SONY

LCD COLOR VIEWFINDER

HDVF-L750
HDVF-L770

SERVICE MANUAL

1st Edition

⚠ 警告

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

⚠ WARNING

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

⚠ WARNUNG

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

⚠ AVERTISSEMENT

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

Model Name	Serial No.
HDVF-L750 (SY)	0100001 and Higher
HDVF-L750 (CN)	0500001 and Higher
HDVF-L770 (SY)	0100001 and Higher
HDVF-L770 (CN)	0500001 and Higher

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1. Service Overview

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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, replacement of main parts, diagnostics, setup menu 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 Guide (Supplied with this unit)
- Operation Manual CD-ROM (Supplied with this unit)
  This manual contains information required to operate and use the unit.
- Factory Service Manual (Available on request)
  This manual describes the information items that premise the service based on the components parts.

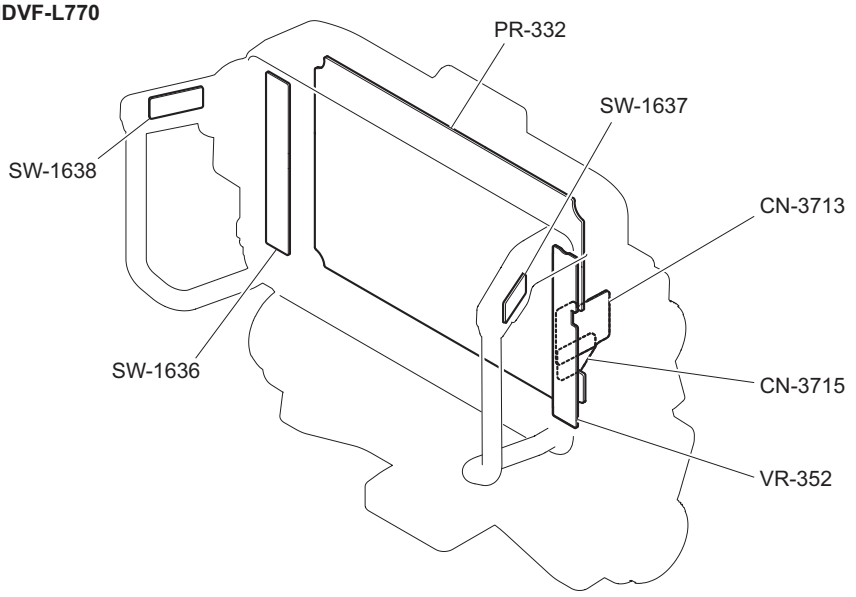
Trademarks

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

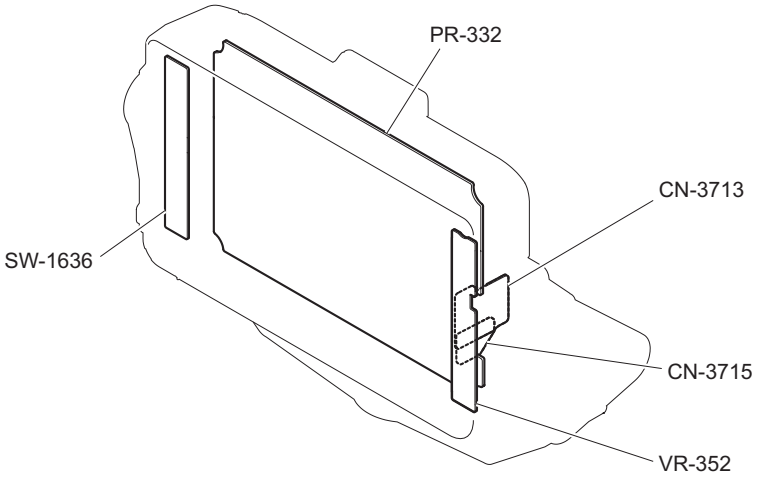
Section 1
Service Overview

1-1. Board Location

HDVF-L770



HDVF-L750

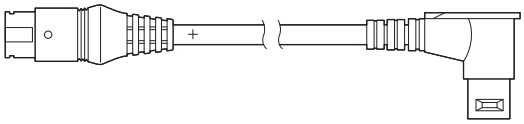


1-2. Connectors and Cables

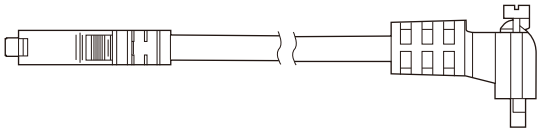
1-2-1. Connection Cables

When connecting the HDVF-L750/L770 to a camera at the time of installation or service, use the supplied connection cable.

- Connection cable (20-pin)
  Sony part No.: 1-838-608-21



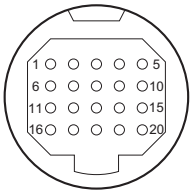
- Connection cable (26-pin)
  Sony part No.: 1-848-062-21



1-2-2. Connector Inputs/Outputs Signals

1. CAM (Round, 20-pin)

Round, 20-pin, Female



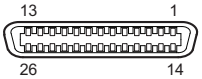
- External View -

No.	Signal	I/O	Specifications
1	SDA	IN/OUT	TTL level
2	Y TALLY	IN	ON: +5 V OFF: GND
3	POWER OFF	IN	ON: OPEN OFF: GND
4	SCK	IN	TTL level
5	NC	—	No connection
6	NC	—	No connection
7	NC	—	No connection
8	G TALLY	IN	ON: +5 V OFF: GND
9	NC	—	No connection
10	NC	—	No connection
11	NC	—	No connection
12	Y VIDEO (X)	IN	1.0 Vp–p, Zi=75 Ω
13	VIDEO GND	—	GND for VIDEO
14	Pb VIDEO (X)	IN	0.7 Vp–p, Zi=75 Ω
15	Pr VIDEO (X)	IN	0.7 Vp–p, Zi=75 Ω
16	REC (L)	IN	ON: +5 V OFF: GND
17	R TALLY	IN	ON: +5 V OFF: GND
18	NC	—	No connection
19	UNREG GND	—	GND for UNREG
20	UNREG	IN	+10.5 V to 17 V

Continued

2. CAM (Rectangular, 26-pin)

Rectangular, 26-pin



- External View -

No.	Signal	I/O
1	SHIELD_GND	—
2	LVDS_1–	IN
3	LVDS_2–	IN
4	LVDS_3–	IN
5	LVDS_CLK–	IN
6	LVDS_4–	IN
7	LVDS_5–	IN
8	VF_ON	OUT
9	SDA	IN /OUT
10	UNREG	IN
11	UNREG	IN
12	GND	—
13	GND	—
14	GND	—
15	LVDS_1+	IN
16	LVDS_2+	IN
17	LVDS_3+	IN
18	LVDS_CLK+	IN
19	LVDS_4+	IN
20	LVDS_5+	IN
21	SRX	OUT
22	SCL	IN
23	UNREG	IN
24	UNREG	IN
25	GND	—
26	SHIELD_GND	—

3. SDI IN

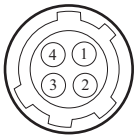
BNC type

- 3G-SDI: SMPTE 424M/425M compliant
  0.8 Vp-p, 75 Ω, 2.970 Gbps/2.967 Gbps

- HD-SDI: SMPTE 292M compliant
  0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps

4. DC IN

DIN, 4-pin, Male

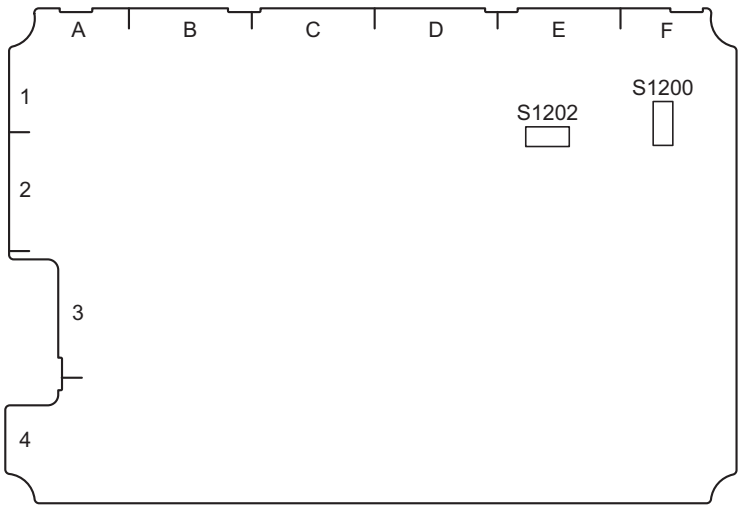


- External View -

No.	Signal	I/O	Specifications
1	UNREG GND	—	GND for UNREG
2	TALLY	IN	ON: GND OFF: High impedance (Open collector)
3	NC	—	No connection
4	UNREG	IN	+10.5 to 17 V dc, 2 A (max)

1-3. Onboard Switches

1-3-1. PR-332 Board



PR-332 board (A side)

Ref. No.	Name	Bit	Function	Factory default setting
S1200	—	1 to 6	Not used	All OFF
	MODEL	7	Selection of model OFF: HDVF-L750 ON: HDVF-L770	Differ according to the model*1
	AREA	8	Selection of destination OFF: SYM ON: CN	Differ according to the destination*1
S1202	TEST SIGNAL	1, 2	Selection of signal output (type) to TP700 (Refer to"3-3. Internal Test Signal")	All OFF
	TEST POINT	3 to 5	Selection of signal output (point) to TP700 (Refer to"3-3. Internal Test Signal")	All OFF
	—	6 to 8	Not used	All OFF

*1: All these bits were set to off when the board was purchased.
When installing this board to the HDVF-L750/L770, change the setting of these bits in accordance with the model and destination.

1-4. Circuit Description

HDVF-L750/HDVF-L770 consists of the following boards.

- PR-332 board
- CN-3713 board
- CN-3715 board
- SW-1636 board
- SW-1637/SW-1638 boards (HDVF-L770 only)
- VR-352 board

1-4-1. PR-332 Board

The PR-332 board mainly consists of a power supply block, a video input block, a video signal processing circuit, a tally control circuit, and a microcomputer.

Video Input Block

This unit has three inputs: analog (20p) interface, digital (26p) interface, and 3G SDI input.

- Analog (20p) interface
  Analog HD Y/Pb/Pr signals that are input to CN100 are transferred to the video amplifier (IC204, IC205, IC206) and the LPF (IC207), are converted to 10-bit digital signals at a rate of 74 Mbps by the A/D converter (IC300), and are then input to the FPGA (IC1).
  The HD/VD synchronizing signal generated in the sync separator IC (IC209) is input to the FPGA (IC1).
- Digital (26p) interface
  LVDS signals encoded on the camera side are input to the FPGA (IC1) through CN101, and are then decoded to digital video signal, synchronizing signal, serial control signal, and TALLY lighting control signal, etc.
- SDI input
  The SDI signal that is input to CN501 is input to the SDI equalizer (IC501) in which impedance conversion and level adjustment are performed. Then the processed SDI signal is input to the FPGA (IC1).

