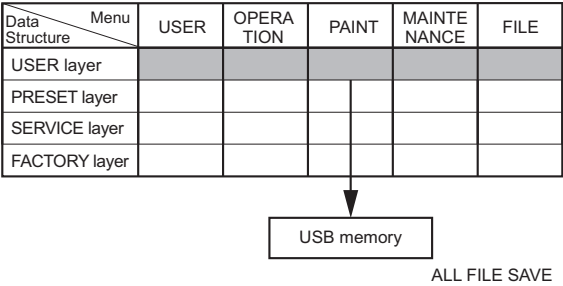
This section describes the required actions for replacing the CCD block assembly.

Note

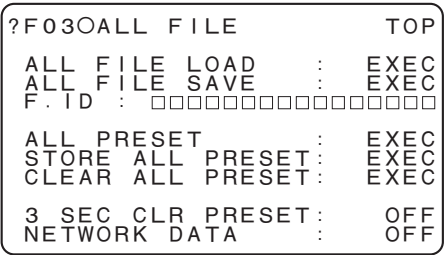
Save the settings of the menu contents in the USB memory before performing the actions after replacement.

1-10-1. Saving Menu Settings

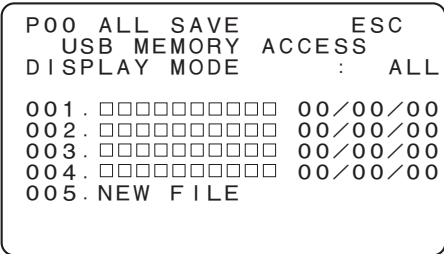
Save the menu settings in a USB memory.



1. Insert a USB memory.
2. Set the MENU ON/OFF switch to the ON position.
3. Let the ALL FILE page of the FILE menu appear on the screen and press the MENU knob.



4. Select F.ID and set the file ID.
5. Select ALL FILE SAVE and execute it by pressing the MENU knob.
6. When the cursor is moved to the file selection display, select the destination file where the file is going to be saved and press the MENU knob. (When saving a new file, select NEW FILE.)



7. Confirm that the screen returns to the ALL FILE display and the message “COMPLETE!” appears indicating that the saving is complete.

1-10-2. Service Action after Replacement

1. Reset them using the [“4-9. SERVICE Menu”](#).
Refer to [“4-1-1. Basic Operations of Setup Menus”](#) for the details on SERVICE menus.
Refer also to [“4-1-2. How to Display the SERVICE Menu”](#) as required.
 - 1) Open the switch cover with the power of the main unit turned on, and turn on the MENU ON/OFF switch.
The menu appears on the viewfinder screen regardless of the ON/OFF state of the DISPLAY switch on the viewfinder.
 - 2) Select “SERVICE” from the TOP menu, and press the MENU knob.
2. Perform the following adjustments.
 - VCO CONT frequency adjustment (Refer to [“9-2-1. Confirming VCO CONT Frequency”](#))
 - Black shading adjustment (Refer to [“9-2-4. Black Shading Adjustment”](#))
 - White shading adjustment (Refer to [“9-2-5. White Shading Adjustment”](#))
 - Black set adjustment (Refer to [“9-2-2. BLACK SET Adjustment”](#))
(After BLACK BALANCE is displayed, press and hold the AUTO W/B BAL switch toward BLACK until BLACK SET is displayed again.)
 - Flare adjustment (Refer to [“9-2-7. Flare Adjustment”](#))
 - Perform RPN ALL PRESET. (Refer to [“4-9. SERVICE Menu”](#), [“RPN MANAGE Display”](#))
 - Perform AUTO CONCEAL. (Refer to [“4-9. SERVICE Menu”](#), [“RPN MANAGE Display”](#))
 - Perform AUTO CONCEAL2. (Refer to [“4-9. SERVICE Menu”](#), [“RPN MANAGE Display”](#))
3. Restore the DIP switch on the MB-1208 board or DCP-65 board to exit the service mode. (Refer to [“4-9. SERVICE Menu”](#))
4. Turn on the power of the camera.
5. Perform ALL FILE LOAD and load the saved ALL FILE. (Refer to [“4-7. FILE Menu”](#), [“ALL FILE Display \(Operating the ALL file\)”](#))

1-11. Service Action after Replacing or Repairing the Optical Block Assembly and Boards

1-11-1. Optical Block Assembly

Refer to [“8-2-1. Adjustment after Replacing the Optical Block Assembly”](#).

1-11-2. DCP-65 Board

After replacing the DCP-65 board, perform the procedure in the following order.

Note

Save the setting of the menu contents in the USB memory before performing the actions after replacement. (ALL File and SERVICE File)

Refer to step 4 in [“5-3-2. ALL FILE”](#) and step 1 in [“5-3-5. SERVICE FILE”](#) for details.

Procedure

1. Upgrade the firmware to the latest version.
Refer to [“1-8-2. Firmware Update Using the USB memory”](#) for details.
2. Reset FRAMs (IC2413) on the DCP-65 board to the factory default settings.
Reset them using the SERVICE menu. (Refer to [“4-9. SERVICE Menu”](#))
Refer to [“4-1-1. Basic Operations of Setup Menus”](#) for the details of operating menus.
Refer also to [“4-1-2. How to Display the SERVICE Menu”](#) as required.
 - 1) Open the switch cover with the power of the main unit turned on, and turn on the MENU ON/OFF switch.
The menu appears on the viewfinder screen regardless of the ON/OFF state of the DISPLAY switch on the viewfinder.
 - 2) Select “SERVICE” from the TOP menu, and press the MENU knob.
 - 3) Scroll the screen to MENU SET by rotating the MENU knob, and press the MENU knob.
 - 4) Point the cursor on FACTORY PRESET by rotating the MENU knob, and press the MENU knob.
 - 5) Press the MENU knob, and execute FACTORY PRESET. (Refer to [“4-9. SERVICE Menu”](#), [“MENU SET Display”](#))
3. Perform the following adjustments.
 - Confirming VCO CONT frequency (Refer to [“9-2-1. Confirming VCO CONT Frequency”](#))
 - Black set adjustment (Refer to [“9-2-2. BLACK SET Adjustment”](#))
(After BLACK BALANCE is displayed, press and hold the AUTO W/B BAL switch toward BLACK until BLACK SET is displayed again.)
 - Perform AUTO CONCEAL. (Refer to [“4-9. SERVICE Menu”](#), [“RPN MANAGE Display”](#))
 - Perform AUTO CONCEAL2. (Refer to [“4-9. SERVICE Menu”](#), [“RPN MANAGE Display”](#))
4. Call back the contents of the previously saved menu settings from the USB memory. (ALL FILE, SERVICE FILE)
Refer to step 5 in [“5-3-2. ALL FILE”](#) and step 2 in [“5-3-5. SERVICE FILE”](#) for details.

1-11-3. CN-3667 Board

After replacing the CN-3667 board, or after replacing EEPROM (IC2) on the CN-3667 board, perform the procedure in the following order.

Service Action after the board replacement

After replacing the CN-3667 board, mount the EEPROM (IC2) from the old board to the new board.

Service Action after the EEPROM replacement

If you have replaced this with a new IC due to its defect, data should be saved.

Contact your local Sony Sales Office/Service Center for details.

1-11-4. SY-439 Board

After replacing the SY-439 board, upgrade the firmware.

Refer to [“1-8-2. Firmware Update Using the USB memory”](#) for details.

1-11-5. FP-190 Board

1. When replacing the FP-190 board, or when replacing EEPROM (IC7007) on the FP-190 board, perform the procedure in the following order.
 - 1) Upgrade the firmware to the latest version. (Only when the board is replaced.)
Refer to [“1-8-2. Firmware Update Using the USB memory”](#) for details.
 - 2) Perform the following adjustments.
 - AUDIO A/D Error Correction (Refer to [“4-11. AUDIO A/D Error Correction”](#))
 - AUDIO D/A Error Correction (Refer to [“4-12. AUDIO D/A Error Correction”](#))
 - Adjusting Battery End Detection Voltage (Refer to [“4-14. Adjusting Battery End Detection Voltage”](#))
2. After replacing the volume (RV1002/RV1003) on the FP-190 board, perform the following adjustment.
 - AUDIO LEVEL Volume Compensation (Refer to [“4-13. AUDIO LEVEL Volume Compensation”](#))

1-11-6. DR-606 Board

Refer to [“8-2-2. Adjustment after Replacing the DR-606 Board”](#).

1-11-7. SE-857 Board

After replacing the SE-857 board, mount the EEPROM (IC4) from the old board to the new board.

If EEPROM (IC4) from the old board is not mounted to the new board or IC 4 is separately replaced, refer to [“8-2-3. Adjustment after Replacing the SE-857 Board”](#).

1-12. Circuit Protection Parts

1-12-1. IC Link

WARNING

IC links are essential parts for safe operation.

Be sure to use the parts specified in this manual. Replacing a fuse with an unspecified one may cause fire or electric shock.

CAUTION

Replacing any IC link is replaced while power is supplied to the unit may cause electric shock.

Before replacing any IC link, turn off the POWER switch and also disconnect the battery pack and the cable from the DC IN connector.

This unit is equipped with IC links.

The IC links blow if overcurrent flows in the unit due to an abnormality. In that case, turn off the power of the unit, inspect inside of the unit, and then remove the cause of the overcurrent. After that, replace the defective parts.

Board	Ref. No.	Address	Part Number	Name/Specification
SW-1621	PS1	None (A side)	△ 1-576-677-21	IC link (4 A /72 V)

1-12-2. 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	Ref. No.	Address	Part Number	Hold Current
CN-3670	TH1	None (A side)	△ 1-802-108-11	1.50 A/20 °C
CNB-31	TH001	A1 (B side)	△ 1-802-063-21	1.10 A/20 °C
	TH002	B1 (A side)	△ 1-812-031-21	1.85 A/20 °C
FP-190	TH5000	A1 (B side)	△ 1-802-108-11	1.50 A/20 °C

1-13. Precautions for the Battery Connector

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 connector immediately if the terminal is deformed or bends, or if the surface color changes.

(Refer to [“7-24. Battery Connector Assembly”](#).)

1-14. Description of CCD Block Number

All of the CCD block assembly 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 block assembly.

Example) PLB xxxxx

PLB XXXXX

Serial number of the CCD unit

Type of CCD block

1-15. Cautions on Handling the Optical Block Assembly

To prevent the damage due to the electrostatic charge, be sure to put the following grounding while handling the optical block assembly (KES-330A).

Grounding human body

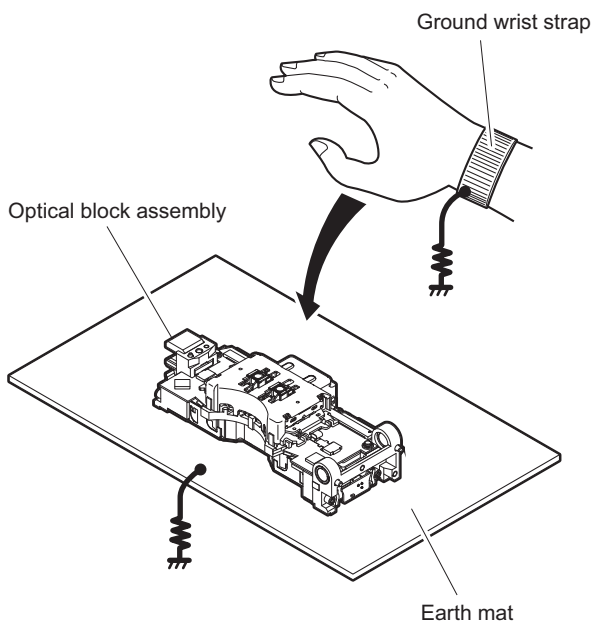
Be sure to wear a grounded wrist strap (10^8 ohms or less) to discharge static electricity charged in the human body.

Note

Since static electricity charged in clothes is not discharged from the wrist strap, keep your clothes away from the optical block assembly.

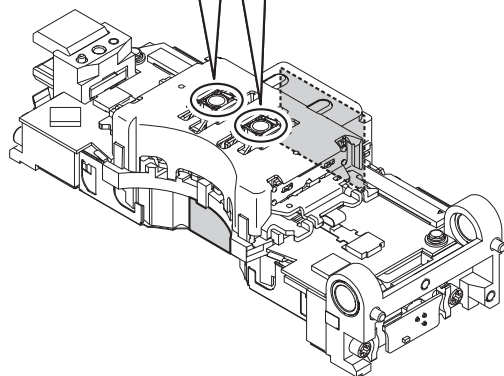
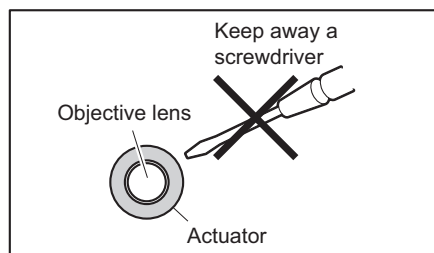
Grounding the workbench

Be sure to put the optical block assembly on a grounded earth mat (10^9 ohms or less recommended) or a copper plate.



Precautions

- The optical block assembly has been precisely adjusted. Do not give impact to it due to fall or careless handling.
- Do not touch the objective lens.
- When handling the optical block assembly, hold the slide base (die-casting part). If a part of human body or another object directly touches the circuit on the printed circuit board, it may deteriorate.
- The actuator has a strong magnet. If a magnetic substance comes close to it, the characteristics change. Contacting a metal part such as a screwdriver with the actuator may damage the objective lens. Do not bring a magnetic substance close to the optical block assembly.
- Be careful so that any foreign matter does not enter the clearance of the actuator cover.



 Hold the shaded portions.

1-16. 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.

Section 2

XDCAM Web Site

2-1. XDCAM Web Site Overview

Operations such as confirming the settings of the camcorder and upgrading the firmware can be performed via the network connector.

The XDCAM website consists of the following menus.

Status menu

- Device Information
- Hours Meter
- Software Version

Disc menu

- Disc Properties
- Thumbnails

Maintenance menu

- Network
- Wi-Fi
- Certificate
- Account
- Software Update
- License Registration

2-1-1. Connecting to XDCAM Website

Tools/Equipment Required

- Personal computer (referred to as PC hereafter)
- Network cable (crossover or straight-through)

Setting the Camcorder

- Change the ETHERNET/USB of power save item in OPERATION menu to ENABL (refer to Operation manual)
- Set the network item in MAINTENANCE menu (refer to Operation manual)

Procedure

1. Connect the camcorder to the host PC using one of the following ways. (Refer to [“2-1-2. Connection Diagram”](#))
 - Directly connect the camcorder to the host PC.
 - Connect the camcorder to the host PC through a network device (such as a hub).
2. Start the web browser of the host PC. Enter “http://192.168.1.10” in the Address bar. (The underlined part is the IP address of the unit.)

Note

Use Internet Explorer for the web browser of the host PC.
Other web browsers may not function correctly.

3. Enter User name and User Password, and then click “OK”.

User name

- “admin”

User password

- “pdw-850”

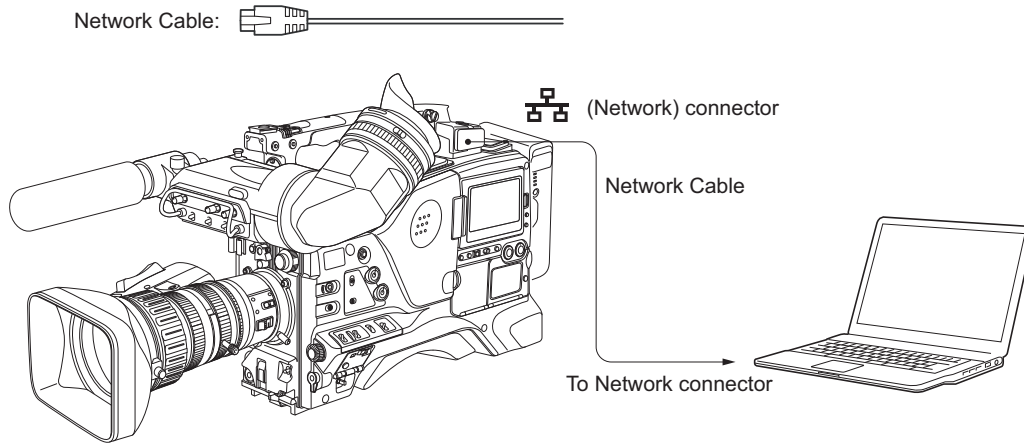
Tip

User name and User password can be changed on the Account page.

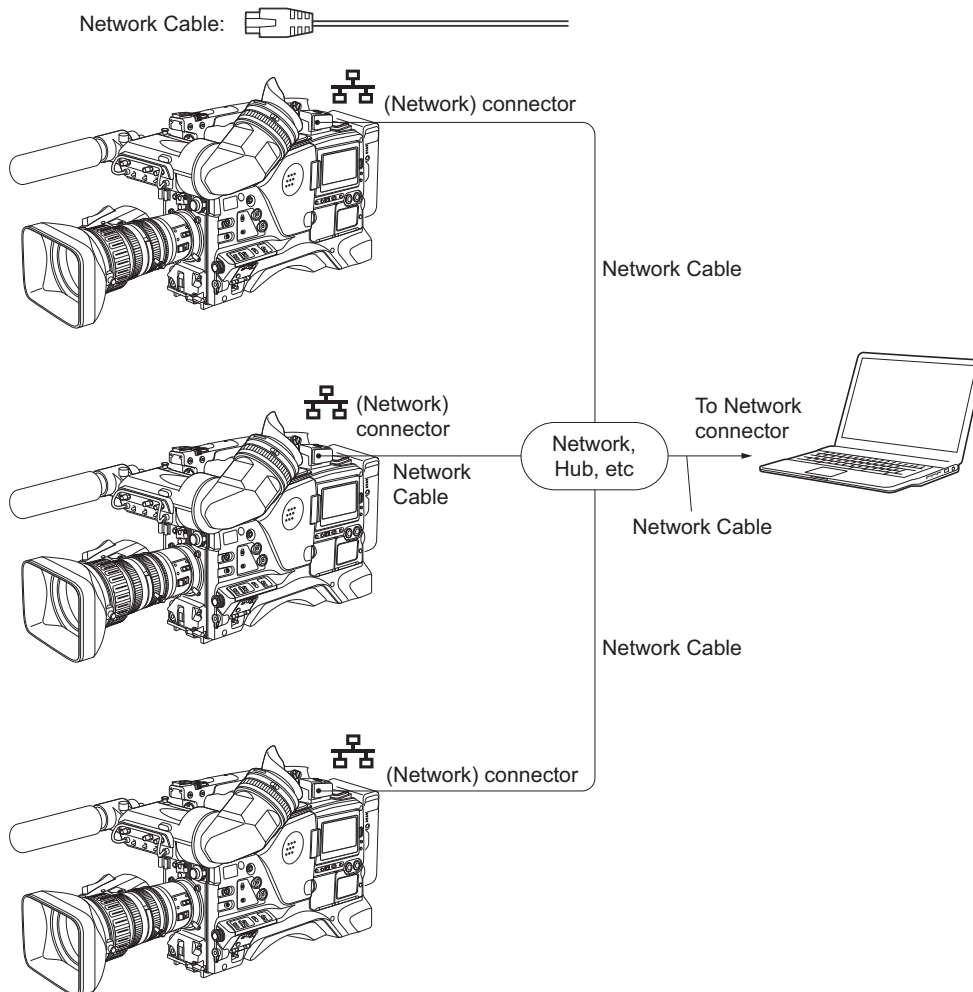
4. The XDCAM top page appears. Click a menu you want to browse on the left frame.

2-1-2. Connection Diagram

Direct connection of a camcorder (single) to the host PC



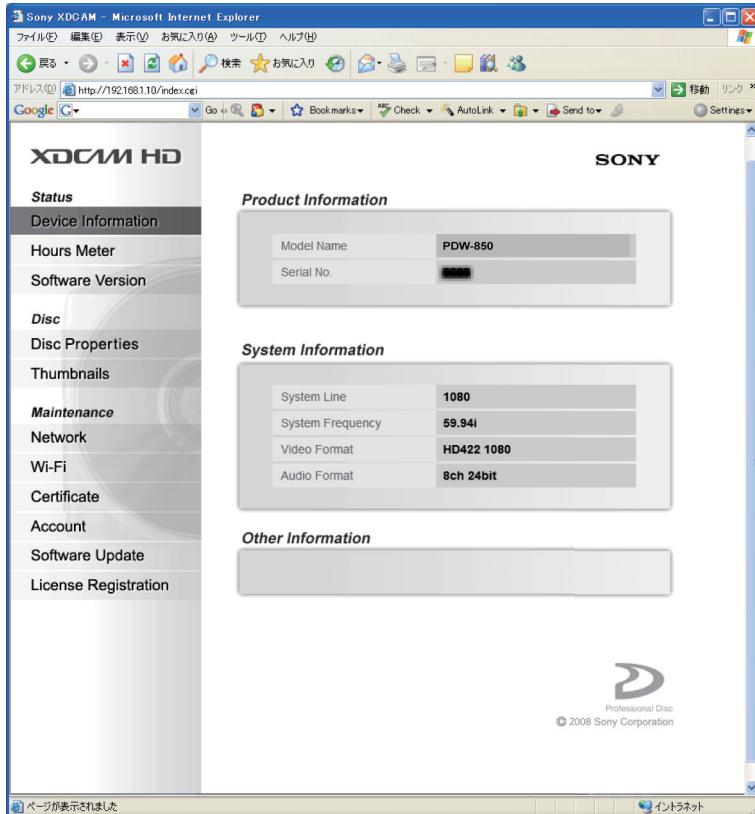
Connection of the camcorder to the host PC through the other Network device



2-2. Status Menu

2-2-1. Device Information

The settings of the camcorder can be checked in the Device Information page of the Status menu.



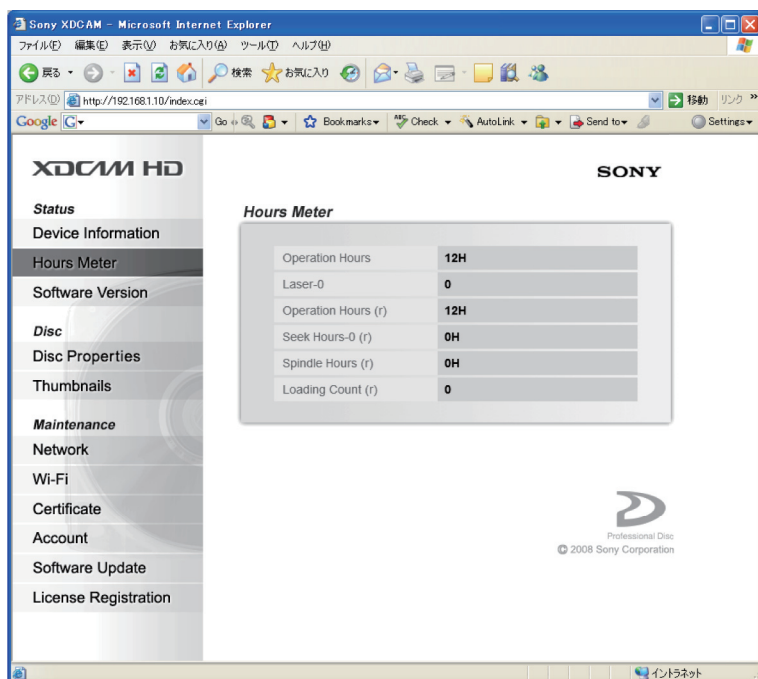
Item		Setting	Function
Product Information	Model Name	Display only	Displays the model name
	Serial No.	Display only	Displays the serial No.
System Information	System Line	Display only	Displays the signal standard
	System Frequency	Display only	Displays the signal standard
	Video Format	Display only	Displays the video recording format
	Audio Format	Display only	Displays the audio recording format
Other Information	Option	Display only	Displays the installed option

2-2-2. Hours Meter

The hours meter of the camcorder can be displayed on the Hours Meter page of the Status menu.

Tip

The function is the same as that of the HOURS METER of the DIAGNOSIS menu on the camcorder.
For “How to reset the hours meter”, contact your local Sony Sales Office/Service Center.



Item	Setting	Function
Operation Hours	Display only	Displays the total operation hours
Laser-0 ^{*1}	Display only	Displays the output count of laser on optical block assembly ^{*2}
Operation Hours (r)	Display only	Displays the total operation hours (Unit: hour, Resettable)
Seek Hours-0 (r)	Display only	Displays the total running hours of seek on optical block assembly (Unit: hour, Resettable)
Spindle Hours (r)	Display only	Displays the total running hours of spindle motor (Unit: hour, Resettable)
Loading Count (r)	Display only	Displays the total loading counts of disc (Resettable)

2-2-3. Software Version

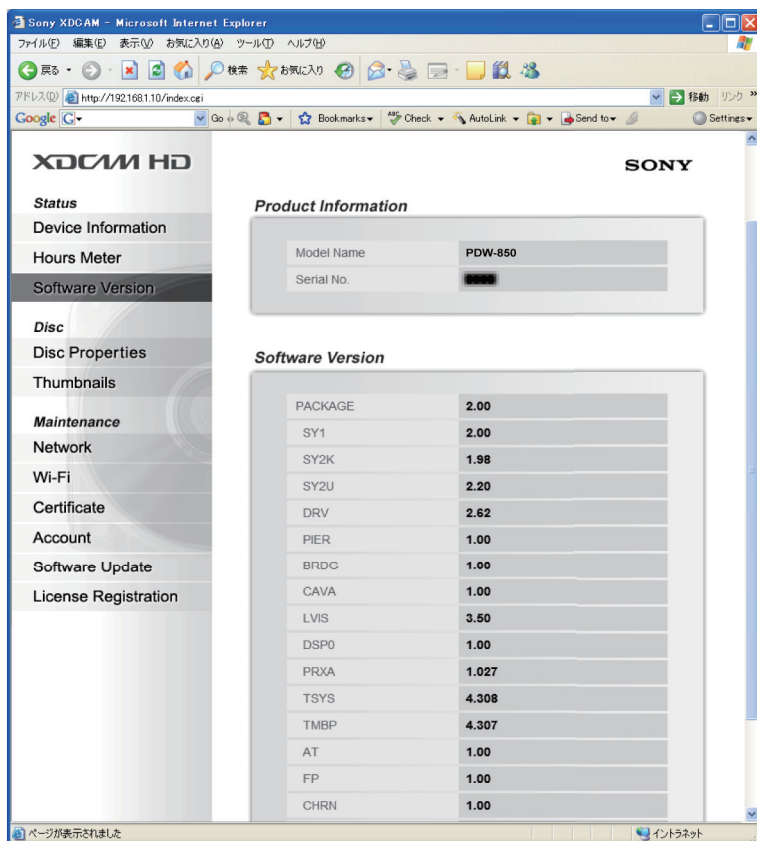
The version of the software can be checked in the Software Version page of the Status menu.

Tip

The function is the same as that of the ROM VERSION menu of the DIAGNOSIS menu on the camcorder.

*1: Not resettable for this unit.

*2: Increment of the counter depends on recording/playback ratio and operating temperature.



Item		Setting	Function
Product Information	Model Name	Display only	Displays the model name
	Serial No.	Display only	Displays the serial No.
Software Version	PACKAGE	Display only	Displays the firmware package version *1
	SY1	Display only	Displays the IC200 version stored in the ROM (IC505, IC506) on the SY-439 board*1
	SY2K	Display only	Displays the IC1300 version stored in the ROM (IC1405, IC1406) on the SY-439 board*1
	SY2U	Display only	Displays the IC1300 version stored in the ROM (IC1405, IC1406) on the SY-439 board*1
	DRV	Display only	Displays the IC600 version stored in the ROM (IC602) on the DR-606 board *1
	PIER	Display only	Displays the DVP-64 board's IC1900 version stored in the ROM (IC505, IC506) on the SY-439 board*1
	BRDG	Display only	Displays the SY-439 board's IC900 version stored in the ROM (IC505, IC506) on the SY-439 board*1
	CAVA	Display only	Displays the DVP-64 board's IC200 version stored in the ROM (IC505, IC506) on the SY-439 board *1
	LVIS	Display only	Displays the DVP-64 board's IC400 version stored in the ROM (IC505, IC506) on the SY-439 board*1
	DSP0	Display only	Displays the DVP-64 board's IC800 version stored in the ROM (IC505, IC506) on the SY-439 board*1
	DSP2	Display only	Displays the DVP-64 board's IC801 version stored in the ROM (IC505, IC506) on the SY-439 board*1

Continued

*1: Using the firmware package file, the version can be upgraded.

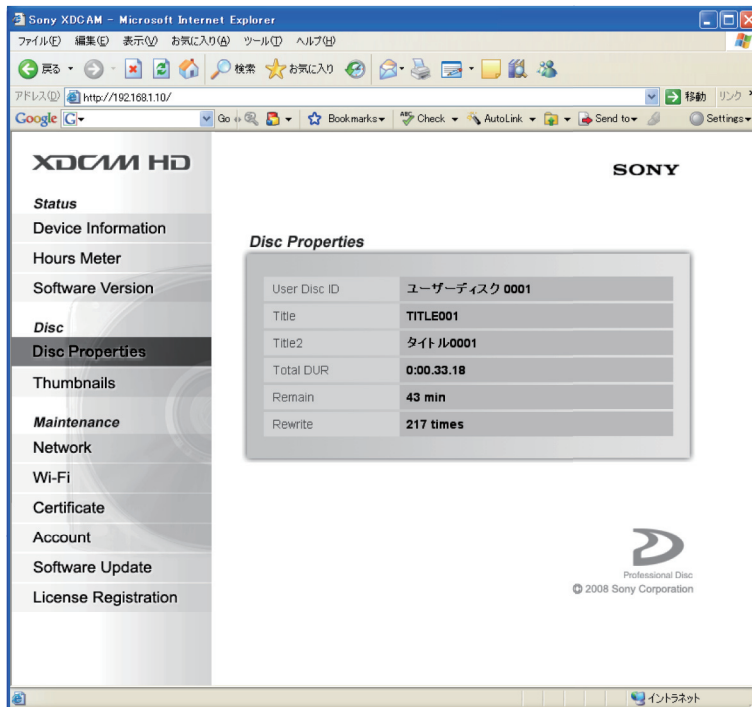
Item		Setting	Function
	PRXA	Display only	Displays the DVP-64 board's IC900 version stored in the ROM (IC505, IC506) on the SY-439 board ^{*1}
	TSYS	Display only	Displays the DVP-64 board's IC1000, IC1200, IC1400 version stored in the ROM (IC505, IC506) on the SY-439 board ^{*1}
	TMBP	Display only	Displays the DVP-64 board's IC1000, IC1200, IC1400 version stored in the ROM (IC505, IC506) on the SY-439 board ^{*1}
	AT	Display only	Displays the IC2400 version stored in the ROM (IC2410, IC2411) on the DCP-65 board ^{*1}
	FP	Display only	Displays the ROM version of the IC7012 on the FP-190 board ^{*1}
	CHIRON	Display only	Displays the ROM version of the IC1100 on the DCP-65 board ^{*1}
	FTBL	Display only	Displays the ROM version of the IC505, IC506 on the SY-439 board ^{*1}
	GPS	Display only	Displays the ROM version of the IC001 on the SW-1622 board

^{*1}: Using the firmware package file, the version can be upgraded.

2-3. Disc Menu

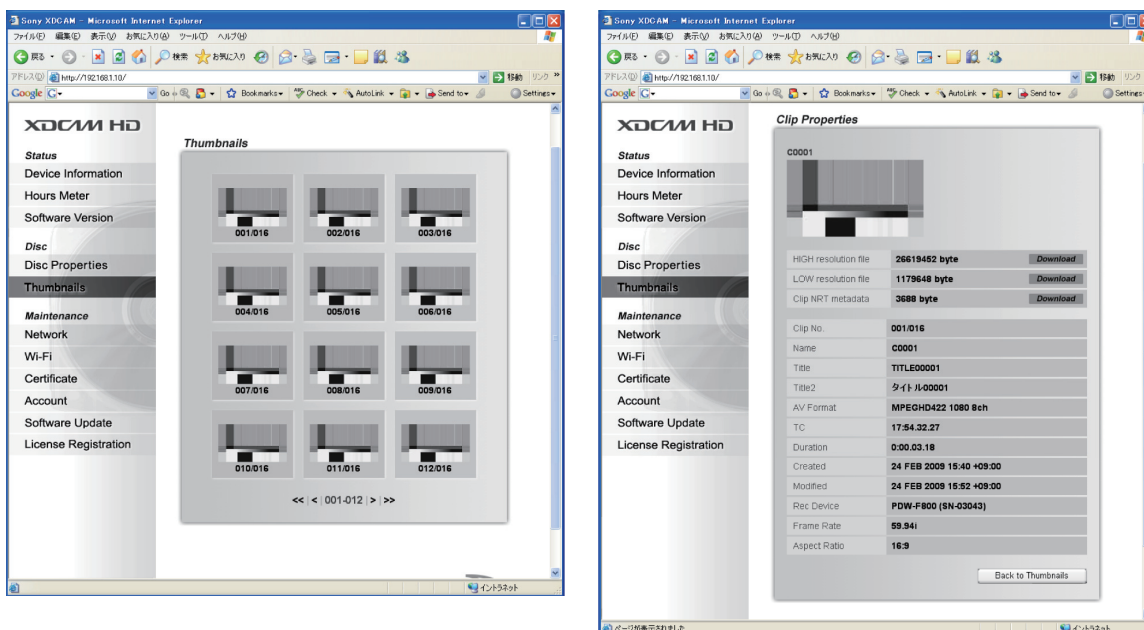
2-3-1. Disc Properties

The information on the disc inserted in the camcorder can be checked on the Disc Properties page of the Disc menu. For details, refer to Operation manual.



2-3-2. Thumbnails

The thumbnails and properties of the clips on the disc inserted in the camcorder can be checked on the Thumbnails page of the Disc menu. For details, refer to Operation manual.



2-4. Maintenance Menu

2-4-1. Software Update

In the Software Update page of the Maintenance menu, the batched update using the firmware package file can be performed.

In this section, the update method using the Web browser (Internet Explorer) is explained.

Note

The figures shown in this page are the sample of display. Due to the specification change, the actual screen display may differ from the sample figures.

Tools/Equipment Required

- Personal computer (referred to as PC hereafter)
- Firmware package file
- Network cable (crossover or straight-through)

For obtaining the firmware package, contact your local Sony Sales Office/Service Center.

Preparation

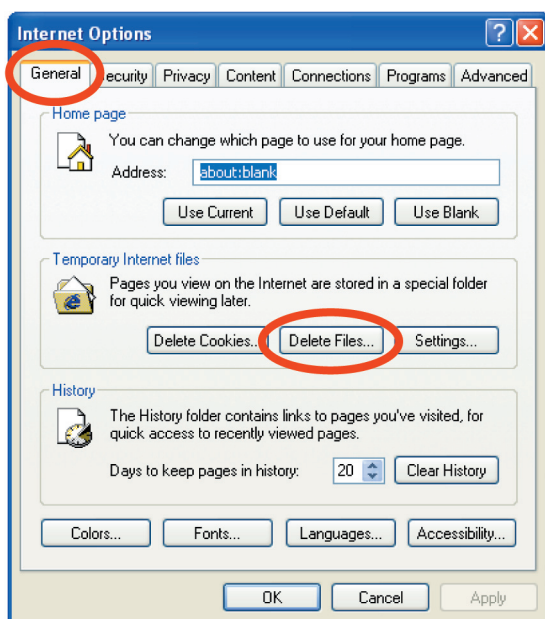
1. Eject the disc.
2. Remove the headphones and the audio cable.
3. Set the VDR switch in inside panel to STBY.
4. Connect the camcorder in either method mentioned below. (Refer to “2-1-2. Connection Diagram”)
 - Connect the camcorder and the host PC via other network device (such as a hub).
 - Connect the camcorder and the PC directly (using network crossover cable).
5. Copy the obtained firmware package to an arbitrary directory on the host PC.
6. Start up the Internet Explorer of host PC.

Note

Use the Internet Explorer for updating.

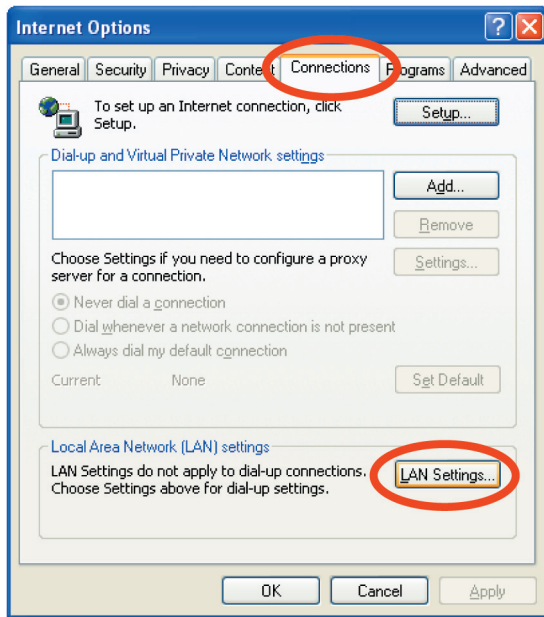
If other browser is used, the update may not be properly done.

7. Select “Tool” - “Internet Options”.
8. Click “Delete Files” on the “General” page to delete the Temporary Internet files.

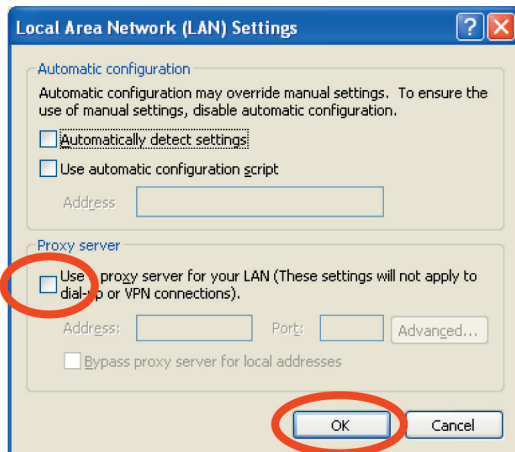


9. The confirmation message appears. Click “OK”.

- Click “LAN Settings” on the “Connections” page.



- Confirm that the checkbox of “Use a proxy server for your LAN” is not checked. If checked, uncheck the checkbox.
- Click “OK”.

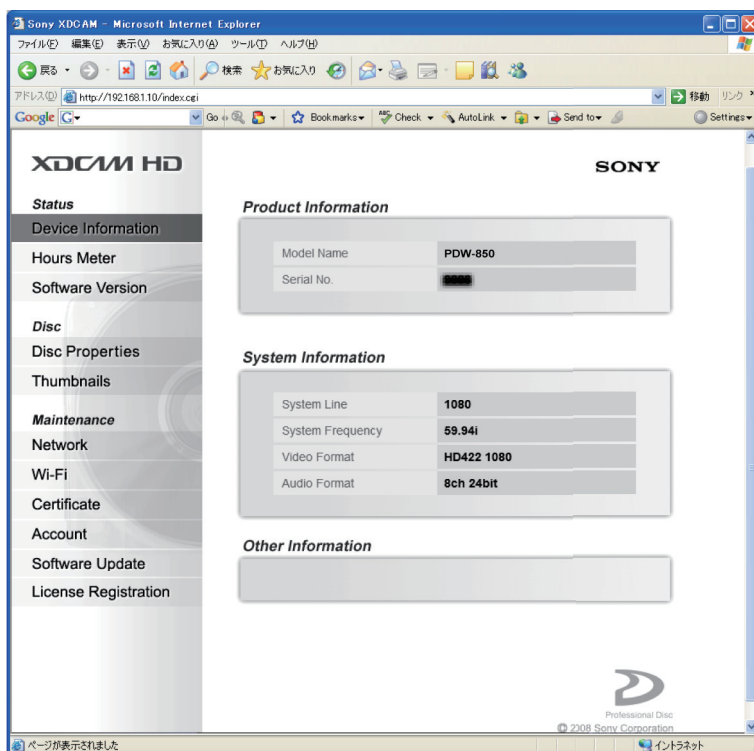
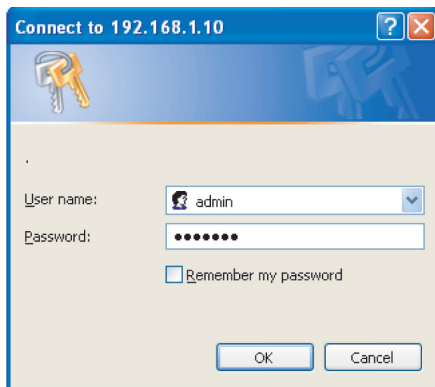


- Click “OK” on the Internet Options window.

Update Procedure

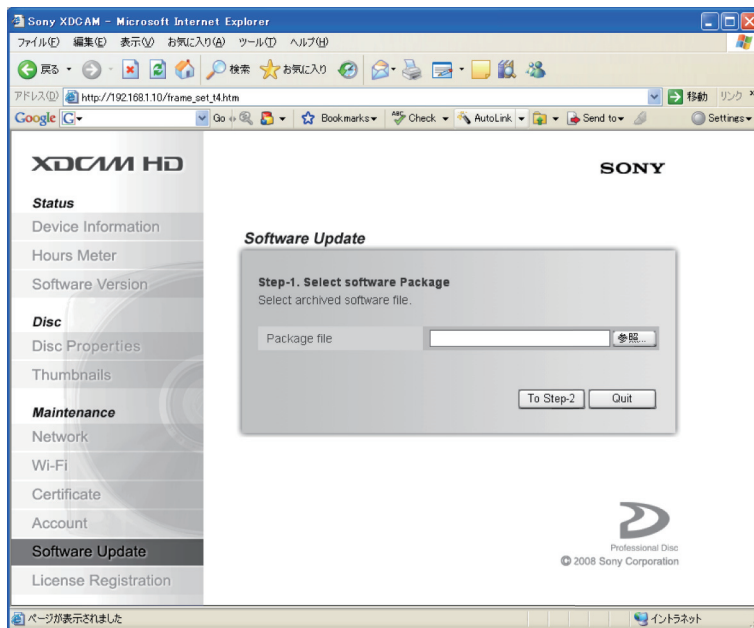
- Start up the Internet Explorer, and enter “http://192.168.1.10” in the Address bar. (Where the underlined part is the IP address of the camcorder.)

2. Enter “admin” for User name and “pdw-850” for Password. Then click “OK”.
The XDCAM top page appears.

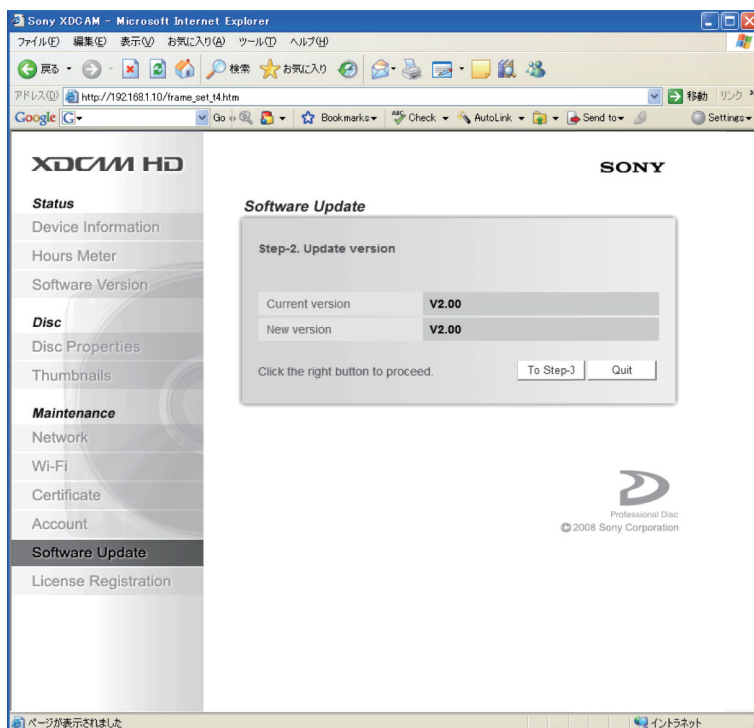


3. Click “Software Update” on the Maintenance menu in the left frame.
4. Click “Browse” and select the firmware package file copied in step 5 of “Preparation”.

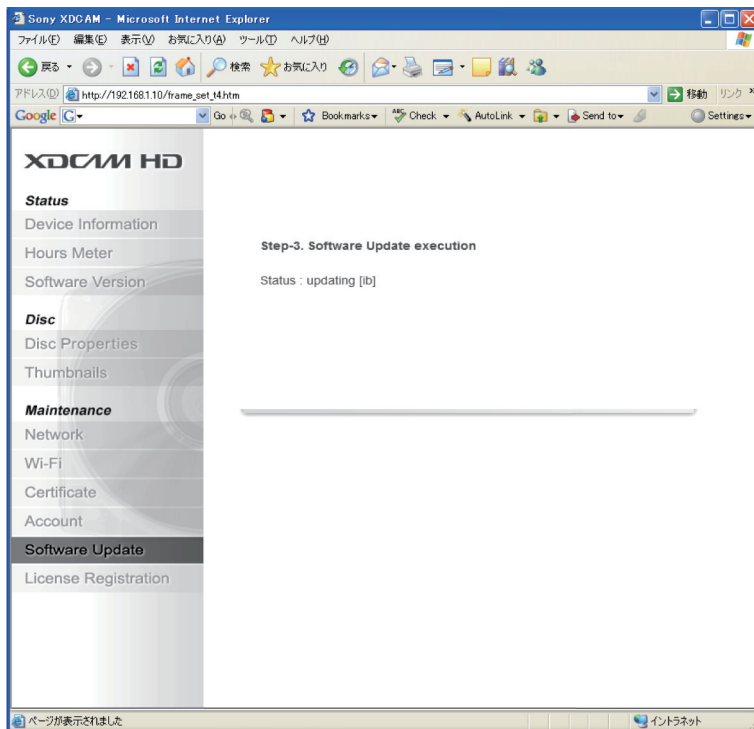
5. Click “To Step-2”.



6. The current version firmware and new version firmware appears. When the firmware update is click “To Step-3”.



7. The update starts, and it changes the following display.

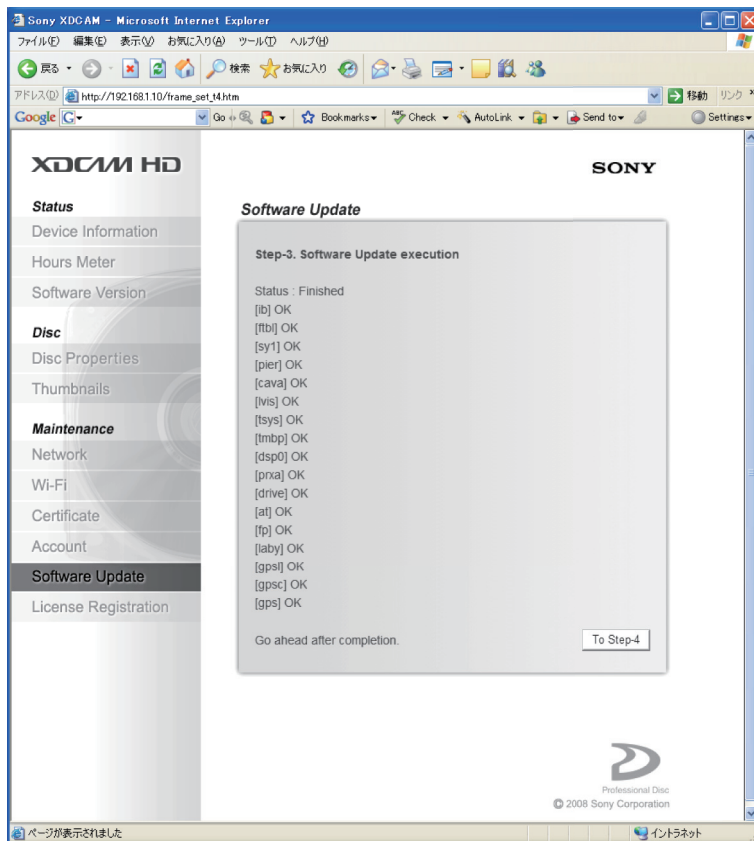


8. When the status turns to “Finished”, check that each firmware program is properly updated or not. (OK or NG)

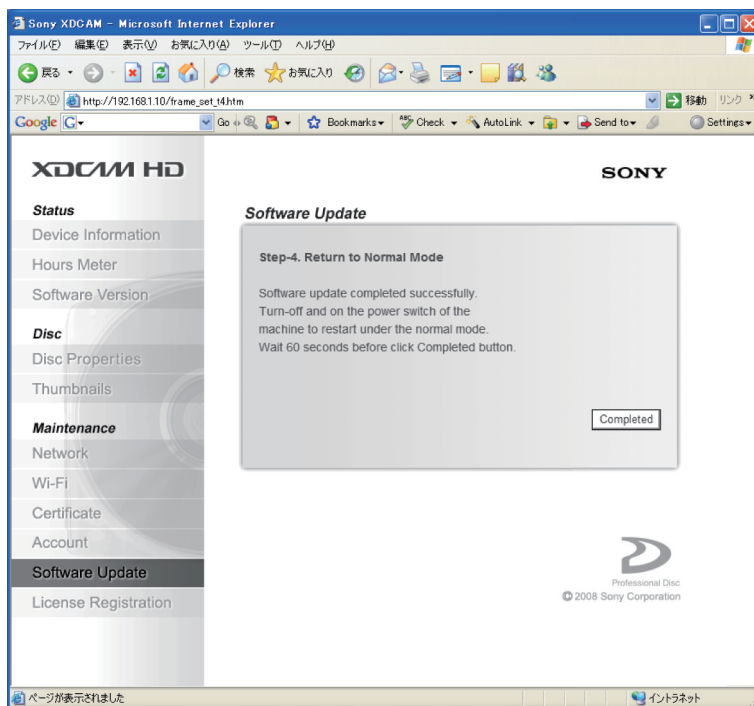
Note

If no change is observed on the download menu for 40 minutes or any firmware program is marked “NG”, the update is failed. In this case, return to step 2 in “Preparation”. If the update is failed again, contact your local Sony Sales Office/Service Center.

9. When “OK” appears for all of the firmware programs, click “To Step-4”.



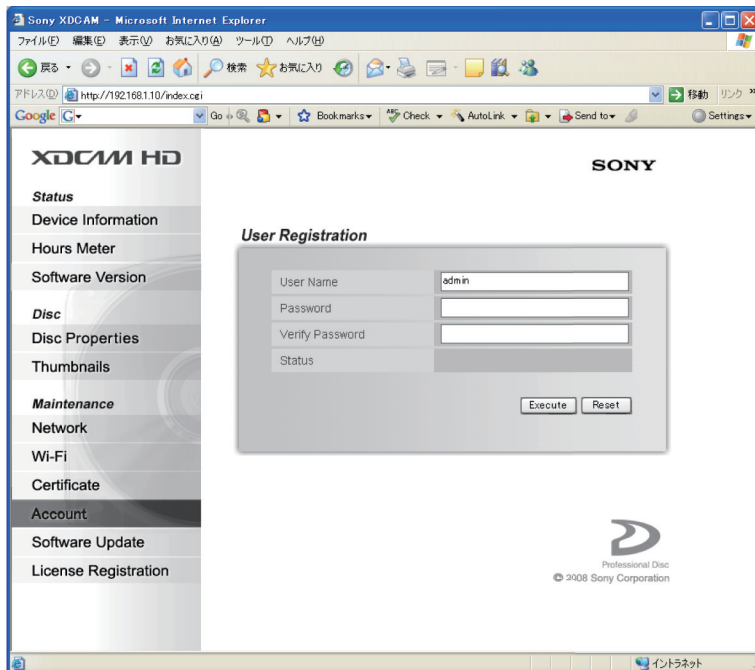
10. Click “Completed”.



11. Turn off the POWER switch and turn on again, then the update is completed.

2-4-2. Account

The user password for the XDCAM website can be changed on the Account page of the Maintenance menu.



Item		Setting	Function
User Registration	User Name	31-byte alphanumeric and hyphen *1	User name
	Password	31-byte alphanumeric and hyphen *1	New password
	Verify Password	31-byte alphanumeric and hyphen *1	New password (Re-enter the new password for verification)
	Status	Display only	Success: Displayed when the user password is changed Error: Displayed when an unusable character is used in the password, or the verify password is conflict

Procedure

1. Enter the new password in the Password box and Verify Password box.
(Pressing “Reset” clears the Input window.)
2. Press “Execute” to change the password.

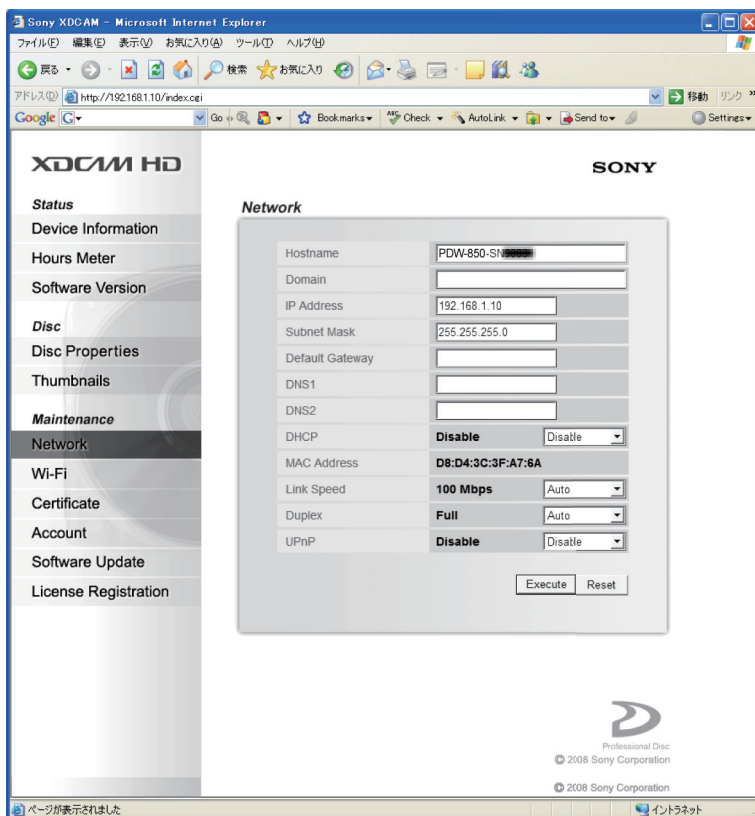
2-4-3. Network

The network-related settings can be changed on the Network page of the Maintenance menu.

Tip

The function is the same as that of the NETWORK page of the MAINTENANCE menu on the camcorder.

*1: Uppercase and lowercase characters are distinguished.



Item	Setting	Default	Function
Hostname	Character string	Serial No. of PDW-850	Sets a host name
Domain	Character string	—	Sets a domain name
IP Address	xxx.xxx.xxx.xxx	192.168.1.10	Sets an IP address (See below)
Subnet Mask	xxx.xxx.xxx.xxx	255.255.255.0	Sets a subnet mask (See below)
Default Gateway	xxx.xxx.xxx.xxx	0.0.0.0	Sets a default gateway (See below)
DNS1	xxx.xxx.xxx.xxx	—	Sets a DNS server 1
DNS2	xxx.xxx.xxx.xxx	—	Sets a DNS server 2
DHCP	Enable/Disable	Disable	Sets whether to automatically acquire an IP address on the DHCP server Enable: Enables automatic acquisition. If the server does not respond in 30 seconds, the IP address is set by Auto IP Disable: Disables automatic acquisition
MAC Address	Display only	—	Displays a MAC address
Link Speed	AUTO/10Mbps/100Mbps	Auto	Sets a communication speed
Duplex	AUTO/Full Duplex/Half Duplex	Auto	Sets a communication mode Auto Full Duplex: Full-duplex communication Half Duplex: Half-duplex communication
UPnP	Enable/Disable	Disable	Sets whether to use a UPnP Enable: Use Disable: Not use

Procedure

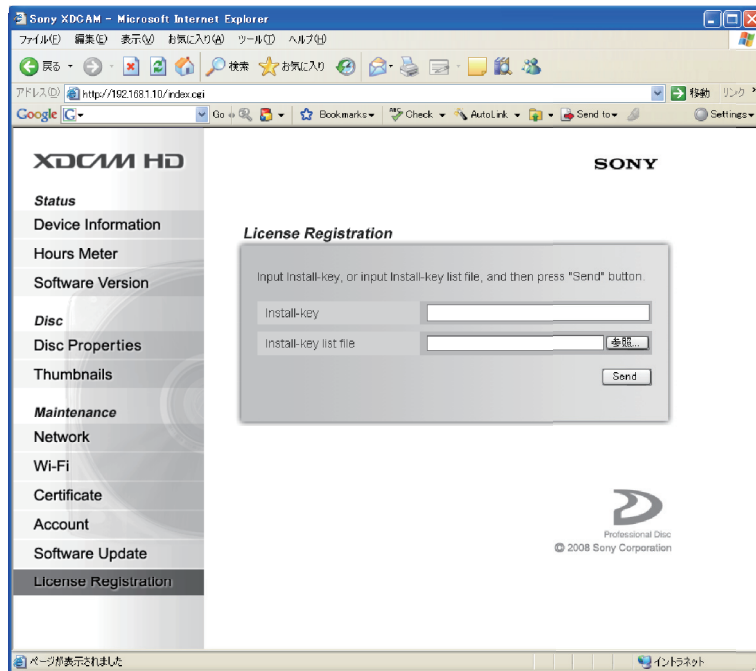
1. Enter the IP address (or the subnet mask or the default gateway).
(Pressing “Reset” clears the Input window.)
2. Press “Execute” to change the setting.

2-4-4. License Registration

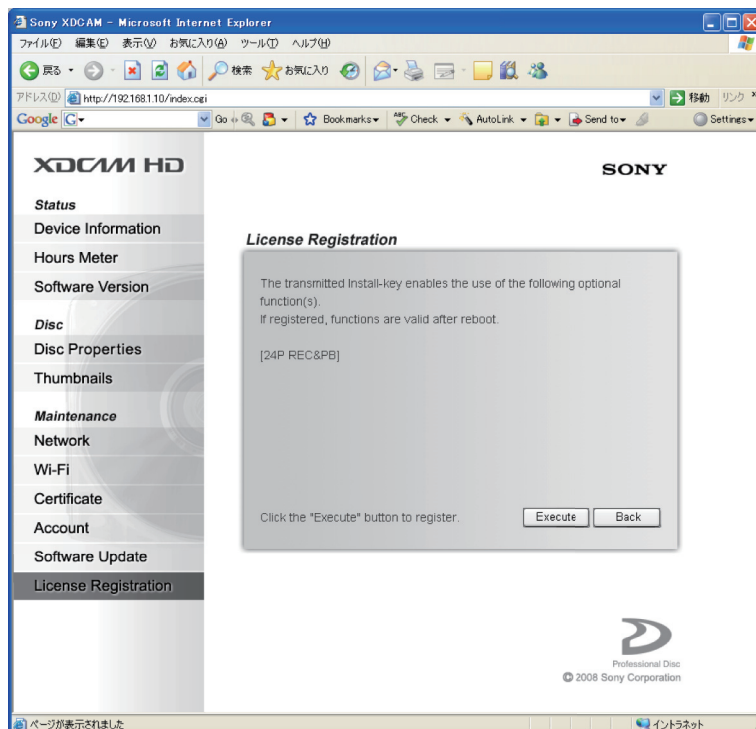
License registration of software option using the Install key can be made from the License Registration page of the Maintenance menu.

Procedure

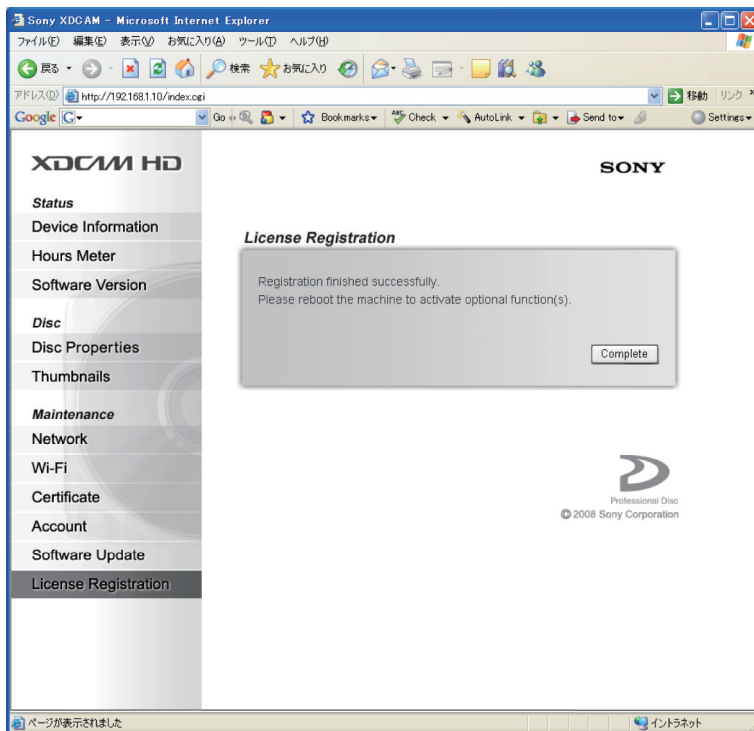
1. Enter the Install key character string in the Install-key field or alternately click the “Browse” button in the Install-key list file field to select the Install key list file.



2. Click “Send”.
3. The software option that is enabled by sending the Install key is displayed. To register the software option being displayed, click the “Execute” button.



4. The page that tells completion of registration appears.



5. Turn the POWER switch OFF once and back ON. Functions of the registered software option are enabled.
6. Confirm that the software option can be operated from the Device Information page of the Status menu.

Section 3

Error Messages

3-1. Error Messages Overview

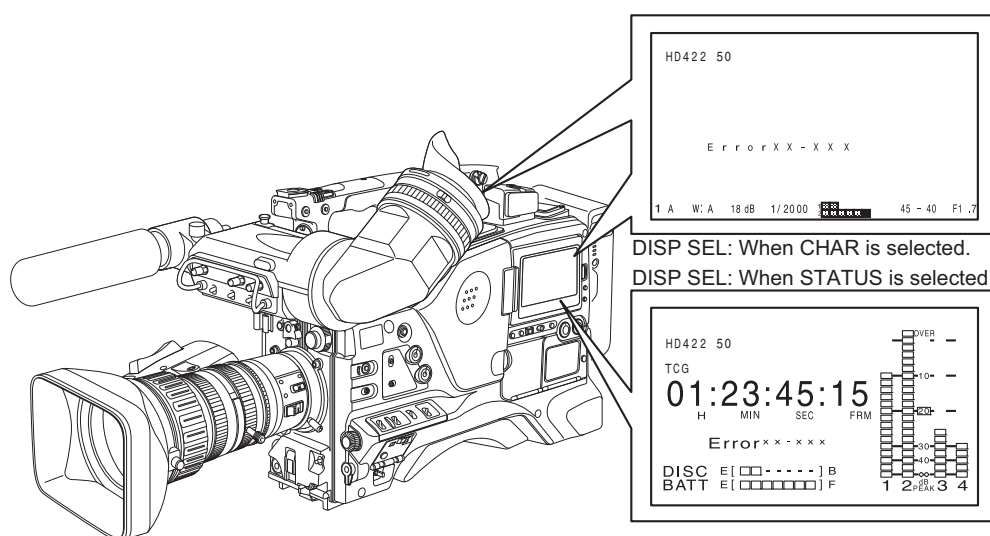
This unit has a self diagnosis function to check internal errors. When the unit detects an error, its error code and description are displayed on the following display units.

- Viewfinder display (error code only)
- Color LCD display

When an error occurs, its error code information is recorded in the error logger (maintenance logger) of the main unit and also in the error logger (drive logger) of the drive unit.

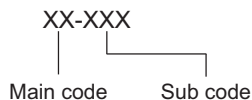
For details of the error logger, refer to “4-15. SERVICE SUPPORT Menu” for the error logger of the main unit, and to “4-10-21. ERROR LOGGER” for the error logger of the drive unit.

Refer to respective error tables for display contents on the viewfinder display and for recording/non-recording in the error loggers.



3-2. Error Codes

An error code is displayed in combination of 2-digit main code and 3-digit sub code.



Main Code

Main Code	Main Error
0X	Optical drive control errors and device errors • 02: Optical device (LD, liquid crystal) errors • 03: 2-axis optical drive (FCS, TRK) errors • 04: Optical drive seek errors • 06: Optical drive SA actuator errors • 08: Optical drive spindle errors
20	Loader assembly errors
3X	Sensor system errors in the optical drive
5X	Read data errors
6X	Startup errors
91	Interface errors between CPU and peripheral devices
92	Synchronization system errors
95	Video/audio signal processing device errors

Sub Code

For sub codes, refer to each list of “Error xx.”

Note

Any number of the following is applicable for “X” in the sub codes below, showing an operation status where the error is detected.

- Example) Error 0X (X27)
X27 → 327: Laser current of optical block assembly is abnormal (zero or excessive) “Disc is not rotating”.
- Example) Error 5X (X0B)
X0B → 5B: Address cannot be read from the disc in optical block assembly “Reading”.

0: Operation cannot be identified or no need to be identified.

1: During loading

2: During vertical move of loading

3: Disc is not rotating

4: Seeking

5: Reading

6: Writing

7: Standby state

8: During horizontal move of unloading

9: During vertical move of unloading

A: During disc ejecting

B: During lens cleaning or device checking

C, D: (Not used)

E: During startup adjustment of optical block assembly

F: During power-on initialization of optical block assembly SA actuator

If two or more errors occur simultaneously

The highest priority error is displayed.

When a higher priority error is cleared, the next priority error code is displayed.

Protection mode

When the unit detects an error, it enters the special state (protection mode) to prevent breakdown or failure of the cartridge disc, optical drive, and other parts.

The protection mode varies depending on errors. If a cartridge is loaded in the unit, press the EJECT button and remove the cartridge.

Depending on the situation of error occurrence, a cartridge cannot be inserted after the EJECT command is received. In that case, turn off and on the power.

3-2-1. Error 0X

When errors related to optical drive control or to devices are detected, the following error codes are displayed.

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
02	020	←	○	○	Optical block assembly is recording at maximum laser output. Perform the pickup lens cleaning. (Refer to “4-10-16. LENS CLEANING”)
	F2E	←	○	○	Laser of optical block assembly is determined to be deteriorated in the laser deterioration assessment for optical block assembly.
	F37	←	○	○	No movement is detected in the ND filter initial operation check of optical block assembly.
	X25	←	○	○	The laser output of the optical block assembly is abnormal.
	X26	←	○	○	The laser output coefficient of the optical block assembly cannot be adjusted.
	X27	←	○	○	The laser current of the optical block assembly is abnormal (zero or excessive).
	X28	←	○	○	The optical block assembly laser output is stopped due to the judgment that no cartridge is inserted.
	X37	←	○	○	The ND filter setting of the optical block assembly cannot be changed.
03	060	←	×	○	Tracking servo of optical block assembly is frequently down.
	X54	←	○	○	No signal can be detected from the disc required for the focus servo of the optical block assembly.
	X57	←	○	○	No control current is detected in the focus servo of the optical block assembly.
	X58	←	○	○	Excessive control current is detected in the focus servo of the optical block assembly.
	X67	←	○	○	No control current is detected in the tracking servo of the optical block assembly.
	X68	←	○	○	Excessive control current is detected in the tracking servo of the optical block assembly.
04	X7C	←	○	○	Optical block assembly cannot move to disc's innermost circumference.
	X7D	←	○	○	Optical block assembly cannot move to disc's outermost circumference.
06	049	←	○	○	SA actuator of optical block assembly cannot move to the target position.

Continued

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
	E41	←	○	○	The SA actuator reference position cannot be detected during the startup adjustment of the optical block assembly.
	F41	←	○	○	The SA actuator reference position cannot be detected during the power-on initialization of the optical block assembly.
08	091	←	○	○	Spindle motor does not rotate after the predetermined time has passed (or no FG signal is detected).
	095	←	○	○	Spindle motor cannot be stopped (or abnormal FG signal is detected).
	292	←	○	○	Spindle motor rotation is detected during vertical move of loading.*1
	992	←	○	○	Spindle motor rotation is detected during vertical move of unloading.*1

3-2-2. Error 20

When errors related to loader assembly are detected, the following error codes are displayed.

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
20	018	←	○	○	An abnormal current of the loading motor is detected.
	111	←	○	○	Horizontal move of loading did not end within the predetermined time.
	117	←	○	○	Displacement of cartridge is detected in the loader during horizontal move of loading.
	118	←	○	○	An abnormal current of the loading motor is detected during horizontal move of loading.
	211	←	○	○	Vertical move of loading did not end within the predetermined time.
	213	←	○	○	Cartridge cannot be detected after loading.
	217	←	○	○	Displacement of cartridge is detected in the loader during vertical move of loading.
	218	←	○	○	An abnormal current of the loading motor is detected during vertical move of loading.
	811	←	○	○	Ejection operation did not end within the predetermined time.
	818	←	○	○	An abnormal current of the loading motor is detected during the ejection operation.
	911	←	○	○	Unchucking operation did not end within the predetermined time.
	918	←	○	○	An abnormal current of the loading motor is detected during the unchucking operation.

3-2-3. Error 3X

When errors related to the optical drive sensor system are detected, the following error codes are displayed.

*1: The vertical move of loading/unloading is also carried out by STBY ON/OFF.

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
34	500	←	○	○	Loader position sensor (SE-709 board) is detects abnormal code.
	509	←	○	○	Sensor hole (SE-857,858 board) is detects abnormal code.
35	500	ACC Sensor!	×	○	Abnormality of acceleration sensor is detected.
37	500	High TEMP!	×	○	The temperature sensor of the optical block assembly is abnormal.

3-2-4. Error 5X

When read data errors are detected, the following error codes are displayed.

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
50	010	(Not displayed)	×	○	BCA area data cannot be read.
	011	(Not displayed)	×	○	BCA area data is abnormal.
51	020	DI read err	×	○	PIC area data cannot be read.
	021	DI read err	×	○	PIC area data is abnormal.
52	X0B	Read err	×	○	Address cannot be read from disc in optical block assembly.

3-2-5. Error 6X

When errors related to startup operation are detected, the following error codes are displayed.

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
60	E00	(Not displayed)	×	○	Optical block assembly cannot seek to target position during startup.
6F	E00	DRV ADJ err	×	○	Optical block assembly startup adjustment cannot be completed.

3-2-6. Error 91

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

Tip

System control CPU: IC200/SY-439 board

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
91	125	←	○	×	System control CPU detects interruption in communication with key control CPU (FP: IC7012/FP-190 board).

Continued

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
	130	←	○	×	System control CPU detects flash memory (IC505, IC506/SY-439 board) error.
	13B	←	○	×	System control CPU detects an error in hours meter area (EEPROM: IC200/SY-439 board).
	13C	←	○	×	System control CPU detects an error in adjustment data area (EEPROM: IC300/SY-439 board).
	13D	←	○	×	System control CPU detects an error in hours meter area (FRAM: IC507/SY-439 board).
	155	←	○	×	System control CPU detects interruption in communication with optical (DR-606 board).
	165	←	○	×	System control CPU detects interruption in communication with camera (IC2400/DCP-65 board) (System control CPU detects).
	185	←	○	×	System control CPU detects interruption in communication with IC for driving color LCD (System control CPU detects).
	1C1	←	○	×	System control CPU detects software option's installation key error.
	215	←	×	×	Key control CPU (FP: IC7012/FP-190 board) detects interruption in communication with system control CPU (Key control CPU detects).
	225	←	○	×	Key control CPU (FP: IC7012/FP-190 board) detects communication error between the KY-712 board.
	239	←	○	×	Key control CPU (FP: IC7012/FP-190 board) detects EEPROM (IC7007/FP-190 board) error.
	23E	←	○	×	Key control CPU (FP: IC7012/FP-190 board) detects LCD Module error.
	275	←	○	×	Key control CPU (FP: IC7012/FP-190 board) detects I ² C I/O (IC302/MB-1208 board) error.
	285	←	○	×	Key control CPU (FP: IC7012/FP-190 board) detects interruption in communication with LCD Module (Key control CPU detects).
	2B5	←	○	×	Key control CPU (FP: IC7012/FP-190 board) detects Real time Clock (IC7005/FP-190 board) error.
	301	←	○	×	System control CPU detects GPS Module error.
	430	←	○	×	System control CPU2 (IC1300/SY-439 board) detects flash memory (IC1405, IC1406/SY-439 board) error.
	551	←	○	○	Optical drive's system control CPU (DRV: IC600/DR-606 board) detects firmware error. Perform the firmware update. (Refer to "1-8-2. Firmware Update Using the USB memory")
	595	←	○	○	Optical drive's system control CPU (DRV: IC600/DR-606 board) detects interruption in communication with SV DSP (IC400/DR-606 board).
	596	←	○	○	Optical drive's system control CPU (DRV: IC600/DR-606 board) detects no reply from SV DSP (DRV: C400/DR-606 board) during communication with SV DSP.

3-2-7. Error 92

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

Note

System control CPU: IC200/SY-439 board

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
92	101	←	○	×	System control CPU detects REF error.
	102	←	○	×	System control CPU detects frame error in input system.
	104	←	○	×	System control CPU detects 24P REF error.

3-2-8. Error 95

When interface errors between device ICs are detected, the following error codes are displayed.

Note

System control CPU: IC200/SY-439 board

Optical drive's system control CPU (DRV): IC600/DR-606 board

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
95	101	←	○	×	Communication error between system control CPU and PCI bridge (IC900/SY-439 board) is detected.
	104	←	○	×	Communication error between system control CPU and MPEG IMX encoder (IC1600/DVP-64 board) is detected.
	107	←	○	×	Communication error between system control CPU and MPEG HD codec (Torino: IC1000, IC1200, IC1400/DVP-64 board) is detected during recording.
	108	←	○	×	MPEG HD codec (Torino: IC1000, IC1200, IC1400/DVP-64 board) has become abnormal during recording.
	109	←	○	×	Communication error between system control CPU and MPEG HD codec (Torino: IC1000, IC1200, IC1400/DVP-64 board) is detected during recording.
	10A	←	○	×	MPEG HD codec (Torino: IC1000, IC1200, IC1400/DVP-64 board) has become abnormal during playback.
	10C	←	○	×	System control CPU detects an error in LVIS (IC400/DVP-64 board).
	10F	←	○	×	System control CPU detects PROXY VIDEO block in LVIS (IC400/DVP-64 board) error during playback.
	110	←	○	×	System control CPU detects PROXY VIDEO block in LVIS (IC400/DVP-64 board) error during recording.
	111	←	○	×	Communication error between system control CPU and PB DSP (IC801/DVP-64 board) is detected.
	113	←	○	×	Communication error between system control CPU and REC DSP (IC800/DVP-64 board) is detected.
	116	←	○	×	Communication error between system control CPU and PROXY AUDIO DSP (IC900/DVP-64 board) is detected.
	503	←	○	○	Optical drive's BDC (IC300/DR-606 board) error is detected during initial check.
	507	←	○	○	Adjustment data cannot be read from EEPROM in optical block assembly.
	508	←	○	○	Hours meter data cannot be read from EEPROM in optical block assembly.
	509	←	○	○	Adjustment data cannot be read from optical drive's EEPROM (IC4/SE-857 board).

Continued

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
	50A	←	○	○	Hours meter data cannot be read from optical drive's EEPROM (IC4/SE-857 board).
	50C	←	○	○	Optical drive's SYS PE (IC700/DR-606 board) configuration error is detected.
	50F	←	○	○	Cannot access SDRAM (IC300/DR-606 board) for Optical driver's BDC (IC301/DR-606 board).
	513	←	○	○	Optical drive's BDC (IC300/DR-606 board) cannot set the SDRAM mode.
	51C	←	○	○	Optical drive's BDC (IC300/DR-606 board) cannot reset free-run by SYS PE (IC700/DR-606 board).
	52C	←	○	○	Auto setting by SYS PE (IC300/DR-606 board) is disabled with power control of optical drive's BDC (IC700/DR-606 board).

Section 4

Setup Menu

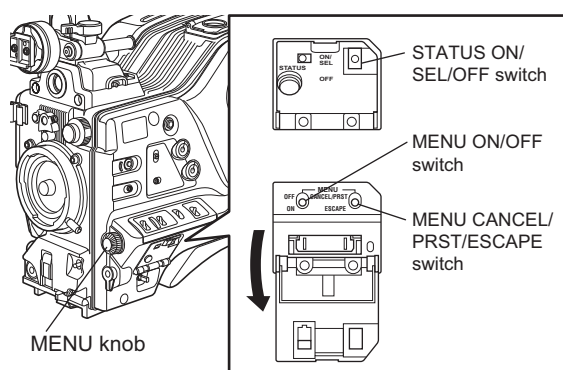
4-1. Setup Menus

This unit has setup menus for making various settings and adjustments. The setup menus of this unit include the USER menu, USER MENU CUSTOMIZE menu, ALL menu, OPERATION menu, PAINT menu, MAINTENANCE menu, FILE menu, DIAGNOSIS menu and SERVICE menu.

The setup menus are displayed on the viewfinder of this unit.

4-1-1. Basic Operations of Setup Menus

Switch description



MENU ON/OFF switch

Use this switch to display the setup menu. When the lid is closed, the switch is set to the OFF position.

- ON: Displays the setup menu.
- OFF: Exits the setup menu.

MENU CANCEL/PRST/ESCAPE switch

Use this switch to cancel the setup of the items that are selected by the setup menu, or return to the initial setup when the MENU ON/OFF switch is in the ON position.

- CANCEL/PRST: Cancels the executed setup or returns to the initial (PRST) setup.
- ESCAPE: Returns to the menu hierarchy one level higher.

STATUS ON/SEL/OFF switch

Use this switch to show or to clear the setup displays in order to confirm various settings and statuses when the MENU ON/OFF switch is in the OFF position.

- ON/SEL: Shows the various settings and status check displays for about 10 seconds. Each press of this switch turns over the display page.
- OFF: Clears the display that is selected by ON/SEL.

MENU knob

- When rotated: Moves to the other pages or items, or changes the setup value.
- When pressed: Enters the page set mode or the setup value modification mode.

Operating procedure

1. Set the MENU ON/OFF switch to ON.
2. To move to another page, rotate the MENU knob. (Press the MENU knob to set it.)

3. To move to another item, rotate the MENU knob.

Tip

Pressing the MENU knob enters the setup value modification mode.

4. To modify a setup value, rotate the MENU knob.
5. Set the MENU ON/OFF switch to OFF to exit the setup menu.

4-1-2. How to Display the SERVICE Menu

Method 1

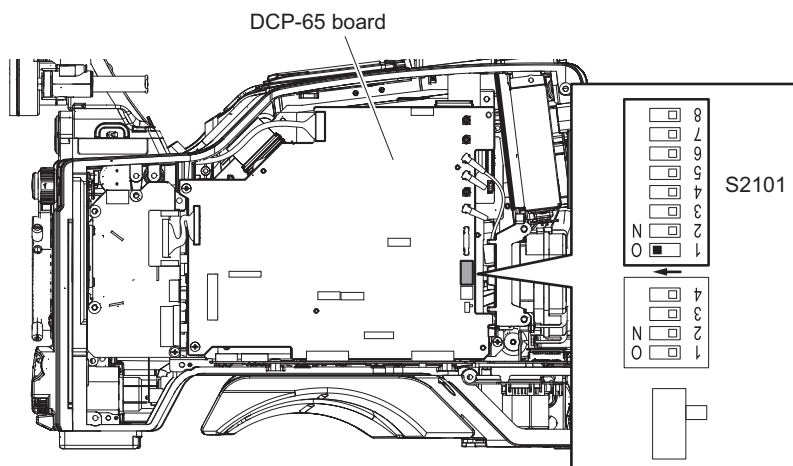
Set the switch S2101-1/DCP-65 board or S102-1/MB-1208 board to the ON position.

Note

After the service has been completed, be sure to set the switches S2101-1/DCP-65 board and S102-1/MB-1208 board to OFF and then exit the service mode.

DCP-65board

1. Open the inside panel. (Refer to “7-4. Inside Panel”)
2. Set the switch S2101-1 to the ON position.

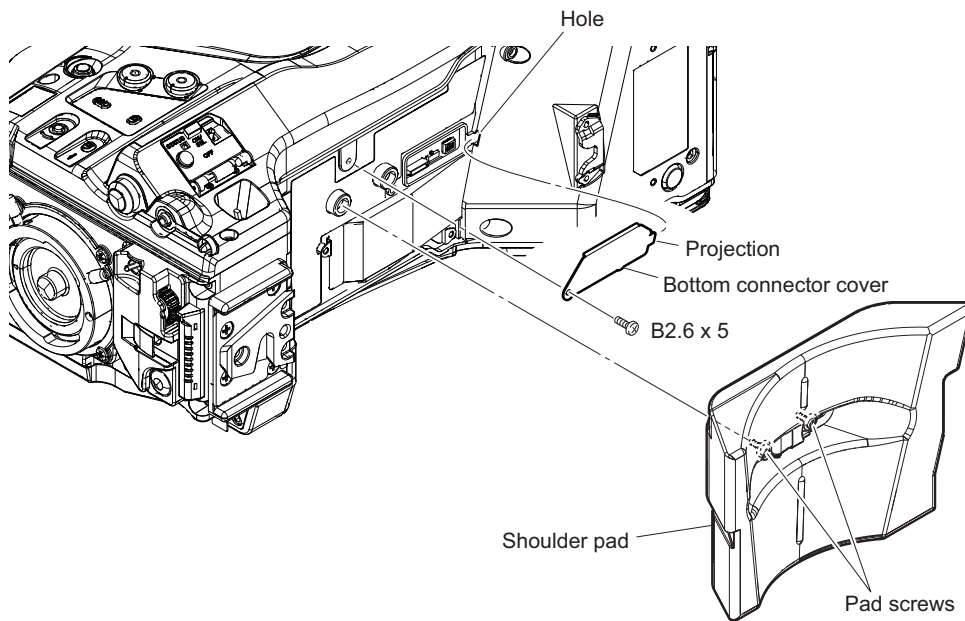


3. Close the inside panel.
4. Turn on the power and flip the MENU ON/OFF switch to ON.

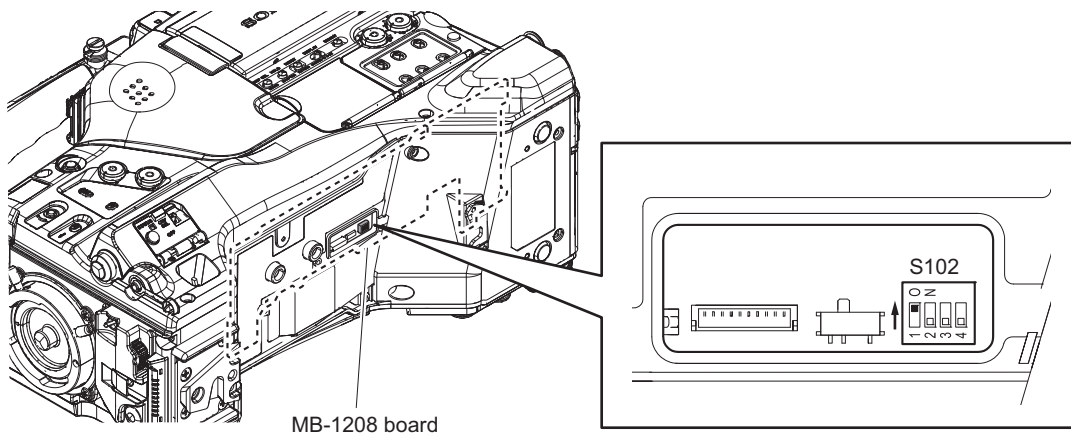
MB-1208 board

1. Loosen the two pad screws, and remove the shoulder pad.
2. Remove the screw (B2.6 x 5).

3. Pull the projection of the bottom connector cover out of the hole to detach the bottom connector cover.



4. Set the switch S102-1 to the ON position.



5. Attach the bottom connector cover and the shoulder pad.
6. Turn on the power and flip the MENU ON/OFF switch to ON.

Method 2

Note

When the following switch settings have been made, Method 2 is not available.

- S2101-2/DCP-65 board or S102-2/MB-1208 board is set to ON.
 - S2102/DCP-65 board and S101/MB-1208 board are set to OFF.
1. Select the DIAGNOSIS menu D00 • CONTENTS page.
 2. While pressing the MENU knob and the ASSIGN1 switch simultaneously, set the MENU ON/OFF switch to ON.

4-2. TOP Menu

While pressing the MENU knob, set the MENU ON/OFF switch to ON. Then the TOP menu appears.

However, the TOP menu is not displayed when the switches S2102/DCP-65 board and S101/MB-1208 board are in the OFF position.

TOP MENU Display

S	<TOP MENU>
→USER	
USER MENU CUSTOMIZE	
ALL	
• OPERATION	
• PAINT	
• MAINTENANCE	
• FILE	
• DIAGNOSIS	
SERVICE	

Menu	Function
USER	Use the USER menu to set the functions that are used for daily routine operations such as MONITOR OUT setting (This menu appears when the MENU ON/OFF switch is set to ON normally)
USER MENU CUSTOMIZE	Use this menu to add or delete the pages that are required for the USER menu to suit operators' needs depending on applications (For more details, refer to "Editing the USER Menu" of Operation Manual)
ALL	The ALL menu contains all pages of each category of the "USER 1" to "USER 19" pages edited by "USER MENU CUSTOMIZE", "ASSIGN ITEM SEL" page, OPERATION, PAINT, MAINTENANCE, FILE and DIAGNOSIS. It means that you can move to any page from the ALL menu without returning to the TOP menu
OPERATION	Usually, the camera operator is expected to use the OPERATION menu to set or change the preference setups to suit the shooting conditions of each object
PAINT	Use this menu to implement fine adjustment of pictures by monitoring the camera output waveform on a waveform monitor etc
MAINTENANCE	This is the camera maintenance menu. Use this menu to set the PAINT items of lower operating frequency or to alter the system configuration
FILE	This is the file operation menu. Use this menu to save data in the REFERENCE file etc
DIAGNOSIS	Use this menu to check the optical drive status or to diagnose the circuit boards that are suspected to have an error
SERVICE	Use this menu for service and maintenance (This menu is enabled when the switch S2101-1/DCP-65 board or S102-1/MB-1208 board is set to ON)

4-3. USER Menu

The USER menu enables the user to use the selected menu items that are frequently used in daily operation. The USER menu contains the following menu items as the default when the unit was shipped from the factory.

Add or delete the menu items as desired with the use of the USER MENU CUSTOMIZE menu.

Name of page	Name of category
OUTPUT 1	OPERATION
OUTPUT 2	OPERATION
SUPERIMPOSE	OPERATION
LCD	OPERATION
REC FUNCTION	OPERATION
ASSIGNABLE SW	OPERATION
VF DISP1	OPERATION
VF DISP2	OPERATION
'!' LED	OPERATION
MARKER 1	OPERATION
GAIN SW	OPERATION
VF SETTING	OPERATION
VF DETAIL	OPERATION
AUTO IRIS	OPERATION
SHOT ID	OPERATION
SHOT DISP	OPERATION
SET STATUS	OPERATION
LENS FILE	OPERATION
USER FILE	OPERATION

4-4. OPERATION Menu

Note

When the range of setting is surrounded by parenthesis () in the setting column, the setup value is the relative value. The range of setting in parenthesis () can be different from what shown in the manual depending on the setting in the layer lower than this menu.

4-4-1. Description of OPERATION Menu

OUTPUT 1 Display (Setting the Output Signal)

001	OUTPUT1	TOP
→SDI	OUT1 SELECT	: ● OFF
SDI	OUT2 SELECT	: OFF
SDI	OUT2 SUPER	: OFF
TEST	OUT SELECT	: VBS
TEST	OUT SUPER	: OFF

Item	Setting	Function
SDI OUT 1 SELECT	OFF/HDSDI/SDSDI	Selects the output signal from the SDI OUT 1 connector • OFF: No output signal • HDSDI: HD SDI signal • SDSDI: SD SDI signal
SDI OUT 2 SELECT	OFF/HDSDI/SDSDI/VF	Selects the output signal from the SDI OUT 2 connector • OFF: No output signal • HDSDI: HD SDI signal • SDSDI: SD SDI signal • VF: The same information (including characters and markers) as VF is output.
SDI OUT 2 SUPER	OFF/ON	Turns ON/OFF the superimposed information output from the SDI OUT 2 connector
TEST OUT SELECT	VBS/Y/R/G/B* ¹	Selects the video signal of the TEST OUT connector (When R/G/B is selected, turning the power ON/OFF changes the setting to Y)
TEST OUT SUPER	OFF/ON* ²	Turns ON/OFF the superimposed information output from the TEST OUT connector

*1: When R/G/B is selected, turning the power of the unit off and on changes the setting to Y.

*2:

- When TEST OUT SELECT is set to Y/R/G/B, the character information is displayed regardless of the setting. The character information can be hidden by switching this item from ON to OFF while the character information is displayed. (The view finder is also hidden.)
- When TEST OUT SELECT is set to LCD, the character information is displayed or hidden according to the display mode selected with the DISPSEL/EXPAND button.

OUTPUT 2 Display (Setting the Output signal)

002	OUTPUT2	TOP
→DOWN CON MODE	: ● CROP	
WIDE ID	: THROU	

Item	Setting	Function
DOWN CON MODE	CROP/SQEZE	Selects the aspect ratio for down-conversion • SQUEZE: Squeeze Converting the 16:9 HD video signal to the SD signal while maintaining the aspect ratio (16:9) • CROP: Edge crop Converting the HD video signal to the SD signal by extracting the 4 : 3 image portion from the HD video signal (4 : 3)
WIDE ID	THROU/AUTO	The setting whether or not to add the wide screen information recorded on • THROU: Outputs the video signal played back from the disc without adding the wide screen information • AUTO: Outputs the video signal by adding the wide screen information when the wide information is detected from the disc during playback

SUPERIMPOSE Display (Setting the information output)

003	SUPERIMPOSE	TOP
<SDI OUT 2 & TEST (VBS) >		
→SUPER (VFDISP)	: ● ON	
SUPER (MENU)	: ON	
SUPER (TC)	: OFF	
SUPER (MARKER)	: OFF	
SUPER (ZEBRA)	: OFF	

Item	Setting	Function
SUPER (VFDISP)	OFF/ON	Turns ON/OFF the output of text (superimposed) information from the SDI OUT 2 connector
SUPER (MENU)	OFF/ON	
SUPER (TC)	OFF/ON	
SUPER (MARKER)	OFF/ON	Turns ON/OFF the marker display output from the TEST OUT connector
SUPER (ZEBRA)	OFF/ON	Turns ON/OFF the zebra display

LCD Display (Setting the LCD monitor)

004	◊LCD	TOP
→LCD COLOR	: ●	0
LCD MARKER&ZEBRA	:	ON

Item	Setting	Function
LCD COLOR	(-99 to 99)	Adjusts the LCD color
LCD MARKER & ZEBRA	OFF/ON	Turns ON/OFF the marker and zebra display in the LCD monitor

REC FUNCTION Display (Setting the Picture cache function)

005	◊REC FUNCTION	TOP
→CACHE/INTVAL REC	: ●	OFF
DISC EXCHG CACHE	:	OFF
CLIP CONT REC	:	OFF
LIVE LOGGING	:	OFF

Item	Setting	Function
CACHE/INTVAL REC	OFF/CACHE/A.INT/M.INT	Sets the CACHE REC function • OFF: Not used • CACHE: CACHE REC • A.INT: Auto interval REC • M.INT: Manual interval REC
DISC EXCHG CACHE	OFF/ON	Turns ON/OFF the function that even if you run out of free disc capacity while recording, you can continue recording Note The unit's internal memory is not unlimited, so the video and audio may be interrupted if it takes too long to exchange the disc.
CLIP CONT REC	OFF/ON	Turns ON/OFF the clip continuous rec function
LIVE LOGGING	OFF/LIVE/VIEW	Sets the LIVE LOGGING function. • OFF: Not used • LIVE: Live mode • VIEW: Live view mode

When CACHE is selected in CACHE/INTVAL REC

005	◊REC FUNCTION	TOP
→CACHE/INTVAL REC	: ●	CACHE
CACHE REC TIME	:	0-2S
DISC EXCHG CACHE	:	OFF

Item	Setting	Function
CACHE REC TIME	0-2S/2-4S/4-6S/6-8S/8-10S/ 18-20S/28-30S	Sets the recording time of CACHE REC (SEC: second)

When A.INT is selected in CACHE/INTVAL REC

005◊REC FUNCTION	TOP
→CACHE/INTVAL REC:	●A. INT
TAKE TOTAL TIME :	5MIN
REC TIME :	5SEC
PRE-LIGHTING :	OFF
DISC EXCHG CACHE:	OFF

Item	Setting	Function
TAKE TOTAL TIME	See the right column	Sets the total recording time of Auto Interval REC (MIN: minute, H: hour) Setting value: 5MIN/10MIN/15MIN/20MIN/30MIN/40MIN/ 50MIN/ 1H/2H/3H/4H/5H/7H/10H/15H/20H/30H/40H/50H/70H/100H
REC TIME	See the right column	Sets the actual recording time of Auto Interval REC (SEC : second) Setting value: 5, 10, 15, 20, 30, 40, 50SEC, 1 to 85MIN
PRE-LIGHTING	OFF/2SEC/5SEC/10SEC	Sets the automatic lighting-on when Auto Interval REC is operating The lighting time (in second) before the start of recording is specified

When M.INT is selected in CACHE/INTVAL REC

005◊REC FUNCTION	TOP
→CACHE/INTVAL REC:	●M. INT
NUMBER OF FRAME :	1
TRIGGER INTERVAL:	1SEC
PRE-LIGHTING :	OFF
DISC EXCHG CACHE:	OFF

Item	Setting	Function
NUMBER OF FRAME	1/3/6	Sets the number of frames to be recorded by one REC operation of Manual Interval REC
TRIGGER INTERVAL	See the right column	Sets the interval time When "M" is selected, by pressing the REC SW, a specified number of frames will be recorded When a time value is set, being triggered by REC SW, recording of a specified number of frames will be made after every elapse of that time Setting value: M/ 1SEC to 10SEC/15SEC/20SEC/30SEC/ 40SEC/50SEC/ 1MIN to 10MIN/15MIN/20MIN/30MIN/ 40MIN/50MIN/ 1H to 6H/12H/24H
PRE-LIGHTING ^{*1}	OFF/2SE/5SEC/10SEC	Sets the automatic lighting-on when Manual Interval REC is operating The lighting time (in second) before the start of recording is specified

*1: This does not appear when TRIGGER INTERVAL is set to M.

ASSIGNABLE SW Display (Setting the ASSIGN SW)

006	○	ASSIGNABLE SW	TOP
→	ASSIGN SW <1>	:	● OFF
	ASSIGN SW <2>	:	OFF
	ASSIGN SW <3>	:	OFF
	ASSIGN SW <4>	:	OFF
	ASSIGN SW <5>	:	OFF
	ASSIGN SW <RET>	:	RET
	ZOOM SPEED	:	20
	RETURN VIDEO	:	OFF

Item	Setting	Function
ASSIGN SW 1/3/4/5/RET	OFF	Assigns no function
	FRONT MIC MONO/STEREO	Assigns the function to switch stereo and monaural when the stereo microphone is connected
	PICTURE CACHE ON/OFF	Assigns the function to execute picture cache recording
	SUPER (VFDISP&MENU)	Assigns the function to switch whether or not to combine the character information of the view finder and that of menu with the video signal that is output from the SDI OUT 2 connector or the TEST OUT connector when SDI OUT 2 SUPER or TEST OUT SUPER is set to ON in the OUTPUT 1 page of the OPERATION menu
	MARKER	Assigns the ON/OFF function to display all markers ^{*1}
	RE-TAKE ^{*2}	Assigns the function to delete the last recorded clip
	ATW	Assigns the ON/OFF function of auto-tracing white balance
	RETURN VIDEO HD-Y	Assigns the function that displays in the viewfinder the HD-Y (1080i) signal input to the GENLOCK IN connector ^{*3}
	RETURN VIDEO HDSDI	Assigns the function that displays in the viewfinder the HDSDI signal input to the SDI IN connector ^{*4}
	LENS RET	Assigns the same function as that of the RET switch on the lens to the switch
	REC SWITCH	Assigns the REC START (recording start) function to the switch
	TURBO SWITCH	Assigns the turbo gain function to the switch
	ZEBRA	Assigns the zebra pattern display function to the switch
	FREEZE MIX	Assigns the function that mixes a still picture (monochrome) and camera video (color) (effective for framing shots)
	CC 5600K	Applies an electrical 5600K filter
	ZOOM TELE/WIDE ^{*5}	When using a serial lens, assign the ZOOM TELE setting to ASSIGN 3, and the WIDE setting to ASSIGN 4
	ZOOM WIDE/TELE ^{*5}	When using a serial lens, assign the ZOOM WIDE setting to ASSIGN 3, and the TELE setting to ASSIGN 4
	SHOT MARK1	Assigns the function to record a SHOT MARK 1 essence mark

Continued

- *1: Even when the MARKER item is set to OFF on the MARKER page of the USER menu, this ASSIGN switch allows you to display or not to display all markers.
- *2: Cannot be assigned to the RET button of the lens.
- *3: Even if the RETURN VIDEO item is set to OFF on the GENLOCK page of the MAINTENANCE menu, you can use this switch to display the image of the return video signal on the viewfinder.
- *4: Even if the RETURN VIDEO item is set to OFF on the ASSIGNABLE SW page of the OPERATION menu, you can use this switch to display the image of the return video signal on the viewfinder.
- *5: Only the Assign 3 SEL and Assign 4 SEL screens appear.

Item	Setting	Function
	SHOT MARK2	Assigns the function to record a SHOT MARK 2 essence mark
	CLIP FLAG OK	Assign the functions that set or clear OK/NG/KEEP flags during recording or playback
	CLIP FLAG NG	
	CLIP FLAG KEEP	
	DIGITAL EXTENDER x 2* ¹	Assigns the function that electronically magnifies the central part of the picture (All video output is magnified, including recorded video)
	DIGITAL EXTENDER x 3* ¹	
	DIGITAL EXTENDER x 4* ¹	
	DIGITAL EXTENDER x 2 x 3 x 4 (cyclic)* ¹	
	CLIP CONT REC	Clip continuous rec function ON/OFF
	VF COLOR DETAIL	VF Color detail function
	PLAY & SDI REC S/S	Outputs the REC trigger signal to the recorder connected to the SDI OUT connector concurrently with playback
	UA01 to UA10* ²	Assigns the items assigned in the ASSIGN ITEM SEL menu
ASSIGN SW 2	OFF	Assigns no function
	FRONT MIC MONO/STEREO	Assigns the function to switch stereo and monaural when the stereo microphone is connected
	PICTURE CACHE ON/OFF	Assigns the function to execute picture cache recording
	SUPER (VFDISP&MENU)	Assigns the function of a switch to select mixing or no mixing of superimposed viewfinder and menu text data into the video signals output from the SDI OUT 2 or TEST OUT connector, when SDI OUT 2 SUPER or TEST OUT SUPER on the OUTPUT 1 page of the OPERATION menu are set to ON
	MARKER	Assigns the ON/OFF function to display all markers* ³
	REC VIDEO SOURCE	Switches the recording target video between the video shot by the camera and the video input from an external device (VBS or SD-SDI/HD-SDI)
	ZEBRA	Assigns the zebra pattern display function to the switch
	FREEZE MIX	Assigns the function that mixes a still picture (monochrome) and camera video (color) (effective for framing shots)
	DIGITAL EXTENDER x 2* ¹	Assigns the function that electronically magnifies the central part of the picture (All video output is magnified, including recorded video)
	DIGITAL EXTENDER x 3* ¹	
	DIGITAL EXTENDER x 4* ¹	
	CLIP CONT REC	Clip continuous rec function ON/OFF
	VF COLOR DETAIL	VF COLOR DETAIL function
	UA01 to UA10* ²	Assigns the items assigned in the ASSIGN ITEM SEL menu
ZOOM SPEED	0 to 99	ZOOM SPEED adjustment
RETURN VIDEO	OFF/ON	RETURN VIDEO function ON/OFF

*1: Video momentarily becomes black and audio is momentarily muted when the DIGITAL EXTENDER is switched ON/OFF.

*2: This does not appear if nothing is assigned in the ASSIGN ITEM SEL menu.

*3: Even when the MARKER item is set to OFF on the MARKER page of the USER menu, this ASSIGN switch allows you to display or not to display all markers.

POWER SAVE Display (Setting the POWER SAVE function)

007	POWER SAVE	TOP
→	ETHERNET/USB	: ● DSABL
	REC AUDIO OUT	: EE
	TEST OUT SAVE	: ON
	Wi-Fi	: DSABL

Item	Setting	Function
ETHERNET/USB	DSABL/ENABL	Enables or disables the network connector and USB connector
REC AUDIO OUT	EE/SAVE	Puts the AUDIO OUT connector in EE or SAVE mode
TEST OUT SAVE	OFF/ON	Switches the TEST OUT connector power saving function on and off - ON: No signals are output if a cable is not connected - OFF: Signals are always output, regardless of whether a cable is connected
Wi-Fi	DSABL/ENABL	Enables or disables the wireless LAN function. - DSABL: Disabled - ENABL: Enabled

VF DISP 1 Display (Setting the Viewfinder screen displays)

008	VF DISP1	TOP
→	VF DISP	: ● ON
	VF DISP MODE	: 3
	DISP EXTENDER	: ON
	DISP FILTER	: ON
	DISP WHITE	: ON
	DISP GAIN	: ON
	DISP SHUTTER	: ON
	DISP AUDIO	: ON
	DISP DISC	: ON
	DISP IRIS	: ON

Item	Setting	Function
VF DISP	OFF/ON	Turns ON/OFF the Viewfinder display ^{*1}
VF DISP MODE	1/2/3	Sets the display mode ^{*2}
DISP EXTENDER	OFF/ON	Displays the extender
DISP FILTER	OFF/ON	ND filter type
DISP WHITE	OFF/ON	Displays the white balance memory
DISP GAIN	OFF/ON	Displays the gain setup value
DISP SHUTTER	OFF/ON	Displays the shutter speed and ECS mode indicator
DISP AUDIO	OFF/ON	Displays the audio level
DISP DISC	OFF/ON	Displays the remaining amount of disc
DISP IRIS	OFF/ON	Displays the lens iris value

Correspondence between the conditions of the unit when the message is displayed and the display modes are shown as follows.

○: Message is displayed.

^{*1}: The viewfinder display can be also turned on or off by using the DISPLAY of the DISPLAY/ASPECT switch on the viewfinder.

^{*2}: Regarding the messages that indicate the contents of setup change and the messages that indicate progress/result of adjustments, only a part of the display items can be selected or no display at all can also be selected by setting the display mode.

×: Message is not displayed.

The conditions that necessitate showing of the message	Message	Display mode setting		
		1	2	3
When FILTER selection is changed	ND FILTER : n (n = 1, 2, 3, 4), CC FILTER : n (n = A, B, C, D)	×	×	○
When GAIN setting is changed	GAIN : n (n = -6 dB, -3 dB, 0 dB, 3 dB, 6 dB, 9 dB, 12 dB, 18 dB, 24 dB, 30 dB, 36 dB, 42 dB)	×	×	○
When the WHITE BAL switch setting is changed	WHITE : n (n = A CH, B CH, PRESET) or ATW (Auto Tracking White-balance) : RUN	×	×	○
When the OUTPUT/DCC switch is set to DCC ON or DCC OFF	DCC : ON (or OFF)	×	○	○
When the shutter speed/shutter mode setting is changed*1	: SS : 1/100 1/100 (or 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS, EVS)	×	○	○
When BLACK balance/WHITE balance adjustment is in progress	example : WHITE : OK	×	○	○

VF DISP 2 Display (Setting the VF displays)

009○VF DISP2	TOP
→DISP ZOOM	: ● ON
DISP COLOR TEMP	: OFF
DISP BATT REMAIN	: INT
DISP DC IN	: OFF
DISP 16:9·4:3 ID	: OFF
DISP WRR RF LVL	: OFF
DISP REC FORMAT	: OFF
DISP CLIP NO (PB)	: ON
DISP TIME CODE	: OFF
DISP ALAC	: OFF

Item	Setting	Function
DISP ZOOM	OFF/ON	Turns ON/OFF the zoom position display
DISP COLOR TEMP	OFF/ON	Turns ON/OFF the color temperature display
DISP BATT REMAIN*2	INT/VOLT/AUTO	Selects the mode for the remaining battery (or DC IN) voltage display
DISP DC IN	OFF/ON	Turns ON/OFF the display when the power is supplied from the external connector (the battery connected to DC IN)
DISP 16:9·4:3 ID	OFF/ON	Turns ON/OFF the aspect display
DISP WRR RF LVL	OFF/ON	Turns ON/OFF the wireless receiver RF level display
DISP REC FORMAT	OFF/ON	Turns ON/OFF the recording format display
DISP CLIP NO(PB)	OFF/ON	Turns ON/OFF the clip name display
DISP TIME CODE	OFF/ON	Turns ON/OFF the time-code display
DISP ALAC	OFF/ON	Turns ON/OFF the operating status display of ALAC

*1: It is also displayed for about 3 seconds when the SHUTTER switch is set to ON.

*2: When an Anton Bauer battery system or a BP-GL65/GL95 battery pack is installed, the remaining battery power is shown as a percentage value (%) according to the setting of this item.

- INT : When one of the above batteries is installed, the remaining power is shown as a percentage value (%) when there is a change in the value or when the power is low.
- AUTO : The remaining power is shown as a percentage value (%) when one of the above batteries is installed. Otherwise the voltage (VOLT) is displayed continuously.
- VOLT : The voltage (VOLT) is displayed continuously.

VF DISP 3 Display (Setting the VF displays)

010	VF DISP3	TOP
→DISP CLIP NAME	: ● PLAN	
DISP SCENE FILE	: OFF	
DISP CONT REC	: ON	
LOW LIGHT	: OFF	
LOW LIGHT LEVEL	: 0	
VF BATT WARNING	: 10%	
ABSOLUTE VALUE	: OFF	

Item	Setting	Function
DISP CLIP NAME	PLAN/AUTO	Clip name display condition
DISP SCENE FILE	OFF/ON	Turns ON/OFF displaying the currently called scene file number.
DISP CONT REC	OFF/ON	Turn ON/OFF a display effective the Clip Continuous Rec function.
LOW LIGHT	OFF/ON	Turns ON/OFF the on-screen warning that the average level of the video has dropped beneath a set level
LOW LIGHT LEVEL	(-99 to 99)	Sets the LOW LIGHT threshold value
VF BATT WARNING	10%/20%	Specifies the remaining battery capacity level that starts the flashing warning in the viewfinder
ABSOLUTE VALUE	OFF/ON	Turns ON/OFF the mode that displays numeric menu settings as absolute values ^{*1}

VF DISP 4 Display (Setting the VF displays)

011	VF DISP4	TOP
→DISP GPS	: ● OFF	
WIRELESS STATUS	: OFF	
EXT MEDIA REMAIN	: OFF	
SENDING CLIP INFO	: OFF	

Item	Setting	Function
DISP GPS	OFF/ON	Displays GPS reception status.

*1: This makes it possible to display settings that include reference settings, stored with STORE ALL PRESET or other functions, as absolute values.