Video Signal Processing Circuit

Peaking processing, ZEBRA/FALSE COLOR processing, and WFM signal creation are applied to digital video signals that are input to the FPGA (IC1). Then the signals are distributed to two channels, and are then input to the image processing IC (IC2). This image processing IC (IC2) performs picture size conversion and IP conversion to convert the input YC digital signals to full-HD YC digital signals. This IC also performs processing to combine two screens.
The full-HD YC digital signals that are output from the image processing IC (IC2) are input again to the FPGA (IC1) that performs YC-to-RGB conversion, brightness setting, knee correction, and convolution of the guide frame and the OSD signal. The converted and processed signals are input to the LVDS transmitter circuit (IC1400).
The LVDS transmitter converts each 8-bit RGB digital signal and synchronizing signal to LVDS signals, and outputs the converted signals to CN1400.
The FPGA (IC1) configures a PLL circuit with the phase comparator (IC1300), VCO1, and VCO2 to control the VCO's oscillation frequency to synchronize it with the HD signal that is input to the FPGA (IC1).

Generating Internal Test Signals

The FPGA (IC1) has two circuits to generate internal test signals at the front and rear to switch test signals and main-line signals.

Control System

The CPU (IC1203) sends and receives data to/from the FPGA (IC1) and the image processing IC (IC2) through serial communication. This CPU also sets parameters for the LPF and the A/D converter through I²C communication. Brightness, contrast, peaking potentiometer level signal lines are connected to CPU's A/D input ports to control them. The D/A output ports are connected to the analog dimming control pins of the LED driver ICs (IC1401, IC1502) to control backlight and UP TALLY brightness.
The FPGA (IC1) performs PWM dimming control for TALLY/INDICATOR, backlight ON/OFF control through the LED driver IC (IC1401), and brightness control using the PWM dimming control in conjunction with the contrast potentiometer. Furthermore, this FPGA performs I²C communication or serial communication with the connected camera.

ROM

The onboard EEPROM (IC1208) retains setup data, operating hours of the unit, and other data. The EEPROM (IC105) also retains model information of the unit such as serial number.
The FPGA can be upgraded through CN400. (Refer to "1-9-3. Writing and Rewriting PLD Internal Data")

Power Supply Block

This block has 16 outputs that operate within the proper input power voltage range.

- Power input switching circuit
  This unit is provided with other three power input methods: power supply from the CAM (camera) connectors (20p and 26p) and power supply from the DC IN connector. Each power input is connected to the FET switch (Q1631, Q1632, Q1635, Q1636, Q1639, and Q1640). When power is input to the DC IN connector, the DC IN connector is preferentially selected.
- Input voltage monitoring circuit
  The input voltage monitoring circuit (IC1601) supplies power to the DC/DC controller IC (IC1603) when the input voltage is within the proper range.
  Power supply operates when the input voltage is within the proper range (+9.5 to +17.5 V). Once power is supplied, the power supply block works within an input voltage range of +8.3 to +18.5 V. If the input voltage lowers below +8.3 V or rises above +18.5 V, Q1605 is turned off to shut off supply of UNREG power. The UNREG power voltage is not restored until it enters the proper range.
- Protective circuit
  The DC-DC converter (IC1700, IC1701, IC1702, and IC1800) incorporates an output error detection circuit. When an error is detected in any output, the POWERGOOD pin is turned low. The POWERGOOD pin output signal is input to IC1003. When an error is detected, the SHUTDOWN signal is output. This SHUT DOWN signal turns off Q1605 to shut off the UNREG power supply.

- Power supply control circuit
  IC1603 is a synchronous rectification-type back DC-DC controller that generates +5 V and +3.3 V from the UNREG voltage supplied from the external circuit.
  IC1700 to IC1703 compose a step-down switching regulator. IC1700, IC1701, and IC1702 generate power voltages +1.8 V, +1.2 V, and +1.0 V from the +3.3 V input voltage, and ICI703 generates a power voltage +2.5 V from the +5 V input voltage.
  IC1704 and IC1705 compose an LDO regulator that generates power voltages +1.2 V_SDI and +1.0 V_SDI from the +1.8 V input voltage.
  Power voltages +5 V_A, +3.3 V_A, +1.8 V_A, and -5 V_A are used for analog circuits. The step-down switching regulator (IC1801) generates a power voltage +5 V_A from the UNREG voltage supplied from the external circuit. From this +5 V_A input voltage, the step-down switching regulator (IC1801) generates +3.3 V_A, and the inverter power IC (IC1803) generates -5 V_A. Furthermore, the LDO regulator (IC1802) generates +1.8 V_A from the +3.3 V_A input voltage.
  IC1101 is a DDR termination regulator that generates a VTT bus termination power voltage of the DDR memory.
- LCD module power supply circuit
  The +3.3 V_LCD power supply circuit for the LCD module activates the FET switch (Q1705) by using the control signal from the FPGA (IC1) to perform ON/OFF control. While the +3.3 V_LCD power supply circuit is turned off, this circuit discharges C1727 and the LCD module.
- LED drive circuit
  This unit has two LED drive circuits to control the LCD module backlight and UP TALLY.
  In the backlight drive circuit (IC1401), brightness setting was made in the factory shipping process by the analog dimming control by using the DC signal from the D/A port of the CPU (IC1203). The LED drive circuit also controls brightness according to the ON/OFF control from the FPGA (IC1) and the PWM dimming control in conjunction with the contrast potentiometer.
  In the Up Tally drive circuit (IC1502), brightness setting is made according to the ON/OFF control from the FPGA (IC1) and the analog dimming control by using the DC signal from the D/A port of the CPU (IC1203).

1-4-2. CN-3713 Board

This board contains a 20-pin analog interface camera connector (CN100).

1-4-3. CN-3715 Board

This board contains the DC IN connector (CN200) to supply external power.

1-4-4. SW-1636 Board

This board contains a rotary encoder (EN300) and a switch (S300) for setup menu, two ASSINABLE switches (S302, S303), and POWER ON/SAVE switch (S301).

1-4-5. SW-1637/SW-1638 Boards (HDVF-L770 only)

Each of these boards contains two ASSINABLE switches (SW-1637: S400, S401 / SW-1638: S500, S501).

1-4-6. VR-352 Board

This board contains three potentiometers BRIGHT (RV600), CONTRAST (RV601), and PEAKING (RV602).

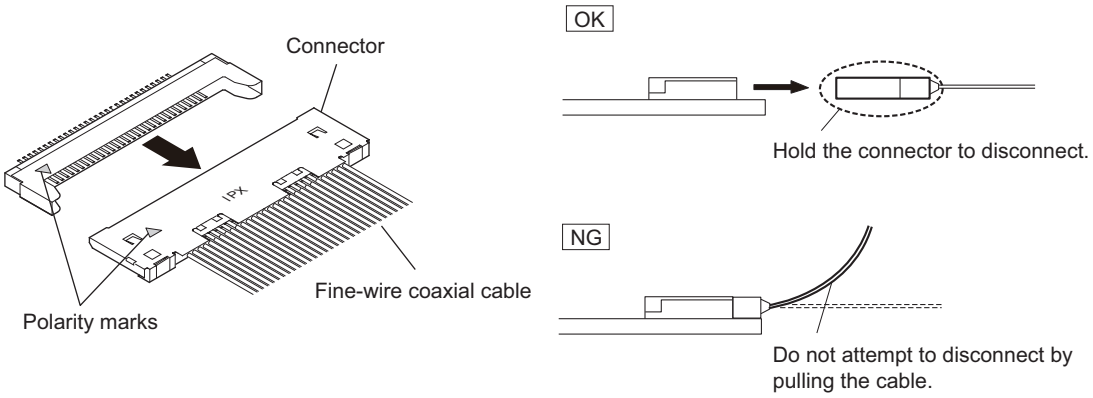
1-5. Coaxial Cable

1-5-1. Disconnecting/Connecting Fine-Wire Coaxial Cable

Note

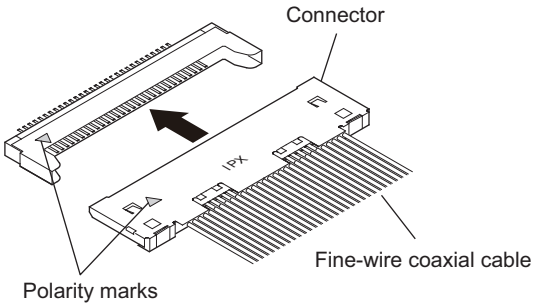
- Be very careful when handling the fine-wire coaxial cable so that fine wires are not disconnected.
- When disconnecting the fine-wire coaxial cable, be sure to hold the connector. Do not attempt to pull the cable.
- Check that the contact surface of the fine-wire coaxial cable connector is free from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

Disconnecting



1. Hold both sides of the fine-wire coaxial cable connector, and pull the connector straight to disconnect it.

Connecting



Note

Firmly insert the connector straight as far as it will go.

1. Insert the connector straight matching the polarity marks.

1-5-2. Disconnecting/Connecting Coaxial Cable

Note

Be sure to observe the disconnecting and connecting procedures below to prevent wire disconnection or poor contact.

Required Tool

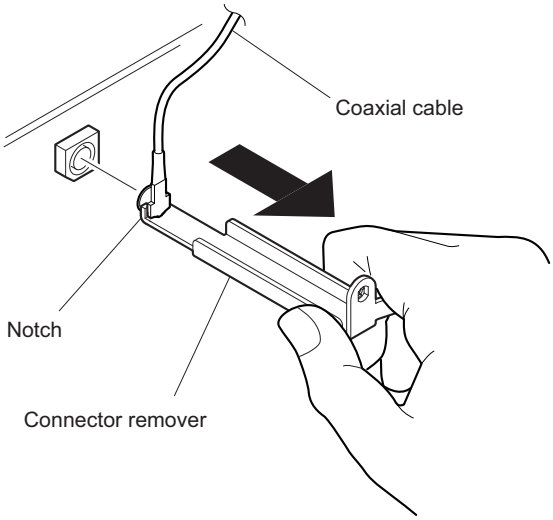
- Connector remover (Part No: J-7121-210-A)

Disconnecting

1. Fit the notch at the end of the connector remover into the connector of a coaxial cable, and pull the connector remover straight.

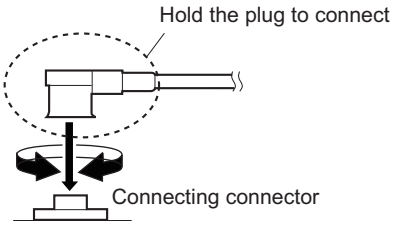
Note

- Insert the notch of the connector remover from the opposite side of the cable of the coaxial cable.
- Do not attempt to pull the cable.



Connecting

1. Hold the plug of the coaxial cable.
2. Push the plug perpendicularly to the connector while slightly turning the plug clockwise and counterclockwise.