'!' LED Display (Selecting the conditions to turn on the '!' indicator on VF)

0120 '!' LED	TOP
→GAIN <!> : ●	ON
SHUTTER <!> :	ON
WHT BAL <!> :	ON
CC 5600K <!> :	OFF
ATW RUN <!> :	ON
EXTENDER <!> :	ON
FILTER ND <!> :	OFF
FILTER CC <!> :	OFF
OVERRIDE <!> :	ON

Item	Setting	Function
GAIN <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the GAIN value is other than 0 dB
SHUTTER <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the SHUTTER switch is ON
WHT BAL <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the WHITE BAL setting is other than the WHITE BAL <!> setting in '!' LED STD
CC 5600K <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the CC 5600K setting is other than the CC5600K <!> setting in '!' LED STD
ATW RUN <!>	OFF/ON	OFF : Does not turn on ON : Turns on when ATW is used
EXTENDER <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the lens extender is used
FILTER ND <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the ND FILTER setting is other than the FILTER ND <!> settings in '!' LED STD
FILTER CC <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the CC FILTER setting is other than the FILTER CC <!> settings in '!' LED STD
OVERRIDE <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the reference value of the auto iris is other than the standard value

'!' LED STD Display (Setting the judgment criteria of the conditions for turning ON the '!' LED on VF)

0130 '!' LED STD	TOP
→GAIN <!> : ●	0dB
SHUTTER <!> :	OFF
WHITE BAL <!> :	AB
CC 5600K <!> :	OFF
ATW RUN <!> :	OFF
EXTENDER <!> :	OFF
FILTER ND <!> :	1
FILTER CC <!> :	B
OVERRIDE <!> :	OFF

Item	Setting	Function
GAIN <!>	0dB/LOW/MID/HIGH	Sets the reference value of GAIN <!> (Value with which the '!' lamp on the VF does not turn on when the '!' LED is on.)

Continued

Item	Setting	Function
SHUTTER <I>	OFF/ECS each FORMAT SHUTTER SPEED*1	Sets the reference value of SHUTTER <I> (Value with which the '!' lamp on the VF does not turn on when the '!' LED is on.)
WHITE BAL <I>	P/A/B/PA/PB/AB	Sets the reference value of WHITE BAL <I> (Value with which the '!' lamp on the VF does not turn on when the '!' LED is on.)
CC 5600K <I>	OFF/5600K	Sets the reference value of CC 5600K <I> (Value with which the '!' lamp on the VF does not turn on when the '!' LED is on.)
ATW RUN <I>	OFF/ON	Sets the reference value of ATW RUN <I> (Value with which the '!' lamp on the VF does not turn on when the '!' LED is on.)
EXTENDER <I>	OFF/ON	Sets the reference value of EXTENDER <I> (Value with which the '!' lamp on the VF does not turn on when the '!' LED is on.)
FILTER ND <I>	1/2/3/4	Sets the reference value of FILTER ND <I> (Value with which the '!' lamp on the VF does not turn on when the '!' LED is on.)
FILTER CC <I>	A/B/C/D	Sets the reference value of FILTER CC <I> (Value with which the '!' lamp on the VF does not turn on when the '!' LED is on.)
OVERRIDE <I>	OFF/ON	Sets the reference value of OVERRIDE <I> (Value with which the '!' lamp on the VF does not turn on when the '!' LED is on.)

MARKER 1 Display (Setting the MARKER)

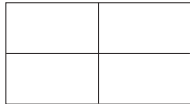
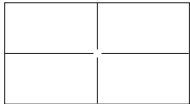
0140	MARKER 1	TOP
→MARKER	: ●	OFF
CENTER	:	OFF
CENTER MARK	:	3
SAFETY ZONE	:	OFF
SAFETY AREA	:	90%
ASPECT	:	ON
ASPECT SELECT	:	4 : 3
ASPECT MASK	:	ON
ASPECT MASK LVL	:	12
100%MARKER	:	OFF

Item	Setting	Function
MARKER	OFF/ON	Turns ON/OFF all the MARKER display functions
CENTER	OFF/ON	Turns ON/OFF the CENTER MARKER display
CENTER MARK	1/2/3/4	Selects the types of CENTER MARKER when the above CENTER MARKER display is ON*2
SAFETY ZONE	OFF/ON	Turns ON/OFF the SAFETY ZONE MARKER display
SAFETY AREA	80/90/92.5/95%	Selects the ranges of the SAFETY ZONE MARKER display(80%/90%/92.5%/95%)

Continued

*1: The selectable shutter speeds are different for each format. (Refer to "SHT ENABLE Display (Setting the shutter mode/speed that can be selected by the SHUTTER switch etc)").

*2: The CENTER MARKER is displayed as shown below.

Setting	1	2	3	4
VF screen				

Item	Setting	Function
ASPECT	OFF/ON	Turns ON/OFF the ASPECT MARKER display
ASPECT SELECT	15 : 9/14 : 9/13 : 9/4 : 3/1.85/2.35	Selects the aspect ratio
ASPECT MASK ^{*1}	OFF/ON	Turns ON/OFF the function to darken the outside of the specified aspect
ASPECT MASK LVL	0 to 15	Selects the darkness level of the outside of the specified aspect when ASPECT MASK is ON
100% MARKER	OFF/ON	Selects the MARKER display function to display the 100% (effective picture elements) area

MARKER 2 Display (Setting the MARKER-related items)

0150MARKER 2	TOP
→USER BOX	: ● OFF
USER BOX WIDTH	: 240
USER BOX HEIGHT	: 135
USER BOX H POS	: 0
USER BOX V POS	: 0
CENTER H POS	: 0
CENTER V POS	: 0
ASPECT SAFE ZONE	: OFF
ASPECT SAFE AREA	: 90%

Item	Setting	Function
USER BOX	OFF/ON	Turns ON/OFF the BOX cursor display
USER BOX WIDTH	3 to 479 ^{*2}	Sets the horizontal width of the BOX cursor
USER BOX HEIGHT	3 to 269 ^{*2}	Sets the vertical width of the BOX cursor
USER BOX H POS	−477 to 476 ^{*3}	Sets the BOX cursor center position (horizontal position)
USER BOX V POS	−267 to 266 ^{*3}	Sets the BOX cursor center position (vertical position)
CENTER H POS	−480 to 479	Sets the CENTER MARKER position (horizontal position)
CENTER V POS	−270 to 269	Sets the CENTER MARKER position (vertical position)
ASPECT SAFE ZONE	OFF/ON	Turns ON/OFF the SAFETY ZONE MARKER display with respect to the ASPECT MARKER
ASPECT SAFE AREA	80%/90%/92.5%/95%	Selects the ranges of the SAFETY ZONE MARKER display with respect to the ASPECT MARKER

*1: The ASPECT MASK item is for processing the signal to be output to the viewfinder.

ASPECT MASK is also enabled for the following cases.

- Also enabled for the LCD by setting LCD MARKER & ZEBRA on the LCD page to ON.
- Also enabled for VBS and SDI2 output by setting SUPER (MARKER) on the SUPERIMPOSE page to ON.

When R, G, or B is selected for the TEST OUT SELECT item in the menu, the masked video signal is output to the TEST OUT connector.

ASPECT MASK is ignored for displays in the viewfinder when the following are true.

- TEST OUT SELECT on the OUTPUT 1 page is set to HD-Y, and a cable is connected to the TEST OUT connector
- TEST OUT SELECT on the OUTPUT 1 page is set to HD-Y, and TEST OUT SAVE on the POWER SAVE page is set to OFF

*2: Range of this setting is different depending upon the above USER BOX H POS/V POS setting.

*3: Range of this setting is different depending upon the above USER BOX WIDTH/HEIGHT setting.

FOCUS ASSIST Display (Setting the FOCUS ASSIST function)

016	FOCUS ASSIST	TOP
→	FOCUS ASSIST IND	● OFF
	FOCUS IND POS	: BOTTM
	FOCUS AREA MARK	: OFF

Item	Setting	Function
FOCUS ASSIST IND	OFF/ON	Turns ON/OFF the FOCUS ASSIST indicator
FOCUS IND POS	BOTTM/LEFT/TOP/RIGHT	Selects the FOCUS ASSIST indicator display position
FOCUS AREA MARK	OFF/ON	Turns ON/OFF the FOCUS AREA detection range frame

GAIN SW Display (Setting GAIN)

017	GAIN SW	TOP
→	GAIN LOW	: ● 0 dB
	GAIN MID	: 6 dB
	GAIN HIGH	: 12 dB
	GAIN TURBO	: 42 dB
	TURBO SW IND	: OFF
	SHOCKLESS GAIN	: OFF

Item	Setting	Function
GAIN LOW	−6/−3/0/3/6/9/12/18/24/30/ 36/42 dB	Sets the gain value when the GAIN switch is set to the “L” position
GAIN MID	−6/−3/0/3/6/9/12/18/24/30/ 36/42 dB	Sets the gain value when the GAIN switch is set to the “M” position
GAIN HIGH	−6/−3/0/3/6/9/12/18/24/30/ 36/42 dB	Sets the gain value when the GAIN switch is set to the “H” position
GAIN TURBO	−6/−3/0/3/6/9/12/18/24/30/ 36/42 dB	Sets the gain value of the TURBO GAIN switch
TURBO SW IND	OFF/ON	Turns ON/OFF the function that disables L/M/H of the GAIN switch while the TURBO GAIN is being selected
SHOCKLESS GAIN	OFF/ON	Turns ON/OFF the shockless gain

VF SETTING display (Setting VF)

018	VF SETTING	TOP
→	ZEBRA	: ● OFF
	ZEBRA SELECT	: 1
	ZEBRA1 DET LVL	: 70%
	ZEBRA1 APT LVL	: 10%
	ZEBRA2 DET LVL	: 100%
	VF DETAIL LEVEL	: 0

Item	Setting	Function
ZEBRA	OFF/ON	Turns ON/OFF the zebra display ^{*1}
ZEBRA SELECT	1/2/BOTH	Selects the zebra pattern type
ZEBRA1 DET LVL	20% to 107%	Sets the ZEBRA1 display level (center value)
ZEBRA1 APT LVL	1% to 20%	Sets the ZEBRA1 aperture level (center value)
ZEBRA2 DET LVL	52% to 109%	Sets the ZEBRA2 display level (lower limit value)
VF DETAIL LEVEL	(-99 to 99)	Sets the VF detail function level

VF DETAIL Display (Setting the VF detail function)

019	VF DETAIL	TOP
→VF DETAIL	: ● OFF	
VF DETAIL LEVEL	: 0	
CRISP	: 0	
FREQUENCY	: 9M	
FAT MODE	: OFF	
FLICKER	: OFF	
COLOR DETAIL	: OFF	
COLOR SEL	: BLUE	
PEAK COLOR	: OFF	
CHROMA LEVEL	: 25%	

Item	Setting	Function
VF DETAIL	OFF/ON	Sets the VF detail function
VF DETAIL LEVEL	-93 to 106	Sets the VF detail function level
CRISP	-99 to 99	Adjusts the Crispening level
FREQUENCY	9M/14M/18M	Sets the center frequency of the detail signal
FAT MODE	OFF/ON	Sets the fat mode
FLICKER	OFF/ON	Sets the flicker correction function
COLOR DETAIL	OFF/ON	Sets the color detail function
COLOR SEL	YELL/RED/BLUE	Sets the color of the color detail
PEAK COLOR	OFF/ON	Sets the peak color
CHROMA LEVEL	0%/25%/50%/100%	Selects the Chroma level

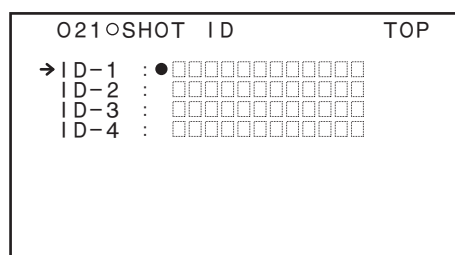
AUTO IRIS Display (Setting AUTO IRIS)

020	AUTO IRIS	TOP
→IRIS OVERRIDE	: ● OFF	
IRIS SPEED	: 0	
CLIP HIGH LIGHT	: OFF	
IRIS WINDOW	: 1	
IRIS WINDOW IND	: OFF	
IRIS VAR WIDTH	: 240	
IRIS VAR HEIGHT	: 135	
IRIS VAR H POS	: 0	
IRIS VAR V POS	: 0	

*1: When you use the viewfinder which is not equipped with the ZEBRA switch, turns the display on or off using this item. When you use viewfinder with the ZEBRA switch, the most recent operation of the ZEBRA switch and this menu operation is effective.

Item	Setting	Function
IRIS OVERRIDE	OFF/ON	Turns ON/OFF the AUTO IRIS OVERRIDE function When set to ON, the reference value of the AUTO IRIS can be changed by the MENU knob (9 steps: -1, -0.75, -0.5, -0.25, 0, +0.25, +0.5, +0.75, +1)
IRIS SPEED	(-99 to 99)	Sets the AUTO IRIS response speed. -99 (Slow) ⇔ 99 (Fast)
CLIP HIGH LIGHT	OFF/ON	Turns ON/OFF the function that limits the AUTO IRIS detection level to 100% when the video signal of higher than 100% is input
IRIS WINDOW	1/2/3/4/5/6/VAR	Selects the IRIS WINDOW (detection range) ^{*1} When VAR is selected, the iris window can be set by the IRIS VAR WIDTH/HEIGHT/H POS/V POS as described below
IRIS WINDOW IND	OFF/ON	Turns ON/OFF the function that checks the iris window with the box cursor
IRIS VAR WIDTH	20 to 479 ^{*2}	Sets width of the iris window when VAR is selected in the above IRIS WINDOW
IRIS VAR HEIGHT	20 to 269 ^{*2}	Sets height of the iris window when VAR is selected in the above IRIS WINDOW
IRIS VAR H POS	-460 to 459 ^{*3}	Sets the center in the horizontal direction of the iris window when VAR is selected in the above IRIS WINDOW
IRIS VAR V POS	-250 to 249 ^{*3}	Sets the center in the vertical direction of the iris window when VAR is selected in the above IRIS WINDOW

SHOT ID Display (Setting SHOT ID)



Item	Setting	Function
ID-1	12 characters (alphanumeric characters, symbols and spaces)	Setting SHOT ID-1
ID-2	12 characters (alphanumeric characters, symbols and spaces)	Setting SHOT ID-2
ID-3	12 characters (alphanumeric characters, symbols and spaces)	Setting SHOT ID-3
ID-4	12 characters (alphanumeric characters, symbols and spaces)	Setting SHOT ID-4

*1: The IRIS WINDOW is set as shown below.

Setting	1	2	3	4	5	6
VF screen						

Shaded (■) area : IRIS WINDOW frame

*2: Range of this setting is different depending upon the above IRIS VAR H POS/V POS setting.

*3: Range of this setting is different depending upon the above IRIS VAR WIDTH/HEIGHT setting.

SHOT DISP Display (Selecting the shot data to be superimposed on color bar)

022	SHOT DISP	TOP
→	SHOT DATE	: ● OFF
	SHOT TIME	: OFF
	SHOT MODEL NAME	: OFF
	SHOT SERIAL NO	: OFF
	SHOT ID SEL	: OFF
	SHOT 16:9 CHARA	: OFF
	SHOT BLINK CHARA	: OFF

Item	Setting	Function
SHOT DATE	OFF/ON	Turns ON/OFF whether to superimpose and record the date
SHOT TIME	OFF/ON	Turns ON/OFF whether to superimpose and record the time
SHOT MODEL NAME	OFF/ON	Turns ON/OFF whether to superimpose and record the model name of the unit
SHOT SERIAL NO	OFF/ON	Turns ON/OFF whether to superimpose and record the serial number of the unit
SHOT ID SEL	OFF/ID-1/ID-2/ID-3/ID-4	Displays the shot ID number selected in the SHOT ID page
SHOT 16:9 CHARA	OFF/ON	Turns ON/OFF whether to superimpose and record 16:9 when the aspect ratio "16:9" is selected
SHOT BLINK CHARA	OFF/ON	Turns ON/OFF whether to superimpose and record the blinking "*"

SET STATUS Display (Selecting the status check screen display)

023	SET STATUS	TOP
→	STATUS ABNORMAL	: ● ON
	STATUS SYSTEM	: ON
	STATUS FUNCTION	: ON
	STATUS AUDIO	: ON
	STATUS GPS	: ON

Item	Setting	Function
STATUS ABNORMAL	OFF/ON	Turns ON/OFF the ABNORMAL <!> screen display
STATUS SYSTEM	OFF/ON	Turns ON/OFF the SYSTEM screen display
STATUS FUNCTION	OFF/ON	Turns ON/OFF the FUNCTION screen display
STATUS AUDIO	OFF/ON	Turns ON/OFF the AUDIO STATUS screen display
STATUS GPS	OFF/ON	Turns ON/OFF the GPS INFORMATION screen display

WHITE SETTING Display (Indicating the setup status of the various function that are set by the FUNCTION display)

024	WHITE SETTING	TOP
→WHITE SW 	: ●	MEM
SHOCKLESS WHITE	:	1
ATW HOLD MEMORY	:	OFF
ATW SPEED	:	4
AWB FIXED AREA	:	OFF
FILTER WHT MEM	:	OFF

Item	Setting	Function
WHITE SWITCH 	MEM/ATW	Sets the operating mode when the WHITE BAL switch is set to the B side - MEM: Auto white balance - ATW: Auto tracking white balance
SHOCKLESS WHITE	OFF/1/2/3	Sets the transition time when the WHITE BAL switch is changed to a new setting (1 is fastest)
ATW HOLD MEMORY	OFF/ON	Sets whether or not to save the white balance adjustment value in the memory (A/B/C) that corresponds to the WHITE BAL switch position during ATW (The value cannot be saved in the PRESET layer)
ATW SPEED	1/2/3/4/5	Switches the transition speed of auto tracking white balance (ATW) (1 is slowest)
AWB FIXED AREA	OFF/ON	Executes the AWB (auto white balance) at the center of the screen
FILTER WHT MEM	OFF/ON	Sets the memory area for white balance for each position number of the FILTER knob

OFFSET WHT Display (Setting on the offset white function)

025	OFFSET WHT	TOP
→OFFSET WHITE <A>	: ●	OFF
WARM-COOL <A>	:	3200
WARM-COOL BAL<A>	:	0
OFFSET WHITE 	:	OFF
WARM-COOL 	:	3200
WARM-COOL BAL	:	0

Item	Setting	Function
OFFSET WHITE <A>	OFF/ON	Turns ON/OFF the setting to be added to the white balance of A-channel
WARM-COOL <A>	Displays reference color temperature	Sets the offset for the white balance of channel A, using the color temperature
WARM-COOL BAL <A>	(-99 to 99)	Used for the above WARM-COOL fine adjustment (A-CH)
OFFSET WHITE 	OFF/ON	Turns ON/OFF the setting to be added to the white balance of B-channel
WARM-COOL 	Displays reference color temperature	Sets the offset for the white balance of channel B, using the color temperature
WARM-COOL BAL 	(-99 to 99)	Used for the above WARM-COOL fine adjustment (B-CH)

SHT ENABLE Display (Setting the shutter mode/speed that can be selected by the SHUTTER switch etc)

026	○	SHT	ENABLE	TOP
→	SHUTTER	ECS	: ●	ON
	SHUTTER	SLS	:	OFF
	SHUTTER	1/60	:	ON
	SHUTTER	1/125	:	ON
	SHUTTER	1/250	:	ON
	SHUTTER	1/500	:	ON
	SHUTTER	1/1000	:	ON
	SHUTTER	1/2000	:	ON

FORMAT : 50i

026	○	SHT	ENABLE	TOP
→	SHUTTER	ECS	: ●	ON
	SHUTTER	SLS	:	OFF
	SHUTTER	1/100	:	ON
	SHUTTER	1/125	:	ON
	SHUTTER	1/250	:	ON
	SHUTTER	1/500	:	ON
	SHUTTER	1/1000	:	ON
	SHUTTER	1/2000	:	ON

FORMAT : 59.9i

Item	Setting	Function
SHUTTER ECS	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER SLS	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/32 ^{*1}	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/33 ^{*1}	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/40 ^{*1}	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/48 ^{*1}	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/50 ^{*1}	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/60 ^{*1}	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/96 ^{*1}	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/100 ^{*1}	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/120 ^{*1}	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/125	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/250	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/500	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/1000	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/2000	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit

*1: Displayed items are different by setting in FORMAT display.

LENS FILE Display (Operating the LENS file)

```

027◊LENS FILE      TOP
→LENS FILE SELECT:●    1
F.ID : □□□□□□□□□□□□□□□□

<LENS INFORMATION>
S.No : □□□□□□□□□□□□□□□□
L.ID : □□□□□□□□□□□□□□□□
L.MF : □□□□□□□□□□□□□□□□
  
```

Item	Setting	Function
LENS FILE SELECT	1 to 32	Selects the LENS file
F.ID	Display only	Displays the file ID of the LENS file that is selected by the above LENS FILE SELECT
S.No	Display only	Displays the serial number of the LENS*1
L.ID	Display only	Displays the LENS-specific ID
L.MF	Display only	Displays the name of the LENS manufacturer

FORMAT Display (Setting the video format)

```

028◊FORMAT      TOP
SYSTEM LINE      : 720
SYSTEM FREQUENCY: 59.9i
REC FORMAT       : HD422 50
ASPECT RATIO (SD): 4:3
AU DATA LEN (IMX): 16bit
→COUNTRY        :●NTSC (J) AREA
  
```

Item	Setting	Function
SYSTEM LINE	720/1080	Sets the format when the power is turned on next time
SYSTEM FREQUENCY*2	59.9i/29.9P/23.9P (NTSC) 50i/25P (PAL)	Sets the format when the power is turned on next time
REC FORMAT	HD422 50/HD420 HQ/HD420 SP /IMX50/IMX40/IMX30/DVCAM	Sets the recording format
ASPECT RATIO (SD)	4:3/16:9	Setting the aspect ratio
AU DATA LEN (IMX)	16bit/24bit	Setting the audio data length
COUNTRY*2	NTSC (J) AREA/NTSC AREA/PAL AREA	- NTSC(J)AREA: NTSC area (Japan) - NTSC AREA: NTSC area (for areas other than Japan) - PAL AREA: PAL area

*1: Displayed only when LENS AUTO RECALL is set to S.No.

*2: The unit must be restarted to enable changes to this setting.

SOURCE SEL Display (Setting to make the front microphone monaural or stereo)

```
029○SOURCE SEL      TOP
→FRONT MIC SELECT: STREO
REC VIDEO SOURCE: CAM
EXT VIDEO SOURCE: HDSDI
WIDE MODE (EXT) : 16:9
```

Item	Setting	Function
FRONT MIC SELECT	MONO/STREO	Selects MONO/STEREO when stereo microphone is connected
REC VIDEO SOURCE	CAM/EXT	Switches the recording target video between the video shot by the camera and the video input (SD-SDI or HD-SDI) from an external device
EXT VIDEO SOURCE	HDSDI/SDSDI	Selects input signal to be recorded by this equipment, among the input signals supplied from external equipment when EXT is selected by REC VIDEO SOURCE
WIDE MODE(EXT)	16:9/AUTO	Setting the aspect ratio

UMID SET Display (Setting the UMID)

```
030○UMID SET      TOP
→COUNTRY CODE    : □□□□
ORGANIZATION      : □□□□
USER CODE         : □□□□
TIME ZONE : 00    : +00:00
```

Item	Setting	Function
COUNTRY CODE	4 characters (alphanumeric characters)	Setting the country code
ORGANIZATION	4 characters (alphanumeric characters)	Setting the organization code
USER CODE	4 characters (alphanumeric characters)	Setting the user code
TIME ZONE	00 to 3F	Setting TIME ZONE (time difference)

CLIP TITLE Display (Setting whether to create the clip title)

When DSABL is selected in TITLE

```
031○CLIP TITLE      TOP
→TITLE              : ●DSABL
```

When ENABL is selected in TITLE

```
031○CLIP TITLE      TOP
→TITLE              : ●ENABL
SELECT PREFIX       : EXEC
CLEAR NUMERIC       : EXEC
LOAD PREFIX DATA   : EXEC
PREFIX : TITLE
NUMERIC : 00001
```

Item	Setting	Function
TITLE	DSABL/ENABL	- DSABL : Not automatically created - ENABL : Sets the clip title to be automatically created when recording
SELECT PREFIX	—	Select from maximum of 20 titles, or enter a prefix
CLEAR NUMERIC	—	Sets the start number of the title name
LOAD PREFIX DATA	—	Loads the file from the USB memory to the unit
PREFIX	TITLE/up to 10 characters	Enters a title prefix
NUMERIC	00001 to 99999	Sets the initial value of the clip title serial

FILE NAMING Display (Assigns the user-defined names to clips and clip lists)

032	FILE NAMING	TOP
→NAMING FORM	: ● FREE	
AUTO NAMING	: C x x x x	

Item	Setting	Function
NAMING FORM	C****/FREE	Assigns user-defined names to clips and clip lists ^{*1}
AUTO NAMING	C****/TITLE/PLAN	Assigns clip name on this unit, when the NAMING FORM item is set to “FREE” - C****: Assigns clip names in the default naming format - TITLE: Assigns the name that is given when the title is set to ENABL in the CLIP TITLE page, as the clip name - PLAN^{*2}: Assigns the title that is described in the readout planning Metadata, as the clip name

MEMORY REC Display (Setting the proxy data record function)

033	MEMORY REC	TOP
→MEMORY REC	: ● DSABL	

Item	Setting	Function
MEMORY REC	DSABL/ENABL	Turns ON/OFF the proxy data record function and the copy function from the disc to the USB memory

^{*1}: A user-defined name can be given to the clip list via FAM/FTP.

^{*2}: The title display on the VF DISP screen can be switched from Settings of the Disc Menu → Planning Clip Name in Clip Info. Area setting.

When ENABL is selected in MEMORY REC

```

→MEMORY REC      : ●ENABL
COPY CURRENT CLP : EXEC
COPY ALL CLIPS   : EXEC
ABORT COPY       : EXEC

DEL ALL MEM CLP  : EXEC
FORMAT MEMORY    : EXEC
  
```

Item	Setting	Function
COPY CURRENT CLP ^{*1}	Press the MENU knob to execute this menu item	Copies a proxy data clip on the disc to the USB memory
COPY ALL CLIPS ^{*1}	Press the MENU knob to execute this menu item	Copies all of the proxy data clips on the disc to the USB memory
ABORT COPY ^{*1}	Press the MENU knob to execute this menu item	Stops copying to the USB memory
DEL ALL MEM CLP ^{*1}	Press the MENU knob to execute this menu item	Deletes the saved proxy data
FORMAT MEMORY ^{*1}	Press the MENU knob to execute this menu item	Formats the USB memory

GPS SETUP Display (Setting the GPS function)

```

034○GPS SETUP      TOP
→GPS                : ● ON
TIME ZONE : 00 : +00:00
GPS DATUM   : WGS-84
  
```

Item	Setting	Function
GPS	OFF/ON	Activates the GPS function.
TIME ZONE	00h to 32h	Sets TIME ZONE (time difference).
GPS DATUM	WGS-84 (Display only)	Displays the geodetic system of GPS.

*1: Executable only when ETHERNET/USB is set to ENABL.

4-5. PAINT Menu

Note

When the range of setting is surrounded by parenthesis () in the setting column, the setup value is the relative value. The range of setting in parenthesis () can be different from what shown in the manual depending on the setting in the layer lower than this menu.

4-5-1. Description of PAINT Menu

SW STATUS Display (Turns ON/OFF the PAINT related functions)

P01	SW STATUS	TOP
→GAMMA	: ●	ON
BLACK GAMMA	:	OFF
MATRIX	:	OFF
KNEE	:	ON
WHITE CLIP	:	ON
DETAIL	:	ON
APERTURE	:	ON
FLARE	:	ON
TEST SAW	:	OFF

Item	Setting	Function
GAMMA	OFF/ON	Turns ON/OFF the gamma correction function
BLACK GAMMA	OFF/ON	Turns ON/OFF the black gamma correction function
MATRIX	OFF/ON	Turns ON/OFF all of the matrix correction functions
KNEE	OFF/ON	Turns ON/OFF the knee correction function
WHITE CLIP	OFF/ON	Turns ON/OFF the white clip correction function
DETAIL	OFF/ON	Turns ON/OFF the function that adds the detail signal to the video signal to improve resolution power
APERTURE	OFF/ON	Turns ON/OFF the aperture correction function
FLARE	OFF/ON	Turns ON/OFF the flare correction function
TEST SAW	OFF/ON	Turns ON/OFF the test signal correction function

WHITE Display (Setting color temperature at WHITE A/B)

P02	WHITE	TOP
→COLOR TEMP	<A>: ●	3200
C TEMP BAL	<A>:	0
R GAIN	<A>:	0
B GAIN	<A>:	0
COLOR TEMP	:	3200
C TEMP BAL	:	0
R GAIN	:	0
B GAIN	:	0

Item	Setting	Function
COLOR TEMP <A>	Displays the color temperature (Guide-line)	Sets the value that is close to the color temperature of your preference (WHITE A) (The displayed value is a guideline) Tip The R GAIN and B GAIN values also change accordingly at the same time When data of the color temperature display is more than 100000K, ***** appears
C TEMP BAL <A>	(-99 to 99)	Uses this item for fine adjustment when the optimum color cannot be obtained by the above COLOR TEMP <A ch> Tip The R GAIN and B GAIN values also change accordingly at the same time
R GAIN <A>	(-99 to 99)	Uses this item when you want to adjust the color temperature by changing the R GAIN <A ch>
B GAIN <A>	(-99 to 99)	Uses this item when you want to adjust the color temperature by changing the B GAIN <A ch>
COLOR TEMP 	Displays the color temperature (Guide-line)	Sets the value that is close to the color temperature of your preference <B ch> (The displayed value is a guideline) Tip The R GAIN and B GAIN values also change accordingly at the same time When data of the color temperature display is more than 100000K, ***** appears
C TEMP BAL 	(-99 to 99)	Uses this item for fine adjustment when the optimum color cannot be obtained by the above COLOR TEMP <B ch> Tip The R GAIN and B GAIN values also change accordingly at the same time
R GAIN 	(-99 to 99)	Uses this item when you want to adjust the color temperature by changing the R GAIN <B ch>
B GAIN 	(-99 to 99)	Uses this item when you want to adjust the color temperature by changing the B GAIN <B ch>

BLACK/FLARE Display (Adjusting black/flare)

P03	BLACK/FLARE	TOP
→MASTER BLACK	:	● 0
R BLACK	:	0
B BLACK	:	0
MASTER FLARE	:	0
R FLARE	:	0
G FLARE	:	0
B FLARE	:	0
FLARE	:	ON
TEST OUT SELECT	:	VBS

Item	Setting	Function
MASTER BLACK	(-99 to 99)	Adjusts the master black level (All of the R, G and B black levels are adjusted)
R BLACK	(-99 to 99)	Adjusts the R black level
B BLACK	(-99 to 99)	Adjusts the B black level
MASTER FLARE	(-99 to 99)	Adjusts the master flare compensation level (All of the R, G and B flare compensation levels are adjusted)
R FLARE	(-99 to 99)	Adjusts the R flare compensation level
G FLARE	(-99 to 99)	Adjusts the G flare compensation level
B FLARE	(-99 to 99)	Adjusts the B flare compensation level

Continued

Item	Setting	Function
FLARE	OFF/ON	Turns ON/OFF the flare compensation function
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal that is output from the TEST OUT connector

GAMMA Display (Adjusting gamma)

P04◯GAMMA	TOP
→GAMMA	: ● ON
STEP GAMMA	: 0.45
MASTER GAMMA	: 0
R GAMMA	: 0
G GAMMA	: 0
B GAMMA	: 0
TEST OUT SELECT	: VBS
GAMMA TABLE	: STD
GAM TABLE (STD)	: 5
ITU-R709	

Item	Setting	Function
GAMMA	OFF/ON	Turns ON/OFF the gamma correction function
STEP GAMMA	0.35 to 0.90 (0.05 step)	Sets the master gamma correction curve for each step
MASTER GAMMA	(-99 to 99)	Adjusts the master gamma correction curve
R GAMMA	(-99 to 99)	Adjusts the R gamma correction curve
G GAMMA	(-99 to 99)	Adjusts the G gamma correction curve
B GAMMA	(-99 to 99)	Adjusts the B gamma correction curve
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal that is output from the TEST OUT connector
GAMMA TABLE	STD/HG/USER	Selects the gamma type • STD: Standard gamma • HG: Hyper gamma • USER: User gamma
GAM TABLE (STD)	1 to 6	Selects the standard gamma type • 1: Corresponds to SD camcorder • 2: x 4.5 gain • 3: x 3.5 gain • 4: Corresponds to SMPTE-240M • 5: Corresponds to ITU-R709 • 6: x 5.0 gain

When HG is selected in GAMMA TABLE

GAMMA TABLE	: HG
GAM TABLE (HG)	: 4
HG4609	

Item	Setting	Function
GAM TABLE (HG)	1 to 4	Selects the hyper gamma type • 1: 325% → 100% • 2: 460% → 100% • 3: 325% → 109% • 4: 460% → 109%

When USER is selected in GAMMA TABLE

GAMMA TABLE	: USER
GAM TABLE (USER)	: 1
ITU-R709	

Item	Setting	Function
GAM TABLE (USER)	1 to 5	Selects USER GAMMA (USER GAMMA can be loaded from the USB memory by using the USER GAMMA page in the FILE menu)

BLACK GAMMA Display (Adjusting black gamma)

P05	BLACK GAMMA	TOP
→	BLACK GAMMA	: ● OFF
	BLACK GAM RANGE	: H. MID
	BLACK GAM LEVEL	: 0
	TEST OUT SELECT	: VBS

Item	Setting	Function
BLACK GAMMA	OFF/ON	Turns ON/OFF the black gamma correction function
BLACK GAM RANGE	LOW/L.MID/ H.MID	Sets the range in which the black gamma correction is effective LOW: 0 to 3.6 % L.MID: 0 to 7.2 % H.MID: 0 to 14.4 %
BLACK GAM LEVEL	(-99 to 99)	Adjusts the black gamma correction curve (All of the R, G and B black gamma correction curves are adjusted)
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal that is output from the TEST OUT connector

KNEE 1 Display (Adjusting-1 knee)

P06	KNEE 1	TOP
→	KNEE	: ● ON
	KNEE POINT (M)	: 95.0
	KNEE SLOPE (M)	: 0
	KNEE SATURATION	: ON
	KNEE SAT LEVEL	: 0
	WHITE CLIP	: ON
	WHITE CLIP LEVEL	: 108.0

Item	Setting	Function
KNEE	OFF/ON	Turns ON/OFF the knee correction function
KNEE POINT (M)	50.0 to 109.0 (0.1 step)	Adjusts the master knee point level during the manual knee adjustment
KNEE SLOPE (M)	(-99 to 99)	Adjusts the master knee slope level during the manual knee adjustment
KNEE SATURATION	OFF/ON	Turns ON/OFF the knee saturation function
KNEE SAT LEVEL	(-99 to 99)	Adjusts the knee saturation level
WHITE CLIP	OFF/ON	Turns ON/OFF the white clip function (used during the video signal adjustment) Note The video level that is higher than 109% is not output even if this setting is set to OFF.

Continued

Item	Setting	Function
WHITE CLIP LEVEL	90.0 to 109.0 *1 (0.1 step)	Set the master white clip level

KNEE 2 Display (Adjusting-2 knee)

P07○KNEE 2	TOP
→KNEE SATURATION : ●	ON
KNEE POINT (R) :	14.0
KNEE SLOPE (R) :	0
KNEE POINT (G) :	14.0
KNEE SLOPE (G) :	0
KNEE POINT (B) :	14.0
KNEE SLOPE (B) :	0

Item	Setting	Function
KNEE SATURATION	OFF/ON	Turns ON/OFF the knee saturation function
KNEE POINT (R)	–45.0 to 14.0 (0.1 step)	Adjusts the R knee point level during the manual knee adjustment
KNEE SLOPE (R)	(–99 to 99)	Adjusts the R knee slope level during the manual knee adjustment
KNEE POINT (G)	–45.0 to 14.0 (0.1 step)	Adjusts the G knee point level during the manual knee adjustment
KNEE SLOPE (G)	(–99 to 99)	Adjusts the G knee slope level during the manual knee adjustment
KNEE POINT (B)	–45.0 to 14.0 (0.1 step)	Adjusts the B knee point level during the manual knee adjustment
KNEE SLOPE (B)	(–99 to 99)	Adjusts the B knee slope level during the manual knee adjustment

DETAIL 1 Display (Adjusting-1 DETAIL)

P08○DETAIL 1	TOP
→DETAIL : ●	ON
APERTURE :	ON
DETAIL LEVEL :	0
APERTURE LEVEL :	0
DTL H/V RATIO :	0
CRISPENING :	0
LEVEL DEPEND :	ON
LEVEL DEPEND LVL :	0
DETAIL FREQUENCY :	0

Item	Setting	Function
DETAIL	OFF/ON	Turns ON/OFF the detail correction function
APERTURE	OFF/ON	Turns ON/OFF the aperture correction function
DETAIL LEVEL	(–99 to 99)	Sets the overall detail signal level
APERTURE LEVEL	(–99 to 99)	Sets the aperture correction level
DTL H/V RATIO	(–99 to 99)	Sets the V. detail signal level only
CRISPENING	(–99 to 99)	Sets the range of video signal amplitude to which the detail signal is crispening

Continued

*1: Default setting value is 108.0% when COUNTRY is set to "NTSC (J) AREA" or "NTSC AREA", 105.0% when COUNTRY is set to "PAL AREA".

Item	Setting	Function
LEVEL DEPEND	OFF/ON	Turns ON/OFF the level depend function (This function decreases the amount of detail signal when the video signal amplitude is small)
LEVEL DEPEND LVL	(-99 to 99)	Sets the range of video signal amplitude that is suppressed by the level depend
DETAIL FREQUENCY	(-99 to 99)	Sets the frequency (thickness) of the H. detail signal

DETAIL 2 Display (Adjusting-2 DETAIL)

P09◊DETAIL 2	TOP
→KNEE APERTURE	: ● OFF
KNEE APT LVL	: 0
DETAIL LIMIT	: 0
DTL WHT LMT	: 0
DTL BLK LMT	: 0
DTL V-BLK LMT	: 0
V DTL CREATION	: R+G
H/V CONTROL MODE	: V

Item	Setting	Function
KNEE APERTURE	OFF/ON	Turns ON/OFF the knee aperture function (This function controls the amount of the detail signal that is added to the highlight signal higher than the knee point)
KNEE APT LVL	(-99 to 99)	Adjusts the amount of the detail signal that is added to the highlight signal higher than the knee point
DETAIL LIMIT	(-99 to 99)	Sets the both detail black and white limiters
DTL WHT LMT	(-99 to 99)	Limits the white peak of the detail signal
DTL BLK LMT	(-99 to 99)	Limits the black peak of the detail signal
DTL V-BLK LMT	(-99 to 99)	Limits the black peak of the V. detail signal
V DTL CREATION	NAM/G/R+G/Y	Selects the source signal of the V. detail signal
H/V CONTROL MODE	H/V /V	Selects an operation mode of DETAIL H/V RATIO on the DETAIL 1 page - H/V: Increase/decrease volume for H and V moves in the opposite manner - V: Controls V DTL

SD DETAIL Display (Adjusting DETAIL of SD)

P10◊SD DETAIL	TOP
→SD DETAIL	: ● OFF
SD DETAIL LEVEL	: 0
SD CRISPENING	: 0
SD DTL WHT LIMIT	: 0
SD DTL BLK LIMIT	: 0
SD LEVEL DEPEND	: ON
SD LV DEPEND LVL	: 0
SD DTL FREQUENCY	: 0
SD DTL H/V RATIO	: 0
SD CROSS COLOR	: 0

Item	Setting	Function
SD DETAIL	OFF/ON	Turns ON/OFF the SD detail correction function
SD DETAIL LEVEL	(-99 to 99)	Sets the overall SD detail signal level

Continued

Item	Setting	Function
SD CRISPENING	(-99 to 99)	Sets the SD crispening level
SD DTL WHT LIMIT	(-99 to 99)	Limits the white peak of the SD detail signal
SD DTL BLK LIMIT	(-99 to 99)	Limits the black peak of the SD detail signal
SD LEVEL DEPEND	OFF/ON	Turns ON/OFF the level depend function (This function decreases the amount of detail signal when the video signal amplitude is small)
SD LV DEPEND LVL	(-99 to 99)	Sets the range of video signal amplitude that is suppressed by the level depend
SD DTL FREQUENCY	(-99 to 99)	Sets the frequency (thickness) of the H. SD detail signal
SD DTL H/V RATIO	(-99 to 99)	Sets the SD V. detail signal level only
SD CROSS COLOR	(-99 to 99)	Sets the SD cross-color reduction level (When NTSC(J)AREA or NTSC AREA is selected on the FORMAT)

SKIN DETAIL Display (Controlling DETAIL of specific color such as skin tone)

P11	SKIN DETAIL	TOP
→SKIN DETAIL ALL	: ●	OFF
SKIN DETECT	:	EXEC
SKIN AREA IND	:	OFF
SKIN DTL SELECT	:	1
SKIN DETAIL	:	ON
SKIN DETAIL LVL	:	0
SKIN DTL SAT	:	0
SKIN DTL HUE	:	0
SKIN DTL WIDTH	:	39

Item	Setting	Function
SKIN DETAIL ALL	OFF/ON	Turns ON/OFF the skin detail function
SKIN DETECT	Moves to color detection page	Automatic color detection function Move the cursor to the desired object color and press the MENU knob. Then the SKIN DTL SAT. and the SKIN DTL HUE will be set automatically
SKIN AREA IND	OFF/ON	Turns ON/OFF the zebra display to the target area
SKIN DTL SELECT	1/2/3	Selects the skin detail BANK (When BANK is switched, the lower 5 lines of display are switched at the same time)
SKIN DETAIL	OFF/ON	Turns ON/OFF skin detail CH1/2/3 individually The ON/OFF settings can be set for each selection of SKIN DTL SELECT above (three settings)
SKIN DETAIL LVL	(-99 to 99)	Sets the skin detail signal level (Increasing this value increases the skin detail signal amplitude) This item can be set to each BANK (3 different settings) of the above SKIN DTL SELECT
SKIN DTL SAT	(-99 to 99)	Sets the range of (saturation) of chroma signal in which the skin detail signal is effective This item can be set to each BANK (3 different settings) of the above SKIN DTL SELECT
SKIN DTL HUE	0 to 359	Sets the center phase of the chroma phase (HUE) in which the skin detail functions (Unit : Degrees) This item can be set to each BANK (3 different settings) of the above SKIN DTL SELECT
SKIN DTL WIDTH	0 to 359	Sets the width of the chroma phase (HUE) in which the skin detail functions (Unit : Degrees) This item can be set to each BANK (3 different settings) of the above SKIN DTL SELECT

MTX LINEAR Display (Setting user-set matrix)

P12	MTX LINEAR	TOP
→MATRIX	:	● OFF
MATRIX (USER)	:	OFF
MATRIX (PRESET)	:	ON
MATRIX (PRST) SEL	:	2
MATRIX (USER) R-G	:	0
MATRIX (USER) R-B	:	0
MATRIX (USER) G-R	:	0
MATRIX (USER) G-B	:	0
MATRIX (USER) B-R	:	0
MATRIX (USER) B-G	:	0

Item	Setting	Function
MATRIX	OFF/ON	Turns ON/OFF the linear matrix, user-set matrix and preset matrix correction functions
MATRIX (USER)	OFF/ON	Turns ON/OFF the user-set linear matrix correction function
MATRIX (PRESET)	OFF/ON	Turns ON/OFF the preset matrix correction function
MATRIX (PRST) SEL	1/2/3/4/5/6	Selects the preset matrix 1: equivalent to SMPTE 240M, 2: equivalent to ITU-709, 3: equivalent to SMPTE WIDE, 4: equivalent to NTSC, 5: equivalent to EBU, 6: equivalent to ITU-601
MATRIX (USER) R-G	(-99 to 99)	Sets the R-G user-set matrix coefficients
MATRIX (USER) R-B	(-99 to 99)	Sets the R-B user-set matrix coefficients
MATRIX (USER) G-R	(-99 to 99)	Sets the G-R user-set matrix coefficients
MATRIX (USER) G-B	(-99 to 99)	Sets the G-B user-set matrix coefficients
MATRIX (USER) B-R	(-99 to 99)	Sets the B-R user-set matrix coefficients
MATRIX (USER) B-G	(-99 to 99)	Sets the B-G user-set matrix coefficients

MTX MULTI Display (Setting multi matrix)

P13	MTX MULTI	TOP
→MATRIX	:	● OFF
ADAPTIVE MATRIX	:	OFF
ADAPTIVE MTX LVL	:	0
MATRIX (MULTI)	:	OFF
MATRIX AREA IND	:	OFF
MATRIX COLOR DET	:	EXEC
MTX (MULTI) PRESET	:	EXEC
MTX (MULTI) AXIS	:	B
MTX (MULTI) HUE	:	0
MTX (MULTI) SAT	:	0

Item	Setting	Function
MATRIX	OFF/ON	Turns ON/OFF the linear matrix, multi matrix and preset matrix correction functions
ADAPTIVE MATRIX	OFF/ON	Turns ON/OFF the adaptive matrix function
ADAPTIVE MTX LVL	0 to 7	Turns ON/OFF the adaptive matrix level function
MATRIX (MULTI)	OFF/ON	Turns ON/OFF the multi matrix correction function
MATRIX AREA IND	OFF/ON	Turns ON/OFF the function that shows the zebra pattern indicating the detecting region of the multi matrix correction
MATRIX COLOR DET	Press the MENU knob to execute this menu item	Automatic color detection function Move the cursor to the desired object color and press the MENU knob Then the MTX (MULTI) AXIS will be set automatically

Continued

Item	Setting	Function
MTX (MULTI) PRESET	Press the MENU knob to execute this menu item	Return MTX (MULTI) HUE and MTX (MULTI) SAT values to preset values for each of the 16 axes
MTX (MULTI) AXIS	B/B+/MG-/MG/MG+/R/R+/YL-/YL/YL+/G-/G/G+/CY/CY+/B-	Sets the chroma phase for the sixteen axes that are the target of the multi matrix correction function
MTX (MULTI) HUE	(-99 to 99)	Adjusts the chroma phase (HUE) of the multi matrix correction (every sixteen axis)
MTX (MULTI) SAT	(-99 to 99)	Adjusts the saturation (SAT) of the multi matrix correction (every sixteen axis)

V MODULATION Display (Adjusting Temporary WHITE V SAW SHADING for LENS)

P14○V MODULATION	TOP
→V MOD	: ● ON
MASTER VMOD	: 0
R VMOD	: 0
G VMOD	: 0
B VMOD	: 0
TEST OUT SELECT	: VBS

Item	Setting	Function
V MOD	OFF/ON	Turns ON/OFF the V. modulation function
MASTER VMOD	(-99 to 99)	Adjusts amount of the master V. modulation correction (All of the R, G and B V. modulation corrections are controlled)
R VMOD	(-99 to 99)	Adjusts amount of the R V. modulation correction
G VMOD	(-99 to 99)	Adjusts amount of the G V. modulation correction
B VMOD	(-99 to 99)	Adjusts amount of the B V. modulation correction
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal that is output from the TEST OUT connector

SATURATION Display (Setting the saturation)

P15○SATURATION	TOP
→LOW KEY SAT	: ● OFF
L KEY SAT LEVEL	: 0
L KEY SAT RANGE	: H. MID

Item	Setting	Function
LOW KEY SAT	OFF/ON	Turns ON/OFF the low key saturation function
L KEY SAT LEVEL	(-99 to 99)	Sets the saturation level of low luminance part

Continued

Item	Setting	Function
L KEY SAT RANGE	LOW/L.MID/H.MID/ HIGH	Sets the range of video signal in which the low key saturation correction is effective • LOW: 0 to 3.6 % • L.MID: 0 to 7.2 % • H.MID: 0 to 14.4 % • HIGH: 0 to 28.8 %

SATURATION MODE Display (Setting the saturation mode function)

P16	○ SATURATION MODE TOP
→	SATURATION MODE : ● L KEY
	KNEE SATURATION : ---
	BLACK GAMMA : ---
	LOW KEY SAT : ---

Item	Setting	Function
SATURATION MODE	KNEE/L KEY	Switches saturation function modes. (High brightness-side processing (KNEE SATURATION) or low brightness-side processing (BLACK GAMMA/LOW KEY SAT) is selectable.)
KNEE SATURATION	OFF/ON	Turns ON/OFF the knee saturation function when SATURATION MODE is set to KNEE.
BLACK GAMMA	OFF/ON	Turns ON/OFF black gamma correction when SATURATION MODE is set to L KEY.
LOW KEY SAT	OFF/ON	Turns ON/OFF the LOW KEY SATURATION function when SATURATION MODE is set to L KEY.

NOISE SUPPRESS Display (Setting the noise suppresser function)

P17	○ NOISE SUPPRESS TOP
→	NOISE SUPPRESS : ● ON
	NOISE SUP LEVEL : LOW

Item	Setting	Function
NOISE SUPPRESS	ON/OFF	Turns ON/OFF the noise suppresser function
NOISE SUP LEVEL	OFF/LOW/HIGH	Selects the noise suppressor function level.

SCENE FILE Display (Operating the SCENE file)

P18 SCENE FILE		TOP
→■1	: STANDARD	
□2	: STANDARD	
□3	: STANDARD	
□4	: STANDARD	
□5	: STANDARD	
□	STANDARD	
SCENE RECALL	:	EXEC
SCENE STORE	:	EXEC
F.ID :	□□□□□□□□□□□□□□□□	

Item	Setting	Function
1 to 5	STANDARD	Recalls the scene file saved in the memory of the camcorder*1
STANDARD	—	Selects whether to clear all current detail-adjusted settings and switch settings and returns the settings to the standard settings saved in the reference file
SCENE RECALL	—	Calls the SCENE file from the main unit or USB memory
SCENE STORE	—	Save the SCENE file to the main unit or USB memory
F.ID	16 characters (alphanumeric characters, symbols and spaces)	Sets the file ID (When the SCENE file is stored, the file ID is saved)

*1: Refer to "4-7. FILE Menu" for the file selection display.

4-6. MAINTENANCE Menu

Note

When the range of setting is surrounded by parenthesis () in the setting column, the setup value is the relative value.
The range of setting in parenthesis () can be different from what shown in the manual depending on the setting in the layer lower than this menu.

4-6-1. Description of MAINTENANCE Menu

WHITE SHADING Display (Adjusting white shading)

M01	WHITE SHADING	TOP
→WHT SHAD CH SEL	: ●	R
TEST OUT SELECT	:	VBS
R WHT H SAW	:	0
R WHT H PARA	:	0
R WHT V SAW	:	0
R WHT V PARA	:	0
WHITE SAW/PARA	:	ON

Item	Setting	Function
WHT SHAD CH SEL	R/G/B/TEST *1	Selects the channel of shading correction
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal that is output from the TEST OUT connector
R WHT H SAW (R/G/B)	(-99 to 99)	Adjusts the H SAW white shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL Note It cannot be changed during the service mode.
R WHT H PARA (R/G/B)	(-99 to 99)	Adjusts the H PARA white shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL Note It cannot be changed during the service mode.
R WHT V SAW (R/G/B)	(-99 to 99)	Adjusts the V SAW white shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL Note It cannot be changed during the service mode.
R WHT V PARA (R/G/B)	(-99 to 99)	Adjusts the V PARA white shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL Note It cannot be changed during the service mode.
WHITE SAW/PARA	OFF/ON	Turns ON/OFF the white shading SAW/PARA compensation

*1: When TEST is set, the channels switch in relation with TEST OUT SELECT.

BLACK SHADING Display (Adjusting black shading)

M02	BLACK SHADING	TOP
→BLK SHAD CH SEL	: ●	R
TEST OUT SELECT	:	VBS
R BLK H SAW	:	0
R BLK H PARA	:	0
R BLK V SAW	:	0
R BLK V PARA	:	0
BLACK SAW/PARA	:	ON
MASTER BLACK	:	0
MASTER GAIN (TMP)	:	0 dB

Item	Setting	Function
BLK SHAD CH SEL	R/G/B/TEST *1	Selects the channel of black shading correction
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal that is output from the TEST OUT connector
R BLK H SAW (R/G/B)	(-99 to 99)	Adjusts the H SAW black shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL
R BLK H PARA (R/G/B)	(-99 to 99)	Adjusts the H PARA black shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL
R BLK V SAW (R/G/B)	(-99 to 99)	Adjusts the V SAW black shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL
R BLK V PARA (R/G/B)	(-99 to 99)	Adjusts the V PARA black shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL
BLACK SAW/PARA	OFF/ON	Turns ON/OFF the black shading SAW/PARA compensation
MASTER BLACK	(-99 to 99)	Adjusts the master black level (All of the R, G and B signal black levels are adjusted)
MASTER GAIN (TMP)	-6/-3/0/3/6/9/12/18/24/30/36/42 dB	Sets the temporary master gain

LEVEL ADJUST Display (Adjusting output signal level)

M03	LEVEL ADJUST	TOP
→VBS VIDEO LEVEL	: ●	0
HD-Y LEVEL	:	0
TEST OUT SELECT	:	VBS

Item	Setting	Function
VBS VIDEO LEVEL	(-99 to 99)	Adjusts the composite signal video level
HD-Y LEVEL	(-99 to 99)	Adjusts the Y level of the HD component signal

Continued

*1: When TEST is set, the channels switch in relation with TEST OUT SELECT.

Item	Setting	Function
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal that is output from the TEST OUT connector

BATTERY 1 Display (Setting-1 the battery-related items)

M04○BATTERY 1	TOP
→ Info BEFORE END	: ● 5%
Info END	: 0%
Sony BEFORE END	: 11.5V
Sony END	: 11.0V
Other BEFORE END	: 11.8V
Other END	: 11.0V
DC IN BEFORE END	: 11.8V
DC IN END	: 11.0V
DETECTED BATTERY	: Info

Item	Setting	Function
Info BEFORE END	5% to 100% (5% steps)	Used when a BP-GL65/GL95 Battery Pack is used. Sets the remaining power (% value) of the battery at which the BEFORE END warning should be issued *1
Info END	0%/1%/2%/3%/4%/5%	Used when a BP-GL65/GL95 Battery Pack is used. Sets the remaining power (% value) of the battery at which the END warning should be issued*2
Sony BEFORE END	11.5 to 17.0 V (0.1V steps)	Used when a BP-L60S/L80S Battery Pack is used. Sets the voltage level of the battery at which the BEFORE END warning should be issued *1
Sony END	11.0 to 11.5 V (0.1V steps)	Used when a BP-L60S/L80S Battery Pack is used. Sets the voltage level of the battery at which the END warning should be issued *2
Other BEFORE END	11.5 to 17.0 V (0.1V steps)	Used when a battery pack other than a Sony battery pack is used. Sets the voltage level of the battery at which the BEFORE END warning should be issued
Other END	11.0 to 14.0 V (0.1V steps)	Used when a battery pack other than a Sony battery pack is used. Sets the voltage level of the battery at which the END warning should be issued
DC IN BEFORE END	11.5 to 17.0 V (0.1V steps)	Used when an external power source is connected to the DC IN connector Sets the voltage level of the connected external power source at which the BEFORE END warning should be issued
DC IN END	11.0 to 14.0 V (0.1V steps)	Used when an external power source is connected to the DC IN connector Sets the voltage level of the connected external power source at which the END warning should be issued
DETECTED BATTERY	Info/Sony/Other/DC IN	Displays the type of automatically detected battery

*1: The setting of this item is overridden by the setting of Other BEFORE END when TYPE DETECTION in the BATTERY 2 page is set to "OTHER".

*2: The setting of this item is overridden by the setting of Other END when TYPE DETECTION in the BATTERY 2 page is set to "OTHER".

BATTERY 2 Display (Setting-2 the battery-related items)

M05	BATTERY 2	TOP
→TYPE DETECTION	: ● AUTO	
<Other Battery Scale>		
SEGMENT NO. 7	: 17.0V	
SEGMENT NO. 6	: 16.0V	
SEGMENT NO. 5	: 15.0V	
SEGMENT NO. 4	: 14.0V	
SEGMENT NO. 3	: 13.0V	
SEGMENT NO. 2	: 12.0V	
SEGMENT NO. 1	: 11.0V	

Item	Setting	Function
TYPE DETECTION *1	AUTO/OTHER	AUTO: Automatically detects the type of the battery OTHER: Always judges the battery to be of the "OTHER" type regardless of the actual battery type
SEGMENT NO.7 to NO.1	11.0 to 17.0 V (0.1 V steps)	When the battery type judgment is "OTHER", sets the voltage level below which the battery status indicator segment No.7 should turn off

AUDIO-1 Display (Setting-1 on audio)

M06	AUDIO-1	TOP
→FRONT MIC SELECT	: ● STEREO	
AUDIO CH3/4 MODE	: SW	
REAR XLR AUTO	: OFF	
FRONT MIC REF	: -50 dB	
REAR MIC REF	: -60 dB	
MIN ALARM VOL	: OFF	
SP ATT LEVEL	: OFF	
HEADPHONE OUT	: MONO	

Item	Setting	Function
FRONT MIC SELECT	MONO/STEREO	Selects whether to make the front microphone monaural or stereo
AUDIO CH3/4 MODE	CH1/2/SW	Selects the input signal to be recorded on CH3/4 - Same signals as CH1 and CH2 - SW: The input signals that are selected by the AUDIO IN CH3, CH4 switches on the inside panel
REAR XLR AUTO	OFF/ON	Turns ON/OFF the function that automatically detects whether the connector is connected to the AUDIO IN connector at the rear
FRONT MIC REF	-60/-50/-40 dB	Sets the reference input level of the front microphone
REAR MIC REF	-60/-50/-40 dB	Select the reference input level when AUDIO IN CH1 of the rear is set to MIC
MIN ALARM VOL	OFF/SET	Volume of the monitor speaker alarm tone when it is turned all the way down - OFF: Almost inaudible - SET: Faintly audible
SP ATT LEVEL	OFF/3/6/9 dB	Lowers the volume of the monitor speaker. Has no effect on earphone volume
HEADPHONE OUT	STEREO/MONO	Selects whether to make the rear earphone monaural or stereo

*1: When TYPE DETECTION in the BATTERY 2 page is set to "AUTO", any batteries other than Sony BP series batteries and Anton Bauer intelligent battery systems are classified as "Others".

AUDIO-2 Display (Setting-2 on audio)

M07	○AUDIO-2	TOP
→AU REF LEVEL	:	● -20 dB
AU REF OUT	:	0 dB
AU CH12 AGC MODE	:	MONO
AU CH34 AGC MODE	:	MONO
AU AGC SPEC	:	-6 dB
AU LIMITER MODE	:	OFF
AU OUT LIMITER	:	ON

Item	Setting	Function
AU REF LEVEL	-20 dB/-18 dB/-16 dB/-12 dB/EBUL	Sets the output level of the 1 kHz test signal
AU REF OUT	0 dB/+4 dB/-3 dB/EBUL	Sets the output level with respect to the REF. level
AU CH12 AGC MODE	MONO/STREO	Selects whether to perform the auto adjustment on the input level of the analog audio signals to be recorded on CH1/CH2 separately for each channel, or in the stereo mode
AU CH34 AGC MODE	MONO/STREO/OFF	Selects whether to perform the auto adjustment on the input level of the analog audio signals to be recorded on CH3/CH4 separately for each channel, or in the stereo mode, or to turn it off
AU AGC SPEC	-6 dB/-9 dB/-12 dB/-15 dB/-17 dB	Sets the AGC characteristics (saturation level)
AU LIMITER MODE	OFF/-6 dB/-9 dB/-12 dB/-15 dB/-17 dB	Sets the limiter characteristics (saturation level) for large input signals during the manual adjustment of the audio input level
AU OUT LIMITER	OFF/ON	Turns ON/OFF the audio output limiter

AUDIO-3 Display (Setting-3 on audio)

M08	○AUDIO-3	TOP
→AU SG (1 KHz)	:	● OFF
MIC CH1 LEVEL	:	FRONT
MIC CH2 LEVEL	:	FRONT
REAR1/WRR LEVEL	:	SIDE1
REAR2/WRR LEVEL	:	SIDE2
AUDIO CH3 LEVEL	:	FIX
AUDIO CH4 LEVEL	:	FIX

Item	Setting	Function
AU SG (1 KHz)	ON/OFF/AUTO	Sets whether to output the 1 kHz test tone during the COLOR BAR mode or not - ON: 1 kHz test tone is output during the COLOR BAR mode - OFF: 1 kHz test tone is not output during the COLOR BAR mode - AUTO: 1 kHz test tone is output only when the CH1 AUDIO SELECT switch on the inside panel is in the AUTO position
MIC CH1 LEVEL	SIDE1/FRONT/F+S1	Selects any of these knobs to adjust the front microphone L-CH - SIDE1: Adjusts it with the AUDIO LEVEL knob (left side) on the side panel - FRONT: Adjusts it with the MIC LEVEL knob on the front panel - F + S1: It can be adjusted by either the AUDIO LEVEL knob (left side) or the MIC LEVEL knob (Two knobs are interlocked each other)

Continued

Item	Setting	Function
MIC CH2 LEVEL	SIDE2/FRONT/F+S2	Selects any of these knobs to adjust the front microphone R-CH • SIDE2: Adjusts it with the AUDIO LEVEL knob (right side) on the side panel • FRONT: Adjusts it with the MIC LEVEL knob on the front panel • F + S2: It can be adjusted by either the AUDIO LEVEL knob (right side) or the MIC LEVEL knob (Two knobs are interlocked each other)
REAR1/WRR LEVEL	SIDE1/FRONT/F+S1	Selects any of these knobs to adjust the equipment that is connected to the wireless microphone and what is connected to the AUDIO IN CH1 connector on the rear panel • SIDE1: Adjusts it with the AUDIO LEVEL knob (left side) on the side panel • FRONT: Adjusts it with the MIC LEVEL knob on the front panel • F + S1: It can be adjusted by either the AUDIO LEVEL knob (left side) or the MIC LEVEL knob (Two knobs are interlocked each other)
REAR2/WRR LEVEL	SIDE2/FRONT/F+S2	Selects any of these knobs to adjust the equipment that is connected to the wireless microphone and what is connected to the AUDIO IN CH2 connector on the rear panel • SIDE2: Adjusts it with the AUDIO LEVEL knob (right side) on the side panel • FRONT: Adjusts it with the MIC LEVEL knob on the front panel • F + S2: It can be adjusted by either the AUDIO LEVEL knob (right side) or the MIC LEVEL knob (Two knobs are interlocked each other)
AUDIO CH3 LEVEL	FIX/FRONT	Selects the audio level recorded on channel 3 when AU CH34 AGC MODE is set to OFF • FIX: Fixed • FRONT: Level as adjusted by the MIC LEVEL knob on the front panel of the camcorder
AUDIO CH4 LEVEL	FIX/FRONT	Selects the audio level recorded on channel 4 when AU CH34 AGC MODE is set to OFF • FIX: Fixed • FRONT: Level as adjusted by the MIC LEVEL knob on the front panel of the camcorder

WRR SETTING Display (Setting on Wireless)

M09	WRR SETTING	TOP
→WRR	VALID CH SEL :	● ALL
WRR	CH SELECT :	TX1
WRR	DELAY COMP :	ON
TX1	:	-
TX1	AUDIO PEAK :	PEAK
TX1	INPUT LEVEL :	MIC
TX1	ATT LEVEL :	0dB
TX1	LCF FREQ :	200Hz
TX1	SYSTEM DELAY :	AUTO

Item	Setting	Function
WRR VALID CH SEL	ALL/CH1	Selects whether to enable channels 1 and 2 of the wireless receiver, or channel 1 only • ALL: Enable both channel 1 and 2 • CH1: Enable channel 1 only. Select this setting to use the wireless receiver as a monaural receiver

Continued

Item	Setting	Function
WRR CH SELECT *1	TX1/TX2	Specifies the target channel for other items in this menu - TX1: Channel 1 - TX2: Channel 2
WRR DELAY COMP *1	OFF/ON	Enables or disables the delay compensation function for wireless audio input - OFF: Disables the function - ON: Enables the function (the audio in all EE output is delayed by about 8 ms)
TX* *1*2	—	Displays the name of the transmitter whose signals are being received on the channel selected by WRR CH SELECT
TX* *1*2 AUDIO PEAK	PEAK	Displays whether the AF level of the transmitter whose signals are being received on the channel selected by WRR CH SELECT is over the peak
TX* *1*2 INPUT LEVEL	MIC/LINE	Displays whether the input level of the transmitter whose signals are being received on the channel selected by WRR CH SELECT is set to MIC or LINE
TX* *1*2 ATT LEVEL	—	Sets the ATT level of the transmitter whose signals are being received on the channel selected by WRR CH SELECT (the permissible setting range may vary depending on the transmitter device)
TX* *1*2 LCF FREQ	—	Sets the Low Cut Filter frequency of the transmitter whose signals are being received on the channel selected by WRR CH SELECT (the permissible setting range may vary depending on the transmitter device)
TX* *1*2 SYSTEM DELAY	AUTO/0.0 ms to 8.0 ms	When WRR DELAY COMP is set to ON, sets the amount of audio delay for the channel selected by WRR CH SELECT - AUTO: Automatically adjusts the amount of delay so that the delay in the audio received from the wireless receiver is zero 0.0 ms to 8.0 ms: Sets the amount of anticipated cases in several wireless systems are being used over a device such as an audio mixer

TIMECODE Display (Setting on TIME CODE)

M10◯TIMECODE	TOP
→TC OUT	: ● AUTO
DF/NDP	: DF
EXT-LK DF/NDP	: INT
EXT-LK UBIT	: INT
LTC UBIT	: FIX
VITC UBIT (SD)	: FIX
WATCH AUTO ADJ	: ON
UBIT GROUP ID	: 000
VITC INS LINE 1	: 16H
VITC INS LINE 2	: 18H

NTSC AREA

M10◯TIMECODE	TOP
→TC OUT	: ● AUTO
EXT-LK UBIT	: INT
LTC UBIT	: FIX
VITC UBIT (SD)	: FIX
WATCH AUTO ADJ	: ON
UBIT GROUP ID	: 000
VITC INS LINE 1	: 16H
VITC INS LINE 2	: 18H

PAL AREA

Item	Setting	Function
TC OUT	AUTO/GENE	Sets the time-code signal output - AUTO: Outputs the time-code generator during recording and outputs the time-code reader during playback - GENE: Outputs the time-code generator during recording and playback
DF/NDP *3	DF/NDP	Sets DF/NDP - DF: Drop frame mode - NDP: Non drop frame mode

Continued

*1: A setting for this item is required when the DWR-S01D Slot-In Digital Wireless Receiver is installed.

*2: * indicates the channel number.

*3: Displayed only when COUNTRY is set to "NTSC (J) AREA" or "NTSC AREA".

Item	Setting	Function
EXT-LK DF/NDP *1	INT/EXT	Selects either internal setting or external setting for DF/NDP • INT: Internal • EXT: External
EXT-LK UBIT	INT/EXT	Sets whether the LTC UBIT setup value locks to INT or EXT source when the time-code is locked to an external source • INT: Internal lock • EXT: External lock
LTC UBIT	FIX/TIME	Sets the data to be recorded in U-BIT of LTC • FIX: Records the data that is set by user • TIME: Records the present time
VITC UBIT (SD)	FIX/TIME	Sets the data to be recorded in U-BIT of VITC • FIX: Records the data that is set by user • TIME: Records the present time
WATCH AUTO ADJ	OFF/ON	Turns ON/OFF the function to match the built-in watch with the actual time data contained in the U-BIT of external time code data
UBIT GROUP ID	000/101	Selects the UBIT GROUP ID
VITC INS LINE1	12H to 19H (NTSC), 9H to 22H (PAL)	Selects the line into which VITC is to be inserted
VITC INS LINE2	12H to 19H (NTSC), 9H to 22H (PAL)	Selects the line into which VITC is to be inserted

ESSENCE MARK Display (Setting on essence mark)

M11	ESSENCE MARK	TOP
→RET	SHOT MARK 1	: ON
RET	SHOT MARK 2	: ON
INDEX	PIC POS	: 0 SEC
FIND	MODE	: R. ST

Item	Setting	Function
RET SHOT MARK 1	OFF/ON	Turns ON/OFF the function that record shot mark 1 by using RET button
RET SHOT MARK 2	OFF/ON	Turns ON/OFF the function that record shot mark 2 by using RET button
INDEX PIC POS	0 SEC to 10 SEC	Sets the function that display thumbnail image when recording time
FIND MODE	R.ST/CLIP	Selects an operation mode when the NEXT/PREV button is pressed • R.ST: Moves to the essence mark of the next or previous REC START • CLIP: Moves to the top of the next clip when the NEXT button is pressed, and moves to the top of the current clip when the PREV button is pressed (Moves to the top of the previous clip when the PREV button is pressed at the top of the clip)

*1: Displayed only when COUNTRY is set to "NTSC (J) AREA" or "NTSC AREA".

CAM CONFIG 1 Display (Setting-1 on camcorder)

M120CAM CONFIG 1	TOP
→REC TALLY BLINK :	● ON
REC START BEEP :	OFF
SDI REC CONTROL :	OFF
HDSDI REMOTE I/F :	CHARA
MATCH CLIP NAME :	OFF
PROAV DISPLAY :	DSABL
MIXED RECORDING :	DSABL
SINGLE CLIP MODE :	OFF
PB POSITION :	KEEP

Item	Setting	Function
REC TALLY BLINK	OFF/ON	Turns ON/OFF the tally blinking at the event of BATTERY BEFORE END/DISC BEFORE END
REC START BEEP	OFF/ON	Turns ON/OFF the beep sound at REC START/STOP
SDI REC CONTROL	OFF/RM/PARA	Sets the function that enables record in synchronization with the unit. • OFF: The record control function in synchronization with the unit is not used. • RM: The REC trigger signal is output to the recorder connected to the SDI OUT connector. • PARA: Record control in synchronization with the unit is performed.
HDSDI REMOTE I/F	OFF/CHARA/G-TLY/R-TLY	Selects whether to use the function that enables recording control from this unit of an external device connected to the SDI OUT 1/2 connectors (HDSDI output) of this unit.*1 • OFF: Do not use the remote recording control function • CHARA: "REC2" displayed on the viewfinder • G-TLY: Use the function, and indicate by the TALLY indicator in the viewfinder • R-TLY: Use the function, and indicate by the REC (recording, red tally) indicator in the viewfinder
MATCH CLIP NAME	OFF/ON	Turns ON/OFF the function to superimpose clip name information on the SDIOUT 1 and SDIOUT 2 connectors (HDSDI output). A clip is created in the accepted equipment with the same clip name as the main unit.
PROAV DISPLAY	DSABL/ENABL	Specifies whether to display the PROAV folder when this unit is accessed by a FAM/FTP connection • DSABL: Do not display • ENABL: Display
MIXED RECORDING	DSABL/ENABL	Turns ON/OFF the function that enables recording and saving of the clips having the different recording formats to the same disc only when they belong to the same frame frequency group
SINGLE CLIP MODE	OFF/ON	Selects the clip for the playback operation • ON: Selects only the currently selected clip for the playback operation • OFF: Selects all clips stored on the disc for the playback operation
PB POSITION	KEEP/TOP	Specifies the playback start position of the clip or sub clip when switching between the clip playback screen and the clip list playback screen • KEEP: Resumes playback at the previous stop position • TOP: Starts playback from the top clip or from the top frame of the top sub clip

*1: SDI OUT 1 SELECT or SDI OUT 2 SELECT in the OUTPUT 1 page of the OPERATION menu must be set to HDSDI.

CAM CONFIG 2 Display (Setting-2 on camcorder)

```

M13◯CAM CONFIG 2    TOP
→TEST SAW SELECT : ● SAW
COLOR BAR SELECT : ARIB
USER & ALL ONLY : OFF
RM COMMON MEMORY : OFF
RM REC START : RM
SHT DISP MODE : SEC
RM F NO DISPLAY : CTRL
FAN CONTROL : AUTO
  
```

Item	Setting	Function
TEST SAW SELECT	REC/SAW	Selects the test signal
COLOR BAR SELECT	ARIB/100%/75%/SMPTE	Selects the color bar type
USER & ALL ONLY	OFF/ON	Show only USER menu and ALL menu in the top menu
RM COMMON MEMORY	OFF/ON	Selects whether or not to share settings for when a remote control unit is connected and when the unit is used alone
RM REC START	RM/CAM/PARA	When an remote control unit is connected, selects which recording start/stop buttons are enabled • RM: Remote control unit • CAM: Camcorder • PARA: Both
SHT DISP MODE	SEC/DEG	Selects shutter speed display (second or degree)
RM F NO DISPLAY	CTRL/RET	Selects the method used to display IRIS F values on the MSU-900 or another method used to display IRIS F values on the MSU-900 or another • CTRL :Display on the basis of control value from the camera (normal display method) • RET: Display on the basis of position information from the lens (same method as when AUTO IRIS is enabled)
FAN CONTROL *1	AUTO/R.MIN/MIN	Selects the control method of the cooling fan • AUTO: The cooling fan rotation is automatically controlled • R.MIN: The cooling fan runs at a low speed only during recording (The fan stops rotating if the temperature inside the unit does not rise due to the low temperature environment) • MIN: The cooling fan runs at a low speed (The fan stops rotating if the temperature inside the unit does not rise due to the low temperature environment) Note Regardless of the setting of this item, the cooling fan starts running at a high speed if the internal temperature of the unit rises close to the point where an alarm is issued.

CAM CONFIG 3 Display (Setting-3 on camcorder)

```

M14◯CAM CONFIG 3    TOP
→ALAC : ● AUTO
Wi-Fi/ETHER RM : OFF
  
```

*1: The setting of this item is retained even after the power is turned off.

Item	Setting	Function
ALAC	OFF/AUTO	Sets the operation of the lens aberration correction function • OFF: Turns OFF the function forcibly even when the lens that supports the aberration correction function is mounted • AUTO: Turns ON the function when the lens that supports the aberration correction function is mounted
Wi-Fi/ETHER RM	OFF/RM/ALL	Sets the operation of the wireless adapter. • OFF: Stopping • RM: Only a remote control can be operated. • ALL: Operation with the unit and the remote control is possible.

PRESET WHT Display (WHITE BAL switch: The function to adjust the white balance gain that is assigned to PRST)

M15	PRESET WHITE	TOP
→COLOR TEMP	<P>: ● 3200	
C TEMP BAL	<P>: 0	
R GAIN	<P>: 0	
B GAIN	<P>: 0	
AWB ENABLE	<P>: OFF	

Item	Setting	Function
COLOR TEMP <P>	Displays the color temperature (Guideline)	Sets the white balance preset Tip The R GAIN and B GAIN values also change accordingly at the same time.
C TEMP BAL <P>	(-99 to 99)	Uses this item for fine adjustment when the optimum color cannot be obtained by the above COLOR TEMP Tip The R GAIN and B GAIN values also change accordingly at the same time.
R GAIN <P>	(-99 to 99)	Uses this menu item to set the color temperature of a WHITE preset value, by adjusting R GAIN
B GAIN <P>	(-99 to 99)	Uses this menu item to set the color temperature of a WHITE preset value, by adjusting B GAIN
AWB ENABLE <P>	OFF/ON	Turns ON/OFF the function that sets the white balance adjustment value as the preset value when the white balance automatic adjustment is executed with the WHITE BAL switch being set in PRST

DCC ADJUST Display (Setting the DCC function)

M16	DCC ADJUST	TOP
→DCC FUNCTION SEL	: ● DCC	
DCC D RANGE	: 600%	
DCC POINT	: 0	
DCC GAIN	: 0	
DCC DELAY TIME	: 0	
DCC PEAK FILTER	: 0	

Item	Setting	Function
DCC FUNCTION SEL	DCC/FIX	Selects the DCC function modes when the DCC switch is ON - DCC: Automatically makes adjustments according to the knee point and the luminance of the object - FIX: Executes knee correction by fixing the knee point at the DCC D RANGE setting value
DCC D RANGE	400%/450%/500%/550%/600%	Sets the dynamic range when the DCC switch is set to ON
DCC POINT	(-99 to 99)	Sets the minimum knee point when the DCC switch is set to ON
DCC GAIN	(-99 to 99)	Adjusts the gain to DCC detected value when the DCC switch is set to ON
DCC DELAY TIME	(-99 to 99)	Sets the response speed of DCC (Increasing the data slows down the response speed)
DCC PEAK FILTER	(-99 to 99)	Adjust the response sensitivity to the peak of the DCC detected value

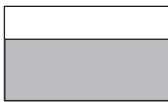
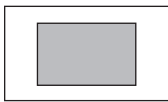
AUTO IRIS 2 Display (Setting-2 AUTO IRIS)

M17	○	AUTO IRIS 2	TOP
→	IRIS WINDOW	:	1
	IRIS WINDOW IND.	:	OFF
	IRIS LEVEL	:	0
	IRIS APL RATIO	:	0
	IRIS VAR WIDTH	:	240
	IRIS VAR HEIGHT	:	135
	IRIS VAR H POS	:	0
	IRIS VAR V POS	:	0
	IRIS SPEED	:	0
	CLIP HIGH LIGHT	:	OFF

Item	Setting	Function
IRIS WINDOW	1/2/3/4/5/6/VAR	Selects the IRIS WINDOW (detection range)*1 When VAR is selected, the iris window can be set by the IRIS VAR WIDTH/HEIGHT/H POS/V POS as described below
IRIS WINDOW IND.	OFF/ON	Turns ON/OFF the function that displays a frame marker for the auto iris detection window
IRIS LEVEL	(-99 to 99)	Sets the auto iris convergence level
IRIS APL RATIO	(-99 to 99)	Adjusts the mix ratio of the auto iris detection peak value and average value
IRIS VAR WIDTH	20 to 479*2	Sets width of the iris window when VAR is selected in the above IRIS WINDOW
IRIS VAR HEIGHT	20 to 269*2	Sets height of the iris window when VAR is selected in the above IRIS WINDOW
IRIS VAR H POS	-460 to 459*3	Sets the center in the horizontal direction of the iris window when VAR is selected in the above IRIS WINDOW

Continued

*1: The IRIS WINDOW is set as shown below.

Setting	1	2	3	4	5	6
VF screen						

Shaded (■) area : IRIS WINDOW frame

*2: Range of this setting is different depending upon the above IRIS VAR HPOS/VPOS setting.
*3: Range of this setting is different depending upon the above IRIS VAR WIDTH/HEIGHT setting.

Item	Setting	Function
IRIS VAR V POS	–250 to 249 *1	Sets the center in the vertical direction of the iris window when VAR is selected in the above IRIS WINDOW
IRIS SPEED	(–99 to 99)	Sets the AUTO IRIS response speed
CLIP HIGH LIGHT	OFF/ON	Turns ON/OFF the function that limits the AUTO IRIS detection level to 100% when the video signal of higher than 100% is input

GENLOCK Display (Setting on GENLOCK input connector)

M18	◊	GENLOCK	TOP	
→	GENLOCK	:	● ON	
GL	HD	H PHASE	:	0
GL	SD	H PHASE	:	0
REFERENCE	:	INTERNAL		

Item	Setting	Function
GENLOCK	OFF/ON	Turns ON/OFF the function that synchronizes the internal reference signal with the video signal that is connected to the GENLOCK connector
GL HD H PHASE	(–99 to 99)	GENLOCK phase adjustment (HD)
GL SD H PHASE	(–99 to 99)	GENLOCK phase adjustment (SD)
REFERENCE	Display only	Displays the type of genlocked reference signal

ND COMP Display (ND OFFSET compensation)

M19	◊	ND COMP	TOP
→	ND OFFSET ADJUST	:	● OFF
	CLEAR ND OFFSET	:	EXEC

Item	Setting	Function
ND OFFSET ADJUST	OFF/ON	Turns ON/OFF the ND OFFSET adjustment mode
CLEAR ND OFFSET	Press the MENU knob to execute this menu item	Returns the ND OFFSET value to the production adjustment value

*1: Range of this setting is different depending upon the above IRIS VAR WIDTH/HEIGHT setting.

AUTO SHADING Display (Automatic SHADING adjustment)

M20	○	AUTO SHADING	TOP
→		AUTO BLK SHADING :	● EXEC
		RESET BLK SHD :	EXEC
		TEST OUT SELECT :	VBS
		MASTER GAIN (TMP) :	0dB

Item	Setting	Function
AUTO BLK SHADING	—	Executes the auto black shading function
RESET BLK SHD	—	Clears black shading compensation values
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal that is output from the TEST OUT and the VBS/SDI OUT connector (Invalid when the BARS signal is selected) (The Y-signal becomes the VBS signal when VBS is selected in the SD REAR BNC OUT of the OUTPUT SEL display (of the OPERATION menu) and SD is selected in the TEST OUT SELECT). The output signal returns to the Y-signal without fail at power-on
MASTER GAIN (TMP)	−6/−3/0/3/6/9/12/18/24/30/36/42 dB	Temporarily sets the master gain value

APR Display (Detect compensation function)

M21	○	APR	TOP
→		APR :	● EXEC
		APR (SLS) :	EXEC
		APR PRESET :	EXEC

Item	Setting	Function
APR	—	Suppresses white flecks by executing the automatic pixel noise reduction function
APR (SLS)	—	Suppresses white flecks in SLS (Slow Speed Shutter) mode by executing the automatic pixel noise reduction function Note The execution time for this function is about 30 minutes. More time may be required when temperatures inside the unit are low.
APR PRESET	—	Deletes white flecks data that was added by execution of the APR and automatic black balance adjustment functions

NETWORK 1 Screen (NETWORK 1 settings)

```
M22○NETWORK 1      TOP
→NETWORK SETUP : ●   EXEC
DHCP             :   D I S A B L E
IP ADDRESS       : 192 168 1 10
SUBNET MASK      : 255 255 255 0
DEF. GATEWAY     : 0 0 0 0
LINK SPEED       :      A U T O
DUPLEX           :      A U T O
DNS1             : 0 0 0 0
UPnP             :   D I S A B L E
```

Item	Setting	Function
DHCP *1	ENABL/DISABLE	Selects whether to enable automatic acquisition of the IP address from a DHCP server
IP ADDRESS *1	192 168 1 10	Sets the IP address
SUBNET MASK *1	255 255 255 0	Sets the subnet mask
DEF.GATEWAY *1	0 0 0 0	Sets the default gateway
LINK SPEED *1	AUTO/10Mbps/100Mbps	Sets the communications speed
DUPLEX *1	AUTO/FULL/HALF	Sets the duplex mode - AUTO: Automatically sets full duplex or half duplex - FULL: Full duplex communication - HALF: Half duplex communication
DNS1 *1	0 0 0 0	Sets the DNS address 1 (Required in order to select the connecting device from the host name using the FTP client function)
UPnP *1	DISABLE/ENABLE	Enables or disables the Universal Plug & Play function

NETWORK 2 Screen (NETWORK 2 settings)

```
M23○NETWORK 2      TOP
→NET CFG RESET   : ●   EXEC
MAC : 00 : 11 : 22 : 33 : 44 : 55
```

Item	Setting	Function
NET CFG RESET	Press the MENU knob to execute.	Resets all setting items on the NETWORK page.
MAC	Display only	Displays the MAC address of the unit.

*1: The unit must be restarted to enable changes to this setting.

WPS Screen (Connected to the network using the WPS in the infrastructure mode)

```
M24○WPS TOP
→Wi-Fi : ● DSABL
```

Item	Setting	Function
Wi-Fi	DSABL/ENABL	Sets whether to enable the Wi-Fi function.

Wi-Fi Screen (Wi-Fi status display)

```
M25○Wi-Fi TOP
→Wi-Fi SETUP : ● EXEC
Wi-Fi STATUS : [-----]
WIRELESS MODE : 802.11b
SSID : (unknown)
NETWORK TYPE : INFRA
CH : 1
AUTH : OPEN
ENCRYPTION : DISABLE
```

Item	Setting	Function
Wi-Fi SETUP	Press the MENU knob to execute this menu item	Switches screen to the Wi-Fi SETTING screen.
Wi-Fi STATUS	—	Displays signal intensity.
WIRELESS MODE	—	Displays IEEE 802.11 specification.
SSID	—	Displays SSID.
NETWORK TYPE	—	Displays connection mode.
CH	—	Displays wireless channels in the ad hoc mode.
AUTH	—	Displays network authentication method.
ENCRYPTION	—	Displays data encryption system.

UP CONVERTER Display (Setting on Upconverter)

```
M26○UP CONVERTER TOP
→UP CON PROCESS : ● ADPT
UC DETAIL LEVEL : 0
UC CRISPENING : 0
UC DETAIL LIMIT : 0
UC LV DEPEND LVL : 0
UC DTL FREQUENCY : 5.0M
UC DTL H/V RATIO : 0
```

Item	Setting	Function
UP CON PROCESS	FIELD/ADPT	Selects the conversion source picture when SD is upconverted to HD - FIELD: Use the field picture - ADPT: Optimize the ratio of conversion from the frame or field picture
UC DETAIL LEVEL	(-99 to 99)	Adjusts the sharpness of edge enhancement by the upconverter
UC CRISPENING	(-8 to 7)	Sets the amplitude width at which the upconverter does not emphasize low-amplitude signals
UC DETAIL LIMIT	(-99 to 99)	Sets the maximum level of edge enhancement by the upconverter
UC LV DEPEND LVL	(-8 to 7)	Sets the luminance of edge enhancement by the upconverter
UC DTL FREQUENCY	3.2M/4.5M/5.0M/4.0M	Sets the center frequency and frequency properties of edge enhancement by the upconverter 3.2M: 3.2±1.1 MHz 4.5M: 4.5±1.4 MHz 5.0M: 5.0±0.7 MHz 4.0M: 4.0±2.0 MHz
UC DTL H/V RATIO	(-3 to 4)	Sets the horizontal/vertical ratio of edge enhancement by the upconverter

SHUTTER SELECT Display (Setting the shutter with reference to the angle)

M27○SHUTTER SELECT TOP
→SHUTTER SELECT : ●SECOND

Item	Setting	Function
SHUTTER SELECT	SECOND/DEGREE	Selecting DEGREE enables to select the shutter with reference to the angle

When DEGREE is selected in SHUTTER SELECT

M27○SHUTTER SELECT TOP
→SHUTTER SELECT : ●DEGREE
→ADD : ●---. -
DEL :
DEGREE SECOND
*1 : 180.0 1/48.00
2 : 172.8 1/50.05
3 : 144.0 1/60.07
4 : 45.0 1/192.2
5 : 22.5 1/383.0
6 : 11.2 1/760.0

When OFF is selected in SLOW & QUICK of the REC FUNCTION display (SYSTEM FREQUENCY : 23.9P, 25P, 29.9P)

Item	Setting	Function
ADD	4.3 to 360	Registers the angle setting (If all settings from 1 to 6 are already registered, some of them need to be deleted before registration)
DEL	1 to 6	Deletes the registered angle setting

When OFF is selected in SLOW & QUICK of the REC FUNCTION display (SYSTEM FREQUENCY : 50i, 59.9i, 50P, 59.9P)

Item	Setting	Function
ADD	4.5 to 360	Registers the angle setting (If all settings from 1 to 6 are already registered, some of them need to be deleted before registration)
DEL	1 to 6	Deletes the registered angle setting

When ON is selected in SLOW & QUICK of the REC FUNCTION display (SYSTEM FREQUENCY : 23.9P, 25P, 29.9P)

Item	Setting			Function
ADD*1	(1080/23.9P) 1F: 4.3 to 22.5 2 to 3F: 4.3 to 45.0 4 to 6F: 4.3 to 90.0 7 to 12F: 4.3 to 180.0 13 to 48F: 4.3 to 360.0	(1080/25P) 1F: 4.3 to 22.5 2 to 3F: 4.3 to 45.0 4 to 6F: 4.3 to 90.0 7 to 12F: 4.3 to 180.0 13 to 50F: 4.3 to 360.0	(1080/29.9P) 1F: 4.3 to 22.5 2 to 3F: 4.3 to 45.0 4 to 7F: 4.3 to 90.0 8 to 15F: 4.3 to 180.0 16 to 60F: 4.3 to 360.0	Registers the angle setting (If all settings from 1 to 6 are already registered, some of them need to be deleted before registration)
DEL	1 to 6			Deletes the registered angle setting

META OUT Display (Setting for output of meta data items)

M28○META OUT TOP
→META DATA ITEM OUT : ●ON

Item	setting	Function
META DATA ITEM OUT	OFF/ON	Turns ON/OFF the function to store meta data items in media.

*1: The effective ranges of the angle setting are different depending on the settings of SYSTEM LINE/SYSTEM FREQUENCY and SLOW & QUICK FRAME RATE.

4-7. FILE Menu

For details of the file structure and the method to save the files, refer to “5. File System”

Note

When the range of setting is surrounded by parenthesis () in the setting column, the setup value is the relative value.
The range of setting in parenthesis () can be different from what shown in the manual depending on the setting in the layer lower than this menu.

4-7-1. Description of FILE Menu

USER FILE Display (Operating the USER files)

```
F01○USER FILE      TOP
→USER FILE LOAD   : ● EXEC
  USER FILE SAVE   :   EXEC
  F.ID : □□□□□□□□□□□□□□□□
  USER PRESET      :   EXEC
```

Item	Setting	Function
USER FILE LOAD	Press the MENU knob to move to the file selection display	Reads the USER file from a USB memory (For the description of the file selection display, see below to the following descriptions)
USER FILE SAVE	Press the MENU knob to move to the file selection display	Saves the USER file to a USB memory (For the description of the file selection display, see below to the following descriptions)
F.ID	16 characters (alphanumeric characters, symbols and spaces)	Sets the file ID (When the USER FILE SAVE is executed, this ID is saved)
USER PRESET	Press the MENU knob to execute this menu item	Returns all the items of the USER menu to the standard setup

File selection display

```
P00 USER LOAD      ESC
  USB MEMORY ACCESS
  DISPLAY MODE      :  ALL
001. □□□□□□□□ 00/000/00
002. □□□□□□□□ 00/000/00
003. □□□□□□□□ 00/000/00
004. □□□□□□□□ 00/000/00
005. NO FILE
```

USER FILE LOAD

```
P00 USER SAVE      ESC
  USB MEMORY ACCESS
  DISPLAY MODE      :  ALL
001. □□□□□□□□ 00/000/00
002. □□□□□□□□ 00/000/00
003. □□□□□□□□ 00/000/00
004. □□□□□□□□ 00/000/00
005. NEW FILE
```

USER FILE SAVE

Item	Setting	Function
USB MEMORY ACCESS	Display only	The display appears when inserting a USB memory or during saving data in a USB memory or during reading data from a USB memory

Continued

Item	Setting	Function
DISPLAY MODE	ALL/F.ID/DATE/MODEL	Switches the attributes when displaying the following file • ALL : File ID and date are displayed (□□□□□□□□ 00/JAN/00) • F.ID : File ID is displayed (□□□□□□□□□□□□□□) • DATA : Date and time of saving the file are displayed (00/00/00 00 : 00 : 00) • MODEL : Model name and format are displayed (PDW-850 59.94i)
001 to 005	Press the MENU knob to execute this menu item	When the file does not exist, the message NO FILE is displayed Select the target read file from which data is read or select the target storage file to which the data is going to be stored When saving the data in a new file, select NEW FILE

USER FILE 2 Display (Operating the USER file)

F02○USER FILE 2	TOP
→STORE USR PRESET : ● EXEC	
CLEAR USR PRESET : EXEC	
CUSTOMIZE RESET : EXEC	
LOAD CUSTOM DATA : OFF	
LOAD OUT OF USER : OFF	
BEFORE FILE PAGE : OFF	
USER LOAD WHITE : OFF	

Item	Setting	Function
STORE USR PRESET	Press the MENU knob to execute this menu item	Saves the data that is set by the USER menu, in the PRE-SET layer and uses it as the standard setup
CLEAR USR PRESET	Press the MENU knob to execute this menu item	Returns the USER menu setup to the default setting when shipped from the factory
CUSTOMIZE RESET	Press the MENU knob to execute this menu item	Returns the items that are edited by the MENU CUSTOMIZE menu, to the original setting
LOAD CUSTOM DATA	OFF/ON	Turns ON/OFF the function to read out the data from USB memory that are set on the MENU CUSTOMIZE menu during execution of USER FILE LOAD
LOAD OUT OF USER	OFF/ON	Turns ON/OFF the function to read out the data from USB memory that are not contained in the present USER menu during execution of USER FILE LOAD
BEFORE FILE PAGE	OFF/ON	Turns ON/OFF the function not to save the USER FILE page and the subsequent pages of the USER menu, in USB memory during execution of USER FILE SAVE ON : Not to save
USER LOAD WHITE	OFF/ON	Turns ON/OFF the function to read out the white balance data from USB memory that are saved in USER FILE during execution of USER FILE LOAD

ALL FILE Display (Operating the ALL file)

```

F03◯ALL FILE          TOP
→ALL FILE LOAD       : ● EXEC
ALL FILE SAVE        : EXEC
F.ID : ████████████████████

ALL PRESET           : EXEC
STORE ALL PRESET     : EXEC
CLEAR ALL PRESET     : EXEC

3SEC CLR PRESET      : OFF
NETWORK DATA        : OFF
  
```

Item	Setting	Function
ALL FILE LOAD	Press the MENU knob to move to the file selection display	Reads the ALL file from a USB memory (For the description of the file selection display, see below)
ALL FILE SAVE	Press the MENU knob to move to the file selection display	Saves the ALL file in a USB memory (For the description of the file selection display, see below)
F.ID	16 characters (alphanumeric numbers, symbols and space)	Sets the file ID (When ALL FILE SAVE is execute, this name is saved)
ALL PRESET	Press the MENU knob to execute this menu item	Returns all the data of all menu items to the standard settings
STORE ALL PRESET	Press the MENU knob to execute this menu item	Saves all the data that are set by all of the menu items, in the PRESET layer and uses them as the standard setups
CLEAR ALL PRESET	Press the MENU knob to execute this menu item	Returns the settings of all menu items to the default setting when shipped from the factory
3SEC CLR PRESET	OFF/ON	Turns ON/OFF the function that returns the data in the PRESET layer to its factory-set value when the MENU CANCEL/PRST/ESCAPE switch is pressed for 3seconds (It returns to OFF at power-on even when having been turned ON)
NETWORK DATA	OFF/ON	Selects whether or not to read in the network-related data

File selection display

```

P00 ALL LOAD          ESC
  USB MEMORY ACCESS
DISPLAY MODE          : ALL

001. ██████████ 00/000/00
002. ██████████ 00/000/00
003. ██████████ 00/000/00
004. ██████████ 00/000/00
005. NO FILE
  
```

ALL FILE LOAD

```

P00 ALL SAVE          ESC
  USB MEMORY ACCESS
DISPLAY MODE          : ALL

001. ██████████ 00/000/00
002. ██████████ 00/000/00
003. ██████████ 00/000/00
004. ██████████ 00/000/00
005. NEW FILE
  
```

ALL FILE SAVE

Descriptions of the respective file selection displays are the same as the file selection display of the USER FILE display. For details, refer to the corresponding item of the USER FILE display.

SCENE FILE Display (Operating the SCENE file)

F04	SCENE FILE	TOP
→■1	: STANDARD	
□2	: STANDARD	
□3	: STANDARD	
□4	: STANDARD	
□5	: STANDARD	
□	STANDARD	
SCENE RECALL	: EXEC	
SCENE STORE	: EXEC	
F.ID	: STANDARD	

Item	Setting	Function
1 to 5	STANDARD	Selects the file when reading the SCENE file from the unit
STANDARD	—	Selects whether to return the SCENE file setup to the standard setting or not to return to When pressing the MENU knob during the “■” display, the standard setting is canceled and returns to the original setting
SCENE RECALL	Press the MENU knob to move to the file selection display	Read the SCENE file from a USB memory (For the description of the file selection display, see below)
SCENE STORE	Press the MENU knob to move to the file selection display	Save the SCENE file to the main unit or USB memory (For the description of the file selection display, see below)
F.ID	16 characters (alphanumeric characters, symbols and space)	Sets the file ID (When the SCENE file is stored, the file ID is saved)

File selection display (When calling a file from the inside of the unit/when saving a file to the inside of the unit)

P01	SCENE RECALL	ESC
RECALL OK?	YES→NO	
DISPLAY MODE	: ● ALL	
001.	SCENE1 :	
002.	SCENE2 :	
003.	NO FILE	
004.	SCENE4 :	
005.	SCENE5 :	
→***.	5 FILE LOAD → MEM1-5	

SCENE RECALL

Item	Setting	Function
DISPLAY MODE	ALL/F.ID/DATE/MODEL	Switches the attributes when displaying a file stored in a USB memory For a file stored in the main unit, the file ID is displayed when ALL/F.ID/DATE is selected. When MODEL is selected, the format when the file was saved is displayed
MEM (1) to (5)	Press the MENU knob to execute this menu item	Select the target read file from which data is read or select the target storage file to which the data is going to be stored When the file does not exist, the message NO FILE is displayed When saving the data in a new file, select NEW FILE

File selection display (When reading a file from a USB memory/when saving a file to a USB memory)

```

P00 SCENE RECALL ESC
DISPLAY MODE      :  ALL
MEM (1) : □□□□□□□□□□□□□□□□
MEM (2) : □□□□□□□□□□□□□□□□
MEM (3) : □□□□□□□□□□□□□□□□
MEM (4) : □□□□□□□□□□□□□□□□
MEM (5) : NO FILE
  
```

↓page moves to

```

P01 SCENE RECALL ESC
USB MEMORY ACCESS
DISPLAY MODE      :  ALL
001. □□□□□□□□ 00/000/00
002. □□□□□□□□ 00/000/00
003. □□□□□□□□ 00/000/00
004. □□□□□□□□ 00/000/00
005. NO FILE
***. 5FILE LOAD → MEM 1-5
  
```

SCENE RECALL

```

P00 SCENE STORE ESC
DISPLAY MODE      :  ALL
MEM (1) : □□□□□□□□□□□□□□□□
MEM (2) : □□□□□□□□□□□□□□□□
MEM (3) : □□□□□□□□□□□□□□□□
MEM (4) : □□□□□□□□□□□□□□□□
MEM (5) : NEW FILE
  
```

↓page moves to

```

P01 SCENE STORE ESC
USB MEMORY ACCESS
DISPLAY MODE      :  ALL
001. □□□□□□□□ 00/000/00
002. □□□□□□□□ 00/000/00
003. □□□□□□□□ 00/000/00
004. □□□□□□□□ 00/000/00
005. NEW FILE
***. 5FILE SAVE ← MEM 1-5
  
```

SCENE STORE

Item	Setting	Function
USB MEMORY ACCESS	Display only	The display appears when inserting a USB memory or during saving data in a USB memory or during reading data from a USB memory
DISPLAY MODE	ALL/F.ID/DATE/MODEL	Switches the attributes when displaying the following file • ALL : File ID and date are displayed (□□□□□□□□ 00/JAN/00) • F.ID : File ID is displayed (□□□□□□□□□□□□□□) • DATE : Date and time of saving the file are displayed (00/00/00 00 : 00 : 00) • MODEL : Model name and format are displayed (PDW-850 59.94i)
001 to 005	Press the MENU knob to execute this menu item	When the file does not exist, the message NO FILE is displayed Select the target read file from which data is read or select the target storage file to which the data is going to be stored When saving the data in a new file, select NEW FILE
5 FILE LOAD	Press the MENU knob to execute this menu item	Reads the 5 files that are being displayed on screen, into MEM1-5 inside the main unit
5 FILE SAVE	Press the MENU knob to execute this menu item	Saves the contents of MEM1-5 of the main unit that are being displayed on screen, into 5 files

REFERENCE Display (Operating the REFERENCE file)

F05	○REFERENCE	TOP
→	REFERENCE STORE :	● EXEC
	REFERENCE CLEAR :	EXEC
	REFERENCE LOAD :	EXEC
	REFERENCE SAVE :	EXEC
F.ID :	□□□□□□□□□□□□□□□□	
SCENE WHITE DATA :	OFF	

Item	Setting	Function
REFERENCE STORE	Press the MENU knob and select YES for the confirmation message to execute this menu item	Saves the REFERENCE file in the main unit
REFERENCE CLEAR	Press the MENU knob and select YES for the confirmation message to execute this menu item	Returns the setting of the REFERENCE file to the standard setting
REFERENCE LOAD	Press the MENU knob and select YES for the confirmation message to execute this menu item	Reads the REFERENCE file from a USB memory
REFERENCE SAVE	Press the MENU knob and select YES for the confirmation message to execute this menu item	Saves the REFERENCE file in a USB memory
F.ID	16 characters (alphanumeric numbers, symbols and space)	Sets the file ID (When REFERENCE STORE of REFERENCE SAVE is executed, this ID is saved)
SCENE WHITE DATA	OFF/ON	Turns ON/OFF the function to read out the white balance data that are saved in SCENE file during execution of SCENE FILE RECALL

USER GAMMA Display (Operating the USER GAMMA file)

F06	○USER GAMMA	TOP
→	USER GAMMA LOAD :	● EXEC
	USER GAMMA RESET :	EXEC
F.ID :	□□□□□□□□□□□□□□□□	

Item	Setting	Function
USER GAMMA LOAD	Press the MENU knob and select YES for the confirmation message to execute this menu item	Loads the GAMMA TABLE data (USER GAMMA file) created by the user from the USB memory into the internal memory
USER GAMMA RESET	Press the MENU knob and select YES for the confirmation message to execute this menu item	Clears the USER GAMMA file on the internal memory
F.ID	Display only	Displays the USER GAMMA file name on the internal memory

When a USER GAMMA file exists in the inserted USB memory

F06○USER GAMMA TOP	
→USER GAMMA LOAD : ● EXEC	
USER GAMMA RESET : EXEC	
F.ID : □□□□□□□□□□□□□□□□	
↓	
F.ID : □□□□□□□□□□□□□□□□	} USER GAMMA file information in the USB memory
DATE : MAY/19/14	

Item	Setting	Function
F.ID	Display only	Displays the USER GAMMA file name in the USB memory
DATE	Display only	Displays the date and time when the USER GAMMA file in the USB memory is created

LENS FILE 1 Display (Setting-1 the LENS file)

F07○LENS FILE 1 TOP	
→LENS FILE RECALL : ● EXEC	
LENS FILE STORE : EXEC	
F.ID : □□□□□□□□□□□□□□□□	
SOURCE : MEMORY 1	
LENS NO OFFSET : EXEC	
LENS AUTO RECALL : S.No	
<LENS INFORMATION>	
L.ID : (unknown)	
L.MF : (unknown)	

Tip

When the LENS FILE STORE is executed, the stored memory number is displayed. When the LENS NO OFFSET is executed, the message NO OFFSET is displayed.

Item	Setting	Function
LENS FILE RECALL	Press the MENU knob to move to the file selection display	Calls the LENS file from the main unit, or read the LENS file from a USB memory (For the description of the file selection display, see below)
LENS FILE STORE	Press the MENU knob to move to the file selection display	Save the LENS file to the main unit or USB memory (For the description of the file selection display, see below)
F.ID	16 characters (alphanumeric characters, symbols and spaces)	Sets the file ID (When the LENS FILE STORE is executed, the file ID is saved)
SOURCE	Display only	Displays the memory number of the LENS file from which the data is read
LENS NO OFFSET	Press the MENU knob to execute this menu item	Returns the LENS file setting to the standard setting
LENS AUTO RECALL	OFF/ON/S.No	Turns ON/OFF the auto recall function when a serial lens is attached
L.ID*1	Display only	Displays the unique ID of the lens (when a serial lens is attached)
L.MF*1	Display only	Displays the manufacturer name of the lens (when a serial lens is attached)

*1: When a lens other than a serial lens is attached, (Unknown) is displayed.

File selection display (When calling a file from the inside of the unit/when saving a file to the inside of the unit)

```

      LENS RECALL ESC
DISPLAY MODE      :  ALL
MEM (1) : □□□□□□□□□□□□□□□□
MEM (2) : □□□□□□□□□□□□□□□□
MEM (3) : □□□□□□□□□□□□□□□□
MEM (4) : □□□□□□□□□□□□□□□□
MEM (5) : NO FILE
  
```

LENS FILE RECALL

```

      LENS STORE ESC
DISPLAY MODE      :  ALL
MEM (1) : □□□□□□□□□□□□□□□□
MEM (2) : □□□□□□□□□□□□□□□□
MEM (3) : □□□□□□□□□□□□□□□□
MEM (4) : □□□□□□□□□□□□□□□□
MEM (5) : NEW FILE
  
```

LENS FILE STORE

File selection display (When reading a file from a USB memory/when saving a file to a USB memory)

```

P07 LENS RECALL   ESC
  USB MEMORY ACCESS
DISPLAY MODE      :  ALL
001. □□□□□□□□ 00/000/00
002. □□□□□□□□ 00/000/00
003. □□□□□□□□ 00/000/00
004. □□□□□□□□ 00/000/00
005. NO FILE
***. USB 001-032▶MEM1-32
  
```

LENS FILE RECALL

```

P07 LENS STORE    ESC
  USB MEMORY ACCESS
DISPLAY MODE      :  ALL
001. □□□□□□□□ 00/000/00
002. □□□□□□□□ 00/000/00
003. □□□□□□□□ 00/000/00
004. □□□□□□□□ 00/000/00
005. NEW FILE
***. USB 001-032◀MEM1-32
  
```

LENS FILE STORE

Descriptions of the respective file selection displays are the same as the file selection display of the SCENE FILE display. For details, refer to the corresponding item of the SCENE FILE display.

LENS FILE 2 Display (Setting-2 the LENS file)

```

F08◊LENS FILE 2      TOP
→LENS M VMOD         : ●    0
LENS CENTER H         :      0
LENS CENTER V         :      0

TEST OUT SELECT      :  VBS
LENS R FLARE          :      0
LENS G FLARE          :      0
LENS B FLARE          :      0
LENS W-R OFST         :      0
LENS W-B OFST         :      0
  
```

Tip

In the LENS M VMOD, LENS CENTER H, LENS CENTER V, LENS R/G/B FLARE and LENS W-R/W-B OFST, the lens extender position is displayed in the rightmost-end of the menu items.

- Blank : Extender OFF
- EX : Extender ON
- 0.8 : Shrinker ON

Item	Setting	Function
LENS M VMOD	(-99 to 99)	Adjusts the lens file V SAW shading compensation
LENS CENTER H	-480 to 479	Sets the center marker position (Horizontal direction)
LENS CENTER V	-270 to 269	Sets the center marker position (Vertical direction)
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal that is output from the TEST OUT connector

Continued

Item	Setting	Function
LENS R FLARE	(-99 to 99)	Adjusts the R flare compensation level
LENS G FLARE	(-99 to 99)	Adjusts the G flare compensation level
LENS B FLARE	(-99 to 99)	Adjusts the B flare compensation level
LENS W-R OFST	(-99 to 99)	Adjusts the R white gain offset value
LENS W-B OFST	(-99 to 99)	Adjusts the B white gain offset value

LENS FILE 3 Display (Setting-3 the LENS file)

F09	LENS FILE 3	TOP
→SHADING CH SEL	: ●	R
TEST OUT SELECT	:	VBS
LENS R H SAW	:	0
LENS R H PARA	:	0
LENS R V SAW	:	0
LENS R V PARA	:	0

Tip

In the LENS R/G/B V/H SAW and LENS R/G/B V/H PARA, the lens extender position is displayed in the rightmost-end of the menu items.

- Blank : Extender OFF
- EX : Extender ON
- 68 : Shrinker ON

Item	Setting	Function
SHADING CH SEL	Y/R/G/B/TEST	Selects the channel of shading adjustment
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal that is output from the TEST OUT connector
LENS R H SAW	(-99 to 99)	Adjusts the H SAW correction value
LENS R H PARA	(-99 to 99)	Adjusts the H PARA correction value
LENS R V SAW	(-99 to 99)	Adjusts the V SAW correction value
LENS R V PARA	(-99 to 99)	Adjusts the V PARA correction value

USB MEMORY Display (Function on USB memory)

F10	USB MEMORY	TOP
→USB IN > JUMP TO :	●	OFF

Item	Setting	Function
USB IN > JUMP TO	OFF/USER/ALL/SCENE/LENS/ REFER/USER1	Sets the function that opens the file setup page automatically as a USB memory is inserted when this menu is set to ON (This function is disabled when the file-related page is opened already)

4-8. DIAGNOSIS Menu

4-8-1. Description of DIAGNOSIS Menu

HOURS METER Display (Confirming and resetting hours meter)

D01○HOURS METER		TOP
→OPERATION	:	●000000H
LASER	:	000000H
OPERATION (rst)	:	000000H
SPINDLE (rst)	:	000000H
LOADING (rst)	:	000000H
SEEK (rst)	:	000000H

Item	Setting	Function
OPERATION	Display only	Displays the total operation time
LASER	Display only	Calculates and displays the total optical output parameter of the optical head
OPERATION (rst)	Display only	Displays the total operation time (Can be reset)
SPINDLE (rst)	Display only	Displays the total time of SPINDLE rotation (Can be reset)
LOADING (rst)	Display only	Displays the total count of disc insertion (Can be reset)
SEEK (rst)	Display only	Displays the total seek time of the optical head (Can be reset)

TIME/DATE Display (Confirming and setting date and hour)

D02○TIME/DATE		TOP
→ADJUST	:	● EXEC
GPS ADJUST	:	EXEC
HOUR	:	03
MIN	:	21
SEC	:	58
YEAR	:	07
MONTH	:	07
DAY	:	16

Item	Setting	Function
ADJUST	Press the MENU knob Then the TIME ADJUST display appears	Sets date and time (For more details, refer to “Setting the Date/Time of Internal Clock” of Operation Manual)
GPS ADJUST *1	Press the MENU knob Then the GPS TIME ADJUST display appears	Sets date and time by using the clock of the GPS satellite. (For details of the settings, refer to “Setting Date and Time of the Built-in Clock” in the operation manual.)
HOUR	Display only	Hour
MIN	Display only	Minute
SEC	Display only	Second
YEAR	Display only	Year
MONTH	Display only	Month
DAY	Display only	Day

*1: The GPS must be set to ON on the GPS SETUP page of the OPERATION menu to be geolocalized.

ROM VERSION 1 Display (Displaying the ROM version)

→D03◊ROM VERSION 1 TOP		
PACKAGE	:	x . x x
SY1	:	x . x x
SY2K	:	x . x x
SY2U	:	x . x x
DRV	:	x . x x
AT	:	x . x x
FP	:	x . x x

Item	Setting	Function
PACKAGE	Display only	Displays the firmware package version*1
SY1	Display only	Displays the IC200 version stored in the ROM (IC505, IC506) on the SY-439 board*1
SY2K	Display only	Displays the IC1300 version stored in the ROM (IC1405, IC1406) on the SY-439 board*1
SY2U	Display only	Displays the IC1300 version stored in the ROM (IC1405, IC1406) on the SY-439 board*1
DRV	Display only	Displays the IC600 version stored in the ROM (IC602) on the DR-606 board*1
AT	Display only	Displays the IC2400 version stored in the ROM (IC24104, IC2411) on the DCP-65 board*1
FP	Display only	Displays the ROM version of the IC7012 on the FP-190 board*1

ROM VERSION 2 Display (Displaying the ROM version)

→D04◊ROM VERSION 2 TOP		
LVIS	:	x . x x
TSYS	:	x . x x
TMBP	:	x . x x
CHRN	:	x . x x
BRDG	:	x . x x
PIER	:	x . x x
CAVA	:	x . x x

Item	Setting	Function
LVIS	Display only	Displays the DVP-64 board's IC400 version stored in the ROM (IC505, IC506) on the SY-439 board*1
TSYS	Display only	Displays the DVP-64 board's IC1000, IC1200, IC1400 version stored in the ROM (IC505, IC506) on the SY-439 board*1
TMBP	Display only	Displays the DVP-64 board's IC1000, IC1200, IC1400 version stored in the ROM (IC505, IC506) on the SY-439 board*1
CHRN	Display only	Displays the ROM version of the IC1100 on the DCP-65 board*1
BRDG	Display only	Displays the SY-439 board's IC900 version stored in the ROM (IC505, IC506) on the SY-439 board*1
PIER	Display only	Displays the DVP-64 board's IC1900 version stored in the ROM (IC505, IC506) on the SY-439 board*1
CAVA	Display only	Displays the DVP-64 board's IC200 version stored in the ROM (IC505, IC506) on the SY-439 board*1

*1: Can be upgraded with the firmware package file from MENU.

ROM VERSION 3 Display (Displaying the ROM version)

→D05◊ROM VERSION 3 TOP		
DSP0	:	x . x x
PRXA	:	x . x x
GPS	:	x . x x

Item	Setting	Function
DSP0	Display only	Displays the DVP-64 board's IC800 version stored in the ROM (IC505, IC506) on the SY-439 board*1
DSP2	Display only	Displays the DVP-64 board's IC801 version stored in the ROM (IC505, IC506) on the SY-439 board*1
PRXA	Display only	Displays the DVP-64 board's IC900 version stored in the ROM (IC505, IC506) on the SY-439 board*1
GPS	Display only	Displays the ROM version of the IC009 on the SW-1622 board*1

DEV STATUS Display (Checking the communication function of each device)

→D06◊DEV STATUS TOP		
I/O	EEPROM	LSI
FP : OK	CN : OK	DCP1 : OK
CN : OK	DCP : OK	DCP2 : OK
DCP : OK	DR : OK	TG : OK
VF : OK		
D/A	FRAM	SCI
DCP1 : OK	AT : OK	SY : OK
DCP2 : OK	FAN	RM : --
	MB : OK	

Item	Setting	Function
I/O	—	Status display of FP/CN/DCP/VF - FP-190: IC4003 - CN-3667: IC1 - DCP-65: IC2108 - VF (IO in each VF) OK/NG/-- message is displayed - OK : Normal - NG : Abnormal --: The state is not defined
D/A	—	D/A : Status display of DCP1/DCP2 DCP-65: IC1801
EEPROM	—	EEPROM : Status display of CN/DCP/DR - CN-3667: IC2 - DCP-65: IC2511 - DR-676: IC308
FRAM	—	FRAM : Status display of AT DCP-65: IC2413
FAN	—	FAN : Status display of MB

Continued

*1: Can be upgraded with the firmware package file from MENU.

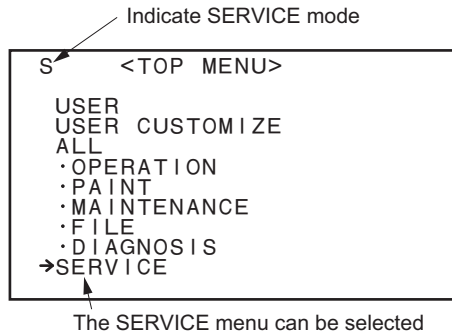
Item	Setting	Function
LSI	—	LSI : Status display of DCP1/DCP2/TG • DCP-65: IC400 • DCP-65: IC1100 • TG-286: IC8
SCI	—	SCI : Status display of SY/RM

4-9. SERVICE Menu

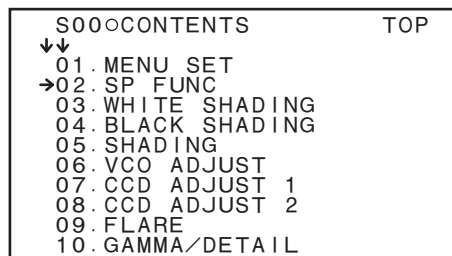
Note

When the range of setting is surrounded by parenthesis () in the setting column, the setup value is the relative value. The range of setting in parenthesis () can be different from what shown in the manual depending on the setting in the layer lower than this menu.

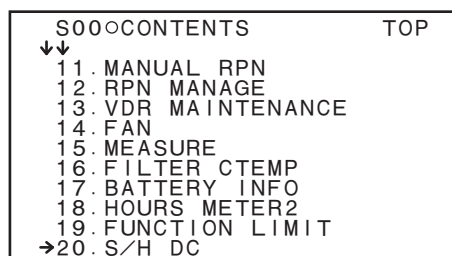
1. Enter SERVICE mode to display the SERVICE menu. (Refer to “4-1-2. How to Display the SERVICE Menu”)



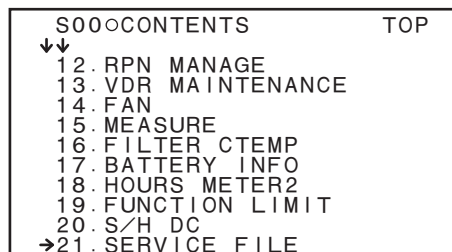
2. The following contents are available in the SERVICE menu.



3. Keep turning the MENU knob to display the next page (11-20).



4. Keep turning the MENU knob further to display the next page (21).



Note

When parameters are changed while the SERVICE menu is displayed, run CLEARALL PRESET from the FILE menu after exiting from SERVICE mode to activate the changed parameters. All parameters that have changed in USER mode are replaced with the value of the SERVICE mode.

4-9-1. Description of SERVICE Menu

MENU SET Display

S01	○MENU SET	TOP
RE ROTATION REV	:	OFF
→RE SPEED	:	● 2
DIRECT VALUE	:	OFF
SERVICE RESET	:	EXEC
FACTORY PRESET	:	EXEC

Item	Setting	Function
RE ROTATION REV	OFF/ON	Turns ON/OFF the function to invert the rotating direction of the MENU knob
RE SPEED	1/2/3	Sets the response speed of the MENU knob 1 (slow) → 3 (fast)
DIRECT VALUE	OFF/DEC/HEX	• OFF : The set value is displayed after conversion (in the range of -99 to 99) (It returns to OFF when the main power is turned on) • DEC : The set value is displayed after being converted into a decimal number (The variable range differs depending on the item) • HEX : The set value is displayed after being converted into a hexadecimal number (The variable range differs depending on the item)
SERVICE RESET	Press the MENU knob to execute this menu item	Resets the data in the SERVICE hierarchy Refer to “5-2. Data Structure” for details of the hierarchical structure
FACTORY PRESET	Press the MENU knob to execute this menu item	Returns all of the settings to the default setting when shipped from the factory (Excluding the black balance automatic adjustment value)

SP FUNC Display

S02	○SP FUNC	TOP
→GAIN DISP MODE	:	● dB
KNEE 2ND POINT	:	ON

Item	Setting	Function
GAIN DISP MODE	dB/ISO	Turns ON/OFF the function that sets the GAIN value in the ISO indication • ON : ISO indication • OFF : Decibel (dB) indication

Continued

Item	Setting	Function
KNEE 2ND POINT	OFF/ON	The setting whether or not to enable the knee 2nd point when compressing a high luminance signal - ON : The knee 2nd point is enabled to allow operator to compress the high luminance part in wide range - OFF : The knee 2nd point is disabled and only the knee 1st point is enabled

WHITE SHADING Display

S03	WHITE SHADING	TOP
WHT SHAD CH SEL	:	R
→TEST OUT SELECT	:	● VBS
R WHT H SAW	:	0
R WHT H PARA	:	0
R WHT V SAW	:	0
R WHT V PARA	:	0
WHITE SAW/PARA	:	ON

Item	Setting	Function
WHT SHAD CH SEL	R/G/B/TEST	Selects the channel of shading correction
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal of the TEST OUT connector
R WHT H SAW (R/G/B)	(-99 to 99)	Adjusts the H SAW correction The R, G and B displays are switched in accordance with the channel selection implemented by the above WHT SHAD CH SEL
R WHT H PARA (R/G/B)	(-99 to 99)	Adjusts the H PARA correction The R, G and B displays are switched in accordance with the channel selection implemented by the above WHT SHAD CH SEL
R WHT V SAW (R/G/B)	(-99 to 99)	Adjusts the V SAW correction The R, G and B displays are switched in accordance with the channel selection implemented by the above WHT SHAD CH SEL
R WHT V PARA (R/G/B)	(-99 to 99)	Adjusts the V PARA correction The R, G and B displays are switched in accordance with the channel selection implemented by the above WHT SHAD CH SEL
WHITE SAW/PARA	OFF/ON	Turns ON/OFF all of the white shading menu items of R/G/B, H/V and SAW/PARA corrections

BLACK SHADING Display

S04	BLACK SHADING	TOP
BLK SHAD CH SEL	:	R
→TEST OUT SELECT	:	● VBS
R BLK H SAW	:	0
R BLK H PARA	:	0
R BLK V SAW	:	0
R BLK V PARA	:	0
BLACK SAW/PARA	:	ON
MASTER BLACK	:	0
MASTER GAIN (TMP)	:	0 dB

Item	Setting	Function
BLK SHAD CH SEL	R/G/B/TEST	Selects the channel of shading correction
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal of the TEST OUT connector
R BLK H SAW (R/G/B)	(-99 to 99)	Adjusts the H SAW correction The R, G and B displays are switched in accordance with the channel selection implemented by the above BLK SHAD CH SEL
R BLK H PARA (R/G/B)	(-99 to 99)	Adjusts the H PARA correction The R, G and B displays are switched in accordance with the channel selection implemented by the above BLK SHAD CH SEL
R BLK V SAW (R/G/B)	(-99 to 99)	Adjusts the V SAW correction The R, G and B displays are switched in accordance with the channel selection implemented by the above BLK SHAD CH SEL
R BLK V PARA (R/G/B)	(-99 to 99)	Adjusts the V PARA correction The R, G and B displays are switched in accordance with the channel selection implemented by the above BLK SHAD CH SEL
BLACK SAW/PARA	OFF/ON	Turns ON/OFF all of the black shading menu items of R/G/B, H/V and SAW/PARA corrections
MASTER BLACK	(-99 to 99)	Adjusts the master black level (All of the R, G and B master black levels are adjusted)
MASTER GAIN (TMP)	-6/-3/0/3/6/9/12/18/24/30/36/42 dB	Temporarily adjusts the master gain value

SHADING Display

S05	SHADING	TOP
AUTO WHT SHADING :	EXEC	
→RESET WHT SHD :	EXEC	
AUTO BLK SHADING :	EXEC	
RESET BLK SHD :	EXEC	
2D BLACK SHADING :	OFF	
TEST OUT SELECT :	VBS	
MASTER GAIN (TMP) :	0dB	

Item	Setting	Function
AUTO WHT SHADING	Press the MENU knob to execute this menu item	Starts to the auto white shading adjustment
RESET WHT SHD	Press the MENU knob to execute this menu item	Returns the white shading value to the default value when shipped from the factory (SAW/PARA)
AUTO BLK SHADING	Press the MENU knob to execute this menu item	Starts to the auto black shading adjustment
RESET BLK SHD	Press the MENU knob to execute this menu item	Returns the black shading value to the default value when shipped from the factory (SAW/PARA or 2D)
2D BLACK SHADING	OFF/ON	Turns ON/OFF the function that sets whether to apply 2D black shading (area shading)
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal of the TEST OUT connector
MASTER GAIN (TMP)	-6/-3/0/3/6/9/12/18/24/30/36/42 dB	Temporarily adjusts the master gain value

VCO ADJUST Display

S06	○	VCO ADJUST	TOP
TEST OUT SELECT	:	VBS	
→CLK OUT SEL	:	●	OFF
HDCK (NTSC IT)	:	0	
HDCK (PAL IT)	:	0	
SDCK	:	0	

Item	Setting	Function
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal of the TEST OUT connector
CLK OUT SELECT	OFF/HDCK (N)/HDCK (P)/SDCK	Outputs the clock from the TEST OUT connector
HDCK (NTSC IT)	-99 to 99	Adjust the oscillating frequency of HD Adjusts the HDCK (N) output to be 37.0879 MHz
HDCK (PAL IT)	-99 to 99	Adjust the oscillating frequency of HD Adjusts the HDCK (P) output to be 37.125 MHz
SDCK	-99 to 99	Adjust the oscillating frequency of SD Adjusts the SDCK output to be 27 MHz

CCD ADJUST 1 Display

S07	○	CCD ADJUST 1	TOP
R CCD GAIN	:	0	
→G CCD GAIN	:	●	0
B CCD GAIN	:	0	

Item	Setting	Function
R CCD GAIN	-99 to 99	Adjusts the sensitivity of the R-channel
G CCD GAIN	-99 to 99	Adjusts the sensitivity of the G-channel
B CCD GAIN	-99 to 99	Adjusts the sensitivity of the B-channel

CCD ADJUST 2 Display

S08	○	CCD ADJUST 2	TOP
R VSUB	:	14.0V	
→G VSUB	:	●14.0V	
B VSUB	:	14.0V	
R VSUB OFST (P)	:	±0V	
G VSUB OFST (P)	:	±0V	
B VSUB OFST (P)	:	±0V	
CCD H DRIVER	:	6.2V	
AD CLOCK PHASE	:	±0	
TEST OUT SELECT	:	VBS	

Item	Setting	Function
R VSUB	10.0 V to 21.0 V (0.1 V step)*1	Sets the V. substrate voltage of the R-channel
G VSUB	10.0 V to 21.0 V (0.1 V step)*1	Sets the V. substrate voltage of the G-channel
B VSUB	10.0 V to 21.0 V (0.1 V step)*1	Sets the V. substrate voltage of the B-channel
R VSUB OFST (P)	-5.0 V to 5.0 V (0.1 V step)*1	Adjusts the offset for the V. substrate voltage of the R-channel during the progressive reading (Adjust the offset when shutter speed is more than 1/500)
G VSUB OFST (P)	-5.0 V to 5.0 V (0.1 V step)*1	Adjusts the offset for the V. substrate voltage of the G-channel during the progressive reading (Adjust the offset when shutter speed is more than 1/500)
B VSUB OFST (P)	-5.0 V to 5.0 V (0.1 V step)*1	Adjusts the offset for the V. substrate voltage of the B-channel during the progressive reading (Adjust the offset when shutter speed is more than 1/500)
CCD H DRIVER	5.2 V/5.4 V/5.6 V/5.8 V/6.0 V/6.2 V	Sets the drive voltage of the CCD H DRIVE
AD CLOCK PHASE	-2/-1/±0/+1/+2	Sets the phase frequency of AD
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal of the TEST OUT connector

FLARE Display

S09	FLARE	TOP
R	FLARE	: 0
→G	FLARE	: ● 0
B	FLARE	: 0
FLARE		: ON
TEST OUT SELECT		: VBS

Item	Setting	Function
R FLARE	(-99 to 99)	Adjusts the R flare compensation level
G FLARE	(-99 to 99)	Adjusts the G flare compensation level
B FLARE	(-99 to 99)	Adjusts the B flare compensation level
FLARE	OFF/ON	Turns ON/OFF the flare compensation circuit
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal of the TEST OUT connector

GAMMA / DETAIL Display

S10	GAMMA/DETAIL	TOP
R	GAMMA	: 0
→G	GAMMA	: ● 0
B	GAMMA	: 0
DETAIL LEVEL		: 0

*1: The default value varies depending on the set.

Item	Setting	Function
R GAMMA	(-99 to 99)	Offsets PAINT/GAMMA/R
G GAMMA	(-99 to 99)	Offsets PAINT/GAMMA/G
B GAMMA	(-99 to 99)	Offsets PAINT/GAMMA/B
DETAIL LEVEL	(-99 to 99)	Offsets PAINT/DETAIL1/DETAIL LEVEL

MANUAL RPN Display

S11	MANUAL RPN	TOP
TEST OUT SELECT	:	VBS
→RPN CURSOR	:	● OFF
SUPER (MENU)	:	OFF
RPN WIDTH	:	1
CURSOR H POS	:	960
CURSOR V POS	:	540
CURSOR JUMP	:	CURR
RECORD RPN	:	EXEC
DELETE RPN	:	EXEC

Item	Setting	Function
TEST OUT SELECT	VBS/Y/R/G/B	Selects the video signal of the TEST OUT connector
RPN CURSOR	OFF/ON	Controls ON/OFF of the RPN cursor
SUPER (MENU)	OFF/ON	Turns ON/OFF the character information output (superimpose) of the TEST OUT connector
RPN WIDTH	0/1/2/3/4	Sets the RPN correction width
CURSOR H POS	37 to 1966	Sets position of the RPN cursor (horizontal)
CURSOR V POS	35 to 1118	Sets position of the RPN cursor (vertical)
CURSOR JUMP	PREV/CURR/NEXT	Jumps the cursor to the position in which the RPN data is registered - PREV : Jumps to the RPN data preceding the current position - CURR : Current display - NEXT : Jumps to the RPN data after the current position
RECORD RPN	Press the MENU knob to execute this menu item	Registers the RPN data of the present cursor position
DELETE RPN	Press the MENU knob to execute this menu item	Deletes the RPN data of the present cursor position

RPN MANAGE Display

S12	RPN MANAGE	TOP
CONC (APR) RESET	:	EXEC
→CONC2 (APR) RESET	:	EXEC
RPN ALL PRESET	:	EXEC
AUTO CONCEAL	:	EXEC
AUTO CONCEAL2	:	EXEC

Item	Setting	Function
CONC (APR) RESET	Press the MENU knob to execute this menu item	Deletes the RPN data registered at ABB, APR, or AUTO CONCEAL
CONC2 (APR) RESET	Press the MENU knob to execute this menu item	Deletes the RPN data registered at ABB, APR (SLS), or AUTO CONCEAL2
RPN ALL PRESET	Press the MENU knob to execute this menu item	Returns all RPN data to the state of factory shipment (Data registered manually are also deleted)
AUTO CONCEAL	Press the MENU knob to execute this menu item	Executes the AUTO RPN correction (The Black Level adjustment is not executed)
AUTO CONCEAL 2	Press the MENU knob to execute this menu item	Executes the AUTO RPN correction (For SLS ON) (The Black Level adjustment is not executed) Note The execution time for this function is about 30 minutes. More time may be required when temperatures inside the unit are low.

VDR MAINTENANCE Display

S130VDR MAINTENANCE TOP
AUDIO A/D ADJUST : EXEC
→AUDIO D/A ADJUST : EXEC
AU SIDE VOL ADJ : EXEC
POWER A/D ADJUST : EXEC
DRIVE MAINTEN : EXEC
SERVICE SUPPORT : EXEC

Item	Setting	Function
AUDIO A/D ADJUST	Press the MENU knob to execute this menu item	Adjustment of the AUDIO A/D Error Correction value (Refer to “4-11. AUDIO A/D Error Correction” for details)
AUDIO D/A ADJUST	Press the MENU knob to execute this menu item	Adjustment of the AUDIO D/A Error Correction value (Refer to “4-12. AUDIO D/A Error Correction” for details)
AU SIDE VOL ADJ	Press the MENU knob to execute this menu item	Adjustment of the AUDIO LEVEL Volume (inside panel) Error Correction value (Refer to “4-13. AUDIO LEVEL Volume Compensation” for details)
POWER A/D ADJUST	Press the MENU knob to execute this menu item	Adjustment of the Battery END Detecting Voltage (Refer to “4-14. Adjusting Battery End Detection Voltage” for details)
DRIVE MAINTEN	Press the MENU knob to move to the DRIVE MAINTEN screen	Refer to “DRIVE MAINTEN Display” for details
SERVICE SUPPORT	Press the MENU knob to move to the SERVICE SUPPORT screen	Displaying the VDR system error log and setting clear (Refer to “4-15. SERVICE SUPPORT Menu” for details)

DRIVE MAINTEN Display

Menu	Item	Sub item	Description
CHECK	DEVICE	TEMPERATURE SENSOR	Checks the temperature sensor on the drive block
		FAN MOTOR	Checks the fan motor connected to the drive block

Continued

Menu	Item	Sub item	Description
		ACCELERATION SENSOR	Checks the acceleration sensor
	LOADER		Checks the loader performance
	SLIDER	AUTO TEST	Checks the slider performance and the limit sensor
		IN-LIM TEST	Moves the slider to the IN LIMIT position
		OUT-LIM TEST	Move the slider to the OUT LIMIT position
	SPINDLE MOTOR	AUTO TEST	Checks the spindle motor performance
	OPTICAL BLOCK	FOCUS ACTUATOR	Checks the focus directions of the two shafts
		TRACKING ACTUATOR	Checks the tracking directions of the two shafts
		SA ACTUATOR	Checks the SA actuator
		LASER	Checks the laser
		ND FILTER	Checks the ND filter
	SKEW		Checks the skew
	LENS CLEANING		Performs Pick-up lens cleaning
ADJUST	SERVO_1		Servo 1 system (MTX BLOCK, PI/FE BLOCK, FE AGC) auto adjustment
	SKEW	TAN ADJUST RAD ADJUST	Adjust the skew
	SERVO_2		Servo 2 system (SKEW OFFSET, TE/CE BLOCK, SV LOOP GAIN) auto adjustment
	OTHER ADJUST	ACCELERATION OFFSET	Adjusts the offset of the acceleration sensor
ERROR LOGGER			Records the error occurred in the drive
OTHERS	VERSION		Displays the version of the drive block
	SERIAL NO		Displays the serial number of the drive block
	CLEAR MEDIA LOG		Clears the acquired media information
	MEMORY SUPPORT	UPLOAD TO EEPROM	Uploads the data backed up in the DR-606 board back to the EEPROM (IC4) on the SE-857 board

FAN Display

S14	FAN	TOP
→FAN VOLT FIX	: ●	OFF
FAN ROTATION DET:		OK

Item	Setting	Function
FAN VOLT FIX	OFF/ON	Sets the fan mode (Normally, set this to OFF and use the automatic control) • OFF : Temperature increase inside the unit is detected and the fan is automatically controlled • ON : The fan is controlled by the fixed voltage (8 V) (For the operation check of the fan)
FAN ROTATION DET	--/OK /NG	Display only

MEASURE Display

S15	MEASURE	TOP
MEASUREMENT MODE :	OFF	
→MASTER BLACK :	● 0	
MASTER GAIN (TMP) :	0 dB	

Item	Setting	Function
MEASUREMENT MODE	OFF/S/N/MODU/RESO/SENSE/REGI/DRANG	Selects the measurement mode • OFF : It returns to OFF when the main power is turned on • S/N : S/N ratio measurement mode • MODU : Modulation degree measurement mode • RESO : Resolution power measurement mode • SENSE : Sensitivity measurement mode • REGI : Registration measurement mode • DRANG : Dynamic range measurement mode
MASTER BLACK	(-99 to 99)	Adjusts the master black level (All of the R, G and B signal black levels are adjusted)
MASTER GAIN (TMP)	-6/-3/0/3/6/9/12/18/24/30/36/42 dB	Sets the tentative gain value

FILTER CTEMP Display

S16	FILTER CTEMP	TOP
FILTER CTEMP 1 :	3200	
→FILTER CTEMP 2 :	● 3200	
FILTER CTEMP 3 :	3200	
FILTER CTEMP 4 :	3200	

Item	Setting	Function
FILTER CTEMP 1	2000 to 10000 (100/1 step)	Sets the color temperature of filter 1
FILTER CTEMP 2	2000 to 10000 (100/1 step)	Sets the color temperature of filter 2
FILTER CTEMP 3	2000 to 10000 (100/1 step)	Sets the color temperature of filter 3
FILTER CTEMP 4	2000 to 10000 (100/1 step)	Sets the color temperature of filter 4

BATTERY INFO Display

When the battery (BP-GL65/GL95) supporting Info is used

→S17○BATTERY INFO TOP	
TYPE	: L I O N
MFD DATE D/M/Y	: 25022008
CYCLE COUNT	: 31
CAPACITY	: 6534mAh
VOLTAGE	: 15.6V
CURRENT	: 2759mA
REMAINING (%)	: 95%
REMAINING (MIN)	: 114M
MODE	: 0000
STATUS	: 00E0

Item	Setting	Function
TYPE	Display only	Selecting battery types
MFD DATE D/M/Y	Display only	Date of manufacture
CYCLE COUNT	Display only	Number of times of charge/discharge
CAPACITY	Display only	Selecting the capacity when battery is fully charged
VOLTAGE	Display only	Indicating the battery voltage
CURRENT	Display only	Indicating the battery current
REMAINING (%)	Display only	Indicating the remaining power of the battery in units of %
REMAINING (MIN)	Display only	Indicating the remaining power of the battery in units of time (minute)
MODE	Display only	Battery operating mode is displayed
STATUS	Display only	Battery status is displayed

HOURS METER 2 Display

S18○HOURS METER2 TOP	
→RESET METER : D EXEC	
OPERATION	: XXXXXH
LASER	: XXXXX
OPERATION (rst)	: XXXXXH
SPINDLE (rst)	: XXXXXH
LOADING (rst)	: XXXXX
SEEK (rst)	: XXXXXH

Refer to “6-4. Digital Hours Meter” for the description of HOURS METER 2 page.

Item	Setting	Function
RESET METER	Press the MENU knob to move to the RESET METER display	Resets the hours meters
OPERATION	Display only	OPERATION (operation time display) mode Accumulates the time during which the power is turned on, and displays the value by an hour
LASER	Display only	LASER PARAMETER (optical block assembly light output time display) mode Accumulates the time (laser-illuminated hours) during which the light is being emitted, and displays the value by an hour. Resettable. The value can be used as a reference to when the next periodical replacement should be

Continued

Item	Setting	Function
OPERATION (rst)	Display only	OPERATION (operation time display) mode (resettable) This is the same function as the OPERATION mode above, but is resettable By resetting it after replacing a part, the value can be used as a reference to when the next periodical replacement should be
SPINDLE (rst)	Display only	SPINDLE RUNNING (spindle motor rotation time display) mode (resettable) Accumulates the time during which the spindle is rotating, and displays the value by an hour. Resettable. By resetting it after replacing a spindle, the value can be used as a reference to when the next replacement should be
LOADING (rst)	Display only	LOADING COUNTER (number of times of disc insertion display) mode (resettable) Accumulates and displays the number of times of disc insertion. Resettable. By resetting it after replacing a loader assembly, the value can be used as a reference to when the next periodical replacement should be
SEEK (rst)	Display only	SEEK RUNNING (optical-head seek operation time display) mode (resettable) Accumulates the seek operation time of the optical head, and displays the value by an hour. Resettable. By resetting it after replacing a seek motor, the value can be used as a reference to when the next replacement should be

FUNCTION LIMIT Display

S19	FUNCTION LIMIT TOP
→AF DISPLAY	: ● OFF
SDI AUDIO SELECT	: DSABL
DISP FAN ALWAYS	: ON
SHUTTER SLS 32F	: DSABL

Item	Setting	Function
AF DISPLAY	OFF/ON	When the FUJINON PF lens (HA22x7.4BRD, HA13x4.5BRD) is used, turns ON/OFF the function that displays the AF detection window and the in-focus indicator on the viewfinder screen ^{*1}
SDI AUDIO SELECT	DSABL/ENABLE	Enables or disables the audio input function at the time of SDI input. - DSABLE: Disabled - ENABLE: Enabled
DISP FAN ALWAYS	OFF/ON	Controls whether to always display the fan control mode on the viewfinder screen. - ON: The fan control mode is always displayed. - OFF: The fan control mode is not displayed.^{*2}
SHUTTER SLS 32F	DSABL/ENABLE	Function of SLS 32F - DSABLE: Disabled - ENABLE: Enabled

*1: Turning ON/OFF the AF detection window, changing the area and turning ON/OFF the in-focus display are activated by the switch of the lens side.

(For details, refer to the lens specifications.)

In-focus indicator display (displayed above F value display of lens on VF DISP):

▲ Out of former focus

■ Just focus

▼ Out of post-focus

*2: When the internal temperature rises, FAN blinks regardless of the setting.

S/H DC Display

S20	○	S/H DC	TOP
S/H DC	ADJ	MODE	: OFF
TEST OUT	SELECT	:	VBS
S/H DC	B	R ch	: 0
S/H DC	B	G ch	: 0
S/H DC	B	B ch	: 0

Item	Setting	Function
S/H DC ADJ MODE	OFF/ON	Turns ON/OFF the function that displays the dummy white spots (vertical bars) for adjustment on the screen (The dummy white spots are displayed in the order of R/G/B starting from the center of screen to the right) Adjusts the S/H DC B R-channel/G-channel/B-channel to the point where the dummy white spots are least visible on the screen (Adjusts them with the GAIN set in 12 dB)
TEST OUT SELECT	VBS/Y/R/G/B	Select the video signal to be output from the TEST OUT connector
S/H DC B R ch	(-99 to 99)	Adjusts the sample-and-hold DC level of the R-channel*1
S/H DC B G ch	(-99 to 99)	Adjusts the sample-and-hold DC level of the G-channel*1
S/H DC B B ch	(-99 to 99)	Adjusts the sample-and-hold DC level of the B-channel*1

SERVICE FILE Display

S21	○	SERVICE FILE	TOP
SVC FILE	LOAD	:	EXEC
→SVC FILE	SAVE	:	D EXEC
F.ID:	□□□□□□□□□□□□□□□□		

Item	Setting	Function
SVC FILE LOAD	Press the MENU knob to execute this menu item	Loads the SERVICE file from the main unit or a USB memory
SVC FILE SAVE	Press the MENU knob to execute this menu item	Saves the SERVICE file in the main unit or a USB memory
F.ID	16 characters (alphanumeric characters symbols and spaces)	Sets the SERVICE file ID (When the SVC FILE SAVE is executed, this ID is saved)

*1: If this adjustment is not made for optimum result, the troubles may occur such as thin vertical bars during the high gain mode or poor accuracy of white spot compensation.

4-10. Drive Maintenance

Used for the maintenance of the optical drive.

- Use an external monitor for the following items.
 - “4-10-4. ACCELERATION SENSOR”
 - “4-10-20. ACCELERATION OFFSET”
- The alignment disc (PFD23A-RS) is required for the following item.
 - “4-10-15. SKEW”

4-10-1. Basic Operation on Drive Maintenance Menus

Enter the drive maintenance menu from the SERVICE menu. (Refer to “4-9. SERVICE Menu”)

If a cartridge is remaining inside, it is ejected automatically.

Procedure

1. Select the "VDR MAINTENANCE" on the SERVICE menu.
2. Select “DRIVE MAINTEN” by turning the MENU knob, and press the MENU knob.

```
S13○VDR MAINTENANCE TOP
AUDIO A/D ADJUST: EXEC
AUDIO D/A ADJUST: EXEC
AU SIDE VOL ADJ : EXEC
POWER A/D ADJUST: EXEC
→DRIVE MAINTEN : EXEC
SERVICE SUPPORT : EXEC
```

3. Select “YES” by turning the MENU knob, and press the MENU knob.

```
DRIVE MAINTENANCE

MAINTENANCE START?

→YES NO
```

The drive maintenance menu is displayed.

```
DRIVE MAINTENANCE
*CHECK
ADJUST
ERROR LOGGER
OTHERS
```

4-10-2. TEMPERATURE SENSOR

This menu allows you to check the temperature sensor on the optical drive.

Menu hierarchy:

[DRIVE MAINTENANCE]

→ [CHECK]

→ [DEVICE]

→ [TEMPERATURE SENSOR]

Procedure

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.

TEMPERATURE SENSOR
CHECK START?
*YES
NO

The current temperature appears.

TEMPERATURE SENSOR
36.0 [DEG]

4-10-3. FAN MOTOR

This menu allows you to check the fan motor connected to the optical drive.

Menu hierarchy:

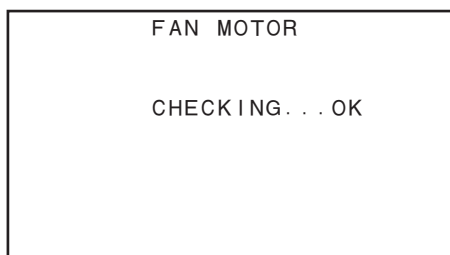
[DRIVE MAINTENANCE]
→ [CHECK]
→ [DEVICE]
→ [FAN MOTOR]

Procedure

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.

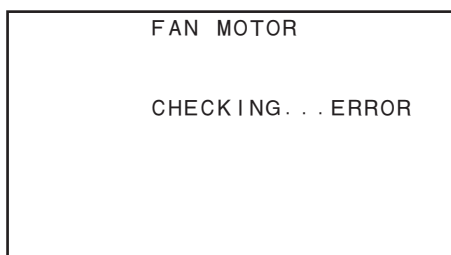


The result appears.



If failed:

The following screen appears.



4-10-4. ACCELERATION SENSOR

This menu allows you to check the acceleration sensor on the optical drive.

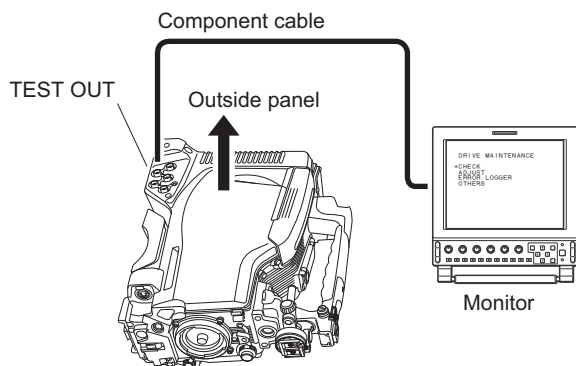
Note

Be sure to place the unit horizontally with the outside panel facing upward as shown in the figure when checking the sensor.

The check may be failed if the optical drive is incorrectly placed.

Preparation

1. Place the unit with the outside panel facing upward as shown in the figure.
2. Connect the component cable to the TEST OUT connector and the monitor.
3. Select VIDEO OUT MENU from the VIDEO OUT page in the OPERATION menu.
The menu appears on the connected monitor.

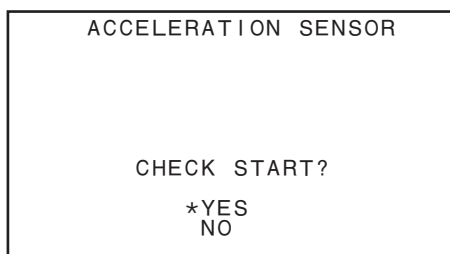


Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [DEVICE]
→ [ACCELERATION SENSOR]

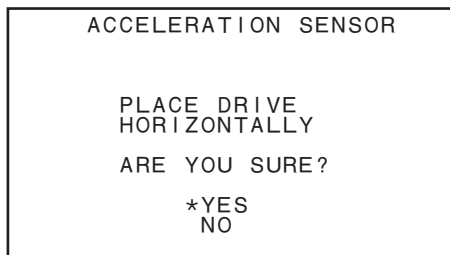
Procedure

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.

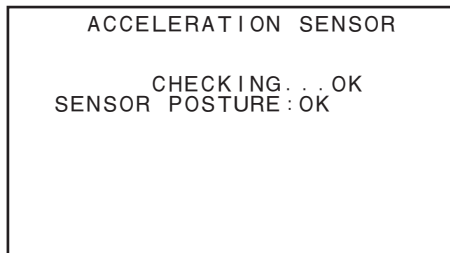


A confirmation screen appears.

3. Check that the unit is placed horizontally, select "YES" by turning the MENU knob and press the MENU knob.



When the optical drive is detected as horizontal, the following screen appears.



If failed:

The following screen appears.

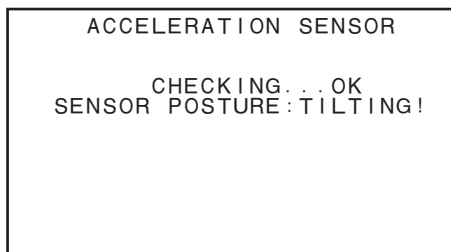
Check optical drive posture and sensor installation.

Tip

CHECKING: Disconnection check result

SENSOR POSTURE: SENSOR POSTURE check result

If the disconnection check results in an error, the SENSOR POSTURE check is not carried out.



4-10-5. LOADER

This menu allows you to check loader operations.

Note

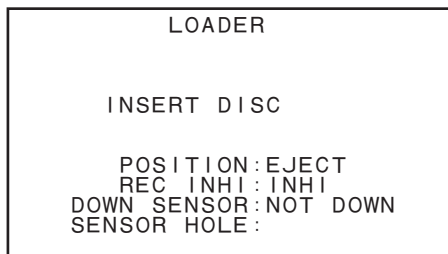
Check that the loader is correctly installed on the optical drive before starting the check.

Menu hierarchy:

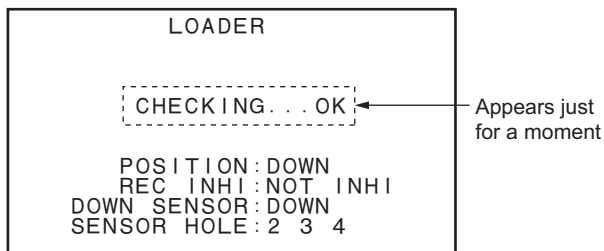
[DRIVE MAINTENANCE]
→ [CHECK]
→ [LOADER]

Procedure

1. A confirmation screen appears.



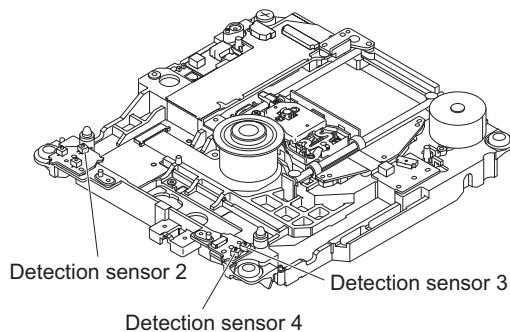
2. Insert a cartridge.
The result appears.
The loader moves to the DOWN position.



SENSOR HOLE

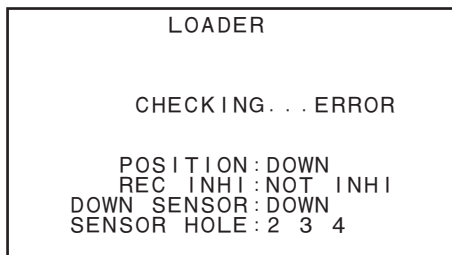
- When insert 23.3 GB SL disc such as PFD23A, the message "SENSOR HOLE:2 3 4" is displayed.
- When insert 50 GB SL disc such as PFD50LA, the message "SENSOR HOLE:3 4" is displayed.

In cases other than above, check the corresponding detection sensor because of possibility of failure.



If failed:

The following screen appears.



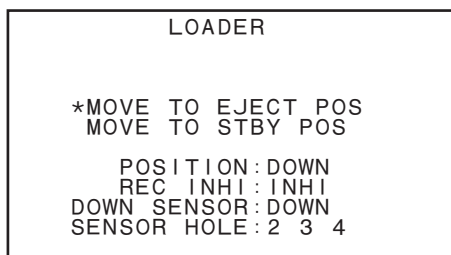
The following describes four procedures:

- “Moving DOWN Position to EJECT Position”
- “Moving DOWN Position to STBY Position”
- “Moving STBY Position to EJECT Position”
- “Moving STBY Position to DOWN Position”

Moving DOWN Position to EJECT Position

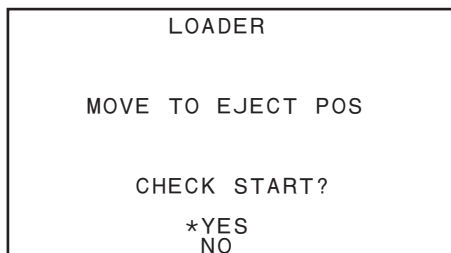
Procedure

1. The item selection screen appears.
2. Press the MENU knob.



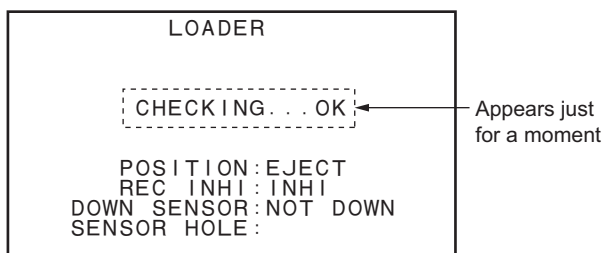
A confirmation screen appears.

3. Select “YES” by turning the MENU knob, and press the MENU knob.



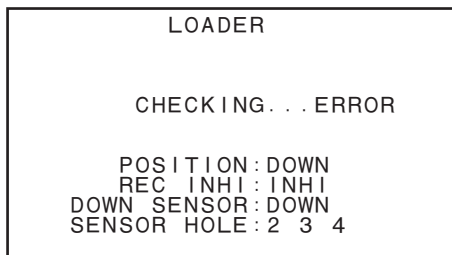
The result appears.

The loader moves to the EJECT position to eject the cartridge.



If failed:

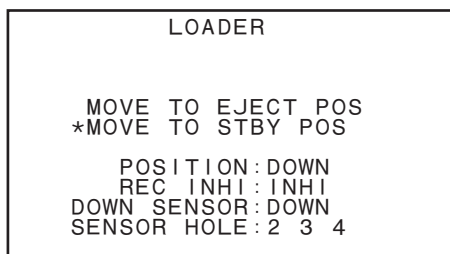
The following screen appears.



Moving DOWN Position to STBY Position

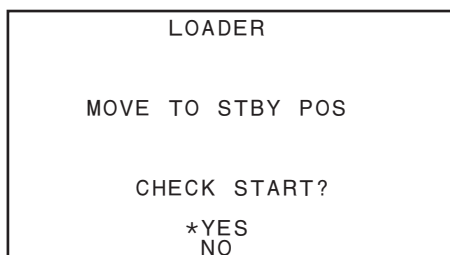
Procedure

1. A confirmation screen appears.
2. Select “MOVE TO STBY POS” by turning the MENU knob, and press the MENU knob.



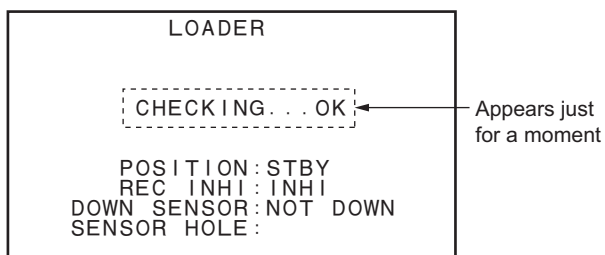
A confirmation screen appears.

3. Select “YES” by turning the MENU knob, and press the MENU knob.



The result appears.

The loader moves to the STBY position.



If failed:

The following screen appears.

```

      LOADER

      CHECKING . . . ERROR

      POSITION:DOWN
      REC INHI:INH I
      DOWN SENSOR:DOWN
      SENSOR HOLE:2 3 4
  
```

Moving STBY Position to EJECT Position

Procedure

1. The item selection screen appears.
2. Press the MENU knob.

```

      LOADER

      *MOVE TO EJECT POS
      MOVE TO DOWN POS

      POSITION:STBY
      REC INHI:INH I
      DOWN SENSOR:NOT DOWN
      SENSOR HOLE:
  
```

A confirmation screen appears.

3. Select “YES” by turning the MENU knob, and press the MENU knob.

```

      LOADER

      MOVE TO EJECT POS

      CHECK START?

      *YES
      NO
  
```

The result appears.

The loader moves to the EJECT position to eject the cartridge.

```

      LOADER

      CHECKING . . . OK
      POSITION:EJECT
      REC INHI:INH I
      DOWN SENSOR:NOT DOWN
      SENSOR HOLE:
  
```

← Appears just for a moment

If failed:

The following screen appears.

```

LOADER

CHECKING . . . ERROR

POSITION:STBY
REC INHI:INH I
DOWN SENSOR:NOT DOWN
SENSOR HOLE:

```

Moving STBY Position to DOWN Position

Procedure

1. The item selection screen appears.
2. Select "MOVE TO DOWN POS" by turning the MENU knob, and press the MENU knob.

```

LOADER

MOVE TO EJECT POS
*MOVE TO DOWN POS

POSITION:STBY
REC INHI:INH I
DOWN SENSOR:NOT DOWN
SENSOR HOLE:

```

A confirmation screen appears.

3. Select "YES" by turning the MENU knob, and press the MENU knob.

```

LOADER

MOVE TO DOWN POS

CHECK START?
*YES
NO

```

The result appears.

The loader moves to the DOWN position.

```

LOADER

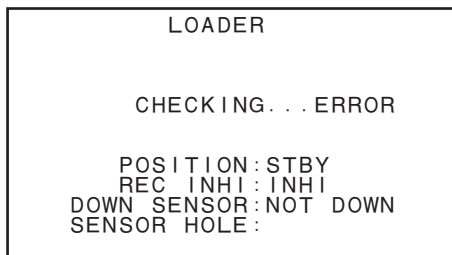
CHECKING . . . OK ← Appears just
                    for a moment

POSITION:DOWN
REC INHI:INH I
DOWN SENSOR:DOWN
SENSOR HOLE:2 3 4

```

If failed:

The following screen appears.



4-10-6. SLIDER-AUTO TEST

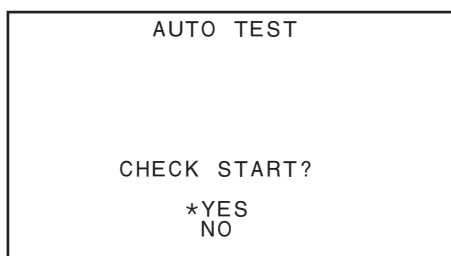
This menu allows you to check optical block assembly operations and the limit sensor.

Menu hierarchy:

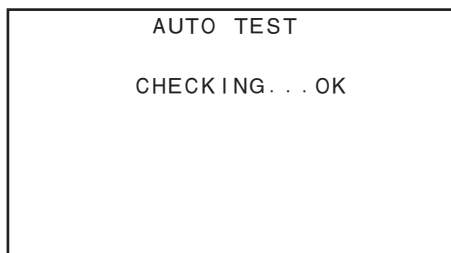
[DRIVE MAINTENANCE]
→ [CHECK]
→ [SLIDER]
→ [AUTO TEST]

Procedure

1. A confirmation screen appears.
2. Select "YES" by turning the MENU knob, and press the MENU knob.

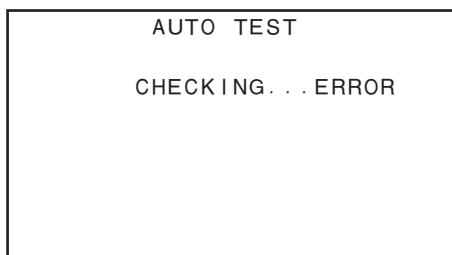


The result appears.



If failed:

The following screen appears.



4-10-7. IN-LIM TEST

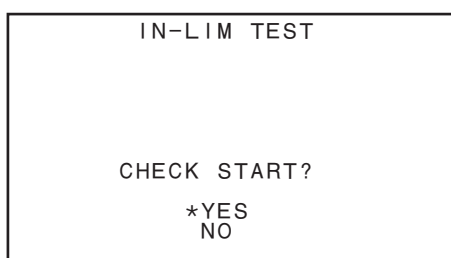
This menu allows you to move the optical block assembly to the inner-limit position of the disc.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [SLIDER]
→ [IN-LIM TEST]

Procedure

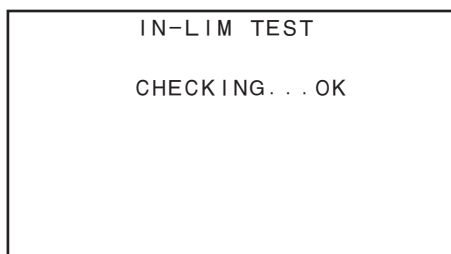
1. A confirmation screen appears.
2. Select "YES" by turning the MENU knob, and press the MENU knob.



The result appears.

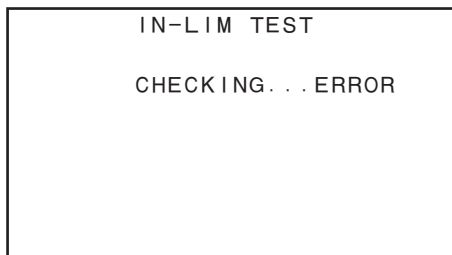
Note

Check visually that the optical block assembly moves to the inner-limit position.



If failed:

The following screen appears.



4-10-8. OUT-LIM TEST

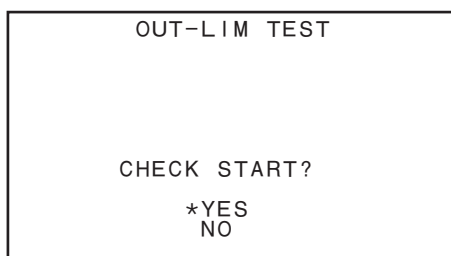
This menu allows you to move the optical block assembly to the outer-limit position of the disc.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [SLIDER]
→ [OUT-LIM TEST]

Procedure

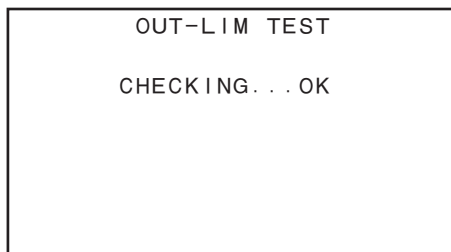
1. A confirmation screen appears.
2. Select "YES" by turning the MENU knob, and press the MENU knob.



The result appears.

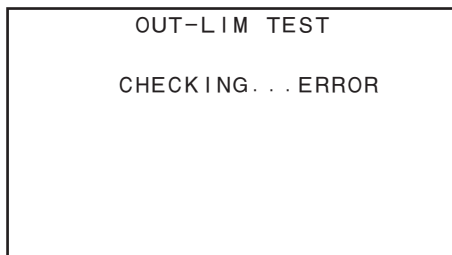
Note

Check visually that the optical block assembly moves to the outer-limit position.



If failed:

The following screen appears.



4-10-9. SPINDLE MOTOR-AUTO TEST

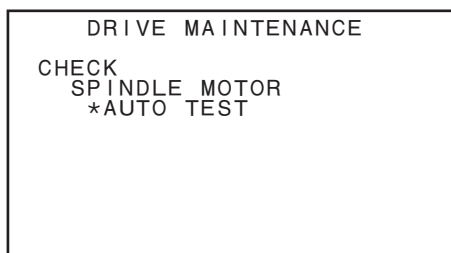
This menu allows you to check spindle motor operations.

Menu hierarchy:

[DRIVE MAINTENANCE]
 → [CHECK]
 → [SPINDLE MOTOR]

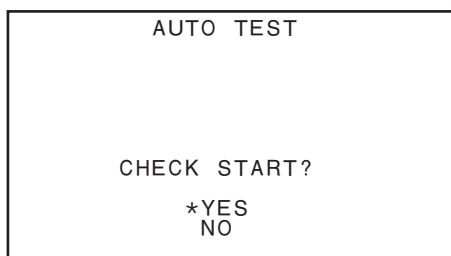
Procedure

1. A confirmation screen appears.
2. Press the MENU knob.

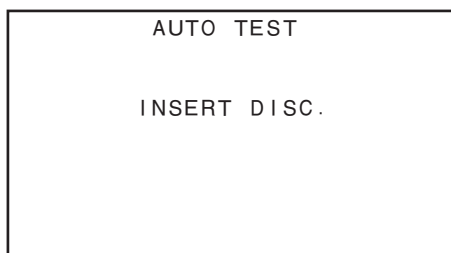


A confirmation screen appears.

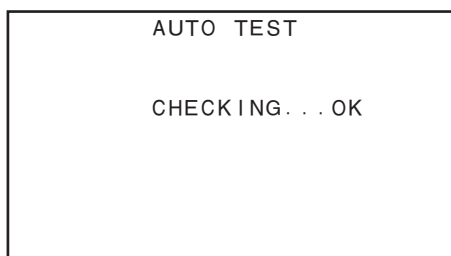
3. Select “YES” by turning the MENU knob, and press the MENU knob.



A screen to insert a cartridge appears.

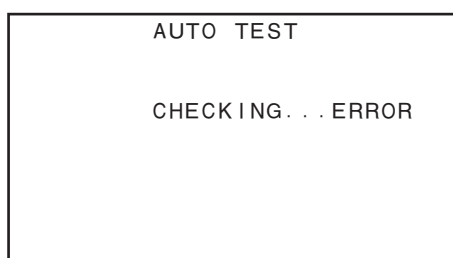


4. Insert a cartridge.
The result appears.



If failed:

The following screen appears.



4-10-10. FOCUS ACTUATOR

This menu allows you to check the focus of the 2-axis actuator.

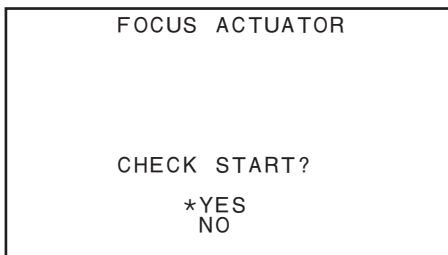
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [OPTICAL BLOCK]
→ [FOCUS ACTUATOR]

Procedure

1. A confirmation screen appears.

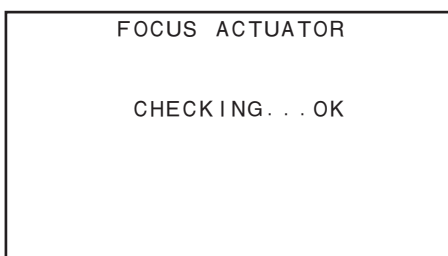
2. Select "YES" by turning the MENU knob, and press the MENU knob.



Check that the 2-axis actuator moves several times.

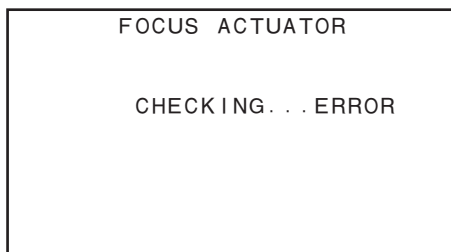
- If the actuator does not move or its movement is not smooth, the harness may be connected improperly or the optical block may be defective.

The result appears.



If failed:

The following screen appears.



4-10-11. TRACKING ACTUATOR

This menu allows you to check the tracking of the 2-axis actuator.

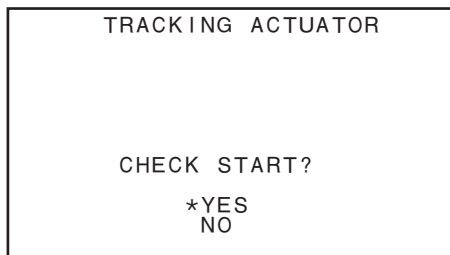
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [OPTICAL BLOCK]
→ [TRACKING ACTUATOR]

Procedure

1. A confirmation screen appears.

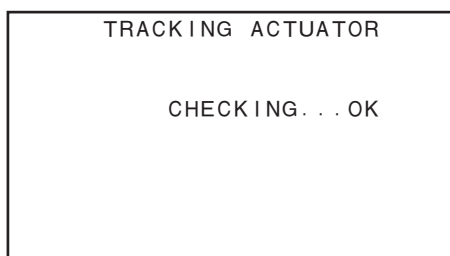
2. Select "YES" by turning the MENU knob, and press the MENU knob.



Check that the 2-axis actuator moves several times.

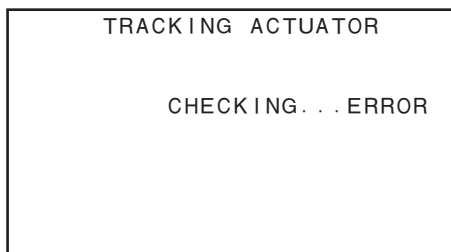
- If the actuator does not move or its movement is not smooth, the harness may be connected improperly or the optical block may be defective.

The result appears.



If failed:

The following screen appears.



4-10-12. SA ACTUATOR

This menu allows you to check the SA actuator motor.

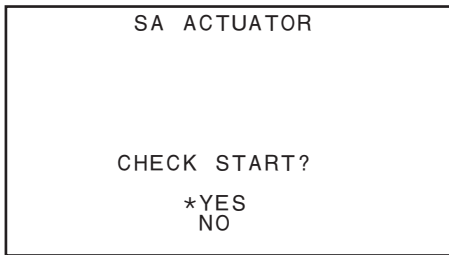
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [OPTICAL BLOCK]
→ [SA ACTUATOR]

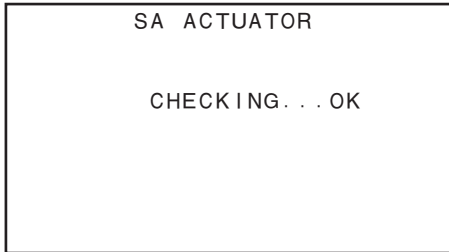
Procedure

1. A confirmation screen appears.

2. Select "YES" by turning the MENU knob, and press the MENU knob.



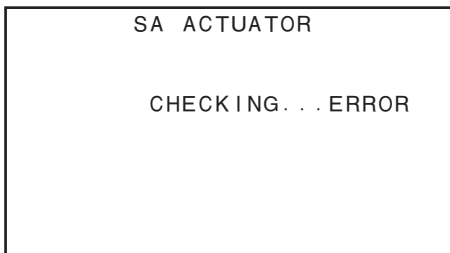
The result appears.



If failed:

The following screen appears.

The harness may be connected improperly or the optical block may be defective.



4-10-13. LASER

This menu allows to check the laser.

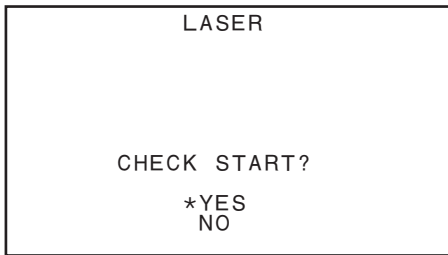
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [OPTICAL BLOCK]
→ [LASER]

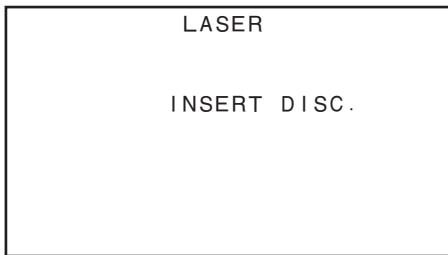
Procedure

1. A confirmation screen appears.

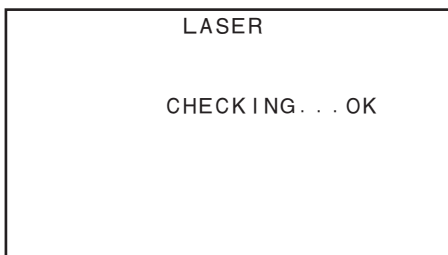
2. Select “YES” by turning the MENU knob, and press the MENU knob.



A screen to insert a cartridge appears.

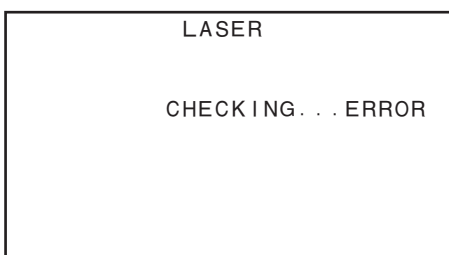


3. Insert a cartridge.
The result appears.



If failed:

The following screen appears.



4-10-14. ND FILTER

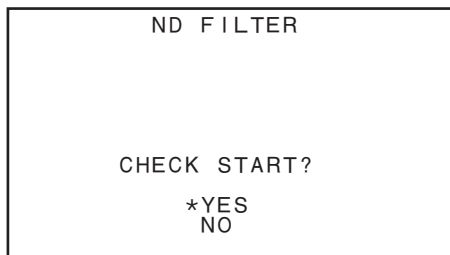
This menu allows you to check the ND filter.

Menu hierarchy:

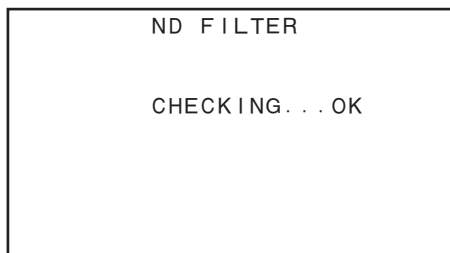
[DRIVE MAINTENANCE]
→ [CHECK]
→ [OPTICAL BLOCK]
→ [ND FILTER]

Procedure

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.

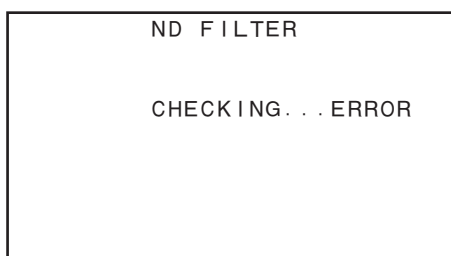


The result appears.



If failed:

The following screen appears.



4-10-15. SKEW

This menu allows you to check the skew.

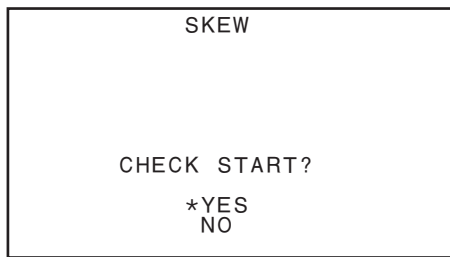
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [SKEW]

Procedure

1. A confirmation screen appears.

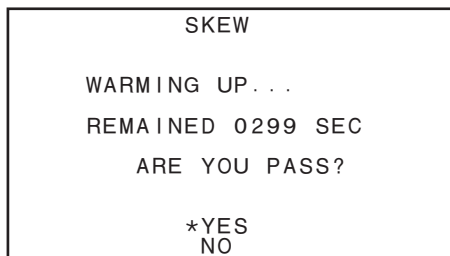
2. Select "YES" by turning the MENU knob, and press the MENU knob.



A warm-up screen appears.

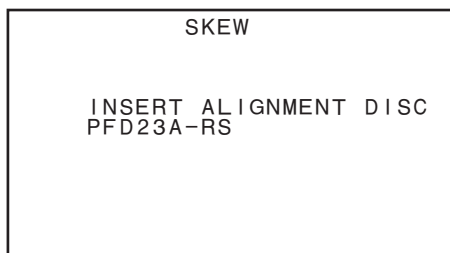
Tip

If five minutes has already passed since power ON, this screen appears just for a moment.



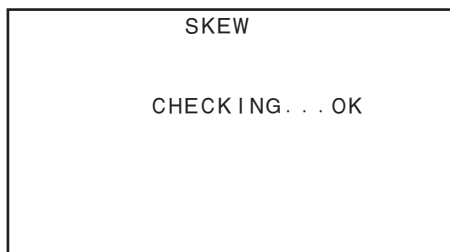
If the power has been supplied to the unit for over five minutes, you can select YES and proceed to the next step even after you turn off the power and then turn it back on.

3. A confirmation screen appears when "0000 SEC" is displayed.



4. Insert the alignment disc.
5. Press the MENU knob.

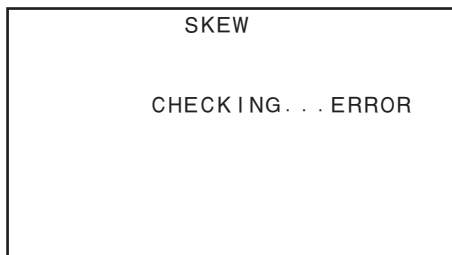
The result appears.



If failed:

The following screen appears.

Perform optical drive alignment. (Refer to ["8. Adjustment of Optical Drive System"](#))



4-10-16. LENS CLEANING

This menu allows you to clean the lens.

Note

Before cleaning, be sure to unload the disc from the unit.

If the disc remains at the loading slot, cleaning will not be finished completely.

Menu hierarchy:

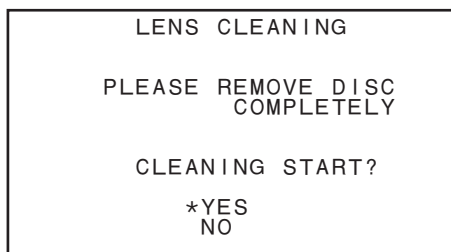
[DRIVE MAINTENANCE]

→ [CHECK]

→ [LENS CLEANING]

Procedure

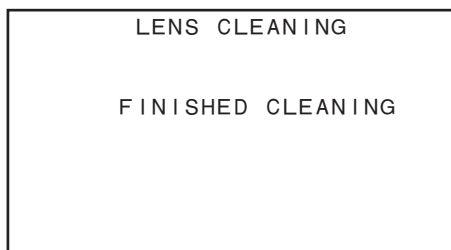
1. A confirmation screen appears.
2. Select "YES" by turning the MENU knob.



Note

Check that no disc is remaining in the unit.

3. Check that no disc is remaining, and then press the MENU knob.
The result appears.



4-10-17. SERVO_1

This menu allows you to adjust the offset and gain of the signal circuit for servo error detection. (Refer to “[8. Adjustment of Optical Drive System](#)” for details.)

Note

Assembly only after replacement, execute this menu.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [ADJUST]
→ [SERVO_1]

4-10-18. SKEW

This menu allows you to skew adjustment.

Remove the loader assembly before executing this menu. (Refer to “[8. Adjustment of Optical Drive System](#)” for details.)

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [ADJUST]
→ [SKEW]

4-10-19. SERVO_2

This menu allows you to adjust TE/CE BLOCK, and SV LOOP GAIN necessary for servo operation. (Refer to “[8. Adjustment of Optical Drive System](#)” for details.)

Note

Be sure to install the loader. The adjustments are not available if the loader is not installed.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [ADJUST]
→ [SERVO_2]

4-10-20. ACCELERATION OFFSET

This menu allows you to perform the offset adjustment of the acceleration sensor.

Note

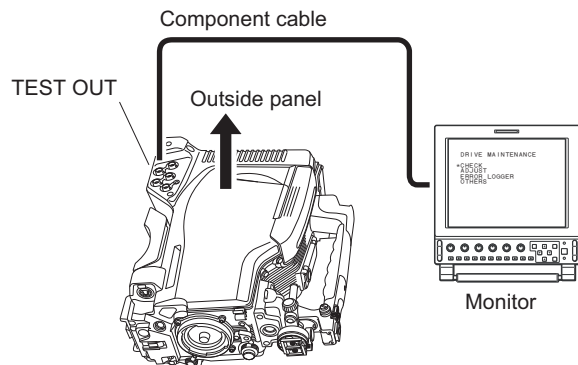
Be sure to place the unit horizontally with the outside panel facing upward as shown in the figure when checking the sensor.

The servo operation is not ensured if the optical drive is incorrectly placed.

Preparation

1. Place the unit with the outside panel facing upward as shown in the figure.

2. Connect the component cable to the TEST OUT connector and the monitor.
3. Select VIDEO OUT MENU from the VIDEO OUT page in the OPERATION menu.
The menu appears on the connected monitor.



Menu hierarchy:

[DRIVE MAINTENANCE]

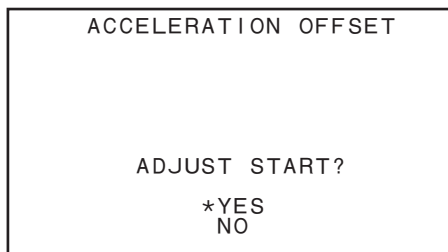
→ [ADJUST]

→ [OTHER ADJUST]

→ [ACCELERATION OFFSET]

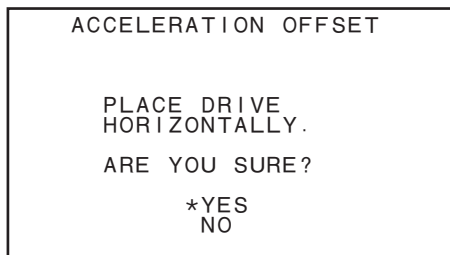
Procedure

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.

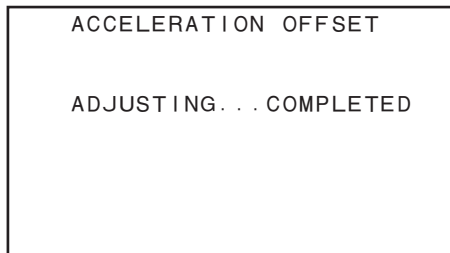


The result appears.

3. Select “YES” by turning the MENU knob, and press the MENU knob.

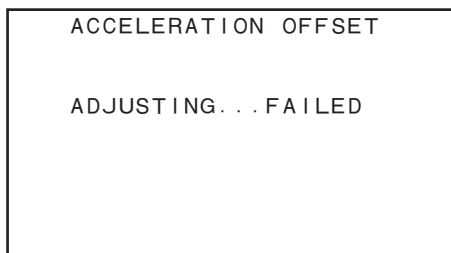


A confirmation screen appears.



If failed:

The following screen appears.



4-10-21. ERROR LOGGER

This menu allows you to delete registered error logs.

Tip

- DRIVE ERROR and DRIVE WARNING are recorded.
 - Up to 16 pieces of log data are displayed.
- The following data is overwritten on the existing data from the oldest.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [ERROR LOGGER]

Procedure

1. Displayed the error log list.

2. Select a desired error number using the MENU knob.

ERROR LOGGER				
*01:	09/22	13:38	95-503	
02:	09/22	02:00	3C-500	
03:	09/21	11:19	3C-500	
04:	09/21	11:18	3C-500	
05:	09/21	11:13	3C-500	
06:	09/21	10:58	04-77C	
07:	09/21	10:58	02-B68	
08:	09/21	10:58	08-091	

Tip

To change the display to the next screen, by turning the MENU knob.

```

ERROR LOGGER

*09: 09/21 10:58 37-500
10: 09/20 01:00 3C-500
11:
12:
13:
14:
15:
16:
CLEAR ERROR LOG

```

3. Press the MENU knob.
Detailed information of the selected error appears.

ERROR LOGGER				
01:				
	2014/05/22	13:38:39		
	C	95-503		

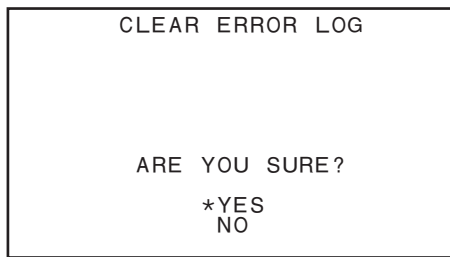
Clearing Error Log

1. Display the error log list.
2. Select "CLEAR ERROR LOG" by turning the MENU knob, and press the MENU knob.

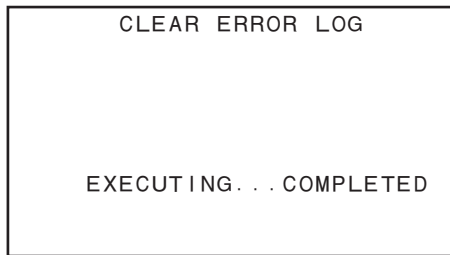
ERROR LOGGER				
09:	09/21	10:58	37-500	
10:	09/20	01:00	3C-500	
11:				
12:				
13:				
14:				
15:				
16:				
*CLEAR ERROR LOG				

A confirmation screen appears.

3. Select “YES” by turning the MENU knob, and press the MENU knob.

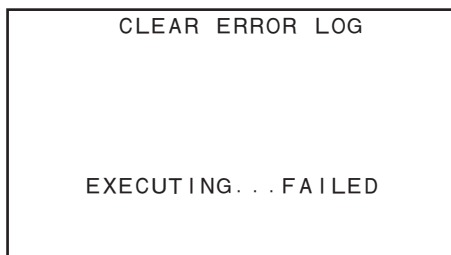


The result appears.



If failed:

The following screen appears.

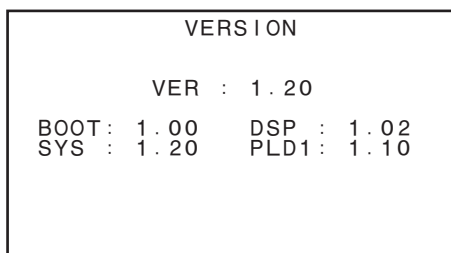


4-10-22. VERSION

This menu displays the version of the optical drive.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [OTHERS]
→ [VERSION]

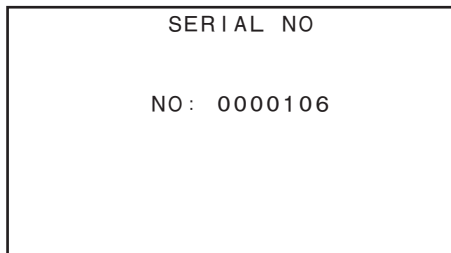


4-10-23. SERIAL NO

This menu displays the serial number of the optical drive.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [OTHERS]
→ [SERIAL NO]



4-10-24. CLEAR MEDIA LOG

This menu allows you to delete the log of media. (Refer to [“8-6. Clearing Media Log”](#) for details.)

Note

Once deleted, the deleted log cannot be restored.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [OTHERS]
→ [CLEAR MEDIA LOG]

4-10-25. UPLOAD TO EEPROM

This menu allows you to update the EEPROM (IC4) information backed up on the SE-857 board when only IC4 is replaced.

Note

When replacing the SE-857 board, remove the EEPROM (IC4) from the board, and then mount it on the new board. This menu is not necessary. Execute this menu only when IC4 is replaced solely.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [OTHERS]
→ [MEMORY SUPPORT]
→ [UPLOAD TO EEPROM]

Procedure

1. A confirmation screen appears.

2. Select “YES” by turning the MENU knob, and press the MENU knob.

```
      UPLOAD TO EEPROM

      FLASH >>> EEPROM
      LOAD BACKUP DATA.

      ARE YOU SURE?

      *YES
      NO
```

The result appears.

```
      UPLOAD TO EEPROM

      FLASH >>> EEPROM
      LOAD BACKUP DATA.

      LOADING . . . COMPLETED
```

If failed:

The following screen appears.

```
      UPLOAD TO EEPROM

      FLASH >>> EEPROM
      LOAD BACKUP DATA.

      LOADING . . . FAILED
```


4-11. AUDIO A/D Error Correction

Before starting adjustment, refer to “9-1. Preparation”.

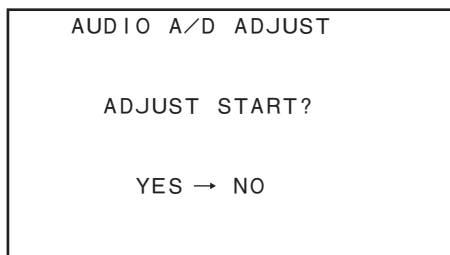
Fixtures and Equipment

For more details, refer to “1-6-2. Measuring Equipments”.

- Signal generator

Procedure

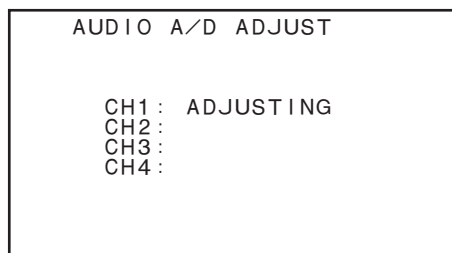
1. Input the sine wave of +4 dBu of 1 kHz to the AUDIO IN CH1 connector and CH2 connector on the rear.
2. Execute AUDIO A/D ADJUST of the VDR MAINTENANCE page of the SERVICE menu.



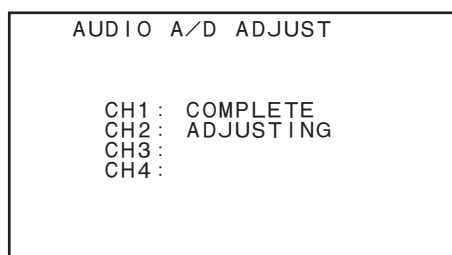
3. Select “YES” by turning the MENU knob, and press the MENU knob.

The auto adjustment starts. The following screens are displayed during the adjustment.

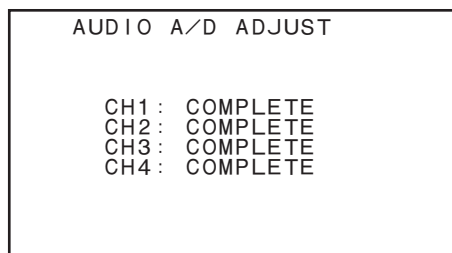
- Screen displayed when CH1 is being adjusted



- Screen displayed when CH1 is finished and CH2 is being adjusted



- Screen displayed when all CH is are finished



4. Press down the MENU ESCAPE switch when the adjustment is complete.
5. Turn off the power of this equipment once and back on again. The error is corrected.

Note

- If “TIME OVER ERR” is indicated on the adjustment screen, check the menu setting, switch setting and others, and re-execute the adjustment.
- If “INPUT OVER ERR” is indicated on the adjustment screen, check the signal level, since the input signal level may be too high.
- If “INPUT UNDER ERR” is indicated on the adjustment screen, check the signal level, since the input signal level may be too low.
- If “NO INPUT ERR” is indicated on the adjustment screen, check the input signal, since the signal may not be input correctly.

4-12. AUDIO D/A Error Correction

Before starting adjustment, refer to “9-1. Preparation”.

Fixtures and Equipment

For more details, refer to “1-6-2. Measuring Equipments”.

- Audio level-meter

Procedure

1. Execute AUDIO D/A ADJUST of the VDR MAINTENANCE page of the SERVICE menu.

AUDIO D/A ADJUST
ADJUST START?
YES → NO

2. Select “YES” by turning the MENU knob, and press the MENU knob.
3. Turn the AUDIO LEVEL knob of CH1 so that the output level of CH1 becomes 0 dBu $\pm$ 0.05 dB.
4. Turn the AUDIO LEVEL knob of CH2 so that the output level of CH2 becomes 0 dBu $\pm$ 0.05 dB.

AUDIO D/A ADJUST
COMPLETE ADJUSTING?
→ YES NO

5. Select “YES” by turning the MENU knob, and press the MENU knob.

Note

When “NO” is selected, the data adjusted this time becomes invalid, and the previous adjustment value becomes valid.

6. Press down the MENU ESCAPE switch when the adjustment is complete.
7. Turn off the power of this equipment once and back on again. The error is corrected.

4-13. AUDIO LEVEL Volume Compensation

Before starting adjustment, refer to “9-1. Preparation”.

Fixtures and Equipment

For more details, refer to “1-6-2. Measuring Equipments”.

- Signal generator

Procedure

1. Input the sine wave of +4 dBu of 1 kHz to the AUDIO IN CH1 connector and CH2 connector on the rear.
2. Align the LEVEL knobs of CH1 and CH2 to the position one scale left of the mechanical center position.
3. Execute AU SIDE VOL ADJ. of the VDR MAINTENANCE page of the SERVICE menu.

AUDIO SIDE VOL ADJUST
ADJUST START?
YES → NO

4. Select “YES” by turning the MENU knob, and press the MENU knob.

AUDIO SIDE VOL ADJUST
ADJUST COMPLETE.
CH1 : OK DATA : 508
CH2 : OK DATA : -460

5. Press down the MENU ESCAPE switch when the adjustment is complete.
6. Turn off the power of this equipment once and back on again. The error is corrected.

Note

If the adjustment result screen shows “NG”, execute the adjustment from step 3 again. When “NG” reappears, replace the variable resistor (RV1002 or RV1003 on the FP-190 board) of the LEVEL knob.

4-14. Adjusting Battery End Detection Voltage

Before starting adjustment, refer to “9-1. Preparation”.

Devices and tools

For more details, refer to “1-6-2. Measuring Equipments”.

- Rated voltage power source (one that can output at least 10 A)
- Digital voltmeter
- Blank disc

Procedure

1. Supply a +12 V voltage to the DC IN connector.
2. Insert a blank disc for recording into the unit, press the REC START button, and begin recording.
3. Execute POWER A/D ADJUST from the page of VDR MAINTENANCE of the SERVICE menu.

POWER A/D ADJUST

ADJUST START?

YES →NO

4. Turn the MENU knob to select “YES” and press the MENU knob.

POWER A/D ADJUST

ADJUST COMPLETE .

ADJ DATA : 0.02 [V]

5. After adjustment finishes, press down on the MENU ESCAPE switch.

Note

If the message “ADJUST ERROR” appears in the adjustment result menu, recheck whether a +12 V voltage is supplied to the DC IN connector and repeat the adjustment from step 3.

4-15. SERVICE SUPPORT Menu

Displays the error log for all errors except for the ones that occur in the optical drive block.

Procedure

1. Execute SERVICE SUPPORT from the VDR MAINTENANCE page of the SERVICE menu.

```
SERVICE SUPPORT
→DISPLAY ERR LOG : EXEC
CLEAR ERR LOG   : EXEC
```

2. Turn the MENU knob to select “DISPLAY ERR LOG” and press the MENU knob.
3. Turn the MENU knob to move the arrow so that it points to the error code that you want to view in more detail.

```
DISPLAY ERR LOG
                (003/0027) ←*
001 ERROR-XX-XXX: EXEC
002 ERROR-XX-XXX: EXEC
→003 ERROR-XX-XXX: EXEC
004 ERROR-XX-XXX: EXEC
005 ERROR-XX-XXX: EXEC
006 ERROR-XX-XXX: EXEC
007 ERROR-XX-XXX: EXEC
008 ERROR-XX-XXX: EXEC
009 ERROR-XX-XXX: EXEC
```

* : (Selected log No./total number of logs)

4. Press the MENU knob to display the detailed menu.

```
DISPLAY ERROR LOG
ERROR: XX-XXX (003/0027)
DATE : MM/DD HH:MM:SS ←*1
TC   : 00:00:00:00 ←*2
      2014/MM/DD HH:MM:SS ←*3
```

*1 : (Date when the error has occurred)

*2 : (TC value when the error has occurred)

*3 : (Current data and time)

4-15-1. Clearing the Error Log

Note

Normally, do not clear the error log. The error log is useful when trying to fix problems that have occurred. The error log can contain important information for solving these problems.

Procedure

1. Execute SERVICE SUPPORT from the page of VDR MAINTENANCE of the SERVICE menu.

SERVICE SUPPORT		
→	DISPLAY ERR LOG	: EXEC
	CLEAR ERR LOG	: EXEC

2. Turn the MENU knob to select "CLEAR ERR LOG" and press the MENU knob.
3. Turn the MENU knob to select "YES" or "NO" and press the MENU knob.

CLEAR ERROR LOG	
CLEAR ALL DATA?	
YES	→NO

- Do not clear the log (NO):
The screen returns to the SERVICE SUPPORT menu.
- Clear the log (YES):
The screen changes to the following screen and returns to the SERVICE SUPPORT menu after two seconds.

CLEAR ERROR LOG	
EXECUTING.	

4-16. Setup Menu List

The data that is set by the Setup menu can be saved in files. (Refer to “5-1. Structure of File System”)

This section shows the list covering all the items of the setup menu. The following list shows the respective default settings when the unit was shipped from the factory and the destination files to which the respective menu items can be saved.

- F-SET: Indicates the default setting when the unit was shipped from the factory.
- ALL: Indicates the items that can be saved when the ALL FILE SAVE is executed. The items are indicated by the symbols.
- PRST: Indicates the items that can be preset when the ALL PRESET is executed. The items are indicated by the symbols.
- SCN: Indicates the items that can be saved in the SCENE file when the SCENE STORE is executed. The items are indicated by the symbols.
- REF: Indicates the items that can be saved in the REFERENCE file when the REFERENCE SAVE/STORE is executed. The items are indicated by the symbols.
- LENS: Indicates the items that can be saved in the LENS file when the LENS FILE STORE is executed. The items are indicated by the symbols.
- STD: The items that are returned to the standard setup (PRESET value) when the STANDARD submenu is clicked.
- Power OFF: Indicates the items that return to the default setting when the unit was shipped from the factory at power-off.
- SVC: Indicates the item that can be saved in the service when the SVC FILE SAVE is executed. The items are indicated by the symbols.

Symbols

- ☉: Can be saved. (The menu display value remains as it is even after saving.)
- ○: Can be saved. (The menu display value becomes 0 when it is saved.)
- ×: Cannot be saved.
- △: Saved with the factory default setting regardless of the current setting. (If the setting value is changed in the Service mode, the setting value in the Service mode returns to the default value when the power is turned off.)
- ▲: Virtually invalid because the operation is prohibited.

Tip

The items that have the crossing mark x (cannot be saved) in their ALL and PRESET columns, can be the target of the USER file and USER PRESET if the items are located in the USER menu. However, the items that return to the default setting when the unit was shipped from the factory at power-OFF, are excluded from the target.

4-16-1. OPERATION Menu

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
01	OUT-PUT1	SDI OUT 1 SELECT	OFF	☉	☉	×	×	×	×		☉
		SDI OUT 2 SELECT	OFF	☉	☉	×	×	×	×		☉
		SDI OUT 2 SUPER	OFF	☉	☉	×	×	×	×		☉
		TEST OUT SELECT	VBS	☉	☉	×	△	×	○	Y when R/G/B	☉
		TEST OUT SUPER	OFF	☉	☉	×	×	×	×		☉

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
02	OUTPUT 2	DOWN CON MODE	CROP	⊙	⊙	×	×	×	×		⊙
		WIDE ID	THROU	⊙	⊙	×	×	×	×		⊙
03	SUPER-IMPOSE	SUPER (VFDISP)	ON	⊙	⊙	×	×	×	×		⊙
		SUPER (MENU)	ON	⊙	⊙	×	×	×	×		⊙
		SUPER (TC)	OFF	⊙	⊙	×	×	×	×		⊙
		SUPER (MARKER)	OFF	⊙	⊙	×	×	×	×		⊙
		SUPER (ZEBRA)	OFF	⊙	⊙	×	×	×	×		⊙
04	LCD	LCD COLOR	0	⊙	○	×	×	×	×		⊙
		LCD MARKER&ZEBRA	ON	⊙	⊙	×	×	×	×		⊙
05	REC FUNCTION	CACHE/INTVAL REC	OFF	⊙	⊙	×	×	×	×	It is set to OFF when A. INT/M. INT is selected.	⊙
		CACHE REC TIME	0-2S	⊙	⊙	×	×	×	×		⊙
		TAKE TOTAL TIME	5MIN	⊙	⊙	×	×	×	×		⊙
		REC TIME	5SEC	⊙	⊙	×	×	×	×		⊙
		PRE-LIGHTING	OFF	⊙	⊙	×	×	×	×		⊙
		NUMBER OF FRAME	1	⊙	⊙	×	×	×	×		⊙
		TRIGGER INTERVAL	M	⊙	⊙	×	×	×	×		⊙
		DISC EXCHG CACHE	OFF	⊙	⊙	×	×	×	×		⊙
		CLIP CONT REC	OFF	⊙	⊙	×	×	×	×		⊙
		LIVE LOGGING	OFF	⊙	⊙	×	×	×	×		⊙
06	ASSIGN-ABLE SW	ASSIGN SW <1>	OFF	⊙	⊙	×	×	×	×		⊙
		ASSIGN SW <2>	OFF	⊙	⊙	×	×	×	×		⊙
		ASSIGN SW <3>	OFF	⊙	⊙	×	×	×	×		⊙
		ASSIGN SW <4>	OFF	⊙	⊙	×	×	×	×		⊙
		ASSIGN SW <RET>	RET	⊙	⊙	×	×	×	×		⊙
		ZOOM SPEED	20	⊙	⊙	×	×	×	×		⊙
		RETURN VIDEO	OFF	⊙	⊙	×	×	×	×		⊙

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
07	POWER SAVE	ETHERNET/USB	DSABL	⊙	⊙	×	×	×	×		⊙
		REC AUDIO OUT	EE	⊙	⊙	×	×	×	×		⊙
		TEST OUT SAVE	ON	⊙	⊙	×	×	×	×		⊙
		Wi-Fi	DSABL	⊙	⊙	×	×	×	×		⊙
08	VF DISP 1	VF DISP	ON	⊙	⊙	×	×	×	×		×
		VF DISP MODE	3	⊙	⊙	×	×	×	×		⊙
		DISP EXTENDER	ON	⊙	⊙	×	×	×	×		⊙
		DISP FILTER	ON	⊙	⊙	×	×	×	×		⊙
		DISP WHITE	ON	⊙	⊙	×	×	×	×		⊙
		DISP GAIN	ON	⊙	⊙	×	×	×	×		⊙
		DISP SHUTTER	ON	⊙	⊙	×	×	×	×		⊙
		DISP AUDIO	ON	⊙	⊙	×	×	×	×		⊙
		DISP DISC	ON	⊙	⊙	×	×	×	×		⊙
		DISP IRIS	ON	⊙	⊙	×	×	×	×		⊙
09	VF DISP 2	DISP ZOOM	ON	⊙	⊙	×	×	×	×		⊙
		DISP COLOR TEMP	OFF	⊙	⊙	×	×	×	×		⊙
		DISP BATT REMAIN	INT	⊙	⊙	×	×	×	×		⊙
		DISP DC IN	OFF	⊙	⊙	×	×	×	×		⊙
		DISP 16:9 · 4:3 ID	OFF	⊙	⊙	×	×	×	×		⊙
		DISP WRR RF LVL	OFF	⊙	⊙	×	×	×	×		⊙
		DISP REC FORMAT	OFF	⊙	⊙	×	×	×	×		⊙
		DISP CLIP NO (PB)	ON	⊙	⊙	×	×	×	×		⊙
		DISP TIME CODE	OFF	⊙	⊙	×	×	×	×		⊙
		DISP ALAC	OFF	⊙	⊙	×	×	×	×		⊙
10	VF DISP 3	DISP CLIP NAME	PLAN	⊙	⊙	×	×	×	×		⊙
		DISP SCENE FILE	OFF	⊙	⊙	×	×	×	×		⊙
		DISP CONT REC	ON	⊙	⊙	×	×	×	×		⊙
		LOW LIGHT	OFF	⊙	⊙	×	×	×	×		⊙
		LOW LIGHT LEVEL	0	⊙	○	×	×	×	×		⊙
		VF BATT WARNING	10%	⊙	⊙	×	×	×	×		⊙
		ABSOLUTE VALUE	OFF	⊙	⊙	×	×	×	×		⊙

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
11	VF DISP 4	DISP GPS	OFF	⊙	⊙	×	×	×	×		⊙
		WRELESS STATUS	ON	⊙	⊙	×	×	×	×		⊙
		EXT.MEDIA REMAIN	ON	⊙	⊙	×	×	×	×		⊙
		SENDING CLIP INFO	ON	⊙	⊙	×	×	×	×		⊙
12	"I" LED	GAIN <I>	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER <I>	ON	⊙	⊙	×	×	×	×		⊙
		WHT BAL <I>	ON	⊙	⊙	×	×	×	×		⊙
		CC 5600K <I>	ON	⊙	⊙	×	×	×	×		⊙
		ATW RUN <I>	ON	⊙	⊙	×	×	×	×		⊙
		EXTENDER <I>	ON	⊙	⊙	×	×	×	×		⊙
		FILTER ND <I>	ON	⊙	⊙	×	×	×	×		⊙
		FILTER CC <I>	ON	⊙	⊙	×	×	×	×		⊙
		OVERRIDE <I>	ON	⊙	⊙	×	×	×	×		⊙
13	"I" LED STD	GAIN	0dB	⊙	⊙	×	×	×	×		⊙
		SHUTTER	*1	⊙	⊙	×	×	×	×		⊙
		WHITE BAL	AB	⊙	⊙	×	×	×	×		⊙
		CC 5600K	OFF	⊙	⊙	×	×	×	×		⊙
		ATW RUN	OFF	⊙	⊙	×	×	×	×		⊙
		EXTENDER	OFF	⊙	⊙	×	×	×	×		⊙
		FILTER ND	1	⊙	⊙	×	×	×	×		⊙
		FILTER CC	B	⊙	⊙	×	×	×	×		⊙
14	MARK-ER 1	MARKER	OFF	⊙	⊙	×	×	×	×		⊙
		CENTER	OFF	⊙	⊙	×	×	×	×		⊙
		CENTER MARK	3	⊙	⊙	×	×	×	×		⊙
		SAFETY ZONE	OFF	⊙	⊙	×	×	×	×		⊙
		SAFETY AREA	90%	⊙	⊙	×	×	×	×		⊙
		ASPECT	OFF	⊙	⊙	×	×	×	×		⊙
		ASPECT SE-LECT	4:3	⊙	⊙	×	×	×	×		⊙
		ASPECT MASK	ON	⊙	⊙	×	×	×	×		⊙
		ASPECT MASK LVL	12	⊙	⊙	×	×	×	×		⊙

Continued

*1: Initial value is OFF when FORMAT is set to 50i/50P.
Initial value is OFF when FORMAT is set to 59.9i/59.9P (SCAN MODE 59.9P).
Initial value is 1/48 when FORMAT is set to 23.9P.
Initial value is 1/50 when FORMAT is set to 25P.
Initial value is 1/60 when FORMAT is set to 29.97P.
Initial value is 1/48 when FORMAT is set to 59.9P (SCAN MODE 23.9P).

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		100% MARK-ER	OFF	⊙	⊙	×	×	×	×		⊙
15	MARK-ER 2	USER BOX	OFF	⊙	⊙	×	×	×	×		⊙
		USER BOX WIDTH	240	⊙	⊙	×	×	×	×		⊙
		USER BOX HEIGHT	135	⊙	⊙	×	×	×	×		⊙
		USER BOX H POS	0	⊙	⊙	×	×	×	×		⊙
		USER BOX V POS	0	⊙	⊙	×	×	×	×		⊙
		CENTER H POS	0	⊙	⊙	×	×	×	×		⊙
		CENTER V POS	0	⊙	⊙	×	×	×	×		⊙
		ASPECT SAFE ZONE	OFF	⊙	⊙	×	×	×	×		⊙
		ASPECT SAFE AREA	90%	⊙	⊙	×	×	×	×		⊙
16	FOCUS ASSIST	FOCUS AS-SIST IND	OFF	⊙	⊙	×	×	×	×		⊙
		FOCUS IND POS	BOTTM	⊙	⊙	×	×	×	×		⊙
		FOCUS AREA MARK	OFF	⊙	⊙	×	×	×	×		⊙
17	GAIN SW	GAIN LOW	0dB	⊙	⊙	×	×	×	×		⊙
		GAIN MID	6dB	⊙	⊙	×	×	×	×		⊙
		GAIN HIGH	12dB	⊙	⊙	×	×	×	×		⊙
		GAIN TURBO	42dB	⊙	⊙	×	×	×	×		⊙
		TURBO SW IND	OFF	⊙	⊙	×	×	×	×		⊙
		SHOCKLESS GAIN	OFF	⊙	⊙	×	×	×	×		⊙
18	VF SETTING	ZEBRA	OFF	×	⊙	×	×	×	×	De- pends on the VF switch setting	×
		ZEBRA SE-LECT	1	⊙	⊙	×	×	×	×		⊙
		ZEBRA1 DET LVL	70%	⊙	⊙	×	×	×	×		⊙
		ZEBRA1 APT LVL	10%	⊙	⊙	×	×	×	×		⊙
		ZEBRA2 DET LVL	100%	⊙	⊙	×	×	×	×		⊙
		VF DETAIL LEVEL	0	⊙	○	×	×	×	×		⊙
19	VF DE- TAIL	VF DETAIL	ON	⊙	⊙	×	×	×	×		⊙
		VF DETAIL LEVEL	0	⊙	⊙	×	×	×	×		⊙
		CRISP	0	—	—	—	—	—	—		—

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		FREQUENCY	9M	⊙	⊙	×	×	×	×		⊙
		FAT MODE	OFF	⊙	⊙	×	×	×	×		⊙
		FLICKER	OFF	⊙	⊙	×	×	×	×		⊙
		COLOR DE- TAIL	OFF	⊙	⊙	×	×	×	×		⊙
		COLOR SEL	BULE	⊙	⊙	×	×	×	×		⊙
		PEAK COLOR	ON	⊙	⊙	×	×	×	×		⊙
		CHROMA LEVEL	25%	⊙	⊙	×	×	×	×		⊙
20	AUTO IRIS	IRIS OVER- RIDE	OFF	⊙	⊙	×	×	×	×		⊙
		IRIS SPEED	0	⊙	○	×	×	×	×		⊙
		CLIP HIGH LIGHT	OFF	⊙	⊙	×	×	×	×		⊙
		IRIS WIN- DOW	1	⊙	⊙	×	⊙	×	○		⊙
		IRIS WIN- DOW IND	OFF	×	△	×	△	×	○	Initial value	×
		IRIS VAR WIDTH	240	⊙	⊙	×	×	×	×		⊙
		IRIS VAR HEIGHT	135	⊙	⊙	×	×	×	×		⊙
		IRIS VAR H POS	0	⊙	⊙	×	×	×	×		⊙
		IRIS VAR V POS	0	⊙	⊙	×	×	×	×		⊙
21	SHOT ID	ID-1	Blank	⊙	×	×	×	×	×		×
		ID-2	Blank	⊙	×	×	×	×	×		×
		ID-3	Blank	⊙	×	×	×	×	×		×
		ID-4	Blank	⊙	×	×	×	×	×		×
22	SHOT DISP	SHOT DATE	OFF	⊙	⊙	×	×	×	×		⊙
		SHOT TIME	OFF	⊙	⊙	×	×	×	×		⊙
		SHOT MOD- EL NAME	OFF	⊙	⊙	×	×	×	×		⊙
		SHOT SERI- AL NO	OFF	⊙	⊙	×	×	×	×		⊙
		SHOT ID SEL	OFF	⊙	⊙	×	×	×	×		⊙
		SHOT 16:9 CHARA	OFF	⊙	⊙	×	×	×	×		⊙
		SHOT BLINK CHARA	OFF	⊙	⊙	×	×	×	×		⊙
23	SET STA- TUS	STATUS AB- NORMAL	ON	⊙	⊙	×	×	×	×		⊙
		STATUS SYS- TEM	ON	⊙	⊙	×	×	×	×		⊙
		STATUS FUNCTION	ON	⊙	⊙	×	×	×	×		⊙
		STATUS AU- DIO	ON	⊙	⊙	×	×	×	×		⊙
		STATUS GPS	ON	⊙	⊙	×	×	×	×		⊙

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
24	WHITE SET- TING	WHITE SWITCH 	MEM	⊙	⊙	×	×	×	×		⊙
		SHOCKLESS WHITE	1	⊙	⊙	×	×	×	×		⊙
		ATW HOLD MEMORY	OFF	⊙	⊙	×	×	×	×		⊙
		ATW SPEED	4	⊙	⊙	×	×	×	×		⊙
		AWB FIXED AREA	OFF	⊙	⊙	×	×	×	×		⊙
		FILTER WHT MEM	OFF	⊙	⊙	×	×	×	×		⊙
25	OFFSET WHT	OFFSET WHITE <A>	OFF	⊙	⊙	×	×	×	×		⊙
		WARM- COOL <A>	3200	⊙	⊙	×	×	×	×		⊙
		WARM- COOL BAL <A>	0	⊙	⊙	×	×	×	×		⊙
		OFFSET WHITE 	OFF	⊙	⊙	×	×	×	×		⊙
		WARM- COOL 	3200	⊙	⊙	×	×	×	×		⊙
		WARM- COOL BAL 	0	⊙	⊙	×	×	×	×		⊙
26	SHT EN- ABLE	SHUTTER ECS	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER SLS	OFF	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/32	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/33	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/40	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/48	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/50	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/60	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/96	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/100	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/120	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/125	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/250	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/500	ON	⊙	⊙	×	×	×	×		⊙

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		SHUTTER 1/1000	ON	⊙	⊙	×	×	×	×		⊙
		SHUTTER 1/2000	ON	⊙	⊙	×	×	×	×		⊙
27	LENS FILE	LENS FILE SELECT	1	×	×	×	×	×	×		×
		F.ID	No Offset	—	—	—	—	—	—		—
		L.ID	Depends on the Lens	—	—	—	—	—	—		—
		L.MF	Depends on the Lens	—	—	—	—	—	—		—
28	FOR-MAT	SYSTEM LINE	Default setting	×	×	×	×	×	×		×
		SYSTEM FREQUENCY	Default setting	×	×	×	×	×	×		×
		REC FOR-MAT	HD422 50	—	—	—	—	—	—		—
		ASPECT RATIO (SD)	—	×	×	×	×	×	×		×
		AU DATA LEN (IMX)	—	×	×	×	×	×	×		×
		COUNTRY	Default setting	×	×	×	×	×	×		×
29	SOURCE SEL	FRONT MIC SELECT	STREO	⊙	⊙	×	×	×	×		⊙
		REC VIDEO SOURCE	CAM	⊙	⊙	×	×	×	×		⊙
		EXT VIDEO SOURCE	HDSDI	⊙	⊙	×	×	×	×		⊙
		WIDE MODE (EXT)	AUTO	⊙	⊙	×	×	×	×		⊙
30	UMID SET	COUNTRY CODE	Blank	⊙	×	×	×	×	×		×
		ORGANIZATION	Blank	⊙	×	×	×	×	×		×
		USER CODE	Blank	⊙	×	×	×	×	×		×
		TIME ZONE	00	⊙	⊙	×	×	×	×		⊙
31	CLIP TITLE	TITLE	DSABL	⊙	⊙	×	×	×	×		⊙
		SELECT PREFIX	EXEC	—	—	—	—	—	—		—
		CLEAR NUMERIC	EXEC	—	—	—	—	—	—		—
		LOAD PREFIX DATA	EXEC	—	—	—	—	—	—		—
		PREFIX	TITLE	⊙	×	×	×	×	×		×
		NUMERIC	00001	×	×	×	×	×	×		×
32	FILE NAMING	NAMING FORM	C****	⊙	⊙	×	×	×	×		⊙
		AUTO NAMING	C****	⊙	⊙	×	×	×	×		⊙

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
33	MEMO- RY REC	MEMORY REC	DSABL	⊙	⊙	×	×	×	×		⊙
		COPY CURRENT CLP	EXEC	—	—	—	—	—	—		—
		COPY ALL CLIPS	EXEC	—	—	—	—	—	—		—
		ABORT COPY	EXEC	—	—	—	—	—	—		—
		DEL ALL MEM CLP	EXEC	—	—	—	—	—	—		—
		FORMAT MEMORY	EXEC	—	—	—	—	—	—		—
34	GPS SET- UP	GPS	ON	⊙	⊙	×	×	×	×		⊙
		TIME ZONE	+00:00	⊙	⊙	×	×	×	×		⊙
		GPS DATUM	WGS-84	⊙	⊙	×	×	×	×		⊙

4-16-2. PAINT Menu

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
01	SW STA- TUS	GAMMA	ON	⊙	⊙	⊙	△	×	○		⊙
		BLACK GAM- MA	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		MATRIX	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		KNEE	ON	⊙	⊙	⊙	⊙	×	○		⊙
		WHITE CLIP	ON	⊙	△	⊙	△	×	○	ON	⊙
		DETAIL	ON	⊙	⊙	⊙	△	×	○		⊙
		APERTURE	ON	⊙	⊙	⊙	△	×	○		⊙
		FLARE	ON	⊙	⊙	⊙	△	×	○		⊙
		TEST SAW	OFF	⊙	⊙	×	△	×	○		⊙
02	WHITE	COLOR TEMP <A>	3200	⊙	○	⊙	○	×	○		×
		C TEMP BAL <A>	0	⊙	○	⊙	○	×	○		×
		R GAIN <A>	0	⊙	○	⊙	○	×	○		×
		B GAIN <A>	0	⊙	○	⊙	○	×	○		×
		COLOR TEMP 	3200	⊙	○	⊙	○	×	○		×
		C TEMP BAL 	0	⊙	○	⊙	○	×	○		×
		R GAIN 	0	⊙	○	⊙	○	×	○		×
		B GAIN 	0	⊙	○	⊙	○	×	○		×
03	BLACK/ FLARE	MASTER BLACK	0	⊙	○	⊙	○	×	○		⊙
		R BLACK	0	⊙	○	⊙	△	×	○		⊙
		G BLACK	0	⊙	○	⊙	○	×	○		⊙
		B BLACK	0	⊙	○	⊙	△	×	○		⊙

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		MASTER FLARE	0	⊙	○	⊙	○	×	○		⊙
		R FLARE	0	⊙	○	⊙	○	×	○		▲
		G FLARE	0	⊙	○	⊙	○	×	○		▲
		B FLARE	0	⊙	○	⊙	○	×	○		▲
		FLARE	ON	⊙	⊙	⊙	△	×	○		⊙
		TEST OUT SELECT	VBS	⊙	⊙	×	△	×	○	Y when R/G/B	⊙
04	GAMMA	GAMMA	ON	⊙	⊙	⊙	△	×	○		⊙
		STEP GAMMA	0.45	⊙	⊙	⊙	⊙	×	○		⊙
		MASTER GAMMA	0	⊙	○	⊙	○	×	○		⊙
		R GAMMA	0	⊙	○	⊙	○	×	○		⊙
		G GAMMA	0	⊙	○	⊙	○	×	○		⊙
		B GAMMA	0	⊙	○	⊙	○	×	○		⊙
		TEST OUT SELECT	VBS	⊙	⊙	×	△	×	○	Y when R/G/B	⊙
		GAMMA TABLE	STD	⊙	⊙	⊙	⊙	×	○		⊙
		GAM TABLE (STD)	5	⊙	⊙	⊙	⊙	×	○		⊙
		GAM TABLE (HG)	4	⊙	⊙	⊙	⊙	×	○		⊙
		GAM TABLE (USER)	1	⊙	⊙	⊙	⊙	×	○		⊙
05	BLACK GAMMA	BLACK GAMMA	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		BLACK GAM RANGE	HIGH	⊙	⊙	⊙	⊙	×	○		⊙
		BLACK GAM LEVEL	0	⊙	○	⊙	○	×	○		⊙
		TEST OUT SELEST	VBS	⊙	⊙	×	△	×	○	Y when R/G/B	⊙
06	KNEE 1	KNEE	ON	⊙	⊙	⊙	⊙	×	○		⊙
		KNEE POINT (M)	95.0	⊙	⊙	⊙	⊙	×	○		⊙
		KNEE SLOPE (M)	0	⊙	○	⊙	○	×	○		⊙
		KNEE SATURATION	ON	⊙	⊙	⊙	⊙	×	○		⊙
		KNEE SAT LEVEL	0	⊙	○	⊙	○	×	○		⊙
		WHITE CLIP	ON	⊙	△	⊙	△	×	○	Initial value	⊙
		WHITE CLIP LEVEL	108.0*1	⊙	⊙	⊙	⊙	×	○		⊙
07	KNEE 2	KNEE SATURATION	ON	⊙	⊙	⊙	⊙	×	○		⊙
		KNEE POINT (R)	0.0	⊙	⊙	⊙	⊙	×	○		⊙

Continued

*1: Initial value is 105.0 when COUNTRY is set to "PAL AREA".