1-6. Service Tools/Equipment

1-6-1. Service Tools

Part No.	Name	Application
J-6323-430-A	Torque screwdriver's bit (M3)	Screw tightening
J-6325-110-A	Torque screwdriver's bit (M1.4)	Screw tightening
J-6325-380-A	Torque screwdriver's bit (M2)	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
J-6510-120-A	RS232 Interface cable	Used for software data downloading
J-7121-210-A	Connector remover	Disconnecting coaxial cables
Commercially available	Xilinx Platform Cable USB II	Used for PLD data downloading

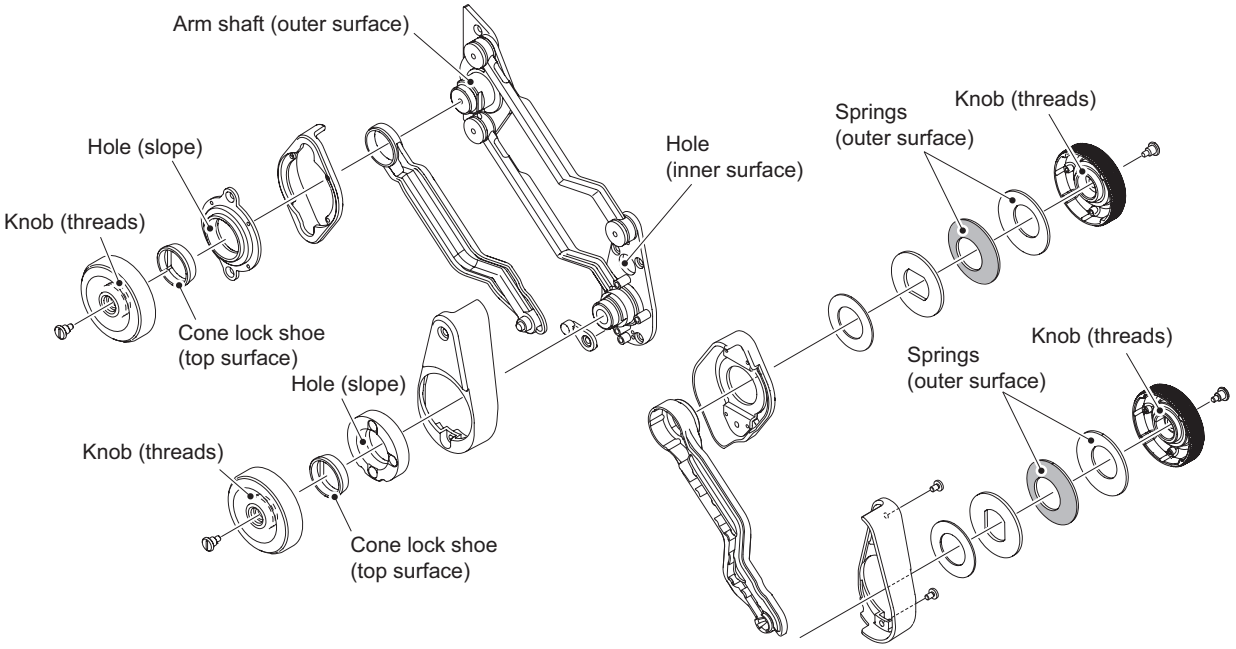
1-6-2. Equipment

Equipment	Model name
HDD camera	The camera indicated to the "Related Equipment" of the OPERATION MANUAL.
General-purpose personal computer	—

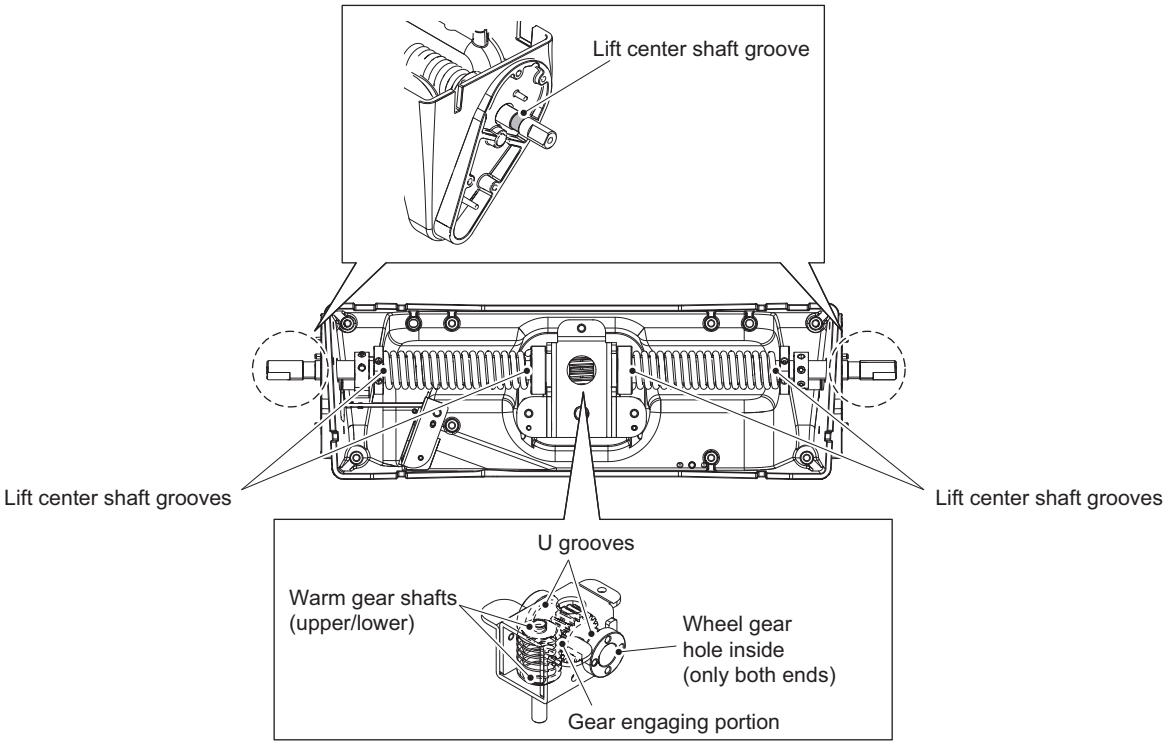
1-7. Locations for Greasing

The following figures show locations that require greasing. Apply grease to these locations as needed.

- Arm



- Slide base

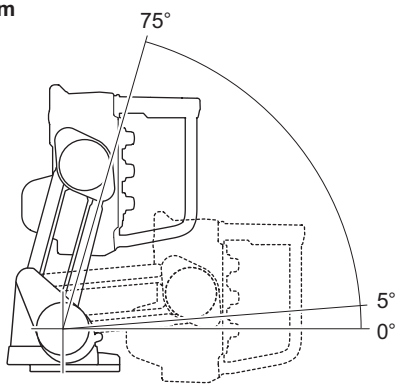


1-8. Adjusting the Arm Lift Angle

Note

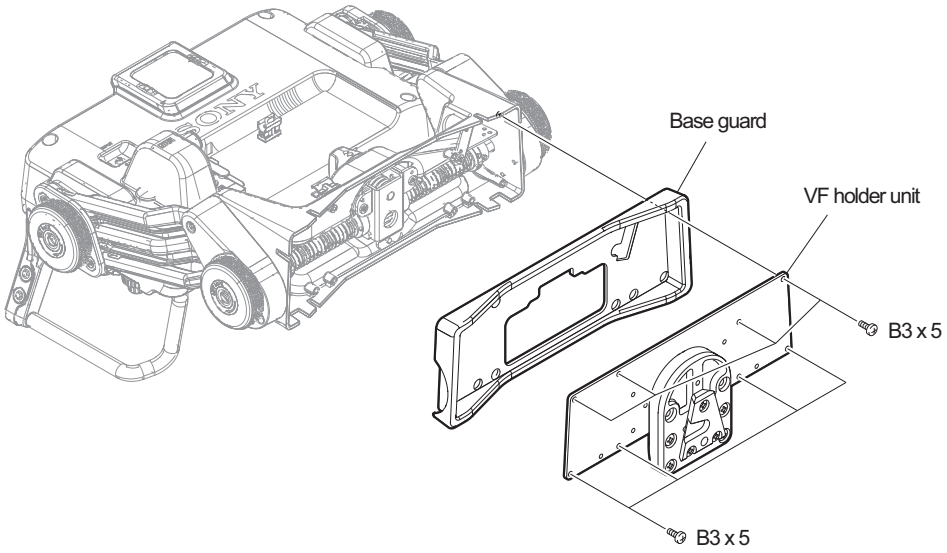
The arm lift angle is set as shown in the figure. Check and adjust the lift angle as needed.

Lift angle range of the arm



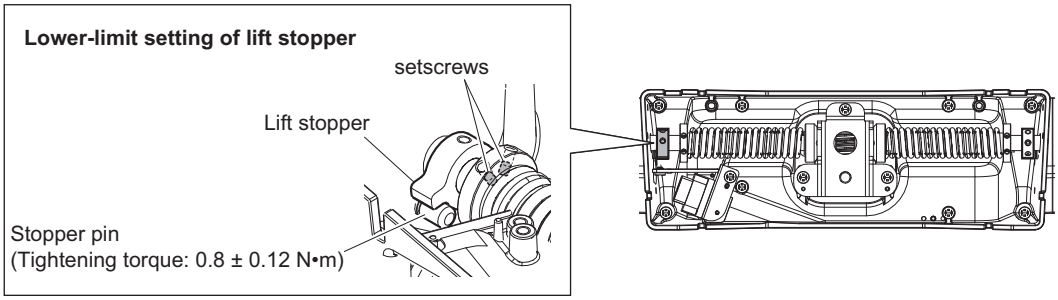
Procedure

1. Remove the eight screws to detach the VF holder unit.
2. Remove the base guide.

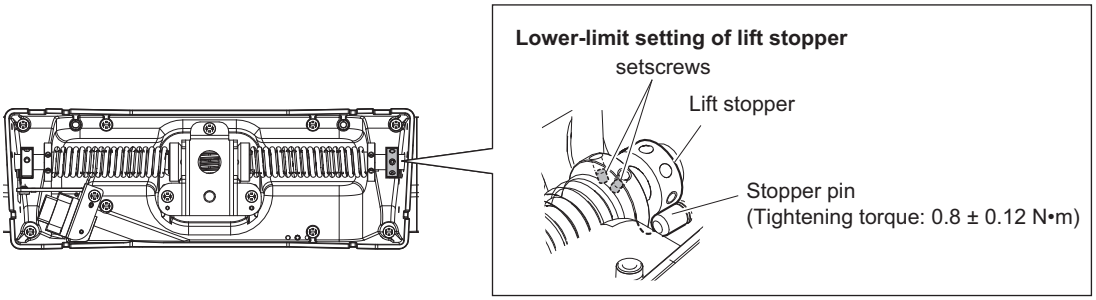


3. Set the lift stopper in the lower-limit position.
   - Loosen the two set screws.
   - Set the arm angle to 5 degrees upward and contact the arm with the stopper pin as shown in the figure.
   - Apply locking compound to the two setscrews and tighten them to the specified torque.

Lower-limit setting of lift stopper



4. Set the lift stopper in the upper-limit position.
   - Loosen the two set screws.
   - Set the arm angle to 75 degrees upward and contact the arm with the stopper pin as shown in the figure.
   - Apply locking compound to the two setscrews and tighten them to the specified torque.