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		KNEE SLOPE (R)	0	⊙	○	⊙	○	×	○		⊙
		KNEE POINT (G)	0.0	⊙	⊙	⊙	⊙	×	○		⊙
		KNEE SLOPE (G)	0	⊙	○	⊙	○	×	○		⊙
		KNEE POINT (B)	0.0	⊙	⊙	⊙	⊙	×	○		⊙
		KNEE SLOPE (B)	0	⊙	○	⊙	○	×	○		⊙
08	DETAIL 1	DETAIL	ON	⊙	⊙	⊙	△	×	○		⊙
		APERTURE	ON	⊙	⊙	⊙	△	×	○		⊙
		DETAIL LEV-EL	0	⊙	○	⊙	○	×	○		⊙
		APERTURE LEVEL	0	⊙	○	⊙	○	×	○		⊙
		DTL H/V RA-TIO	0	⊙	○	⊙	○	×	○		⊙
		CRISPENING	0	⊙	○	⊙	○	×	○		⊙
		LEVEL DE-PEND	ON	⊙	⊙	⊙	⊙	×	○		⊙
		LEVEL DE-PEND LVL	0	⊙	○	⊙	○	×	○		⊙
		DETAIL FRE-QUENCY	0	⊙	○	⊙	○	×	○		⊙
09	DETAIL 2	KNEE APER-TURE	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		KNEE APT LVL	0	⊙	○	⊙	○	×	○		⊙
		DETAIL LIM-IT	0	⊙	○	⊙	○	×	○		⊙
		DTL WHT LIMIT	0	⊙	○	⊙	○	×	○		⊙
		DTL BLK LIMIT	0	⊙	○	⊙	○	×	○		⊙
		DTL V-BLK LMT	0	⊙	○	⊙	○	×	○		⊙
		V DTL CREA-TION	R+G	⊙	⊙	⊙	⊙	×	○		⊙
		H/V CON-TROL MODE	V	⊙	⊙	⊙	⊙	×	○		⊙
10	SD DE-TAIL	SD DETAIL	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		SD DETAIL LEVEL	0	⊙	○	⊙	○	×	○		⊙
		SD CRISPEN-ING	0	⊙	○	⊙	○	×	○		⊙
		SD DTL WHT LIMIT	0	⊙	○	⊙	○	×	○		⊙
		SD DTL BLK LIMIT	0	⊙	○	⊙	○	×	○		⊙
		SD LEVEL DEPEND	ON	⊙	⊙	⊙	⊙	×	○		⊙

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		SD LV DEPEND LVL	0	⊙	○	⊙	○	×	○		⊙
		SD DTL FREQUENCY	0	⊙	○	⊙	○	×	○		⊙
		SD DTL H/V RATIO	0	⊙	○	⊙	○	×	○		⊙
		SD CROSS COLOR	0	⊙	○	⊙	○	×	○		⊙
11	SKIN DETAIL	SKIN DETAIL ALL	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		SKIN DETECT	EXEC	—	—	—	—	—	—		—
		SKIN AREA IND	OFF	×	△	×	△	×	○	Initial value	×
		SKIN DTL SELECT	1	×	△	×	△	×	○	Initial value	×
		SKIN DETAIL	ON	⊙	⊙	⊙	⊙	×	○		⊙
		SKIN DETAIL LVL	0	⊙	○	⊙	○	×	○		⊙
		SKIN DTL SAT	0	⊙	○	⊙	○	×	○		⊙
		SKIN DTL HUE	0	⊙	⊙	⊙	⊙	×	○		⊙
		SKIN DTL WIDTH	39	⊙	⊙	⊙	⊙	×	○		⊙
12	MTX LINEAR	MATRIX	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		MATRIX (USER)	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		MATRIX (PRESET)	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		MATRIX (PRST) SEL	2	⊙	⊙	⊙	⊙	×	○		⊙
		MATRIX (USER) R-G	0	⊙	○	⊙	○	×	○		⊙
		MATRIX (USER) R-B	0	⊙	○	⊙	○	×	○		⊙
		MATRIX (USER) G-R	0	⊙	○	⊙	○	×	○		⊙
		MATRIX (USER) G-B	0	⊙	○	⊙	○	×	○		⊙
		MATRIX (USER) B-R	0	⊙	○	⊙	○	×	○		⊙
		MATRIX (USER) B-G	0	⊙	○	⊙	○	×	○		⊙
13	MTX MULTI	MATRIX	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		ADAPTIVE MATRIX	ON	⊙	⊙	⊙	⊙	×	○		⊙
		ADAPTIVE MTX LVL	0	⊙	⊙	⊙	⊙	×	○		⊙
		MATRIX (MULTI)	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		MATRIX AREA IND	OFF	×	△	×	△	×	○	Initial value	×

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		MATRIX COLOR DET	EXEC	—	—	—	—	—	—		—
		MTX (MULTI) PRESET	EXEC	—	—	—	—	—	—		—
		MTX (MULTI) AXIS	B	×	Δ	×	Δ	×	○	Initial value	×
		MTX (MULTI) HUE	0	⊙	○	⊙	○	×	○		⊙
		MTX (MULTI) SAT	0	⊙	○	⊙	○	×	○		⊙
14	V MOD- ULA- TION	VMOD	ON	⊙	⊙	×	Δ	×	○		⊙
		MASTER VMOD	0	⊙	○	⊙	Δ	×	○		⊙
		R VMOD	0	⊙	○	⊙	Δ	×	○		⊙
		G VMOD	0	⊙	○	⊙	Δ	×	○		⊙
		B VMOD	0	⊙	○	⊙	Δ	×	○		⊙
		TEST OUT SE- LECT	VBS	⊙	⊙	×	×	×	○	Y when R/G/B	⊙
15	SATU- RATION	LOW KEY SAT	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		L KEY SAT LEVEL	0	⊙	○	⊙	○	×	○		⊙
		L KEY SAT RANGE	HIGH	⊙	⊙	⊙	⊙	×	○		⊙
16	SATU- RATION MODE	SATURA- TION MODE	L KEY	⊙	⊙	⊙	⊙	×	○		⊙
		KNEE SATU- RATION	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		BLACK GAM- MA	OFF	⊙	⊙	⊙	⊙	×	○		⊙
		LAW KEY SAT	OFF	⊙	⊙	⊙	⊙	×	○		⊙
17	NOISE SUP- PRESS	NOISE SUP- PRESS	ON	⊙	⊙	⊙	⊙	×	○		⊙
		NOISE SUB LEVEL	LOW	⊙	⊙	⊙	⊙	×	○		⊙
18	SCENE FILE	□ 1	STAND- ARD	—	—	—	—	—	—		—
		□ 2	STAND- ARD	—	—	—	—	—	—		—
		□ 3	STAND- ARD	—	—	—	—	—	—		—
		□ 4	STAND- ARD	—	—	—	—	—	—		—
		□ 5	STAND- ARD	—	—	—	—	—	—		—
		□ STANDARD	—	—	—	—	—	—	—		—
		SCENE RE- CALL	EXEC	—	—	—	—	—	—		—
		SCENE STORE	EXEC	—	—	—	—	—	—		—

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		F.ID	Blank	×	×	⊙	×	×	×		×

4-16-3. MAINTENANCE Menu

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
01	WHITE SHADING	WHT SHAD CH SEL	R	⊙	⊙	×	Δ	×	○		⊙
		TEST OUT SELECT	VBS	⊙	⊙	×	Δ	×	○	Y when R/G/B	⊙
		R/G/B WHT H SAW	0	×	○	×	×	×	×		×
		R/G/B WHT H PARA	0	×	○	×	×	×	×		×
		R/G/B WHT V SAW	0	×	○	×	×	×	×		×
		R/G/B WHT V PARA	0	×	○	×	×	×	×		×
		WHITE SAW/ PARA	ON	×	Δ	×	×	×	○	ON	×
02	BLACK SHADING	BLK SHAD CH SEL	R	⊙	⊙	×	Δ	×	○		⊙
		TEST OUT SELECT	VBS	⊙	⊙	×	Δ	×	○		⊙
		R/G/B BLK H SAW	0	×	○	×	×	×	×		×
		R/G/B BLK H PARA	0	×	○	×	×	×	×		×
		R/G/B BLK V SAW	0	×	○	×	×	×	×		×
		R/G/B BLK V PARA	0	×	○	×	×	×	×		×
		BLACK SAW/ PARA	ON	×	Δ	×	Δ	×	○	ON	×
		MASTER BLACK	0	⊙	○	⊙	○	×	○		⊙
		MASTER GAIN(TMP)	Depends on the switch setting.	×	⊙	⊙	⊙	×	○	Depends on the GAIN switch setting.	×
03	LEVEL ADJUST	VBS VIDEO LEVEL	0	×	○	×	×	×	×		⊙
		HD-Y LEVEL	0	×	○	×	×	×	×		⊙
		TEST OUT SELECT	VBS	⊙	⊙	×	Δ	×	○	Y when R/G/B	⊙
04	BATTERY 1	Info BEFORE END	5%	⊙	⊙	×	×	×	×		⊙
		Info END	0%	⊙	⊙	×	×	×	×		⊙

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		Sony BEFORE END	11.5V	⊙	⊙	×	×	×	×		⊙
		Sony END	11.0V	⊙	⊙	×	×	×	×		⊙
		Other BE-FORE END	11.8V	⊙	⊙	×	×	×	×		⊙
		Other END	11.0V	⊙	⊙	×	×	×	×		⊙
		DC IN BE-FORE END	11.8V	⊙	⊙	×	×	×	×		⊙
		DC IN END	11.0V	⊙	⊙	×	×	×	×		⊙
		DETECTED BATTERY		—	—	—	—	—	—		—
05	BAT- TERRY 2	TYPE DETECTION	AUTO	⊙	⊙	×	×	×	×		⊙
		SEGMENT No.7	17.0V	⊙	⊙	×	×	×	×		⊙
		SEGMENT No.6	16.0V	⊙	⊙	×	×	×	×		⊙
		SEGMENT No.5	15.0V	⊙	⊙	×	×	×	×		⊙
		SEGMENT No.4	14.0V	⊙	⊙	×	×	×	×		⊙
		SEGMENT No.3	13.0V	⊙	⊙	×	×	×	×		⊙
		SEGMENT No.2	12.0V	⊙	⊙	×	×	×	×		⊙
		SEGMENT No.1	11.0V	⊙	⊙	×	×	×	×		⊙
06	AUDIO-1	FRONT MIC SELECT	STREO	⊙	⊙	×	×	×	×		⊙
		AUDIO CH3/4 MODE	SW	⊙	⊙	×	×	×	×		⊙
		REAR XLR AUTO	OFF	⊙	⊙	×	×	×	×		⊙
		FRONT MIC REF	−50dB	⊙	⊙	×	×	×	×		⊙
		REAR MIC REF	−60dB	⊙	⊙	×	×	×	×		⊙
		MIN ALARM VOL	OFF	⊙	⊙	×	×	×	×		⊙
		SP ATT LEVEL	OFF	⊙	⊙	×	×	×	×		⊙
		HEADPHONE OUT	MONO	⊙	⊙	×	×	×	×		⊙
07	AUDIO-2	AU REF LEVEL	−20dB	⊙	⊙	×	×	×	×		⊙
		AU REF OUT	0dB	⊙	⊙	×	×	×	×		⊙
		AU CH12 AGC MODE	MONO	⊙	⊙	×	×	×	×		⊙
		AU CH34 AGC MODE	MONO	⊙	⊙	×	×	×	×		⊙
		AU AGC SPEC	−6dB	⊙	⊙	×	×	×	×		⊙
		AU LIMITER MODE	OFF	⊙	⊙	×	×	×	×		⊙

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		AU OUT LIM- ITER	ON	⊙	⊙	×	×	×	×		⊙
08	AUDIO-3	AU SG (1KHz)	OFF	⊙	⊙	×	×	×	×		⊙
		MIC CH1 LEVEL	FRONT	⊙	⊙	×	×	×	×		⊙
		MIC CH2 LEVEL	FRONT	⊙	⊙	×	×	×	×		⊙
		REAR1/WRR LEVEL	SIDE1	⊙	⊙	×	×	×	×		⊙
		REAR2/WRR LEVEL	SIDE2	⊙	⊙	×	×	×	×		⊙
		AUDIO CH3 LEVEL	FIX	⊙	⊙	×	×	×	×		⊙
		AUDIO CH4 LEVEL	FIX	⊙	⊙	×	×	×	×		⊙
09	WRR SET- TING	WRR VALID CH SEL	ALL	⊙	⊙	×	×	×	×		⊙
		WRR CH SE- LECT	TX1	×	△	×	×	×	×	Initial value	×
		WRR DELAY COMP	ON	⊙	⊙	×	×	×	×		⊙
		TX1/2/3/4		—	—	—	—	—	—		—
		TX1/2/3/4 AU- DIO PEAK		—	—	—	—	—	—		—
		TX1/2/3/4 IN- PUT LEVEL		—	—	—	—	—	—		—
		TX1/2/3/4 ATT LEVEL	0dB	—	—	—	—	—	—		—
		TX1/2/3/4 LCF FREQ	200Hz	—	—	—	—	—	—		—
		TX1/2/3/4 SYSTEM DE- LAY	AUTO	⊙	△	×	×	×	×	Initial value	⊙
10	TIME- CODE	TC OUT	AUTO	⊙	⊙	×	×	×	×		⊙
		DF/NDF	DF	⊙	⊙	×	×	×	×		⊙
		EXT-LK DF/NDF	INT	⊙	⊙	×	×	×	×		⊙
		EXT-LK UBIT	INT	⊙	⊙	×	×	×	×		⊙
		LTC UBIT	FIX	⊙	⊙	×	×	×	×		⊙
		VITC UBIT (SD)	FIX	⊙	⊙	×	×	×	×		⊙
		WATCH AU- TO ADJ	ON	⊙	⊙	×	×	×	×		⊙
		UBIT GROUP ID	000	⊙	⊙	×	×	×	×		⊙
		VITC INS LINE 1	16H	⊙	⊙	×	×	×	×		⊙
		VITC INS LINE 2	18H	⊙	⊙	×	×	×	×		⊙
11	ES- SENCE MARK	RET SHOT MARK 1	ON	⊙	⊙	×	×	×	×		⊙

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		RET SHOT MARK 2	ON	⊙	⊙	×	×	×	×		⊙
		INDEX PIC POS	0SEC	⊙	⊙	×	×	×	×		⊙
		FIND MODE	R.ST	⊙	⊙	×	×	×	×		⊙
12	CAM CONFIG 1	REC TALLY BLINK	ON	⊙	⊙	×	×	×	×		⊙
		REC START BEEP	OFF	⊙	⊙	×	×	×	×		⊙
		SDI REC CONTROL	OFF	⊙	⊙	×	×	×	×		⊙
		HDSDI RE- MOTE I/F	OFF	⊙	⊙	×	×	×	×		⊙
		MATCH CLIP NAME	OFF	⊙	⊙	×	×	×	×		⊙
		PROAV DIS- PLAY	DSABL	⊙	⊙	×	×	×	×		⊙
		MIXED RE- CORDING	DSABL	⊙	⊙	×	×	×	×		⊙
		SINGLE CLIP MODE	OFF	⊙	⊙	×	×	×	×		⊙
		PB POSITION	KEEP	⊙	⊙	×	×	×	×		⊙
13	CAM CONFIG 2	TEST SAW SELECT	SAW	⊙	⊙	×	×	×	×		⊙
		COLOR BAR SELECT	ARIB	⊙	⊙	×	×	×	×		⊙
		USER & ALL ONLY	OFF	⊙	⊙	×	×	×	×		⊙
		RM COM- MON MEMO- RY	OFF	⊙	⊙	×	×	×	×		⊙
		RM REC START	RM	⊙	⊙	×	×	×	×		⊙
		SHT DISP MODE	SEC	⊙	⊙	×	×	×	×		⊙
		RM F NO DIS- PLAY	CTRL	⊙	⊙	×	×	×	×		⊙
		FAN CON- TROL	AUTO	⊙	⊙	×	×	×	×		⊙
14	CAM CONFIG 3	ALAC	AUTO	⊙	⊙	×	×	×	×		⊙
		Wi-Fi/ETHER RM	OFF	⊙	⊙	×	×	×	×		⊙
15	PRESET WHITE	COLOR TEMP <P>	3200	⊙	⊙	×	○	×	○		⊙
		C TEMP BAL <P>	0	⊙	○	×	○	×	○		⊙
		R GAIN <P>	0	⊙	○	×	○	×	○		⊙
		B GAIN <P>	0	⊙	○	×	○	×	○		⊙
		AWB ENA- BLE <P>	OFF	×	△	×	×	×	×	Initial value	×

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
16	DCC ADJUST	DCC FUNCTION SEL	DCC	⊙	⊙	○	⊙	×	○		⊙
		DCC D RANGE	600%	⊙	⊙	○	⊙	×	○		⊙
		DCC POINT	0	⊙	○	○	⊙	×	○		⊙
		DCC GAIN	0	⊙	○	○	⊙	×	○		⊙
		DCC DELAY TIME	0	⊙	○	○	⊙	×	○		⊙
		DCC PEAK FILTER	0	⊙	○	○	○	×	○		⊙
17	AUTO IRIS 2	IRIS WINDOW	1	⊙	⊙	×	⊙	×	○		⊙
		IRIS WINDOW IND	OFF	×	△	×	△	×	○	Initial value	×
		IRIS LEVEL	0	⊙	○	⊙	○	×	○		⊙
		IRIS APL RATIO	0	⊙	○	⊙	○	×	○		⊙
		IRIS VAR WIDTH	240	⊙	⊙	×	×	×	×		⊙
		IRIS VAR HEIGHT	135	⊙	⊙	×	×	×	×		⊙
		IRIS VAR H POS	0	⊙	⊙	×	×	×	×		⊙
		IRIS VAR V POS	0	⊙	⊙	×	×	×	×		⊙
		IRIS SPEED	0	⊙	○	×	×	×	×		⊙
		CLIP HIGH LIGHT	OFF	⊙	⊙	×	×	×	×		⊙
18	GEN-LOCK	GENLOCK	ON	⊙	⊙	×	×	×	×		⊙
		GL HD H PHASE	0	×	○	×	×	×	×		⊙
		GL SD H PHASE	0	×	○	×	×	×	×		⊙
		REFERENCE	INTERNAL	—	—	—	—	—	—		—
19	ND COMP	ND OFFSET ADJUST	OFF	×	△	×	×	×	×	Initial value	×
		CLEAR ND OFFSET	EXEC	—	—	—	—	—	—		—
20	AUTO SHADING	AUTO BLK SHADING	EXEC	—	—	—	—	—	—		—
		RESET BLK SHD	EXEC	—	—	—	—	—	—		—
		TEST OUT SELECT	VBS	⊙	⊙	×	△	×	○	Y when R/G/B	⊙
		MASTER GAIN (TMP)	Depends on the switch setting.	×	⊙	⊙	⊙	×	○	Depends on the GAIN switch setting.	×
21	APR	APR	EXEC	—	—	—	—	—	—		—
		APR (SLS)	EXEC	—	—	—	—	—	—		—

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		APR PRESET	EXEC	—	—	—	—	—	—		—
22	NET-WORK 1	DHCP* ¹	DSABL	⊙	×	×	×	×	×		×
		IP ADDRESS* ¹	192.168.1.10	⊙	×	×	×	×	×		×
		SUBNET MASK* ¹	255.255.255.0	⊙	×	×	×	×	×		×
		DEF.GATE-WAY* ¹	0.0.0.0	⊙	×	×	×	×	×		×
		LINK SPEED* ¹	AUTO	⊙	×	×	×	×	×		×
		DUPLEX* ¹	AUTO	⊙	×	×	×	×	×		×
		DNS1* ¹	0.0.0.0	⊙	×	×	×	×	×		×
		DNS2* ¹	0.0.0.0	⊙	×	×	×	×	×		×
		UPnP* ¹	DSABL	⊙	×	×	×	×	×		×
23	NET-WORK 2	NET CFG RE-SET	EXEC	—	—	—	—	—	—		—
		MAC	—	—	—	—	—	—	—		—
24	WPS	Wi-Fi	DSABL	⊙	⊙	×	×	×	×		⊙
25	Wi-Fi	Wi-Fi SETUP	EXEC	⊙	⊙	×	×	×	×		⊙
26	UP CON-VERTER	UPCONPRO-CESS	ADPT	⊙	○	×	×	×	×		⊙
		UC DETAIL LEVEL	0	⊙	○	×	×	×	×		⊙
		UC CRISPEN-ING	0	⊙	○	×	×	×	×		⊙
		UC DETAIL LIMIT	0	⊙	○	×	×	×	×		⊙
		UC LV DE-PEND LVL	0	⊙	○	×	×	×	×		⊙
		UC DTL FRE-QUENCY	5.0M	⊙	⊙	×	×	×	×		⊙
		UC DTL H/V RAITO	0	⊙	○	×	×	×	×		⊙
27	SHUT-TER SE-LECT	SHUTTER SE-LECT	SECOND	⊙	⊙	×	×	×	×		⊙
		ADD	180	×	×	×	×	×	×		×
		DEL	1	×	×	×	×	×	×		×
		1:	* ²	⊙	△	×	×	×	×		⊙
		2:	* ²	⊙	△	×	×	×	×		⊙
		3:	* ²	⊙	△	×	×	×	×		⊙
		4:	* ²	⊙	△	×	×	×	×		⊙
		5:	* ²	⊙	△	×	×	×	×		⊙
		6:	* ²	⊙	△	×	×	×	×		⊙
28	META OUT	META DATA ITEM OUT	ON	⊙	⊙	×	×	×	×		⊙

*1: These items can be loaded when NETWORK DATA is set to ON on the ALL FILE page.

*2: Initial values are different by value of SYSTEM FREQUENCY.

- When 59.94P, 59.94i, 29.97P: [1: 216.0 / 2: 180.0 / 3: 90.0 / 4: 45.0 / 5: 22.5 / 6: 11.2]
- When 50P, 50i, 25P: [1: 180.0 / 2: 150.0 / 3: 90.0 / 4: 45.0 / 5: 22.5 / 6: 11.2]
- When 23.98P: [1: 180.0 / 2: 172.8 / 3: 144.0 / 4: 45.0 / 5: 22.5 / 6: 11.2]

4-16-4. FILE Menu

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
01	USER FILE	USER FILE LOAD	EXEC	—	—	—	—	—	—		—
		USER FILE SAVE	EXEC	—	—	—	—	—	—		—
		F.ID	Blank	×	×	×	×	×	×		×
		USER PRE-SET	EXEC	—	—	—	—	—	—		—
02	USER FILE 2	STORE USR PRESET	EXEC	—	—	—	—	—	—		—
		CLEAR USR PRESET	EXEC	—	—	—	—	—	—		—
		CUSTOMIZE RESET	EXEC	—	—	—	—	—	—		—
		LOAD CUSTOM DATA	OFF	⊙	⊙	×	×	×	×		⊙
		LOAD OUT OF USER	OFF	⊙	⊙	×	×	×	×		⊙
		BEFORE FILE PAGE	OFF	⊙	⊙	×	×	×	×		⊙
		USER LOAD WHITE	OFF	⊙	⊙	×	×	×	×		⊙
03	ALL FILE	ALL FILE LOAD	EXEC	—	—	—	—	—	—		—
		ALL FILE SAVE	EXEC	—	—	—	—	—	—		—
		F.ID	Blank	⊙	×	×	×	×	×		×
		ALL PRESET	EXEC	—	—	—	—	—	—		—
		STORE ALL PRESET	EXEC	—	—	—	—	—	—		—
		CLEAR ALL PRESET	EXEC	—	—	—	—	—	—		—
		3SEC CLR PRESET	OFF	×	△	×	×	×	×	Initial value	×
		NETWORK DATA	OFF	×	⊙	×	×	×	×		×
04	SCENE FILE	□ 1	STANDARD	—	—	—	—	—	—		—
		□ 2	STANDARD	—	—	—	—	—	—		—
		□ 3	STANDARD	—	—	—	—	—	—		—
		□ 4	STANDARD	—	—	—	—	—	—		—
		□ 5	STANDARD	—	—	—	—	—	—		—
		□ STANDARD	—	—	—	—	—	—	—		—
		SCENE RE-CALL	EXEC	—	—	—	—	—	—		—
		SCENE STORE	EXEC	—	—	—	—	—	—		—
		F.ID	Blank	×	×	⊙	×	×	×		×

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
05	REFER- ENCE	REFERENCE STORE	EXEC	—	—	—	—	—	—		—
		REFERENCE CLEAR	EXEC	—	—	—	—	—	—		—
		REFERENCE LOAD	EXEC	—	—	—	—	—	—		—
		REFERENCE SAVE	EXEC	—	—	—	—	—	—		—
		F.ID	Blank	×	×	×	⊙	×	×		×
		SCENE WHITE DATA	OFF	⊙	⊙	×	×	×	×		⊙
06	USER GAMMA	USER GAM- MA LOAD	EXEC	—	—	—	—	—	—		—
		USER GAM- MA RESET	EXEC	—	—	—	—	—	—		—
07	LENS FILE 1	LENS FILE RECALL	EXEC	—	—	—	—	—	—		—
		LENS FILE STORE	EXEC	—	—	—	—	—	—		—
		F.ID	No Offset	—	—	—	—	—	—		—
		SOURCE	MEMO- RY 1	—	—	—	—	—	—		—
		LENS NO OFFSET	EXEC	—	—	—	—	—	—		—
		LENS AUTO RECALL	OFF	⊙	⊙	×	×	×	×		⊙
		L.ID	Depends on the Lens	—	—	—	—	—	—		—
		L.MF	Depends on the Lens	—	—	—	—	—	—		—
08	LENS FILE 2	LENS M VMOD	0	×	×	×	×	⊙	×		×
		LENS CEN- TER H	0	×	×	×	×	⊙	×		×
		LENS CEN- TER V	0	×	×	×	×	⊙	×		×
		TEST OUT SE- LECT	VBS	⊙	⊙	×	△	×	○	Y when R/G/B	⊙
		LENS R FLARE	0	×	×	×	×	⊙	×		×
		LENS G FLARE	0	×	×	×	×	⊙	×		×
		LENS B FLARE	0	×	×	×	×	⊙	×		×
		LENS W-R OFST	0	×	×	×	×	⊙	×		×
		LENS W-B OFST	0	×	×	×	×	⊙	×		×
09	LENS FILE 3	SHADING CH SEL	R	⊙	⊙	×	×	×	×		⊙
		TEST OUT SE- LECT	VBS	⊙	⊙	×	△	×	○	Y when R/G/B	⊙

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		LENS R/G/B H SAW	0	×	×	×	×	⊙	×		×
		LENS R/G/B H PARA	0	×	×	×	×	⊙	×		×
		LENS R/G/B V SAW	0	×	×	×	×	⊙	×		×
		LENS R/G/B V PARA	0	×	×	×	×	⊙	×		×
10	USB MEMO- RY	USB IN > JUMP TO	OFF	⊙	⊙	×	×	×	×		⊙

4-16-5. DIAGNOSIS Menu

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
01	HOURS METER	OPERATION	000000H	—	—	—	—	—	—		—
		LASER	000000	—	—	—	—	—	—		—
		OPERATION (rst)	000000H	—	—	—	—	—	—		—
		SPINDLE (rst)	000000H	—	—	—	—	—	—		—
		LOADING (rst)	000000	—	—	—	—	—	—		—
		SEEK (rst)	000000H	—	—	—	—	—	—		—
02	TIME/ DATE	ADJUST	EXEC	—	—	—	—	—	—		—
		GPS ADJUST	EXEC	—	—	—	—	—	—		—
		HOURL	Internal clock	—	—	—	—	—	—		—
		MIN	Internal clock	—	—	—	—	—	—		—
		SEC	Internal clock	—	—	—	—	—	—		—
		YEAR	Internal clock	—	—	—	—	—	—		—
		MONTH	Internal clock	—	—	—	—	—	—		—
		DAY	Internal clock	—	—	—	—	—	—		—
03	ROM VER- SION 1	PACKAGE	ROM Version	—	—	—	—	—	—		—
		SY1	ROM Version	—	—	—	—	—	—		—
		SY2K	ROM Version	—	—	—	—	—	—		—
		SY2U	ROM Version	—	—	—	—	—	—		—
		DRV	ROM Version	—	—	—	—	—	—		—

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		AT	ROM Version	—	—	—	—	—	—		—
		FP	ROM Version	—	—	—	—	—	—		—
04	ROM VER-SION 2	LVIS	ROM Version	—	—	—	—	—	—		—
		TSYS	ROM Version	—	—	—	—	—	—		—
		TMBP	ROM Version	—	—	—	—	—	—		—
		CHRN	ROM Version	—	—	—	—	—	—		—
		BRDG	ROM Version	—	—	—	—	—	—		—
		PIER	ROM Version	—	—	—	—	—	—		—
		CAVA	ROM Version	—	—	—	—	—	—		—
05	ROM VER-SION 3	DSP0	ROM Version	—	—	—	—	—	—		—
		PRXA	ROM Version	—	—	—	—	—	—		—
		GPS	ROM Version	—	—	—	—	—	—		—
06	DEV STATUS	I/O	—	—	—	—	—	—	—		—
		FP	OK	—	—	—	—	—	—		—
		CN	OK	—	—	—	—	—	—		—
		DCP	OK	—	—	—	—	—	—		—
		VF	OK	—	—	—	—	—	—		—
		EEPROM	—	—	—	—	—	—	—		—
		CN	OK	—	—	—	—	—	—		—
		DCP	OK	—	—	—	—	—	—		—
		DR	OK	—	—	—	—	—	—		—
		LSI		—	—	—	—	—	—		—
		DCP1	OK	—	—	—	—	—	—		—
		DCP2	OK	—	—	—	—	—	—		—
		TG	OK	—	—	—	—	—	—		—
		D/A		—	—	—	—	—	—		—
		DCP1	OK	—	—	—	—	—	—		—
		DCP2	OK	—	—	—	—	—	—		—
		FRAM		—	—	—	—	—	—		—
		AT	OK	—	—	—	—	—	—		—
		FAN		—	—	—	—	—	—		—
		MB	OK	—	—	—	—	—	—		—
		SCI		—	—	—	—	—	—		—
		SY	OK	—	—	—	—	—	—		—
		RM	—	—	—	—	—	—	—		—

4-16-6. SERVICE Menu

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
01	MENU SET	RE ROTATION REV	OFF	×	×	×	×	×	×		⊙
		RE SPEED	2	×	×	×	×	×	×		⊙
		DIRECT VALUE	OFF	×	×	×	×	×	×	Initial value	⊙
		SERVICE RESET	EXEC	—	—	—	—	—	—		—
		FACTORY PRESET	EXEC	—	—	—	—	—	—		—
02	SP FUNC	GAIN DISP MODE	dB	×	×	×	×	×	×		⊙
		KNEE 2ND POINT	ON	×	▲	×	×	×	×		⊙
03	WHITE SHADING	WHT SHAD CH SEL	R	⊙	⊙	×	Δ	×	○		⊙
		TEST OUT SELECT	VBS	⊙	⊙	×	Δ	×	○	Y when R/G/B	⊙
		R/G/B WHT H SAW	0	×	×	×	×	×	×		⊙
		R/G/B WHT H PARA	0	×	×	×	×	×	×		⊙
		R/G/B WHT V SAW	0	×	×	×	×	×	×		⊙
		R/G/B WHT V PARA	0	×	×	×	×	×	×		⊙
		WHITE SAW/ PARA	ON	×	Δ	×	Δ	×	○	ON	×
04	BLACK SHADING	BLK SHAD CH SEL	R	⊙	⊙	×	Δ	×	○		⊙
		TEST OUT SELECT	VBS	⊙	⊙	×	Δ	×	○	Y when R/G/B	⊙
		R/G/B BLK H SAW	0	×	×	×	×	×	×		⊙
		R/G/B BLK H PARA	0	×	×	×	×	×	×		⊙
		R/G/B BLK V SAW	0	×	×	×	×	×	×		⊙
		R/G/B BLK V PARA	0	×	×	×	×	×	×		⊙
		BLACK SAW/ PARA	ON	×	Δ	×	Δ	×	○	ON	×
		MASTER BLACK	0	⊙	○	⊙	○	×	○		⊙
		MASTER GAIN(TMP)	Depends on the switch setting.	×	⊙	⊙	⊙	×	○	Depends on the GAIN switch setting.	×
05	SHADING	AUTO WHT SHADING	EXEC	—	—	—	—	—	—		—

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		RESET WHT SHD	EXEC	—	—	—	—	—	—		—
		AUTO BLK SHADING	EXEC	—	—	—	—	—	—		—
		RESET BLK SHD	EXEC	—	—	—	—	—	—		—
		2D BLACK SHADINGT	OFF	×	▲	×	×	×	×		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		MASTER GAIN(TMP)	Depends on the switch setting.	×	◎	◎	◎	×	○	Depends on the GAIN switch setting.	×
06	VCO ADJUST	TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		CLK OUT SELECT	OFF	×	×	×	×	×	×	Initial value	×
		HDCK (NTSC IT)	0	×	×	×	×	×	×		◎
		HDCK (PAL IT)	0	×	×	×	×	×	×		◎
		SDCK	0	×	×	×	×	×	×		◎
07	CCD ADJUST 1	R CCD GAIN	0	×	×	×	×	×	×		◎
		G CCD GAIN	0	×	×	×	×	×	×		◎
		B CCD GAIN	0	×	×	×	×	×	×		◎
08	CCD ADJUST 2	R VSUB	Factory adjustment value	×	×	×	×	×	×		◎
		G VSUB	Factory adjustment value	×	×	×	×	×	×		◎
		B VSUB	Factory adjustment value	×	×	×	×	×	×		◎
		R VSUB OFST (P)	Factory adjustment value	×	×	×	×	×	×		◎
		G VSUB OFST (P)	Factory adjustment value	×	×	×	×	×	×		◎
		B VSUB OFST (P)	Factory adjustment value	×	×	×	×	×	×		◎
		CCD H DRIVER	6.2V	×	×	×	×	×	×		◎

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		AD CLOCK PHASE	Factory adjustment value	×	×	×	×	×	×		⊙
		TEST OUT SELECT	VBS	⊙	⊙	×	△	×	○	Y when R/G/B	⊙
09	FLARE	R FLARE	0	×	×	×	×	×	×		⊙
		G FLARE	0	×	×	×	×	×	×		⊙
		B FLARE	0	×	×	×	×	×	×		⊙
		FLARE	ON	⊙	⊙	⊙	△	×	○		⊙
		TEST OUT SELECT	VBS	⊙	⊙	×	△	×	○	Y when R/G/B	⊙
10	GAMMA/DETAIL	R GAMMA	0	×	▲	×	×	×	×		⊙
		G GAMMA	0	×	▲	×	×	×	×		⊙
		B GAMMA	0	×	▲	×	×	×	×		⊙
		DETAIL LEVEL	0	×	▲	×	×	×	×		⊙
11	MANUAL RPN	TEST OUT SELECT	VBS	⊙	⊙	×	△	×	○	Y when R/G/B	⊙
		RPN CURSOR	OFF	×	▲	×	×	×	×	Initial value	×
		SUPER(MENU)	ON	⊙	⊙	×	×	×	×		⊙
		RPN WIDTH	1	×	▲	×	×	×	×		×
		CURSOR H POS	960	×	▲	×	×	×	×		×
		CURSOR V POS	540	×	▲	×	×	×	×		×
		CURSOR JUMP	CURR	×	▲	×	×	×	×		×
		RECORD RPN	EXEC	—	—	—	—	—	—		—
		DELETE RPN	EXEC	—	—	—	—	—	—		—
12	RPN MAN-AGE	CONC (APR) RESET	EXEC	—	—	—	—	—	—		—
		CONC2(APR) RESET	EXEC	—	—	—	—	—	—		—
		RPN ALL PRESET	EXEC	—	—	—	—	—	—		—
		AUTO CONCEAL	EXEC	—	—	—	—	—	—		—
		AUTO CONCEAL2	EXEC	—	—	—	—	—	—		—
13	VDR MAINTENANCE	AUDIO A/D ADJUST	EXEC	—	—	—	—	—	—		—
		AUDIO D/A ADJUST	EXEC	—	—	—	—	—	—		—
		AU SIDE VOL ADJ	EXEC	—	—	—	—	—	—		—

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		POWER A/D ADJUST	EXEC	—	—	—	—	—	—		—
		DRIVE MAINT	EXEC	—	—	—	—	—	—		—
		SERVICE SUPPORT	EXEC	—	—	—	—	—	—		—
14	FAN	FAN VOLT FIX	OFF	×	▲	×	×	×	×	Initial value	×
		FAN ROTATION DET	OK	—	—	—	—	—	—		—
15	MEASURE	MEASUREMENT MODE	OFF	×	▲	×	×	×	×	Initial value	×
		MASTER BLACK	0	◎	○	◎	○	×	○		◎
		MASTER GAIN(TMP)	Depends on the switch setting.	×	◎	◎	◎	×	○	Depends on the GAIN switch setting.	×
16	FILTER CTEMP	FILTER CTEMP 1	3200	×	▲	×	×	×	×		◎
		FILTER CTEMP 2	3200	×	▲	×	×	×	×		◎
		FILTER CTEMP 3	3200	×	▲	×	×	×	×		◎
		FILTER CTEMP 4	3200	×	▲	×	×	×	×		◎
17	BATTERY INFO	TYPE	----	—	—	—	—	—	—		—
		MFD DATE D/M/Y	-----	—	—	—	—	—	—		—
		CYCLE COUNT	-----	—	—	—	—	—	—		—
		CAPACITY	-----mAh	—	—	—	—	—	—		—
		VOLTAGE	---V	—	—	—	—	—	—		—
		CURRENT	----mA	—	—	—	—	—	—		—
		REMAINING (%)	---%	—	—	—	—	—	—		—
		REMAINING (MIN)	---M	—	—	—	—	—	—		—
		MODE	----	—	—	—	—	—	—		—
18	HOUSE METER2	RESET METER	EXEC	—	—	—	—	—	—		—
		OPERATION	000000H	—	—	—	—	—	—		—
		LASER	000000	—	—	—	—	—	—		—
		OPERATION (rst)	000000H	—	—	—	—	—	—		—
		SPINDLE (rst)	000000H	—	—	—	—	—	—		—
		LOADING (rst)	000000	—	—	—	—	—	—		—

Continued

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
		SEEK (rst)	000000H	—	—	—	—	—	—		—
19	FUNCTION LIMIT	AF DISPLAY	OFF	×	▲	×	×	×	×		◎
		SDI AUDIO SELECT	DSABL	×	▲	×	×	×	×		◎
		DISP FAN ALWAYS	ON	×	▲	×	×	×	×		◎
		SHUTTER SLS 32F	ENABL	×	▲	×	×	×	×		◎
20	S/H DC	S/H DC ADJ MODE	OFF	×	▲	×	×	×	×	Initial value	×
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		S/H DC B Rch	0	×	▲	×	×	×	×		◎
		S/H DC B Gch	0	×	▲	×	×	×	×		◎
		S/H DC B Bch	0	×	▲	×	×	×	×		◎
21	SERVICE FILE	SVC FILE LOAD	EXEC	—	—	—	—	—	—		—
		SVC FILE SAVE	EXEC	—	—	—	—	—	—		—
		F.ID	Blank	×	×	×	×	×	×		◎

Section 5

File System

5-1. Structure of File System

The PDW-850 can save data modifications made in the setup menu, as files in the main unit itself and in a USB memory. The file system consists of the USER FILE, ALL FILE, SCENE FILE, REFERENCE FILE and LENS FILE. For details of each file, refer to “4-1. Setup Menus”.

1. USER FILE

The USER file contains the customized USER menu items and its setups. Up to 100 files can be saved in a USB memory. When this file is saved in a USB memory, the USER menu can be set instantly to the users' preferred setup by reading the USER file data from the USB memory.

2. ALL FILE

The ALL file contains the setups of all menus. Up to 100 files can be saved in a USB memory. By saving the ALL file in a USB memory after adjusting the first camera, the user can instantly set the same adjustment setup as the first camera to the second and subsequent cameras by reading the ALL file data from the USB memory.

3. SCENE FILE

The SCENE file contains the setup value of the paint items adjusted in accordance with the shooting scene. Up to 5 SCENE files can be set in the built-in memory, and up to 100 SCENE files in a USB memory. When an operator saves the setup data optimized for a specific scene during rehearsal, the operator can establish exactly the same setup for the actual take as in the rehearsal by calling the saved setup data.

4. REFERENCE FILE

The REFERENCE file contains the setup values that serve as a reference for implementing SCENE FILE STANDARD. One file can be saved in the USB memory.

5. LENS FILE

The LENS file contains setup data that corrects the characteristics unique to each lens (flare, white shading, center marker position, white correction values). Up to 32 LENS files can be saved in the built-in memory, and up to 100 files can be saved in a USB memory.

5-2. Data Structure

Each menu item can be classified into the categories of USER, OPERATION, PAINT and MAINTENANCE. In addition to these categories, each menu item has different data in the USER layer (not the USER menu), PRESET layer, SERVICE layer (not the SERVICE menu) and FACTORY layer.

- USER layer : Data layer that can be changed by menu operation.
- PRESET layer : Data layer to be registered as the standard setup.
- SERVICE layer : Data layer that can be changed by a service engineer after entering the Service mode^{*1}.
For users, this layer is identical to the factory default setup.
- FACTORY layer : Data layer that contains factory-adjusted values and fixed values.

Menu Data Structure	USER	OPERATION	PAINT	MAINTENANCE	FILE	SERVICE
USER layer						
PRESET layer						
SERVICE layer						
FACTORY layer						

The USER layer, PRESET layer, SERVICE layer and FACTORY layer contain absolute values. The data in the USER layer, which is at the top, is used as the actual setup value.

Regarding the items that change continuously such as DETAIL LEVEL (hereafter referred to as analog data) in the MENU display, when the data in the PRESET layer are changed by performing REFERENCE LOAD (refer to [“5-3-3. REFERENCE FILE”](#)) or a similar process that displays the differential values between the USER layer and the PRESET layer (USER mode), the MENU display changes according to the data in the PRESET layer. However, the values actually set do not change. In the Service mode, the MENU display for the analog data shows the differential values between the SERVICE layer and the FACTORY layer.

Location where the data of each layer is saved:

- USER, PRESET and SERVICE layers : FRAM (DCP-65 board)
- FACTORY layer : EEPROM (CN-3667 board, DCP-65 board, DR-676 board) and ROM (fixed value)

*1: Refer to [“4-1-2. How to Display the SERVICE Menu”](#) for entering the service mode.

5-3. Operating the Files and the Data Flow

5-3-1. USER FILE

1. Initializing all the items in the USER menu to the default values. (USER PRESET)

When executing USER PRESET in the USER FILE page under the FILE menu page 1 <F01>, all the items in the USER menu is initialized to the default values.

Data Structure \ Menu	USER
USER layer	↑
PRESET layer	↑
SERVICE layer	
FACTORY layer	

Executing USER PRESET:

Copy the data in the PRESET layer of the USER menu items to the USER layer.

Note

After the operation, the MENU display for the analog data shows “0”.

2. Registering the setups of the USER menu as the default values. (STORE USER PRESET)

When executing STORE USER PRESET on the USER FILE page under the FILE menu page 2 <F02>, all the USER menu items are stored as the default values.

Data Structure \ Menu	USER
USER layer	↓
PRESET layer	↓
SERVICE layer	
FACTORY layer	

Executing STORE USER PRESET:

Copy the data in the PRESET layer of the USER menu items to the USER layer.

Note

After the operation, the MENU display for the analog data shows “0”.

3. Initializing all the USER menu setups to the factory default values. (CLEAR USER PRESET)

When executing CLEAR USER PRESET on the USER FILE page under the FILE menu page 2 <F02>, all the items in the USER menu are initialized to the factory default values.

Data Structure \ Menu	USER
USER layer	↑
PRESET layer	↑
SERVICE layer	↑
FACTORY layer	

Executing CLEAR USER PRESET:

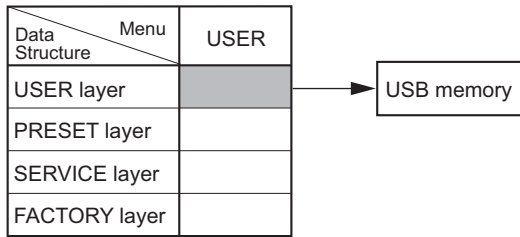
Copy the data in the SERVICE layer of the USER menu items to the USER and PRESET layers.

Note

After the operation, the MENU display for the analog data shows “0”.

4. Saving the setups of the USER menu in the USB memory. (USER FILE SAVE)

When executing USER FILE SAVE on the USER FILE page under the FILE menu page 1 <F01>, all the USER menu items are saved as USER FILE in the USB memory .



Executing USER FILE SAVE:

Save the data of the USER layer of the USER menu items in the USB memory.

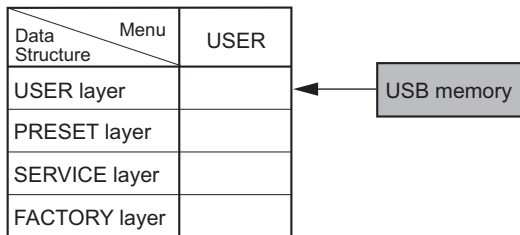
Tip

The contents of USER CUSTOMIZE MENU and the WHITE BALANCE data are also saved in the USB memory.

5. Calling the USER file saved in the USB memory. (USER FILE LOAD)

When executing USER FILE LOAD on the USER FILE page under the FILE menu page 1 <F01>, the USER FILE saved in the USB memory are called to the USER layer.

When the same USER FILE is loaded to two units, the same settings are reflected to the both units, but if the data in the PRESET layer are different, the MENU display shows different values.



Executing USER FILE LOAD:

Call the USER FILE saved in the USB memory to the data in the USER layer of the USER menu items.

Tip

There are LOAD OPTION setups such as the one to choose whether or not to load the contents of USER CUSTOMIZE MENU when loading the data from the USB memory.

- LOAD CUSTOM DATA :
Setup to choose whether or not to call the data to customize the menu
- LOAD OUT OF USER :
Setup to choose whether or not to have the data saved in the USB memory call the items that do not exist in the current customized USER menu
- BEFORE FILE PAGE :
Setup to choose whether or not to call the USER FILE data saved in the USB memory to the setup data contained in the pages after the USER FILE page, when the USER menu contains the USER FILE page of FILE menu
- USER LOAD WHITE :
Setup to choose whether or not to call the WHITE BALANCE data saved in the USER FILE

5-3-2. ALL FILE

Tip

Refer to “4-16. Setup Menu List” for the items of object. (ALL: ALL FILE object items. PRESET: ALL PRESET object items.)

1. Returning the items in the ALL file to the preset value. (ALL PRESET)

When executing ALL PRESET on the ALL FILE page under the FILE menu page 3 <F03>, the ALL FILE items (corresponding items among OPERATION, PAINT, MAINTENANCE and FILE) are returned to the default values.

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE	FILE
USER layer	↑	↑	↑	↑
PRESET layer	↑	↑	↑	↑
SERVICE layer				
FACTORY layer				

Executing ALL PRESET:

Copy the data stored in the PRESET layer of the ALL PRESET object items to the USER layer.

2. Setting the preset values of the ALL PRESET object items. (STORE ALL PRESET)

When executing STORE ALL PRESET on the ALL FILE page under the FILE menu page 3 <F03>, the ALL FILE items (corresponding items among OPERATION, PAINT, MAINTENANCE and FILE) are saved as the default values.

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE	FILE
USER layer	↓	↓	↓	↓
PRESET layer	↓	↓	↓	↓
SERVICE layer				
FACTORY layer				

Executing STORE ALL PRESET:

Copy the data stored in the USER layer of the ALL PRESET object items to the PRESET layer.

3. Clearing the preset value of the ALL PRESET object items. (CLEAR ALL PRESET)

When executing CLEAR ALL PRESET on the ALL FILE page under the FILE menu page 3 <F03>, the value of the ALL FILE items (corresponding items among OPERATION, PAINT, MAINTENANCE and FILE) are initialized to the factory default value^{*1}.

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE	FILE
USER layer	↑	↑	↑	↑
PRESET layer	↑	↑	↑	↑
SERVICE layer	↑	↑	↑	↑
FACTORY layer				

Executing CLEAR ALL PRESET:

Copy the data stored in the SERVICE layer of the ALL PRESET object items to the USER and PRESET layers.

*1: As the users will use the values set in the service mode as the factory default value, be sure to handle the setup values with care in the service mode.

4. Saving the setups of the ALL FILE object items in the USB memory. (ALL FILE SAVE)

When executing ALL FILE SAVE on the ALL FILE page under the FILE menu page 3 <F03>, the data of the USER and PRESET layers of ALL FILE object items (corresponding items among OPERATION, PAINT, MAINTENANCE and FILE) are saved to the USB memory as ALL FILE.

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE	FILE	
USER layer					USB memory
PRESET layer					
SERVICE layer					
FACTORY layer					

Executing ALL FILE SAVE:

Save the data of the USER and PRESET layers of the ALL FILE object items in the USB memory.

5. Calling the ALL FILE saved in the USB memory. (ALL FILE LOAD)

When executing ALL FILE LOAD on the ALL FILE page under the FILE menu page 3 <F03>, ALL FILE stored in the USB memory are called to the USER layer and the PRESET layer of the ALL FILE object items (corresponding items among OPERATION, PAINT, MAINTENANCE and FILE).

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE	FILE	
USER layer					USB memory
PRESET layer					
SERVICE layer					
FACTORY layer					

Executing ALL FILE LOAD:

Call ALL FILE stored in the USB memory to the USER and PRESET layers of the ALL FILE object items.

5-3-3. REFERENCE FILE

The REFERENCE FILE data is the same as the one in the PRESET layer. The difference is that the items to be handled as REFERENCE FILE in the PRESET layer are limited.

Refer to “4-16. Setup Menu List” for the items of the REFERENCE FILE.

Data Structure \ Menu	USER	OPERATION	PAINT	MAINTENANCE	FILE	SERVICE
PRESET layer						

REFERENCE FILE items

1. Saving the REFERENCE FILE in the built-in memory of the PDW-F850. (REFERENCE STORE)

When executing REFERENCE STORE on the REFERENCE page under the FILE menu page 5 <F05>, the REFERENCE FILE items (corresponding items among OPERATION, PAINT and MAINTENANCE) are saved as the default values.

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE
USER layer	↓	↓	↓
PRESET layer	↓	↓	↓
SERVICE layer			
FACTORY layer			

Executing REFERENCE STORE:

Copy the data stored in the USER layer of the REFERENCE FILE items to the PRESET layer.

2. Initializing all the REFERENCE FILE setups to the factory default values. (REFERENCE CLEAR)

When executing REFERENCE CLEAR on the REFERENCE page under the FILE menu page 5 <F05>, the REFERENCE FILE items (corresponding items among OPERATION, PAINT and MAINTENANCE) are initialized to the factory default value*1.

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE
USER layer	↑	↑	↑
PRESET layer	↑	↑	↑
SERVICE layer	↑	↑	↑
FACTORY layer			

Executing REFERENCE CLEAR:

Copy the data stored in the SERVICE layer of the REFERENCE FILE items to the USER and PRESET layers.

3. Saving the REFERENCE FILE in the USB memory. (REFERENCE SAVE)

When executing REFERENCE SAVE on the REFERENCE page under the FILE menu page 5 <F05>, the data of the PRESET layer of the REFERENCE FILE items (corresponding items among OPERATION, PAINT and MAINTENANCE) are saved as REFERENCE FILE in the USB memory.

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE
USER layer			
PRESET layer			
SERVICE layer			
FACTORY layer			

→ USB memory

Executing REFERENCE SAVE:

Save the data of the PRESET layer of the REFERENCE FILE items in the USB memory.

*1: As the users will use the values set in the service mode as the factory default value, be sure to handle the setup values with care in the service mode.

4. Calling the REFERENCE FILE saved in the USB memory. (REFERENCE LOAD)

When executing REFERENCE LOAD on the REFERENCE page on the FILE menu page 5 <F05>, the REFERENCE FILE are called to the PRESET layer of the REFERENCE FILE item (corresponding items among OPERATION, PAINT and MAINTENANCE).

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE
USER layer			
PRESET layer			
SERVICE layer			
FACTORY layer			

← USB memory

Executing REFERENCE LOAD:

Call the REFERENCE FILE stored in the USB memory to the data on the PRESET layer of the REFERENCE FILE items.

Tip

Some of the menu items are displayed as the setup data for the newly called REFERENCE (reference value).

(E.g.) DETAIL LEVEL

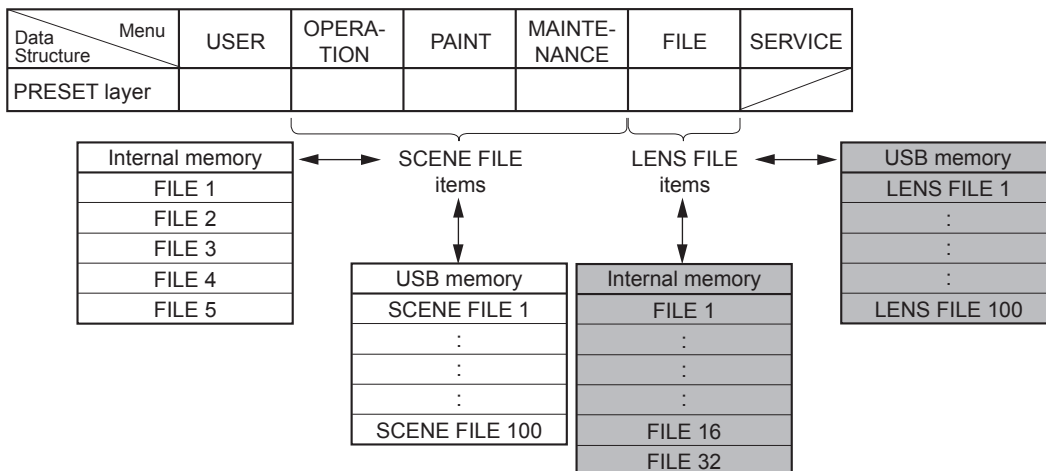
Display value of PAINT menu: 10
REFERENCE value: 20 } Output value: 30
REFERENCE value saved in the USB memory: -10

↓ (Execute REFERENCE LOAD)

Display value of the PAINT menu: 40
REFERENCE value: -10 } Output value: 30 (No difference in the output values before and after execution)

5-3-4. Other FILE (SCENE FILE and LENS FILE)

There is no hierarchical layer structure for the data of SCENE FILE and LENS FILE. The USER layer and the memory area of each file handle all the data.



Tip

Refer to “4-16. Setup Menu List” for the items of SCENE FILE, LENS FILE and STANDARD.

5-3-5. SERVICE FILE

When the system enters the service mode, most of the items in all the menus belong to the SERVICE layer. If changes are made in the data, the changed data will be saved as the data belonging to the SERVICE layer.

1. Saving the setups for the items to be included in the SERVICE FILE in the USB memory. (SERVICE FILE SAVE)

When executing SVC FILE SAVE on the SERVICE FILE page under the SERVICE menu page 25 <S25>, the data of the SERVICE FILE items (corresponding items among OPERATION, PAINT, MAINTENANCE FILE and SERVICE) belonging to the SERVICE layer are saved as SERVICE FILE in the USB memory.

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE	FILE	SERVICE
USER layer					
PRESET layer					
SERVICE layer					
FACTORY layer					



The diagram shows a box labeled 'USB memory' with an arrow pointing to the 'SERVICE layer' row of the table, indicating that data from this layer is saved to USB memory.

Executing USER FILE SAVE:

Save the data in the SERVICE layer of the SERVICE FILE item in the USB memory.

2. Calling the SERVICE FILE saved in the USB memory.

When executing SVC FILE LOAD on the SERVICE FILE page under the SERVICE menu page 25 <S25>, the data of the SERVICE FILE (corresponding items among OPERATION, PAINT, MAINTENANCE, FILE and SERVICE) stored in the USB memory are called to the SERVICE layer of the SERVICE FILE item.

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE	FILE	SERVICE
USER layer					
PRESET layer					
SERVICE layer					
FACTORY layer					



The diagram shows a box labeled 'USB memory' with an arrow pointing to the 'SERVICE layer' row of the table, indicating that data from USB memory is loaded into this layer.

Executing SVC FILE LOAD:

Call the SERVICE FILE stored in the USB memory to the data in the PRESET layer of the SERVICE FILE items.

5-3-6. Other RESET

This section describes SERVICE RESET and FACTORY PRESET in the SERVICE menu.

1. Resetting the data changed in the SERVICE mode. (SERVICE RESET)

When executing SERVICE RESET on the MENU SET page under the SERVICE menu page 1 <S01>, the setups changed in the SERVICE mode are initialized to the factory default value.

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE	FILE	SERVICE
USER layer					
PRESET layer					
SERVICE layer					
FACTORY layer					



The diagram shows arrows pointing from the 'FACTORY layer' row to the 'OPERATION', 'PAINT', 'MAINTENANCE', 'FILE', and 'SERVICE' columns of the 'SERVICE layer' row, indicating that factory default data is being copied to the current layer.

Executing SERVICE RESET:

Copy the data in the FACTORY layer to the SERVICE layer.

2. Initializing all the setup data to the factory default values. (FACTORY PRESET)

When executing FACTORY RESET on the MENU SET page under SERVICE menu page 1 <S01>, all the changed setups except for the DIAGNOSIS menu are initialized to the default value.

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE	FILE	SERVICE
USER layer	↑	↑	↑	↑	
PRESET layer	↑	↑	↑	↑	
SERVICE layer	↑	↑	↑	↑	↑
FACTORY layer	↑	↑	↑	↑	↑

Executing FACTORY PRESET:

Copy the data stored in the FACTORY layer to the SERVICE, PRESET and USER layers.

5-4. Special Items to Save

5-4-1. White Gain

Using the ALL FILE

Executing item	Status after execution
ALL FILE SAVE (FILE menu/ALL FILE page)	All the values of the white gain are saved in the ALL FILE. (Filter A/B/C/D, WHITE BAL A/B)
ALL FILE LOAD (FILE menu/ALL FILE page)	All the values of the white gain are overwritten to the value of ALL FILE. (Filter A/B/C/D, WHITE BAL A/B)
STORE ALL PRESET (FILE menu/ALL page)	The value of the preset white gain specified on the MAINTENANCE menu/PRESET WHT page is saved as the value of the PRESET layer (identical to the value of the REFERENCE FILE).
CLEAR ALL PRESET (FILE menu/ALL FILE page)	All the values of the white gain are overwritten to the factory default value. (Filter A/B/C/D, WHITE BAL A/B) The PRESET WHITE R/B GAIN is also changed to the factory default value.
ALL PRESET (FILE menu/ALL FILE page)	All the values of the white gain are overwritten to the value of PRESET layer.

Using the REFERENCE FILE

Executing item	Status after execution
REFERENCE STORE (FILE menu/REFERENCE page)	The current value of the white gain at the time of execution is saved in REFERENCE FILE. (When the WHITE BAL switch is A, the saved value is A. When B, the saved value is B. When PRST, the saved value is PRST.) If REFERENCE STORE is executed when the WHITE BAL switch is A or B, the preset WHITE GAIN to be specified in the MAINTENANCE menu/PRESET WHT page is also overwritten to the value of the saved WHITE GAIN.
REFERENCE CLEAR (FILE menu/REFERENCE page)	When the WHITE BAL switch is A at the time of execution, R/B GAIN of A becomes the default value. When the WHITE BAL switch is B, R/B GAIN of B becomes the factory default value. PRESET WHITE R. B GAIN becomes the default value irrespective of the BAL switch.

Using the SCENE FILE

Executing item	Status after execution
SCENE STORE (FILE menu/SCENE FILE page)	The current value of the white gain at the time of execution is saved in the SCENE FILE. (When the WHITE BAL switch is A, the saved value is A. When B, the saved value is B. When PRST, the saved value is PRST.)
SCENE RECALL (FILE menu/SCENE FILE page)	The current value of the WHITE GAIN at the time execution is overwritten to that of the SCENE file only when "SCENE WHITE DATA" is set to ON in the FILE menu/REFERENCE page. (When the WHITE BAL switch is A, the value of A is overwritten. When it is B, the value of B is overwritten.) However, the value of the preset WHITE GAIN is retained when the WHITE BAL switch is PRST.
SCENE STANDARD (FILE menu/SCENE FILE page)	The current value of the WHITE GAIN at the time of execution is overwritten to that of the REFERENCE file only when "SCENE WHITE DATA" is set to ON in the FILE menu/REFERENCE page.

5-4-2. Master Gain

The Master Gain value can be saved in the REFERENCE FILE and in the SCENE FILE. When the PDW-850 is used in a standalone manner, the hardware switches are prioritized, so the saved value cannot be read out. When the PDW-850

is connected to the remote controller, the value of the master gain can be read from each file and is retained until a change is made. (The value is retained even after the power is turned off.) When the RM-B170 is connected, the hardware switches of the RM-B170 take precedence.

5-4-3. Shutter

The values of SHUTTER ON/OFF, ECS frequency and SHUTTER SEL can be saved in the SCENE FILE. When the PDW-850 is used in a standalone manner, the value of the ECS frequency and SHUTTER SEL can be read. The values are retained until a change is made. (The values are retained even after the power is turned off.)

(The hardware switches are prioritized for SHUTTER ON/OFF, so the saved value cannot be read out.)

When the PDW-850 is connected to the remote controller, the value of SHUTTER SEL can be read out.

The value is retained until a change is made. (The values are retained even after the power is turned off.)

Section 6

Periodic Maintenance and Inspection

6-1. 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	Hours Meter (Menu item)	Check/Replacement Period	Parts Number and Name
Optical block assembly	Laser parameter (LASER PARAMETER)	Replace every 6000.	△ A-1938-468-A KES-330A/J1 (RP)
Seek motor	Seek running hours (SEEK RUNNING)	Replace every 12000 H.	△ A-1374-689-A Seek motor assembly
Cleaner assembly	Laser parameter (LASER PARAMETER)	Check every 6000. Replace when bristles of brush become sparse or damaged remarkably.	A-1256-291-B Cleaner (P100) assembly
PS-708 board	Laser parameter (LASER PARAMETER)	Replace around the same time as optical block assembly.	A-1164-283-A PS-708 board
Lithium battery	Current-carrying hours (OPERATION)	About 5 years	△ 1-528-174-31 Lithium battery (CR2032)
Loader assembly	Disc loading count* ¹ (LOADING)	Replace every 110,000 times.	A-1256-958-F Loader (P100) assembly (RP)
Battery connector	Current-carrying hours (OPERATION)	About 5 years	1-820-459-21 Battery connector
REC start (recording) button	—	Replace about 3 years, or check for deformation and deterioration, and do not push the REC start button easily.	3-986-632-02 VTR start button

*1: This count differs from the actual disc insertion times because the loader up/down count is made by the normal loading operation.

6-2. Cleaning

To make the most of the functions, fully realize the performance of this unit, and to lengthen the life of the unit and cartridge, clean the components often.

6-2-1. General Information for the Use of Cleaning Cloth

Cautions

- Be sure turn the power off before cleaning.
- Each block in the drive consists of precision parts and is adjusted precisely. Be careful not to damage the parts and to apply excessive force during cleaning.
- Do not insert a cartridge before cleaning fluid completely evaporates after cleaning.

Preparation

1. Turn the power off.
2. Remove the loader assembly. (Refer to [“7-28-1. Loader Assembly”](#).)

6-2-2. Cleaning Loader Assembly

Precautions

The loader assembly consists of precision parts.
Be careful not to damage and give excessive force to the parts.

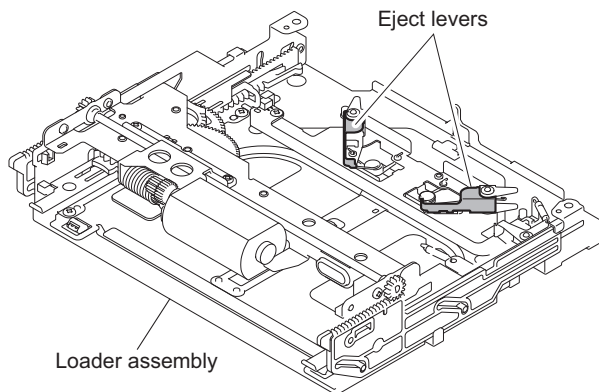
Cleaning Procedure

Tools

- Cleaning cloth (or cotton swab)
- Cleaning fluid (alcohol)

Procedure

1. Clean the eject levers in the loader assembly using the cleaning cloth (or cotton swab) with the cleaning fluid soaked.



6-2-3. Cleaning Spindle Motor

Precautions

- To prevent the possibility of damage to the optical block assembly in the drive by static electricity charged in a human body or clothes, be sure to establish a ground before cleaning the drive assembly.
(Refer to [“1-15. Cautions on Handling the Optical Block Assembly”](#).)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.
- The drive assembly consists of precision parts.
Be careful not to damage and give excessive force to the parts.

Cleaning Procedure

Tools

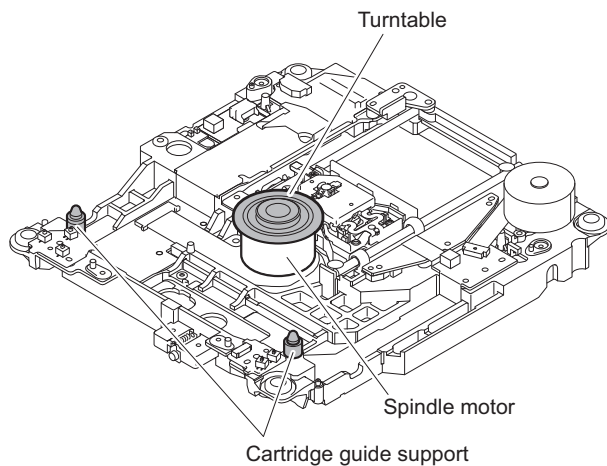
- Cleaning cloth (or cotton swab)
- Cleaning fluid (alcohol)

Procedure

1. Remove dust and dirt attached to the turntable of the spindle motor and the cartridge guide supports using the cleaning cloth (or cotton swabs) with the cleaning fluid soaked.

Note

After the cleaning, ensure that fibers of the cleaning cloth (or cotton swab) are not attached on the spindle motor.



6-2-4. Cleaning Pickup Lens

Error codes “02-020” may be displayed due to smudged optical pickup lens. (Refer to [“3-2-1. Error 0X”](#).)

If “02-020” is displayed, be sure to clean the pickup lens referring to “LENS CLEANING Menu”. (Refer to [“4-10-16. LENS CLEANING”](#).)

Note

Before cleaning, be sure to unload the disc from the unit.

6-3. Cares after Using under Special Environment

Checking the followings is recommended when returned from the news gathering at seaside, at the dusty locations, at hot spring, or if the unit is heavily splashed with water or water leaks in the unit in the rough weather or the like.

1. Carefully clean off sand and dust that entered the unit with airbrush or the like.
2. If salt contained in seawater or sulfur contained in hot spring attaches to the non-painted surface of outer cabinet, the cabinet may corrode in white.
If it attaches, wipe it off immediately with alcohol.
3. If water leaks inside the unit, turn off the power and dry the unit with hair-dryer and so on. Check especially that water does not remain in the CCD block or the power supply block.

Note

If the unit is not taken care of appropriately, corrosion may occur inside that may cause fire and electric shock.

4. Clean out the contacting surface of connectors.
5. Perform the general operational check and confirm that no abnormal sound is heard from inside the unit or the unit operates correctly without any abnormality.

6-4. Digital Hours Meter

The hours meter has six types of display mode. The operation hours or operation count of the PDW-850 can be accumulated for each mode and displayed on the viewfinder.

The hours meter can be reset as desired.

Use the hours meter as a reference for periodic inspection.

The display can also be checked on the HOURS METER page of the DIAGNOSIS menu (Cannot be reset in the DIAGNOSIS menu). (refer to “4-8. DIAGNOSIS Menu”, “HOURS METER Display (Confirming and resetting hours meter)”) Display and reset are carried out by using the HOURS METER 2 page in the SERVICE menu. (refer to “4-9. SERVICE Menu”, “HOURS METER 2 Display”)

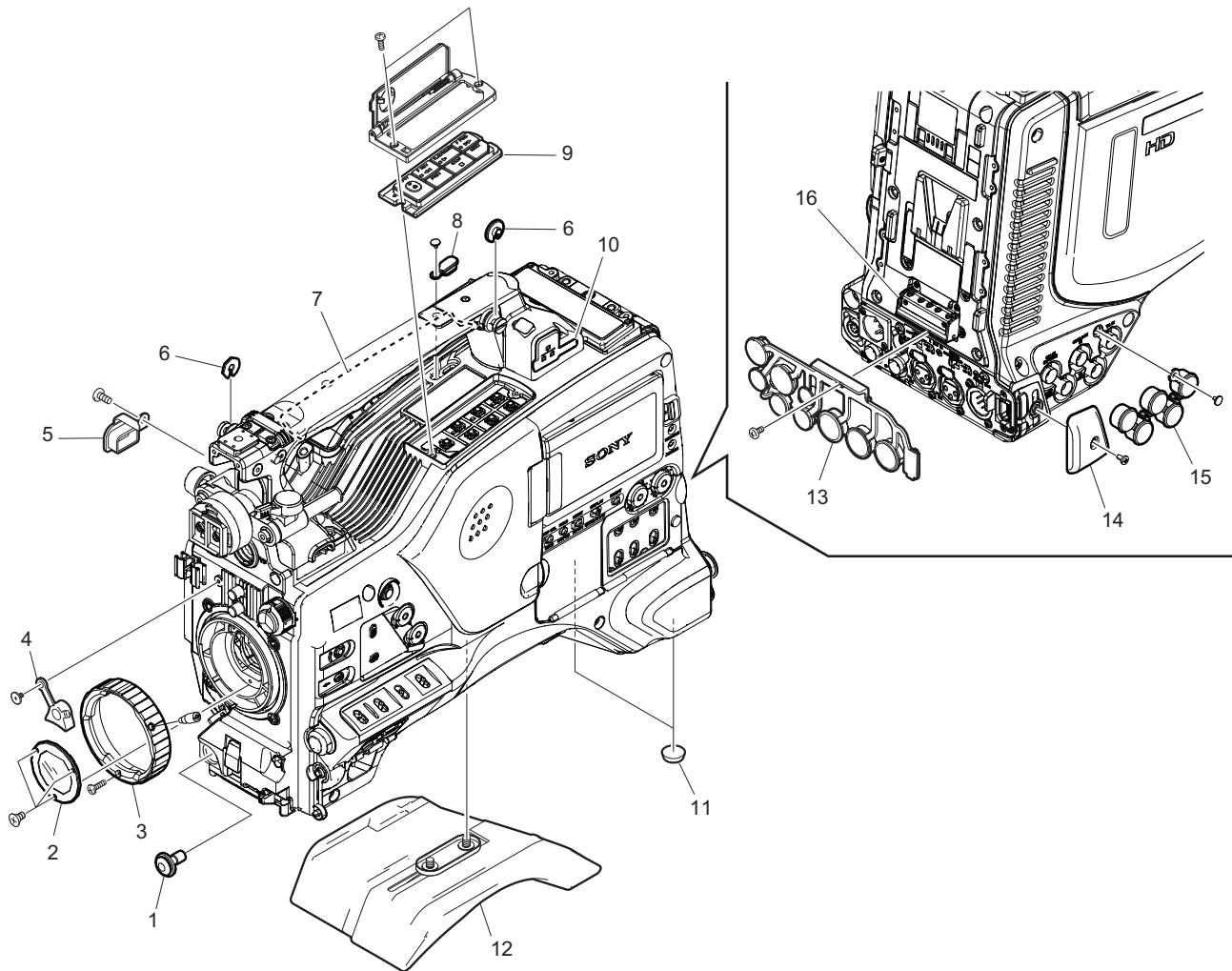
6-4-1. Display Method and Reset Methods

Procedure

1. Display the SERVICE menu. (Refer to “4-9. SERVICE Menu”)
TOP MENU is displayed on the viewfinder screen.
2. Select “SERVICE” from the TOP MENU and press the MENU knob.
3. Rotate the MENU knob to scroll the screen up to HOURS METER 2, and press the knob.
4. Rotate the MENU knob to move the cursor onto RESET METER, and press the knob. Move to the RESET METER screen.
5. Rotate the MENU knob to move the cursor to the desired hours meter.
6. Press the MENU knob. The accumulated time of the selected hours meter is reset.

RESET METER	ESC	
RESET OPERATION HOURS	←	Resets the power-on hours.
RESET SPINDLE RUN HOURS	←	Resets the spindle rotation time.
RESET LASER PARAMETER	←	Resets the light output counter value for the optical head.
RESET LOADING COUNTER	←	Resets the number of times the disc has been loaded.
RESET SEEK RUN HOURS	←	Resets the seek operation time for the optical head.
RESET ALL METERS	←	Resets all the hour meters.

6-5. Recommended Replacement Parts



Recommended replacement parts

ID	Part name	part No.	Recommended replacement timing
1	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
2	Optical filter unit	1-788-764-11	It can become nebulous (in transparent and whitened) with elapse of time. Then it will not meet the required characteristics. Replace it as needed.
3	Mount ring	3-790-043-11	Replace every 5 years.

Continued

*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.

ID	Part name	part No.	Recommended replacement timing
4	Holder lens mount	3-796-982-03	Check for deformation and deterioration (abraded or damaged or lost) from time to time. Replace it as necessary.
5	Light connector cover	3-877-892-01	
6	Suspension collar	3-654-615-02	
7	Handle cover bottom	3-796-975-02	
8	ME cap	3-870-253-02	
9	Key switch cover	3-797-024-02	
10	Handle cap	4-540-364-01	
11	Rubber foot	3-723-097-01	
12	Shoulder pad assembly	A-8279-878-H	
13	Rear cap connector	4-540-362-01	
14	Protector	3-870-158-02	
15	BNC cover (PH3)	3-870-160-01	
16	Battery connector	1-820-459-21	

6-5-1. Precautions for the Battery Connector

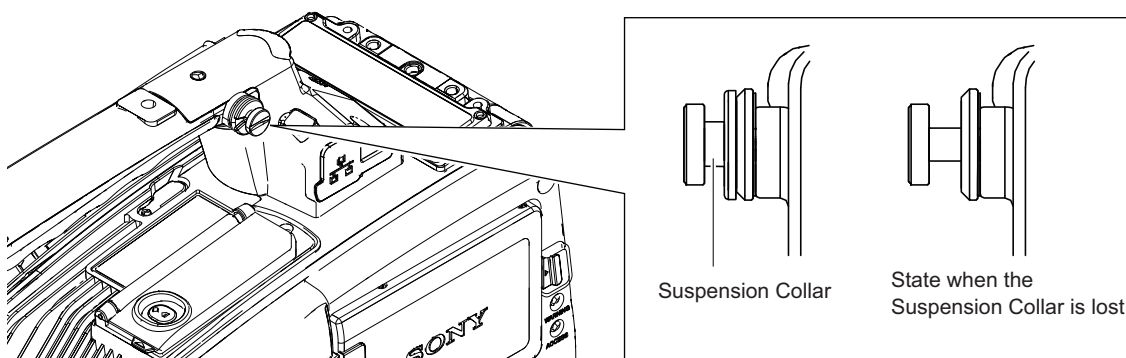
The battery connector in this unit is consumable parts. Replace ever about 5 years.

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 connector immediately if the terminal is deformed or bends, or if the surface color changes. (Refer to “7-24. Battery Connector Assembly”.)

6-5-2. 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-1541-491-A).



Section 7

Replacement of Main Parts

7-1. General Information for Parts Replacement

7-1-1. 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: $0.19 \pm 0.01 \text{ N}\cdot\text{m}$

M2: $0.2 \pm 0.01 \text{ N}\cdot\text{m}$

M2.6: $0.53 \pm 0.07 \text{ N}\cdot\text{m}$

M3: $0.8 \pm 0.12 \text{ N}\cdot\text{m}$

Tip

- When using the torque driver with the notation of $\text{cN}\cdot\text{m}$, interpret it as follows.
Example: $0.8 \text{ N}\cdot\text{m} = 80 \text{ cN}\cdot\text{m}$
- 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.

7-1-2. Switch Settings for Shipping

Switches of this unit were set as follows in the factory shipping process. Refer to the settings when setting switches after maintenance.

A : Front panel

- FILTER knob : 1
- SHUTTER switch : OFF
- MIC LEVEL knob : 10 (Fully clockwise)

B : Inside panel

- MENU ON/OFF switch: OFF
- POWER switch : OFF

C : Inside panel

- VDR SAVE/STBY switch: SAVE
- GAIN switch : L
- OUTPUT/DCC switch: BARS
- WHITE BAL switch: PRST

D : Inside panel (Audio switches)

- F-RUN/SET/R-RUN switch : R-RUN
- LEVEL CH-1/CH-2 knob: 0 (Fully clockwise)
- PRESET/REGEN/CLOCK switch : PRESET
- AUDIO SELECT CH-1/CH-2 switch : AUTO
- AUDIO IN CH-1/CH-2 switch : FRONT
- AUDIO IN CH-3/CH-4 switch : R

E : Inside panel (Monitor switches)

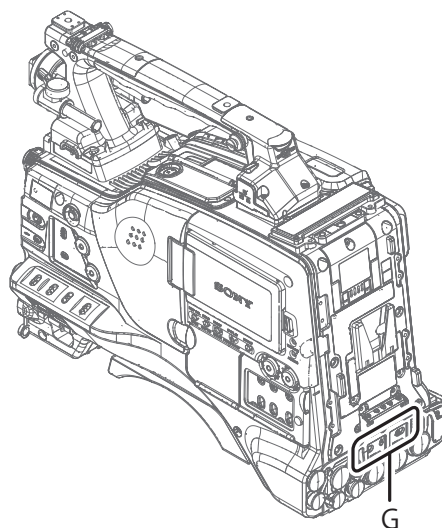
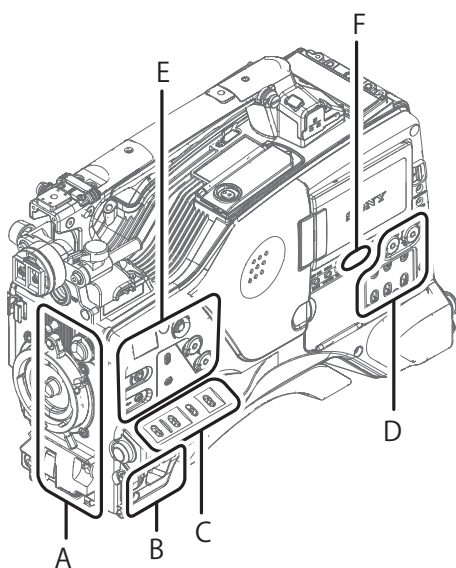
- MONITOR switch 1 : MIX
- MONITOR switch 1 : CH-1/2
- ASSIGN 2 switch : Left side
- ALARM knob : Minimum (Fully counterclockwise)
- MONITOR knob : Minimum (Fully counterclockwise)

F : Inside panel (Display switches)

- DISPLAY switch : TC

G : Rear panel

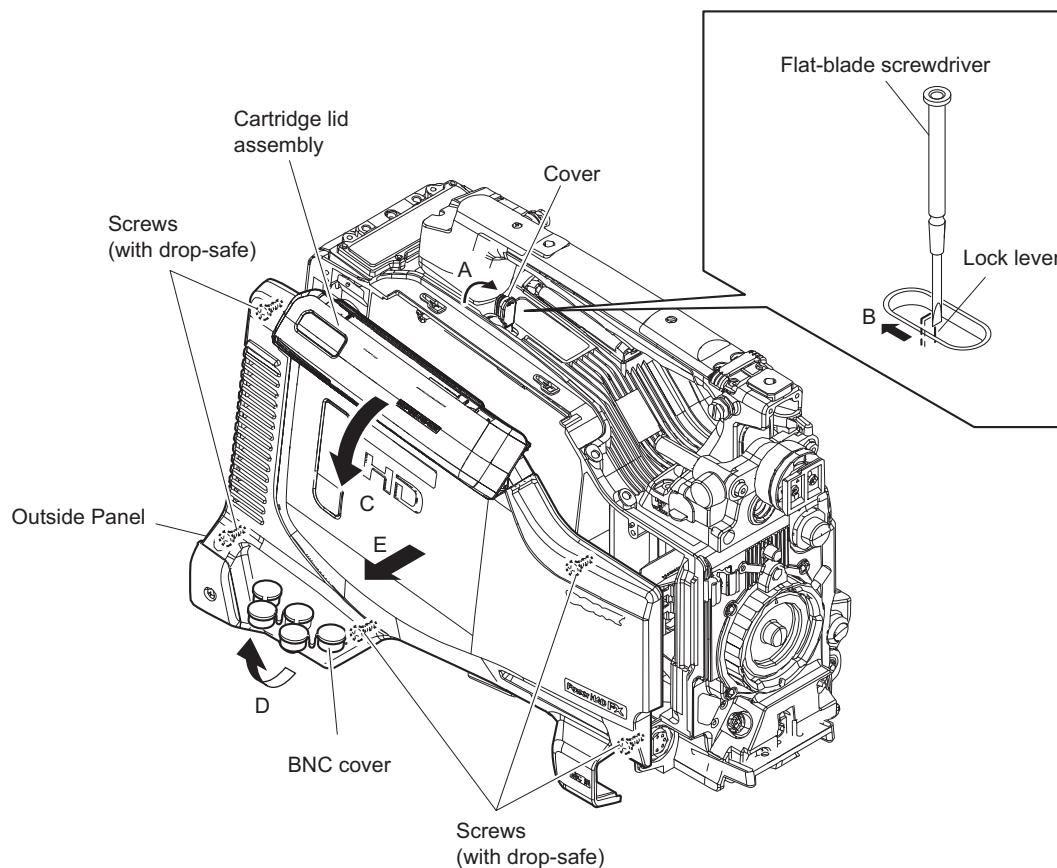
- LINE/AES/EBU/MIC switch : LINE
- +48V/OFF switch : OFF



7-2. Outside Panel

Removing Outside Panel

1. Open the cover in the direction of the arrow A.
2. Push the lock lever in the direction of the arrow B with a screwdriver. The cartridge lid assembly is opened in the direction of the arrow C.
3. Open the BNC cover in the direction of the arrow D.
4. Fully loosen the five screws (with drop-safe) of the outside panel, and remove the outside panel in the direction of the arrow E.



Installing Outside Panel

5. Install the outside panel to the unit with its cartridge lid assembly opened, by tightening the five screws.

Note

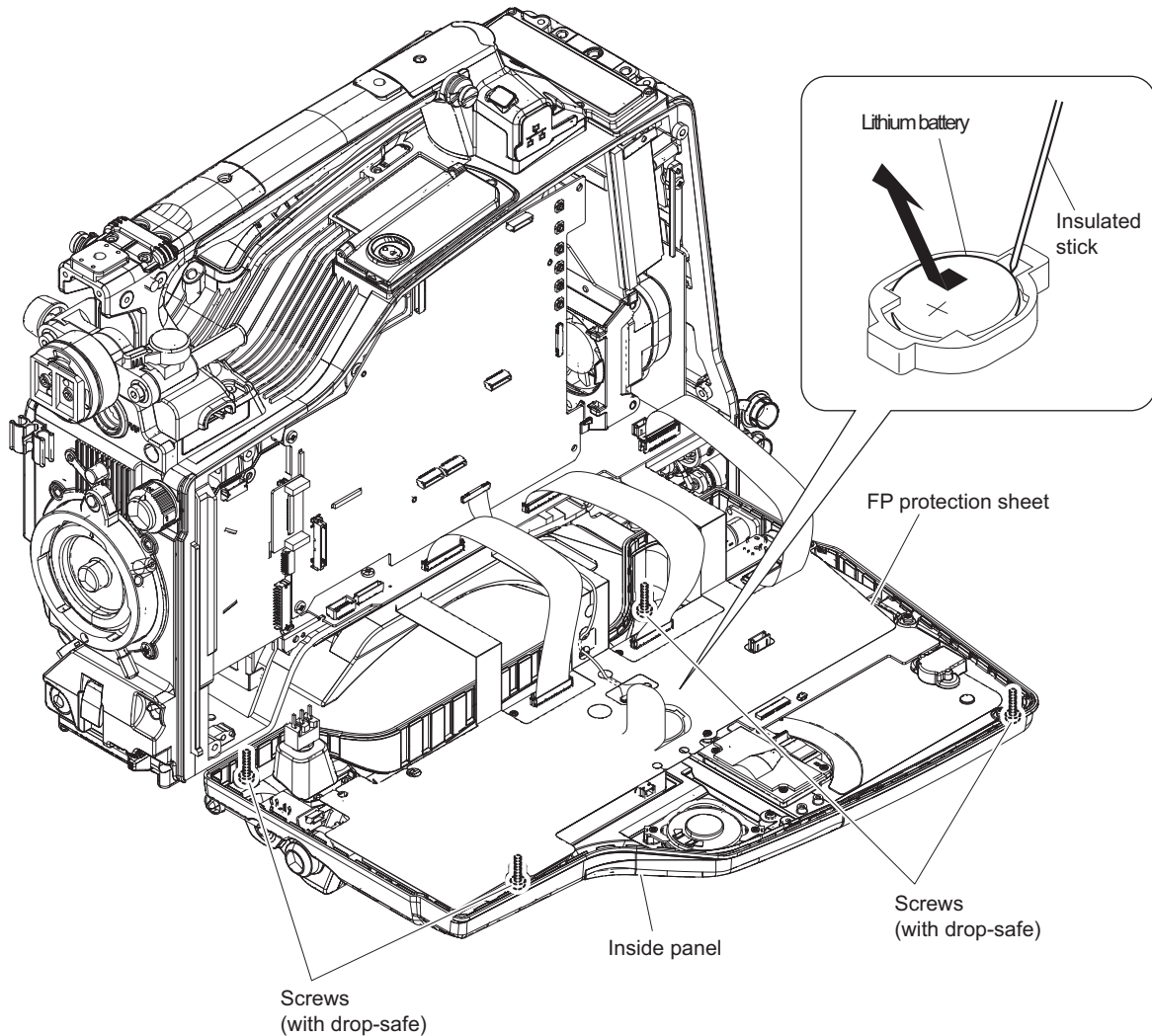
Do not tighten the screws with the cartridge inside. Be sure to take out the cartridge before installing the outside panel. (Refer to [“1-5. How to Take Out a Cartridge Manually”](#))

6. Close the cartridge lid assembly.
7. Close the BNC cover.
8. Close the cover.

7-3. Lithium Battery

Procedure

1. Fully loosen the four screws (with drop-safe) of the inside panel, and open the inside panel.
2. Turn up the FP protection sheet, and remove the lithium battery.



Note

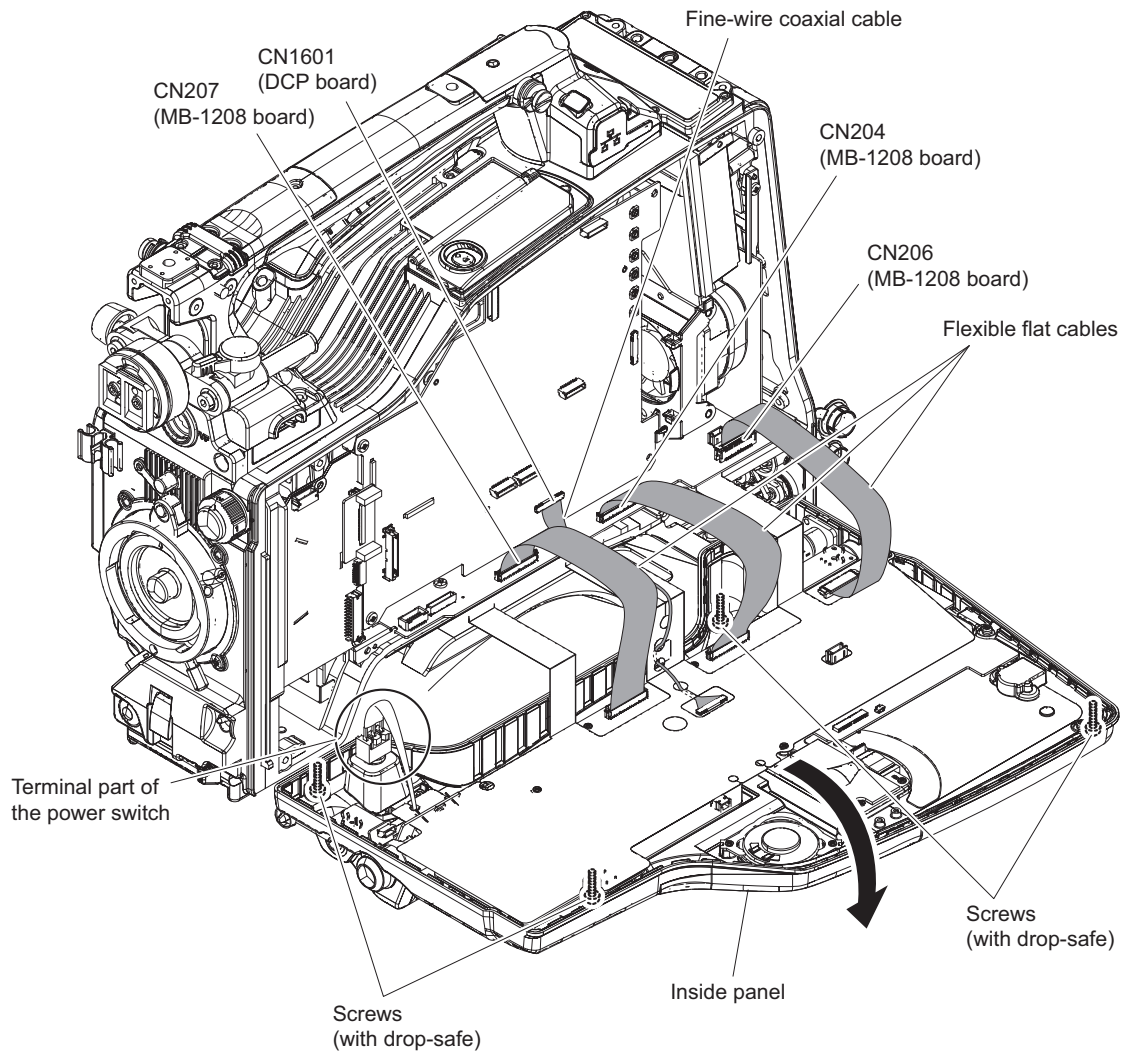
When installing the lithium battery, not to mistake the orientation of the lithium battery.

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

7-4. Inside Panel

Procedure

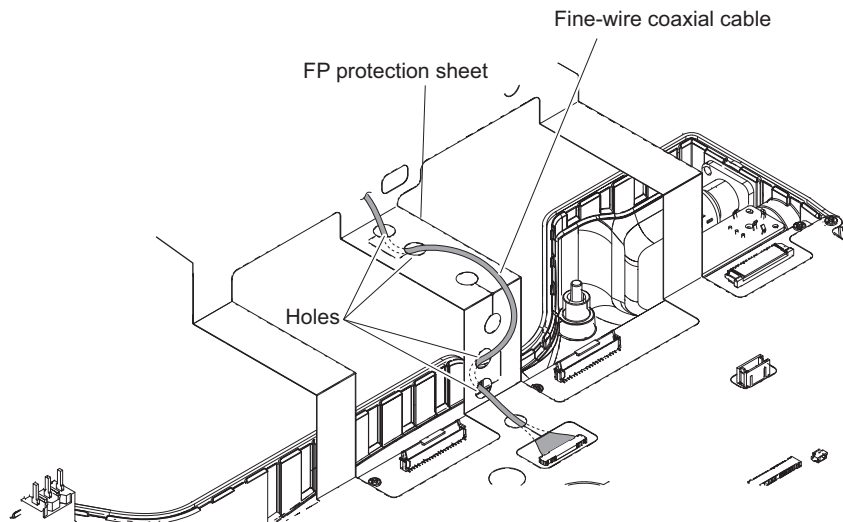
1. Fully loosen the four screws (with drop-safe) of the inside panel, and open the inside panel.
2. Disconnect the three flexible flat cables from the three connectors (CN204, CN206, CN207) on the MB-1208 board.
3. Disconnect the fine-wire coaxial cable from the connector (CN1601) on the DCP board.



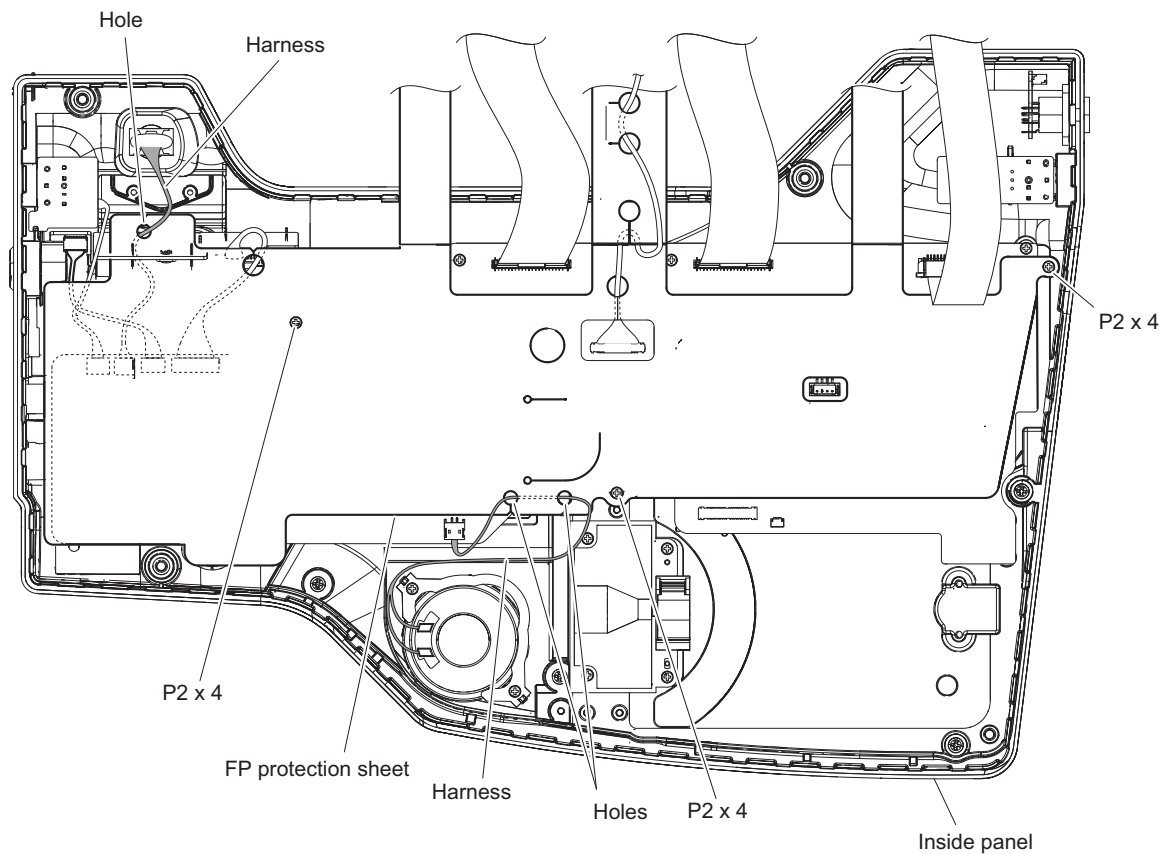
Note

Be careful so that the POWER switch terminal area does not touch surrounding components. When placing the inside panel, set it with its inside facing up.

4. Release the fine-wire coaxial cable from the four holes of the FP protection sheet.



5. Release the two harnesses from the three holes of the FP protection sheet.
6. Remove the three screws to detach the FP protection sheet from the inside panel.



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

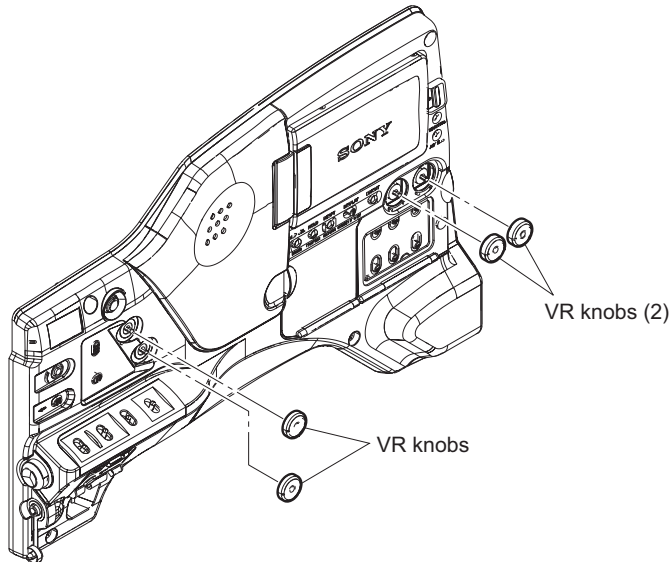
7-5. FP-190 Board/LCD Block

Preparation

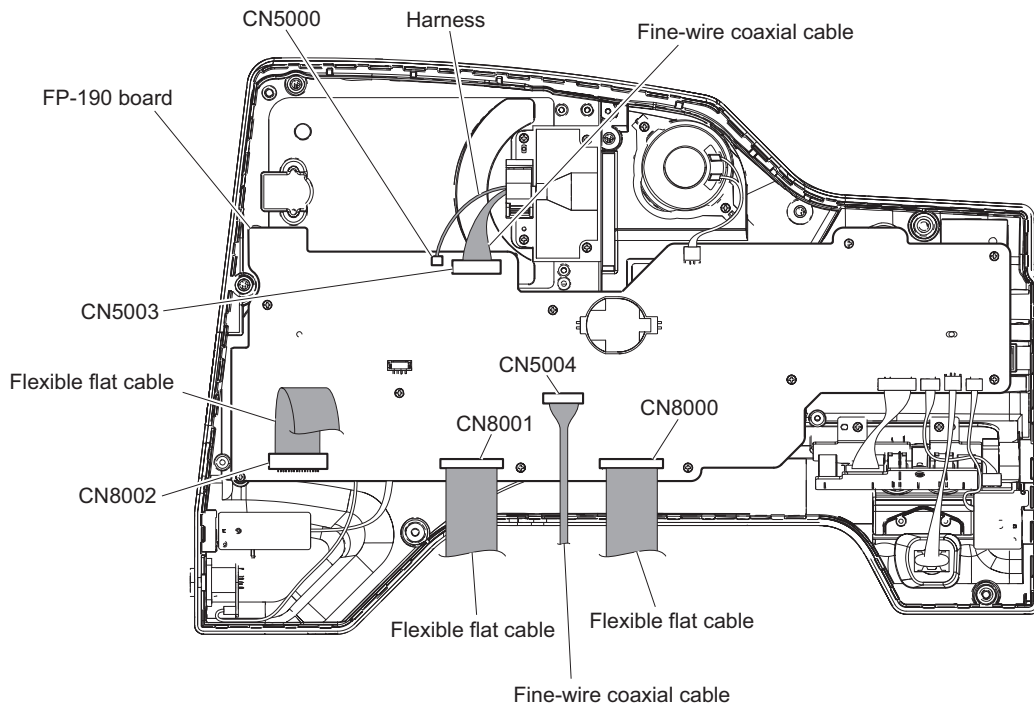
1. Remove the inside panel. (Refer to “7-4. Inside Panel”)

Procedure

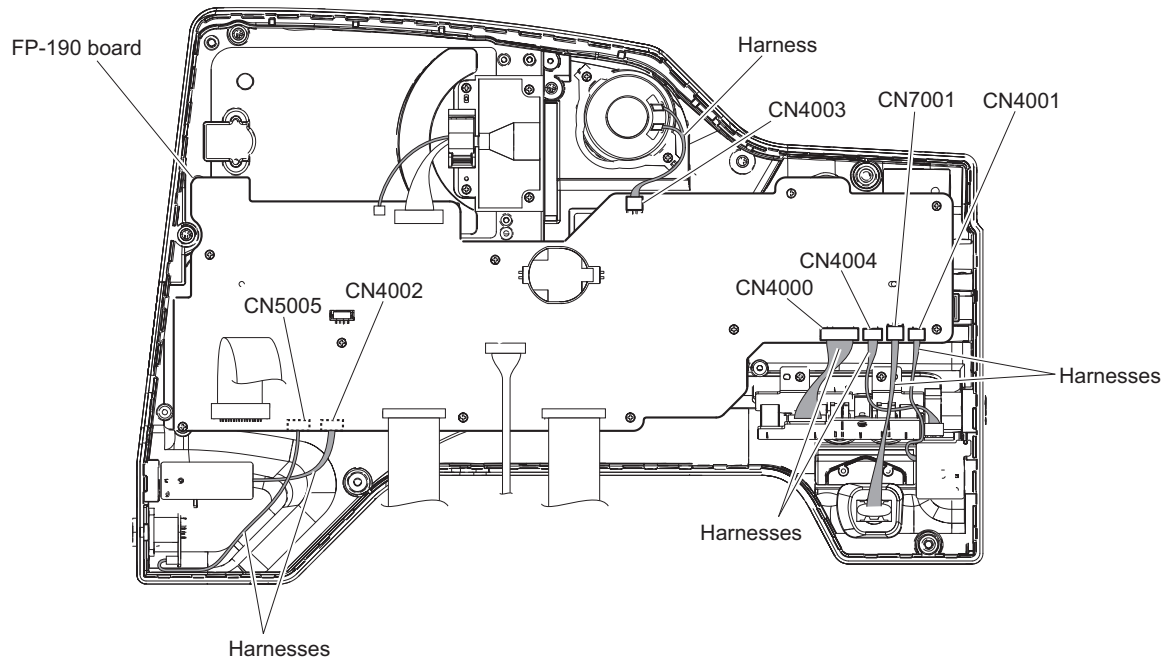
1. Remove the two VR knobs and two VR knobs (2).



2. Disconnect the two fine-wire coaxial cables from the two connectors (CN5003, CN5004) on the FP-190 board.
3. Disconnect the harness from the connector (CN5000) on the FP-190 board.
4. Disconnect the three flexible flat cables from the three connectors (CN8000, CN8001, CN8002) on the FP-190 board.



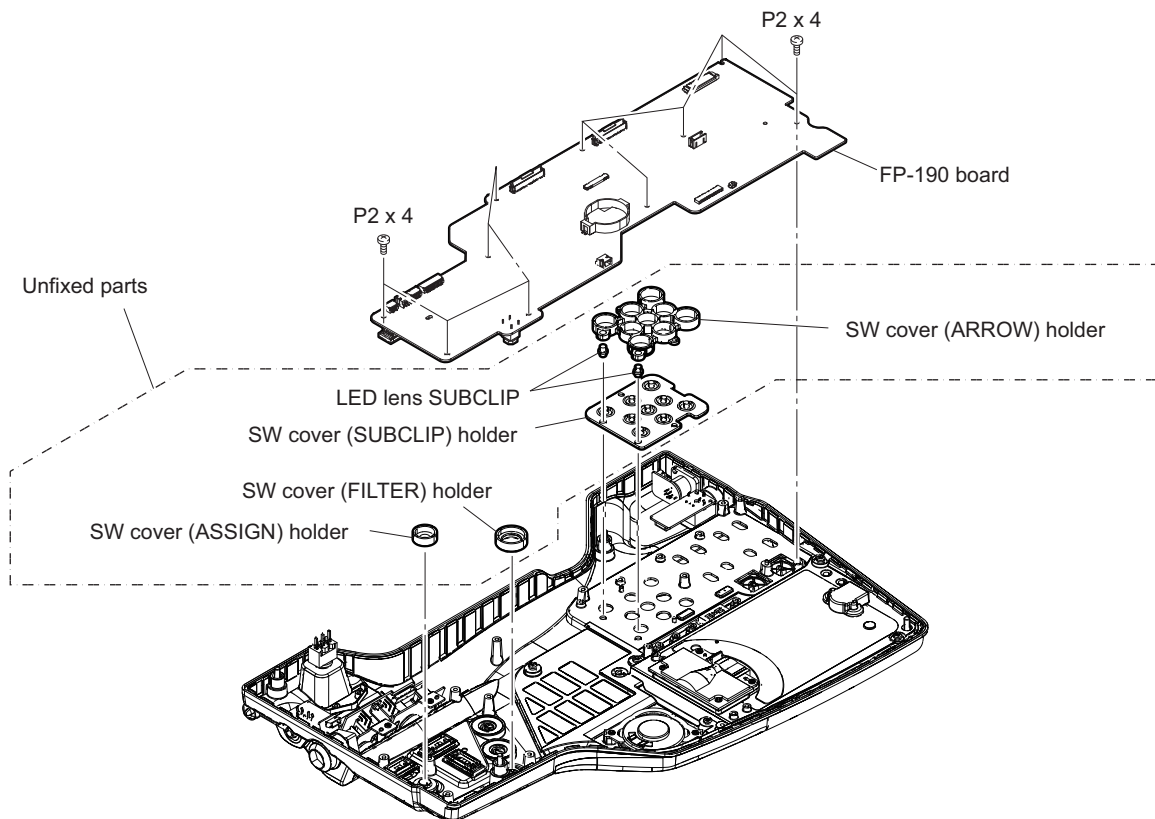
- Disconnect the seven harnesses from the seven connectors (CN4000, CN4001, CN4002, CN4003, CN4004, CN5005, CN7001) on the FP-190 board.



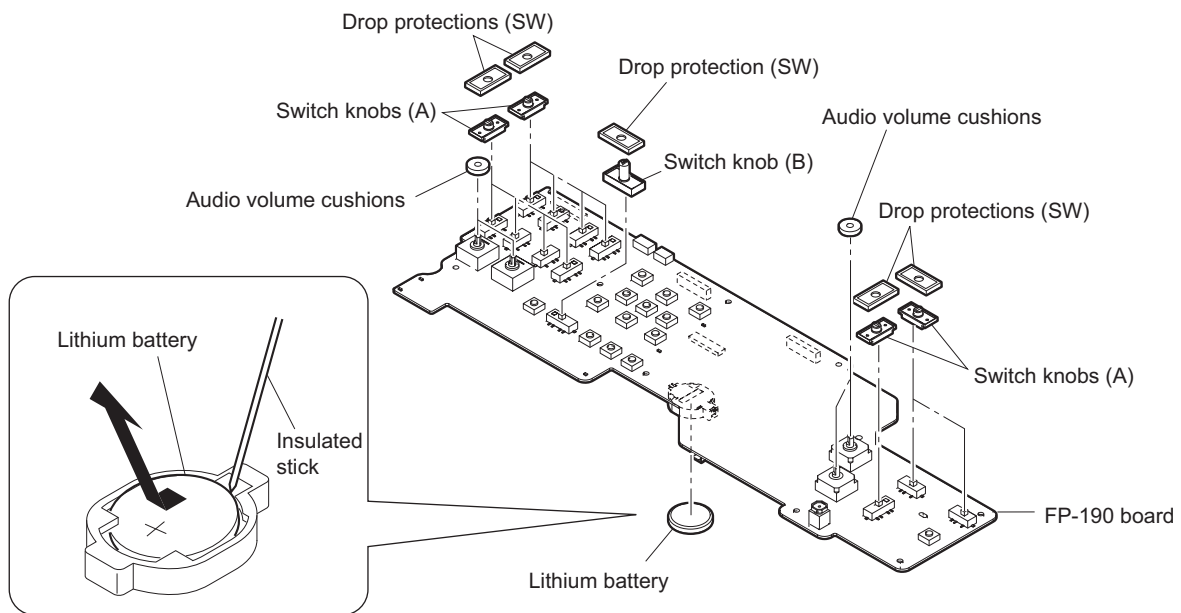
- Remove the ten screws to detach the FP-190 board.

Note

After removing the FP-190 board, be careful not to drop the unfixed parts.



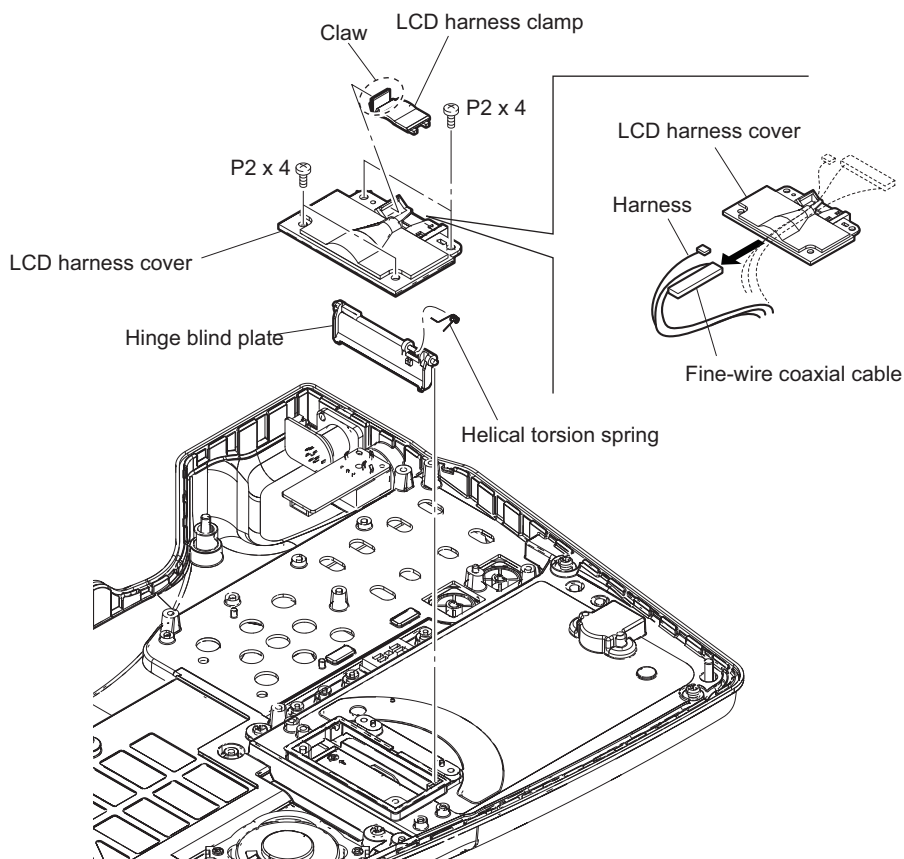
7. Remove the twelve drop protections (SW), the eleven switch knobs (A), the switch knob (B), the four audio volume cushions from the FP-190 board.



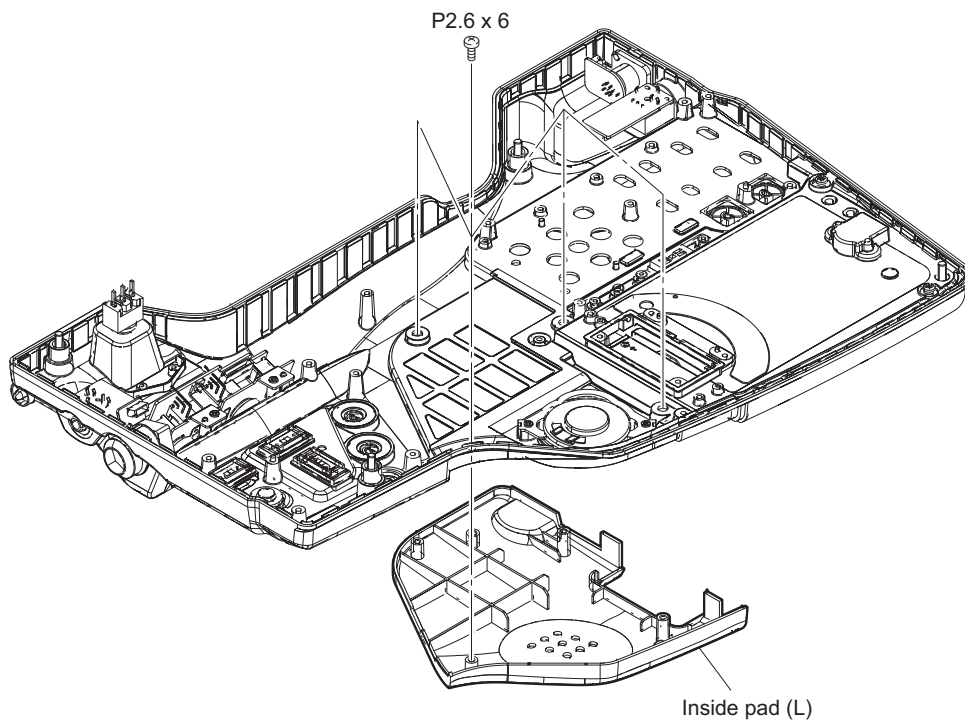
Note

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

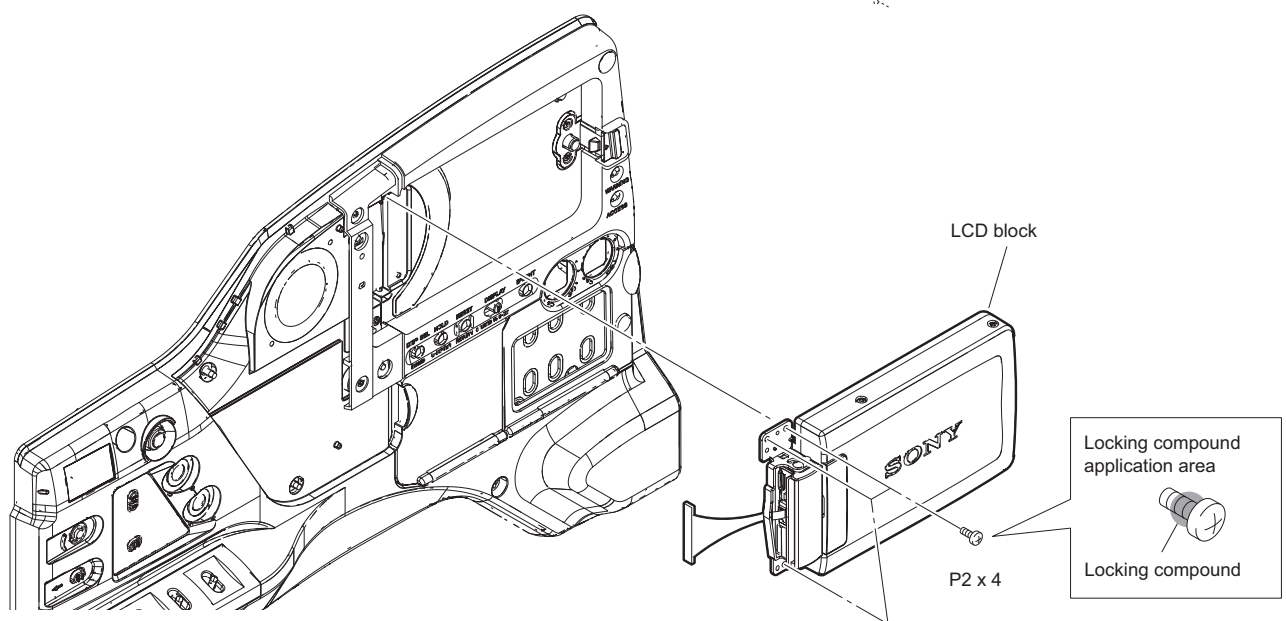
8. Release the claw to detach the LCD harness clamp.
9. Remove the four screws to detach the LCD harness cover.
10. Release the fine-wire coaxial cable and the harness from the hole of the LCD harness cover.
11. Remove the hinge blind plate and helical torsion spring.



12. Remove the four screws to detach the inside pad (L).



13. Remove the three screws to detach the LCD block.



Note

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

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

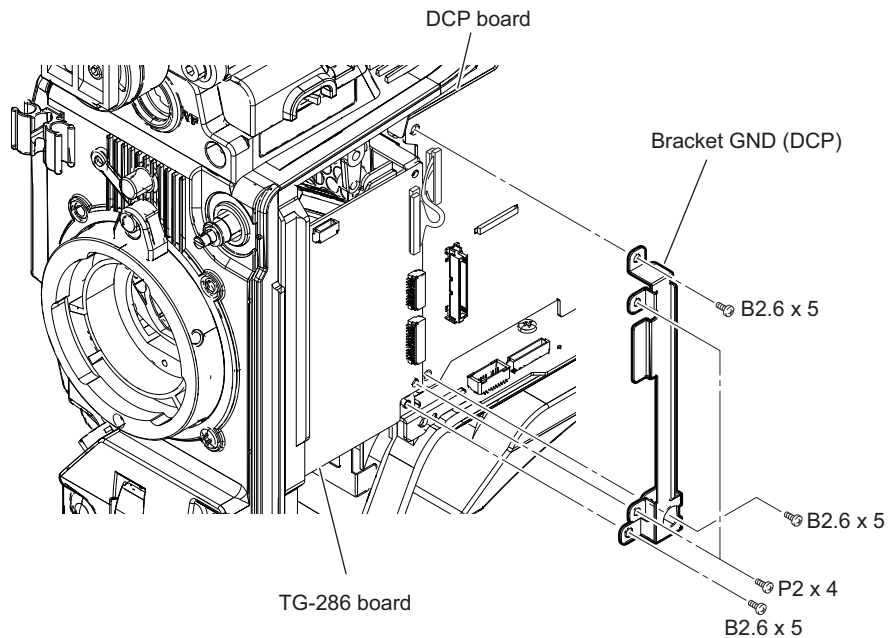
7-6. DCP Board

Preparation

1. Remove the inside panel. (Refer to “7-4. Inside Panel”)

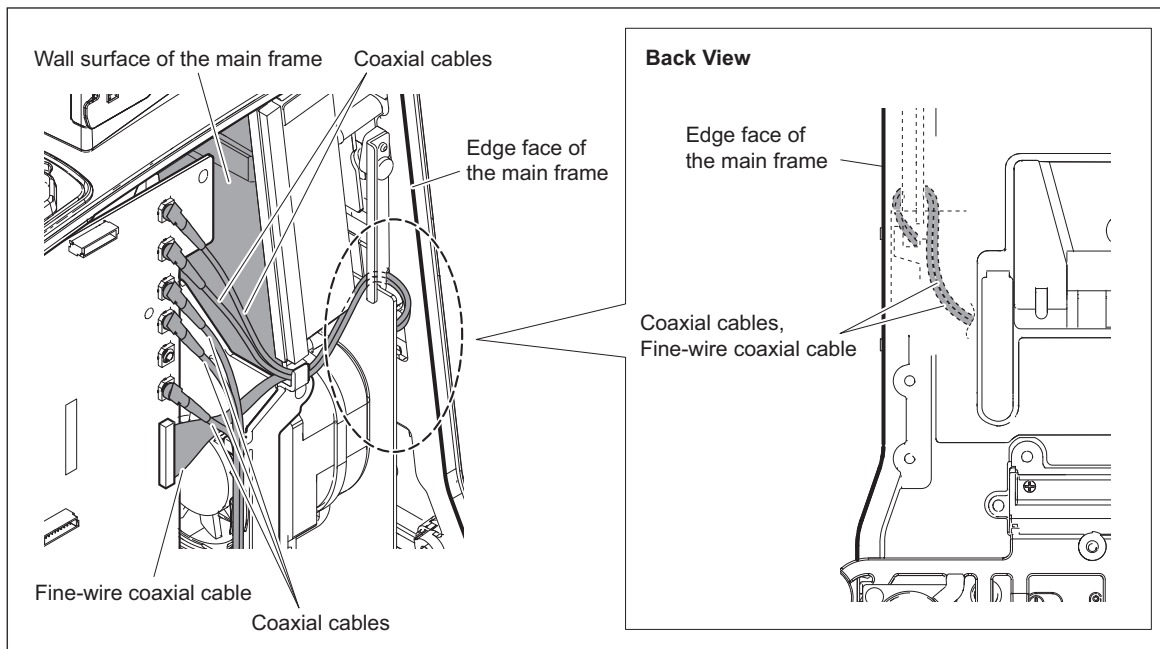
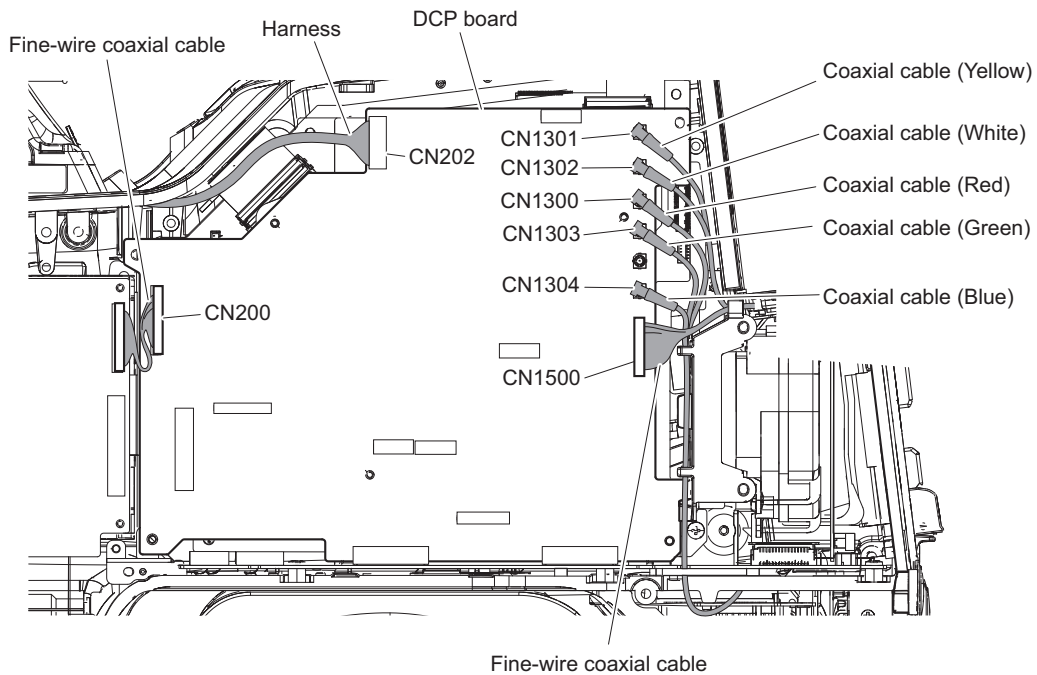
Procedure

1. Remove the three screws (B2.6 x 5) and the two screws (P2 x 4) to detach the Bracket GND (DCP).



2. Disconnect the five coaxial cables from the five connectors (CN1300, CN1301, CN1302, CN1303, CN1304) on the DCP board.
3. Disconnect the two fine-wire coaxial cables from the two connectors (CN200, CN1500) on the DCP board.

4. Disconnect the harness from the connector (CN202) on the DCP board.

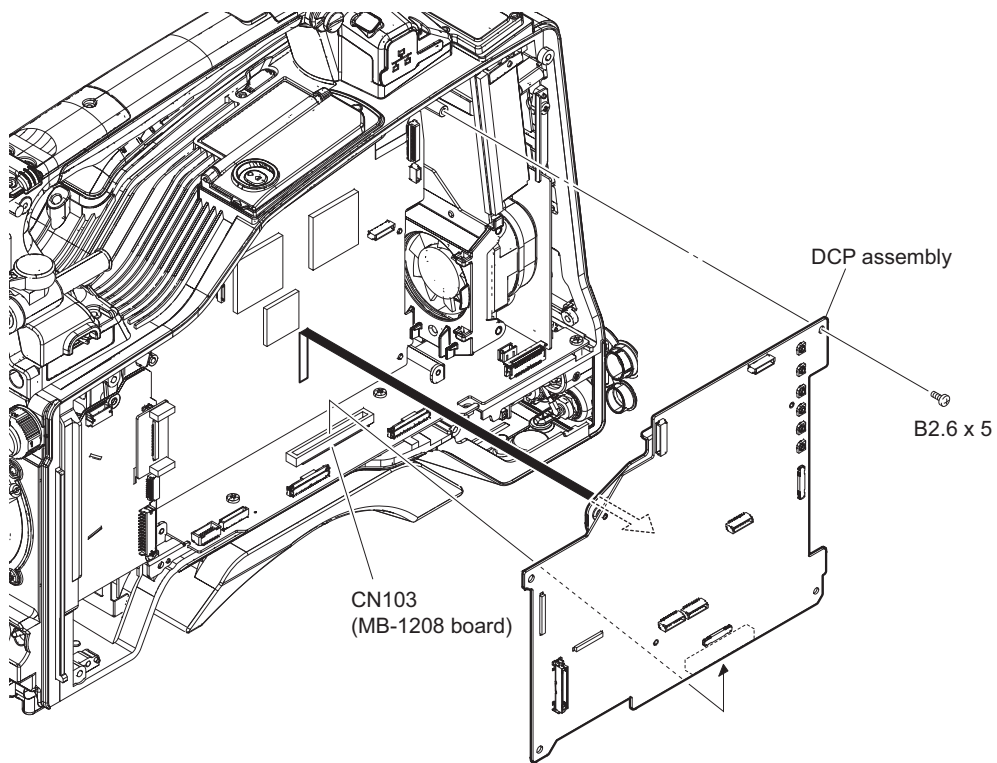


Note

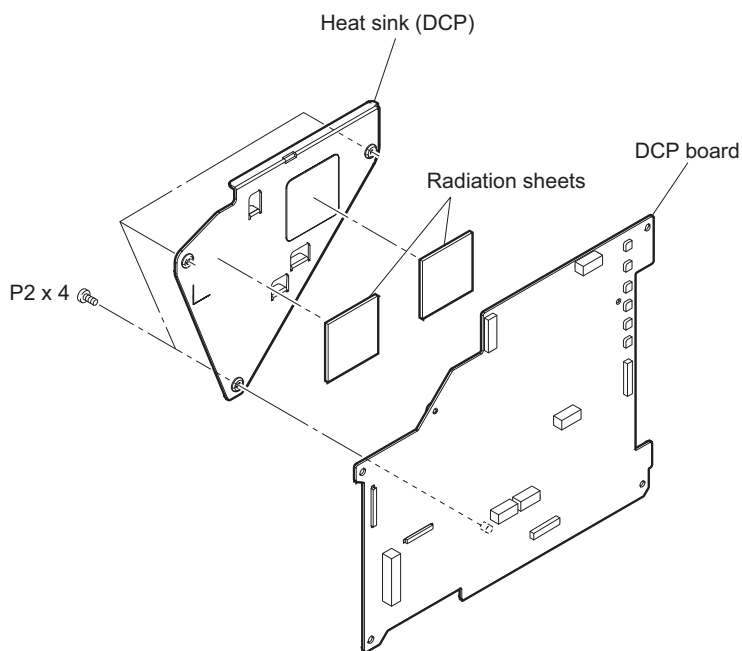
Pay attention to the following when connecting the coaxial cables and the fine-wire coaxial cables.

- Connect the coaxial cables to correct connectors.
- Arrange the coaxial cables as shown in the figure, so that coaxial cables does not contact the wall surface of the main frame.
- Arrange the coaxial cables and the fine-wire coaxial cables as shown in the figure, so that these cables does not come out of the edge face of the main frame to inside.

5. Remove the screw, and disconnect the DCP assembly from the connector (CN103) on the MB-1208 board.



6. Remove the three screws to detach the heat sink (DCP) and the two radiation sheets.



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

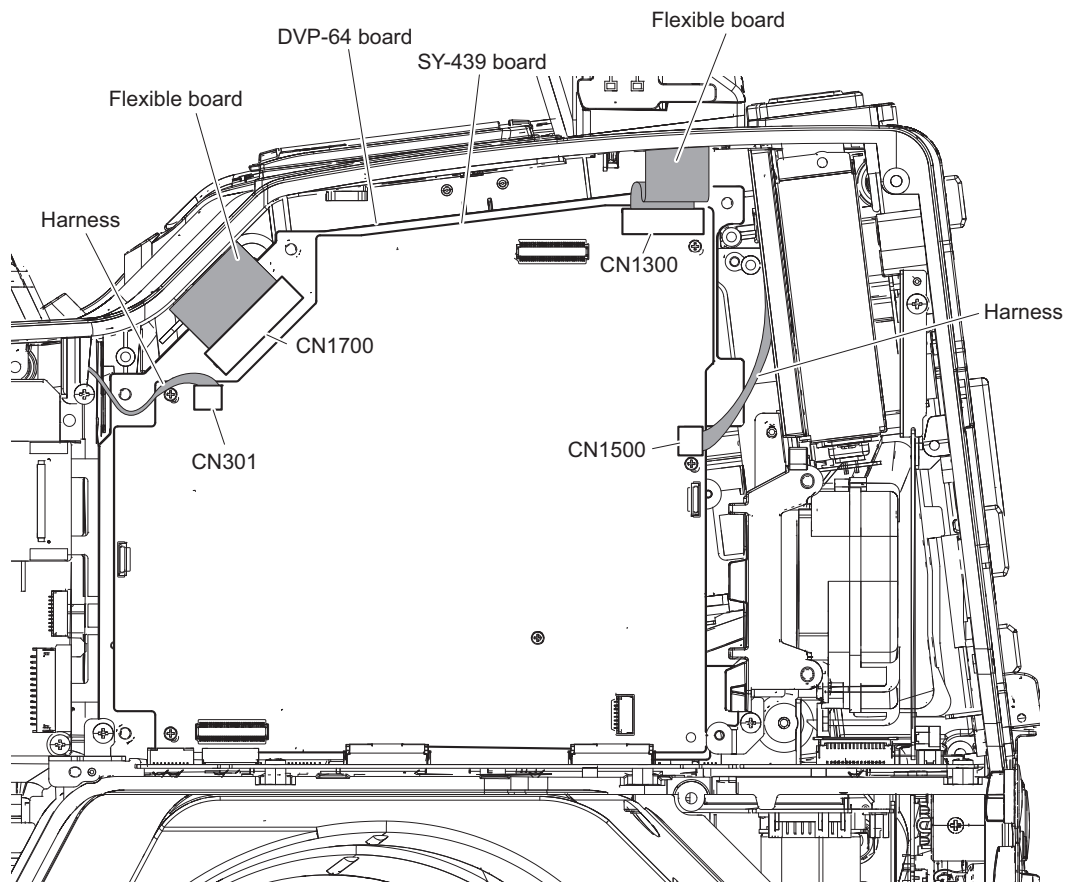
7-7. DVP-64 Board/SY-439 Board

Preparation

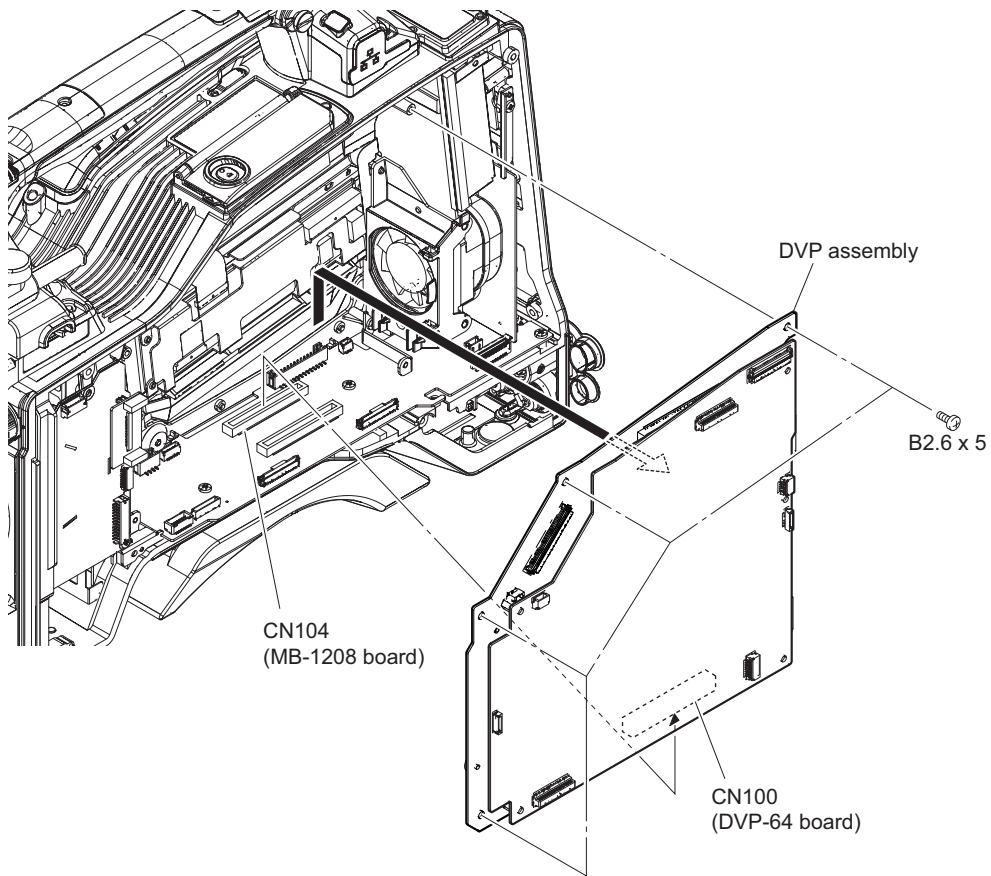
1. Remove the inside panel. (Refer to “7-4. Inside Panel”)
2. Remove the DCP assembly. (Refer to “7-6. DCP Board”)

Procedure

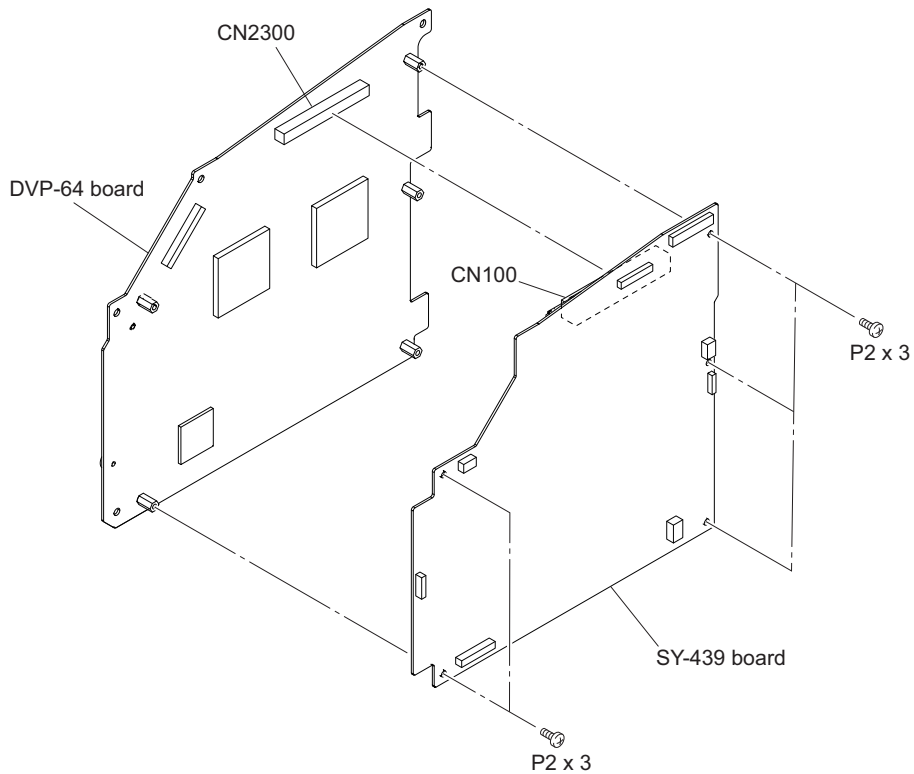
1. Disconnect the flexible board from the connector (CN1700) on the DVP-64 board.
2. Disconnect the flexible board from the connector (CN1300) on the SY-439 board.
3. Disconnect the two harnesses from the two connectors (CN301, CN1500) on the SY-439 board.



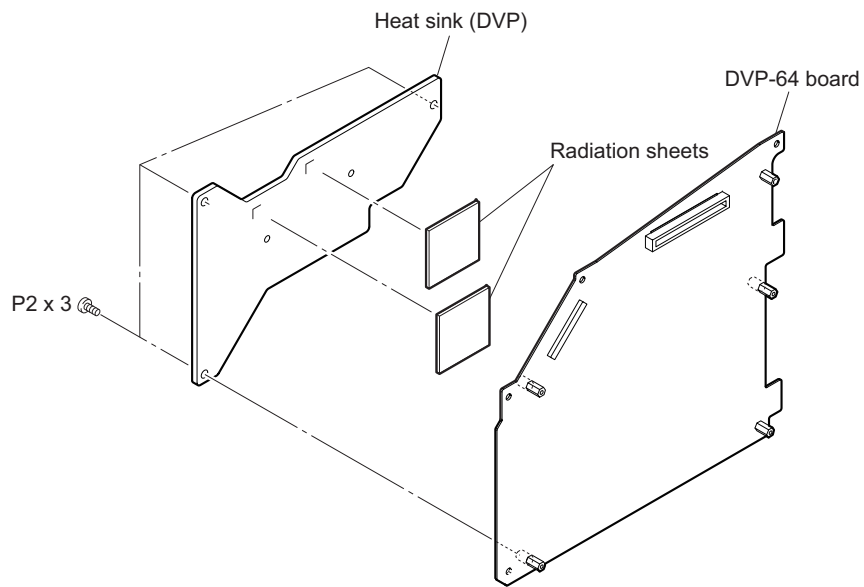
4. Remove the four screws, and disconnect the DVP assembly from the connector (CN104) on the MB-1208 board in the direction of the arrow.



5. Remove the five screws, and disconnect the SY-439 board from the connector (CN2300) on the DVP-64 board.



6. Remove the three screws to detach the heat sink (DVP) and the two radiation sheets.



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

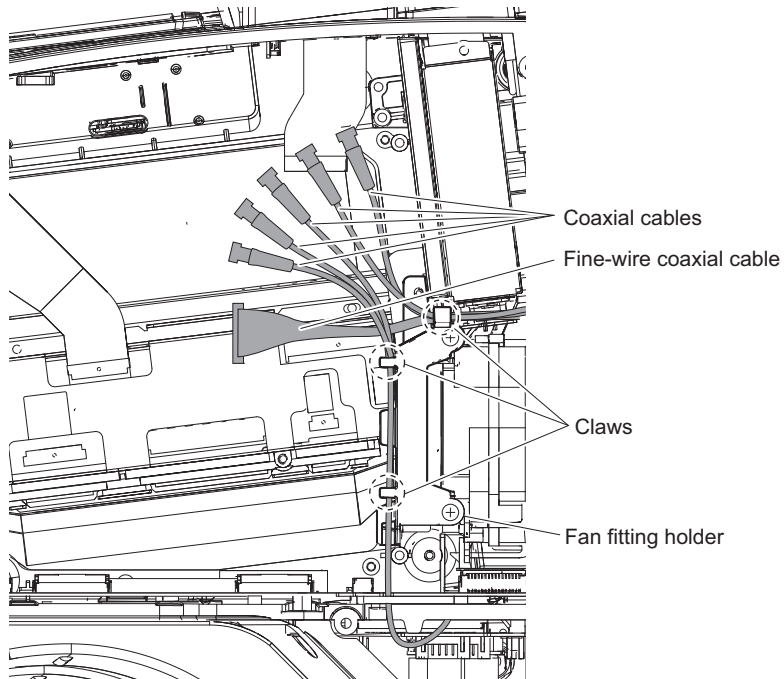
7-8. DC Fan

Preparation

1. Remove the inside panel. (Refer to “7-4. Inside Panel”)
2. Remove the DCP assembly. (Refer to “7-6. DCP Board”)
3. Remove the DVP assembly. (Refer to “7-7. DVP-64 Board/SY-439 Board”)

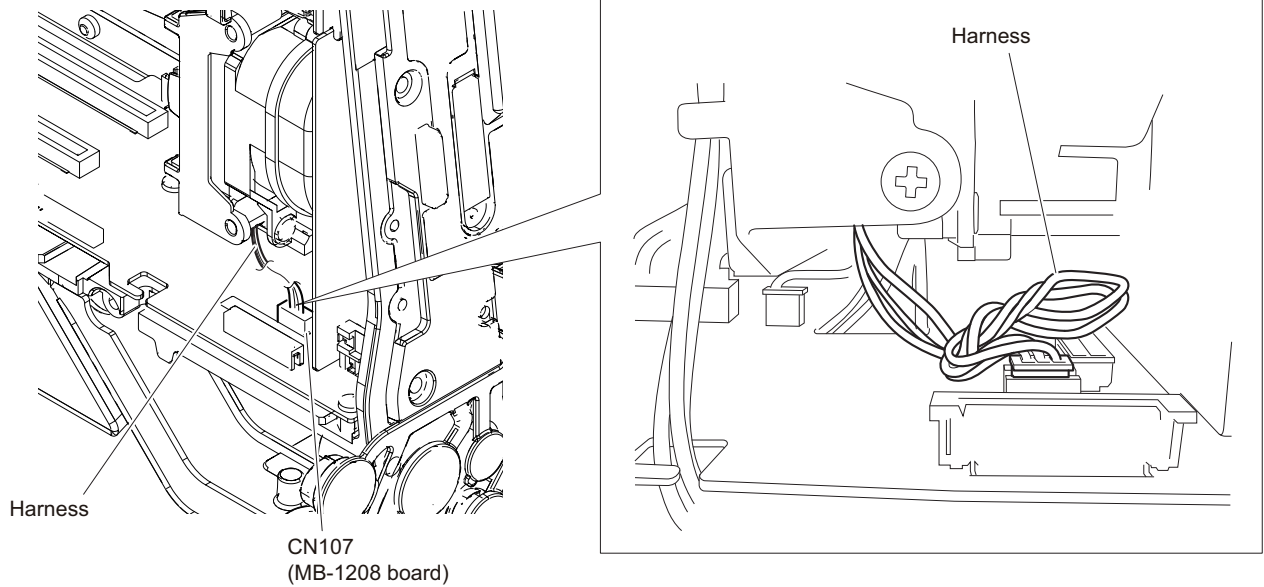
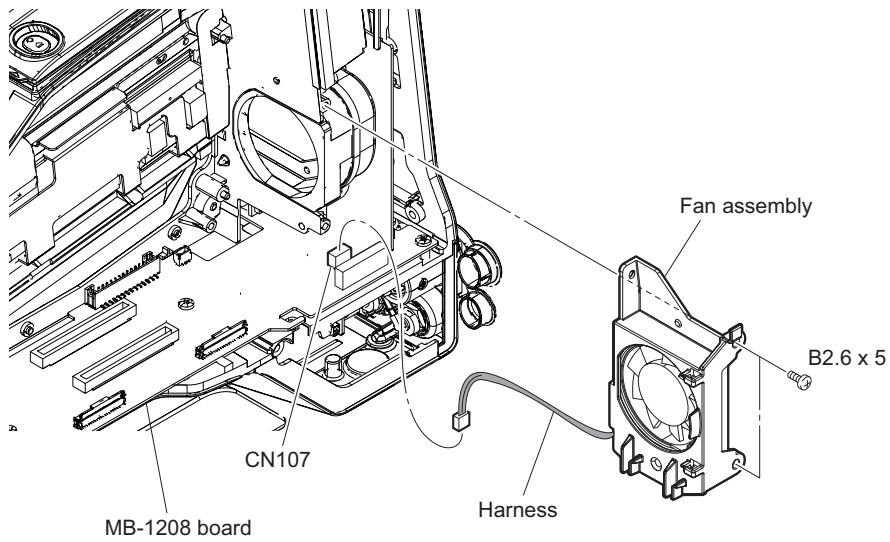
Procedure

1. Release the five coaxial cables and the fine-wire coaxial cable from the three claws.



2. Disconnect the harnesses from the connector (CN107) on the MB-1208 board.

3. Remove the two screws to detach the fan assembly.

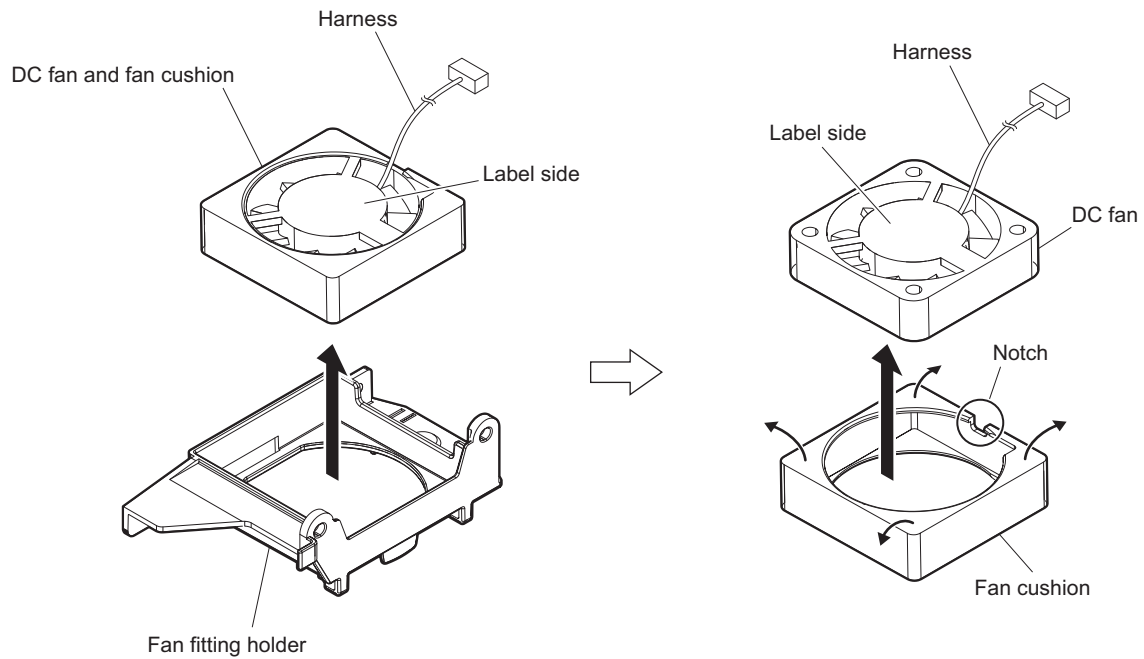


Note

When installing the DC fan, twist the harness three turns.

4. Remove the DC fan and the fan cushion from the fan fitting holder.

5. Remove the DC fan from the fan cushion.



Note

Pay attention to the following when installing the DC fan.

- Pay attention to the position of label and harness.
- Align the notch of the fan cushion with the harness.

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

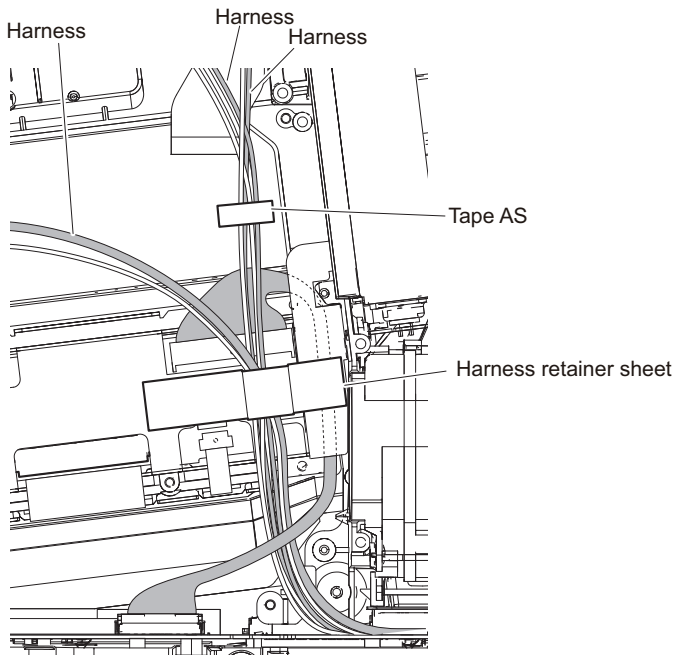
7-9. DR-606 Board

Preparation

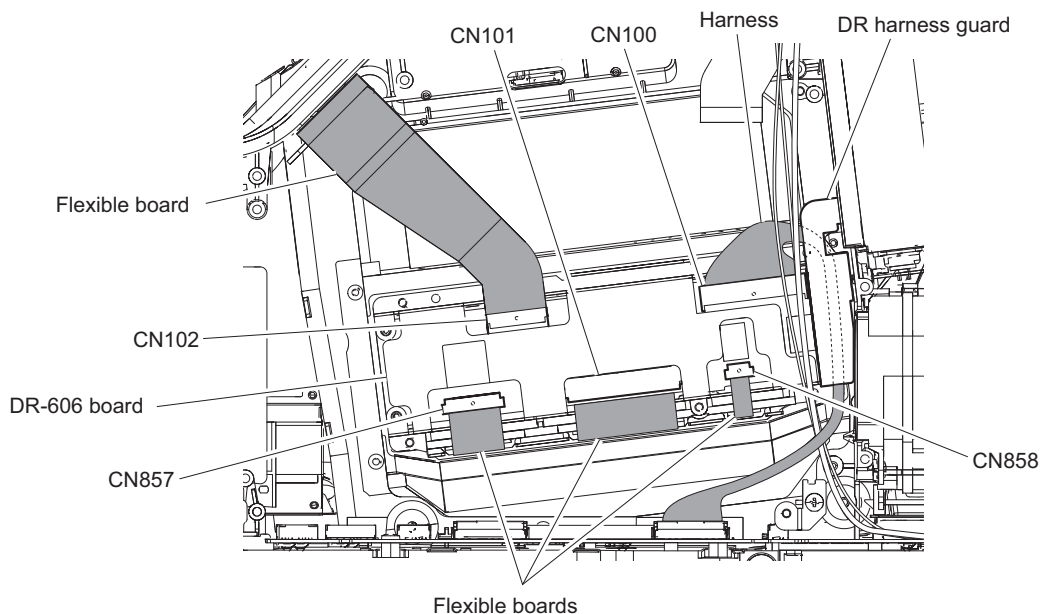
1. Remove the inside panel. (Refer to “7-4. Inside Panel”)
2. Remove the DCP assembly. (Refer to “7-6. DCP Board”)
3. Remove the DVP assembly. (Refer to “7-7. DVP-64 Board/SY-439 Board”)
4. Remove the fan assembly. (Refer to “7-8. DC Fan”)

Procedure

1. Remove the tape AS and the harness retainer sheet, then release the fixing of the three harnesses.

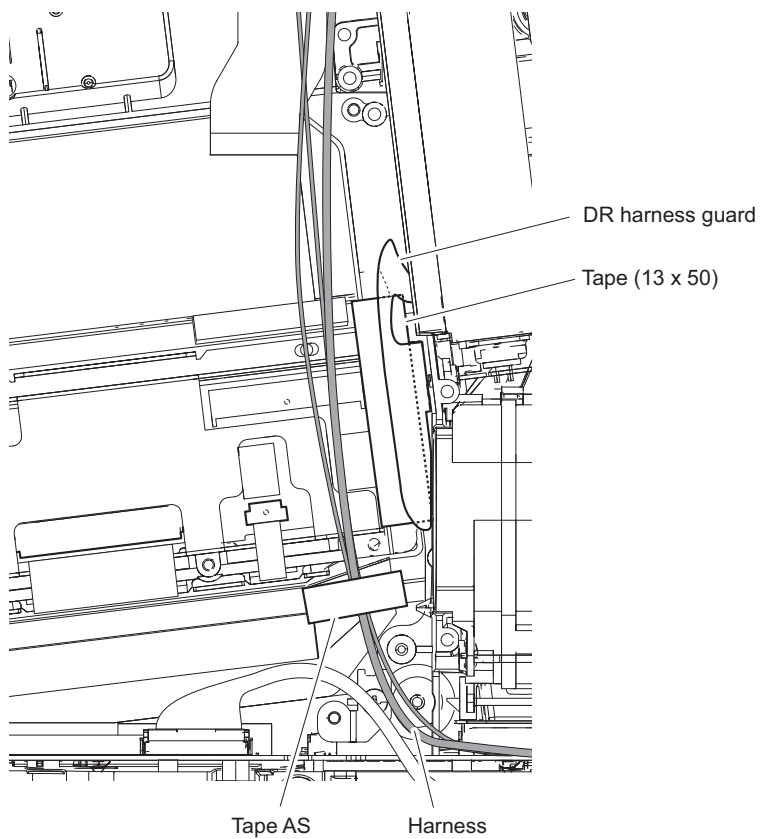


2. Disconnect the four flexible boards from the four connectors (CN101, CN102, CN857, CN858) on the DR-606 board.
3. Disconnect the harness from the connector (CN100) on the DR-606 board.
4. Release the harness from the DR harness guard.

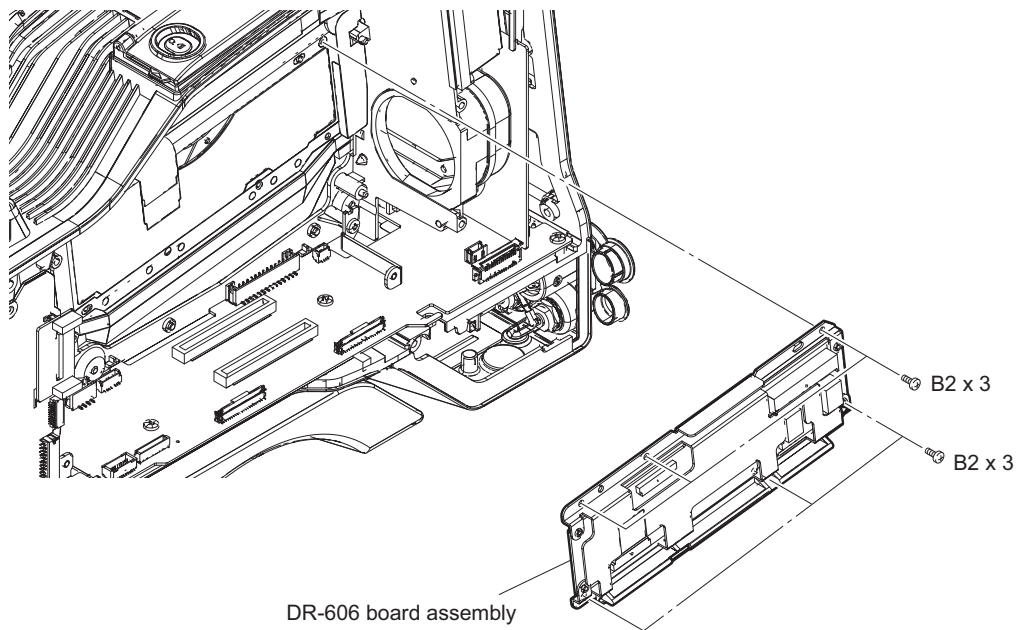


5. Raise the DR harness guard and remove the tape (13x50).

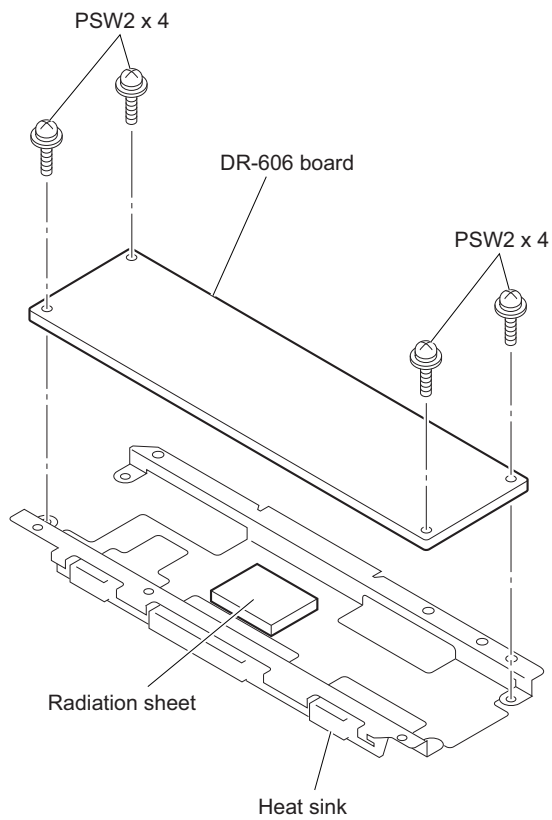
6. Remove the tape AS, then release the fixing of the harness.



7. Remove the six screws to detach the DR-606 board assembly.



8. Remove the four screws to detach the DR-606 board.



Note

When installing the DR-606 board, attach the radiation sheet to the position shown in the figure.

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

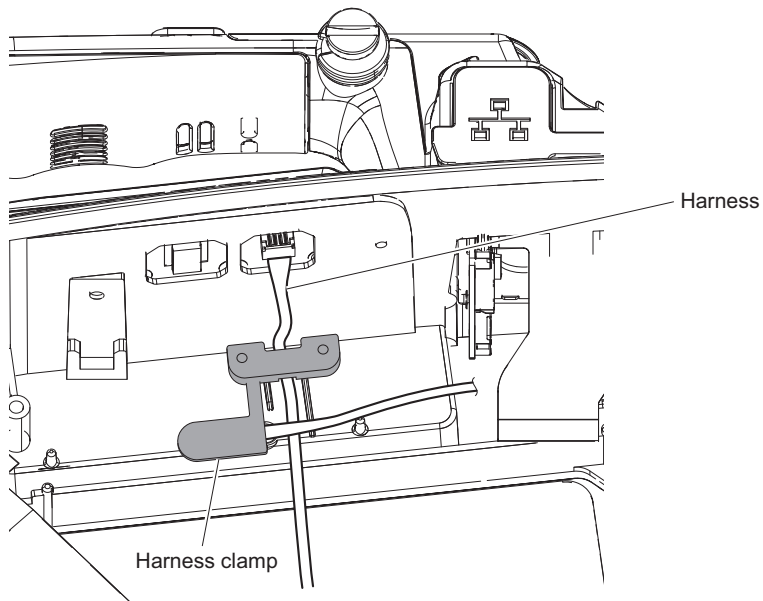
7-10. KY-712 Board

Preparation

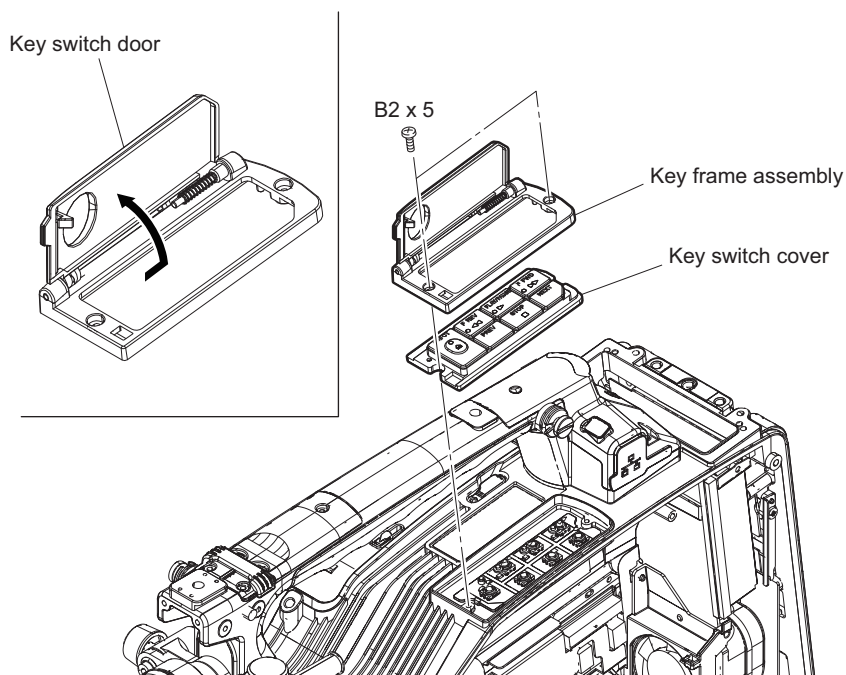
1. Remove the inside panel. (Refer to “7-4. Inside Panel”)
2. Remove the DCP assembly. (Refer to “7-6. DCP Board”)
3. Remove the DVP assembly. (Refer to “7-7. DVP-64 Board/SY-439 Board”)

Procedure

1. Remove the harness clamp to release the harness.

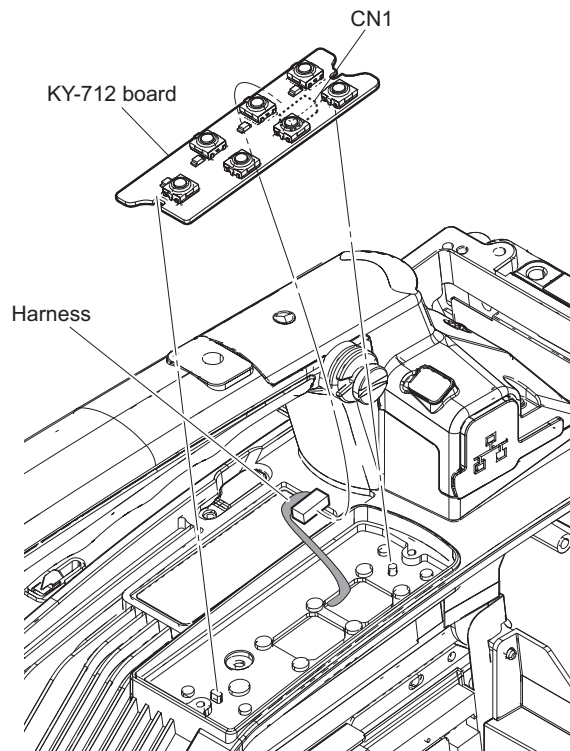


2. Open the key switch door in the direction of the arrow.
3. Remove the two screws to detach the key frame assembly and the key switch cover.



4. Pull up the KY-712 board.

5. Disconnect the harness from the connector (CN1) on the KY-712 board.



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

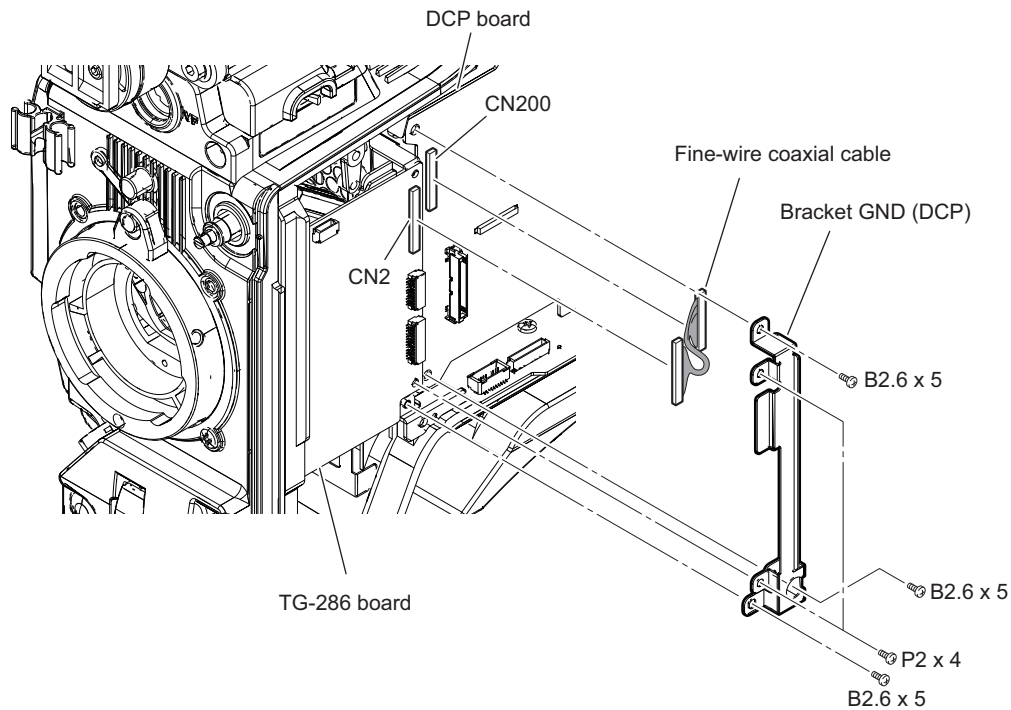
7-11. TG-286 Board

Preparation

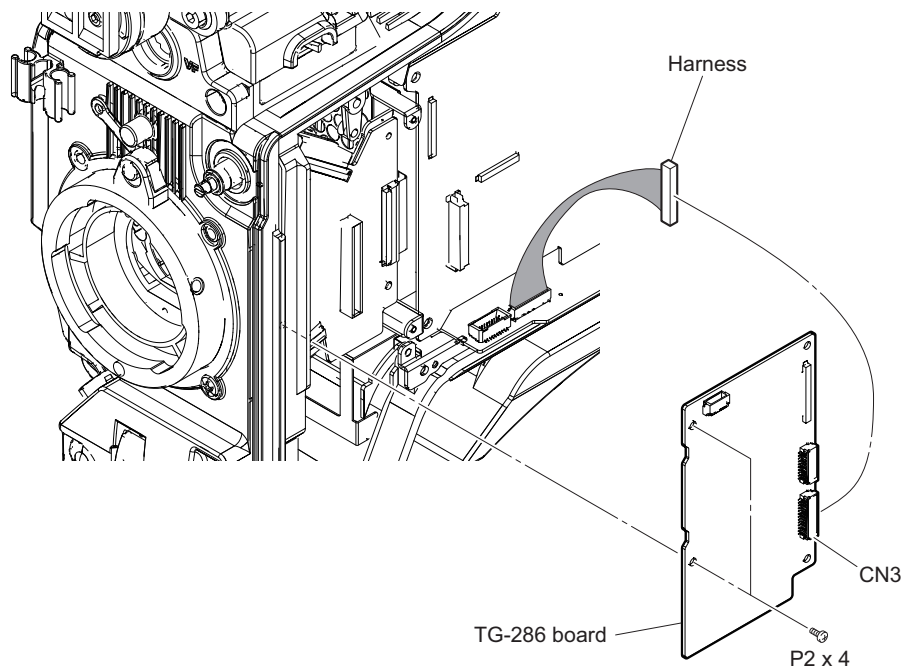
1. Remove the inside panel. (Refer to “7-4. Inside Panel”)

Procedure

1. Remove the three screws (B2.6 x 5) and two screws (P2 x 4) to detach the bracket GND (DCP).
2. Disconnect the fine-wire coaxial cable from the connector (CN200) on the DCP board and the connector (CN2) on the TG-286 board.



3. Disconnect the harness from the connector (CN3) on the TG-286 board.
4. Remove the two screws to detach the TG-286 board.



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

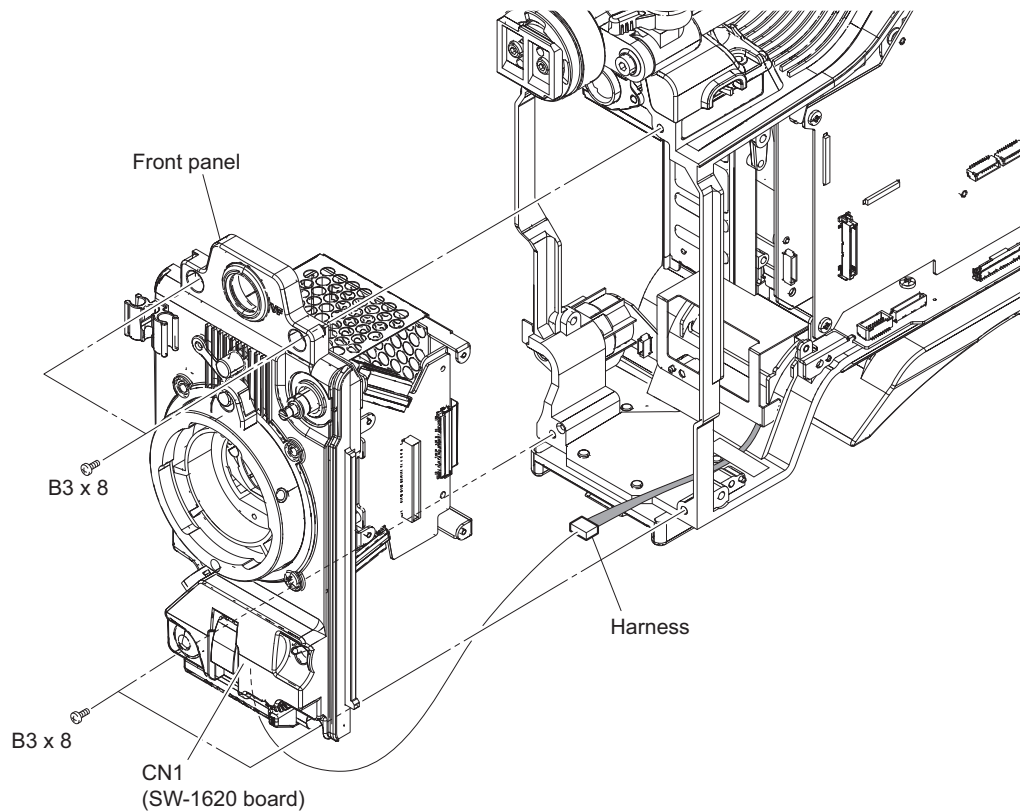
7-12. Front Panel

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the inside panel. (Refer to “7-4. Inside Panel”)
3. Remove the TG-286 board. (Refer to “7-11. TG-286 Board”)

Procedure

1. Remove the four screws.
2. Draw the front panel.
3. Disconnect the harness from the connector (CN1) on the SW-1620 board, and remove the front panel.



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

7-13. CCD Block Assembly

Note

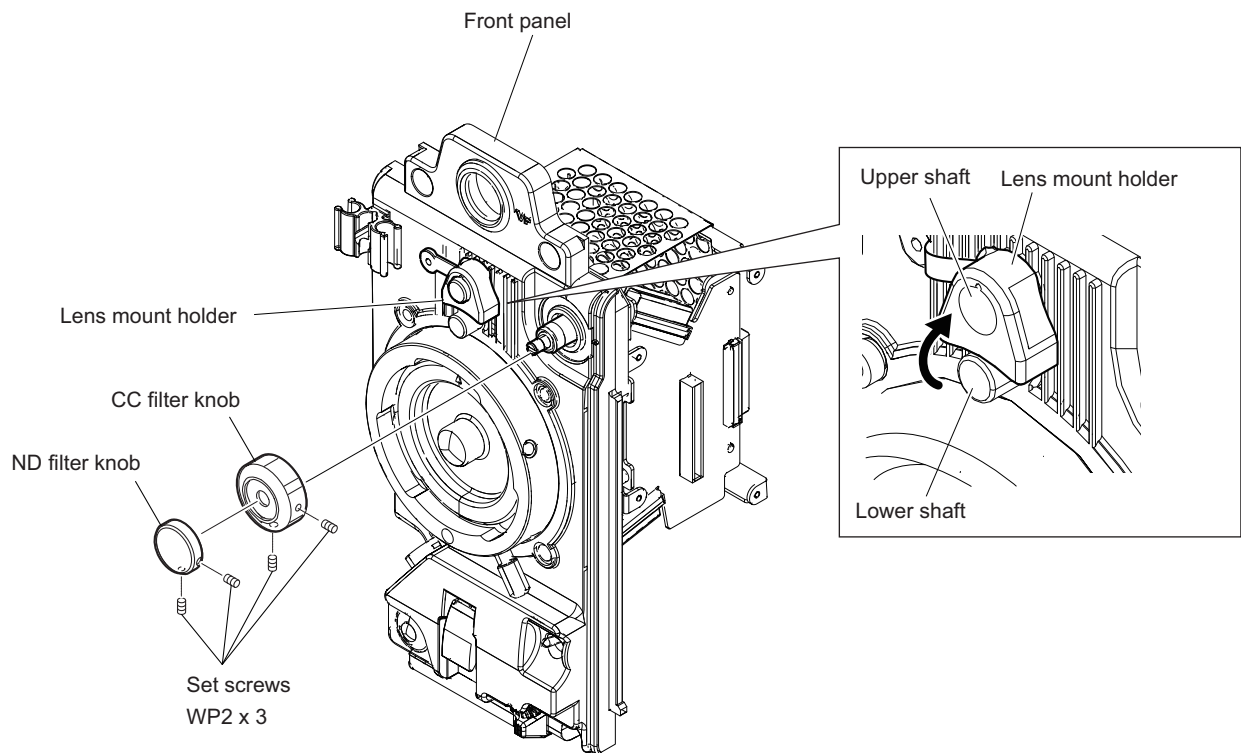
Hexagonal wrench (Width across : 0.89 mm), hexagonal wrench (Width across : 1.5 mm), hexagonal wrench (Width across : 2.5 mm) are necessary as tools.

Preparation

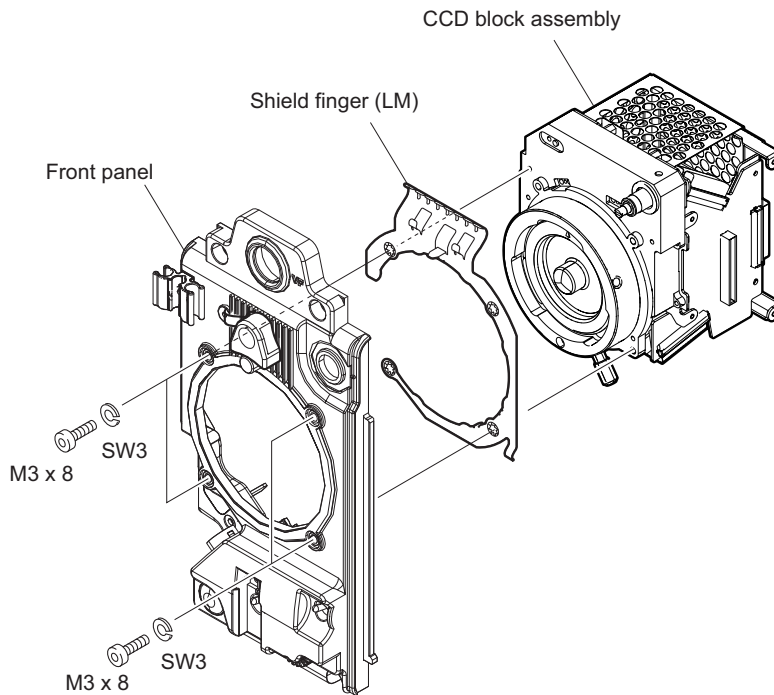
1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the inside panel. (Refer to “7-4. Inside Panel”)
3. Remove the TG-286 board. (Refer to “7-11. TG-286 Board”)
4. Remove the front panel. (Refer to “7-12. Front Panel”)

Removing Procedure

1. Loosen the two set screws and remove the ND filter knob.
2. Loosen the two set screws and remove the CC filter knob.
3. Move the position of the lens mount holder from the lower shaft to the upper shaft.



4. Remove the four bolts and four spring washers, and remove the shield finger (LM) and the CCD block assembly from the front panel.

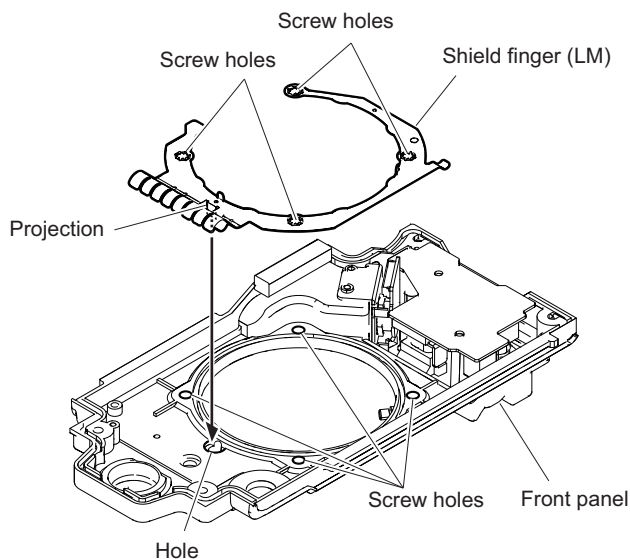


Installing Procedure

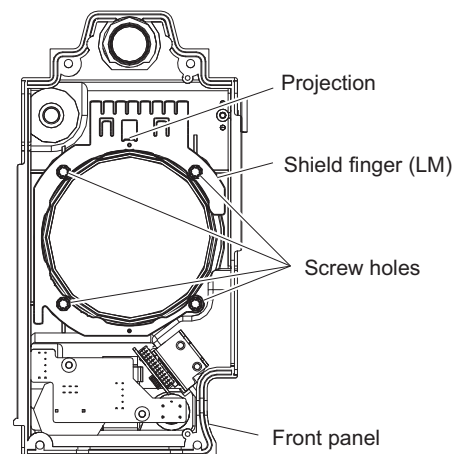
5. Install the shield finger (LM) to the front panel.

Note

- Do not directly touch shield finger (LM). Be careful not to get hurt with the edges when handling them.
- Insert the projection of the shield finger (LM) to the hole of the front panel.
- Align the four screw holes of the shield finger (LM) with the four screw holes of the front panel.



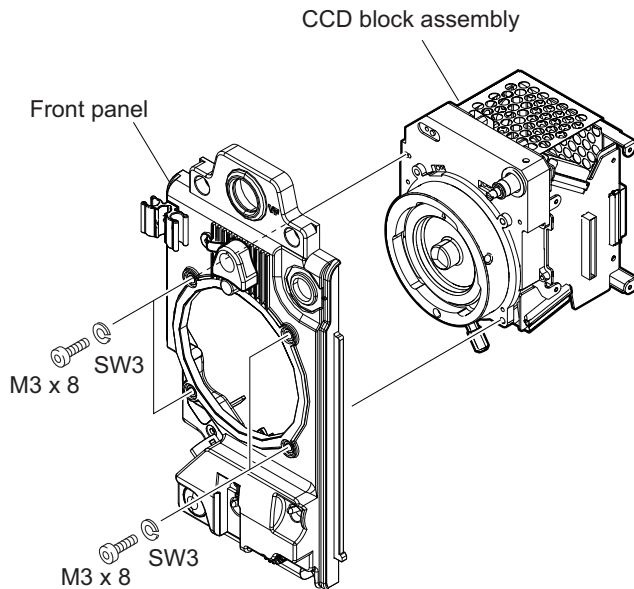
Back view



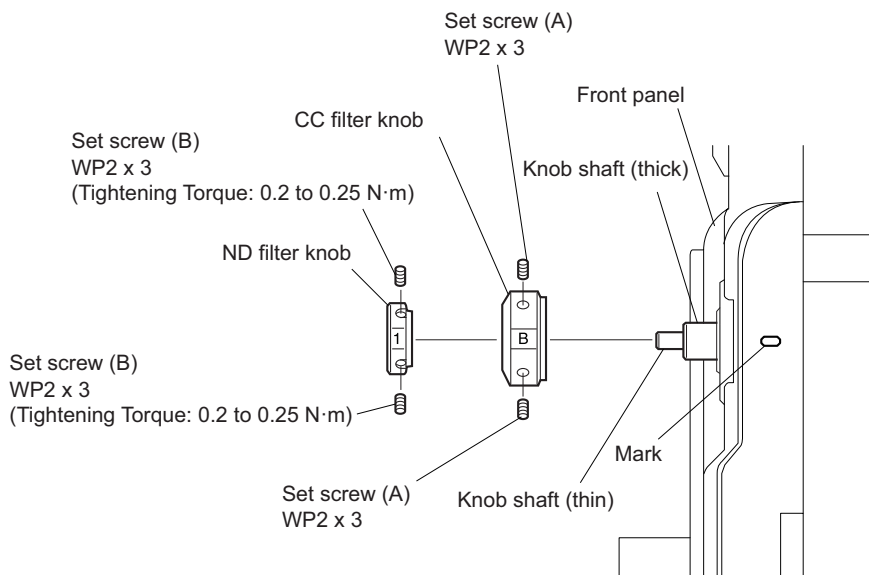
6. Install the CCD block assembly to the front panel with four bolts and four spring washers.

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.



7. Rotate the knob shaft (thick) until the filter of the thinnest color is visible from the front.
8. Align the CC filter knob number “B” with the mark on the inside panel assembly and attach it with the use of the two set screws (A).
9. Rotate the knob shaft (thin) until the filter of the thinnest color is visible from the front.
10. Align the ND filter knob number “1” with the mark on the inside panel assembly and attach it with the use of the two set screws (B).

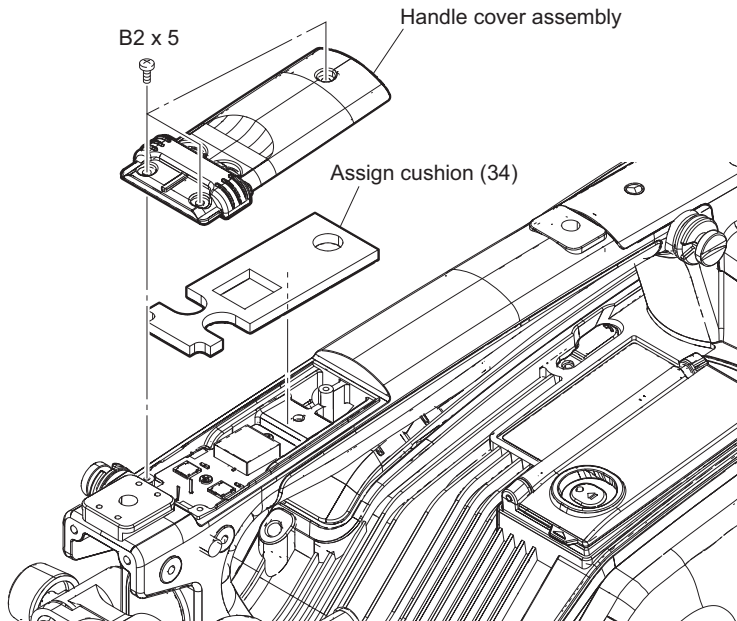


11. Install the front panel assembly. (Refer to “7-12. Front Panel”)
12. Install the TG-286 board. (Refer to “7-11. TG-286 Board”)
13. Install the inside panel. (Refer to “7-4. Inside Panel”)
14. Install the outside panel. (Refer to “7-2. Outside Panel”)
15. When a new CCD block assembly is installed, camera adjustment is required. (Refer to “9. Electrical Adjustment”)

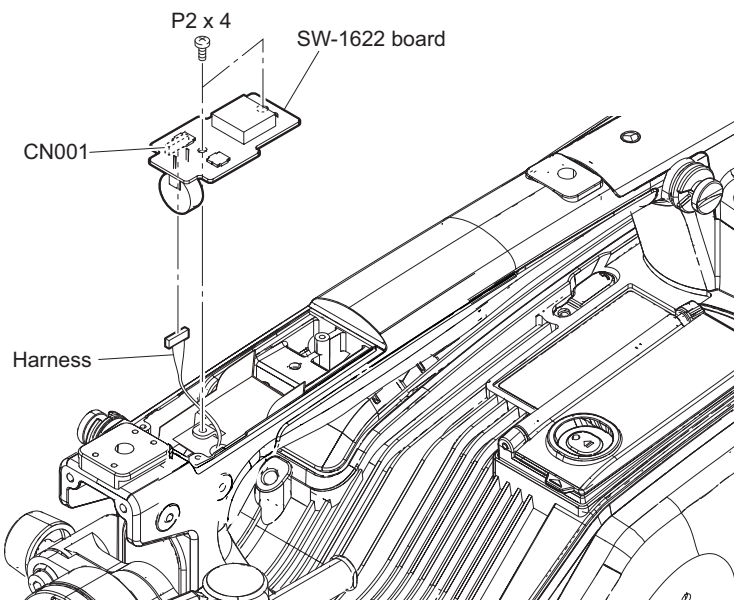
7-14. SW-1622 Board

Procedure

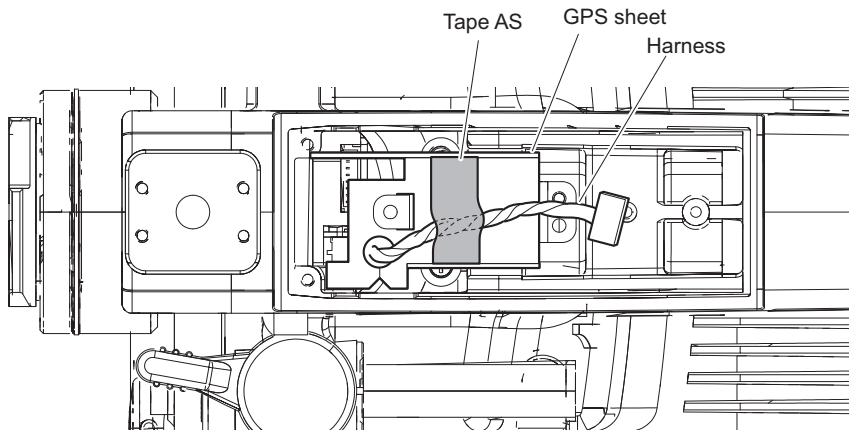
1. Remove the three screws to detach the handle cover assembly.
2. Remove the assign cushion (34).



3. Remove the two screws.
4. Pull up the SW-1622 board.
5. Disconnect the harness from the connector (CN001) on the SW-1622 board, and remove the SW-1622 board.



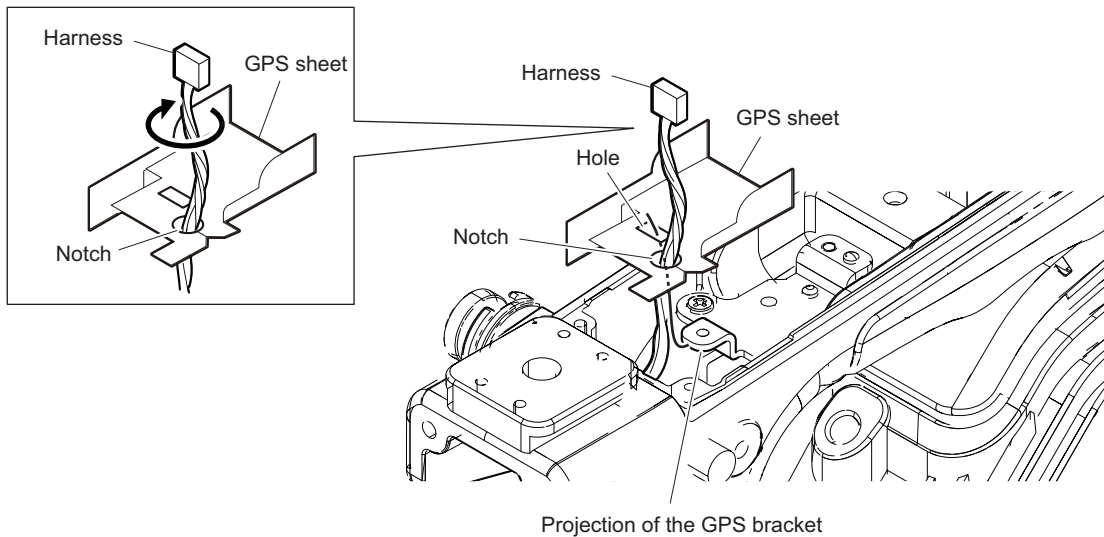
6. Remove the tape AS.



Note

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

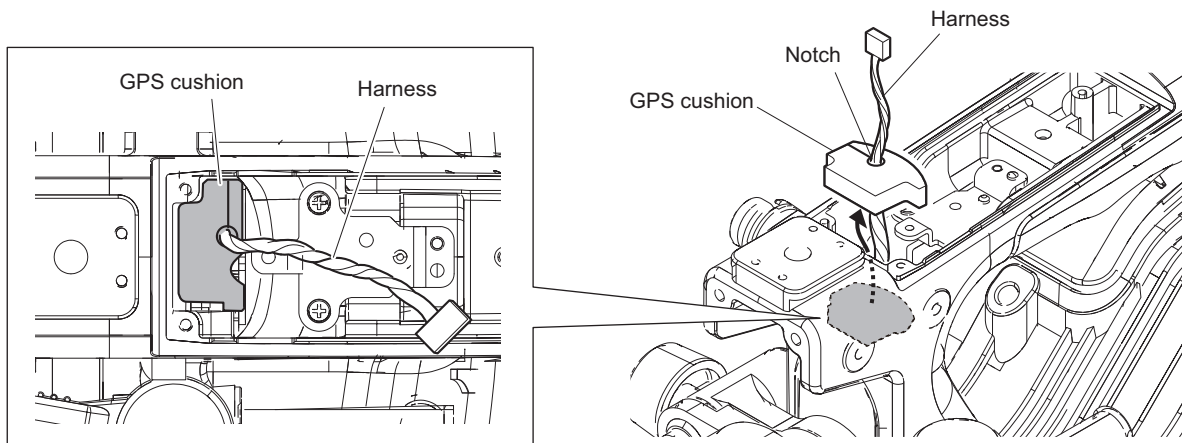
7. Release the projection of the GPS bracket from the hole of the GPS sheet.
8. Remove the GPS sheet, while pulling out the harness from the notch of the GPS sheet.



Note

When attaching the GPS sheet, twist the harness four turns in the direction of the arrow and pass it through the notch of the GPS sheet.

9. Remove the GPS cushion, while pulling out the harness from the notch of the GPS cushion.



Note

Pay attention to the following when installing the GPS cushion.

- Install the GPS cushion in the direction of the figure.
- Pull out the harness as shown in the figure.

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

7-15. CN-3669 Board

Preparation

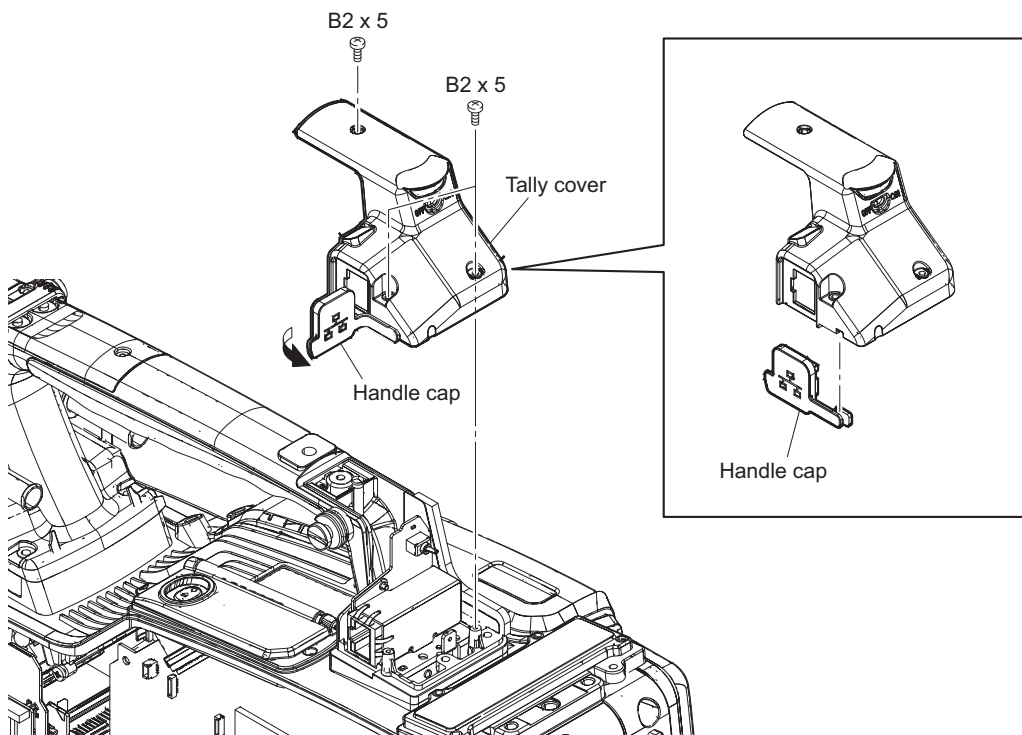
1. Remove the inside panel. (Refer to “7-4. Inside Panel”)
2. Remove the DCP assembly. (Refer to “7-6. DCP Board”)

Procedure

1. Open the handle cap.
2. Remove the three screws to detach the tally cover.

Note

Do not lose the handle cap that is not fixed.

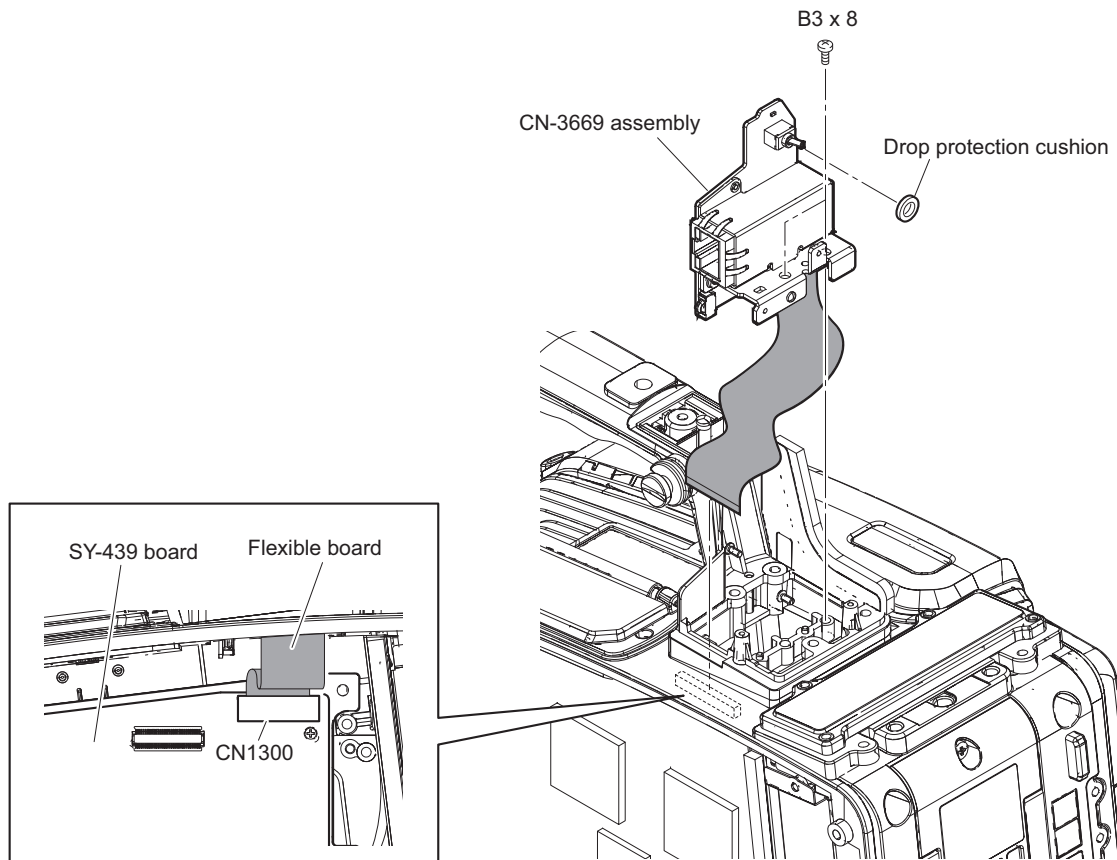


3. Disconnect the flexible board from the connector (CN1300) on the SY-439 board.
4. Remove the two screws to detach the CN-3669 assembly.

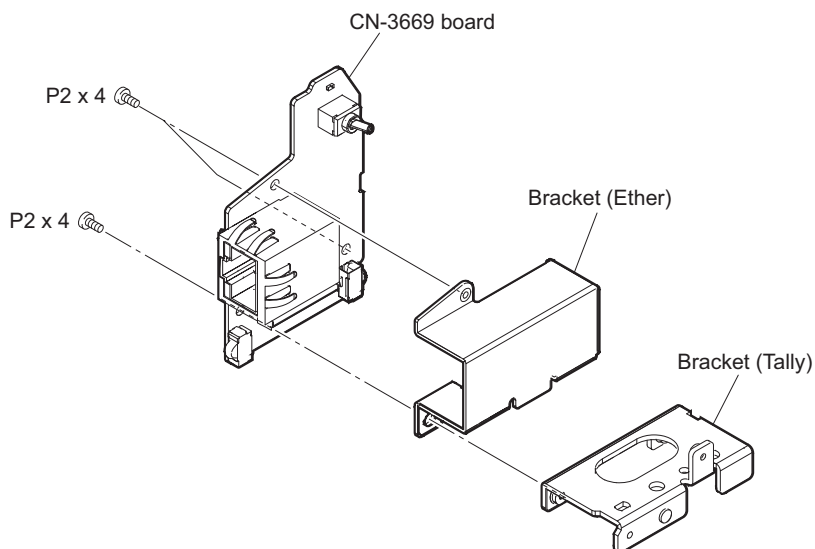
5. Remove the drop protection cushion.

Note

Do not lose the drop protection cushion that is not fixed.



6. Remove the three screws to detach the bracket (ether) and the bracket (tally) from the CN-3669 board.



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

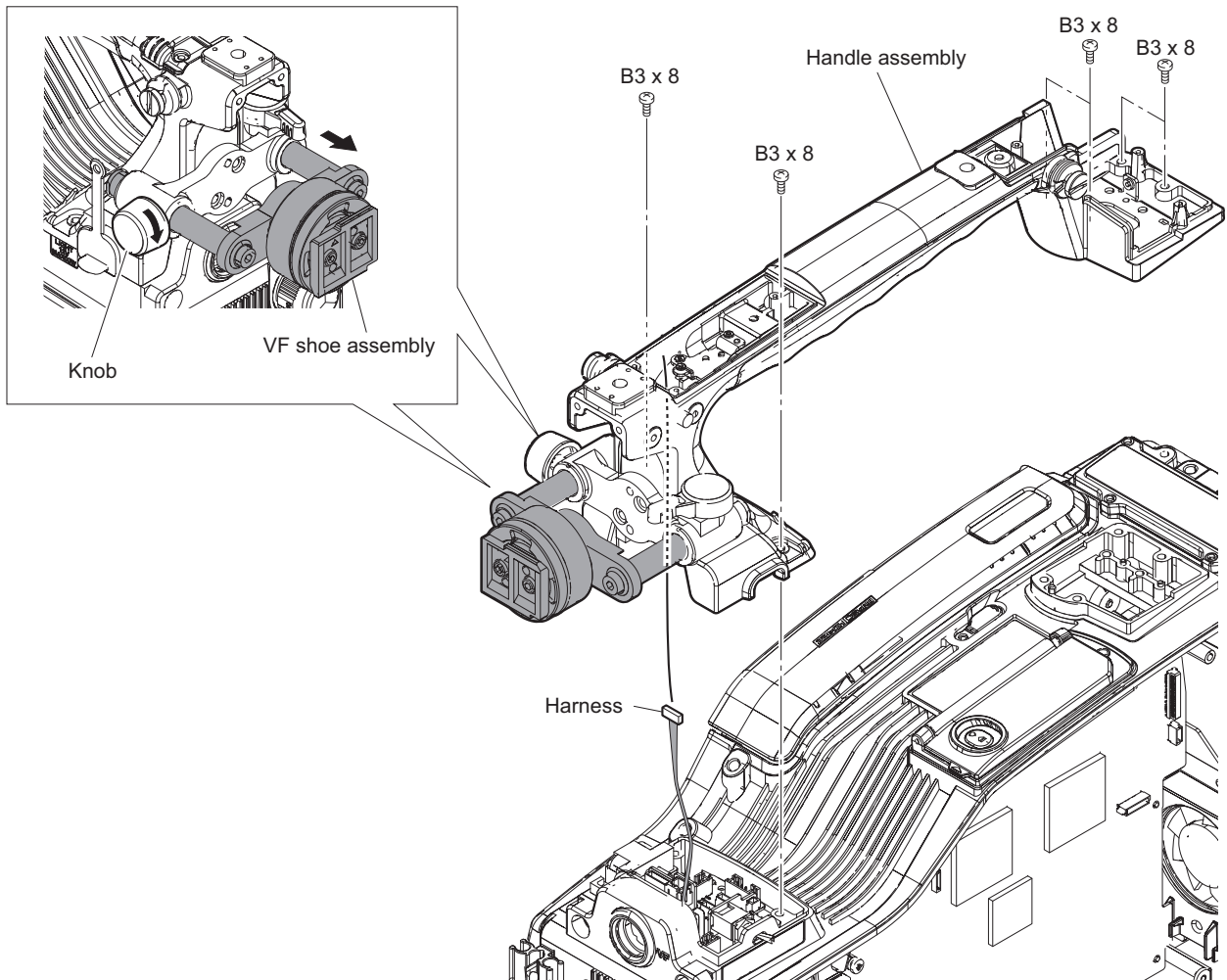
7-16. Handle Assembly

Preparation

1. Remove the inside panel. (Refer to “7-4. Inside Panel”)
2. Remove the DCP assembly. (Refer to “7-6. DCP Board”)
3. Remove the SW-1622 board. (Refer to “7-14. SW-1622 Board”)
4. Remove the CN-3669 board. (Refer to “7-15. CN-3669 Board”)

Procedure

1. Rotate the knob to release the rock, and then draw the VF shoe assembly.
2. Remove the six screws.
3. Pull up the handle assembly.
4. Remove the handle assembly while pulling out the harness from the handle assembly.



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

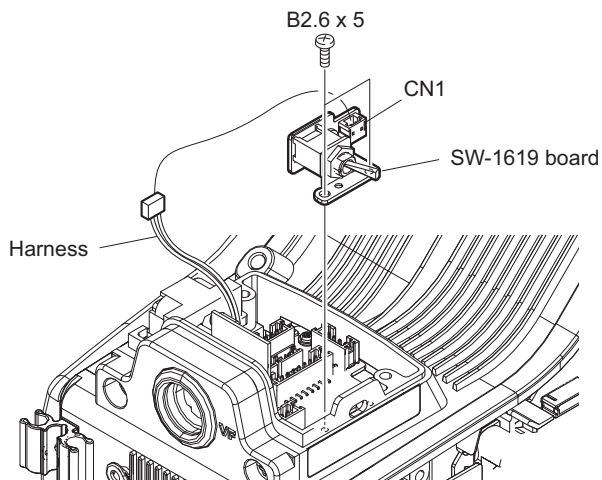
7-17. SW-1619 Board/CN-3667 Board

Preparation

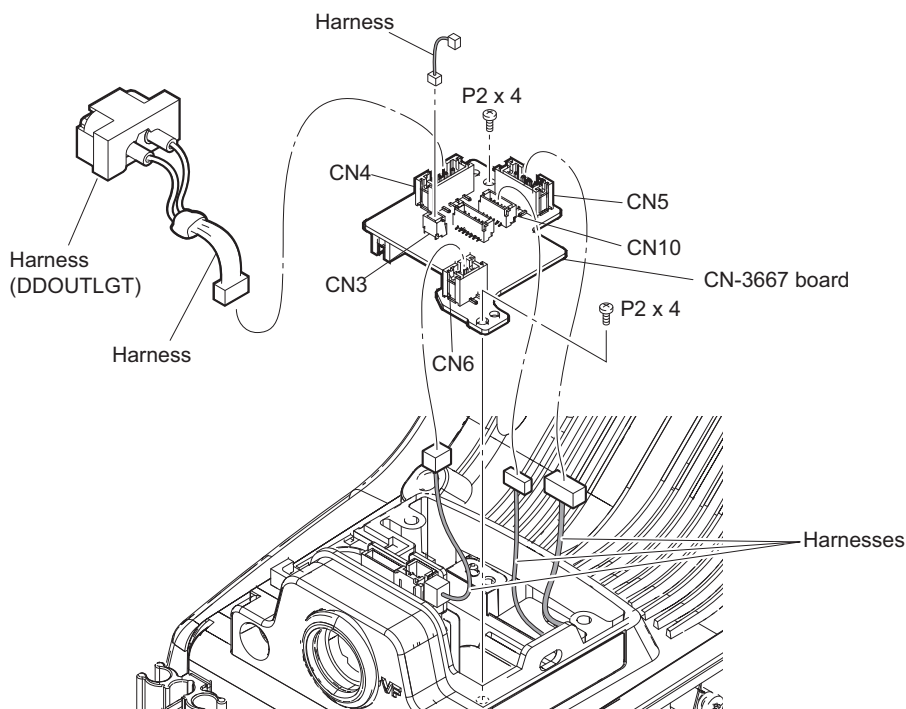
1. Remove the inside panel. (Refer to “7-4. Inside Panel”)
2. Remove the DCP assembly. (Refer to “7-6. DCP Board”)
3. Remove the SW-1622 board. (Refer to “7-14. SW-1622 Board”)
4. Remove the CN-3669 board. (Refer to “7-15. CN-3669 Board”)
5. Remove the handle assembly. (Refer to “7-16. Handle Assembly”)

Procedure

1. Disconnect the harness from the connector (CN1) on the SW-1619 board.
2. Remove the two screws to detach the SW-1619 board.



3. Disconnect the harness from the connector (CN4) on the CN-3667 board, and then remove the harness (DDOUTGT).
4. Disconnect the four harnesses from the four connectors (CN3, CN5, CN6, CN10) on the CN-3667 board.
5. Remove the two screws to detach the CN-3667 board.

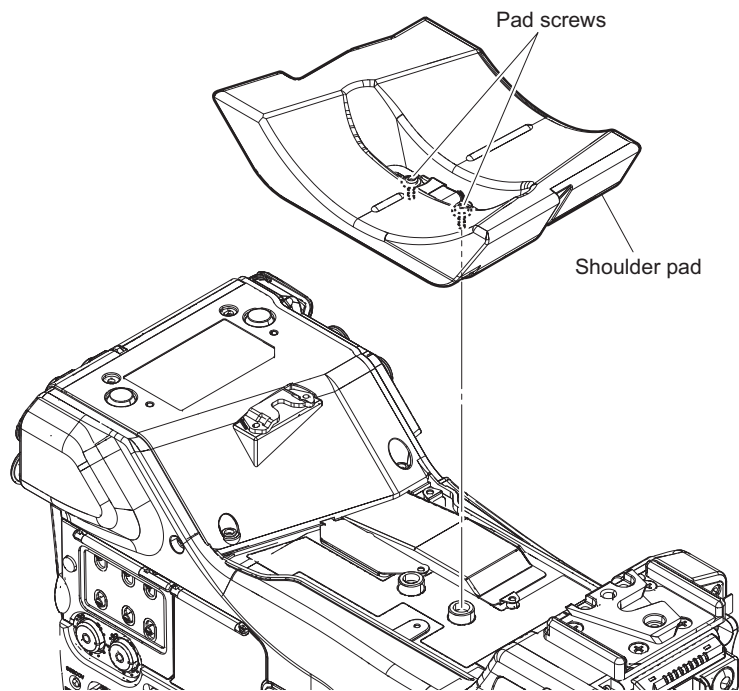


6. Install the removed parts by reversing the steps of removal.

7-18. Shoulder Pad

Procedure

1. Loosen the two pad screws and remove the shoulder pad.

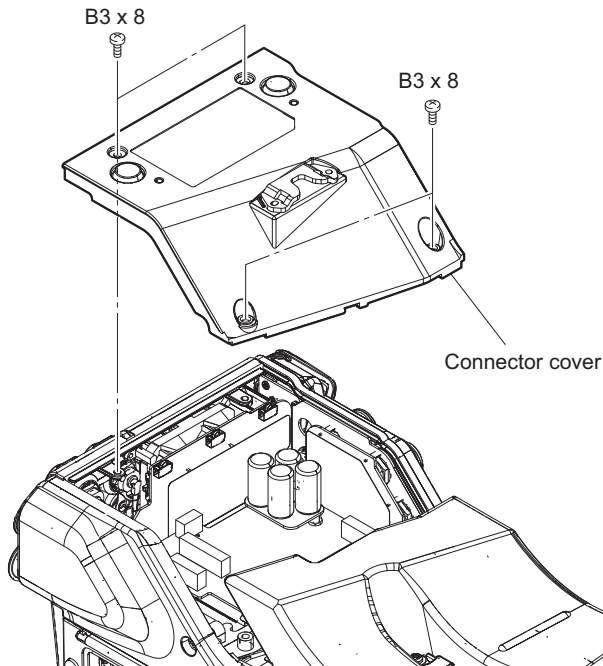


2. Install the removed parts by reversing the steps of removal.

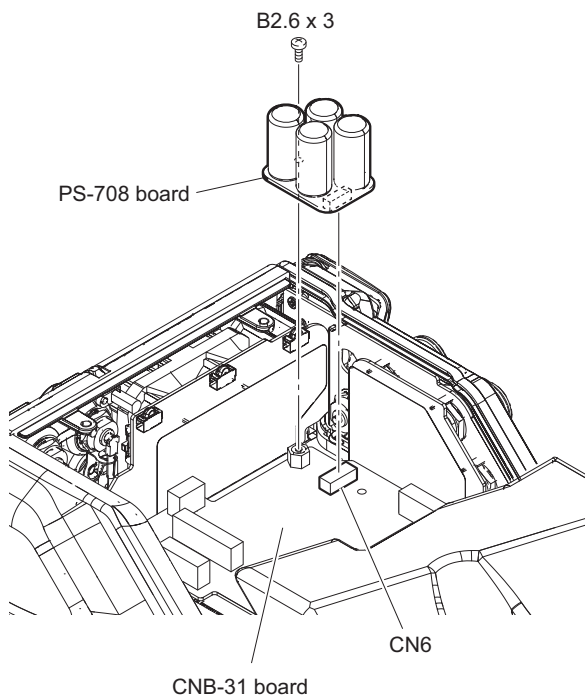
7-19. CNB-31 Board

Procedure

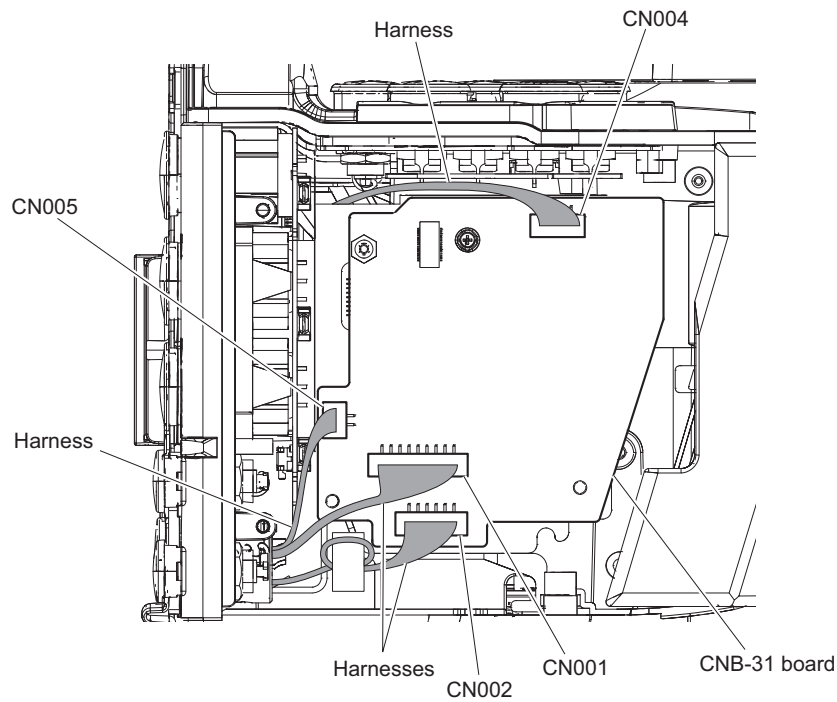
1. Remove the four screws to detach the connector cover.



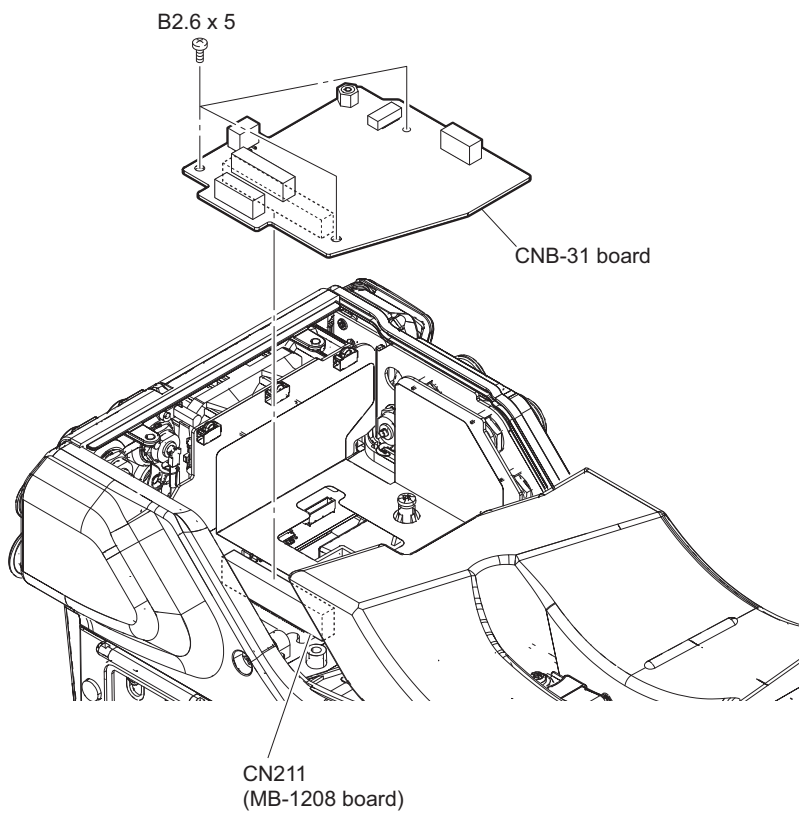
2. Remove the screw, and disconnect the PS-708 board from the connector (CN6) on the CNB-31 board.