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

1-9. Firmware and PLD Upgrading

Note

Do not version down the ROM. Equipment may not operate normally.
ROMs are mounted on the PR-332 board of this unit.

Board	Ref. No.	Address
PR-332	IC400	D4 (side A)

1-9-1. ROM and Software Versions Check

Procedure

1. Display the TOP menu. (Refer to"4-2-1. TOP Menu")
2. Display the VERSION screen in the SERVICE menu.
3. Confirm the version of ROM and software.

1-9-2. Writing and Rewriting Software

If software data needs to be upgraded, contact your local Sony Sales Office/Service Center.

1-9-3. Writing and Rewriting PLD Internal Data

If PLD needs to be upgraded, contact your local Sony Sales Office/Service Center.

1-10. Notes on Replacing the Board

The EEPROM (IC1208) is mounted on the PR-332 board. This IC stores adjustment data. If the PR-332 board needs to replaced, remove IC1208 from the current PR-332 board before replacing it, and mount the removed IC1208 to the new PR-332 board. For how to replace the PR-332 board, refer to "2-4. PR-332 Board".

Note

Perform this transfer of IC1208 when replacing only the PR-332 board.
When replacing the LCD module, do not transfer IC1208. (Refer to"5-1. Actions to Be Taken When Replacing the LCD Module")

Tip

When replacing the PR-332 board, electrical adjustment is not required.

Procedure

1. Remove the PR-332 board from the unit.
2. Remove IC1208 from the PR-332 board before replacing it.
3. Remove IC1208 from the new PR-332 board.
4. Mount IC1208 removed in step 2 on the new PR-332 board.
5. Install the PR-332 board to the unit.
6. Connect the unit to the camera and turn on the power of the unit.
   Check that video image is displayed.

1-11. Lead-free Solder

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

 : LEAD FREE MARK

Note

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

Section 2
Replacement of Main Parts

2-1. 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
M2: 0.19 ±0.03 N·m
M2.6: 0.53 ±0.07 N·m
M3: 0.80 ±0.12 N·m

Tip

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

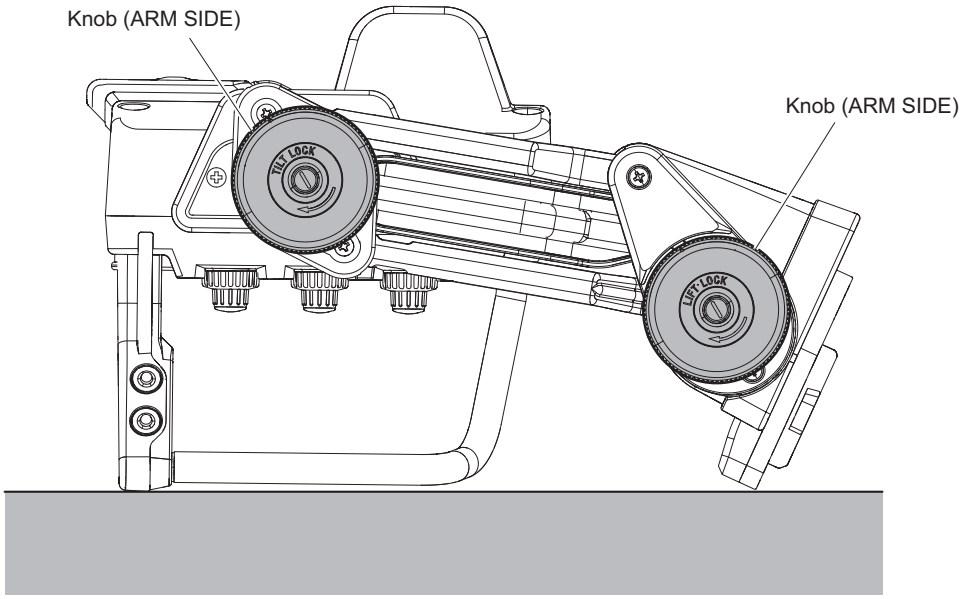
2-2. VF Holder Assembly (HDVF-L770)/Rear Panel Assembly (HDVF-L750)

Tip

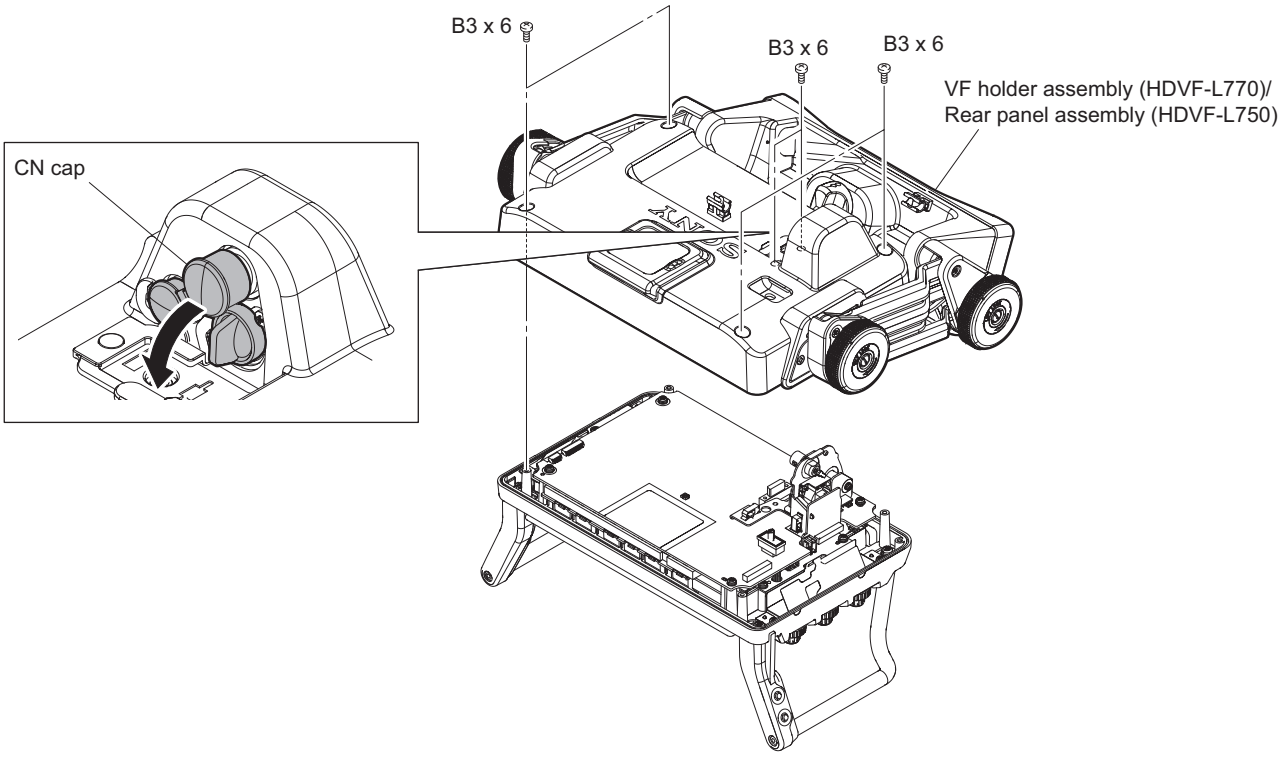
Illustration: HDVF-L770

Procedure

1. Loosen four knobs (ARM SIDE, right and left) and fix the unit as shown. (HDVF-L770 only)



2. Open the CN cap in the direction of the arrow.
3. Remove the six screws to detach the VF holder assembly (HDVF-L770) /rear panel assembly (HDVF-L750).



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

2-3. CN Assembly

Tip

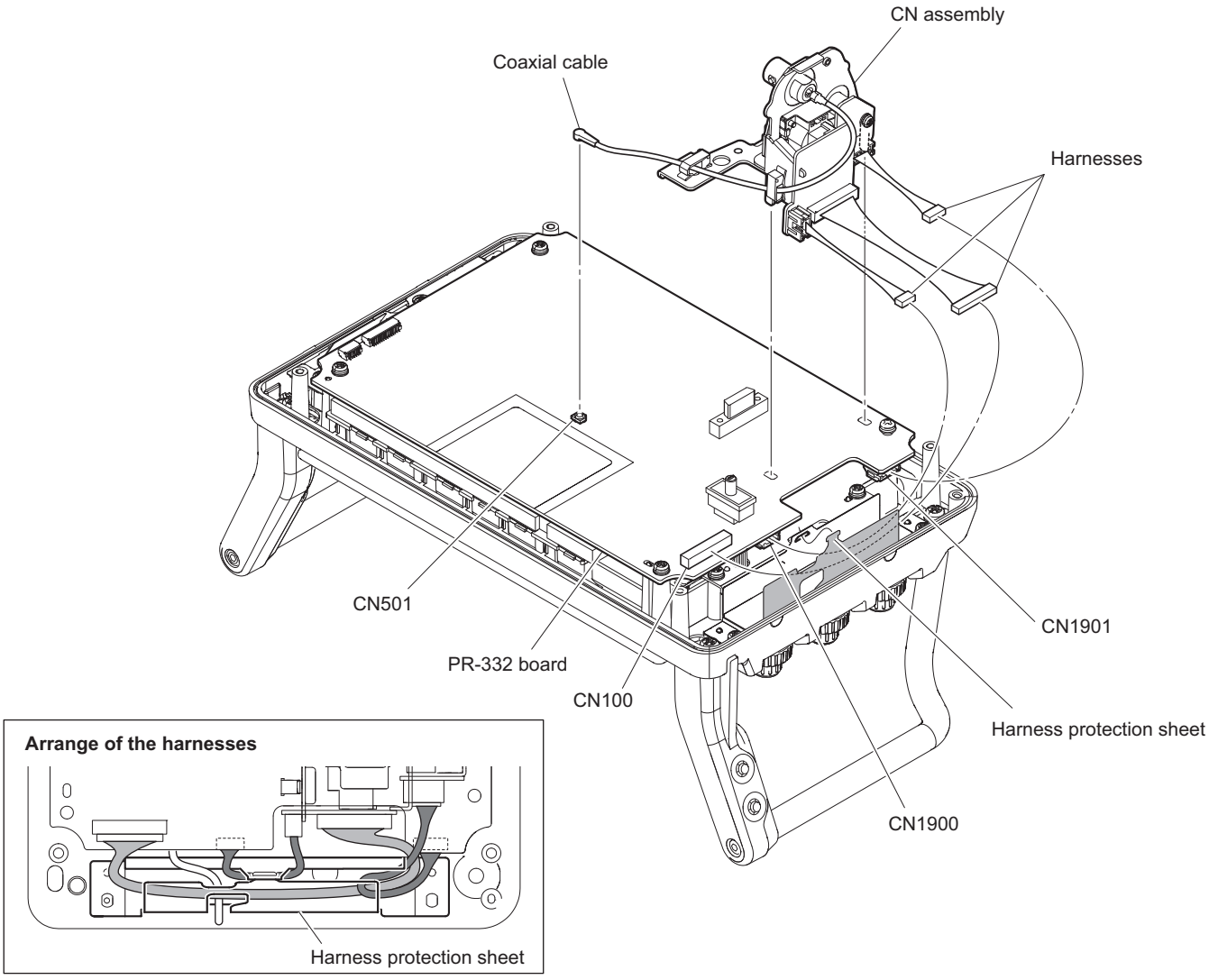
Illustration: HDVF-L770

Preparation

1. Remove the VF holder assembly. (Refer to "2-2. VF Holder Assembly (HDVF-L770)/Rear Panel Assembly (HDVF-L750)")

Procedure

1. Disconnect the coaxial cable from the connector (CN501) on the PR-332 board.
2. Open the harness protection sheet.
3. Disconnect the three harnesses from the three connectors (CN100, CN1900, and CN1901) on the PR-332 board.
4. Remove the CN assembly.