3. Disconnect the four harnesses from the four connectors (CN001, CN002, CN004, CN005) on the CNB-31 board.



4. Remove the three screws, and disconnect the CNB-31 board from the connector (CN211) on the MB-1208 board.



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

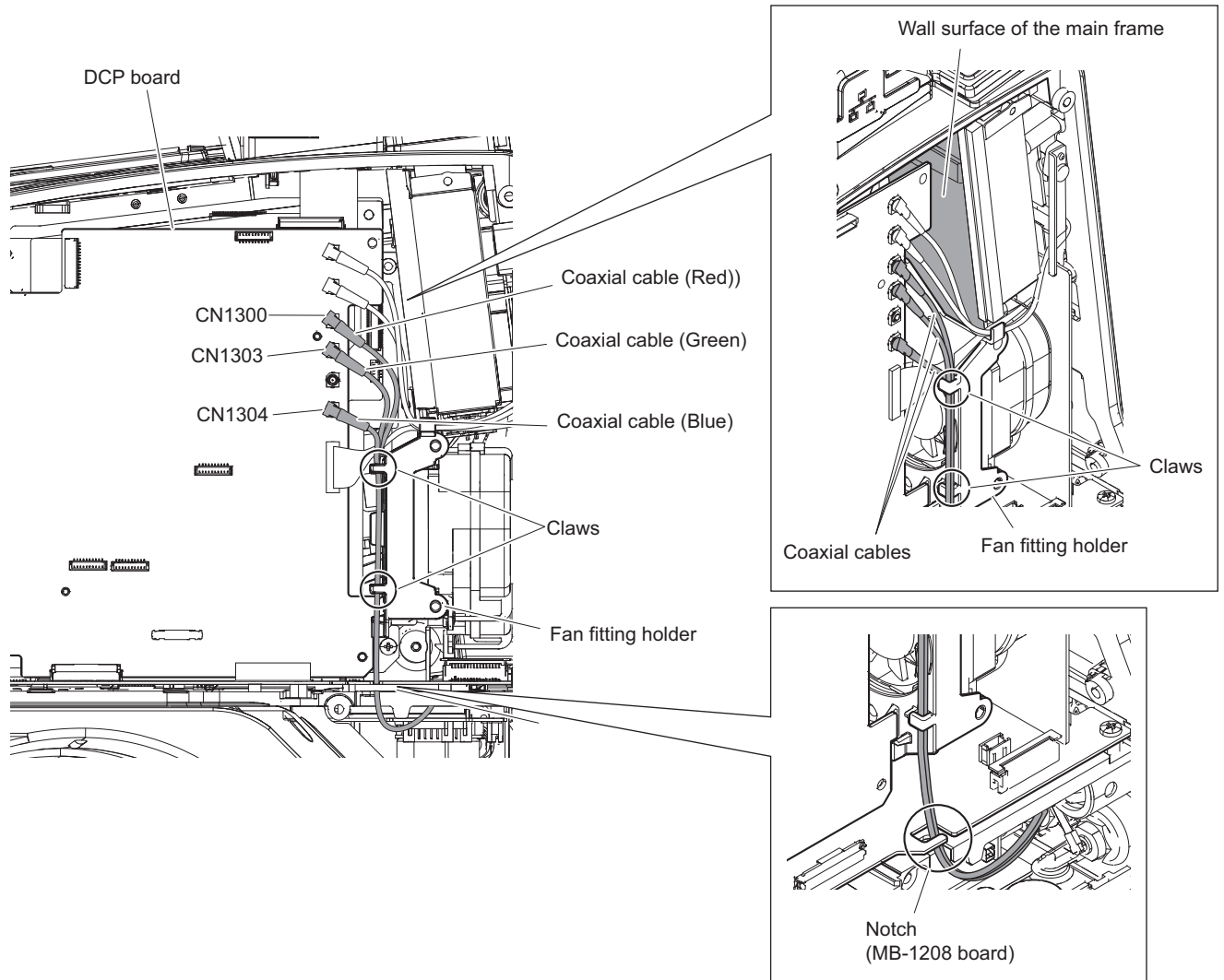
7-20. Connector Panel

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the inside panel. (Refer to “7-4. Inside Panel”)
3. Remove the CNB-31 board. (Refer to “7-19. CNB-31 Board”)

Procedure

1. Disconnect the three coaxial cables from the three connectors (CN1300, CN1303, CN1304) on the DCP board.
2. Release the three coaxial cables from the two claws and the notch of the MB-1208 board.



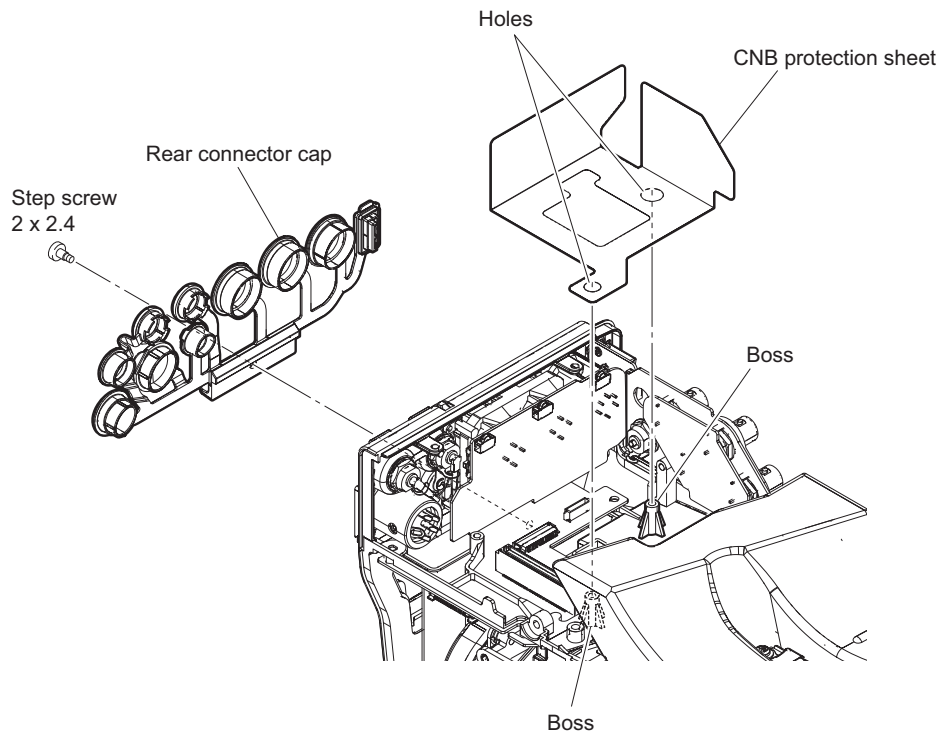
Note

Pay attention to the following when connecting the coaxial cables.

- Connect the coaxial cables correct connectors.
- Arrange the coaxial cables as shown in the figure, so that coaxial cables does not contact the wall surface of the main frame.

3. Remove the step screw to detach the rear connector cap.

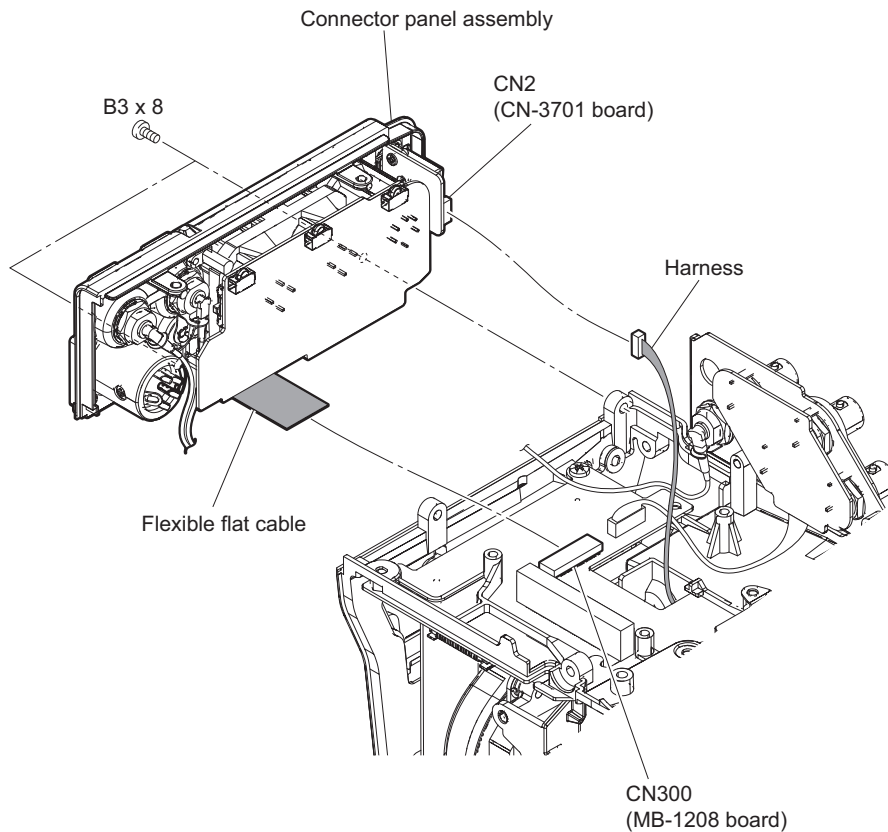
4. Remove the CNB protection sheet.



Note

When installing the CNB protection sheet, align the two holes with the two bosses.

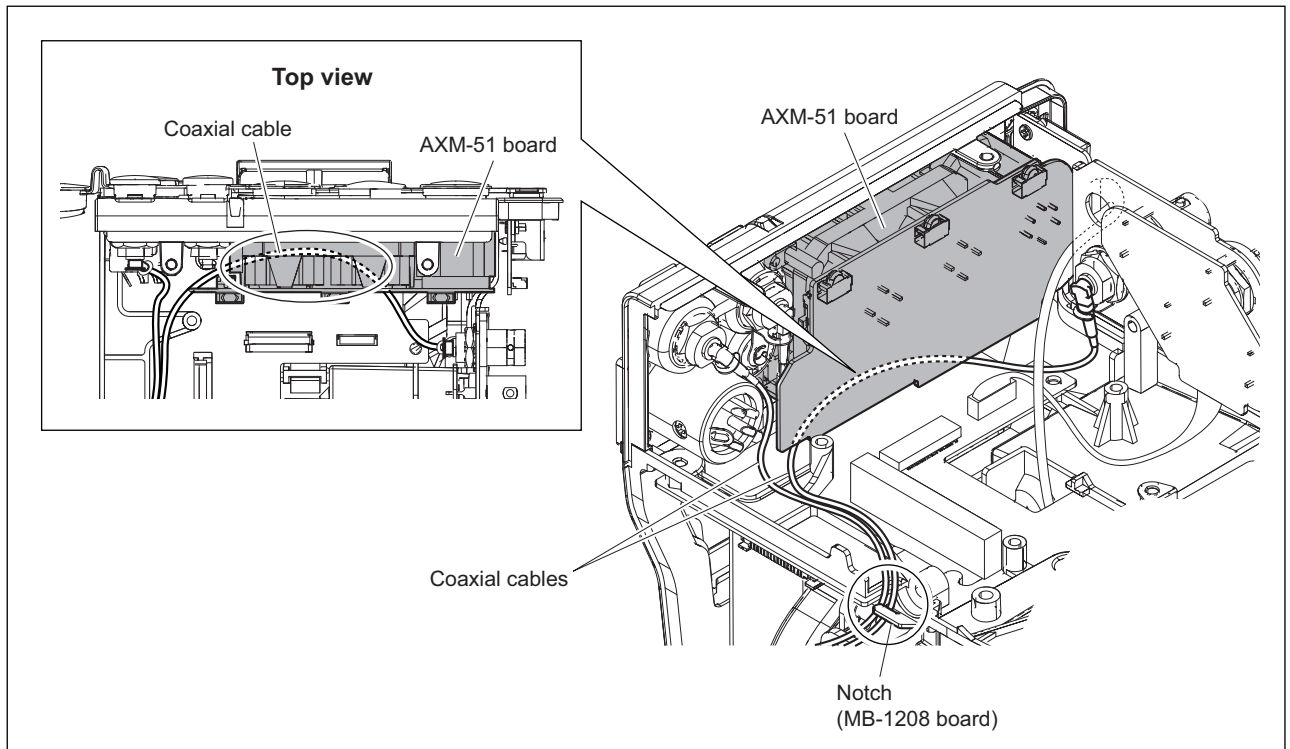
5. Disconnect the flexible flat cable from the connector (CN300) on the MB-1208 board.
6. Disconnect the harness from the connector (CN2) on the CN-3701 board.
7. Remove the two screws to detach the connector panel assembly.



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

Note

When installing, pay attention to arrangement of the coaxial cables.



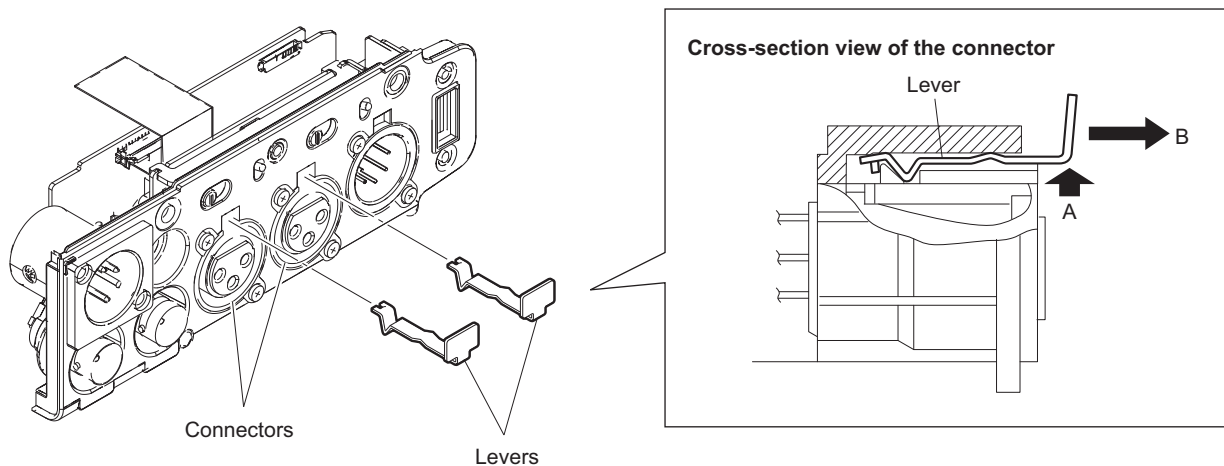
7-21. AXM-51 Board/DET-57 Board

Preparation

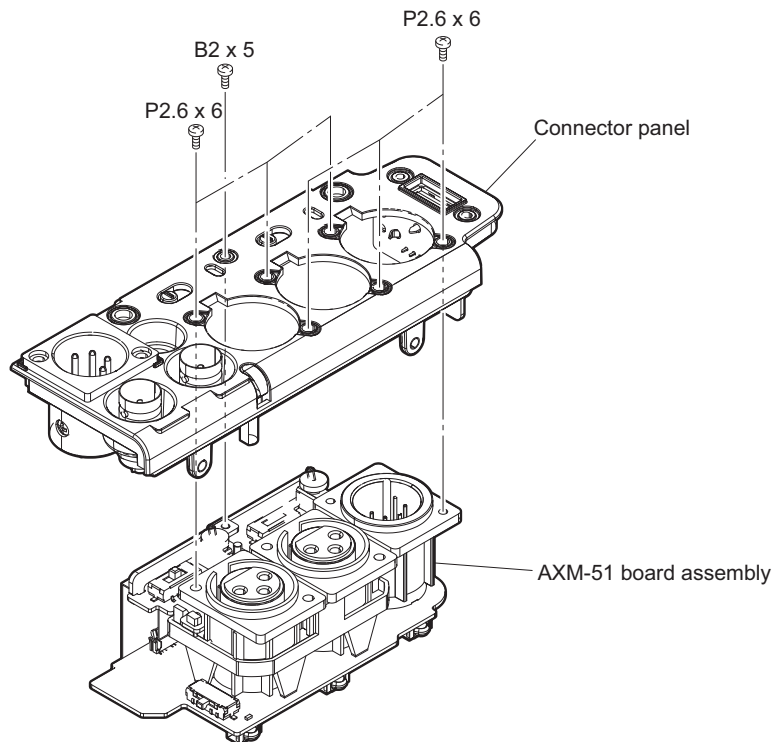
1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the inside panel. (Refer to “7-4. Inside Panel”)
3. Remove the CNB-31 board. (Refer to “7-19. CNB-31 Board”)
4. Remove the connector panel. (Refer to “7-20. Connector Panel”)

Procedure

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



2. Remove the six screws (P2.6 x 6) and screw (B2 x 5) to detach the connector panel.



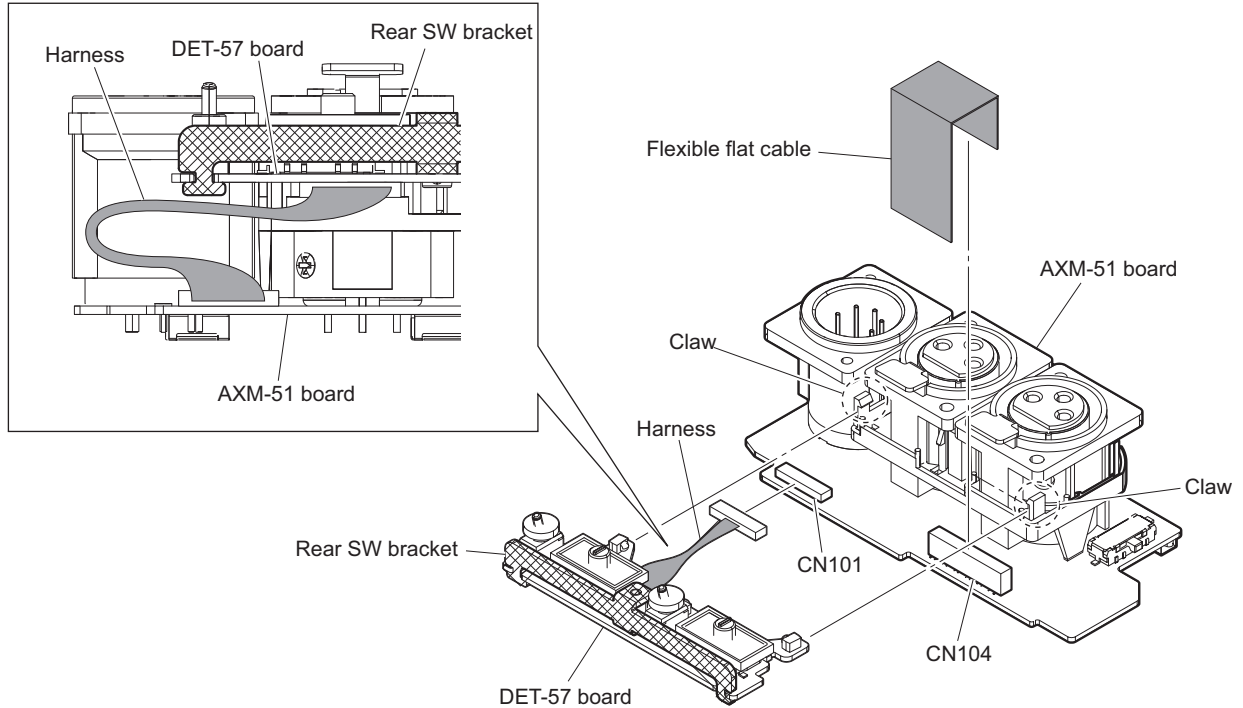
3. Disconnect the harness from the connector (CN101) on the AXM-51 board.

4. Release the DET-57 board from the two claws.

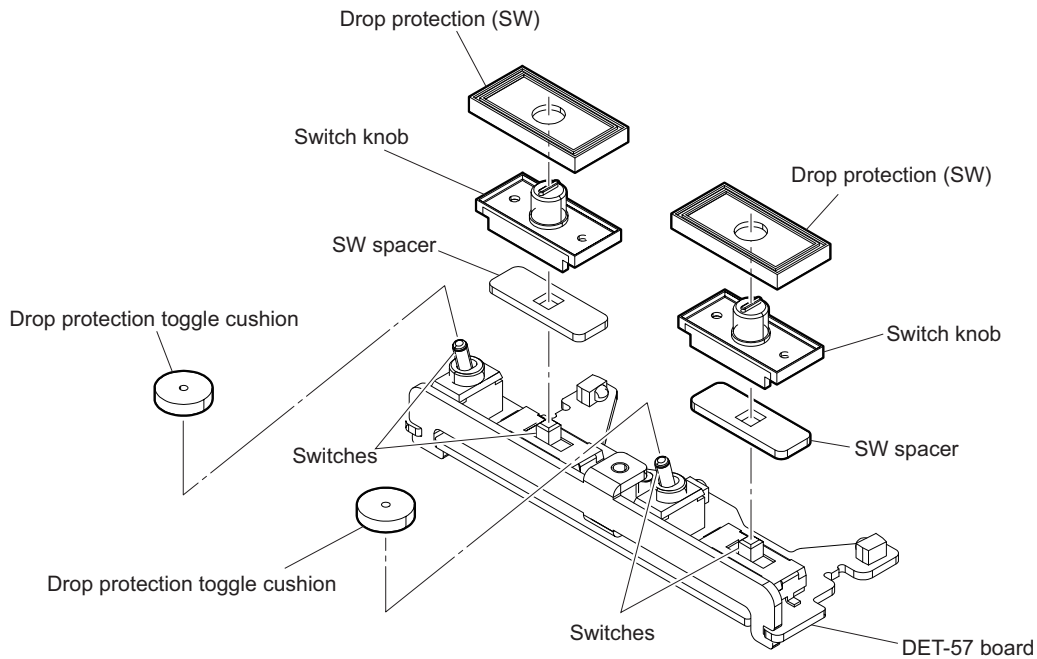
Note

When installing, pay attention to arrangement of the harness.

5. Disconnect the flexible flat cable from the connector (CN104) on the AXM-51 board.

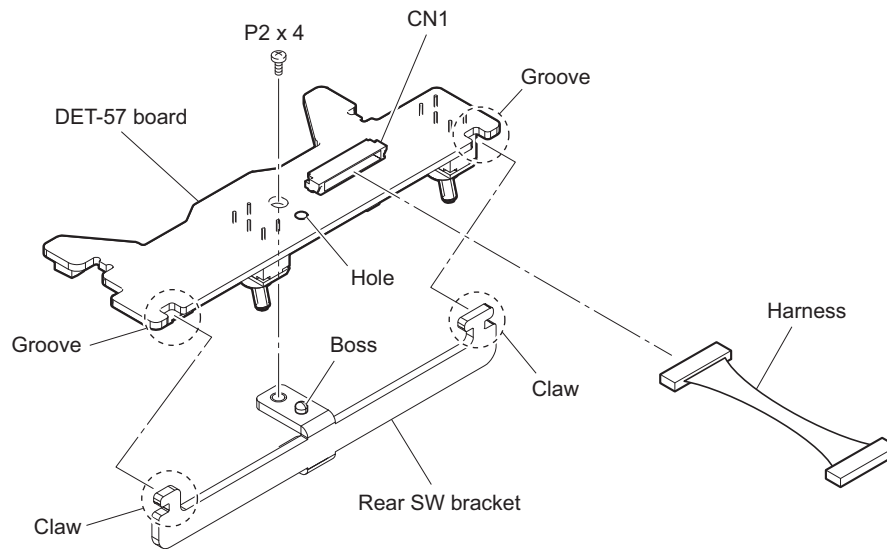


6. Remove the two drop protections (SW), the two switch knobs, the two SW spacers, the two drop protection toggle cushions.



7. Disconnect the harness from the connector (CN1) on the DET-57 board.

8. Remove the screw to detach the DET-57 board.



Note

When installing, align the two claws with the two grooves and align the boss with the hole.

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

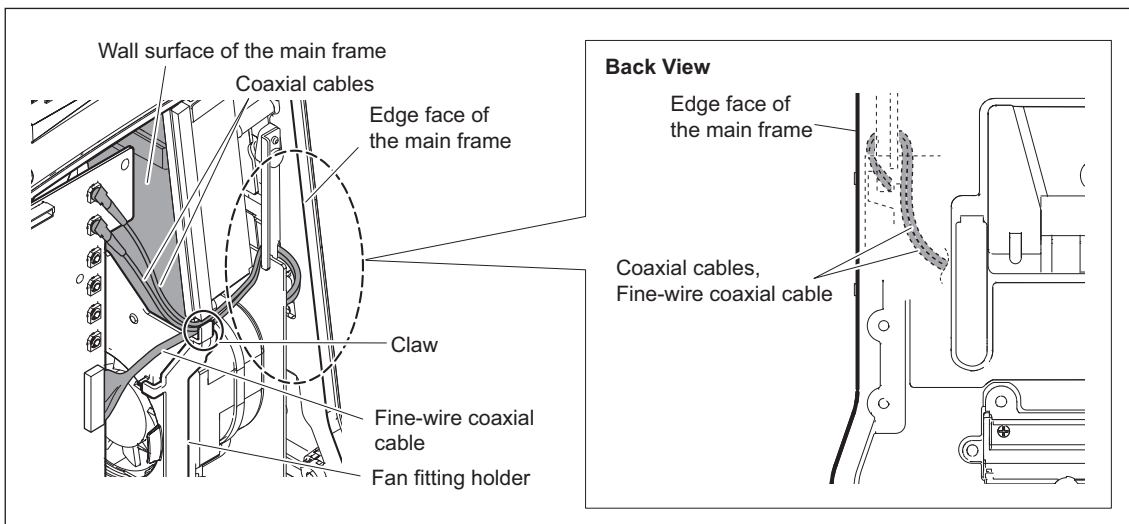
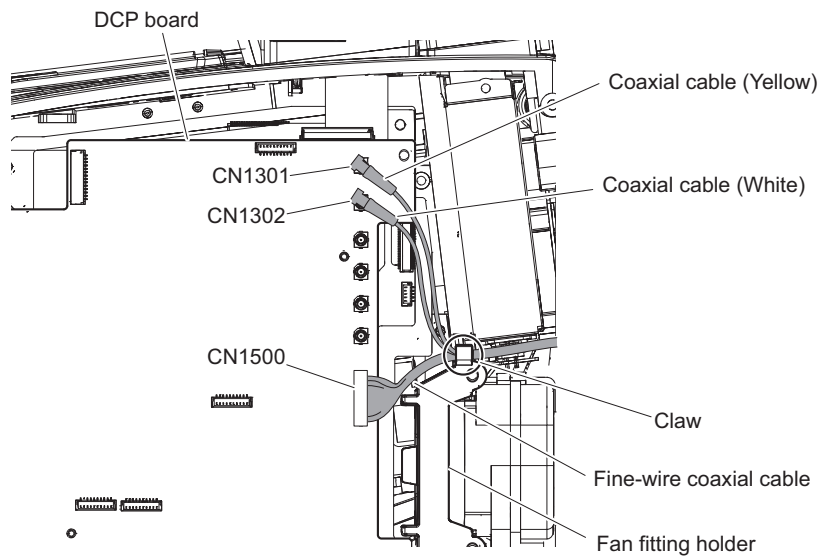
7-22. Rear Panel Assembly/Slide Lock

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the inside panel. (Refer to “7-4. Inside Panel”)
3. Remove the CNB-31 board. (“7-19. CNB-31 Board”)
4. Remove the connector panel. (Refer to “7-20. Connector Panel”)

Procedure

1. Disconnect the two coaxial cables from the two connectors (CN1301, CN1302) on the DCP board.
2. Disconnect the fine-wire coaxial cable from the connector (CN1500) on the DCP board.
3. Release the two coaxial cables and fine-wire coaxial cable from the claw.



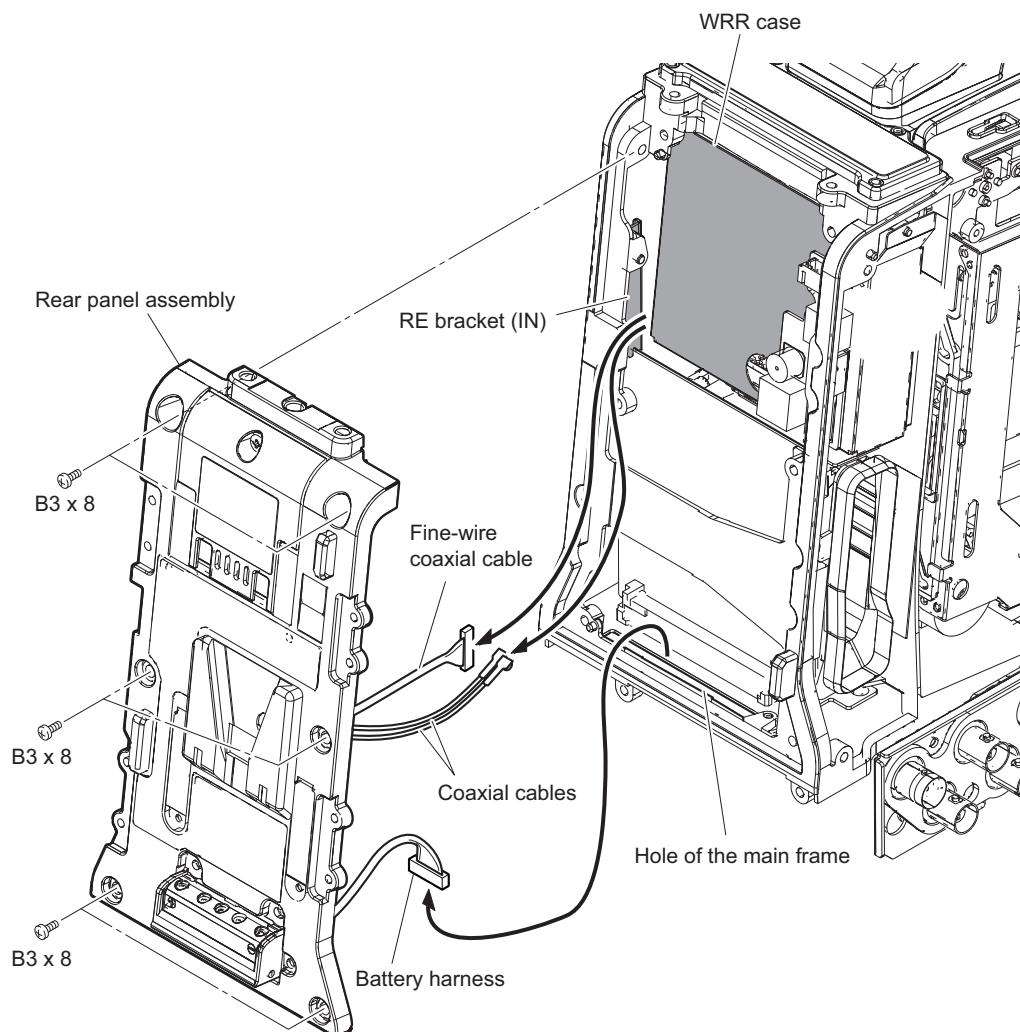
Note

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

- Connect the coaxial cables correct connectors.
- Arrange the coaxial cables as shown in the figure, so that coaxial cables does not contact the wall surface of the main frame.
- Arrange the coaxial cables and the fine-wire coaxial cable as shown in the figure, so that these cables does not come out of the edge face of the main frame to inside.

4. Remove the five screws, and draw the rear panel assembly.

5. Pull out the battery harness from the hole of the main frame.
6. Pull out the two coaxial cables and the fine-wire coaxial cable from the space between the WRR case and RE bracket (IN).

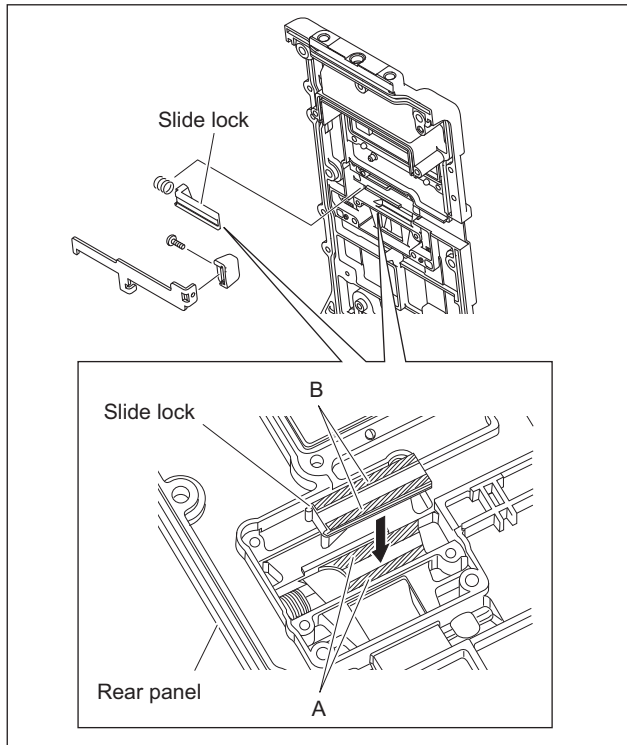


7. Install the removed parts by reversing the steps of removal.

Note

When the slide lock included in the rear panel assembly has been replaced, apply grease as described below.

- Apply grease (SGL-601) to the two shaded areas (A) on the rear panel.
- Install the slide lock.
- Apply grease (SGL-601) to the two shaded areas (B) on the slide lock.
- When applying the grease, be careful so that the grease within the applying area.



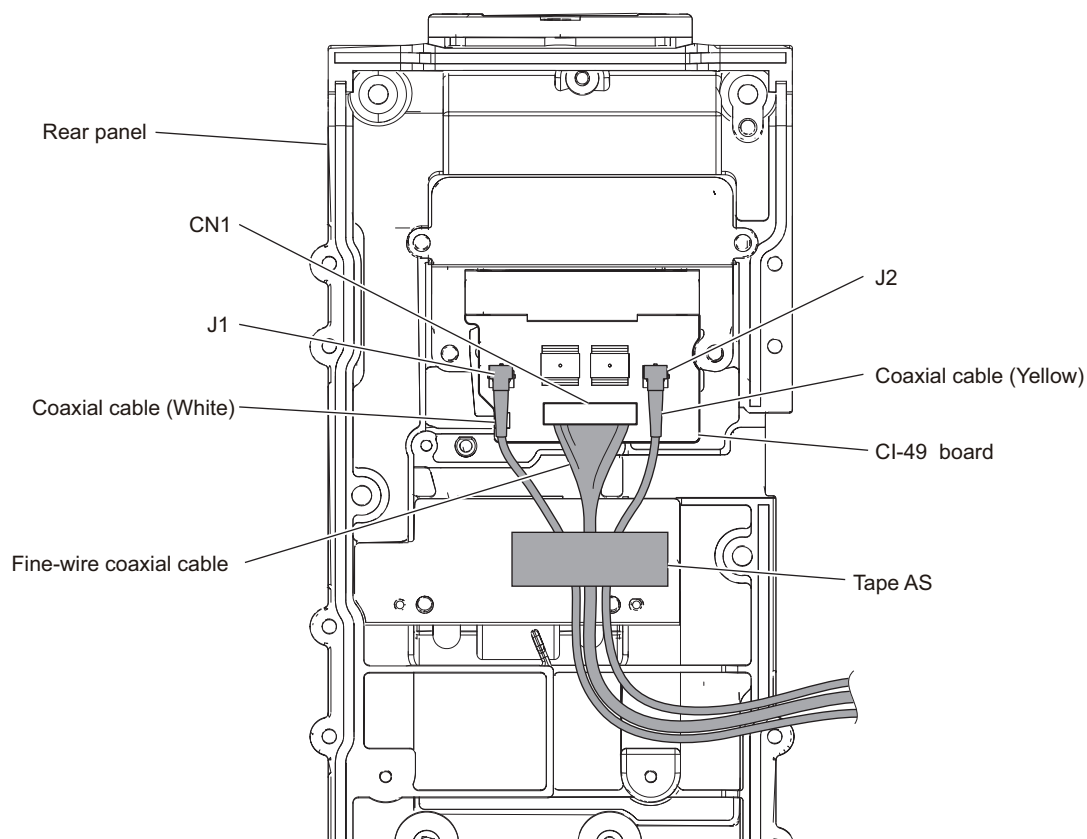
7-23. CI-49 Board

Preparation

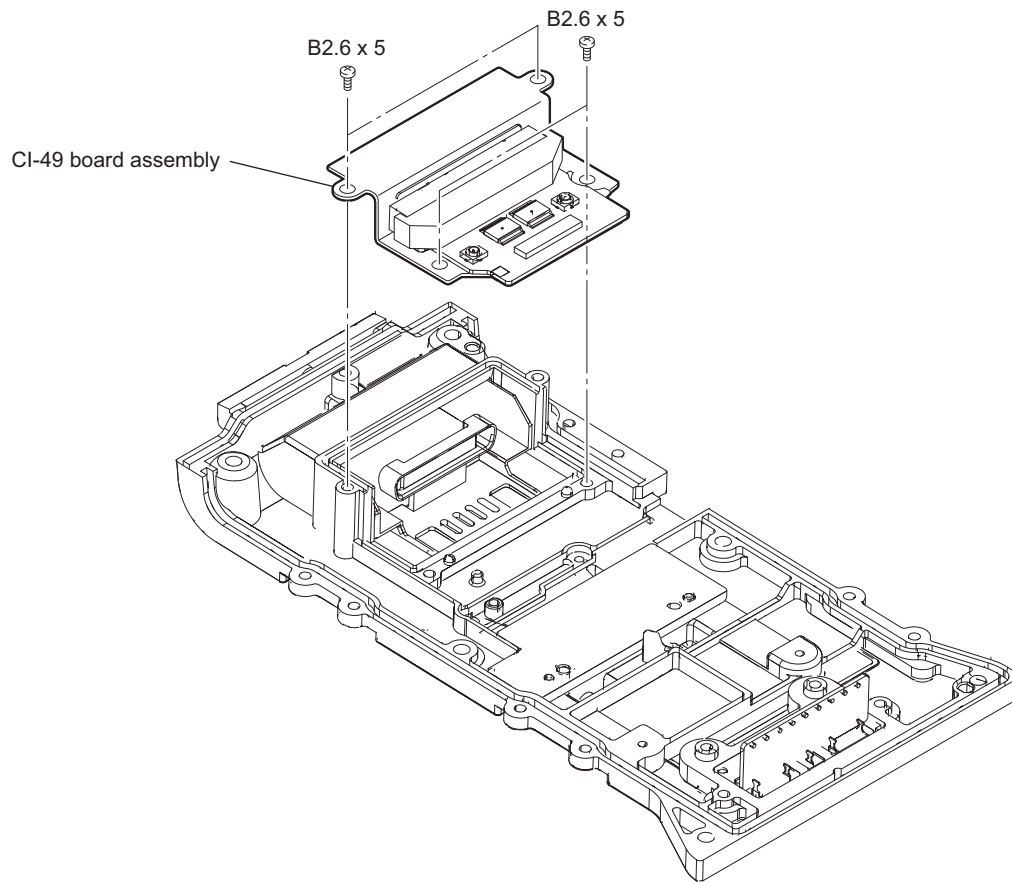
1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the inside panel. (Refer to “7-4. Inside Panel”)
3. Remove the CNB-31 board. (Refer to “7-19. CNB-31 Board”)
4. Remove the connector panel. (Refer to “7-20. Connector Panel”)
5. Remove the rear panel assembly. (Refer to “7-22. Rear Panel Assembly/Slide Lock”)

Procedure

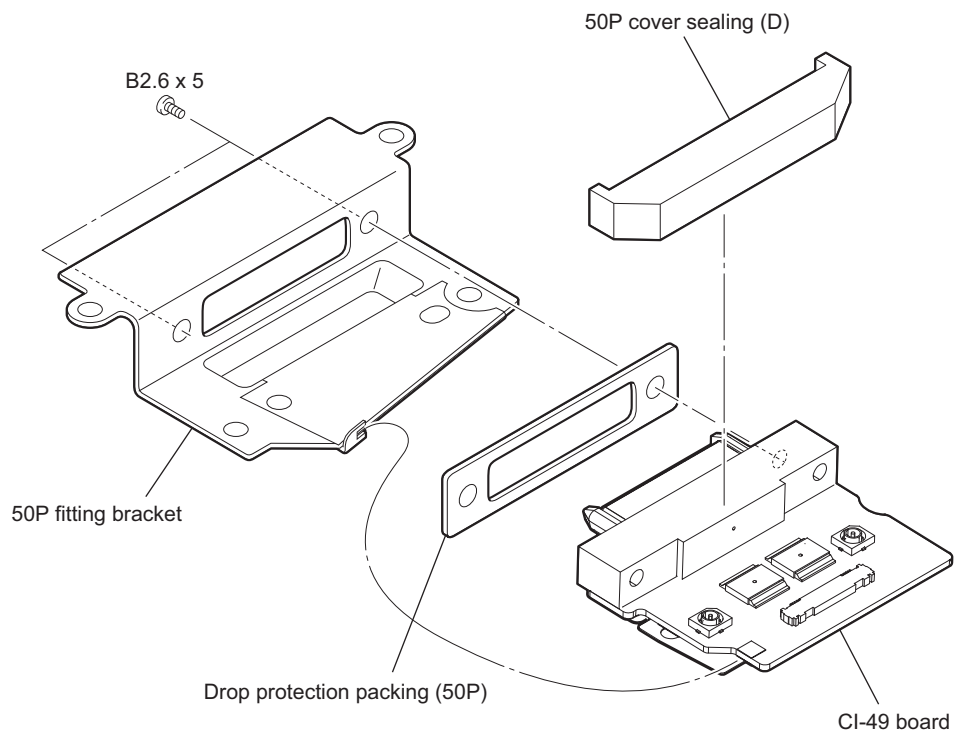
1. Remove the tape AS.
2. Disconnect the two coaxial cables from the two connectors (J1, J2) on the CI-49 board.
3. Disconnect the fine-wire coaxial cable from the connector (CN1) on the CI-49 board.



- Remove the four screws to detach the CI-49 board assembly.



5. Remove the 50P cover sealing (D) from the CI-49 board.
6. Remove the two screws to detach CI-49 board and the drop protection packing (50P) from the 50P fitting bracket.



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

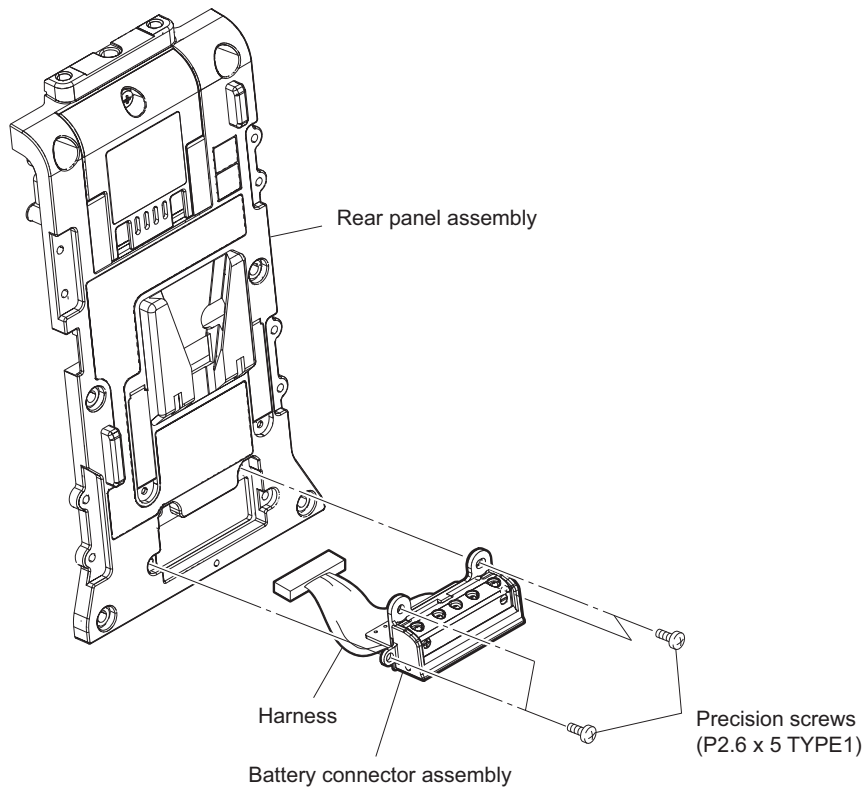
7-24. Battery Connector Assembly

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the inside panel. (Refer to “7-4. Inside Panel”)
3. Remove the CNB-31 board. (Refer to “7-19. CNB-31 Board”)
4. Remove the connector panel. (Refer to “7-20. Connector Panel”)
5. Remove the rear panel assembly. (Refer to “7-22. Rear Panel Assembly/Slide Lock”)

Procedure

1. Remove the four screws to detach the battery connector assembly.



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

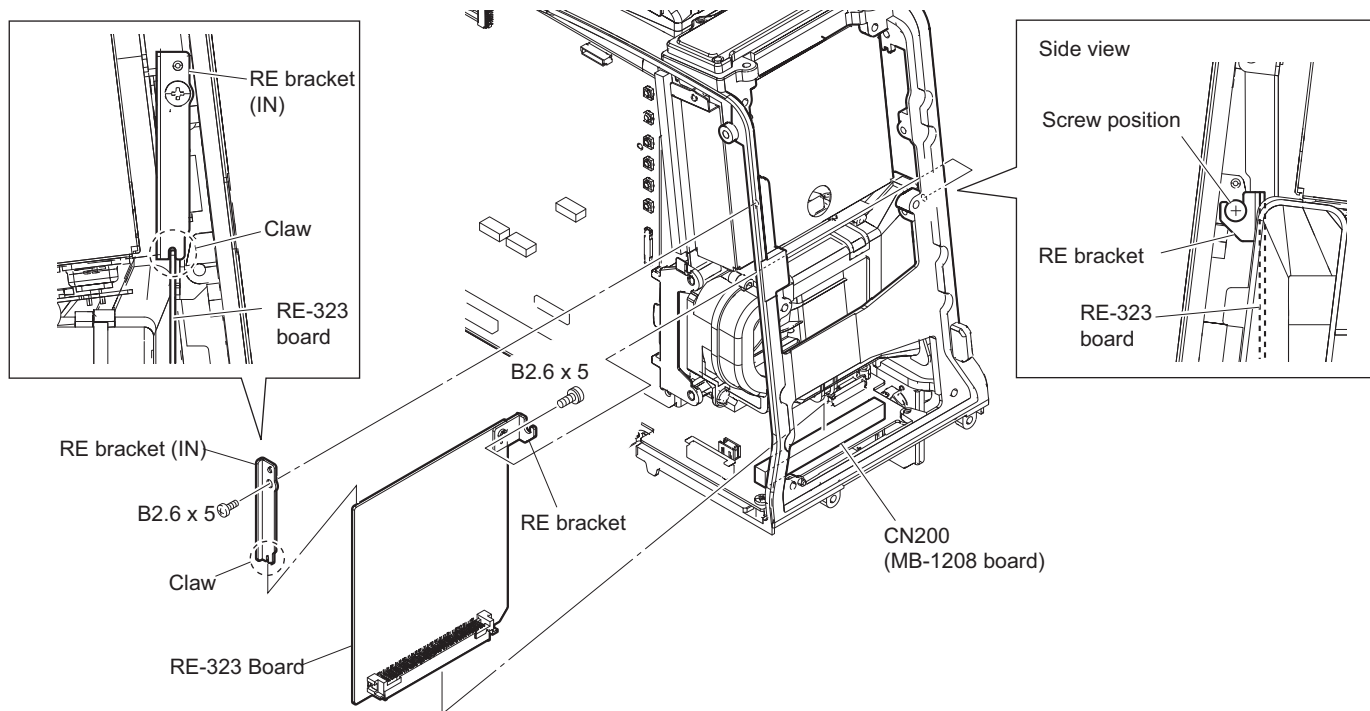
7-25. RE-323 Board

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the inside panel. (Refer to “7-4. Inside Panel”)
3. Remove the CNB-31 board. (Refer to “7-19. CNB-31 Board”)
4. Remove the connector panel. (Refer to “7-20. Connector Panel”)
5. Remove the rear panel assembly. (Refer to “7-22. Rear Panel Assembly/Slide Lock”)

Procedure

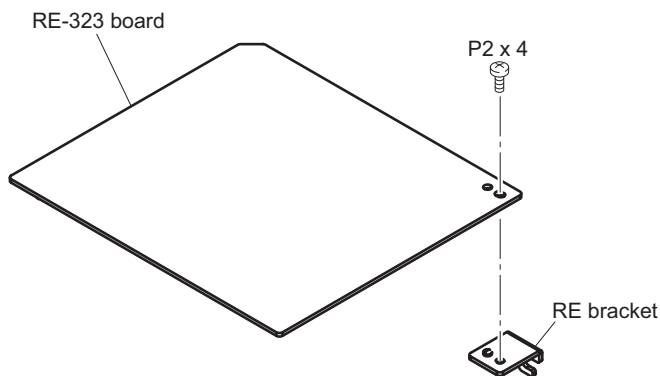
1. Remove the screws fixing the RE bracket.
2. Remove the screw to detach the RE bracket (IN).
3. Disconnect the RE-323 board from the connector (CN200) on the MB-1208 board.



Note

When installing the RE-323 board, set the claw of the RE bracket (IN) at the positions shown in the figure.

4. Remove the screw to detach the RE bracket.



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

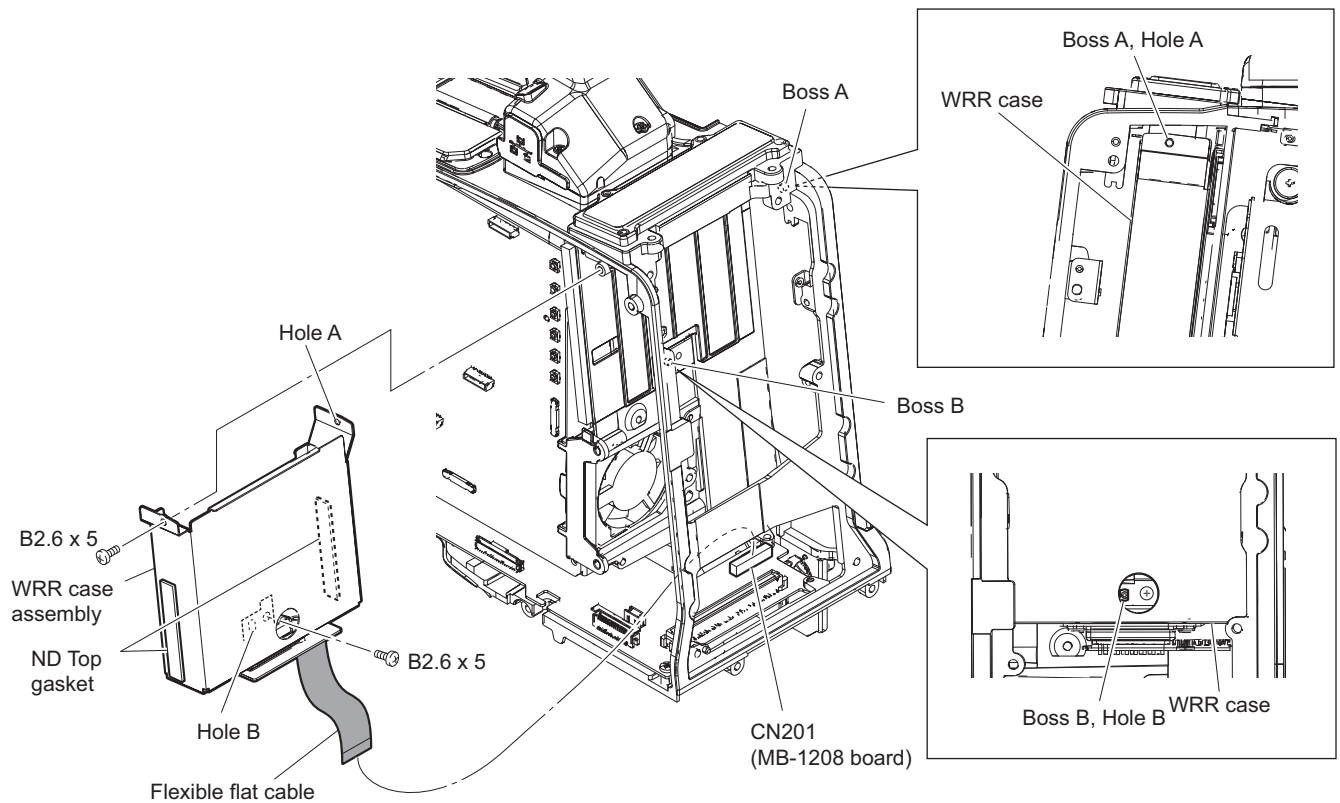
7-26. RX-134 Board

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the inside panel. (Refer to “7-4. Inside Panel”)
3. Remove the CNB-31 board. (Refer to “7-19. CNB-31 Board”)
4. Remove the connector panel. (Refer to “7-20. Connector Panel”)
5. Remove the rear panel assembly. (Refer to “7-22. Rear Panel Assembly/Slide Lock”)
6. Remove the RE-323 board. (Refer to “7-25. RE-323 Board”)

Procedure

1. Disconnect the flexible flat cable from the connector (CN201) on the MB-1208 board.
2. Remove the two screws to detach the WRR case assembly.

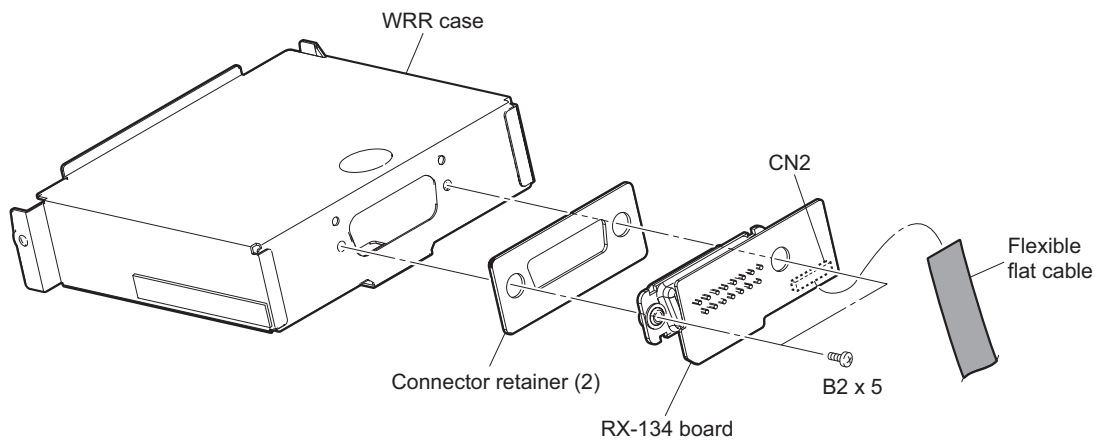


Note

When installing, align the boss A with the hole A and align the boss B with hole B.

3. Disconnect the flexible flat cable from the connector (CN2) on the RX-134 board.

4. Remove the two screws to detach the RX-134 board and the connector retainer (2).



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

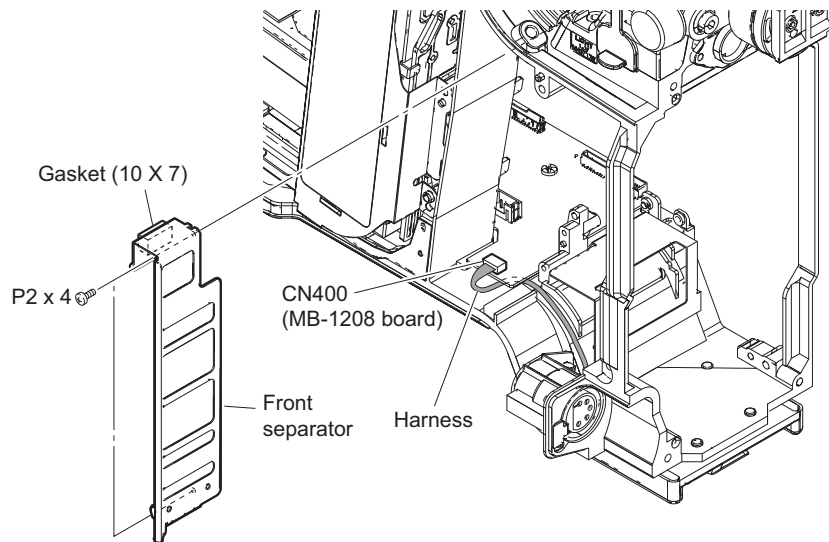
7-27. MB-1208 Board

Preparation

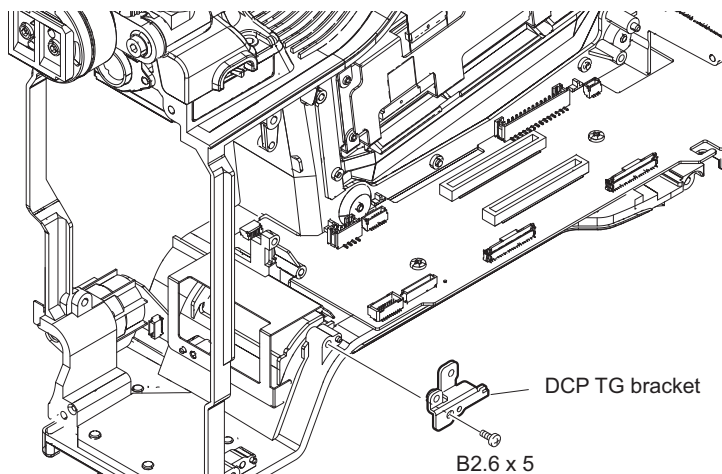
1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the inside panel. (Refer to “7-4. Inside Panel”)
3. Remove the TG-286 board. (Refer “7-11. TG-286 Board”)
4. Remove the front panel. (Refer “7-12. Front Panel”)
5. Remove the DCP assembly. (Refer to “7-6. DCP Board”)
6. Remove the DVP assembly. (Refer to “7-7. DVP-64 Board/SY-439 Board”)
7. Remove the fan assembly. (Refer to “7-8. DC Fan”)
8. Remove the CNB-31 board. (Refer to “7-19. CNB-31 Board”)
9. Remove the connector panel. (Refer to “7-20. Connector Panel”)
10. Remove the rear panel assembly. (Refer to “7-22. Rear Panel Assembly/Slide Lock”)
11. Remove the RE-323 board. (Refer to “7-25. RE-323 Board”)

Procedure

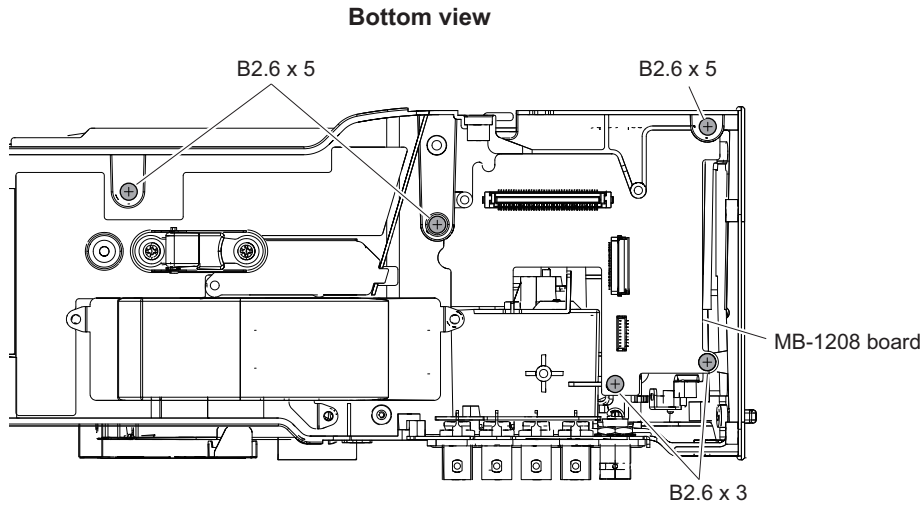
1. Remove the two screws to detach the front separator.
2. Disconnect the harness from the connector (CN400) on the MB-1208 board.



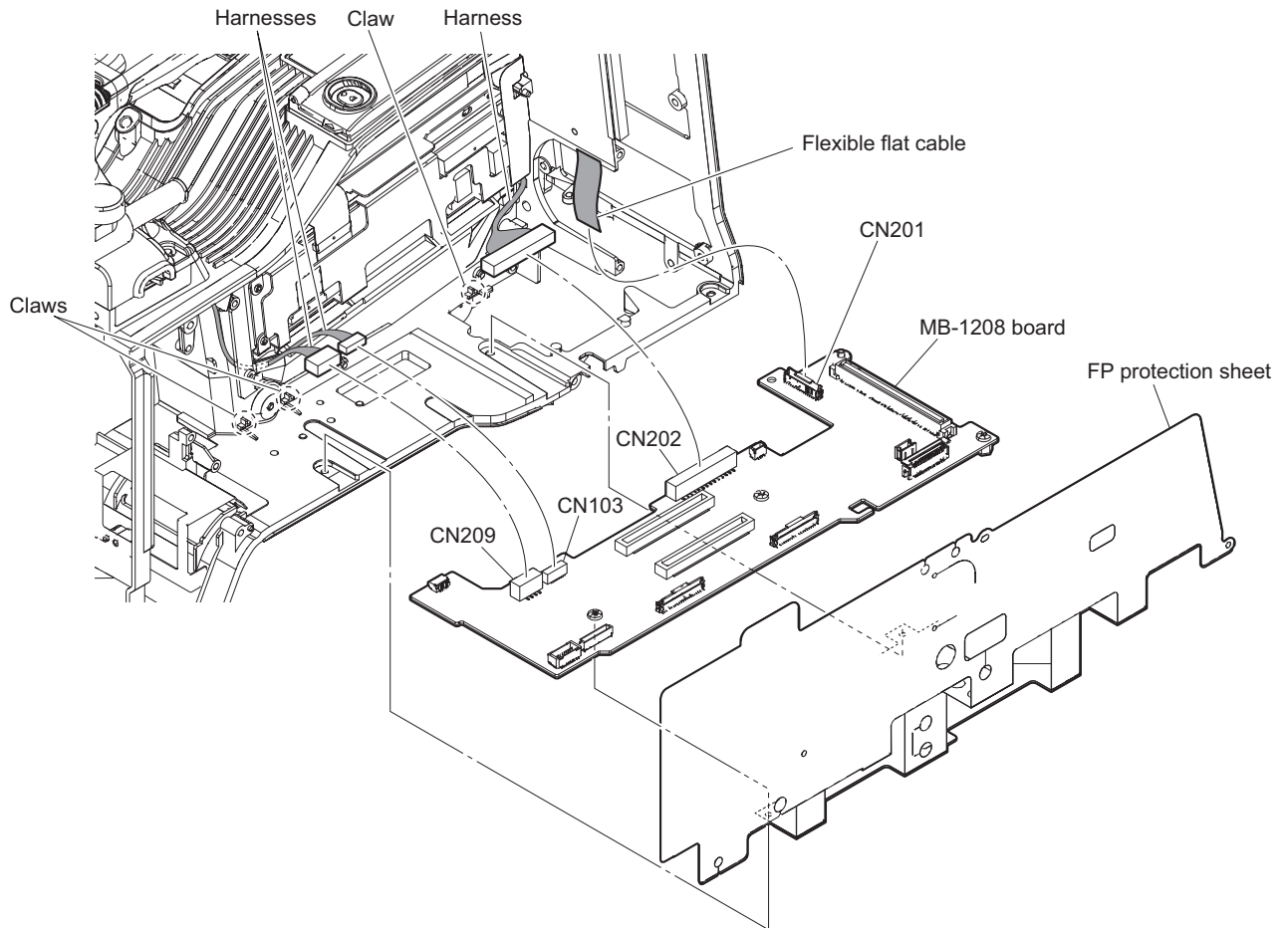
3. Remove the screw to detach the DCP TG bracket.



4. Remove the three screws (B2.6 x 5) and the two screws (B2.6 x 3).



5. Disconnect the three harnesses from the three connectors (CN103, CN202, CN209) on the MB-1208 board.
6. Disconnect the flexible flat cable from the connector (CN201) on the MB-1208 board.
7. Release the MB-1208 board from the three claws, and then remove the FP protection sheet.



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

7-28. Optical Drive Assembly

Note

- The optical block assembly in the drive may be damaged by static electricity charged in a human body or clothes. Therefore, be sure to establish a ground before starting an operation. (Refer to “[1-15. Cautions on Handling the Optical Block Assembly](#)”)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.

Tip

The following parts are necessary as tools.

- Cleaning liquid
- Cleaning cloth
- Parallel pin (2 x 20) : 3
- Stopper washer: 2

7-28-1. Loader Assembly

Note

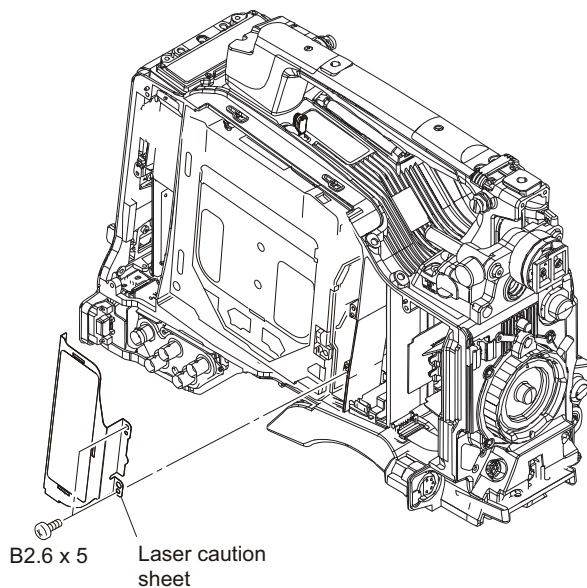
- When a cartridge is already being inserted in the unit, be sure to take it out beforehand. If you cannot take out the cartridge with normal operation, refer to “[1-5. How to Take Out a Cartridge Manually](#)”.
- The loader assembly require periodic replacement, Refer to “[6-1. Periodic Check/Replacement Parts List](#)” for details.

Preparation

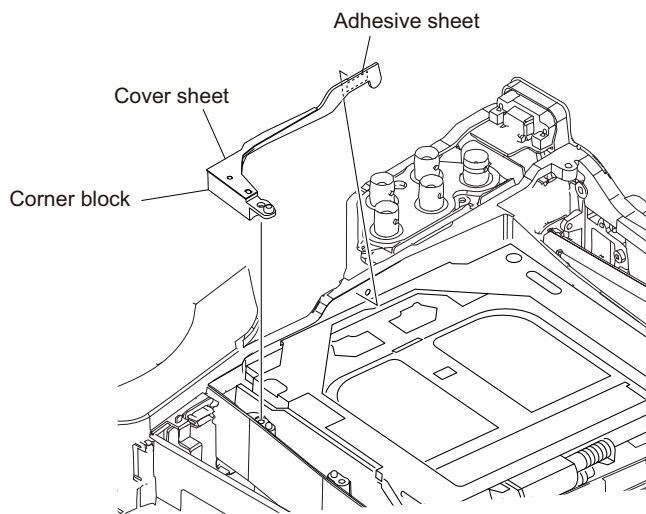
1. Remove the outside panel. (Refer to “[7-2. Outside Panel](#)”)

Removing Procedure

1. Remove the two screws to detach the laser caution sheet.



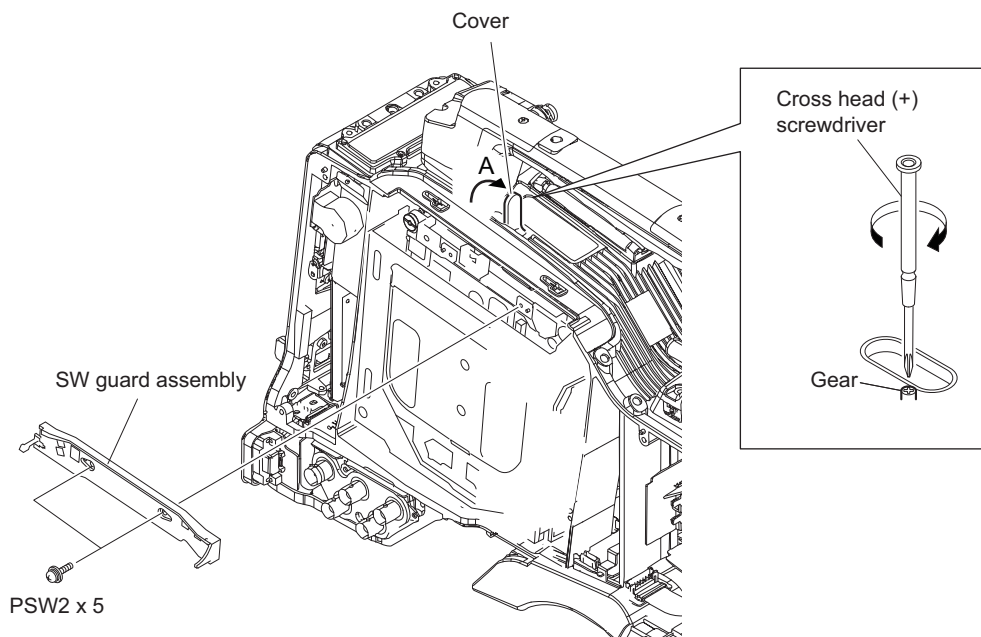
2. Remove the corner block with adhesive sheet and cover sheet.



3. Remove the two screws to detach the SW guard assembly.

Note

If the loader has already been moved to the up position, the SW guard assembly may be difficult to remove in some cases. Open the cover in the direction of the arrow A, and then move down the loader by rotating the gear in clockwise direction with crosshead screwdriver.

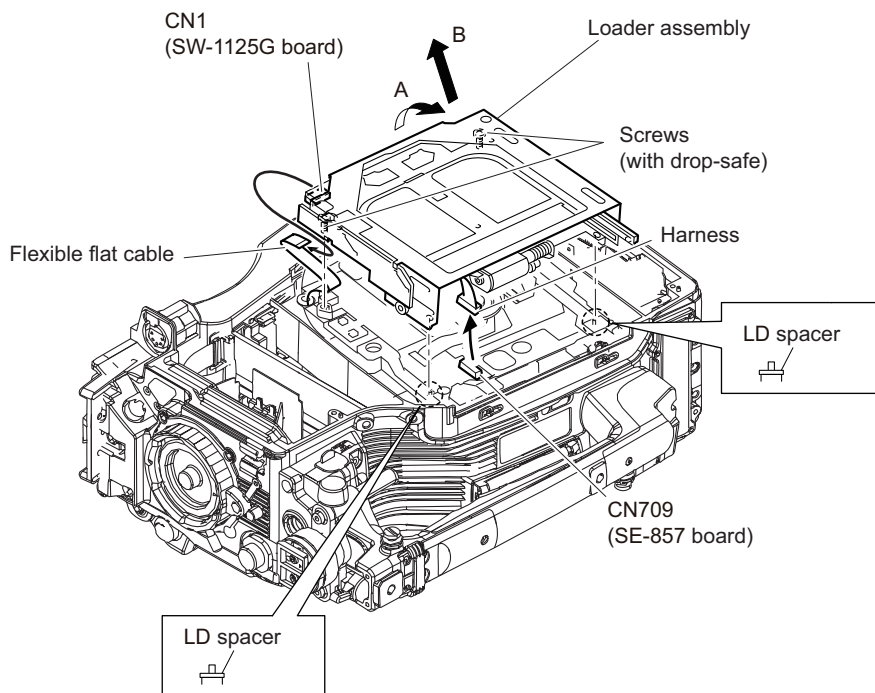


4. Disconnect the flexible flat cable from the connector (CN1) on the SW-1125G board.
5. Fully loosen the two screws fixing the loader assembly and draw it in the direction of the arrow "A".

6. Disconnect the harness from the connector (CN709) on the SE-857 board, while removing the loader assembly in the direction of the arrow “B”.

Note

- Be careful not to lose the two LD spacers.
- The spindle motor has an intense powerful magnet. Remove the loader assembly, being careful not to be attracted by the magnetic force or not to be caught by the edge of the spindle motor.



Cleaning

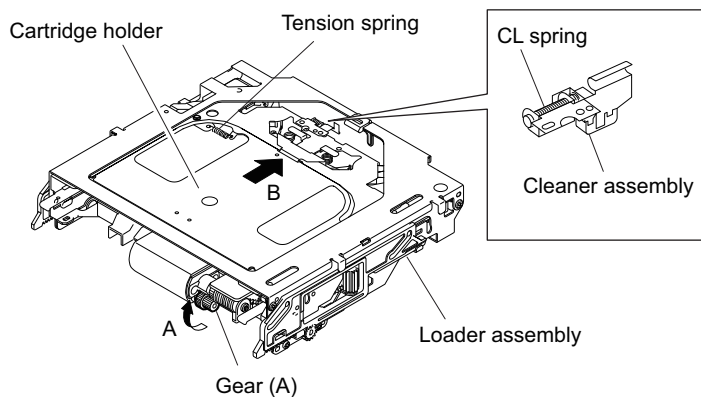
7. Clean the loader assembly. (Refer to “6-2. Cleaning”)

Installing Procedure

Note

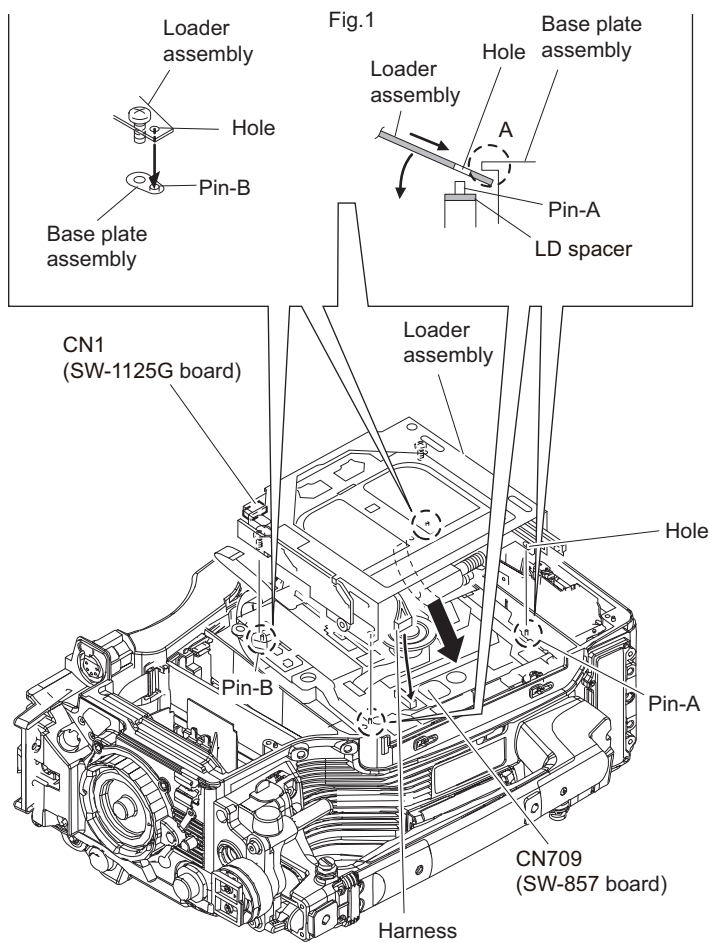
When installing, take care so that the tension spring and CL spring do not come off.

8. Rotate the gear (A) in the direction of the arrow A to move the cartridge holder in the direction of the arrow B until it will stop.



9. Connect the harness to the connector (CN709) on the SE-857 board.

10. Insert the upper part of the loader assembly underneath the portion “A” of the base plate assembly, and align the four positioning pins (A, B) of the base plate assembly with the four holes of the loader assembly as shown in the figure.

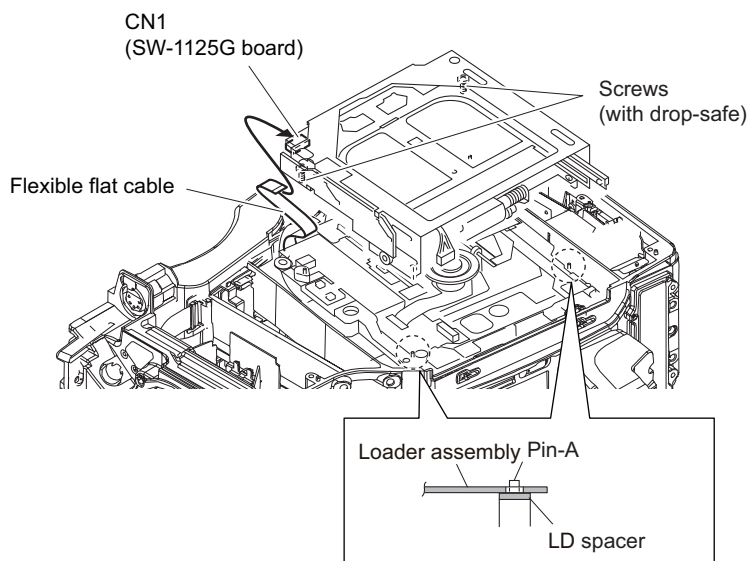


11. Reinstall the loader assembly in the base plate assembly, and fix it using the two screws (with drop-safe).

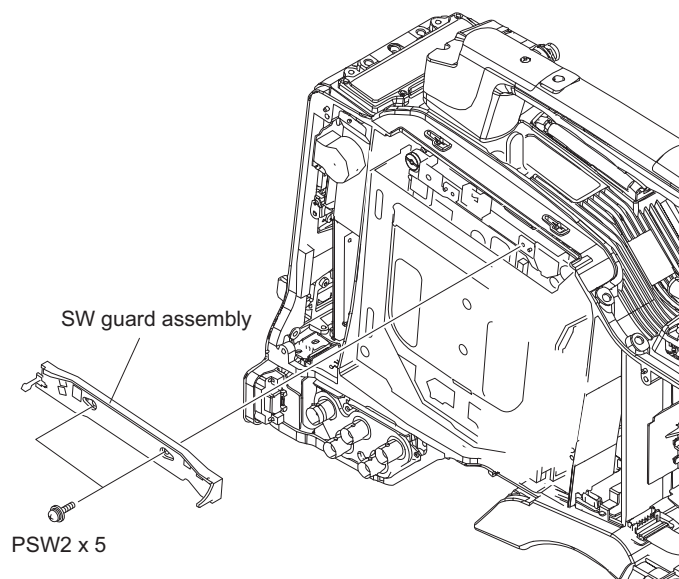
Note

Confirm that the LD spacer is correctly installed in the positioning pin-A (at two locations).

12. Connect the flexible flat cable to the connector (CN1) on the SW-1125G board.



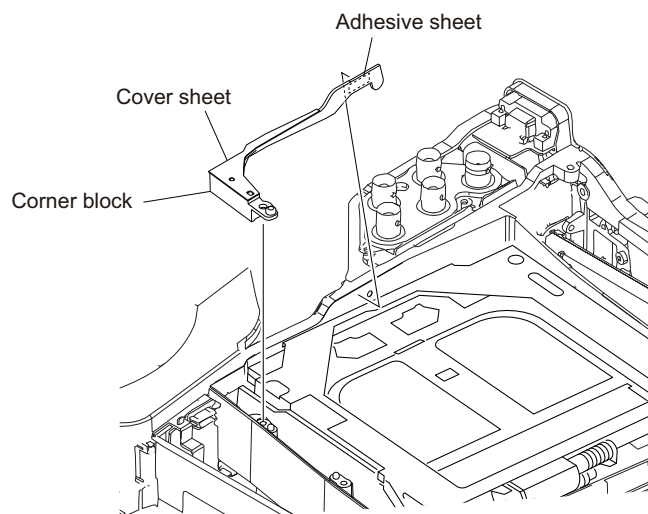
13. Install the SW guard assembly and tighten the two screws.



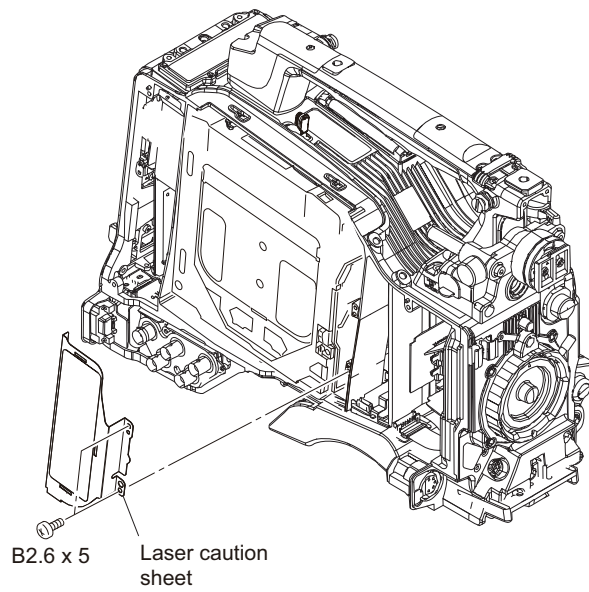
14. Install the corner block.

Note

When install the corner block, replace an adhesive sheet with a new one. (Adhesive sheet : 3-870-265-01)



15. Install the laser caution sheet and tighten the two screws.



16. Install the outside panel.(Refer to “[7-2. Outside Panel](#)”)

7-28-2. Cleaner Assembly

Note

The Cleaner assembly requires periodic check. Refer to “6-1. Periodic Check/Replacement Parts List” for details.

Preparation

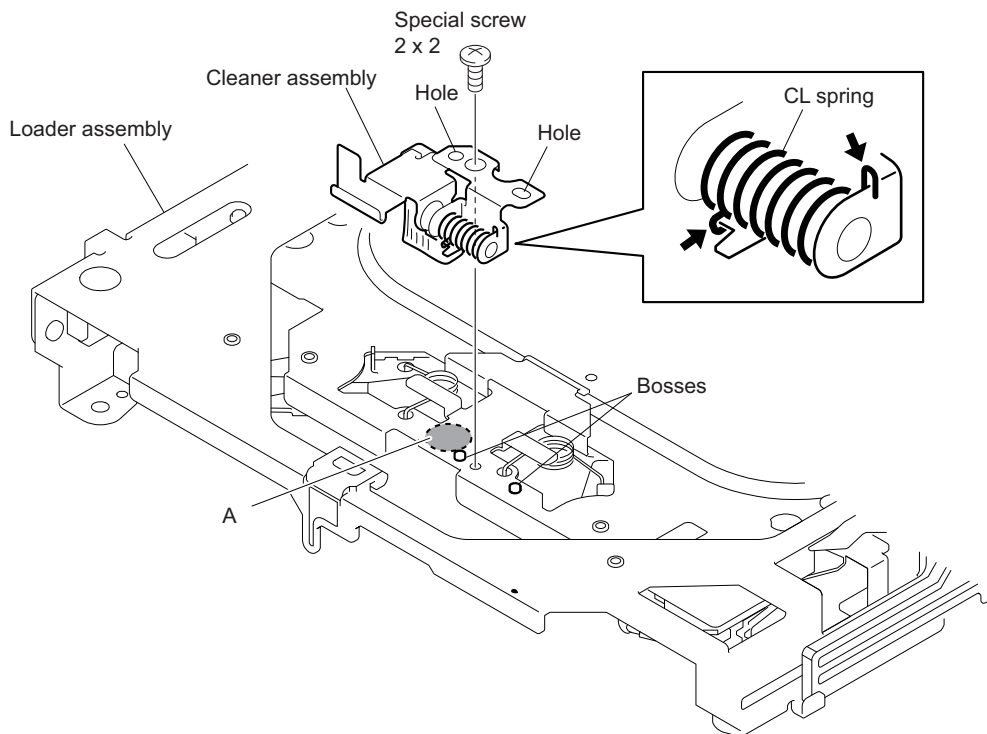
1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the loader assembly. (Refer to “7-28-1. Loader Assembly”)

Procedure

1. Remove the screw to detach the cleaner assembly.

Note

- Be careful not to deform the loader assembly.
- Take care so that the CL spring does not come off.



Note

Be careful not to deform the loader assembly, so that tighten the screw while pressing portion A on the back of the loader assembly with fingers.

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

Note

Pay attention to the following when installing the cleaner assembly.

- Align the two holes of the cleaner assembly with the two bosses.
- Take care so that the CL spring does not come off.

7-28-3. SE-709 Board

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the loader assembly. (Refer to “7-28-1. Loader Assembly”)

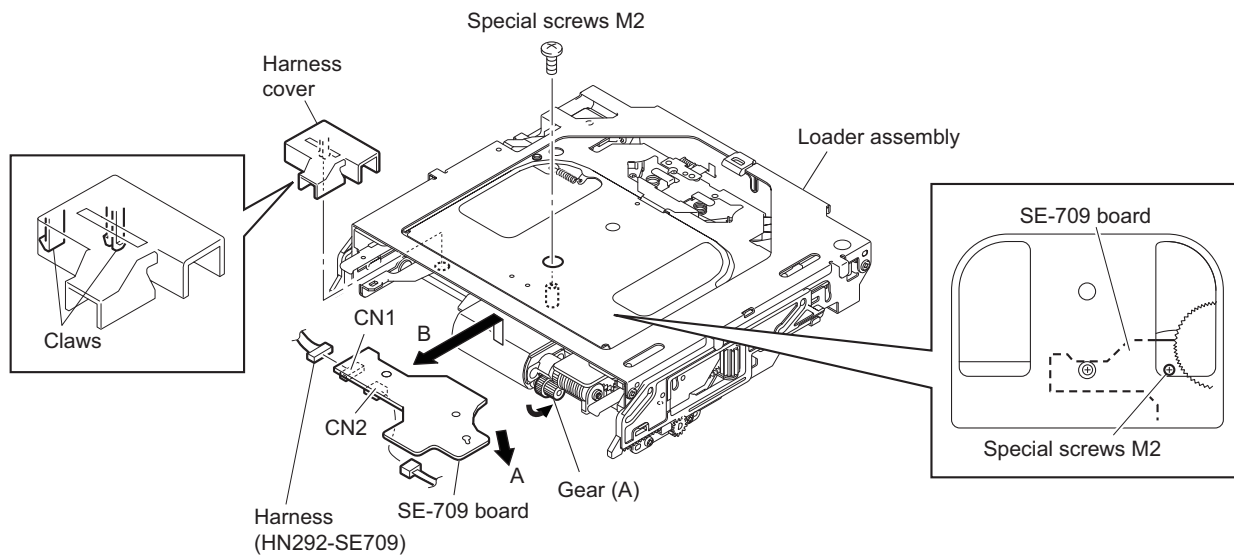
Procedure

1. Disengage the two claws, and remove the harness cover.
2. Turn the gear (A) in the arrow direction to move the SE-709 board fixing screw to under the hole of the loader assembly.

Tip

This step is not necessary when the cartridge has been ejected normally.

3. Remove the two screws, and slide the SE-709 board in the direction of the arrow A.
4. Remove the SE-709 board in the direction of the arrow B.
5. Disconnect the harnesses from the connectors CN1 and CN2.



Note

When connecting the harness (HN292-SE709) to the connector (CN1), pay attention to arrangement of the harness.

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

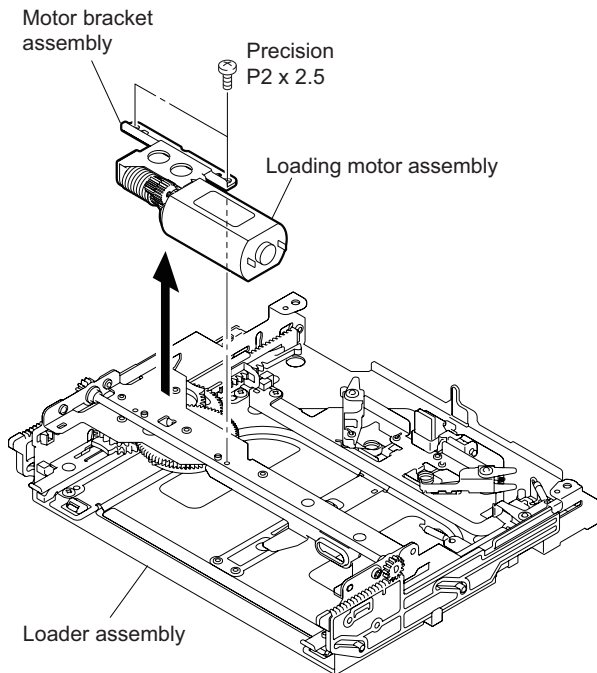
7-28-4. Loading Motor Assembly

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the loader assembly. (Refer to “7-28-1. Loader Assembly”)
3. Remove the SE-709 board. (Refer to “7-28-3. SE-709 Board”)

Procedure

1. Remove the two screws to detach the motor bracket assembly and the loading motor assembly.



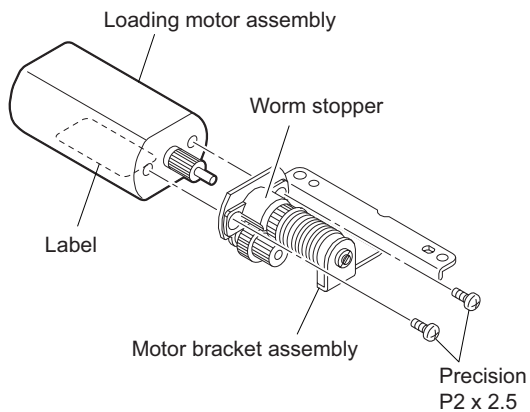
Note

When assembling, apply locking compound to the two screws.

2. Remove the two screws to detach the loading motor assembly.

Note

Take care so that the worm stopper does not come off.



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

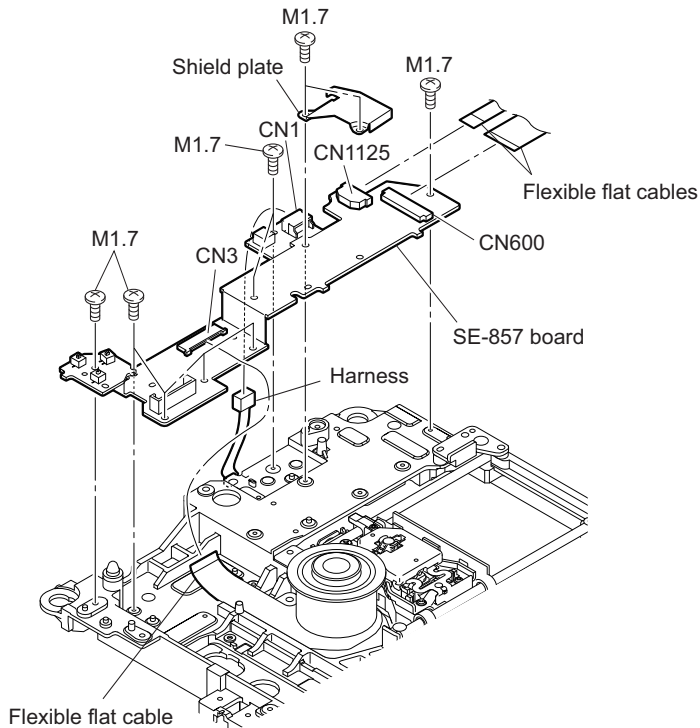
7-28-5. SE-857 Board

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the loader assembly. (Refer to “7-28-1. Loader Assembly”)

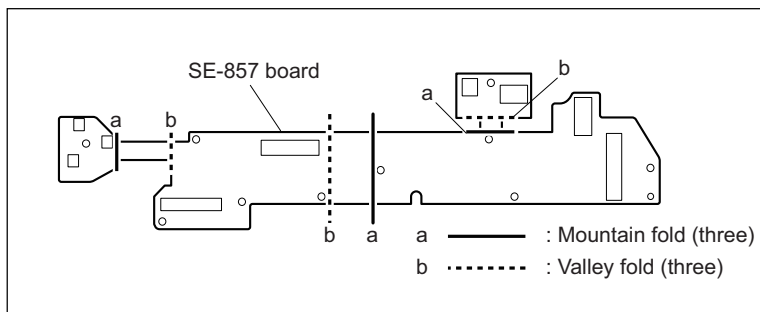
Removing Procedure

1. Disconnect the three flexible flat cables from the three connectors (CN3, CN600, CN1125).
2. Remove the ten screws to detach the SE-857 board and the shield plate.
3. Disconnect the fan motor harness from the connector (CN1).



Installing Procedure

4. When installing a new SE-857 board, fold it several times as shown in the figure to maintain the folded shape.



5. Connect the fan motor harness to the connector (CN1).
6. Install the SE-857 board and the shield plate with ten screws in the order of the numbers shown in the figure.
7. Connect the three flexible flat cables to the connectors (CN3, CN600, CN1125).

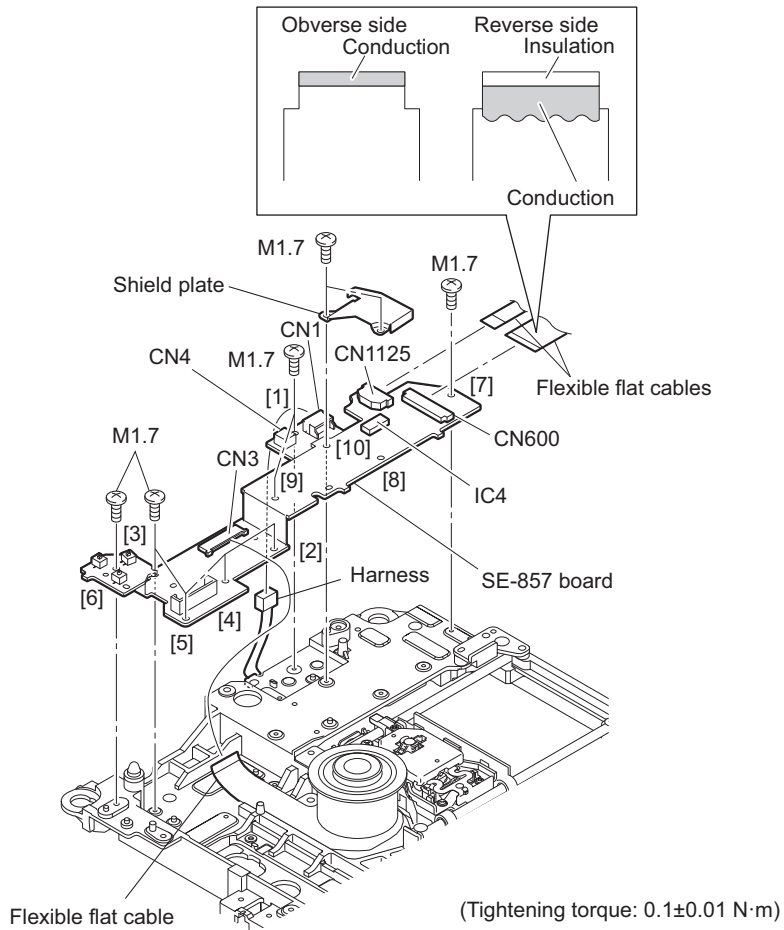
Note

The flexible flat cable connected to CN600 has a conductive area on both sides, and the tip on the reverse side is insulated. Insert the flexible card wire into the connector as far as it will go, and then lock it.

8. To replace the SE-857 board, remove IC4 from the old SE-857 board and mount it on a new SE-857 board.

Tip

IC4 retains data including adjustment data and hours meter data.



9. Install the removed parts by reversing the steps of removal.
10. Take service action after replacing or repairing the SE-857 board. (Refer to [“8-2. Procedures after Replacing the Optical Block Assembly and the Board”](#))

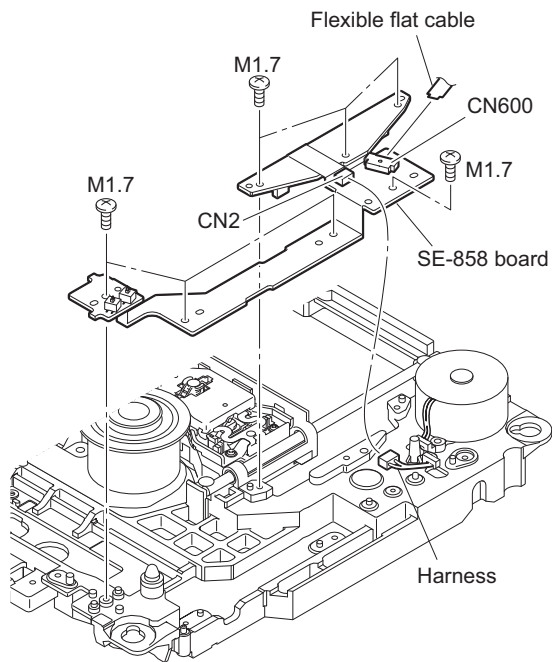
7-28-6. SE-858 Board

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the loader assembly. (Refer to “7-28-1. Loader Assembly”)

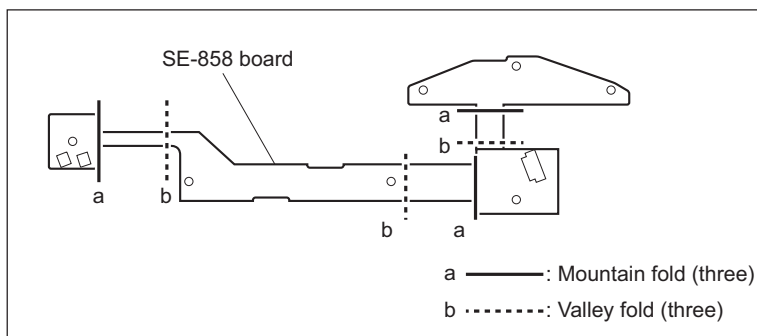
Removing Procedure

1. Disconnect the harness from the connector (CN2).
2. Disconnect the flexible flat cable from the connector (CN600).
3. Remove the seven screws to detach the SE-858 board.



Installing Procedure

4. When installing a new SE-858 board, fold it several times as shown in the figure to maintain the folded shape.

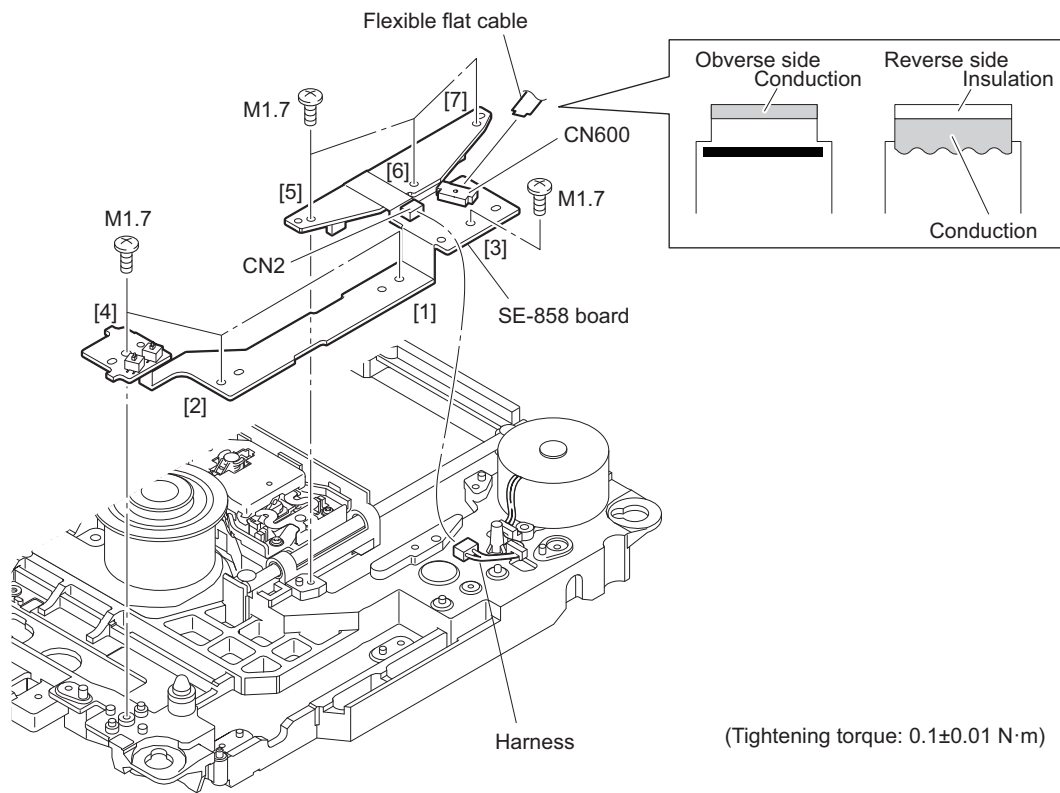


5. Install the SE-858 board with seven screws in the order of the numbers shown in the figure.
6. Connect the flexible flat cable to the connectors (CN600).

Note

The flexible flat cable connected to CN600 has a conductive area on both sides, and the tip on the reverse side is insulated. Insert the flexible card wire into the connector as far as it will go, and then lock it.

7. Connect the harness to the connector (CN2).



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

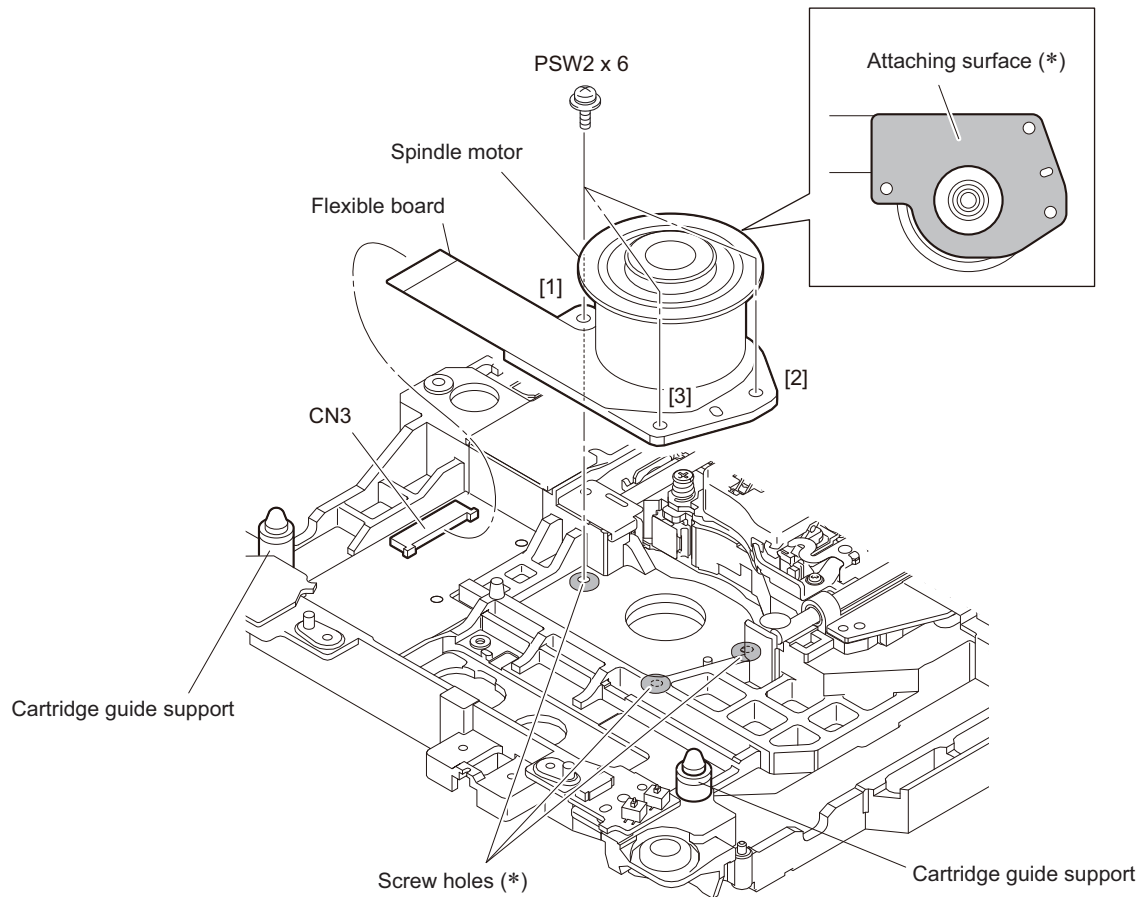
7-28-7. Spindle Motor

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the loader assembly. (Refer to (“7-28-1. Loader Assembly”))

Removing Procedure

1. Disconnect the flexible board from the connectors (CN3).
2. Remove the three screws to detach the spindle motor.



Cleaning

3. Clean the spindle motor, cartridge guide support. (Refer to “6-2. Cleaning”)

Installing Procedure

4. Clean the attaching surface (*) and the three screw holes (*) of a new spindle motor with a cleaning cloth with cleaning fluid soaked.
5. Install the spindle motor with three screws in the order of the numbers shown in the figure.
6. Connect the flexible board to the connector (CN3).
7. Perform the skew adjustment. (Refer to “8-4. Skew Adjustment”)
8. Install the loader assembly. (Refer to “7-28-1. Loader Assembly”)
9. Install the outside panel. (Refer to “7-2. Outside Panel”)

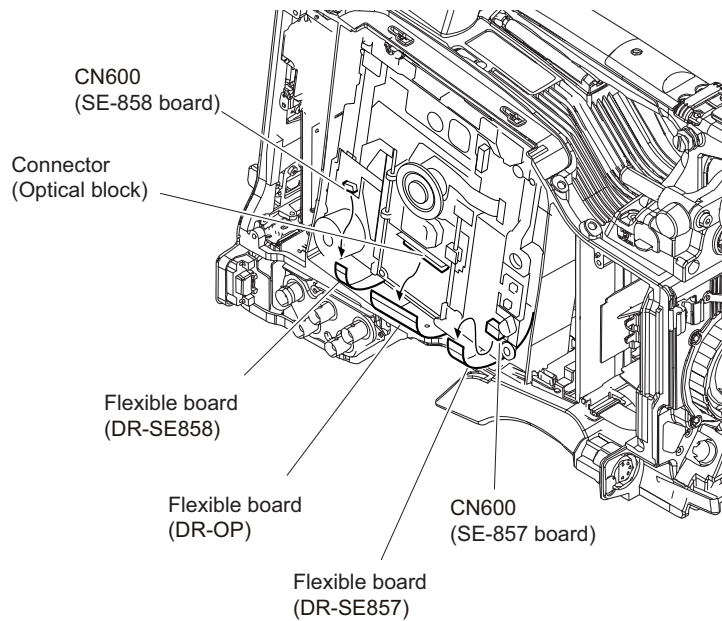
7-28-8. Drive Sub Assembly

Preparation

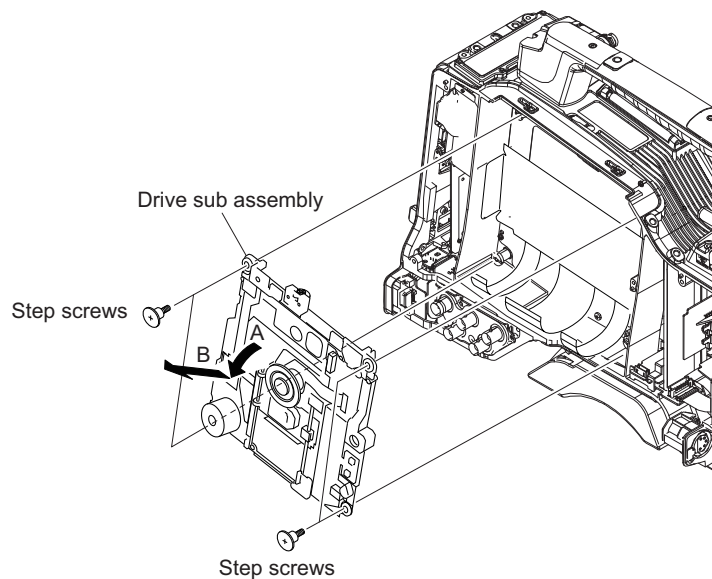
1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the loader assembly. (Refer to “7-28-1. Loader Assembly”)

Removing Procedure

1. Disconnect the flexible board (DR-SE857) from the connector (CN600) on the SE-857 board.
2. Disconnect the flexible board (DR-SE858) from the connector (CN600) on the SE-858 board.
3. Disconnect the flexible board (DR-OP) from the connector of the optical block assembly.