Note

When installing the CN assembly, dress the harnesses into the harness protection sheet.

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

2-4. PR-332 Board

Tip

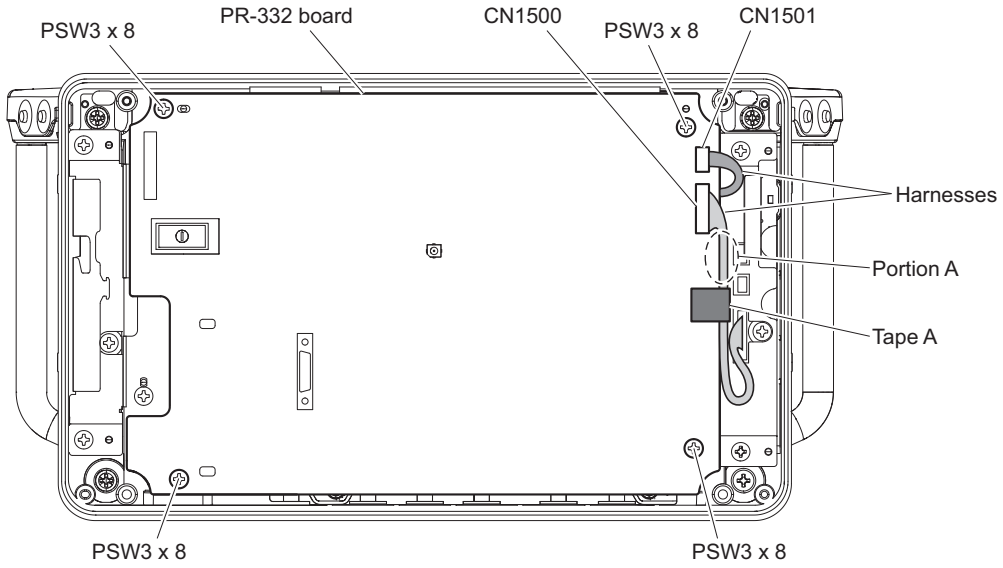
Illustration: HDVF-L770

Preparation

1. Remove the VF holder assembly. (Refer to "2-2. VF Holder Assembly (HDVF-L770)/Rear Panel Assembly (HDVF-L750)")
2. Remove the CN assembly. (Refer to "2-3. CN Assembly")

Procedure

1. Remove the tape A.
2. Disconnect the two harnesses from the two connectors (CN1500, CN1501) on the PR-332 board.
3. Remove the four screws.



Note

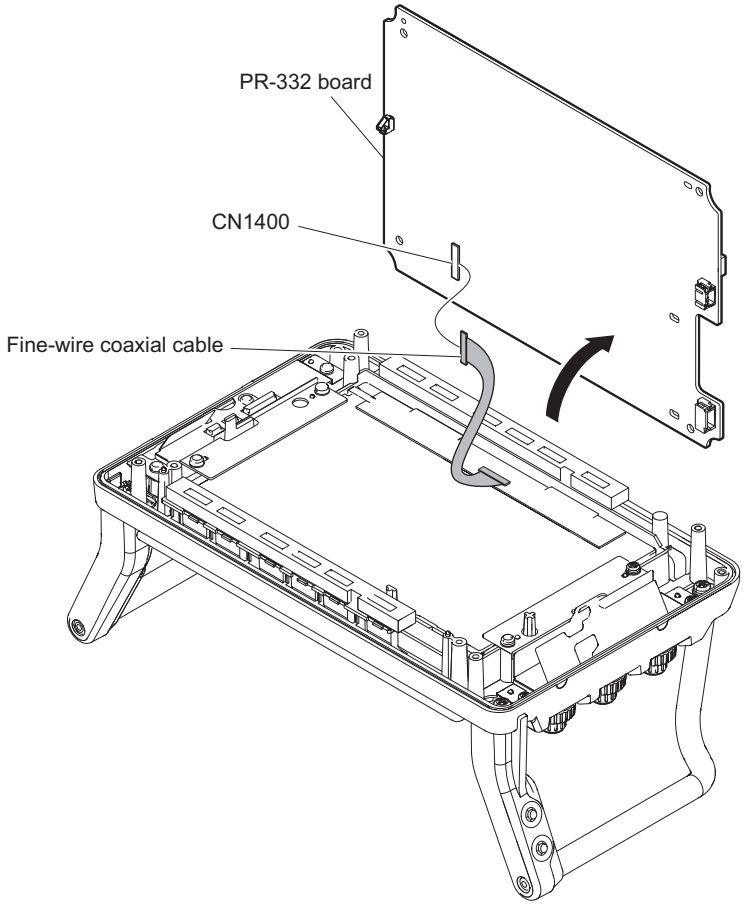
When attaching the tape A, do not slacken the harness at the portion A.

4. Open the PR-332 board in the direction of the arrow.

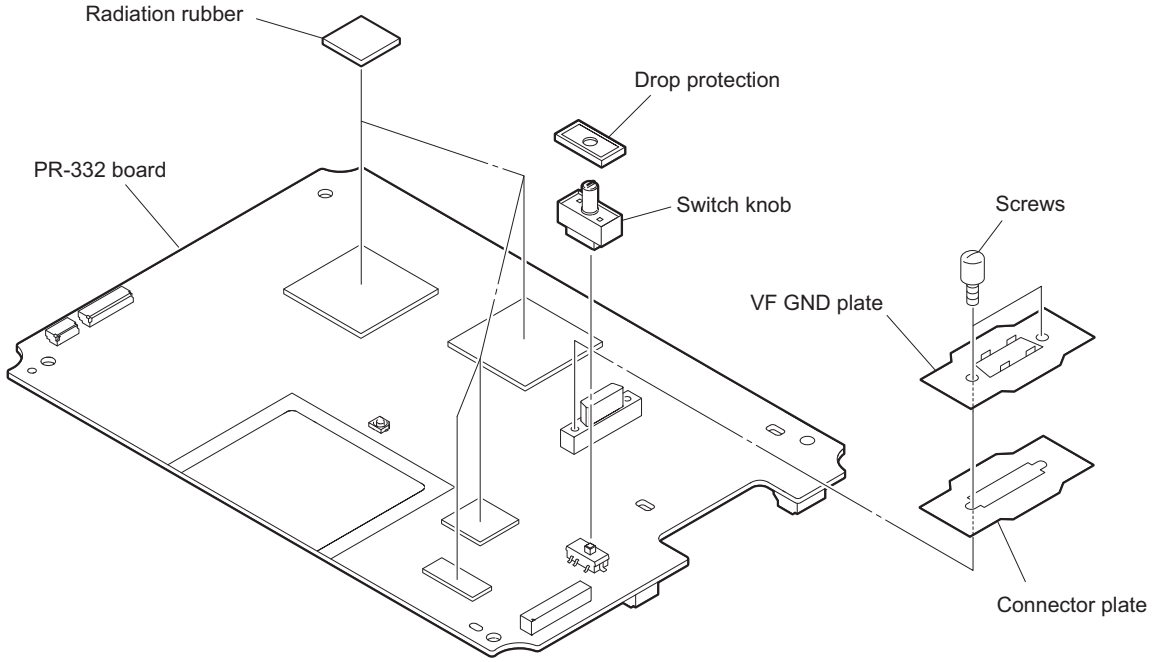
Note

Be careful not to damage fine-wire coaxial cable connected to the PR-332 board.

5. Disconnect the Fine-wire coaxial cable from the connector (CN1400) on the PR-332 board.



6. Remove the two screws to detach the VF GND plate and the connector plate.
7. Remove the four radiation sheets, drop protection, and the switch knob from the PR-332 board.



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

2-5. LCD Module

Tip

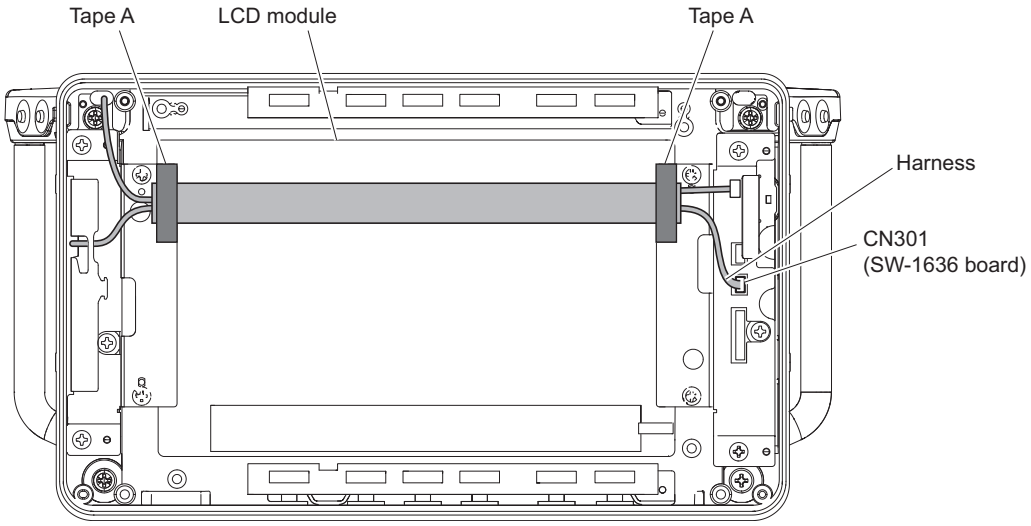
Illustration: HDVF-L770

Preparation

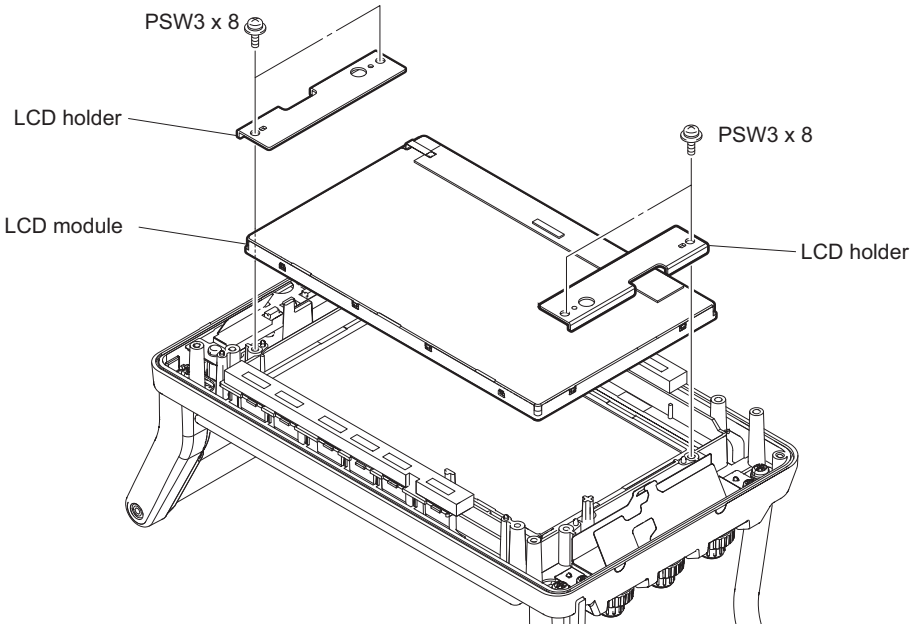
1. Remove the VF holder assembly. (Refer to "2-2. VF Holder Assembly (HDVF-L770)/Rear Panel Assembly (HDVF-L750)")
2. Remove the CN assembly. (Refer to "2-3. CN Assembly")
3. Remove the PR-332 board. (Refer to "2-4. PR-332 Board")