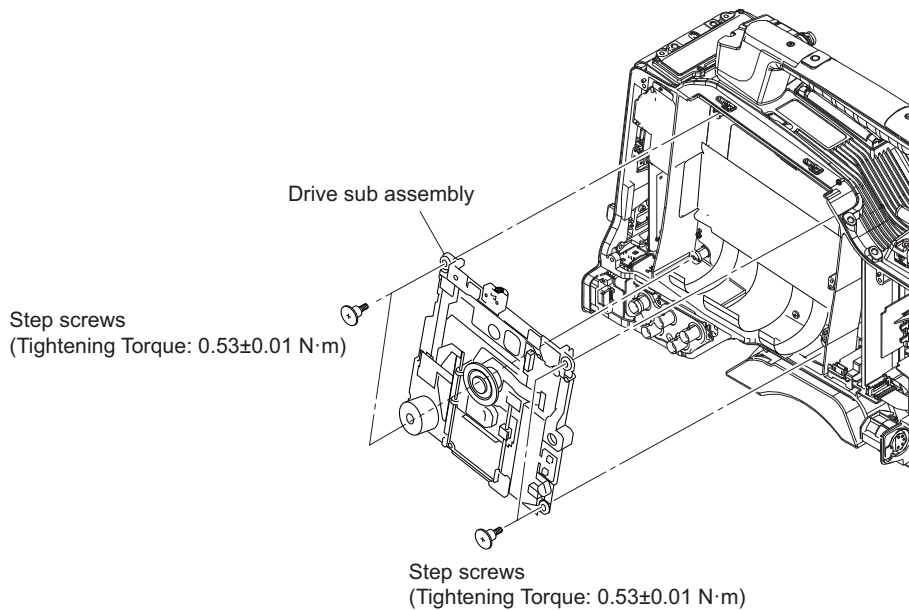


4. Remove the four step screws, and draw out the drive sub assembly in the direction of the arrow “A” and then of the arrow “B”.



Installing Procedure

- Reinstall the drive sub assembly with the four step screws.

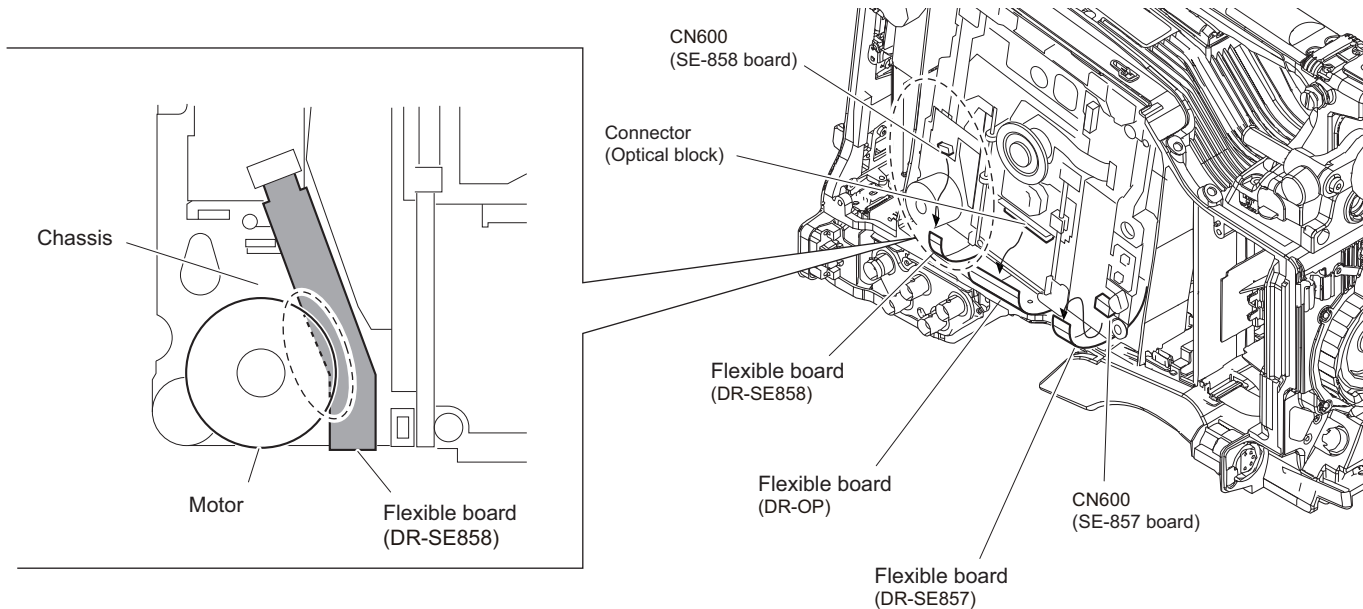


- Connect the flexible board (DR-OP) to the connector on the optical block assembly.
- Connect the flexible board (DR-SE858) to the connector (CN600) on the SE-858 board.

Note

Place the flexible board (DR-SE858) in the way that it is routed interspace between the motor and the chassis.

- Connect the flexible board (DR-SE857) to the connector (CN600) on the SE-857 board.



- Install the loader assembly. (Refer to [“7-28-1. Loader Assembly”](#))
- Install the outside panel. (Refer to [“7-2. Outside Panel”](#))

7-28-9. Optical Block Assembly

Note

The optical block assembly requires periodic replacement. Refer to “6-1. Periodic Check/Replacement Parts List” for details.

Tip

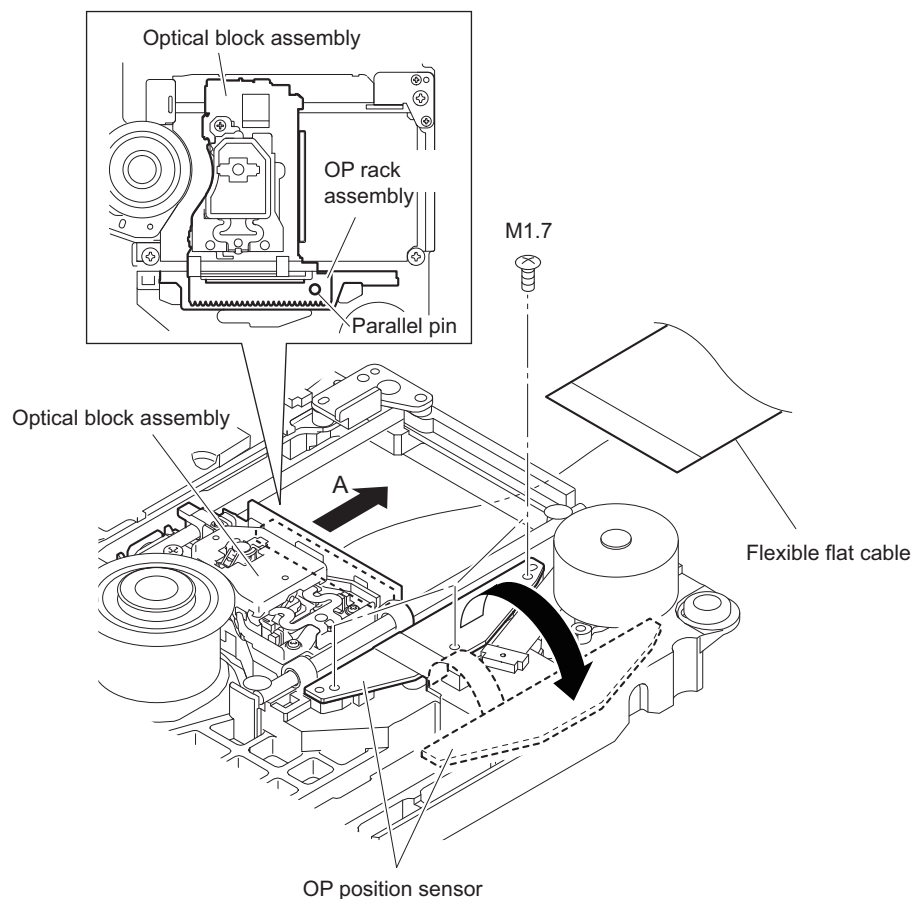
Cleaning liquid, Cleaning cloth, Parallel pin (2 x 20) : 1 are necessary as tools.

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the loader assembly. (Refer to “7-28-1. Loader Assembly”)
3. Remove the drive sub assembly. (Refer to “7-28-8. Drive Sub Assembly”)

Removing Procedure

1. Disconnect the flexible flat cable from the connector on the optical block assembly.
2. Remove the three screws from the OP position sensor on the SE-858 board.
3. Turn up the OP position sensor and press the die-casting part of the optical block assembly until entire OP rack assembly is visible in the direction of the allow A.
4. Insert the parallel pin into the hole of the OP rack assembly.

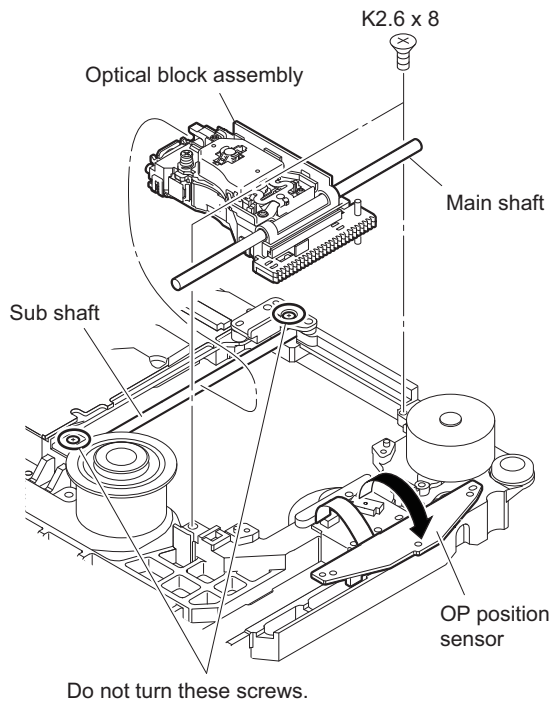


5. Remove the two screws from the main shaft.

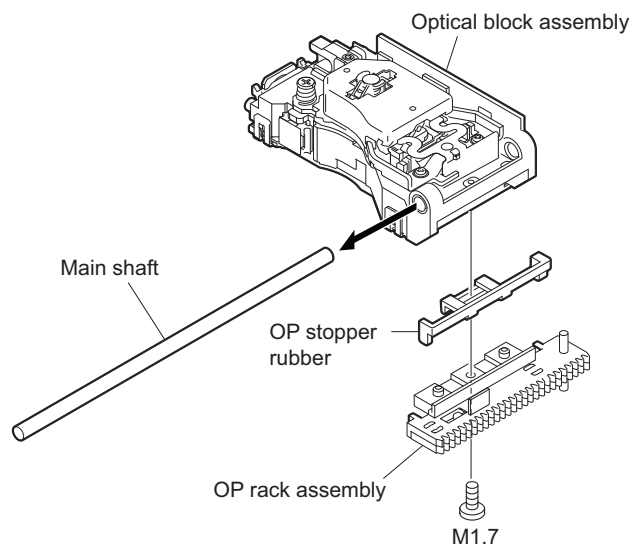
Note

Do not turn the two screws that secure the sub shaft.

6. Turn up the OP position sensor, and remove the optical block assembly and the main shaft.



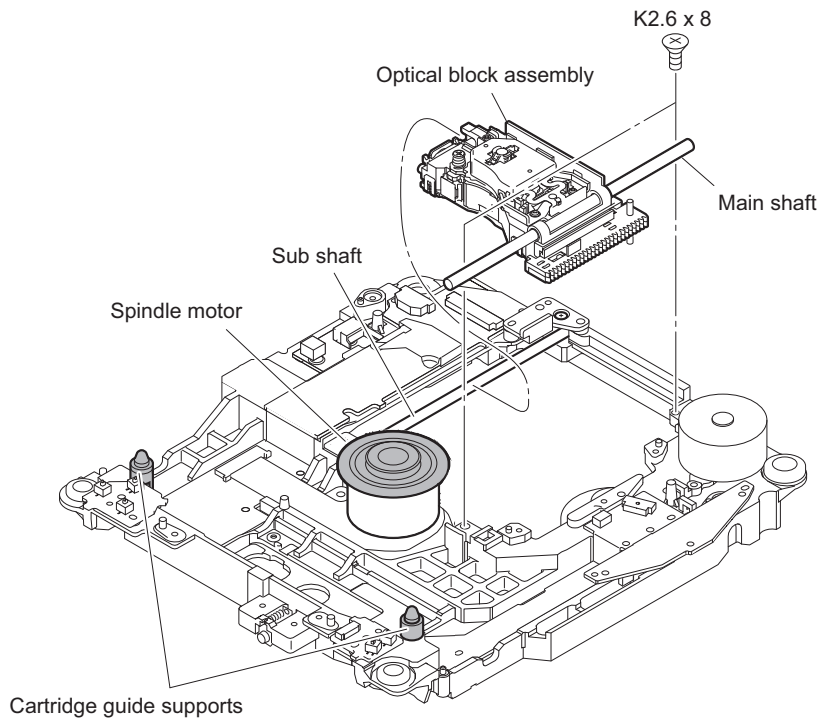
7. Remove the main shaft from optical block assembly.
8. Remove the screw to detach the OP rack assembly and the OP stopper rubber.



Cleaning

9. Clean the spindle motor, cartridge guide supports. (Refer to "6-2. Cleaning")

10. Clean the main shaft, sub shaft. (Refer to "Installing Procedure")



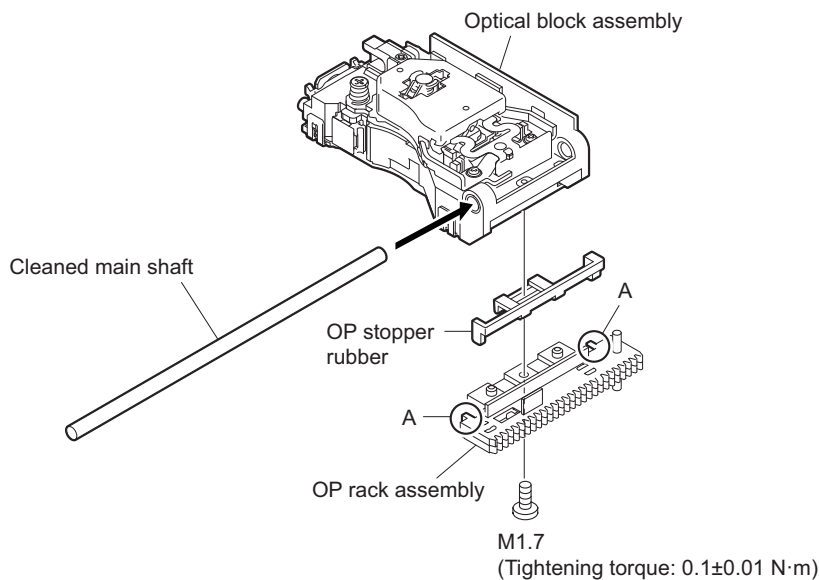
Installing Procedure

11. Install the OP stopper rubber and the OP rack assembly onto a new optical block assembly with a screw.

Note

- If the OP stopper rubber is deformed or deteriorated, replace it with a new one.
- Be careful so that the OP stopper rubber does not come out of the both ends (portion A) of the OP rack assembly.

12. Clean the main shaft using a cleaning cloth with cleaning fluid soaked.
13. Pass the main shaft through the new optical block assembly.



14. Clean the sub shaft using a cleaning cloth with cleaning fluid soaked.
15. Align the upper hole and lower holes of the OP rack assembly while pressing the both ends of the OP rack assembly, and insert the parallel pin into the holes.

16. Turn up the OP position sensor, insert the guide into the sub shaft, and install the optical block assembly and the main shaft.

Note

- Install these parts so that the gear of the OP rack assembly is properly engaged with the gear of the No.3 gear assembly.
- The laser part of the optical block assembly is precisely positioned. Do not hit the laser part against the sub shaft or the chassis when installing the optical block assembly.

17. Press the connector of the optical block assembly to move the optical block assembly to the spindle motor.

18. Install the main shaft with the two screws.

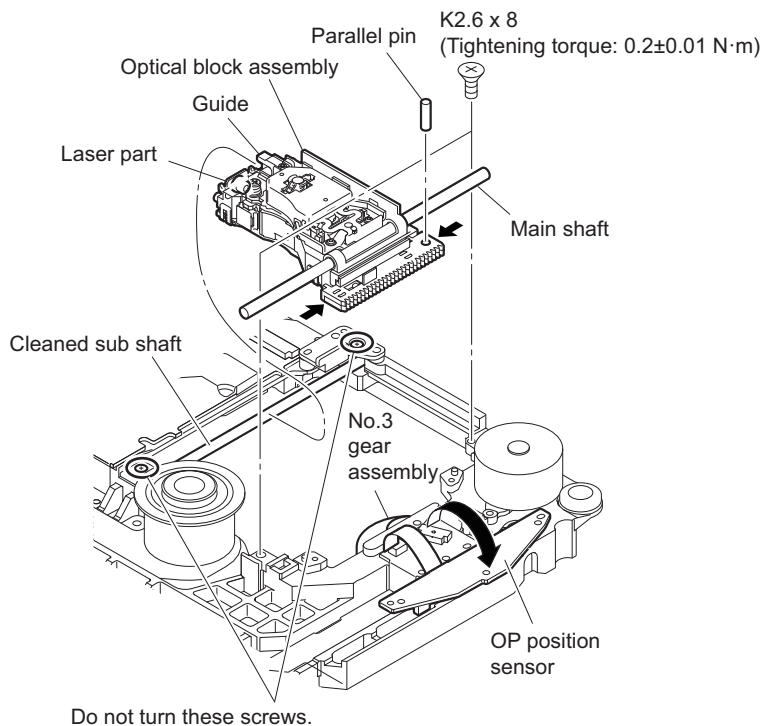
Note

Do not turn the two screws that secure the sub shaft.

19. Pull out the parallel pin.

20. Press the die-casting part or the connector of the optical block assembly, and check the following:

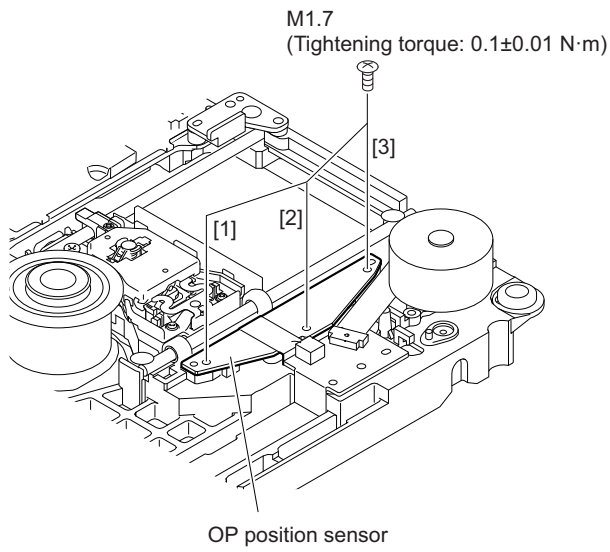
- The optical block assembly moves smoothly.
- The OP rack assembly and the No.3 gear assembly are not disengaged.



21. Install the OP position sensor with three screws in the order of the numbers in the figure.

22. Connect the flexible flat cable to the connector on the optical block assembly.

23. Perform the optical drive adjustment. (Refer to “[8. Adjustment of Optical Drive System](#)”)



24. Install the loader assembly. (Refer to “[7-28-1. Loader Assembly](#)”)
25. Install the outside panel. (Refer to “[7-2. Outside Panel](#)”)

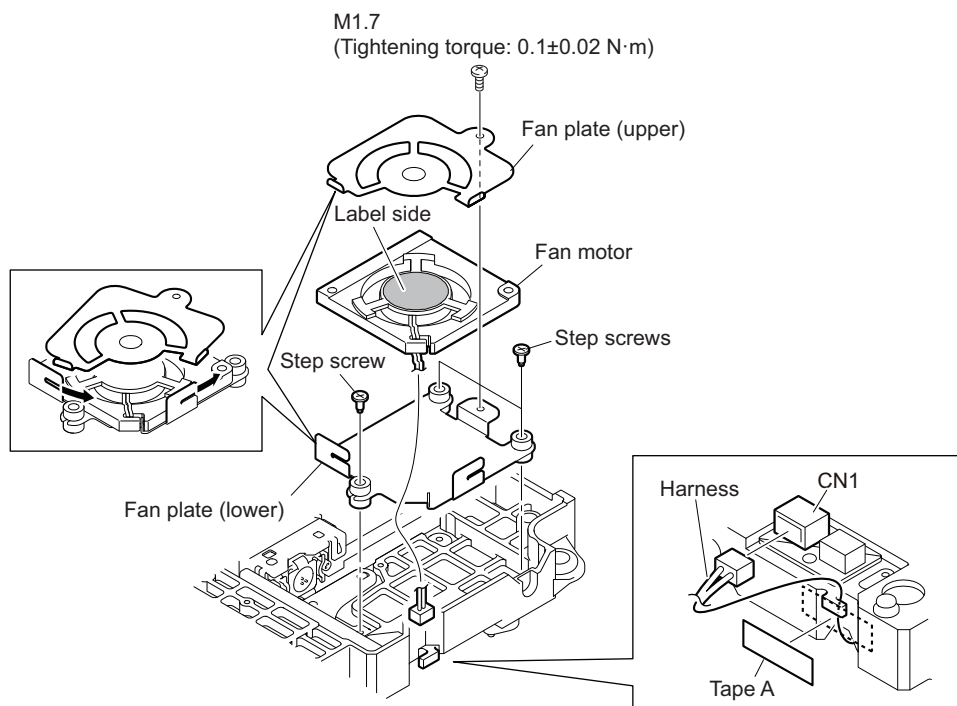
7-28-10. Fan Motor (Drive)

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the loader assembly. (Refer to “7-28-1. Loader Assembly”)
3. Remove the drive sub assembly. (Refer to “7-28-8. Drive Sub Assembly”)

Procedure

1. Remove the tape A and disconnect harness from the connector (CN1).
2. Remove the three step screws to detach the fan plate (lower).
3. Remove the screw to detach the fan plate (upper) while rotating it in the arrow direction.
4. Remove the fan motor.



Note

Pay attention to the following when installing the fan motor.

- Place a new fan motor with its label side up oriented as shown in the figure.
- Arrange the harness as shown in the figure.

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

7-28-11. No.2/No.3 Gear Assemblies

Tip

Parallel pin (2 x 20) : 2, Stopper washer : 2 are necessary as tools.

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the loader assembly. (Refer to “7-28-1. Loader Assembly”)
3. Remove the drive sub assembly. (Refer to “7-28-8. Drive Sub Assembly”)

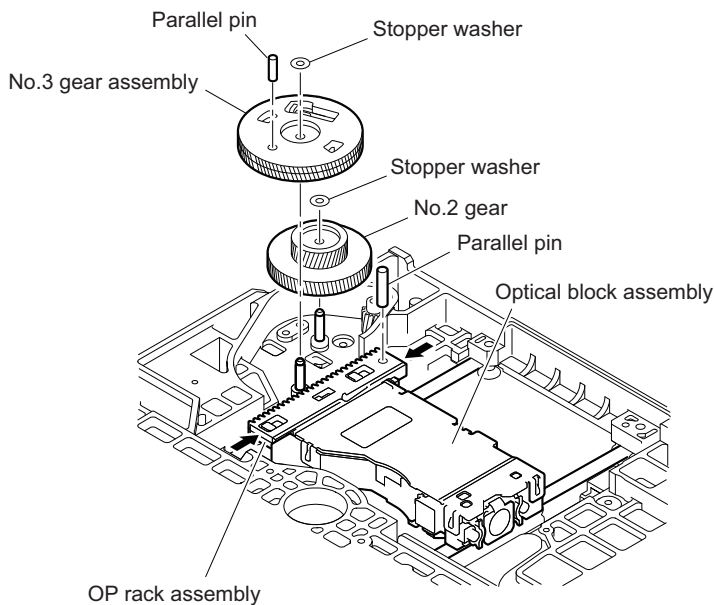
Removing Procedure

1. Reverse the drive sub assembly.

Note

Do not to put the drive sub assembly reversed on anywhere. If it is put, this may cause damage to the spindle motor or the optical block assembly.

2. Align the position of the upper and the lower holes of the No.3 gear, and insert the parallel pin.
3. Move the optical block assembly to the position shown in the figure while pressing the die-casting part of the optical block assembly.
4. Align the upper and lower holes of the OP rack assembly while pressing the both ends of the OP rack assembly, and insert the parallel pin into the holes.
5. Remove the stopper washer, and remove the No.3 gear assembly.
6. Remove the stopper washer, and remove the No.2 gear.



Installing Procedure

7. Install the No.2 gear onto the base plate shaft.
8. Align the upper and lower holes of the No.3 gear assembly while turning the No.3 gear assembly, and insert the parallel pin into the holes.
9. Install the No.3 gear assembly onto the shaft of base plate.

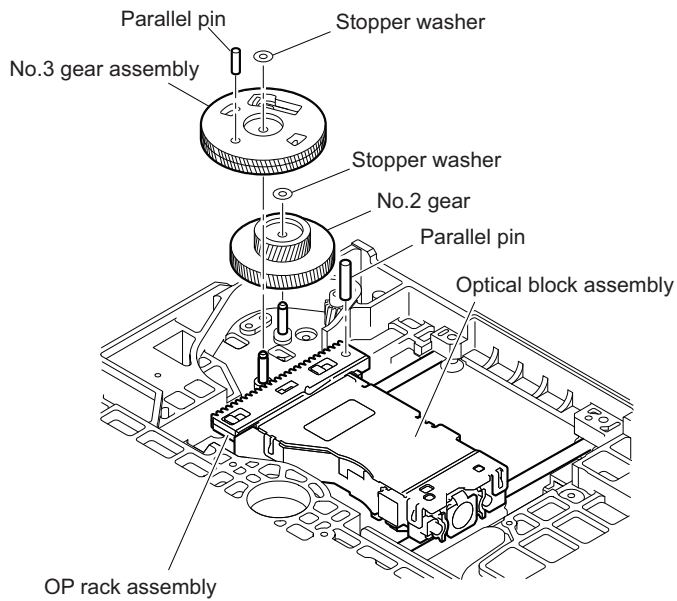
Note

Install the No.3 gear assembly so that the gear of the No.3 gear assembly is properly engaged with the gear of the OP rack assembly and with the No.2 gear.

10. Attach two new stopper washers to the two shafts of the base plate.
11. Pull out the two parallel pins.

12. Press the die-casting part or the connector of the optical block assembly, and check the following:

- The optical block assembly moves smoothly.
- The OP rack assembly and the No.3 gear assembly are not disengaged.



13. Install the drive sub assembly. (Refer to [“7-28-8. Drive Sub Assembly”](#))

14. Install the loader assembly. (Refer to [“7-28-1. Loader Assembly”](#))

15. Install the outside panel. (Refer to [“7-2. Outside Panel”](#))

7-28-12. Seek Motor Assembly

Note

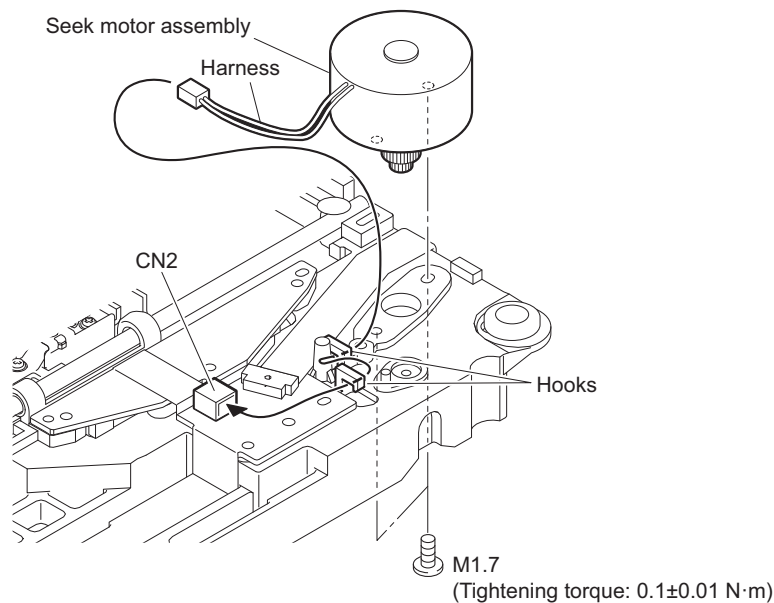
The seek motor assembly requires periodic replacement. Refer to [“6-1. Periodic Check/Replacement Parts List”](#) for details.

Preparation

1. Remove the outside panel. (Refer to [“7-2. Outside Panel”](#))
2. Remove the loader assembly. (Refer to [“7-28-1. Loader Assembly”](#))
3. Remove the drive sub assembly. (Refer to [“7-28-8. Drive Sub Assembly”](#))
4. Remove the No.2 gear and the No.3 gear assembly. (Refer to [“7-28-11. No.2/No.3 Gear Assemblies”](#))

Procedure

1. Disconnect the harness from the connector (CN2).
2. Remove the two screws to detach the seek motor assembly.



Note

When connecting the harness, clamp the harness to the two hooks.

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

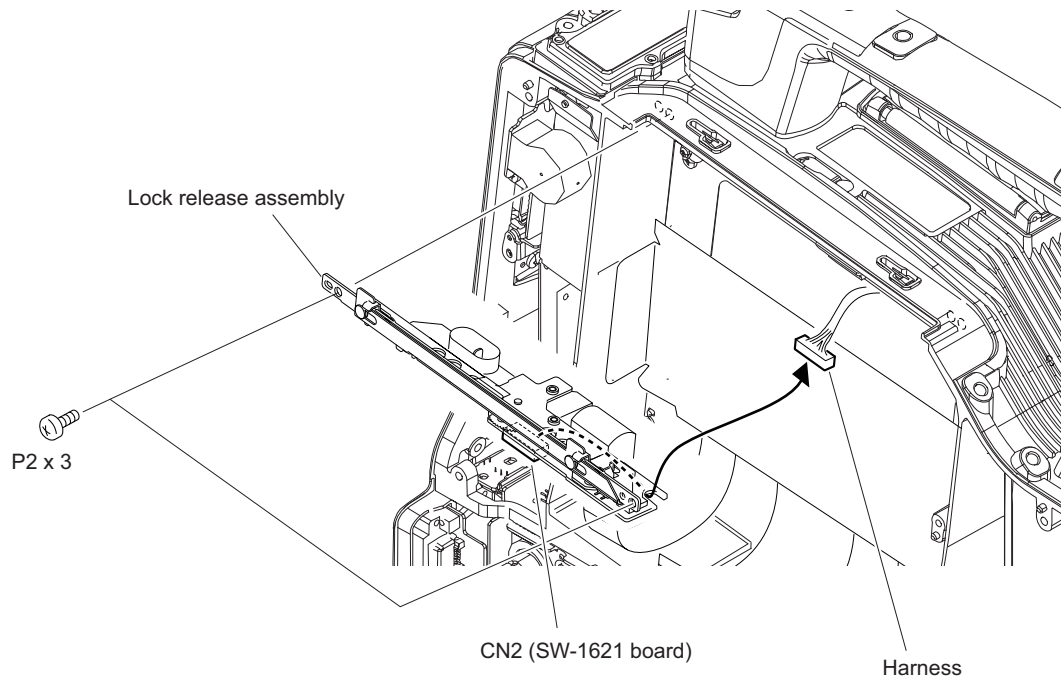
7-28-13. Lock Release Assembly

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the loader assembly. (Refer to “7-28-1. Loader Assembly”)
3. Remove the drive sub assembly. (Refer to “7-28-8. Drive Sub Assembly”)

Removing Procedure

1. Remove the two screws, and draw the lock release assembly.
2. Disconnect the harness from the connector (CN2) on the SW-1621 board.

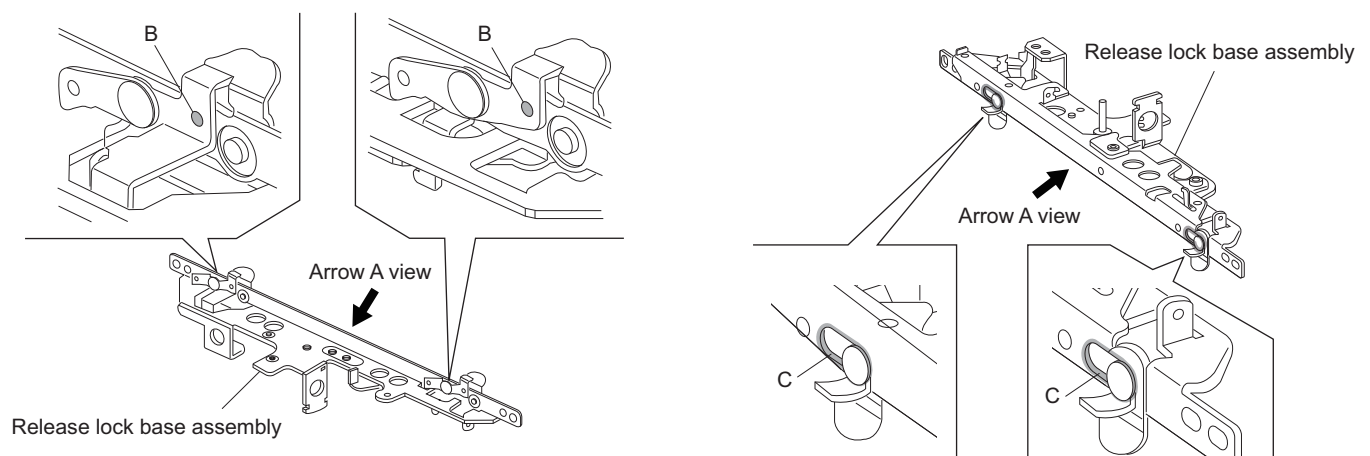


Installing Procedure

3. When replacing the release lock base assembly in the lock release assembly, apply approximately 0.0025 g (1/4 of one drop) of Sony BC oil to two locations B and two locations C.

Tip

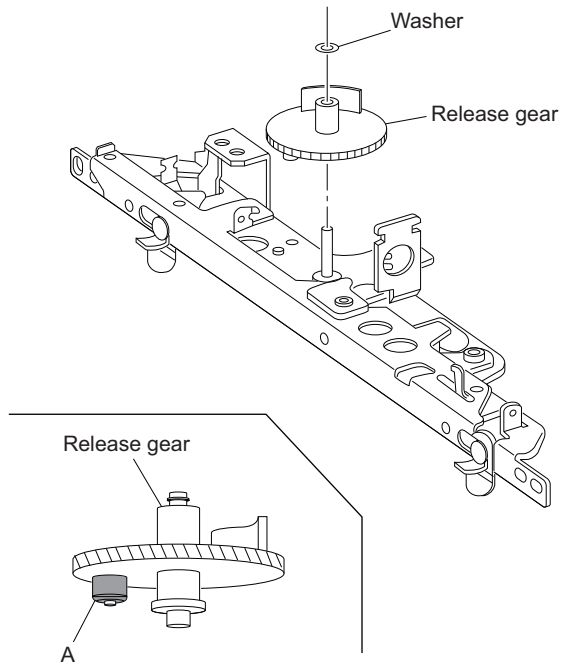
A volume of 0.0025 g is equivalent to the amount of adhering oil when the tip 3 mm of a 0.9 round bar is dipped in oil.



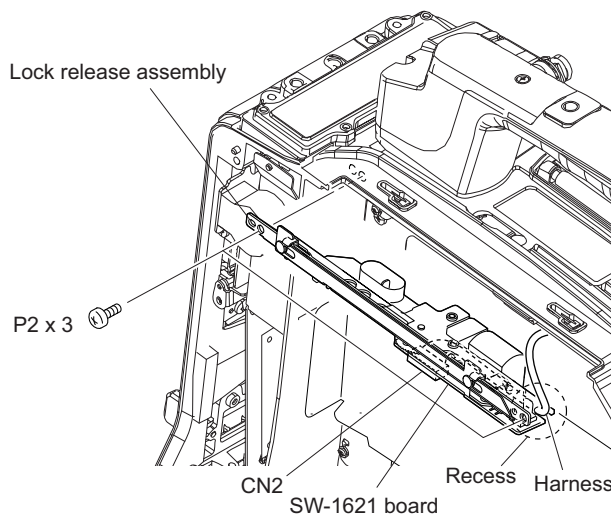
4. When replacing the release gear in the lock release assembly, apply approximately 0.0025 g (1/4 of one drop) of Sony BC oil to locations A.

Tip

A volume of 0.0025 g is equivalent to the amount of adhering oil when the tip 3 mm of a 0.9 round bar is dipped in oil.



5. Connect the harness to the connector (CN2) on the SW-1621 board.
6. Install the lock release assembly with the two screws while hooking the slacked portion of the harness into the recess of the SW-1621 board.



7. Install the drive sub assembly. (Refer to [“7-28-8. Drive Sub Assembly”](#))
8. Install the loader assembly. (Refer to [“7-28-1. Loader Assembly”](#))
9. Install the outside panel. (Refer to [“7-2. Outside Panel”](#))

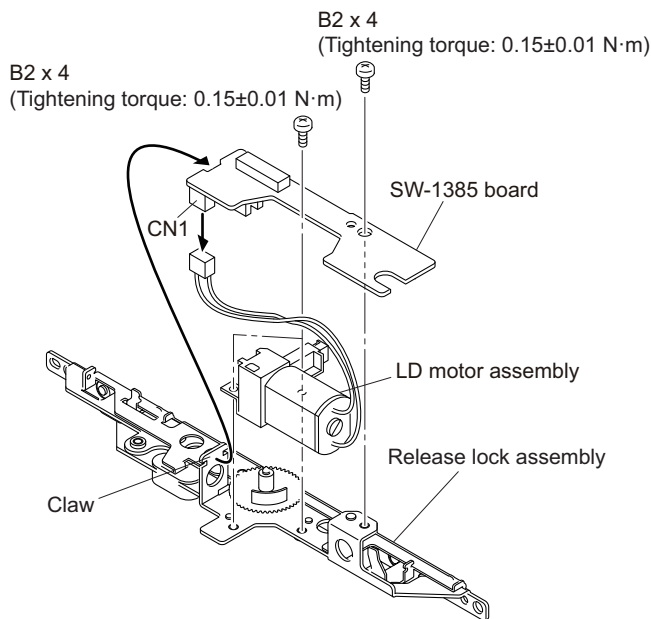
7-28-14. SW-1385 Board/LD Motor

Preparation

1. Remove the outside panel. (Refer to “7-2. Outside Panel”)
2. Remove the loader assembly. (Refer to “7-28-1. Loader Assembly”)
3. Remove the drive sub assembly. (Refer to “7-28-8. Drive Sub Assembly”)
4. Remove the lock release assembly . (Refer to “7-28-13. Lock Release Assembly”)

Removing Procedure

1. Disconnect the connector (CN1) on the SW-1385 board.
2. Remove the screw and disengage the SW-1385 board from the claws of the release lock assembly base.
3. Remove the two screws to detach the LD motor sub assembly.

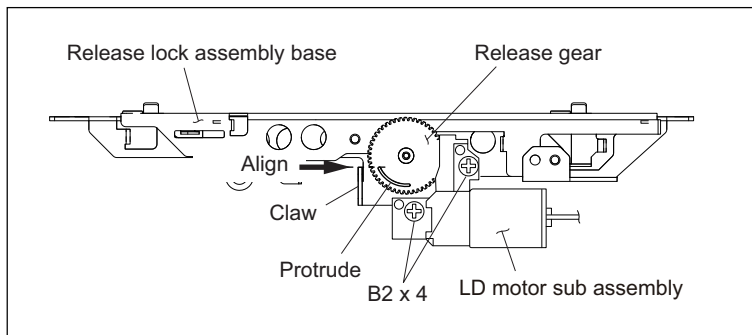


Installing Procedure

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

Note

Align the protruded portion of the release gear with the claw on the release lock assembly base to install the LD motor sub assembly.



Section 8

Adjustment of Optical Drive System

8-1. Optical Drive Alignment Overview

Precautions

- Be sure to perform each adjustment in order unless any instructions are provided.
- To prevent the possibility of damage to the optical block assembly in the drive assembly by static electricity charged in a human body or clothes, be sure to establish a ground before starting the service operation. (Refer to [“1-15. Cautions on Handling the Optical Block Assembly”](#).)
- The spindle motor and the actuator around the objective lens have a powerful magnet. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If a magnetic substance comes close to these parts, their characteristics may be changed.

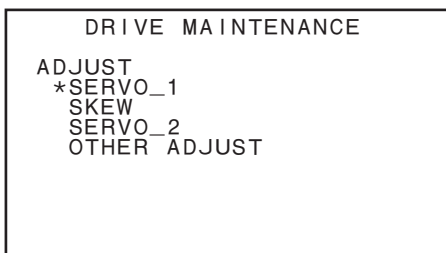
8-1-1. Preparations before Adjustment

Fixtures

- Alignment disc (PFD23A-RS)
- Torque driver (for 3 kg)
- Bit for torque driver (M2)
- Flat-blade screwdriver
- Locking compound
- Weight (50 to 100 g)

Procedure

1. Turn off the power.
2. Remove the outside panel. (Refer to [“7-2. Outside Panel”](#).)
3. Remove the loader assembly. (Refer to [“7-28-1. Loader Assembly”](#).)
4. Turn on the power.
5. Display the service menu. (Refer to [“4-9. SERVICE Menu”](#).)
6. Select “VDR MAINTENANCE” by turning the MENU knob, and press the MENU knob.
7. Select “DRIVE MAINTENANCE” by turning the MENU knob, and press the MENU knob.
8. Select “YES” by turning the MENU knob, and press the MENU knob.
9. Select “ADJUST” by turning the MENU knob, and press the MENU knob. The ADJUST screen appears.



8-2. Procedures after Replacing the Optical Block Assembly and the Board

8-2-1. Adjustment after Replacing the Optical Block Assembly

After replacing the optical block assembly, perform adjustment in the following order.

1. Servo1 Automatic Adjustment (Refer to [“8-3. Servo1 Automatic Adjustment”](#).)
2. Skew Adjustment (Refer to [“8-4. Skew Adjustment”](#).)
3. Servo2 Automatic Adjustment (Refer to [“8-5. Servo2 Automatic Adjustment”](#).)
4. Clearing Media Log (Refer to [“8-6. Clearing Media Log”](#).)

8-2-2. Adjustment after Replacing the DR-606 Board

After replacing the DR-606 board, or after replacing any parts in repair, perform the procedure in the following order.

1. Upgrade the firmware to the latest version. (Only when the board is replaced.)
Refer to [“1-8-2. Firmware Update Using the USB memory”](#) for details.
2. Perform adjustment in the following order.
 - 1) Servo1 Automatic Adjustment (Refer to [“8-3. Servo1 Automatic Adjustment”](#).)
 - 2) Radial Skew Adjustment (Refer to [“8-4-2. Radial Skew Adjustment”](#).)
 - 3) Servo2 Automatic Adjustment (Refer to [“8-5. Servo2 Automatic Adjustment”](#).)
 - 4) ACCELERATION OFFSET (Refer to [“4-10-20. ACCELERATION OFFSET”](#).)

8-2-3. Adjustment after Replacing the SE-857 Board

After replacing the SE-857 board, or after replacing any parts in repair, perform adjustment in the following order.

1. UPLOAD TO EEPROM (Refer to [“4-10-25. UPLOAD TO EEPROM”](#).)

Note

After replacing the SE-857 board, mount the EEPROM (IC4) from the old board to the new board.

If EEPROM (IC4) from the old board is not mounted to the new board, perform this menu only when IC4 is separately replaced.

2. ACCELERATION OFFSET (Refer to [“4-10-20. ACCELERATION OFFSET”](#).)

8-3. Servo1 Automatic Adjustment

Tip

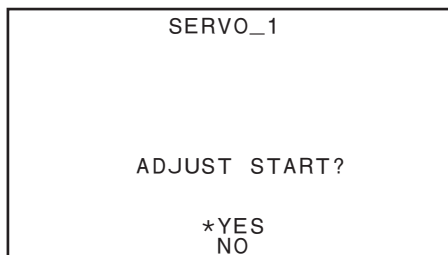
Make this adjustment with the loader assembly detached.

Fixtures

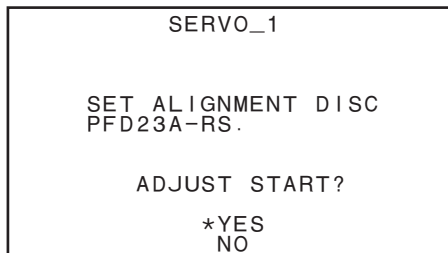
- Alignment disc (PFD23A-RS)
- Weight (50 to 100 g)

Procedure

1. Display the adjustment items referring to [“8-1-1. Preparations before Adjustment”](#).
2. Select “SERVO_1” by turning the MENU knob, and press the MENU knob.
A confirmation screen appears.
3. Select “YES” by turning the MENU knob, and press the MENU knob.



A confirmation screen appears.



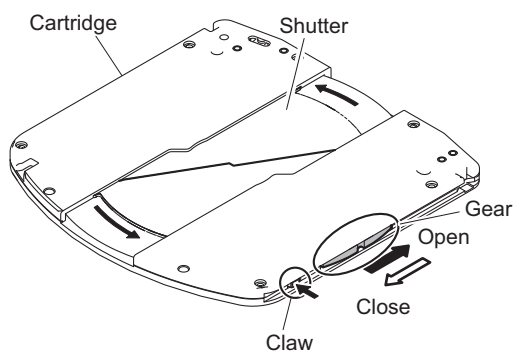
4. Select “YES” by turning the MENU knob.

5. Open the shutter of the cartridge of the alignment disc using the following procedure.
Be sure to close it after the adjustment.

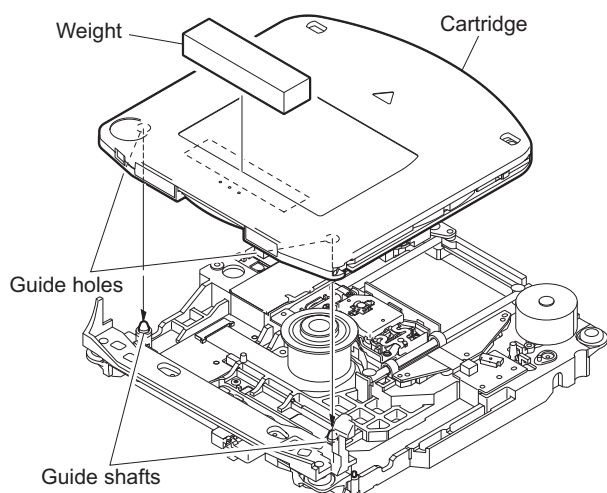
Note

Opening the shutter of the cartridge by hand is limited to the optical drive alignment.
Do not open it for any other purpose or touch the disc in the cartridge.

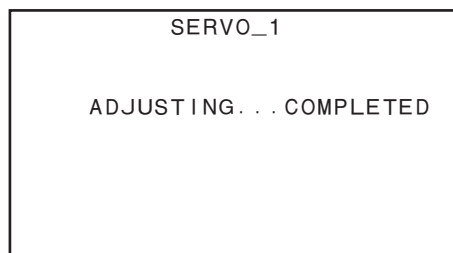
- How to Open
Open the shutter a little in the direction of the arrow while pressing the claw. Then move the gear by hand until the shutter is completely opened.
- How to Close
Move the gear in the direction of the arrow until the shutter is closed and the claw snaps.



6. Set the cartridge with its shutter opened so that its guide holes are aligned with the two guide shafts of the unit.
7. Put the weight on the cartridge.



8. Press the MENU knob.
The result appears.



8-4. Skew Adjustment

Tip

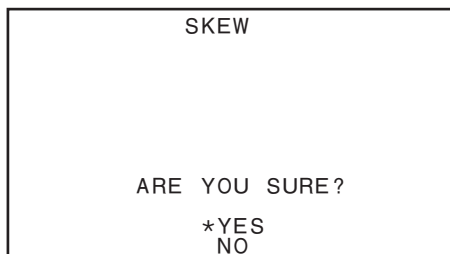
Make this adjustment with the loader assembly detached.

Tools

- Alignment disc (PFD23A-RS)
- Flat-blade screwdriver
- Locking compound
- Weight (50 to 100 g)
- Torque driver

Procedure

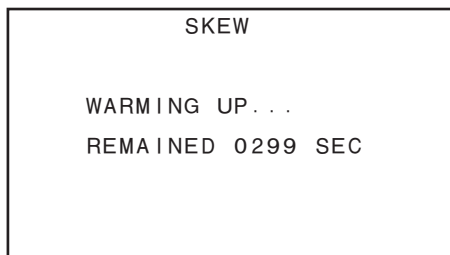
1. Display the adjustment item referring to [“8-1-1. Preparations before Adjustment”](#).
2. Select “SKEW” by turning the MENU knob, and press the MENU knob.
A confirmation screen appears.
3. Select “YES” by turning the MENU knob, and press the MENU knob.



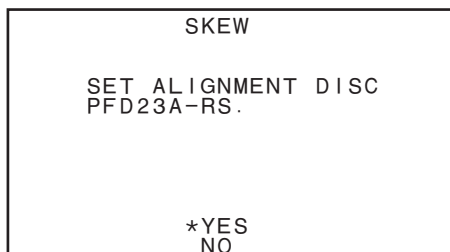
A warm-up screen appears.

Tip

If five minutes has already passed since power ON, this screen appears only for a moment.



4. A confirmation screen appears when “0000 SEC” is displayed.

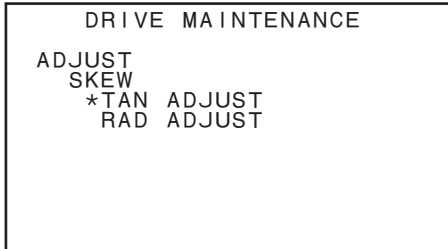


5. Set the alignment disc by referring to steps 5 to 7 in [“8-3. Servo1 Automatic Adjustment”](#) by turning the MENU knob, and press the MENU knob. The skew adjustment selection screen appears.
Select “TAN ADJUST” by turning the MENU knob, and press the MENU knob.

8-4-1. Tangential Skew Adjustment

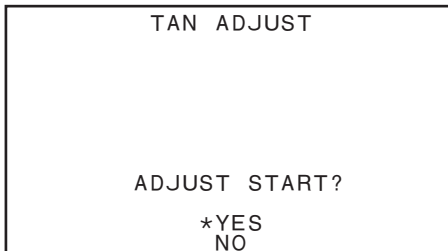
Procedure

1. Perform steps 1 to 5 in [“8-4. Skew Adjustment”](#).
2. Select “TAN ADJUST” by turning the MENU knob, and press the MENU knob.

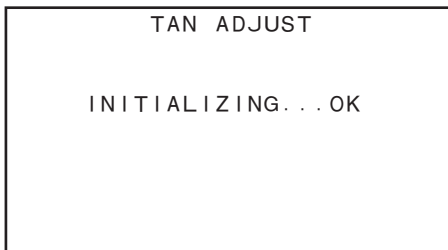


A confirmation screen appears.

3. Select “YES” by turning the MENU knob, and press the MENU knob.

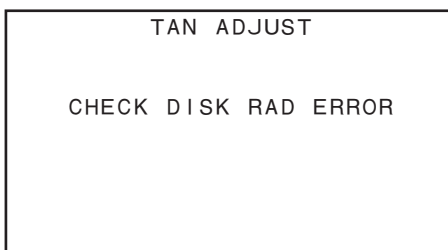


The result appears, and a confirmation screen appears.



In case of error:

4. The following screen appears.
The defect in the alignment disc is thought.



5. Select "YES" by turning the MENU knob, and press the MENU knob.
The result on the tangential OUT side appears.
6. If the adjustment failed in step 5, repeat steps (1) to (2) until satisfactory result is obtained.
 - 1) Turn the tangential OUT adjustment screw.

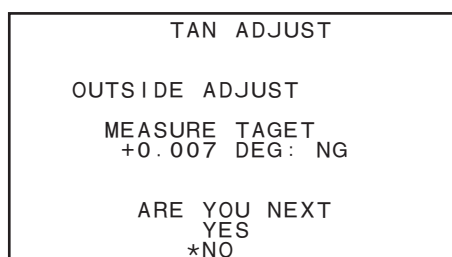
Note

The adjustment screw should be turned clockwise for this adjustment.
If they are turned too much, turn them back sufficiently, and turn them clockwise again.

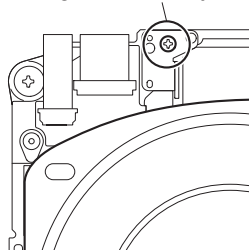
Tip

- If measured data is +, turn the adjustment screw clockwise.
- If measured data is -, turn the adjustment screw counterclockwise.

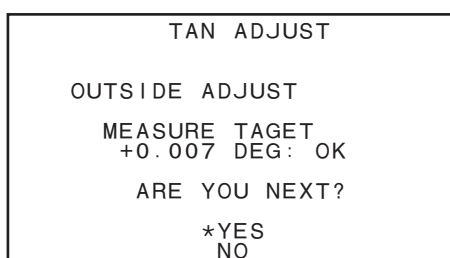
- 2) Press the [SET] button.
The result on the tangential OUT side appears.



Tangential OUT adjustment screw



7. When the result is satisfactory, select "YES" by turning the MENU knob, and press the MENU knob.
("YES" cannot be selected when the result is not satisfactory.)



8. The result on the tangential IN side appears.

9. If the adjustment failed in step 8, repeat steps (1) to (2) until satisfactory result is obtained.

- 1) Turn the tangential IN adjustment screw.

Note

The adjustment screw should be turned clockwise for this adjustment.

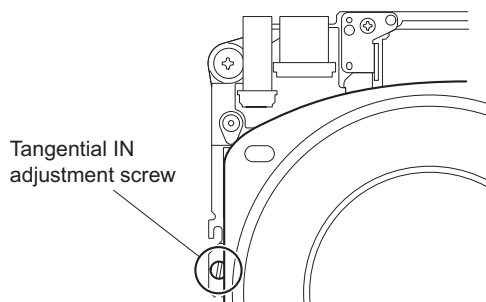
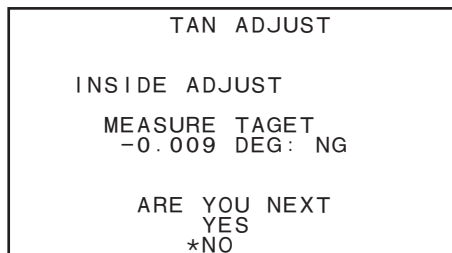
If they are turned too much, turn them back sufficiently, and turn them clockwise again.

Tip

- If measured data is +, turn the adjustment screw counterclockwise.
- If measured data is –, turn the adjustment screw clockwise.

- 2) Press the [SET] button.

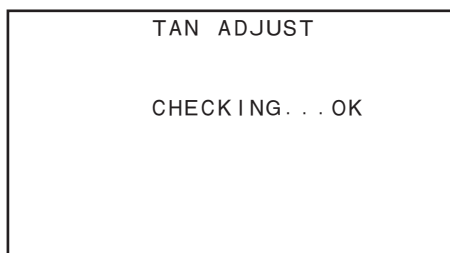
The result on the tangential IN side appears.



10. When the result is satisfactory, select “YES” by turning the MENU knob, and press the MENU knob.

11. The tangential skew adjustment result appears.

When “ERROR” appears, press the MENU knob to make adjustment from step 2.



8-4-2. Radial Skew Adjustment

Tip

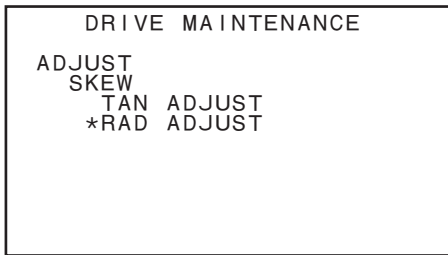
This adjustment is made automatically.

You need not adjust radial skew using the adjustment screw as shown in the previous adjustment item.

Procedure

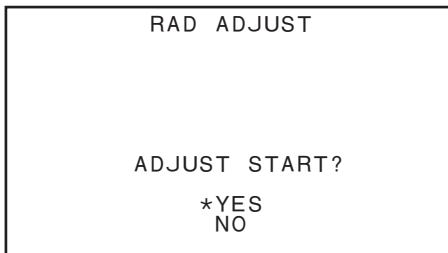
1. Perform steps 1 to 5 in [“8-4. Skew Adjustment”](#).

2. Select “RAD ADJUST” by turning the MENU knob, and press the MENU knob.

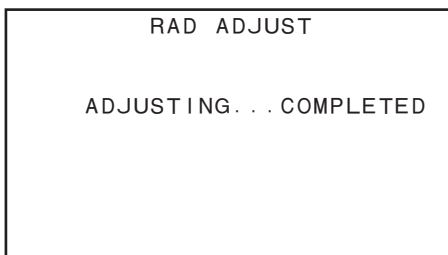


A confirmation screen appears.

3. Select “YES” by turning the MENU knob, and press the MENU knob.

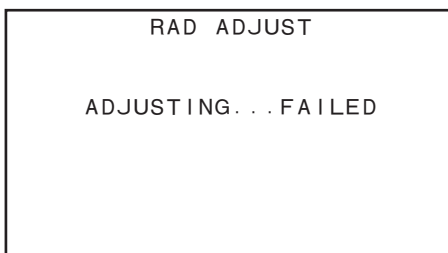


The result appears.



In case of error:

4. The following screen appears.
The defect in the optical block assembly is thought.



5. When “OK” appears, press the MENU switch.

Note

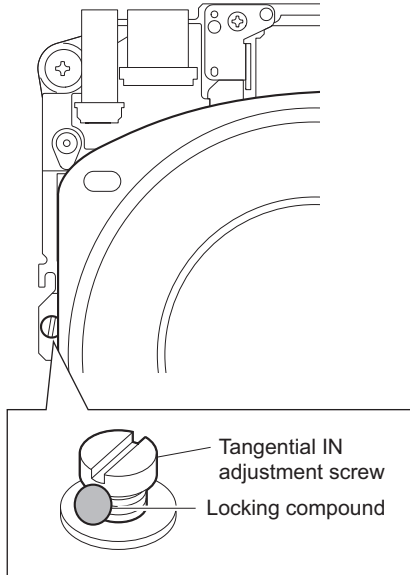
If failed, the optical block assembly may be defective.

6. Press the MENU switch again. The ADJUST screen appears.
7. Remove the cartridge and the weight.

8. Apply locking compound to the screw shown in the figure.

Note

Apply the locking compound to the screw as shown in the figure, being careful not to put it over the head of the screw.



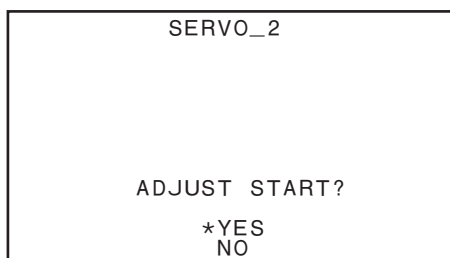
8-5. Servo2 Automatic Adjustment

Note

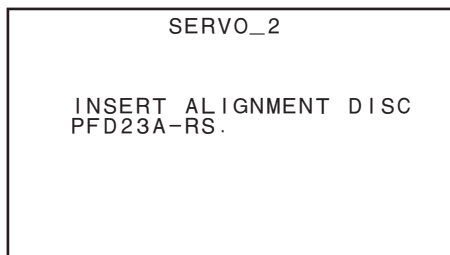
This adjustment is not available when the loader assembly is removed.
Be sure to install the loader assembly before making this adjustment.

Procedure

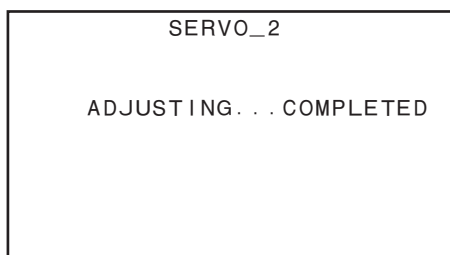
1. Clean the loader assembly. (Refer to “6-2-2. Cleaning Loader Assembly”.)
2. Install the loader assembly. (Refer to “7-28-1. Loader Assembly”.)
3. Display the adjustment item referring to “8-1-1. Preparations before Adjustment”.
4. Select “SERVO_2” by turning the MENU knob, and press the MENU knob.
A confirmation screen appears.
5. Select “YES” by turning the MENU knob, and press the MENU knob.



A confirmation screen appears.



6. Set the alignment disc.
The result appears.



7. Press the MENU switch.
The alignment disc is ejected.

8-6. Clearing Media Log

Note

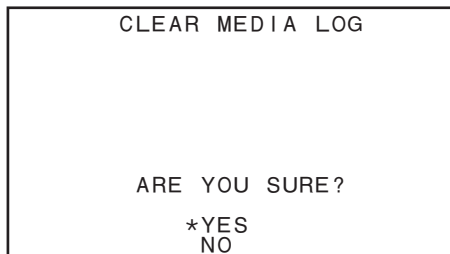
This menu is used to clear acquired media log.
Once this menu is executed, the cleared log data can no longer be restored.

Tip

The adjustment value is stored for each media.
If the optical drive is replaced, the adjustment value differs from the one that is stored, so the media log needs to be cleared.

Procedure

1. Select "OTHERS ADJUST" by turning the MENU knob, and press the MENU knob.
2. Select "CLEAR MEDIA LOG" by turning the MENU knob, and press the MENU knob.
A confirmation screen appears.
3. Select "YES" by turning the MENU knob, press the MENU knob.



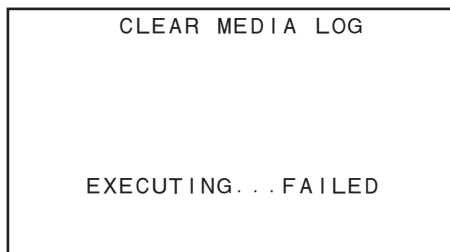
The result appears.



4. Perform the procedure after adjustment. (Refer to ["8-7. After Adjustment"](#))

In case of error:

5. The following screen appears.
The defect in the EEPROM (IC4/SE-857 board) is thought.



8-7. After Adjustment

Procedure

1. Turn off the power.
2. Reinstalled the outside panel. (Refer to [“7-2. Outside Panel”](#).)

Section 9

Electrical Adjustment

9-1. Preparation

9-1-1. Fixtures and Equipment

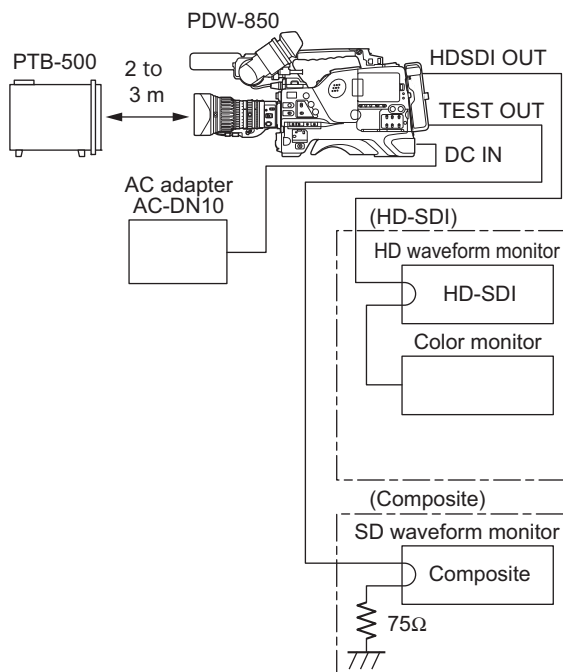
Fixtures

Name	Part No.
Pattern box PTB-500	J-6029-140-B
Grayscale chart	Commercially available on the market Reflective type (16:9)
White window chart	

Equipment

Name	Model name
Oscilloscope	Tektronix TDS3054 or equivalent (150 MHz or more)
HD waveform monitor	LEADER ELECTRONICS CORP.LV5152DA or equivalent
SD waveform monitor	Tektronix 1755A or equivalent
Frequency counter	Advantest TR5821AK or equivalent
Color monitor	Sony HDM-20E1U/14E1U/14E5U or equivalent
Signal generator	Tektronix SG-5010/TG-2000 or equivalent
AC adapter	Sony AC-DN10
Luminance meter	Konica Minolta LS-110 or equivalent
Lux meter	Konica Minolta T-10 or equivalent

9-1-2. Connection



9-1-3. Switch Setting before Adjustment

Before performing adjustment, set switches and menu as follows.

Inside panel

- GAIN switch → L (0 dB)
- OUTPUT/DCC switch → CAM/OFF
- WHITE BAL switch → PRST

Front panel

- SHUTTER switch → OFF
- Filter knob → 1

Lens

- LENS → MANU
- IRIS → C (CLOSE)

Menu

- MENU: OPERATION
PAGE: GAIN SW
ITEM: GAIN LOW → 0 dB
ITEM: GAIN MID → 6 dB
ITEM: GAIN HIGH → 12 dB
- MENU: OPERATION
PAGE: OUTPUT 1
ITEM: SDI OUT 1 SELECT → HDSOI
- MENU: PAINT
PAGE: SW STATUS
ITEM: GAMMA → ON
ITEM: KNEE → ON
ITEM: WHITE CLIP → ON
ITEM: DETAIL → ON

9-1-4. Notes on Adjustment

- Some adjustments of the Electrical Alignment require menu to be used.
Put the unit into the SERVICE mode to display the SERVICE menu. (Refer to “4-9. SERVICE Menu”)
- Be sure to turn off the power before extending the plugin board using the extension board.
- Before starting adjustment, set the main POWER switch of Camcorder to ON, then be sure to allow for about 10minute warm-up time.

9-1-5. Maintenance of Grayscale Chart

We recommend that you use a reflective grayscale chart (reflectance: 89.9 %) for adjustment. If no reflective grayscale chart is available, use a well-maintained pattern box and perform adjustment using a transparent grayscale chart. Before starting adjustment, correctly set the illuminance (or brightness) on the chart surface using the following procedure. Furthermore, adjust the illumination to accurately set the color temperature to 3200 K.

Reflective Grayscale Chart (16 : 9)

Obtaining chart

Reflective grayscale chart (16 : 9) is commercially available.

Product Name	Supplier
Reflective grayscale chart	Murakami Color Research Laboratory

Notes on handling the grayscale chart

- Do not directly touch the chart surface with a bare hand.
- Do not contaminate or rub the chart surface.
- Avoid using the chart for a long time in direct sunlight.
- Do not leave or store the chart in a humid place or a place subject to hazardous gas.
- Do not put any object on the case.
- If the chart is not used for a long period and is stored, open the wooden case once or twice a month to dry it for 30 minutes to one hour.

Guideline for replacement when the grayscale chart is used as reference chart

Reflective grayscale chart is likely to degrade with age. We recommend that you replace the chart every two years. However, the replacement period may vary depending on the chart storage status.

Setting Illuminance (when using a reflective chart)

Measuring equipment

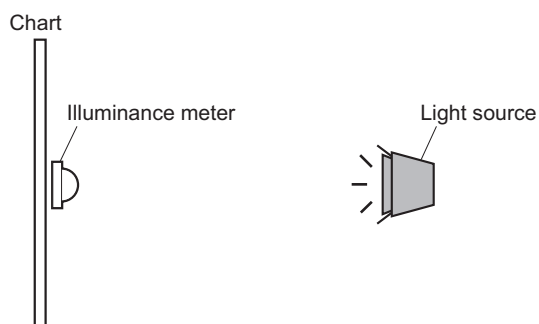
Illuminance meter (must have been calibrated)

Procedure

1. Turn on the light source for the chart and warm up the light source for about 30 minutes.
2. Put an illuminance meter fixed to the chart surface and adjust the position and angle of the light source so that the illuminance over the chart surface becomes 2000 lx evenly.

Note

Irradiate light in the same direction and at the same height as the chart capturing camera as much as possible.



Setting Brightness (when using a transparent chart)

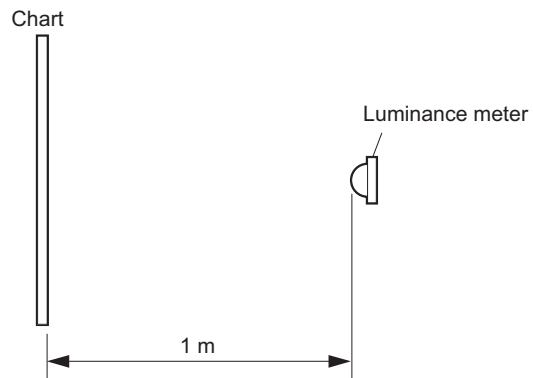
Measuring equipment

Luminance meter (must have been calibrated)

Procedure

1. Turn on the pattern box and warm it up for about 30 minutes.
2. Place the pattern box in a place where no light comes to the chart surface (e.g. darkroom).
(Or cover the pattern box with a sheet whose inside is coated black.)

3. Place a luminance meter at a position one meter away from the pattern box.



4. Adjust the brightness knob of the pattern box to adjust the brightness at the center white part of the chart to 573 ± 6 cd/m^2 .

Tip

This is equal to the brightness on the reflective chart surface with an illuminance of 2000 lx and a reflectance of 89.9 %.

9-2. Adjustment

9-2-1. Confirming VCO CONT Frequency

Note

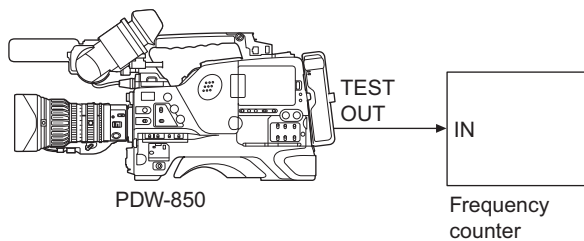
- Perform this check only when the DCP board is replaced.
- Before measurement, set main POWER switch of Camcorder to ON, and be sure to allow for about 10 minute warm up time.
- Images may deteriorate during adjustment.

Fixtures and Equipment

- Frequency counter

Preparation

- Connect as follows.



- On the menu, set as follows.
MENU: SERVICE
PAGE: VCO ADJUST

Adjustment Procedure

Adjust the following three types of VCO:

- HDCK (N)
 - HDCK (P)
 - SDCK
1. HDCK (N) adjustment
 - 1) Set CLK OUT SEL to HDCK (N).

The signal of the following specification is output from the TEST OUT connector.

 - Specification: $37,087,912 \pm 70$ Hz
 - 2) When the signal is outside the specification, change the setting value of HDCK (NTSC AREA) so that the signal meets within the specification.
 - 3) When the specification is met, press the MENU knob, and fix the value.
 2. HDCK (P) adjustment
 - 1) Set CLK OUT SEL to HDCK (P).

The signal of the following specification is output from the TEST OUT connector.

 - Specification: $37,125,000 \pm 70$ Hz
 - 2) When the signal is outside the specification, change the setting value of HDCK (PAL AREA) so that the signal meets within the specification.
 - 3) When the specification is met, press the MENU knob, and fix the value.

3. SDCK adjustment
 - 1) Set CLK OUT SEL to SDCK.

The signal of the following specification is output from the TEST OUT connector.

 - Specification: 27,000,000 $\pm$ 50 Hz
 - 2) When the signal is outside the specification, change the setting value of SDCK so that the signal meets within the specification.
 - 3) When the specification is met, press the MENU knob, and fix the value.
4. After adjusting 1 through 3, set CLK OUT SEL to OFF.

9-2-2. BLACK SET Adjustment

Preparation:

- Put the unit into the SERVICE mode. (Refer to [“4-1-2. How to Display the SERVICE Menu”](#).)
- WHITE BAL switch (inside panel) → PRST
- OUTPUT/DCC switch (inside panel) → CAM/ON
- MENU → VF DISP display

Adjustment Procedure:

1. Hold this switch in BLK state until the message “BLACK SET” on the viewfinder is displayed twice.

AUTO W/B BAL switch (front panel) → BLK
2. A few seconds later after releasing the switch, check that the message “ABB OK” is displayed on the viewfinder.

9-2-3. VA Gain Adjustment

Note

- Use an 89.9 %-reflective chart in this adjustment as possible. For details, refer to [“9-1-5. Maintenance of Grayscale Chart”](#).
- If the “16:9” chart is not available, shoot a “4:3” chart so that the chart width is aligned with the underscanned monitor frame.

Fixtures and Equipment:

- Oscilloscope, SD waveform monitor
- Grayscale chart (16:9)

Preparation:

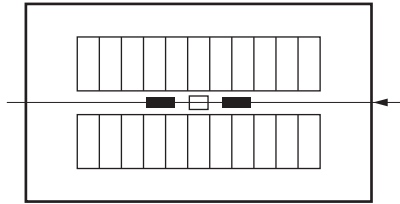
- Connect an SD waveform monitor to the TEST OUT connector.
- OUTPUT/DCC switch (inside panel) → CAM/ON
- WHITE BAL switch (inside panel) → PRST
- Shoot a grayscale chart (16:9) in the full underscanned monitor frame.

Adjustment Procedure:

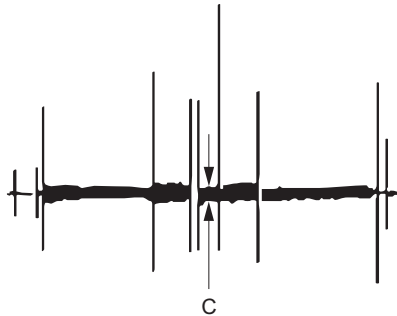
1. Perform the automatic black balance adjustment.

AUTO W/B BAL switch (front panel) → BLK

2. On the menu, set as follows.
 - MENU: MAINTENANCE
PAGE: PRESET WHITE
ITEM: COLOR TEMP <P> : 3200
ITEM: C TEMP BAL <P> : 0
 - MENU: PAINT
PAGE: SW STATUS
ITEM: GAMMA → OFF
ITEM: DETAIL → OFF
3. Select the center portion by using the waveform monitor.



4. Set the waveform monitor to the CHROMA mode.
5. On the menu, adjust as follows.
 - MENU: SERVICE
PAGE: CCD ADJUST 1
ITEM: R CCD GAIN
ITEM: B CCD GAIN
 - Equipment: Waveform monitor
 - Test point: TEST OUT connector
 - Spec.: Minimize carrier leakage C by using the variable resistors alternately.



Setting after Adjustment:

- On the menu, set as follows.
MENU: PAINT
PAGE: SW STATUS
ITEM: GAMMA → ON
ITEM: DETAIL → ON

9-2-4. Black Shading Adjustment

Fixtures and Equipment:

- HD waveform monitor

Preparation:

- Connect an HD waveform monitor to the TEST OUT connector.
- Lens IRIS → CLOSE
- Waveform monitor setting
LUM mode
VOLT FULL SCALE range → 0.5

Adjustment Procedure:

Perform either step 1 or step 2 for the black shading adjustment.

1. Auto black shading adjustment
 - 1) On the menu, set as follows.
 - MENU: SERVICE
PAGE: SHADING
ITEM: AUTO BLK SHADING → EXEC
 - 2) Push the MENU knob.
 - 3) When adjustment ends successfully, the message “COMPLETE” appears.

Tip

The auto adjustment takes about 30 seconds.

2. Manual black shading adjustment

When performing fine adjustment after executing the black shading auto adjustment, or when performing manual adjustment without executing the auto adjustment, proceed as follows.

1) On the menu, set as follows.

- MENU: SERVICE
PAGE: BLACK SHADING
ITEM: BLK SHAD CH SEL → G
ITEM: TEST OUT SELECT → G

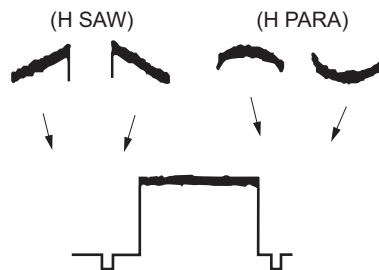
Note

The HD signal is output when TEST OUT SELECT is set to a signal other than VBS.

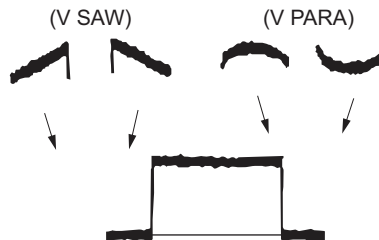
2) On the menu, perform the G-channel adjustment as follows.

- MENU: SERVICE
PAGE: BLACK SHADING
ITEM: G BLK H SAW
ITEM: G BLK V SAW
ITEM: G BLK H PARA
ITEM: G BLK V PARA
- Spec.: Make the waveform of the G-channel flat.

H: LINE



V: FIELD



3) On the menu, set as follows.

- MENU: SERVICE
PAGE: BLACK SHADING
ITEM: BLK SHAD CH SEL → R
ITEM: TEST OUT SELECT → R

4) Adjust the shading for the R-channel in the same procedure as the G-channel adjustment.

5) On the menu, set as follows.

- MENU: SERVICE
PAGE: BLACK SHADING
ITEM: BLK SHAD CH SEL → B
ITEM: TEST OUT SELECT → B

6) Adjust the shading for the B-channel in the same procedure as the G-channel adjustment.

Setting after Adjustment:

- On the menu, set as follows.
MENU: SERVICE
PAGE: BLACK SHADING
ITEM: TEST OUT SELECT → VBS

9-2-5. White Shading Adjustment

Note

This adjustment could not be correctly performed if the uneven white pattern is used, luminance is not correct, or lens iris and lens zoom are not in good conditions.

Fixtures and Equipment:

- HD waveform monitor
- Full white pattern (White window chart)

Preparation:

- Connect an HD waveform monitor to the TEST OUT connector.
- Lens IRIS → AUTO
- Waveform monitor setting
LUM mode
VOLT FULL SCALE range → 0.5
- Shoot a fully occupied full white pattern in the underscanned monitor frame.

Adjustment Procedure:

Perform either step 1 or step 2 for the white shading adjustment.

1. Auto white shading adjustment
 - 1) On the menu, set as follows.
 - MENU: SERVICE
PAGE: SHADING
ITEM: AUTO WHT SHADING → EXEC
 - 2) Push the MENU knob.
 - 3) When adjustment ends successfully, the message “COMPLETE” appears.

Tip

The auto adjustment takes about 30 seconds.

2. Manual white shading adjustment

When performing fine adjustment after executing the black shading auto adjustment, or when performing manual adjustment without executing the auto adjustment, proceed as follows.

1) On the menu, set as follows.

- MENU: SERVICE
PAGE: WHITE SHADING
ITEM: WHT SHAD CH SEL → G
ITEM: TEST OUT SELECT → G

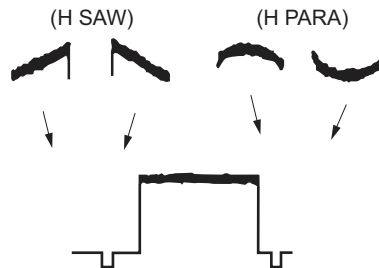
Note

The HD signal is output when TEST OUT SELECT is set to a signal other than VBS.

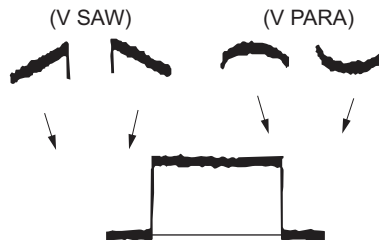
2) On the menu, perform the G-channel adjustment as follows.

- MENU: SERVICE
PAGE: WHITE SHADING
ITEM: G WHT H SAW
ITEM: G WHT V SAW
ITEM: G WHT H PARA
ITEM: G WHT V PARA
- Spec.: Make the waveform of the G-channel flat.

H: LINE



V: FIELD



3) On the menu, set as follows.

- MENU: SERVICE
PAGE: WHITE SHADING
ITEM: WHT SHAD CH SEL → R
ITEM: TEST OUT SELECT → R

4) Adjust the shading for the R-channel in the same procedure as the G-channel adjustment.

5) On the menu, set as follows.

- MENU: SERVICE
PAGE: WHITE SHADING
ITEM: WHT SHAD CH SEL → B
ITEM: TEST OUT SELECT → B

6) Adjust the shading for the B-channel in the same procedure as the G-channel adjustment.

Setting after Adjustment:

- On the menu, set as follows.
MENU: SERVICE
PAGE: WHITE SHADING
ITEM: TEST OUT SELECT → VBS

9-2-6. Black Set Adjustment

Fixtures and Equipment:

- HD waveform monitor

Preparation

- Connect an HD waveform monitor of the HD-SDI to the HDSDI OUT connector.
- Lens IRIS → CLOSE
- Perform the automatic black balance adjustment.
AUTO W/B BAL switch (front panel) → BLK

Adjustment Procedure:

1. On the menu, adjust as follows.
 - MENU: PAINT
PAGE: BLACK/FLARE
ITEM: MASTER BLACK
 - Spec.: $A = 3 \pm 1$ IRE



9-2-7. Flare Adjustment

Fixtures and Equipment:

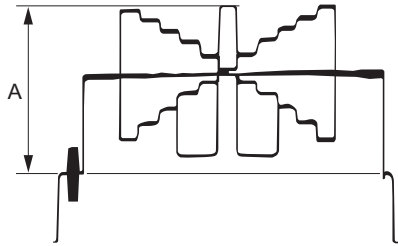
- SD waveform monitor
- Grayscale chart (16:9)

Preparation:

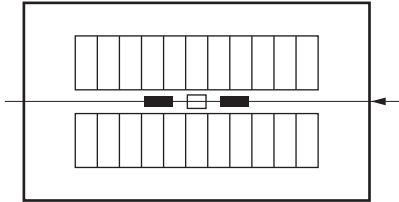
- Connect an SD waveform monitor to the TEST OUT connector.
- OUTPUT/DCC switch (inside panel) → CAM/ON
- On the menu, set as follows.
MENU: SERVICE
PAGE: FLARE
ITEM: TEST OUT SETECT → VBS
- Shoot a grayscale chart in the full underscanned monitor frame.

Adjustment Procedure:

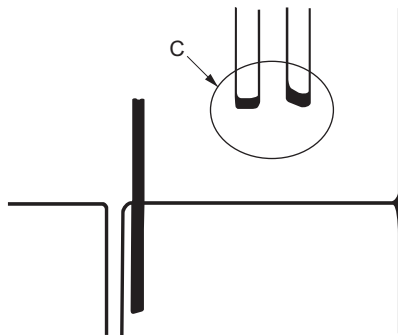
1. Lens IRIS: Open the lens iris by one step from the reference setting A.
 - Spec.: $A = 100 \pm 2$ IRE



2. On the menu, set as follows.
 - MENU: SERVICE
PAGE: FLARE
ITEM: G FLARE $\rightarrow 0$
3. Select center portion by using the waveform monitor.



4. On the menu, set as follows.
 - MENU: SERVICE
PAGE: FLARE
ITEM: R FLARE
 - Spec.: Minimize the carrier leakage at portion C. (R-ch)



5. On the menu, adjust as follows.
 - MENU: SERVICE
PAGE: FLARE
ITEM: B FLARE
 - Spec.: Minimize the carrier leakage at portion C. (B-ch)
6. Repeat steps 4 and 5 several times and minimize the carrier leakage at portion C.

9-2-8. Auto Iris Adjustment

Fixtures and Equipment:

- SD waveform monitor
- Black and white monitor

- Grayscale chart

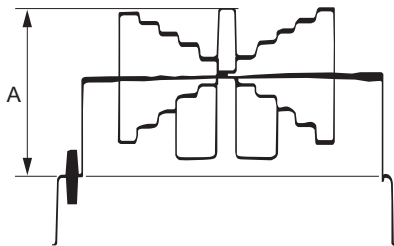
Preparation:

- Connect an SD waveform monitor to the TEST OUT connector.
- Lens IRIS → AUTO
- OUTPUT/DCC switch (inside panel) → CAM/ON
- Shoot a grayscale chart in the full underscanned monitor frame.

Adjustment Procedure:

1. On the menu, adjust as follows.
 - MENU: MAINTENANCE
PAGE: AUTO IRIS 2
ITEM: IRIS APL RATIO
 - Spec.:
Set AUTO iris operation depending on the application.
(Automatic iris operation mode setting can be set in the range of the average level operation to peak-to-peak level operation of the video signal.)
 - IRIS APL RATIO = MIN → peak-to-peak
 - IRIS APL RATIO = MAX → average level only

2. On the menu, adjust as follows.
 - MENU: MAINTENANCE
PAGE: AUTO IRIS 2
ITEM: IRIS LEVEL
 - Spec.: $A = 100 \pm 2$ IRE



3. On the menu, adjust as follows.
 - MENU: MAINTENANCE
PAGE: AUTO IRIS 2
ITEM: IRIS SPEED
 - Spec.: Adjust to the desired operation speed of auto iris.
4. On the menu, adjust as follows.
 - MENU: MAINTENANCE
PAGE: AUTO IRIS 2
ITEM: CLIP HIGH LIGHT → ON or OFF
 - Spec.: Set the level to the desired AUTO iris.

9-2-9. RPN Adjustment

Note

- RPN (Residual Point Noise) of CCD is usually corrected automatically (APR) during automatic black balance adjustment (ABB).

When there exists RPN that is not corrected by APR, perform this adjustment.

- This adjustment is performed on the MANUAL RPN page in the SERVICE menu.

Fixtures and Equipment:

- Color monitor

Preparation:

- Connect an HD color monitor to the TEST OUT connector.
- This is the setting for the RPN adjustment that appears only in slow shutter mode.
SHUTTER switch (front panel) → SLS:2 FRAME or more
- On the menu, set as follows
MENU: SERVICE
PAGE: MANUAL RPN (Standard adjustment)

Adjustment Procedure:

Note

All the adjustments are to be performed using the MANUAL RPN page on the SERVICE menu.

1. Perform the automatic black balance adjustment.
AUTO W/B BAL switch (front panel) → BLK
2. Choose the channel (R, G or B) to be corrected.
 - ITEM: TEST OUT SELECT → R, G, BThis sets TEST OUT to output R, G, or B in HD.
3. Adjust the values of H and V. Then move the center of the cross cursor to RPN.
 - ITEM: RPN CURSOR → ON
ITEM: CURSOR H POS
ITEM: CURSOR V POS
4. Push the MENU knob and save the RPN data (corrected value).
 - ITEM: RECORD RPN → EXEC
5. The message “EXEC OK?” appears. After confirming the RPN is removed, push the MENU knob.
The message “COMPLETE!” appears and the correction is performed.
To cancel the RPN correction after the correction is completed, perform the Cancel without moving the position of the cross cursor.
 - ITEM: RECORD RPN → EXEC
6. To correct another RPN, repeat steps 2 to 5.

Setting after Adjustment:

- On the menu, adjust as follows.
ITEM: RPN CURSOR → OFF
ITEM: TEST OUT SELECT → VBS

9-2-10. S/H DC Adjustment

Note

If it is poorly adjusted, the RPN correction cannot be optimized, or vertical stripes will appear when MASTER GAIN is increased.

In such case, perform this adjustment.

Fixtures and Equipment:

- HD picture monitor

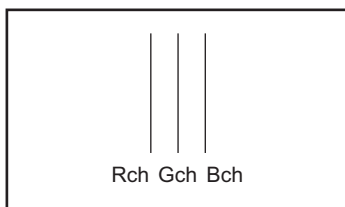
Preparation:

- Connect an TEST OUT connector to the (HD-Y) of HD picture monitor.
- Lens IRIS → CLOSE
- GAIN SW → 12 dB
- WHITE BAL SW → PRESET
- Perform the automatic black balance adjustment.
AUTO W/B BAL switch (Font panel) → BLK

Adjustment Procedure:

1. On the menu, adjust as follows.
 - MENU: SERVICE
PAGE: S/H DC
ITEM: S/H DC ADJ MODE → ON
ITEM: TEST OUT SELECT → R

If this adjustment is poorly performed, the vertical stripes appear on the monitor screen.



2. Perform the R-channel adjustment using the menu until the vertical stripes become least visible on the picture monitor.
 - MENU: SERVICE
PAGE: S/H DC
ITEM: S/H DC B Rch
3. On the menu, adjust as follows.
 - MENU: SERVICE
PAGE: S/H DC
ITEM: TEST OUT SELECT → G
4. Perform the G-channel adjustment using the menu until the vertical stripes become least visible on the picture monitor.
 - MENU: SERVICE
PAGE: S/H DC
ITEM: S/H DC B Gch

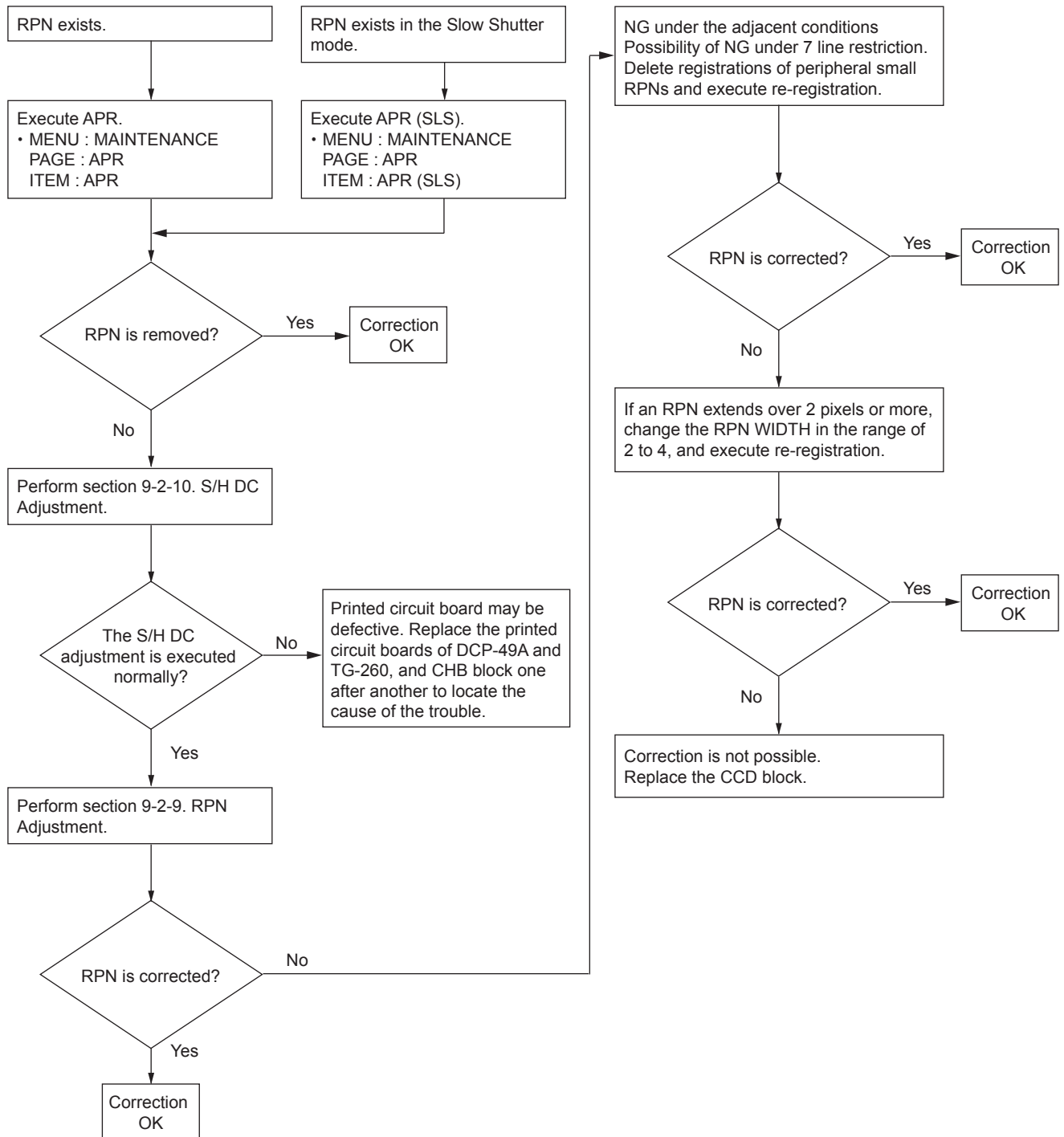
5. On the menu, adjust as follows.
 - MENU: SERVICE
PAGE: S/H DC
ITEM: TEST OUT SELECT → B
6. Perform the B-channel adjustment using the menu until the vertical stripes become least visible on the picture monitor.
 - MENU: SERVICE
PAGE: S/H DC
ITEM: S/H DC B Bch

Setting after Adjustment:

- On the menu, set as follows.
MENU: SERVICE
PAGE: S/H DC
ITEM: S/H DC ADJ MODE → OFF
ITEM: TEST OUT SELECT → VBS

9-2-11. RPN Correction Procedure

The RPN correction procedure is shown below.