Procedure

1. Remove the two tapes A.
2. Disconnect the harness from the connector (CN301) on the SW-1636 board. (HDVF-L770 only)

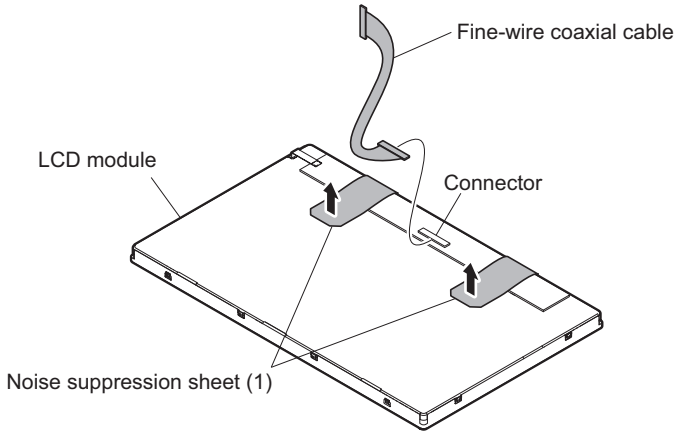


3. Remove the four screws to detach the two LCD holders.
4. Remove the LCD module.

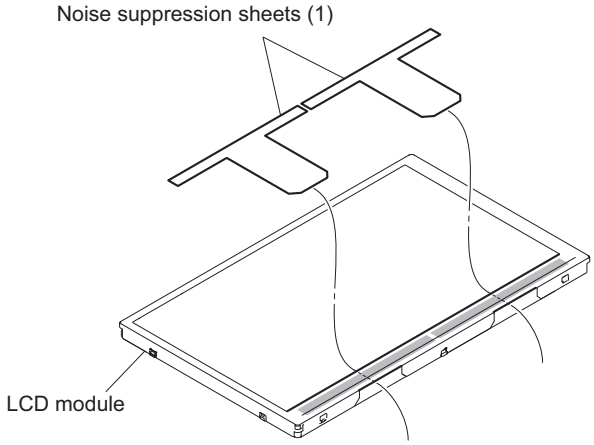


5. Disconnect the fine-wire coaxial cable from the connector on the LCD module.

6. Peal the two noise suppression sheets (1).



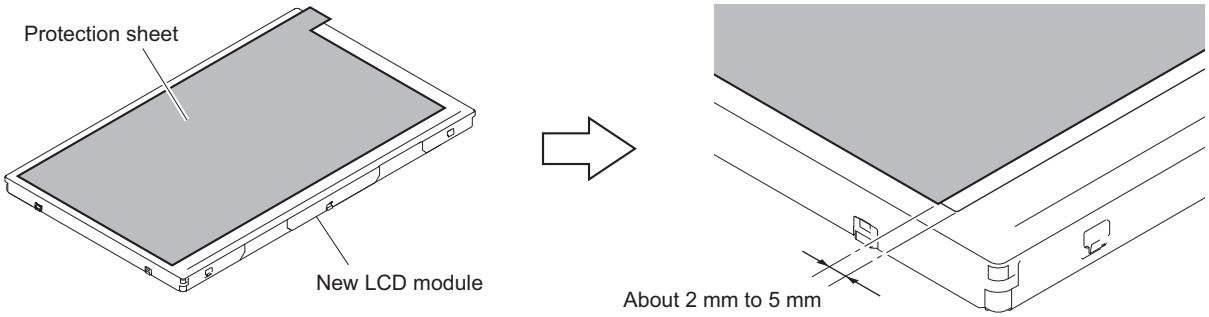
7. Remove the two noise suppression sheets (1).



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

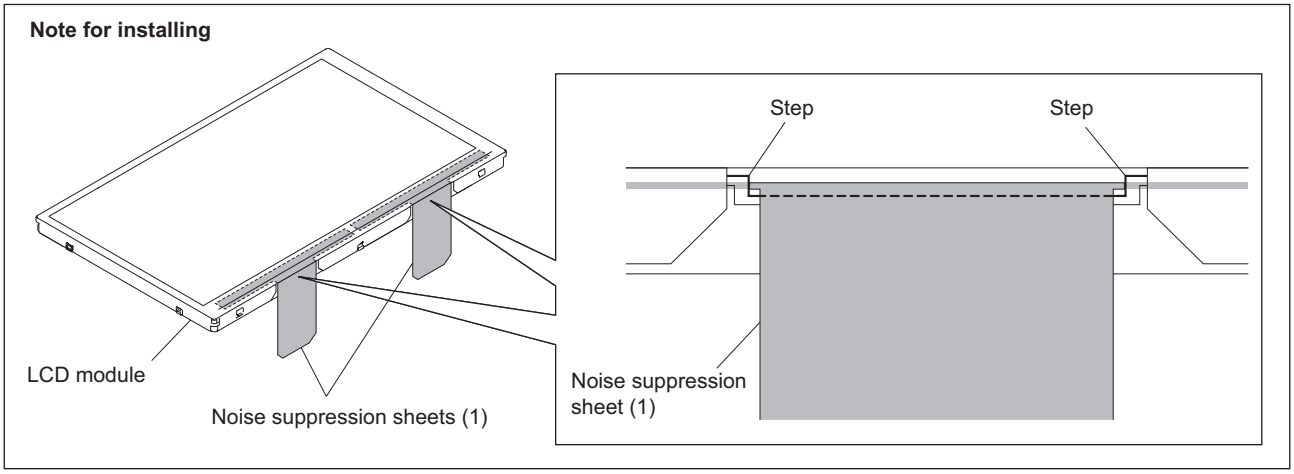
Note

When installing the noise suppression sheets (1) to the new LCD module, re-stick the protection sheet and then install it as shown in the figure.



Note

- When attaching the noise suppression sheets (1), do not ride it on the step.
- Be careful because the noise suppression sheets (1) are easily damaged by tugging.



2-6. SW-1636 Board

Tip

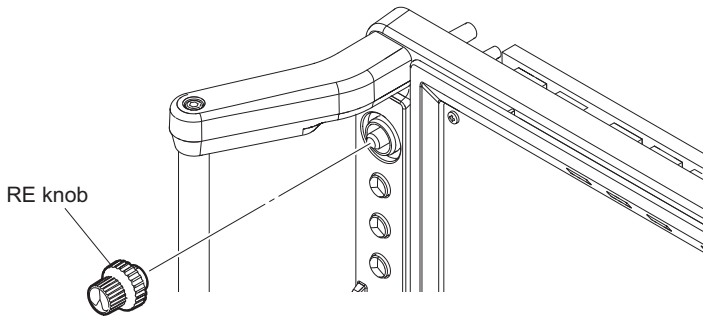
Illustration: HDVF-L770

Preparation

1. Remove the VF holder assembly. (Refer to "2-2. VF Holder Assembly (HDVF-L770)/Rear Panel Assembly (HDVF-L750)")
2. Remove the CN assembly. (Refer to "2-3. CN Assembly")
3. Remove the PR-332 board. (Refer to "2-4. PR-332 Board")

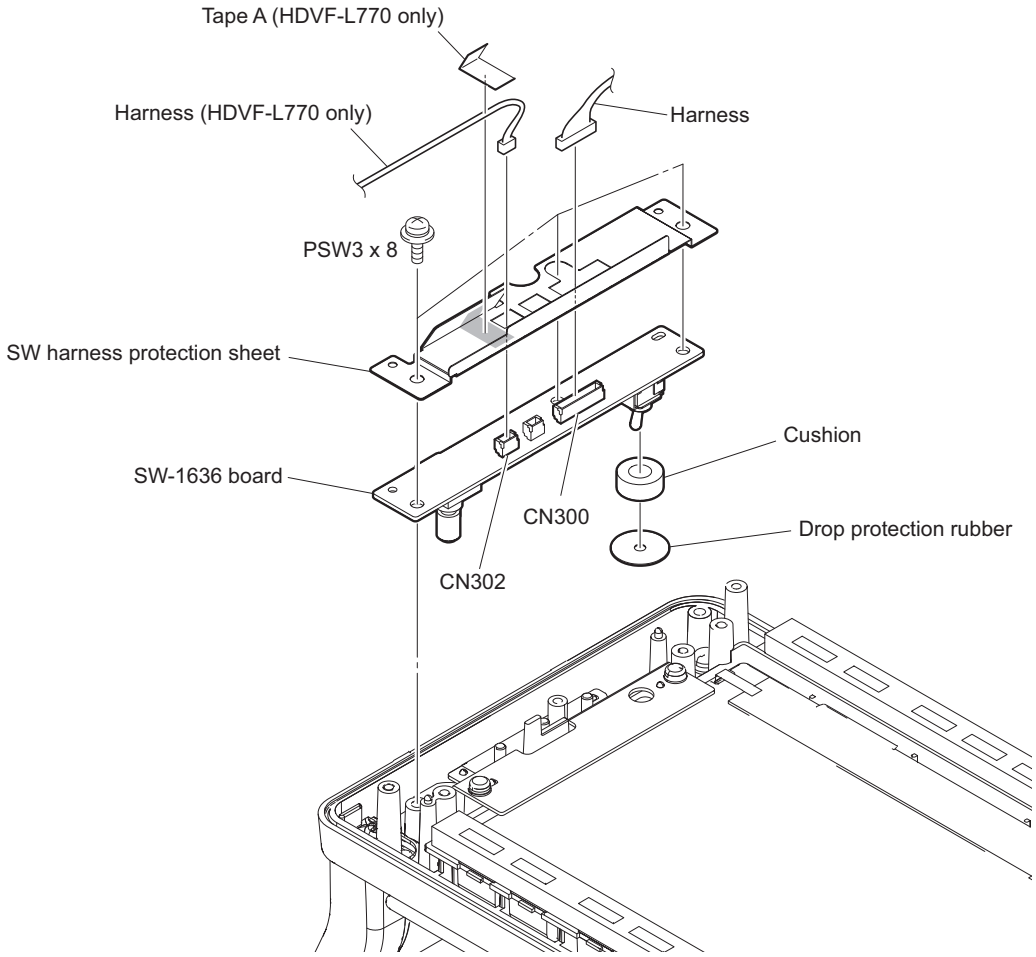
Procedure

1. Remove the RE knob.



2. Remove the tape A. (HDVF-L770 only)
3. Disconnect the harness from the connector (CN302) on the SW-1636 board. (HDVF-L770 only)
4. Disconnect the harness from the connector (CN300) on the SW-1636 board.
5. Remove the three screws to detach the SW harness protection sheet, and the SW-1636 board.

6. Remove the drop protection rubber and the cushion.



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

2-7. VR-352 Board

Tip

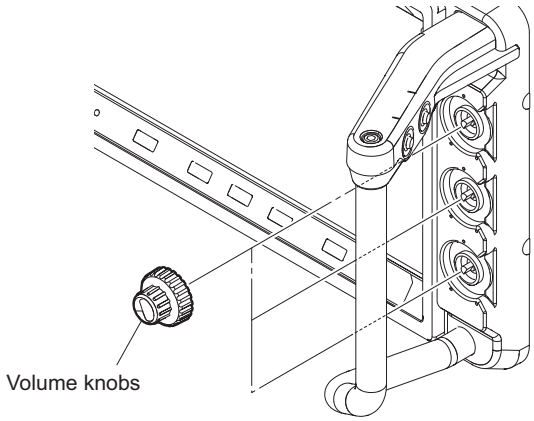
Illustration: HDVF-L770

Preparation

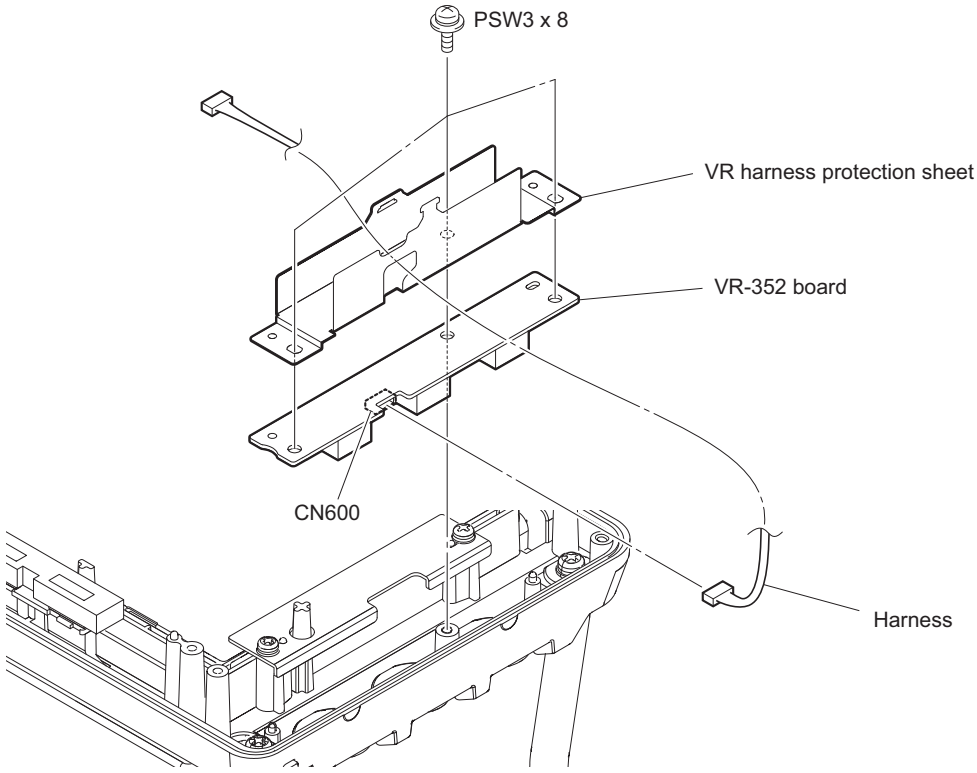
1. Remove the VF holder assembly. (Refer to "2-2. VF Holder Assembly (HDVF-L770)/Rear Panel Assembly (HDVF-L750)")
2. Remove the CN assembly. (Refer to "2-3. CN Assembly")
3. Remove the PR-332 board. (Refer to "2-4. PR-332 Board")

Procedure

1. Remove the three volume knobs.



2. Remove the three screws to detach the VR harness protection sheet.
3. Lift up the VR-352 board and then disconnect the harness from the connector (CN600) on the VR-352 board.

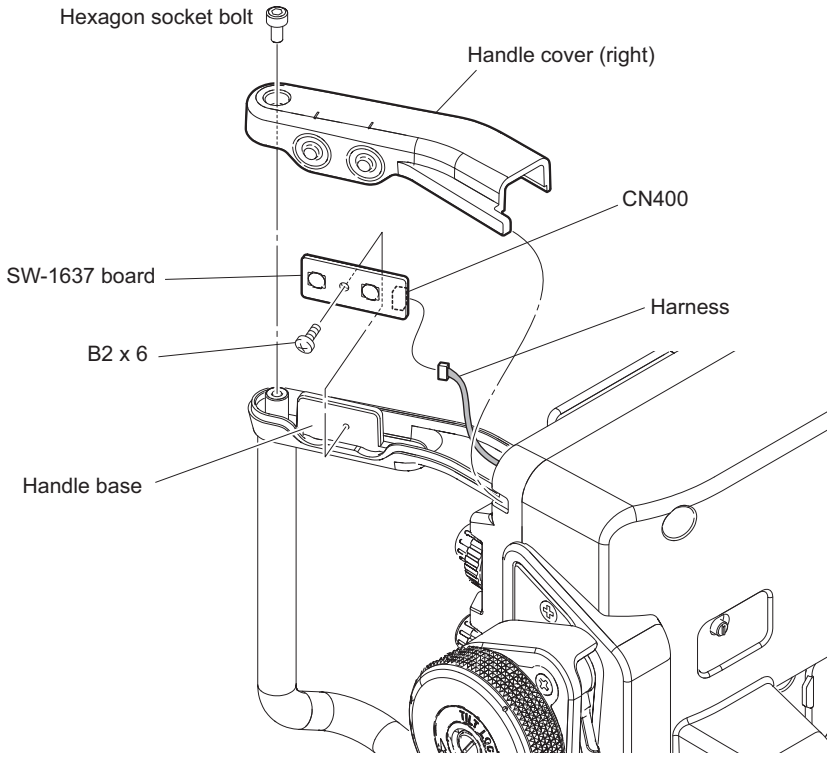


4. Install the removed parts by reversing the steps of removal.

2-8. SW-1637 Board (HDVF-L770)

Procedure

1. Remove the hexagon socket bolt to detach the handle cover (right).
2. Disconnect the harness from the connector (CN400) on the SW-1637 board.
3. Remove the screw to detach the SW-1637 board.



Note

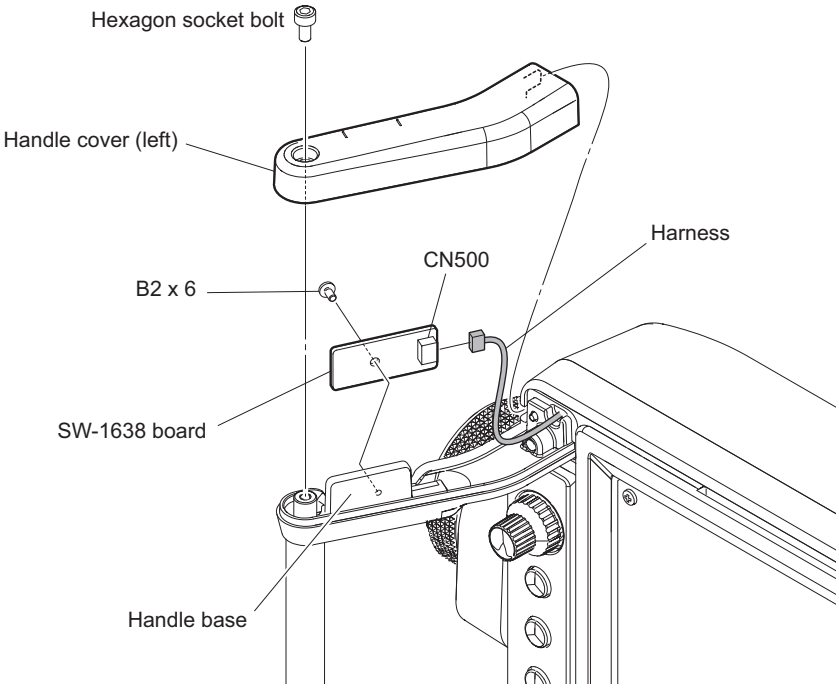
When installing, do not have a gap between SW-1637 board and handle base.

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

2-9. SW-1638 Board (HDVF-L770)

Procedure

1. Remove the hexagon socket bolt to detach the handle cover (left).
2. Disconnect the harness from the connector (CN500) on the SW-1638 board.
3. Remove the screw to detach the SW-1638 board.



Note

When installing, do not have a gap between SW-1638 board and handle base.

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

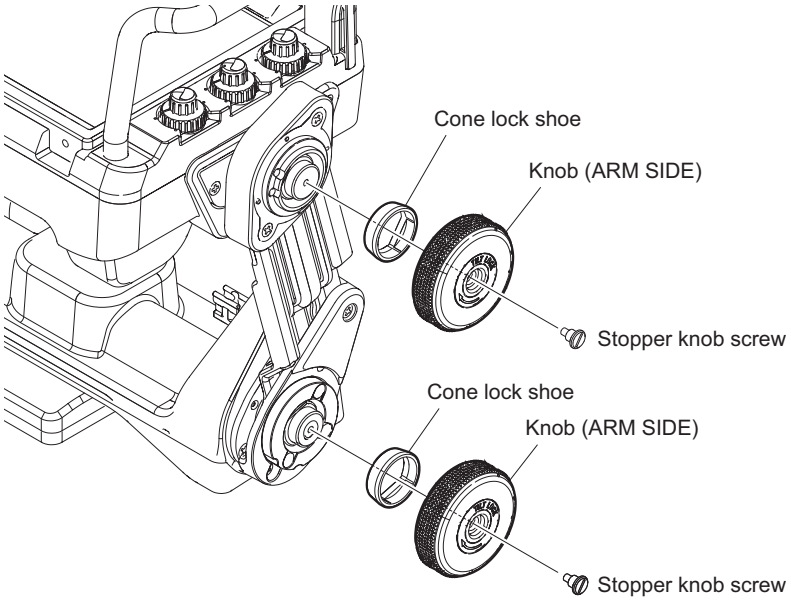
2-10. Arm (R) Sub Assembly (HDVF-L770)