Section 10

Spare Parts

10-1. 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

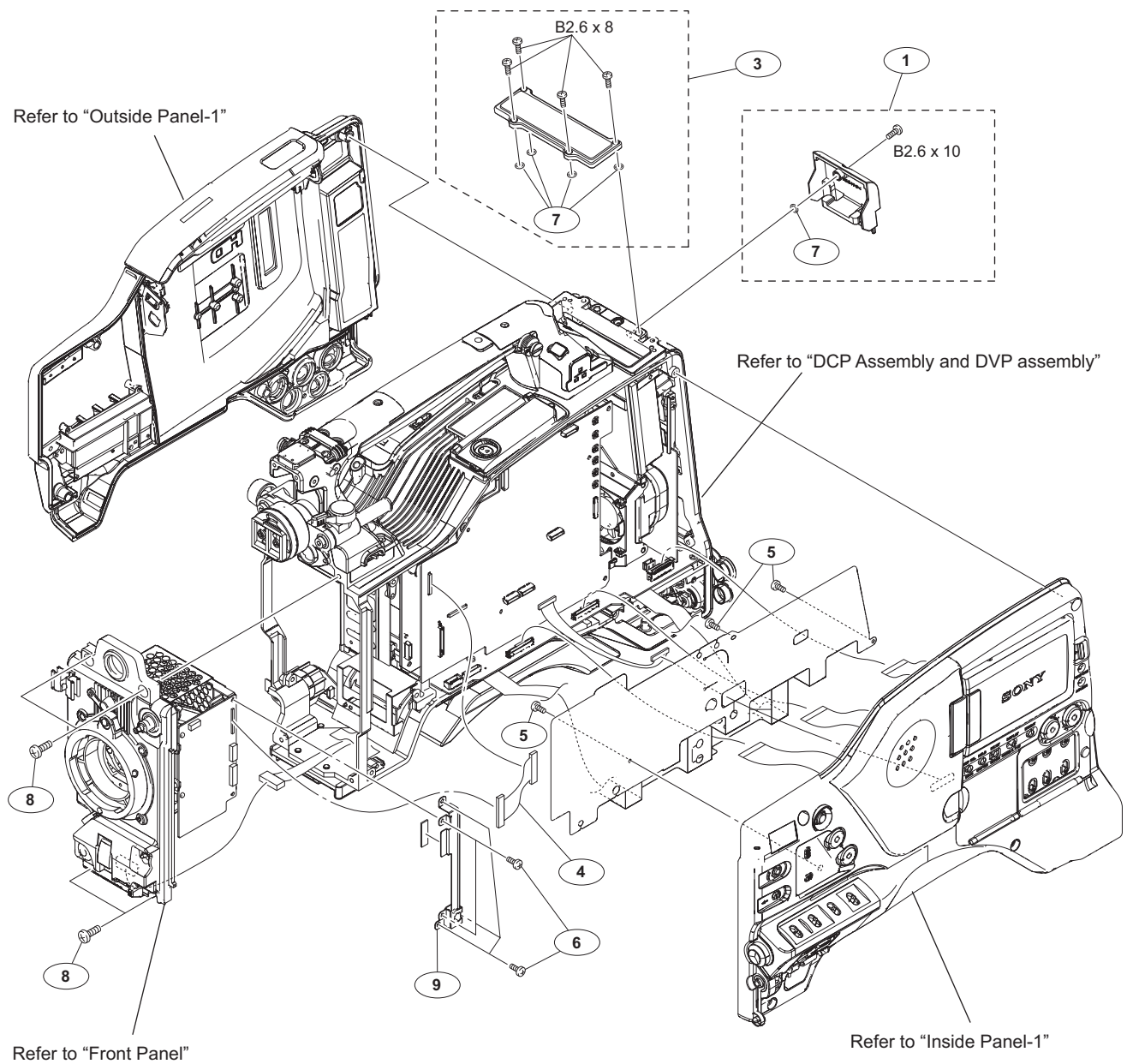
部品表の SP (Supply code) 欄に “o” で示される部品は在庫していないことがあります。納期が長くなる場合があります。

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。

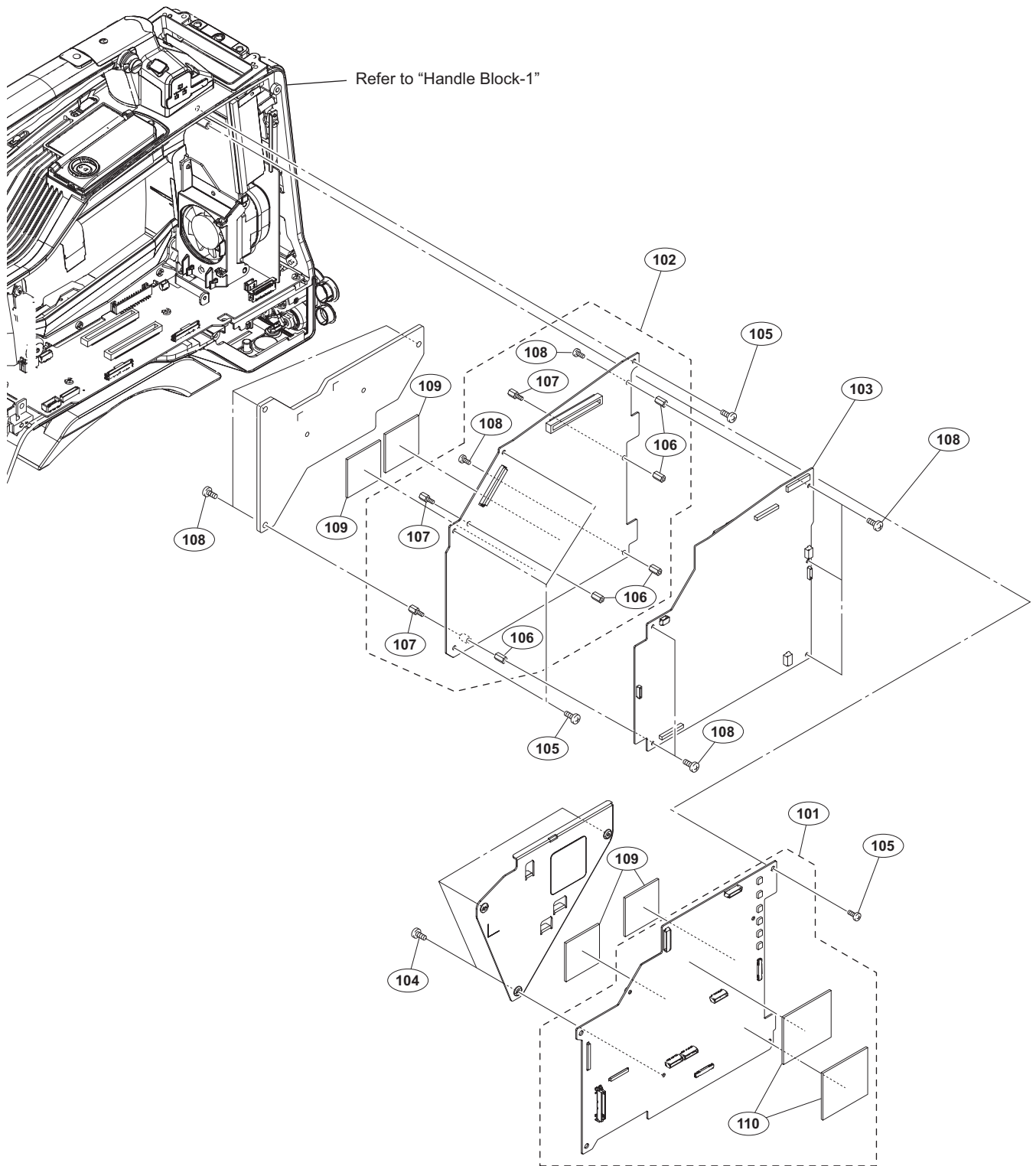
10-2. Exploded Views

Overall



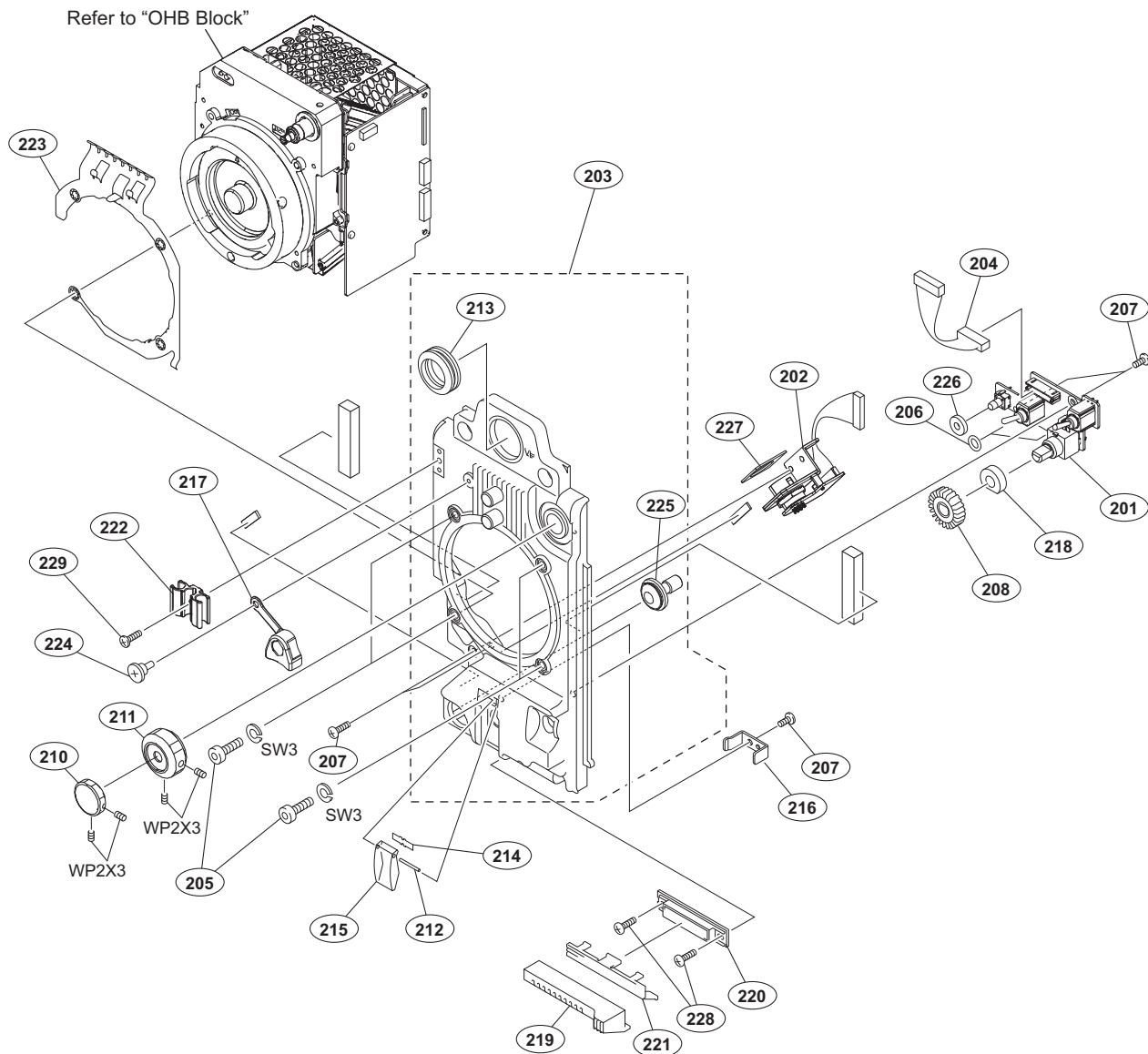
No.	Part No.	SP Description
1	A-1541-506-A s	COVER ASSY, 50P
3	A-2059-785-A s	PLATE (WRR) ASSY, BLIND
4	1-967-533-11 s	HARNESS (TG-DCP)
5	3-056-233-21 s	SCREW (M2), LOCK ACE, P2
6	3-364-941-01 s	SCREW (+B) (2.6X5), NYLOK [Silver]
7	3-742-004-01 s	RING, NYLON
8	3-742-074-13 s	SCREW (+B 3X8)
9	4-540-390-01 s	BRACKET GND (DCP)
	7-621-775-40 s	SCREW +B 2.6X8
	7-621-775-50 s	SCREW +B 2.6X10

DCP Assembly and DVP Assembly



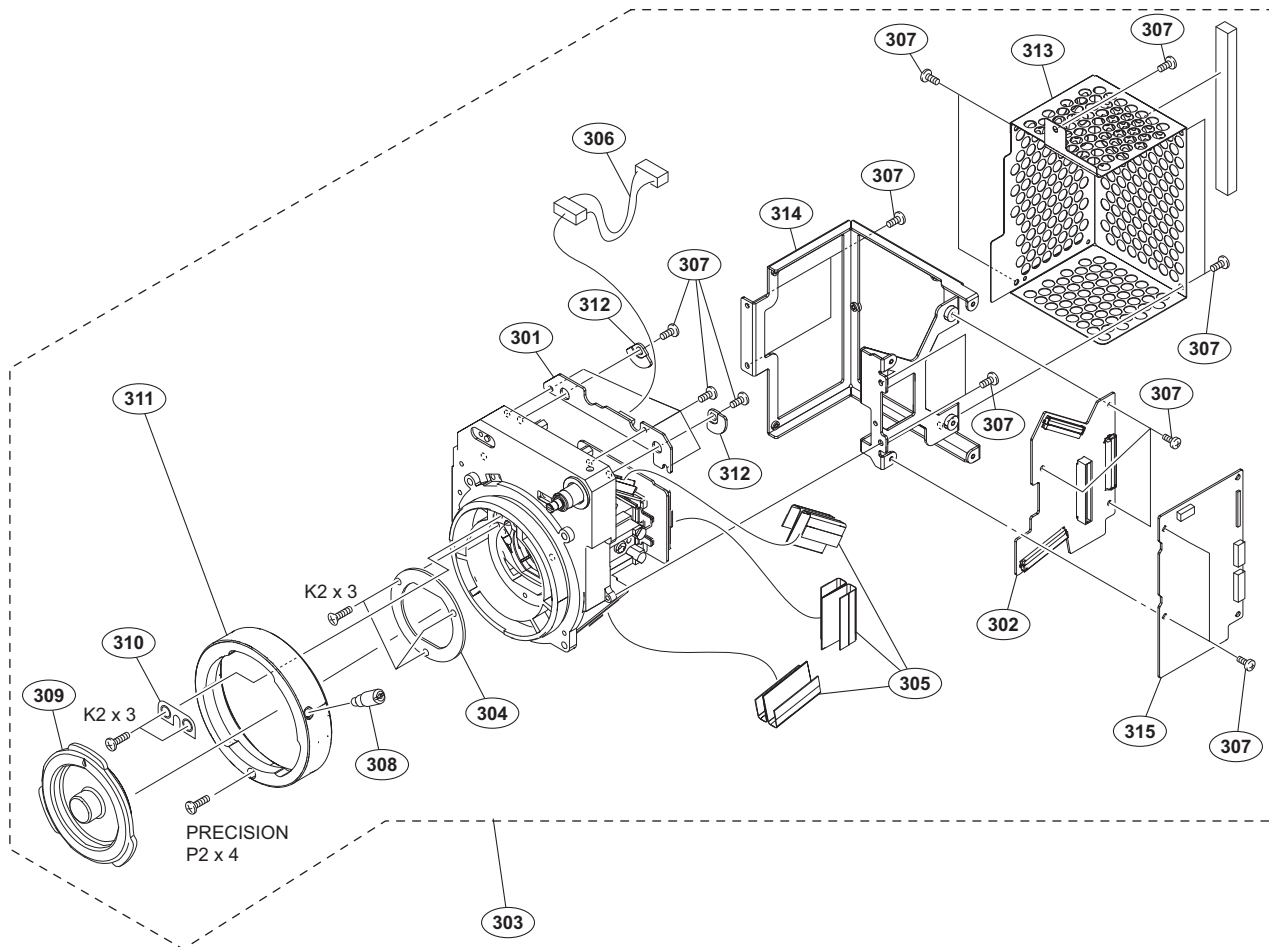
No.	Part No.	SP Description	No.	Part No.	SP Description
101	A-2042-986-A s	MOUNTED CIRCUIT BOARD, DCP-65	110	4-544-160-01 s	SHEET (0.5X44X52.5), SERIES
102	A-2060-130-A s	MOUNTED CIRCUIT BOARD, DVP-64			
103	A-2060-131-A s	MOUNTED CIRCUIT BOARD, SY-439			
104	3-056-233-21 s	SCREW (M2), LOCK ACE, P2			
105	3-364-941-01 s	SCREW (+B) (2.6X5), NYLOK [Silver]			
106	3-854-997-01 s	SUPPORT (M2X7)			
107	3-875-192-01 s	SUPPORT HEATSINK			
108	3-968-729-81 s	SCREW (M2), LOCK ACE, P2			
109	4-540-388-01 s	SHEET T1.5(30X30), RADIATION			

Front Panel



No.	Part No.	SP Description	No.	Part No.	SP Description
201	A-2042-951-A	s MOUNTED CIRCUIT BOARD, SW-1620	223	3-879-494-02	s FINGER (LM), SHIELD
202	A-2042-967-A	s MOUNTED CIRCUIT BOARD, CN-3670	224	3-965-077-02	s SCREW, SPECIAL (M2)
203	A-2054-248-A	s PANEL SUB ASSY, FRONT	225	3-986-632-02	s BUTTON,VTR START
204	1-970-228-11	s SUB HARNESS (LENS)	226	3-990-897-01	s CUSHION REC (SW)
205	2-623-773-11	s BOLT (M3X8), STAINLESS	227	4-540-370-01	s CUSHION, DROP PROTECTION
206	3-312-823-02	s PACKING, KNOB	228	4-654-273-02	s ACE (M2), LOCK
207	3-364-941-01	s SCREW (+B) (2.6X5), NYLOK [Silver]	229	4-674-315-01	s SCREW (M2.6X6)
208	3-624-135-01	s KNOB,VR (AUDIO)			
210	3-679-670-03	s KNOB,FILTER (ND)	7-621-732-09	s SET-SCT HEX. 2X3 WP	
211	3-679-671-11	s KNOB,FILTER (CC)	7-623-208-22	s SW 3,TYPE 2	
212	3-703-357-05	s PIN, PARALLEL (DIA. 1.6X16)			
213	3-710-024-02	s PACKING, VF			
214	3-742-066-11	o SPRING, SHUTTER			
215	3-742-067-06	s LID, SHUTTER			
216	3-796-965-01	s BRACKET,SHUTTER			
217	3-796-982-03	s HOLDER, LENS MOUNT			
218	3-797-080-01	s DROP PROTECTION (MIC VR)			
219	3-854-361-01	s GUARD VOLUME FRONT			
220	3-854-362-01	s HOLDER GUARD			
221	3-854-363-01	s SLIDER			
222	3-870-272-02	s CLAMP, CABLE			

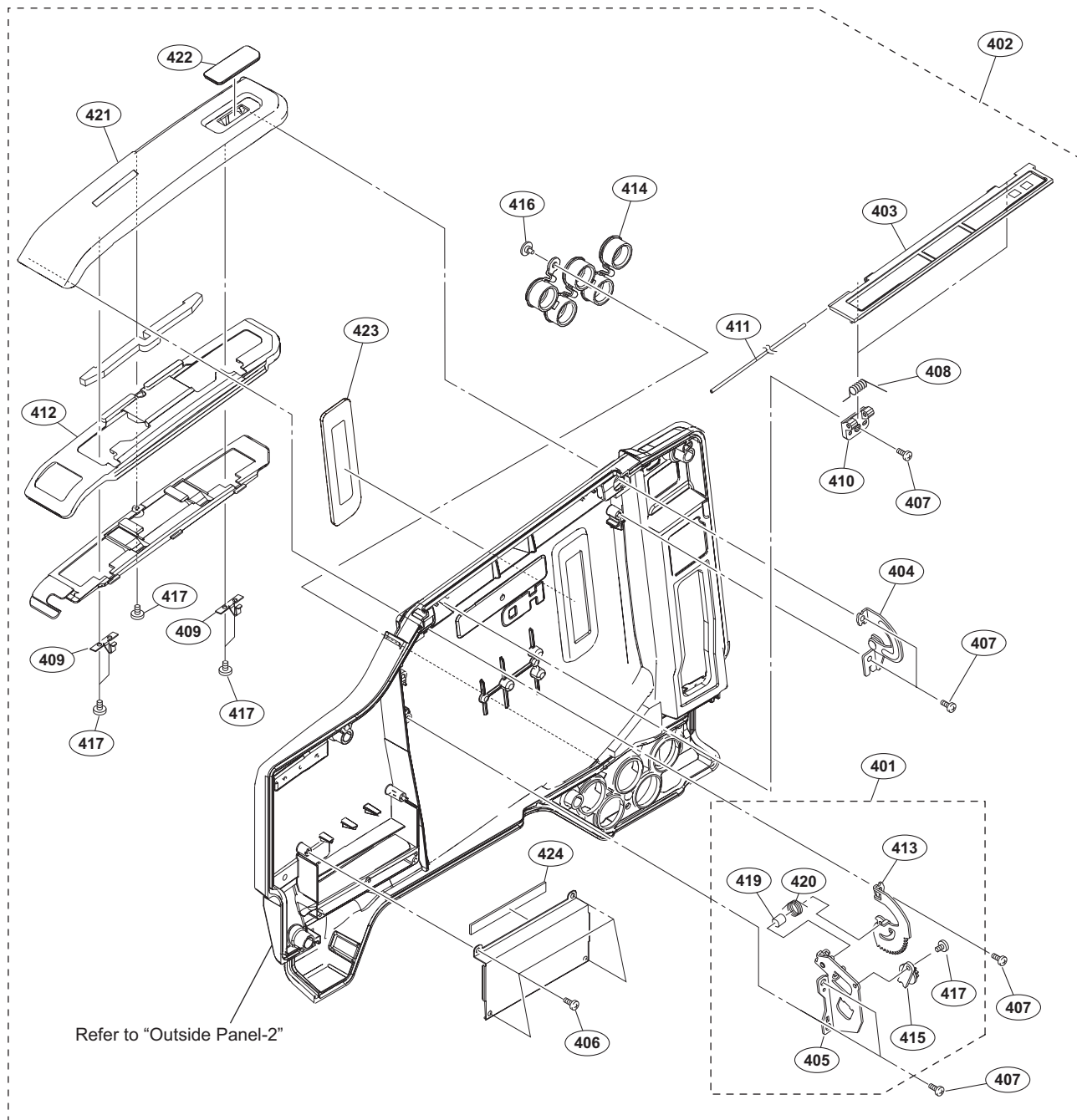
OHB Block



No.	Part No.	SP Description
301	A-2042-973-A s	MOUNTED CIRCUIT BOARD, SE-1156
302	A-2042-984-A s	MOUNTED CIRCUIT BOARD, DR-676
303	A-2068-312-A s	CCD BLOCK ASSY (850WW (RP))
304	1-788-764-21 s	FILTER UNIT, OPTICAL
305	1-832-133-11 s	CABLE, FLEXIBLE FLAT (50 CORE)
306	1-970-247-11 s	SUB HARNESS (SEN)
307	3-056-233-21 s	SCREW (M2), LOCK ACE, P2
308	3-678-629-04 s	LEVER, MOUNT
309	3-699-048-01 s	CAP, MOUNT
310	3-776-897-02 s	GUIDE PLATE
311	3-790-043-11 s	RING, BAYONET
312	3-854-378-01 s	PLATE, FILTER ID
313	4-540-911-01 s	COVER, OHB
314	4-540-912-01 s	BRACKET, OHB
315	A-2042-983-A s	MOUNTED CIRCUIT BOARD, TG-286

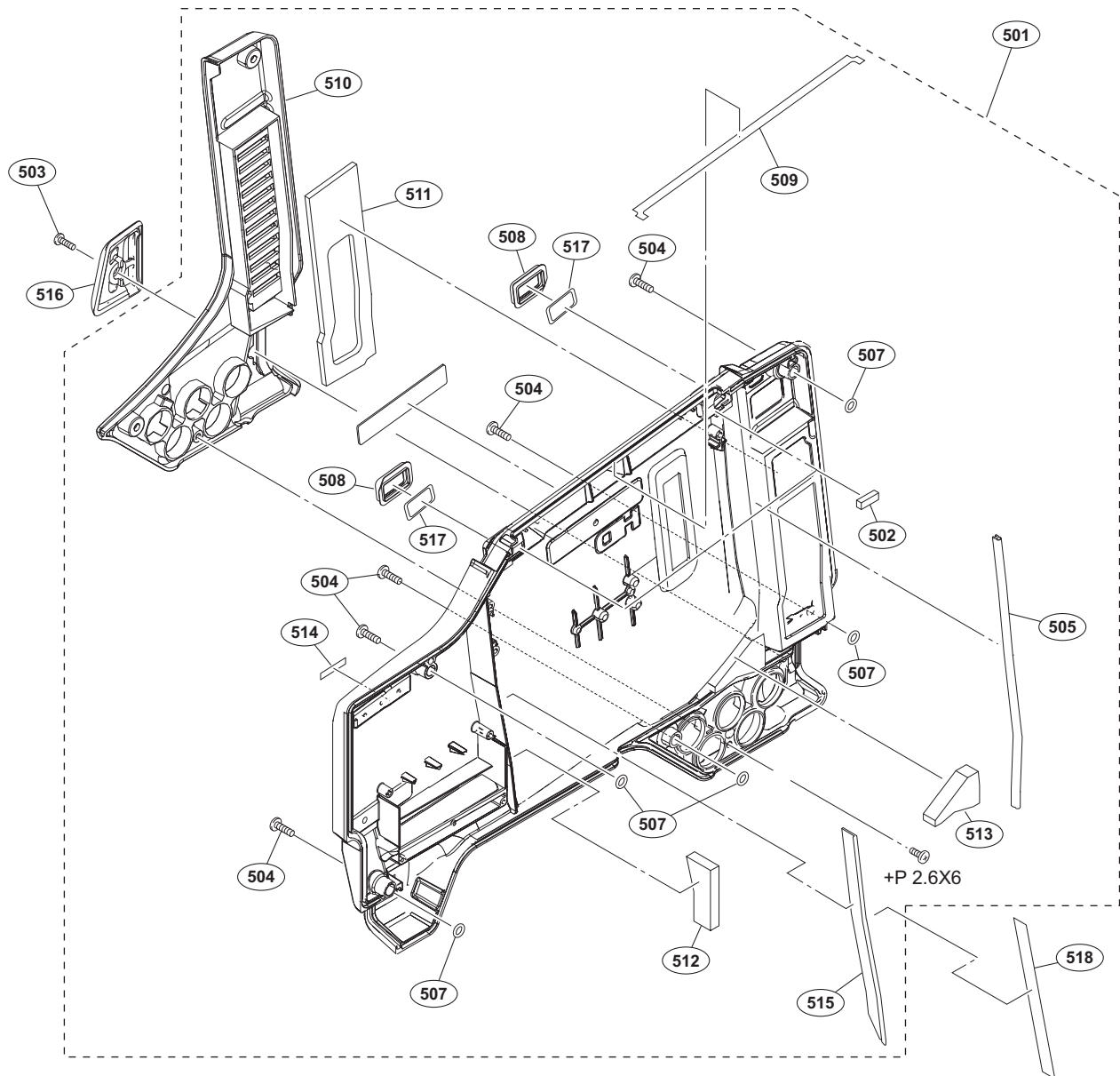
7-627-452-18 s SCREW, PRECISION +K 2X3

Outside Panel-1



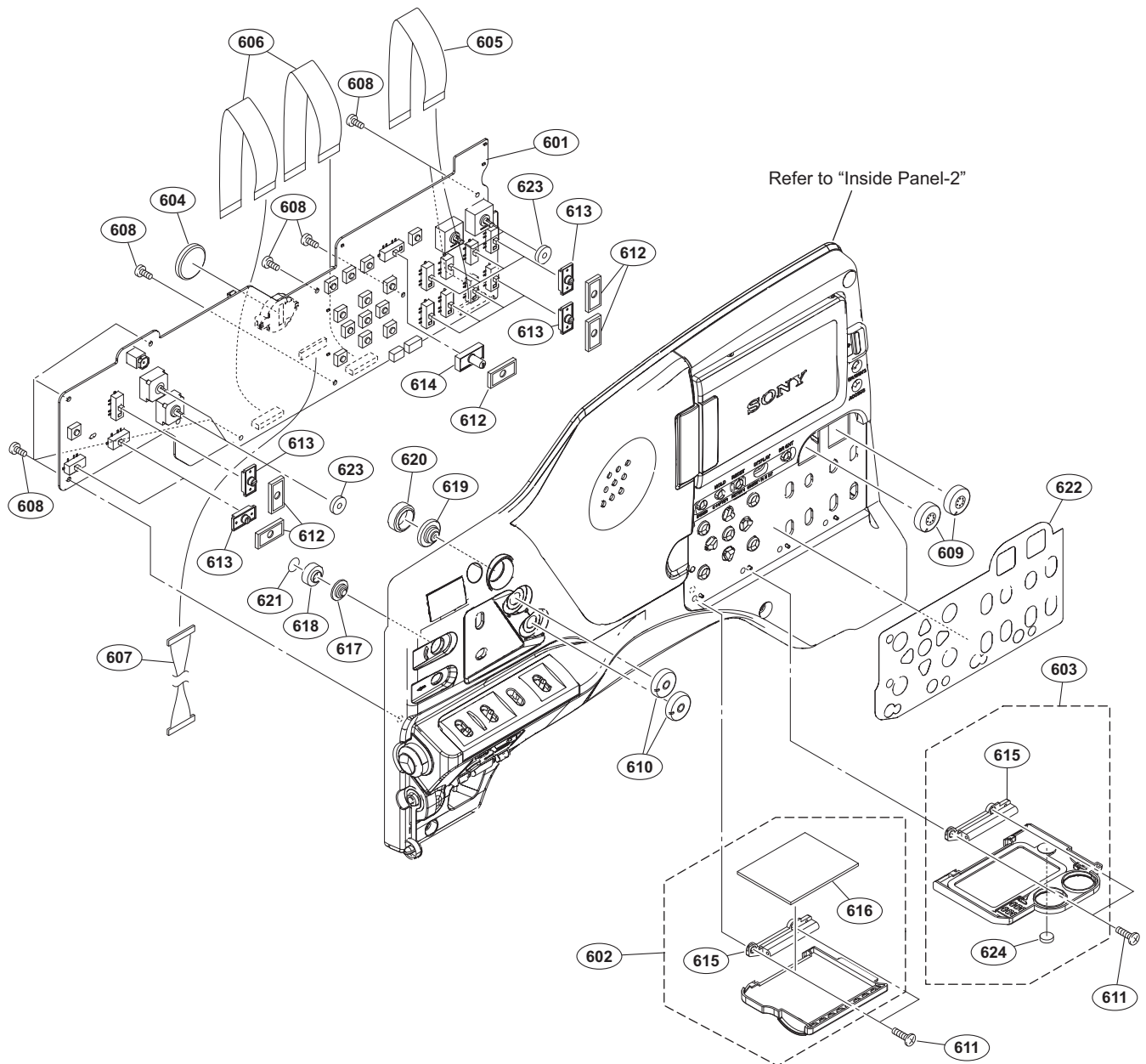
No.	Part No.	SP Description	No.	Part No.	SP Description
401	A-1106-972-B s	DAMPER ASSY, LID ARM (R)	415	3-953-235-11 s	DAMPER, OIL
402	A-2054-255-A s	PANEL ASSY, OUT SIDE	416	3-965-077-02 s	SCREW, SPECIAL (M2)
403	X-2589-918-1 s	ASSY, SHUTTER INNER	417	3-968-729-81 s	SCREW (M2), LOCK ACE, P2
404	X-3698-568-4 s	ARM (L) ASSY, LID	419	3-991-830-02 s	COLLAR (2)
405	X-3698-570-3 s	HOLDER (R) ASSY, ARM, LID	420	3-991-834-01 s	(OPEN) SPRING TORSION
406	3-056-233-21 s	SCREW (M2), LOCK ACE, P2	421	4-540-348-01 s	LID, OUTSIDE
407	3-364-941-01 s	SCREW (+B) (2.6X5), NYLOK [Silver]	422	4-540-349-01 s	WINDOW, LID
408	3-797-003-01 s	SPRING 02, TORSION	423	4-540-350-01 s	WINDOW, OUTSIDE
409	3-797-004-04 s	HOLDER, OUT LID	424	4-480-708-02 s	GUSKET 40X5X0.5
410	3-797-058-01 s	HOLDER, SHUTTER, INNER			
411	3-797-059-01 s	SHAFT, SHUTTER, INNER			
412	3-825-462-02 s	PROTECTION, OUTER LID			
413	3-868-613-04 s	(R) ARM, LID			
414	3-870-160-01 s	COVER (PH3), BNC			

Outside Panel-2



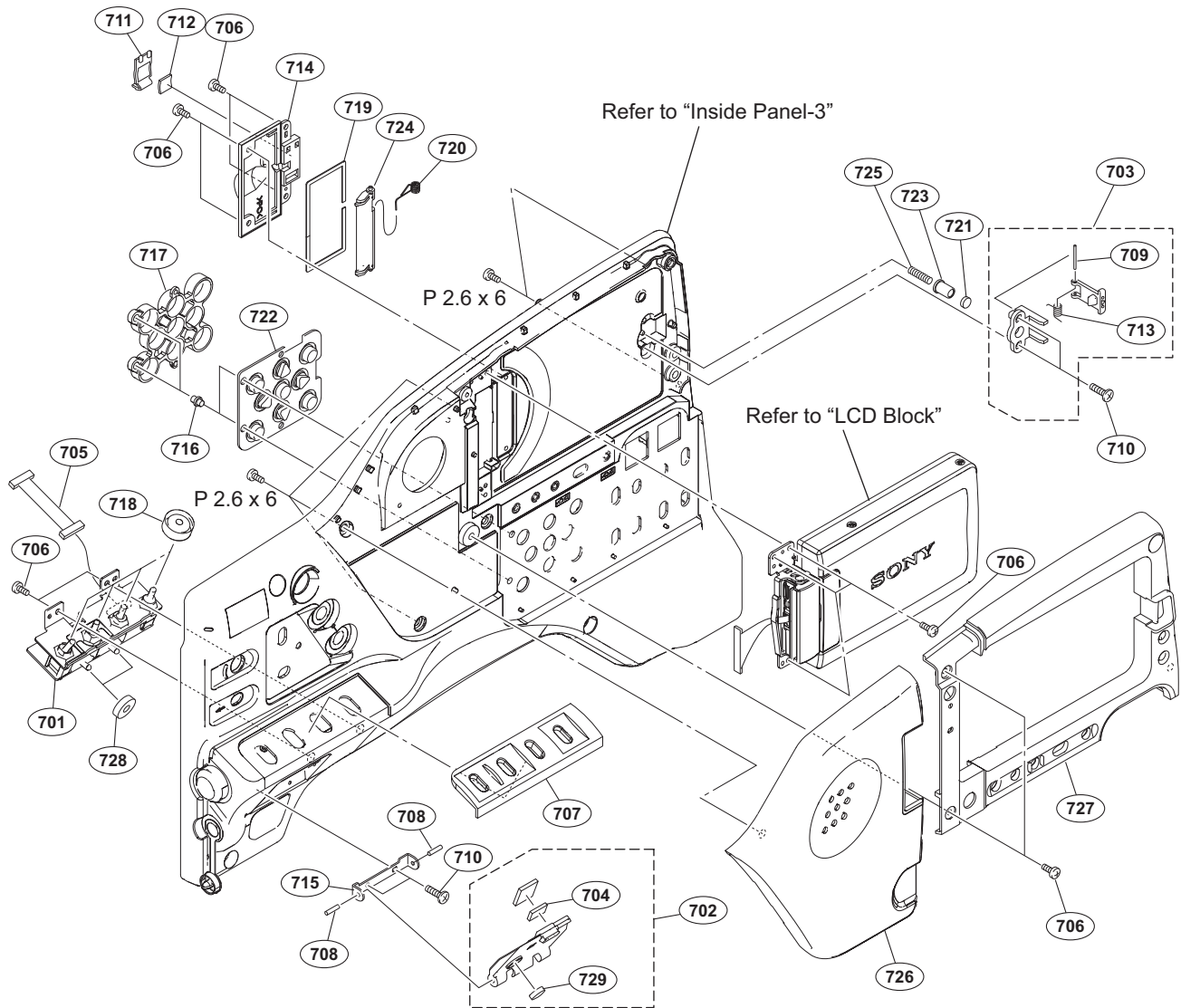
No.	Part No.	SP Description
501	A-2054-250-A	s PANEL SUB ASSY, OUT SIDE
502	3-323-259-01	s SPACER (B)
503	3-364-941-12	s SCREW (+B) (2.6X5), NYLOK [Black]
504	3-603-680-02	s STAINLESS SCREW +B3X12
505	3-603-753-03	s DUST PROTECT (2)
507	3-672-250-01	s RING (M2.6), O
508	3-797-005-03	s PROTECTION, ARM LID
509	3-797-013-02	s PACKING OUT INNER
510	3-870-148-11	s PAD, OUTSIDE
511	3-870-149-01	s CUSHION (EXH)
512	3-870-151-02	s CUSHION (FB)
513	3-870-152-01	s CUSHION (RB)
514	3-870-153-01	s SHEET (4.5X30), ADHESIVE
515	3-870-154-01	s CUSHION (OF), SHIELD
516	3-870-158-02	s PROTECTOR
517	3-991-719-02	s SHEET, ADHESIVE
518	4-000-499-01	s TAPE (OF)
	7-685-133-11	s SCREW +P 2.6X6 TYPE2

Inside Panel-1



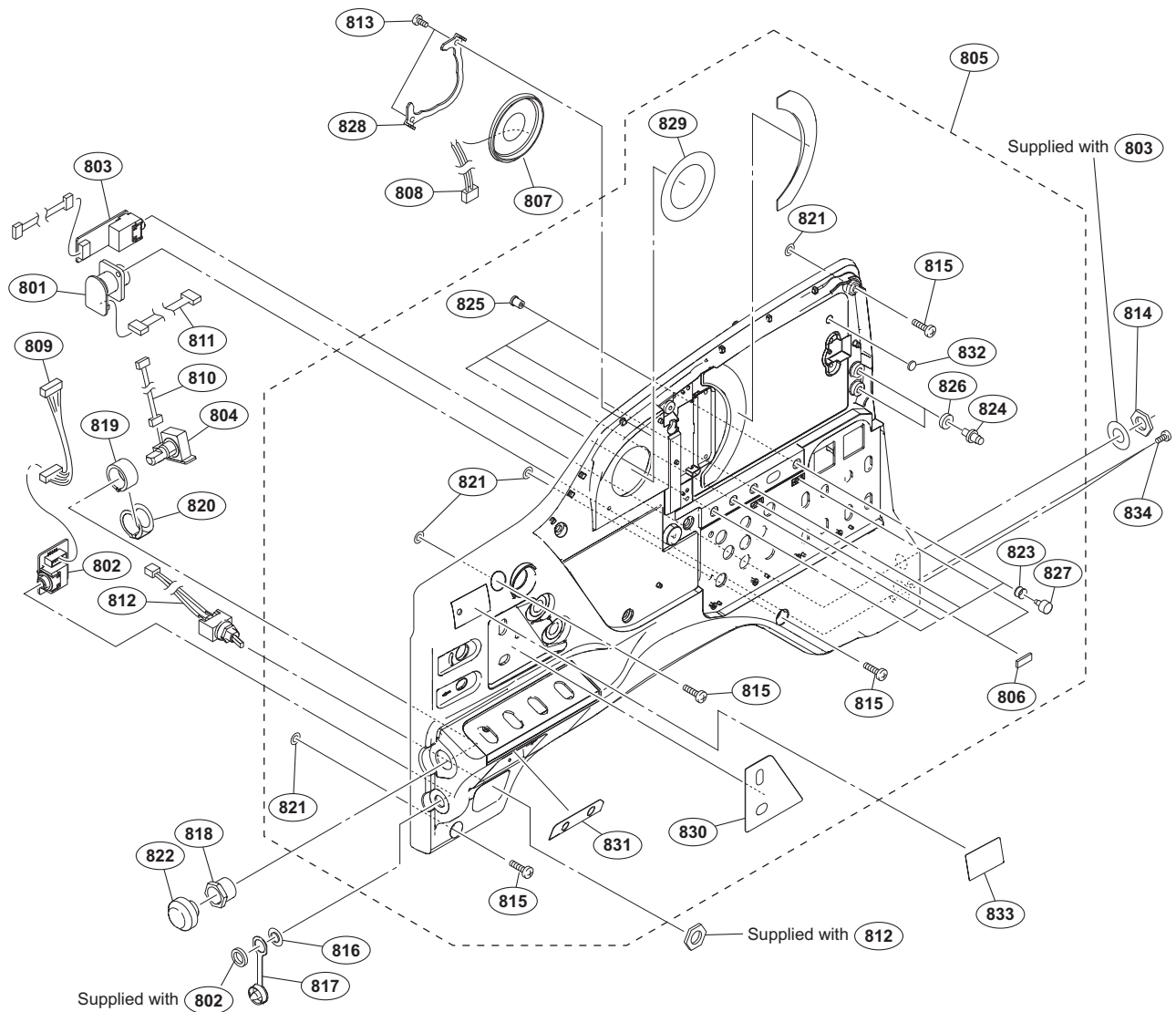
No.	Part No.	SP Description	No.	Part No.	SP Description
601	A-2042-987-A	s MOUNTED CIRCUIT BOARD, FP-190	620	3-870-134-01	s HOLDER, SW COVER (FILTER)
602	A-2054-245-A	s DOOR (L) ASSY, SWITCH	621	3-870-142-01	s SHEET, SW COVER (ASSIN)
603	A-2054-246-A	s DOOR (R) ASSY, SWITCH	622	4-540-341-02	s PLATE, SW ORNAMENTAL
604	⚠ 1-528-174-72	s BATTERY, LITHIUM (CR2032 TYPE)	623	4-544-808-01	s CUSHION VOLUME AUDIO(T1)
605	1-831-007-11	s CABLE, FLEXIBLE FLAT (16 CORE)	624	4-644-879-11	s FOOT (B-2)
606	1-848-509-11	s CABLE, FLEXIBLE FLAT(40 CORE)			
607	1-970-227-11	s SUB HARNESS (COM)			
608	3-056-233-21	s SCREW (M2), LOCK ACE, P2			
609	3-611-740-03	s KNOB (2), VR			
610	3-680-219-03	s KNOB, VR			
611	3-719-381-02	s SCREW (M2X4)			
612	3-796-995-01	s DROP PROTECTION (SW)			
613	3-796-996-03	s KNOB (A), SW			
614	3-796-998-02	s KNOB (B), SW			
615	3-870-058-01	s HINGE, SW DOOR			
616	3-870-066-01	s SW DOOR L CUSHION			
617	3-870-121-02	s SW COVER (ASSIGN)			
618	3-870-122-01	s HOLDER, SW COVER (ASSIGN)			
619	3-870-133-01	s SW COVER (FILTER)			

Inside Panel-2



No.	Part No.	SP Description	No.	Part No.	SP Description
701	A-2042-966-A	s MOUNTED CIRCUIT BOARD, SW-1618	725	4-264-416-01	s SPRING, COMPRESSION
702	A-2054-244-A	s DOOR ASSY, MENU	726	4-540-336-01	s PAD (L), INSIDE
703	A-2054-249-A	s LOCK ASSY, LCD	727	4-540-337-01	s PAD (R), INSIDE
704	1-471-483-11	s MAGNET, LCD	728	4-540-744-01	s CUSHION (MENU)
705	1-970-221-11	s SUB HARNESSSW)	729	4-644-879-11	s FOOT (B-2)
706	3-056-233-21	s SCREW (M2), LOCK ACE, P2			
707	3-629-768-31	s ORNAMENTAL PLATE(3),SW,CAMERA			
708	3-703-357-03	s PIN, PARALLEL (DIA. 1.6X6)			
709	3-703-575-01	s PIN (DIA. 1.2), PARALLEL			
710	3-719-381-02	s SCREW (M2X4)			
711	3-868-599-01	s CLAMP HARNESS LCD			
712	3-868-991-01	s SHEEL HARNESS LCD			
713	3-869-457-01	s SPRING TORSION			
714	3-870-119-01	s COVER, LCD HARNESS			
715	3-870-120-01	s HINGE, MS DOOR			
716	3-870-123-01	s LED LENS SUBCLIP			
717	3-870-136-01	s HOLDER, SW COVER (ARROW)			
718	3-870-137-02	s CAP, DROP PROTECTION			
719	3-870-138-01	s SHEET,HARNESS DROP PROTECTION			
720	3-870-139-01	s SPRING, HELICAL TORSION			
721	3-969-387-01	s FOOT, RUBBER			
722	4-131-186-02	s COVER (SUBCLIP), SW			
723	4-264-412-01	s LCD PANEL POPUP			
724	4-264-413-01	s PLATE BLIND, HING			

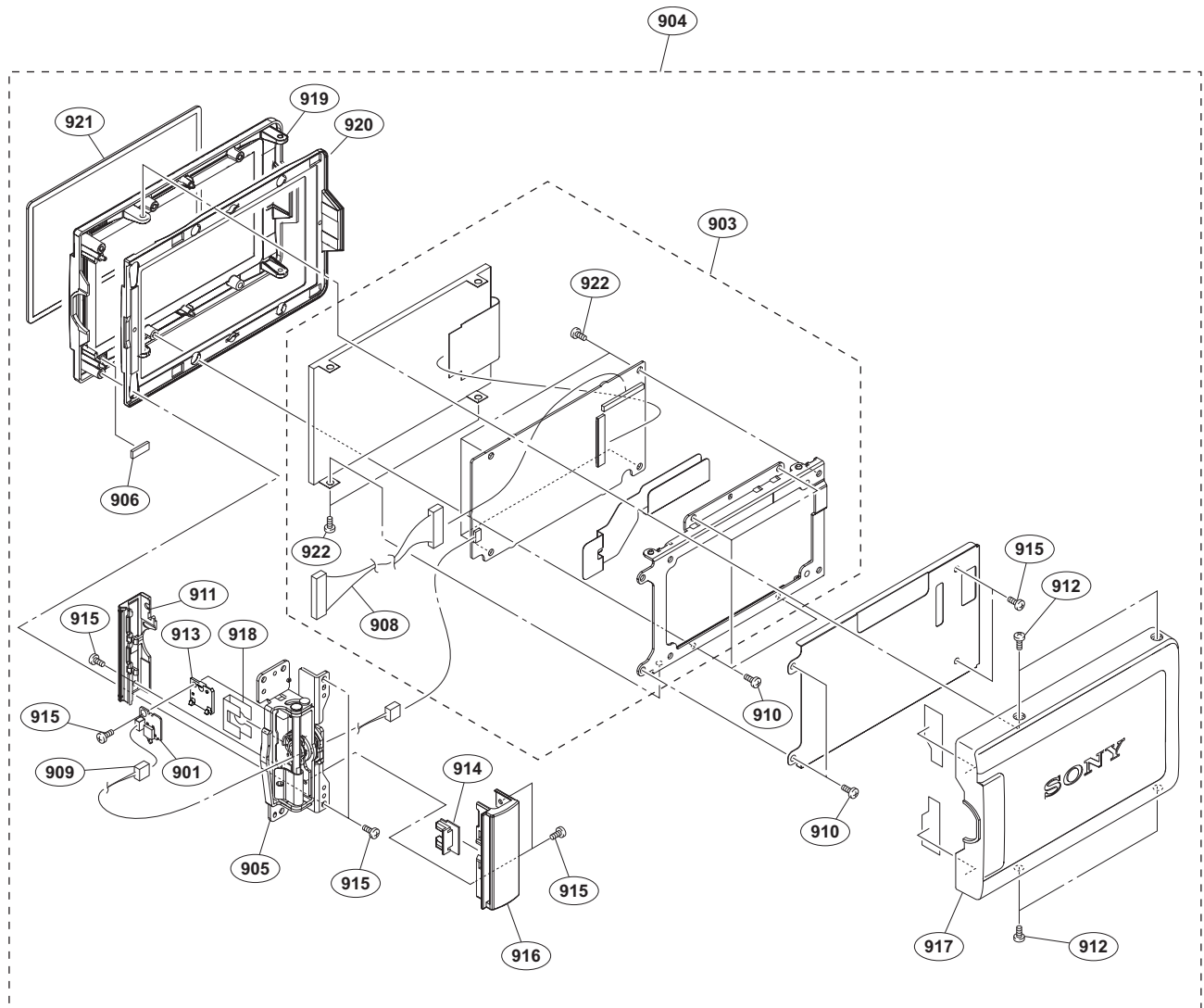
Inside Panel-3



No.	Part No.	SP Description
801	A-2042-952-A s	MOUNTED CIRCUIT BOARD, RM-242
802	A-2042-968-A s	MOUNTED CIRCUIT BOARD, HP-167
803	A-2042-969-A s	MOUNTED CIRCUIT BOARD, HP-168
804	A-2042-971-A s	MOUNTED CIRCUIT BOARD, ENC-159
805	A-2054-459-A s	PANEL SUB ASSY, IN SIDE
806	1-471-483-11 s	MAGNET, LCD
807	1-503-293-12 s	SPEAKER
808	1-960-882-13 s	HARNESS, SUB (SPEAKER)
809	1-970-220-11 s	SUB HARNESS (HP)
810	1-970-222-11 s	SUB HARNESS (ENC)
811	1-970-225-11 s	SUB HARNESS (RM)
812	1-970-226-11 s	SUB HARNESS (POWER)
813	3-056-233-21 s	SCREW (M2), LOCK ACE, P2
814	3-061-234-01 s	NUT (M6X0.5)
815	3-603-680-02 s	STAINLESS SCREW +B3X12
816	3-620-732-01 s	BRACKET, EARPHONE JACK
817	3-620-733-01 s	COVER HEADPHONE JACK
818	3-629-446-04 s	SLEEVE (ENC2)
819	3-629-447-03 o	SLEEVE (ENC1)
820	3-647-917-02 s	PLATE, EARTH
821	3-672-250-01 s	RING (M2.6), O
822	3-692-111-02 s	KNOB, RE
823	3-724-758-02 s	RUBBER (PUSH), DROP PROTECTION
824	3-797-011-01 s	A LENS LED

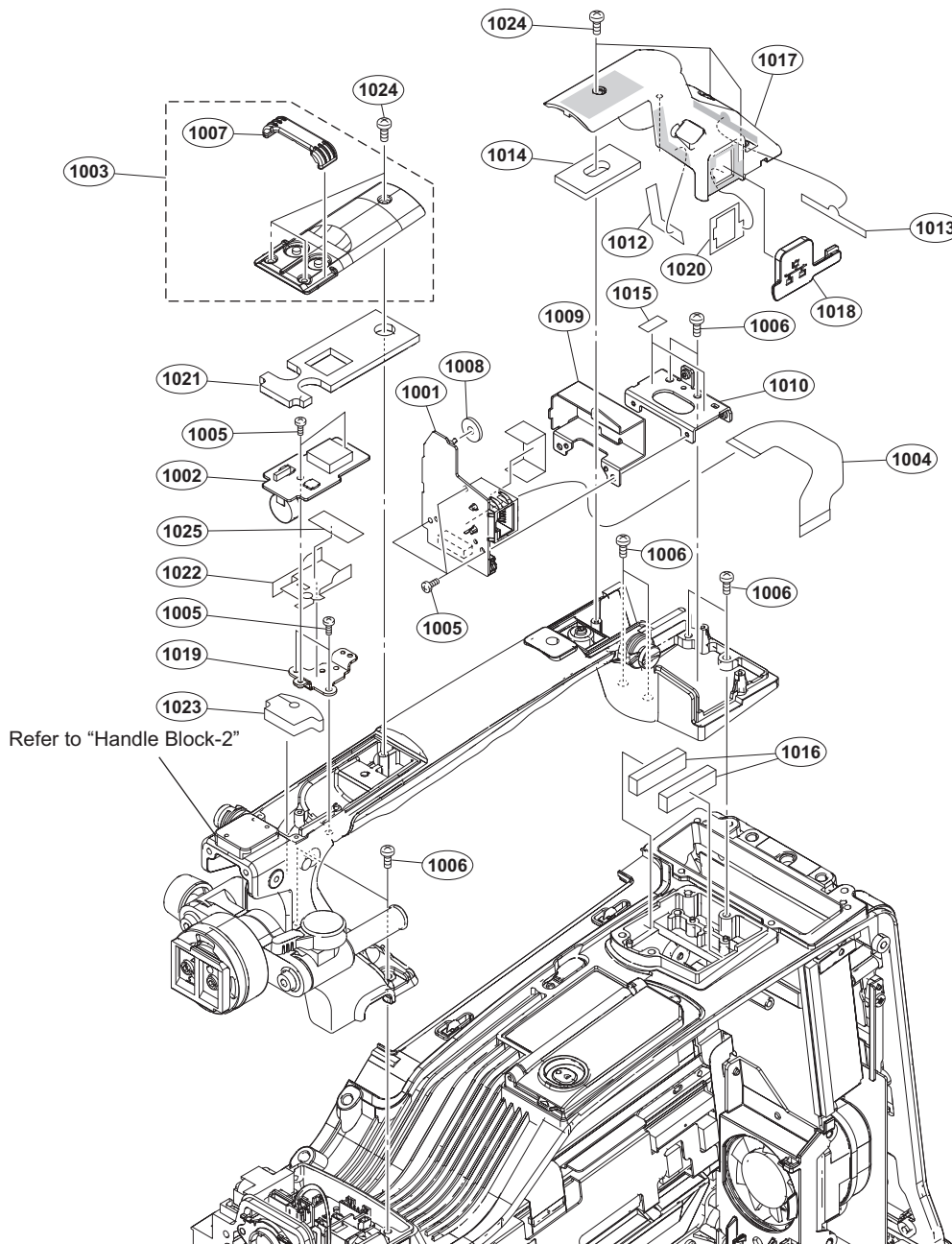
No.	Part No.	SP Description
825	3-797-012-01 s	STOPPER, PUSH SW
826	3-797-071-01 s	CUSHION LENS A
827	3-797-073-01 s	RES, SW PUSE
828	3-797-084-01 s	HOLDER SPEAKER
829	3-868-597-01 s	SHEET (SP), DROP PROTECTION
830	3-870-094-01 s	PLATE, AUDIO MONITOR ORNAMENTAL
831	3-870-095-01 s	PLATE, MENU ORNAMENTAL
832	3-969-387-01 s	FOOT, RUBBER
833	3-182-055-11 s	LABEL (1), FILTER
834	4-674-315-01 s	SCREW (M2.6X6)

LCD Block



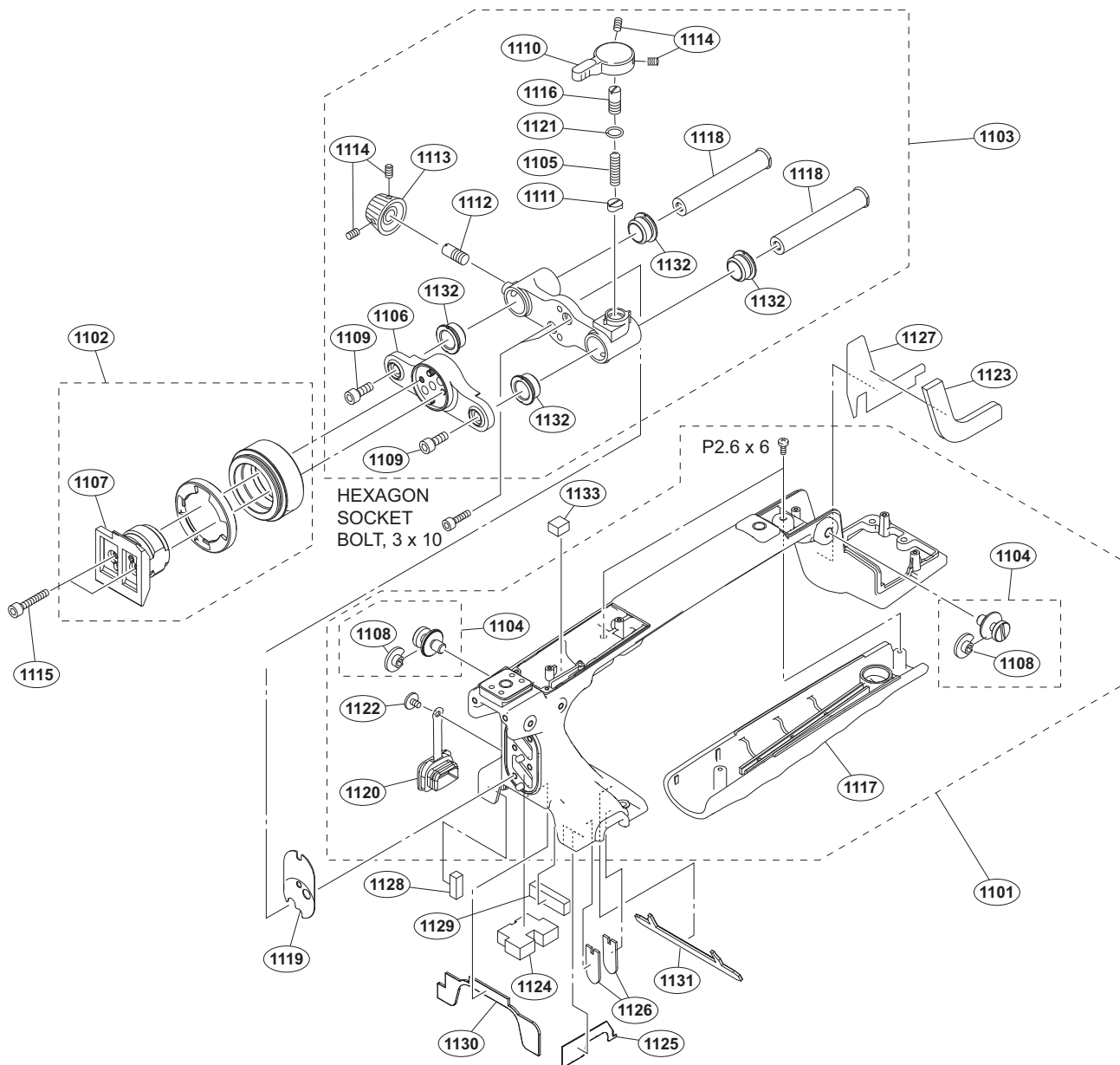
No.	Part No.	SP Description
901	A-1786-301-A	s MOUNTED CIRCUIT BOARD, DET-50
903	A-2054-242-A	s 3.5 INCH LCD ASSY
904	A-2054-253-A	s LCD ASSY
905	X-2560-679-1	s HINGE ASSY
906	1-471-483-11	s MAGNET, LCD
908	1-970-223-12	s SUB HARNESS (LCD)
909	1-970-224-11	s SUB HARNESS (DET)
910	3-056-233-21	s SCREW (M2), LOCK ACE, P2
911	3-060-694-11	s COVER (REAR), HINGE
912	3-719-381-02	s SCREW (M2X4)
913	3-870-082-01	s LCD HINGE SW HOLDER
914	3-870-088-01	s PROTECTOR, LCD HINGE HARNESS
915	3-989-735-11	s SCREW (M1.7), LOCK ACE, P2
916	3-991-265-11	s (FRONT)COVER HINGI
917	4-264-420-11	s COVER, LCD
918	4-300-095-01	s SHEET,HINGE HARNESS PROTECTION
919	4-558-188-01	s BEZEL, LCD
920	4-540-345-01	s LCD SEALING
921	4-540-346-01	s LCD WINDOW
922	3-964-010-32	s SCREW (M2), 0 PART-NO. P2 MAIN

Handle Block-1



No.	Part No.	SP Description	No.	Part No.	SP Description
1001	A-2042-964-A	s MOUNTED CIRCUIT BOARD, CN-3669	1019	4-540-366-01	s BRACKET, GPS
1002	A-2046-129-A	s MOUNTED CIRCUIT BOARD, SW-1622	1020	4-540-413-01	s CUSHION, LAN
1003	X-3608-704-3	s COVER ASSY, HANDLE	1021	4-540-909-01	s CUSHION (34), ASSIGN
1004	1-876-959-11	s FPC (ETHER)	1022	4-540-910-01	s SHEET, GPS
1005	3-056-233-21	s SCREW (M2), LOCK ACE, P2	1023	4-549-507-01	s CUSHION, GPS
1006	3-742-074-13	s SCREW (+B 3X8)	1024	4-654-273-02	s ACE (M2), LOCK
1007	3-805-990-01	s HANDLE TOP COVER LID	1025	3-079-115-01	s TAPE AS
1008	3-868-631-01	s CUSHION, DROP PROTECTION			
1009	3-870-197-02	s BRACKET (ETHER)			
1010	3-870-199-02	s BRACKET (TALLY)			
1012	4-000-669-01	s SEALING (B), TALLY COVER			
1013	4-000-670-01	s SEALING (C), TALLY COVER			
1014	4-000-678-01	s SEALING (E), TALLY COVER			
1015	4-414-026-01	s FOAM (7X1X13), SHIELD			
1016	4-446-008-01	s GASKET MAIN P			
1017	4-540-363-01	s COVER, TALLY			
1018	4-540-364-01	s CAP, HANDLE			

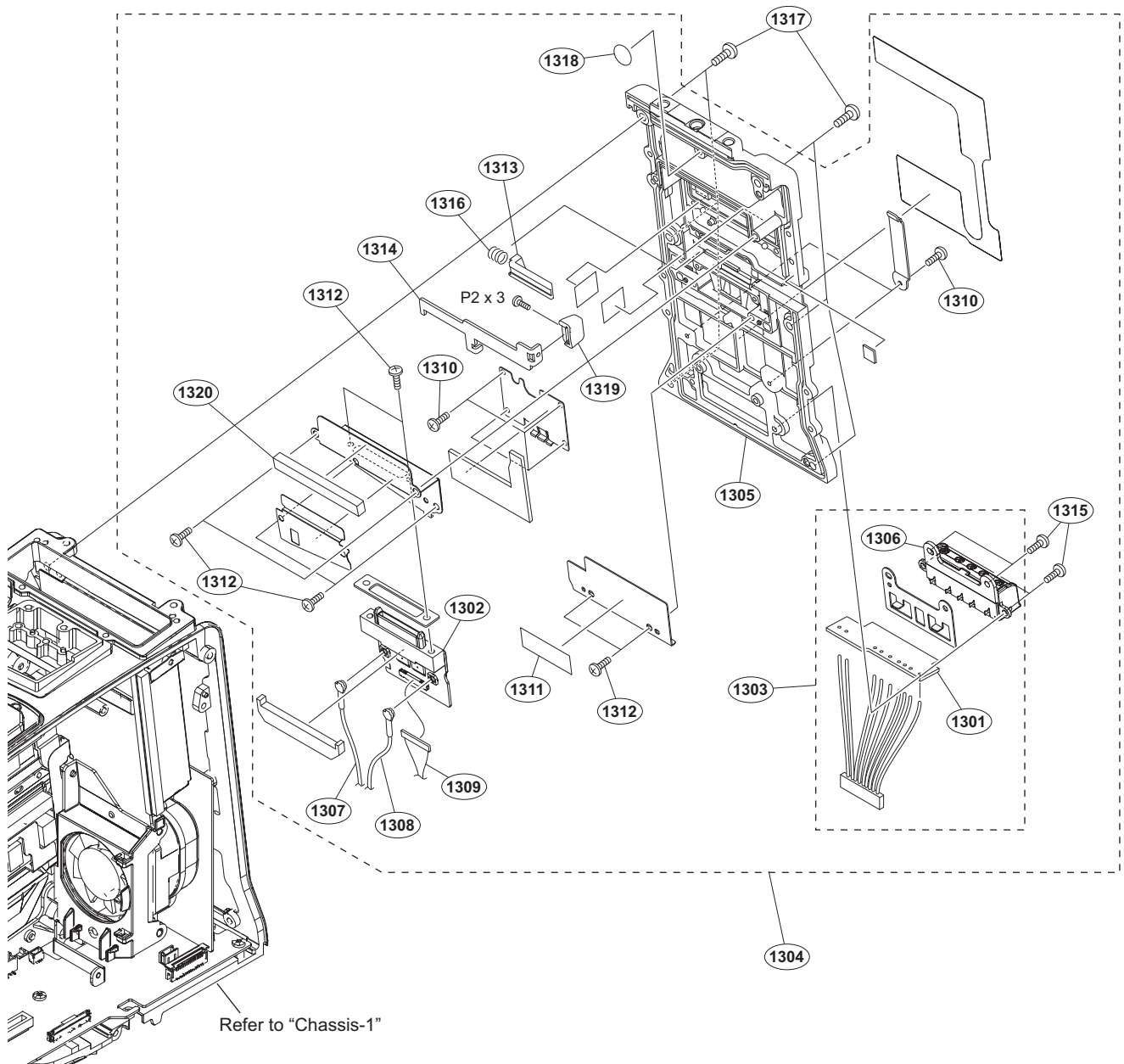
Handle Block-2



No.	Part No.	SP Description	No.	Part No.	SP Description
1101	A-1541-491-A	s HANDLE SUB ASSY	1120	3-877-892-01	s LIGHT CONNECTOR COVER
1102	A-2065-043-A	s SHOE ASSY,VF			
1103	A-2065-044-A	s SLIDE ASSY (LB),VF	1121	3-895-622-01	s RING (DIA. 5), O
1104	X-3710-037-1	s SUSPENSION ASSY (C)	1122	3-965-077-02	s SCREW, SPECIAL (M2)
1105	3-612-822-01	s SPRING,COMPRESSION	1123	4-000-666-01	s SEALING (C), HANDLE
			1124	4-000-667-01	s SEALING (E), HANDLE
1106	4-558-056-01	s FIXED TABLE (WS),VF SHOE	1125	4-000-673-01	s SEALING (F), HANDLE
1107	4-558-057-01	s SHOE,SLIDE			
1108	3-654-615-02	s COLLAR, SUSPENSION	1126	4-000-676-01	s SEALING (J), HANDLE
1109	3-657-705-91	s BOLT (M4X8), HEXAGON HOLE	1127	4-000-677-01	s SEALING (K), HANDLE
1110	4-558-058-01	s LEVER, LOCK	1128	4-129-036-02	s FOAM (HF), SHIELD
			1129	4-476-607-01	s CUSION B (SXS COVER)
1111	3-679-702-11	o CUSION,STOPPER	1130	4-540-740-01	s HANDLE SEALING GND (A)
1112	4-558-190-01	s LOCK,SCREW			
1113	4-549-633-01	s KNOB,LOCK	1131	4-540-741-01	s HANDLE SEALING GND (B)
1114	3-701-507-01	s SET SCREW, DOUBLE POINT,(M3X5)	1132	3-679-684-01	o REST,ARM
1115	3-711-765-01	s BOLT (M3), HEXAGON SOCKET [M3X25]	1133	4-170-737-01	s ACCESSORY SHOE GASKET A
1116	4-559-455-01	s PIN, STOPPER		7-683-405-04	s BOLT,HEXAGON SOCKET 3X10
1117	3-796-975-02	s COVER BOTTOM,HANDLE		7-685-133-11	s SCREW +P 2.6X6 TYPE2
1118	4-558-317-01	s PIPE,VF SLIDE			
1119	3-870-162-01	s COVER, HANDLE (FRONT)			

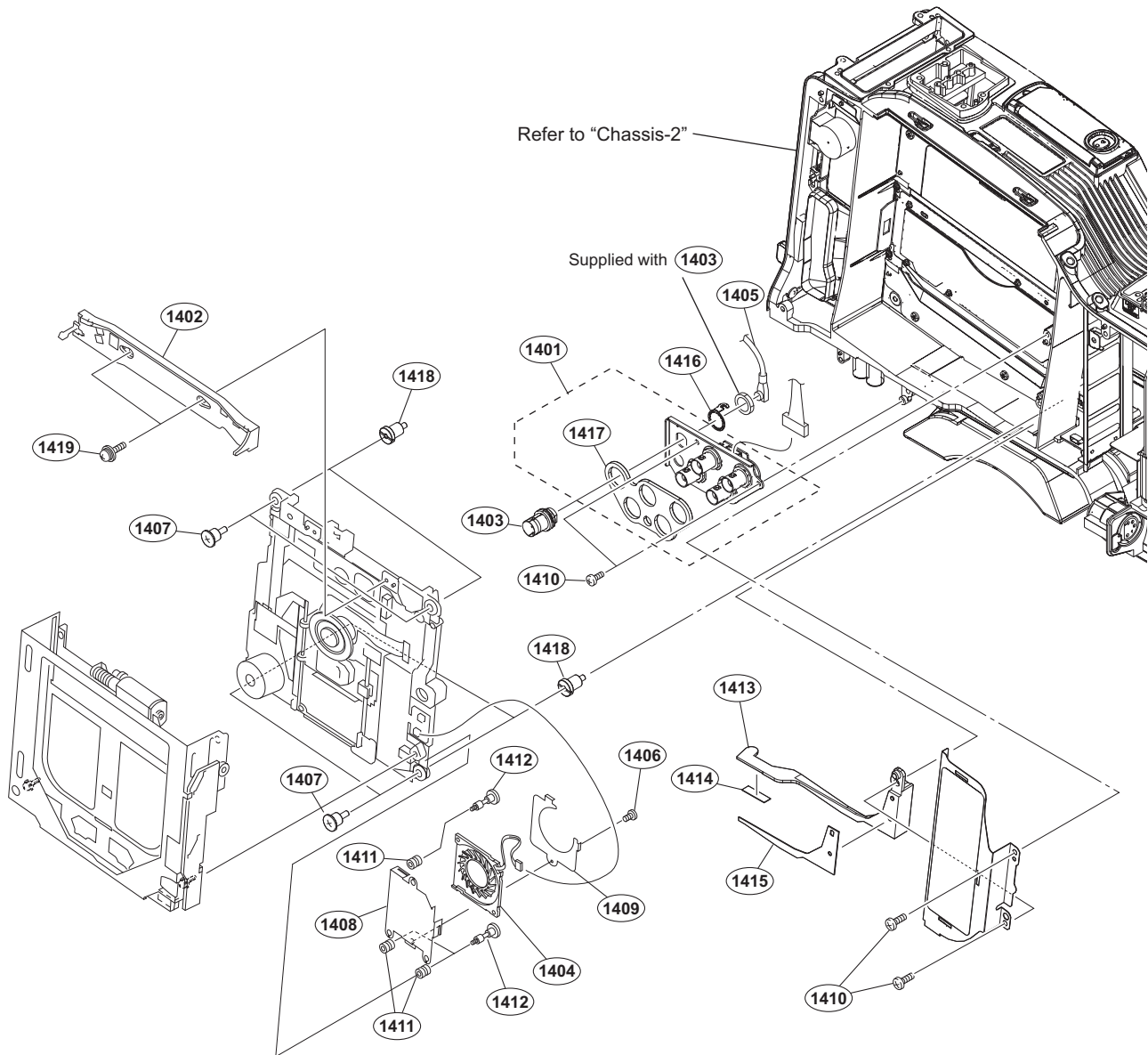
PDW-850

Rear Panel



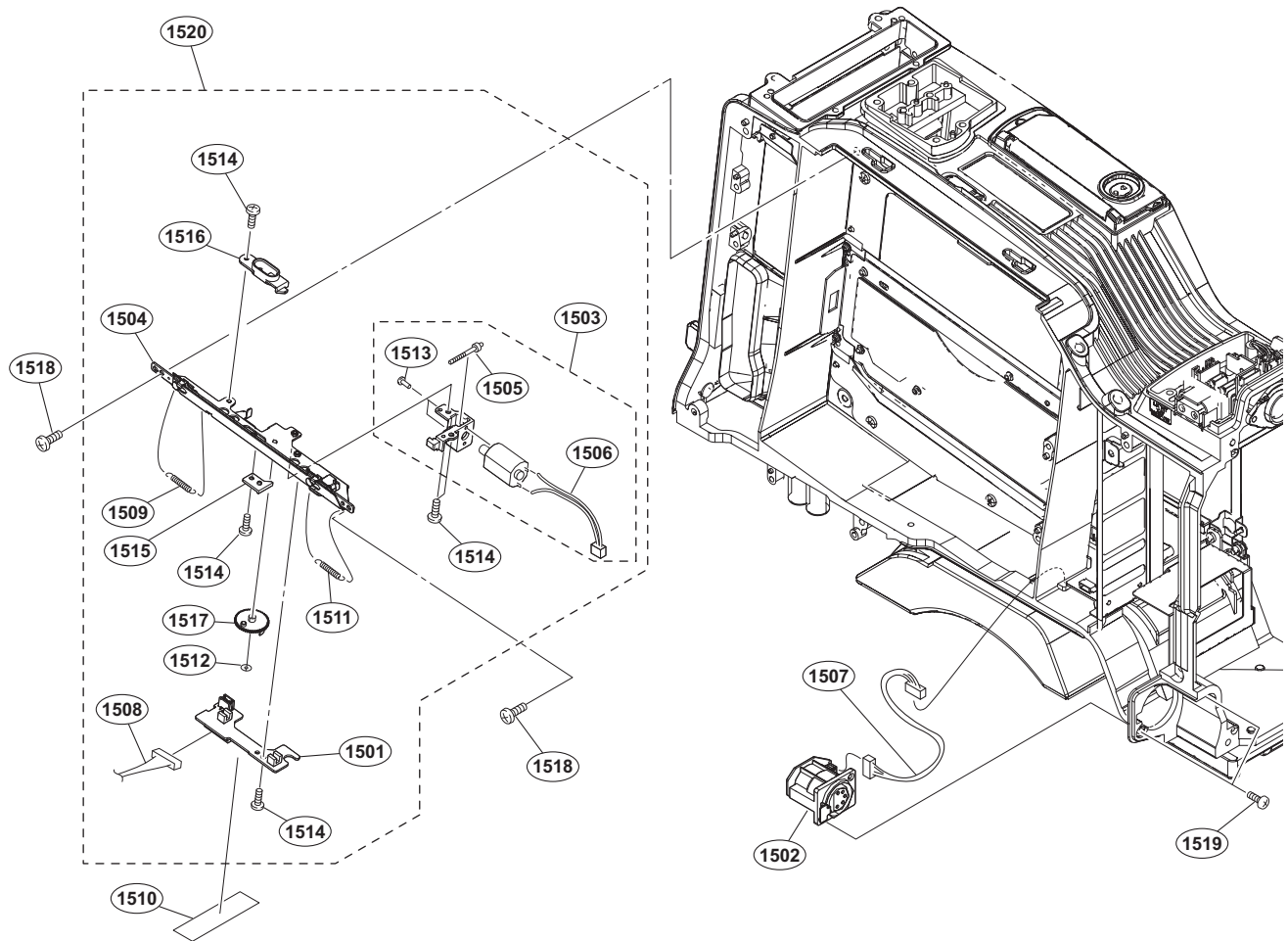
No.	Part No.	SP Description	No.	Part No.	SP Description
1301	A-2042-956-A	s MOUNTED CIRCUIT BOARD, DC-172	1319	3-796-949-01	s KNOB, RELEASE LEVER
1302	A-2042-959-A	s MOUNTED CIRCUIT BOARD, CI-49	1320	4-279-434-01	s GASKET , ND TOP
1303	A-2054-258-A	s CONNECTOR ASSY, BATTERY			
1304	A-2061-102-A	s PANEL ASSY, REAR			
1305	A-2064-267-A	s PANEL SUB ASSY, REAR			
				7-627-553-38	s SCREW, PRECISION +P 2X3
1306	1-820-459-21	s CONNECTOR, BATTERY			
1307	1-831-906-11	s CABLE ASSEMBLY, COAXIAL [White]			
1308	1-848-513-11	s CABLE ASSEMBLY, COAXIAL [Yellow]			
1309	1-970-227-11	s SUB HARNESS (COM)			
1310	3-056-233-21	s SCREW (M2), LOCK ACE, P2			
1311	3-079-115-01	s TAPE AS			
1312	3-364-941-01	s SCREW (+B) (2.6X5), NYLOK [Silver]			
1313	3-679-687-02	s LOCK, SLIDE			
1314	3-679-688-03	s LEVER, RELEASE			
1315	3-694-181-03	s TYPE1, AROCK PRECISION +P2.6X5			
1316	3-704-964-01	s SPRING, COMPRESSION			
1317	3-742-074-13	s SCREW (+B 3X8)			
1318	3-796-946-03	s TAPE (A)			

Chassis-1



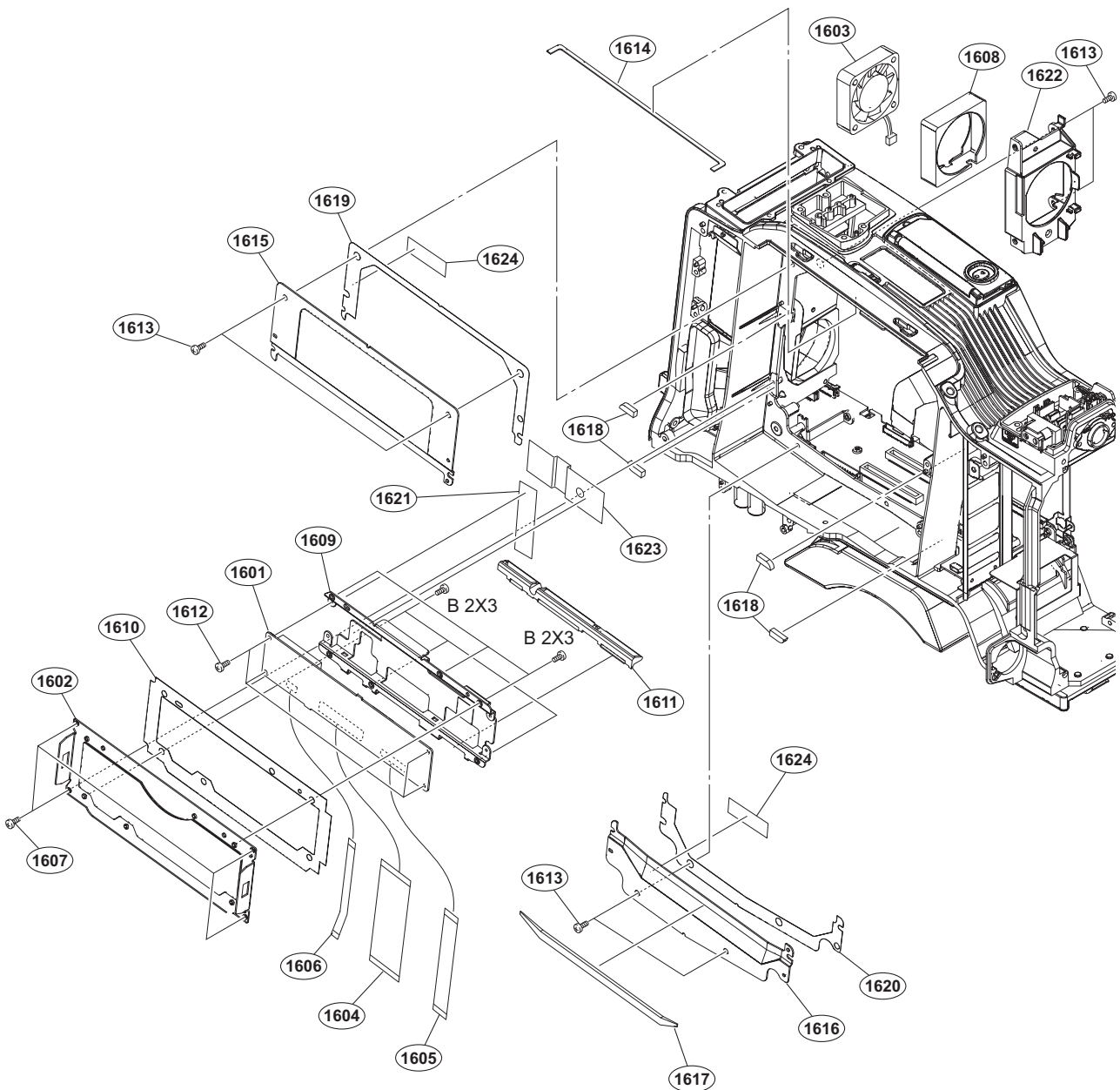
No.	Part No.	SP Description
1401	A-2042-949-A	s MOUNTED CIRCUIT BOARD, IO-262
1402	X-2187-621-3	s GUARD 2 ASSY, SW
1403	1-784-240-11	s CONVERTER, COAXIAL CONNECTOR
1404	⚠ 1-787-645-12	s D.C. FAN (35 SQUARE)
1405	1-837-372-11	s CABLE ASSEMBLY, COAXIAL
1406	2-635-562-11	s SCREW (M1.7)
1407	3-277-093-01	s SCREW (DIA.9), STEP
1408	3-279-009-02	s PLATE (LOWER), FAN
1409	3-279-010-02	s PLATE (UPPER), FAN
1410	3-364-941-01	s SCREW (+B) (2.6X5), NYLOK [Silver]
1411	3-617-812-01	s VIBRATION PROOF, RUBBER
1412	3-825-467-02	s SCREW, STEP
1413	3-870-264-01	s BLOCK, CORNER
1414	3-870-265-01	s SHEET (CB), ADHESIVE
1415	3-870-266-01	s SHEET, COVER
1416	4-136-517-01	s WASHER, BNC COAXIAL FIXED
1417	4-540-374-01	s CUSHION, IO
1418	4-540-414-01	s SUPPORT, MD
1419	4-654-273-02	s ACE (M2), LOCK

Chassis-2



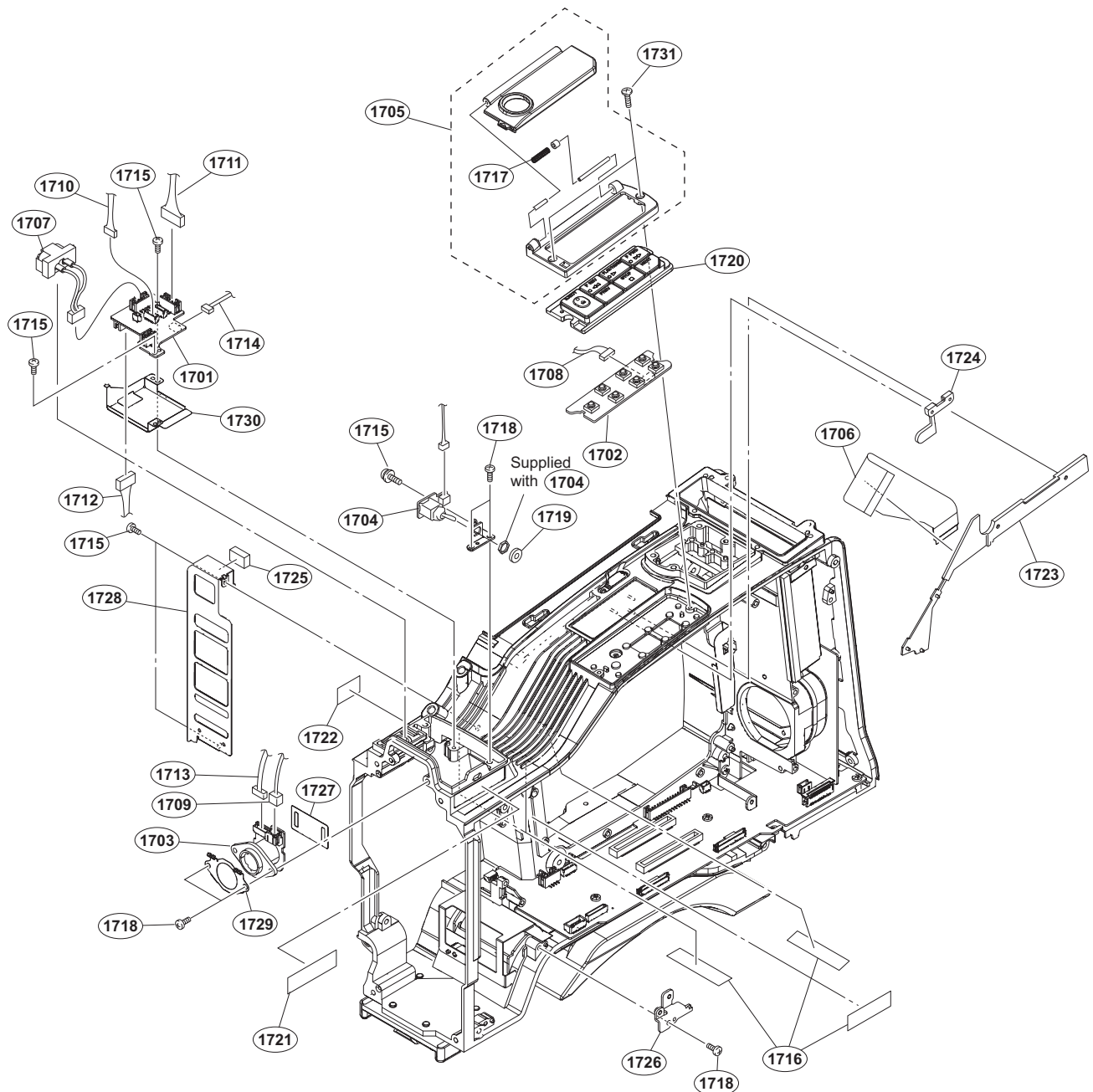
No.	Part No.	SP Description
1501	A-2042-947-A	s MOUNTED CIRCUIT BOARD, SW-1621
1502	A-2042-963-A	s MOUNTED CIRCUIT BOARD, CN-3668
1503	A-8279-912-B	s MOTOR SUB ASSY, LD
1504	X-3608-695-4	s ASSY BASE, RELEASE LOCK
1505	X-3945-435-3	s SHAFT (12) ASSY, WORM
1506	1-956-658-11	s HARNESS, SUB (LOADING)
1507	1-967-519-11	s HARNESS, SUB (CN-PS/5P)
1508	1-970-389-11	s HARNESS, SUB (LID)
1509	3-029-898-02	s SPRING (CLK), TENSION
1510	3-079-115-01	s TAPE AS
1511	3-513-074-21	s SPRING, TENSION
1512	3-559-408-11	s WASHER, POLYETHYLENE, DIA.1.2
1513	3-703-816-45	s SCREW (M1.4X2.5), SPECIAL HEAD
1514	3-729-076-11	s SCREW (+B) (2X4)
1515	3-797-030-01	s ARM, RELEASE
1516	3-797-031-03	s GUIDE, EJECT
1517	3-797-063-03	s GEAR, RELEASE
1518	3-968-729-81	s SCREW (M2), LOCK ACE, P2
1519	4-674-315-01	s SCREW (M2.6X6)
1520	A-2054-264-A	s RELEASE ASSY, LOCK

Chassis-3



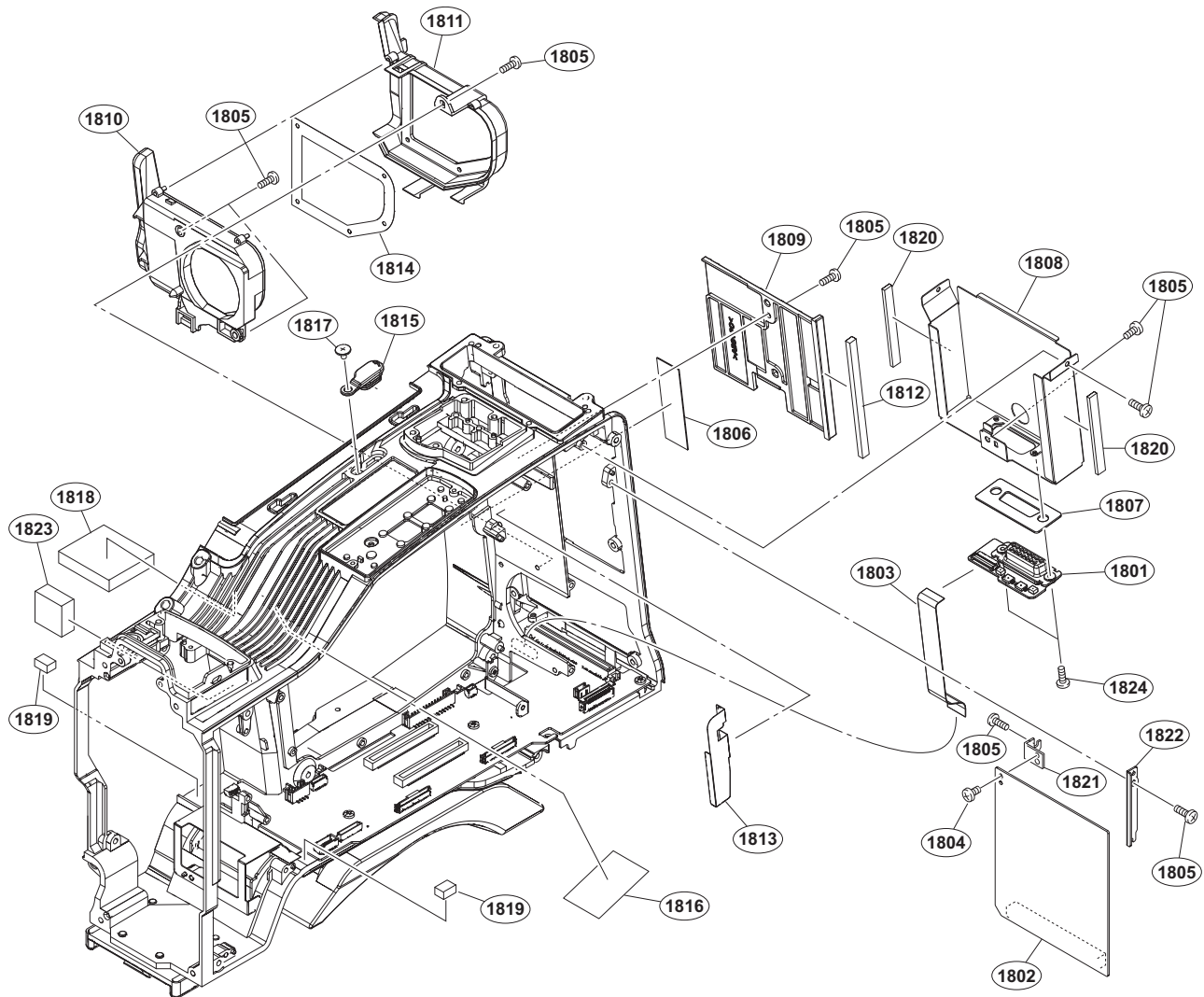
No.	Part No.	SP Description	No.	Part No.	SP Description
1601	A-1418-765-C	s MOUNTED CIRCUIT BOARD, DR-606	1619	3-870-250-01	s SHEET (A MINIATURE)
1602	X-2187-410-2	s MINI PARTITION ASSY	1620	3-870-251-01	s SHEET (B MINIATURE)
1603	⚠ 1-787-899-11	s FAN, DC (40 SQUARE)			
1604	1-875-555-11	s FPC(DR-OP)P100	1621	4-119-886-01	s TAPE (13X50)
1605	1-875-556-11	s FPC(DR-SE857)P100	1622	4-540-361-01	s HOLDER, FAN FITTING
			1623	4-547-898-01	s SHEET, HARNESS RETAINER
1606	1-875-557-11	s FPC(DR-SE858)P100	1624	3-079-115-01	s TAPE AS
1607	3-056-233-21	s SCREW (M2), LOCK ACE, P2			
1608	3-097-054-03	s CUSHION, FAN (40X10)			
1609	3-279-004-02	s HEAT SINK		7-621-772-08	s SCREW +B 2X3
1610	3-279-005-03	s PACKING PARTITION			
1611	3-279-479-02	s GUIDE, FPC			
1612	3-286-141-01	s +PSW 2X4			
1613	3-364-941-01	s SCREW (+B) (2.6X5), NYLOK [Silver]			
1614	3-797-014-02	s PACKING MAIN INNER			
1615	3-870-238-01	s PARTITION A MINIATURE			
1616	3-870-239-01	s PARTITION B MINIATURE			
1617	3-870-240-01	s CUSHION, FPC RETAINER			
1618	3-870-248-01	s CUSHION, DUST PROTECTION			

Chassis-4



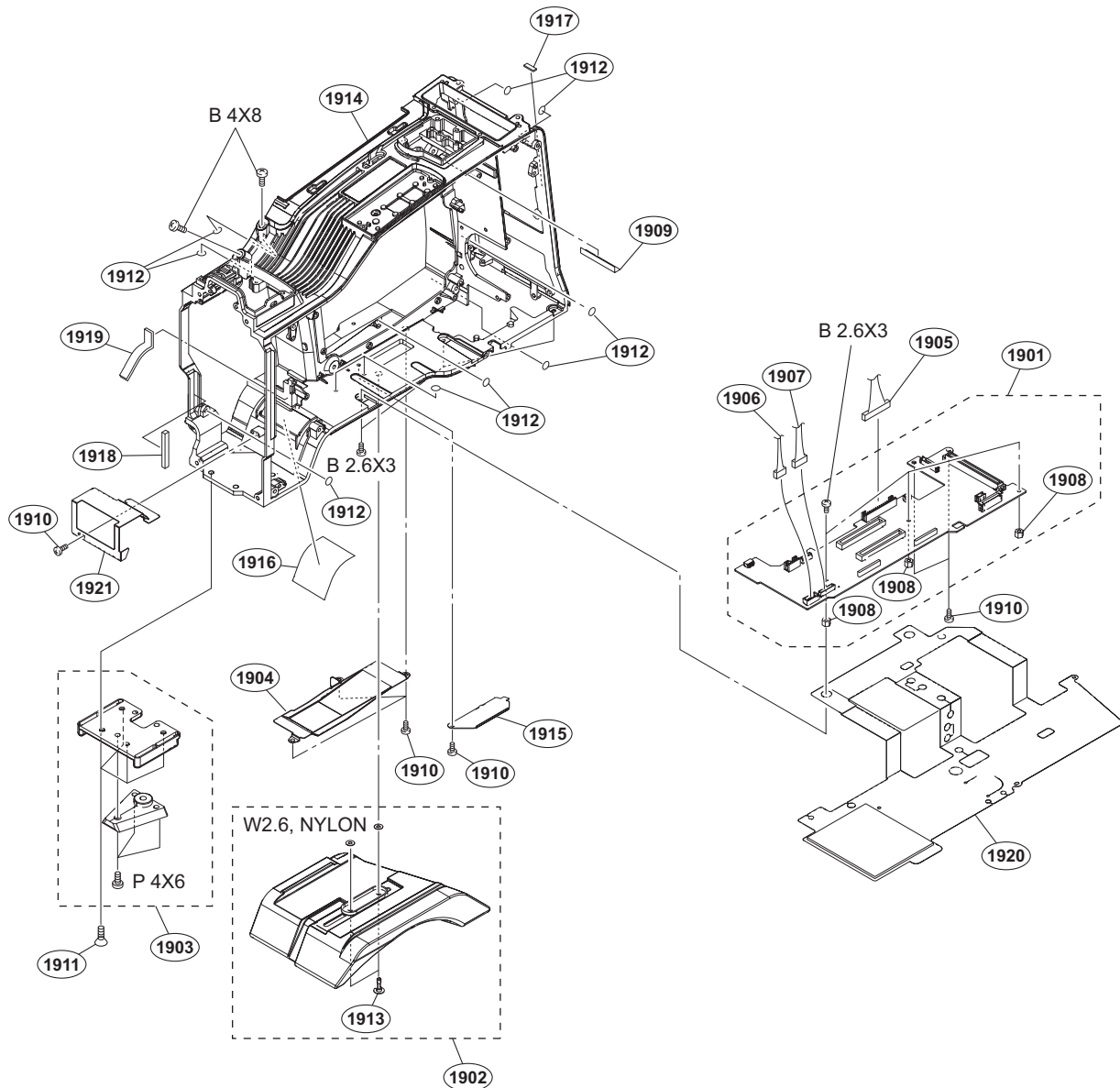
No.	Part No.	SP Description	No.	Part No.	SP Description
1701	A-2042-948-A	s MOUNTED CIRCUIT BOARD, CN-3667	1718	3-364-941-01	s SCREW (+B) (2.6X5), NYLOK
1702	A-2042-955-A	s MOUNTED CIRCUIT BOARD, KY-712	1719	3-796-980-02	s DROP PROTECTION(LIGHT)
1703	A-2042-961-A	s MOUNTED CIRCUIT BOARD, CN-3683	1720	3-797-024-02	s COVER,KEY SW
1704	A-2042-965-A	s MOUNTED CIRCUIT BOARD, SW-1619			
1705	A-2054-259-A	s KEY FRAME ASSY	1721	3-870-187-02	s LABEL (IN), TOP
			1722	3-870-188-01	s LABEL (OUT), TOP
1706	1-876-960-11	s FPC (ATA)	1723	3-870-201-01	s HARNESS CLAMP CENTER
1707	1-964-607-11	s HARNESS, SUB (DDOUTLGT)	1724	3-870-202-01	s HARNESS CLAMP KY-EJ
1708	1-970-219-11	s SUB HARNESS(KEY)	1725	4-459-282-71	s GASKET (10X7)
1709	1-970-246-11	s SUB HARNESS(VF R)			
1710	1-970-388-11	s HARNESS, SUB (HANDLE)	1726	4-540-367-01	s BRACKET, DCP TG
			1727	4-540-376-01	s SHEET, VF PROTECTION
1711	1-970-393-11	s HARNESS, SUB (LIGHT)	1728	4-540-377-01	s SEPARATOR, FRONT
1712	1-970-394-11	s HARNESS, SUB (VFUNREG)	1729	4-540-389-01	s SHIELD GND (VF)
1713	1-970-395-11	s HARNESS, SUB (VF)	1730	4-540-391-02	s SHIELD(HB)
1714	1-970-399-11	s HARNESS, SUB (GPS)			
1715	3-056-233-21	s SCREW (M2), LOCK ACE, P2	1731	4-654-273-02	s ACE (M2), LOCK
1716	3-079-115-01	s TAPE AS			
1717	3-234-710-01	o SPRING (OPEN),COMPRESSION COIL			

Chassis-5



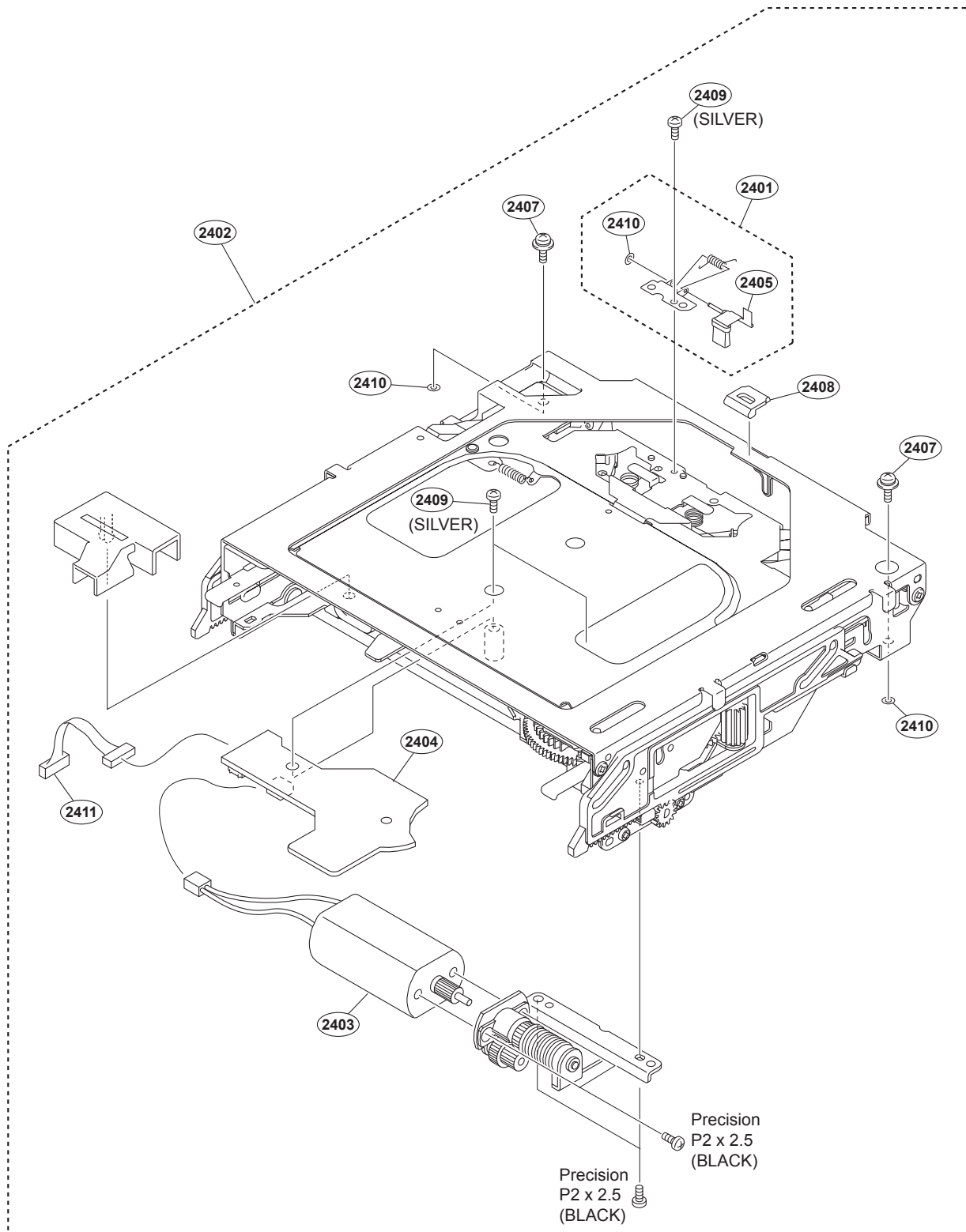
No.	Part No.	SP Description
1801	A-2042-962-A s	MOUNTED CIRCUIT BOARD, RX-134
1802	A-2061-339-A s	MOUNTED CIRCUIT BOARD, RE-323
1803	1-831-113-11 s	CABLE, FLEXIBLE FLAT (30 CORE)
1804	3-056-233-21 s	SCREW (M2), LOCK ACE, P2
1805	3-364-941-01 s	SCREW (+B) (2.6X5), NYLOK [Silver]
1806	3-629-467-01 s	PLATE(TOP), BLIND
1807	3-826-984-03 s	CONNECTOR RETAINER 2
1808	3-870-190-01 s	CASE, WRR
1809	3-870-203-01 s	GUIDE, REAR HARNESS
1810	3-870-204-02 s	DUCT (A), EXHAUST
1811	3-870-205-01 s	DUCT (B), EXHAUST
1812	3-870-235-01 s	CUSHION, GUIDE, REAR HARNESS
1813	3-870-249-01 s	GUARD, DR HARNESS
1814	3-870-252-01 s	FILM, DUCT
1815	3-870-253-02 s	CAP ME
1816	3-870-254-01 s	SHEET, ATA PROTECTION
1817	3-965-077-02 s	SCREW, SPECIAL (M2)
1818	4-000-494-01 s	FOAM (MFT), SHIELD
1819	4-115-172-01 s	GASKET (REAR CENTER)
1820	4-279-434-01 s	GASKET , ND TOP
1821	4-540-360-01 s	BRACKET, RE
1822	4-540-381-01 s	BRACKET (IN), RE
1823	4-544-197-01 s	GASKET (25X15 (25))-D, SOFT
1824	4-654-273-02 s	ACE (M2), LOCK

Chassis-6



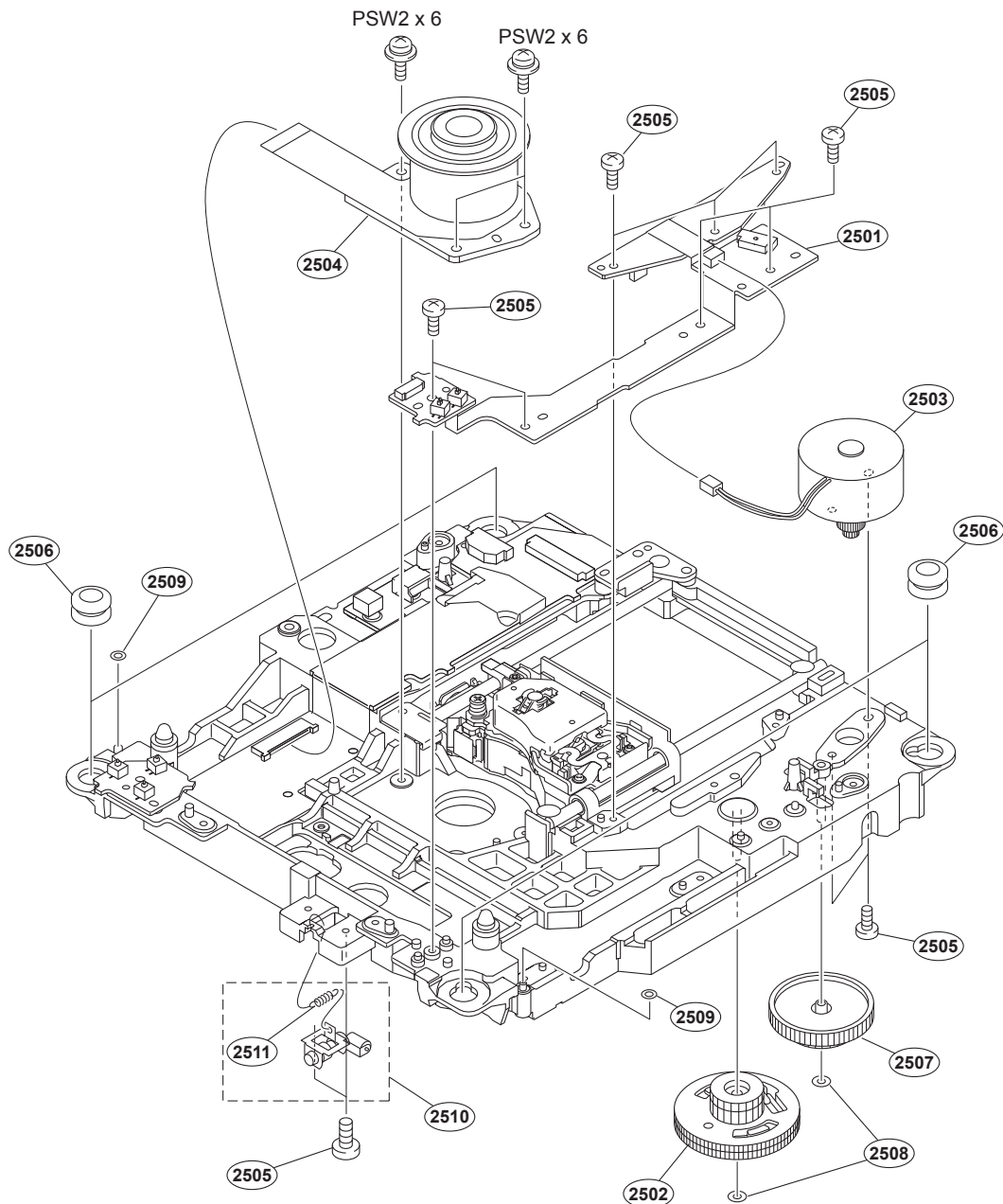
No.	Part No.	SP Description	No.	Part No.	SP Description
1901	A-2042-950-A	s MOUNTED CIRCUIT BOARD, MB-1208	1921	4-540-743-01	s SHEET (BOTTOM)
1902	A-8279-878-H	s PAD ASSY, SHOULDER			
1903	A-8279-993-D	s SHOE (D) ASSY, V			
1904	X-3608-689-2	s BOTTOM COVER ASSY			
1905	1-966-084-11	s HARNESS, SUB (DR1)			
1906	1-970-396-11	s HARNESS, SUB (FRONT)			
1907	1-970-397-11	s HARNESS, SUB (REG1)			
1908	2-534-514-02	o SUPPORT (1)			
1909	3-079-115-01	s TAPE AS			
1910	3-364-941-01	s SCREW (+B) (2.6X5), NYLON [Silver]			
1911	3-729-072-02	s SCREW, +K (4X8)			
1912	3-796-946-03	s TAPE (A)			
1913	3-836-796-04	s SCREW PAD			
1914	3-870-186-11	s FRAME, MAIN			
1915	3-870-194-01	s COVER, BOTTOM CONNECTOR			
1916	3-870-236-01	s MESH, BOTTOM			
1917	4-000-684-01	s SEALING (A), RELEASE LEVER			
1918	4-129-038-01	s FOAM (MOF), SHIELD			
1919	4-480-708-02	s GUSKET 40X5X0.5			
1920	4-540-378-02	s SHEET, FP PROTECTION			

Loader Block



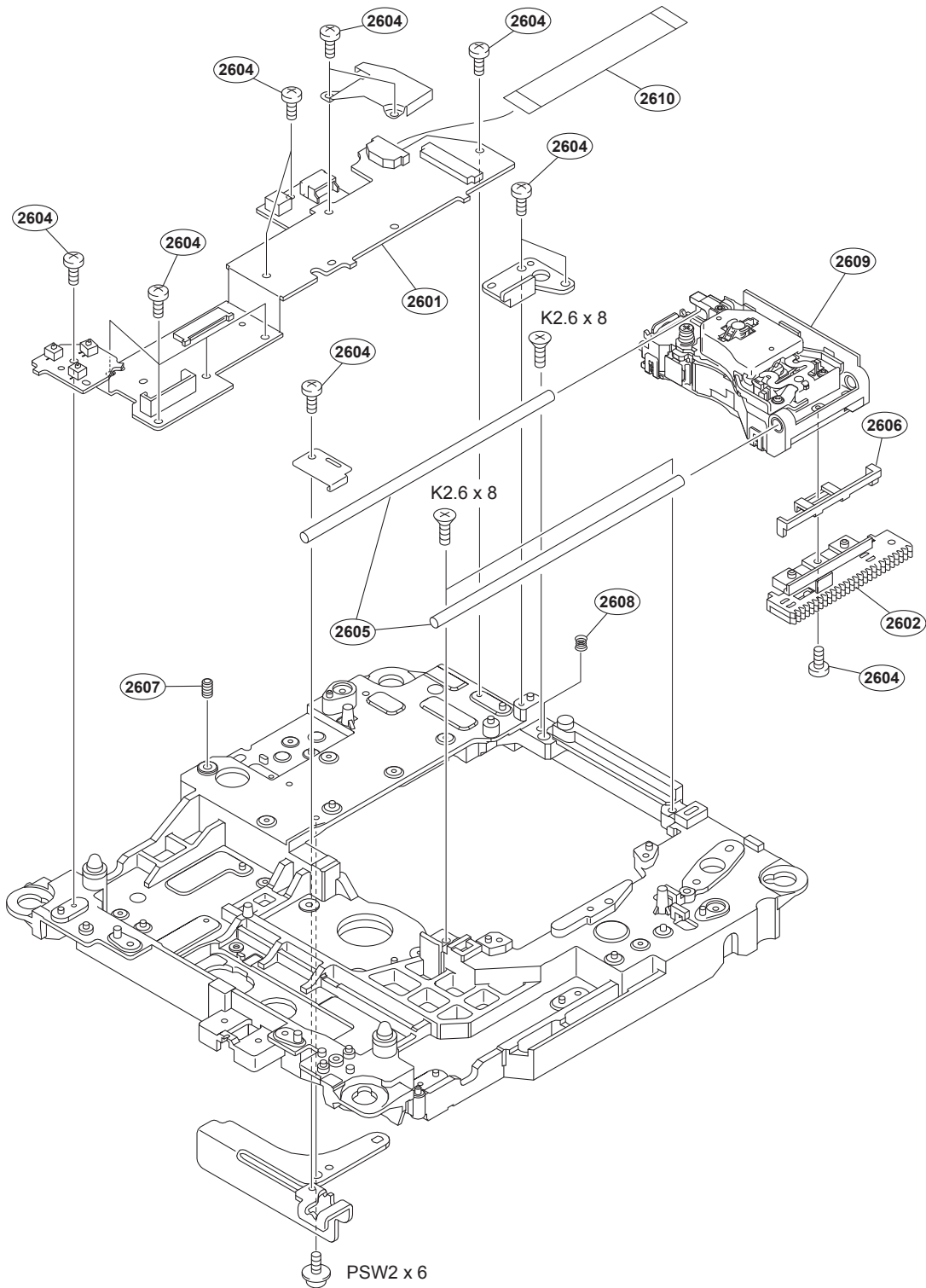
No.	Part No.	SP Description	No.	Part No.	SP Description
2401	A-1256-291-B	s CLEANER (P100) ASSY	2410	3-669-465-01	s WASHER (1.5), STOPPER
2402	A-1256-958-F	s LOADER (P100) ASSY (RP)	2411	1-962-531-12	s HARNESS, SUB (HN292-SE709)
2403	A-8347-267-A	s MOTOR (P1) ASSY, LOADING			
2404	A-8347-272-A	s MOUNTED CIRCUIT BOARD, SE-709			
2405	X-2177-881-4	s BRACKET ASSY,BRUSH		7-627-854-08	s PRECISION SCREW +P 2X2.5 TYPE3
2407	2-640-315-02	o SCREW (M2X5), SMALL, +P, SW			
2408	3-197-718-03	s CL SPACER			
2409	3-624-231-01	s SCREW M2,SPECIAL			

Drive Block-1



No.	Part No.	SP Description
2501	A-1366-120-A s	MOUNTED CIRCUIT BOARD, SE-858
2502	A-1369-355-B s	GEAR ASSY, NO.3
2503	A-1374-689-A s	MOTOR ASSY, SEEK
2504	⚠ 1-855-348-11 s	MOTOR, DC (SPINDLE)
2505	2-635-562-11 s	SCREW (M1.7)
2506	3-277-087-01 s	DAMPER
2507	3-277-224-01 s	GEAR, HELICAL, NO.2
2508	3-669-465-01 s	WASHER (1.5), STOPPER
2509	3-854-705-01 s	SPACER LD
2510	A-1368-046-B s	ME ASSY
2511	3-796-403-01 s	SPRING (ME), EXTENSION
	7-628-000-05 s	+PSW 2X6

Drive Block-2



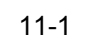
No.	Part No.	SP Description	No.	Part No.	SP Description
2601	A-1366-119-A	s MOUNTED CIRCUIT BOARD, SE-857	2610	1-874-831-11	s FPC((P100)LOADER)
2602	A-1369-356-A	s RACK ASSY, OP0			
2604	2-635-562-11	s SCREW(M1.7)			
2605	3-277-223-01	s SHAFT, MAIN SUB	7-621-592-10	s SCREW +K 2.6X8	
2606	3-277-227-01	s RUBBER, STOPPER, OP	7-628-000-05	s +PSW 2X6	
2607	3-277-388-01	s SCREW, ADJUST, M2.6			
2608	3-796-307-01	s SPRING(SKEW), COMPRESSION			
2609	⚠ A-1938-468-A	s KES-330A/J1 (RP)			

10-3. Supplied Accessories

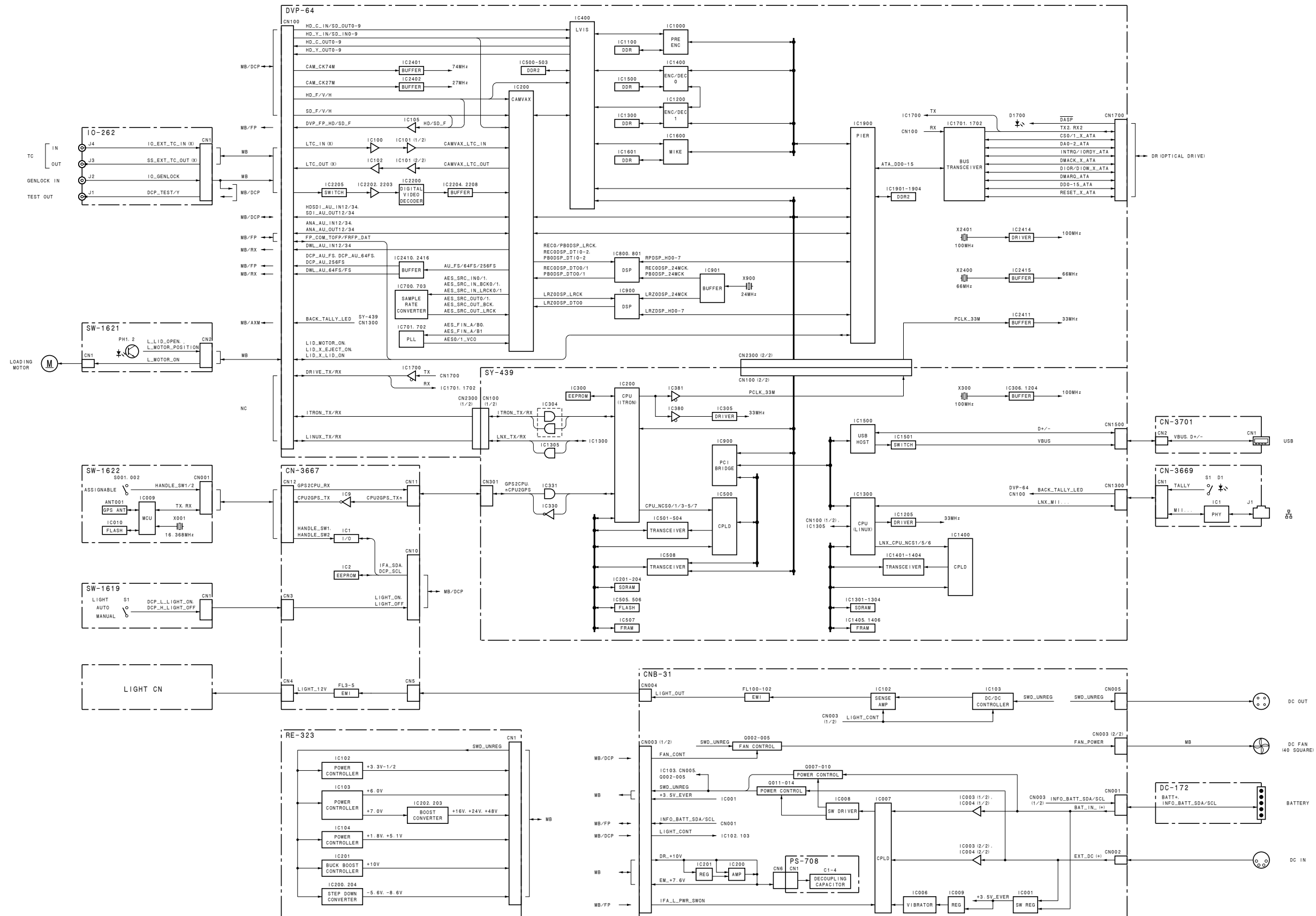
Q'ty	Part No.	SP Description
1pc	A-6772-374-C s	BELT ASSY, SHOULDER
1pc	1-835-427-12 s	CORD, WITH XLR CONNECTOR
1pc	3-274-369-03 s	SPACER, MICROPHONE
1pc	△ 4-544-502-01 s	MANUAL, OPERATION (Japanese)
1pc	△ 4-544-502-11 s	MANUAL, OPERATION (English)

Section 11

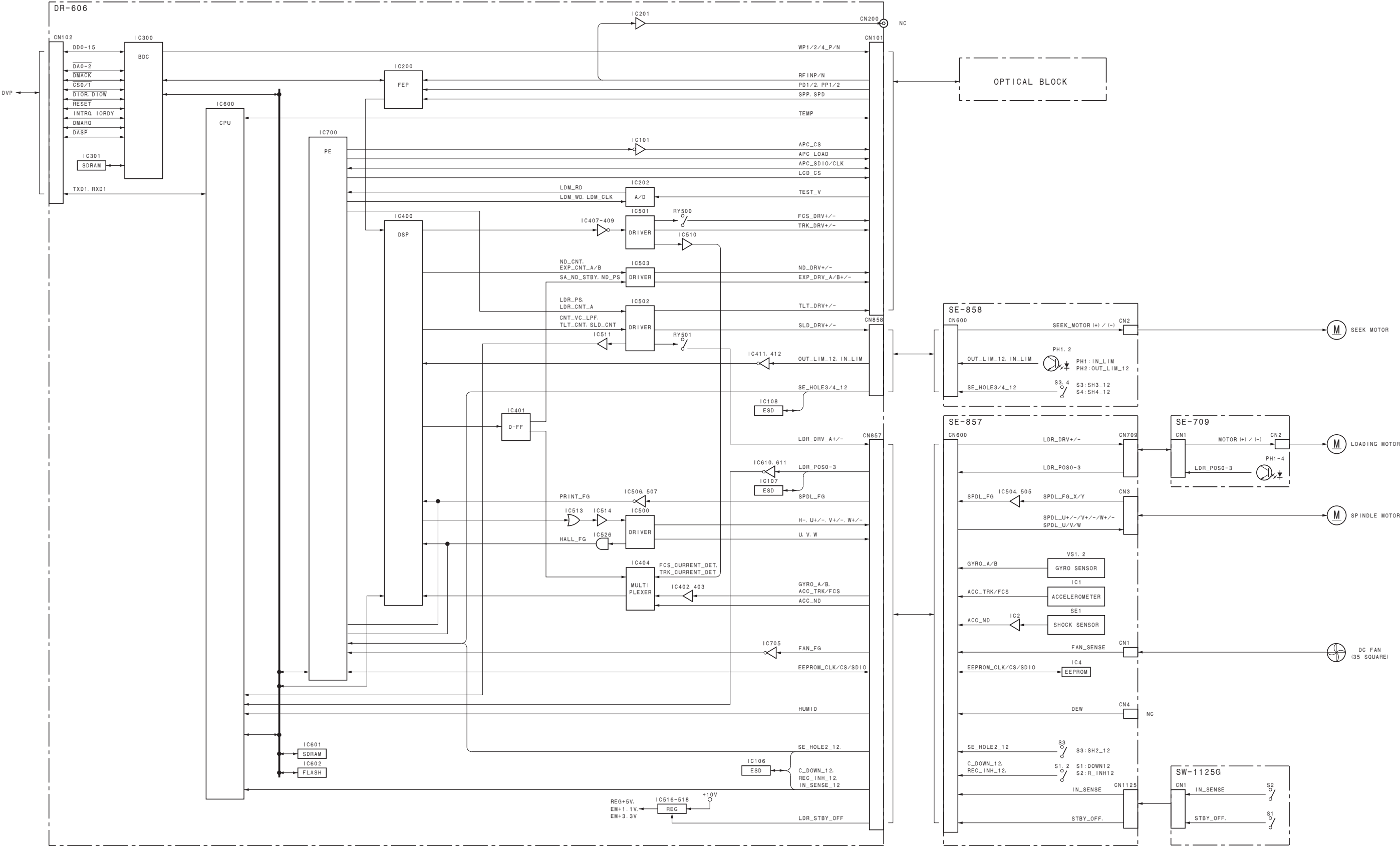
Diagrams



Overall (2/3)



Overall (3/3)



Frame Wiring