Tip

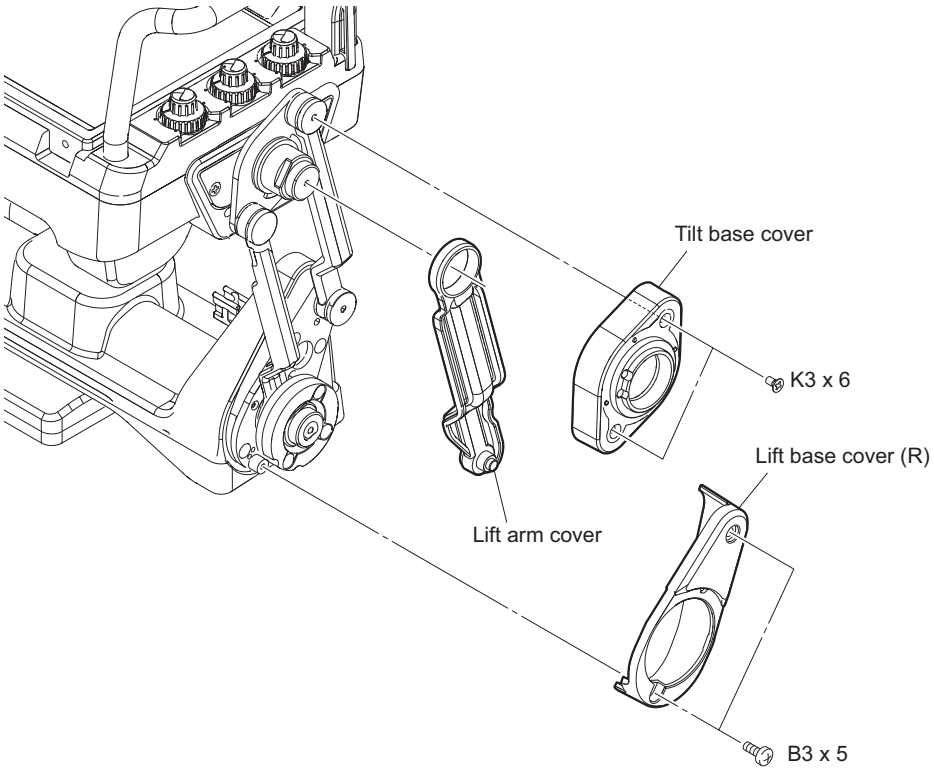
When applying the grease, refer to the"1-7. Locations for Greasing".

Procedure

1. Remove the two stopper knob screws to detach the two knobs (ARM SIDE) and the two cone lock shoes.

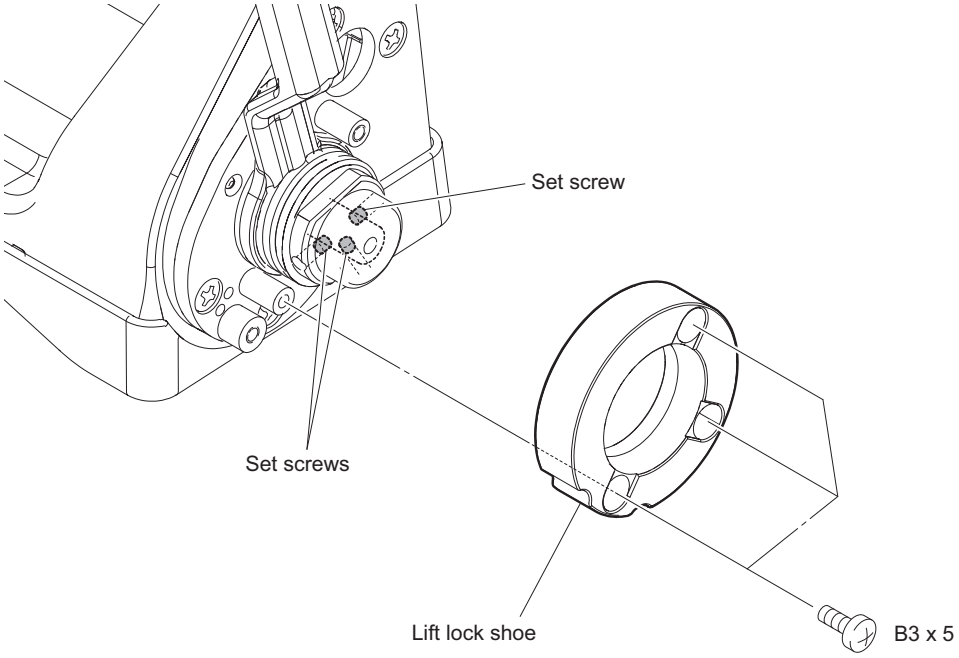


2. Remove the two screws (K3 x 6) to detach the tilt base cover.
3. Remove the two screws (B3 x 5) to detach the lift base cover (R).
4. Remove the lift arm cover.

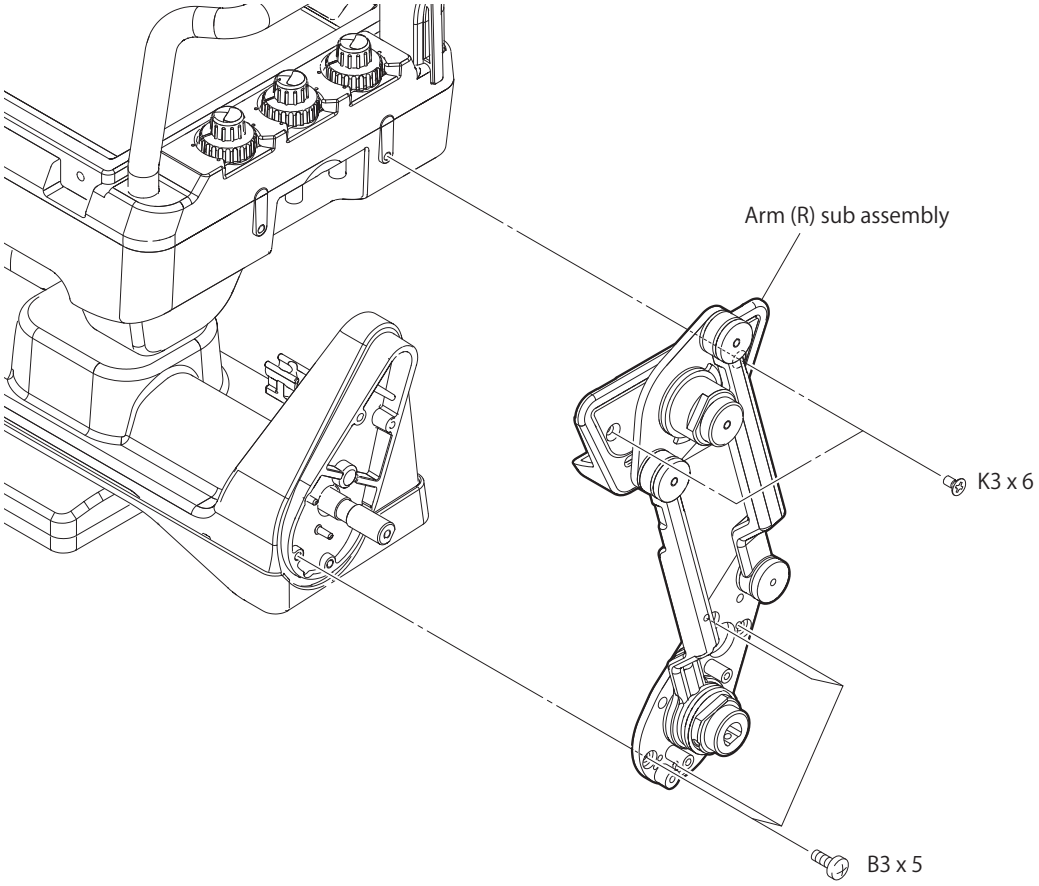


5. Remove the three screws (B3 x 5) to lift lock shoe.

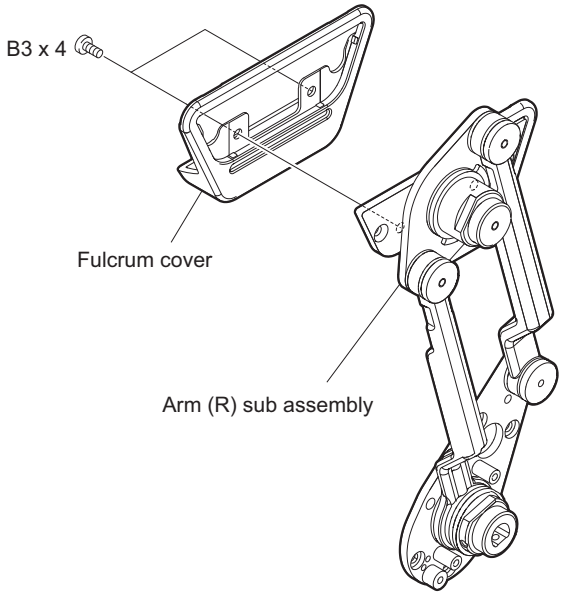
6. Loose the three set screws.



7. Remove the two screws (K3 x 6) and the four screws (B3 x 5) to detach the arm (R) sub assembly.



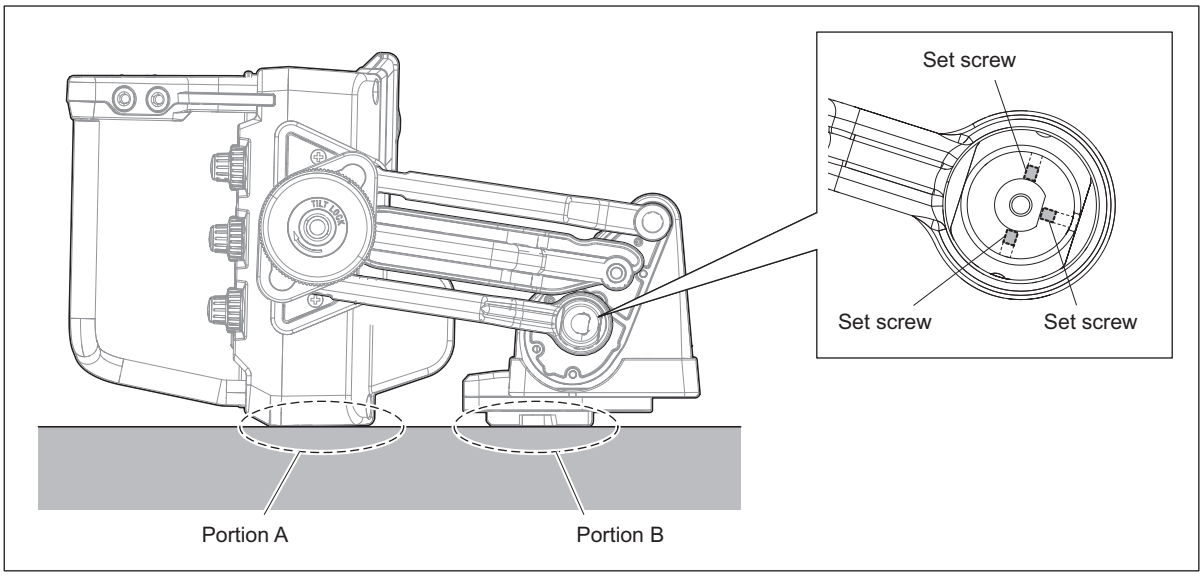
8. Remove the two screws to detach the fulcrum cover.



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

Note

When installing, tighten the three set screws after right and left of portions A and B are grounded.



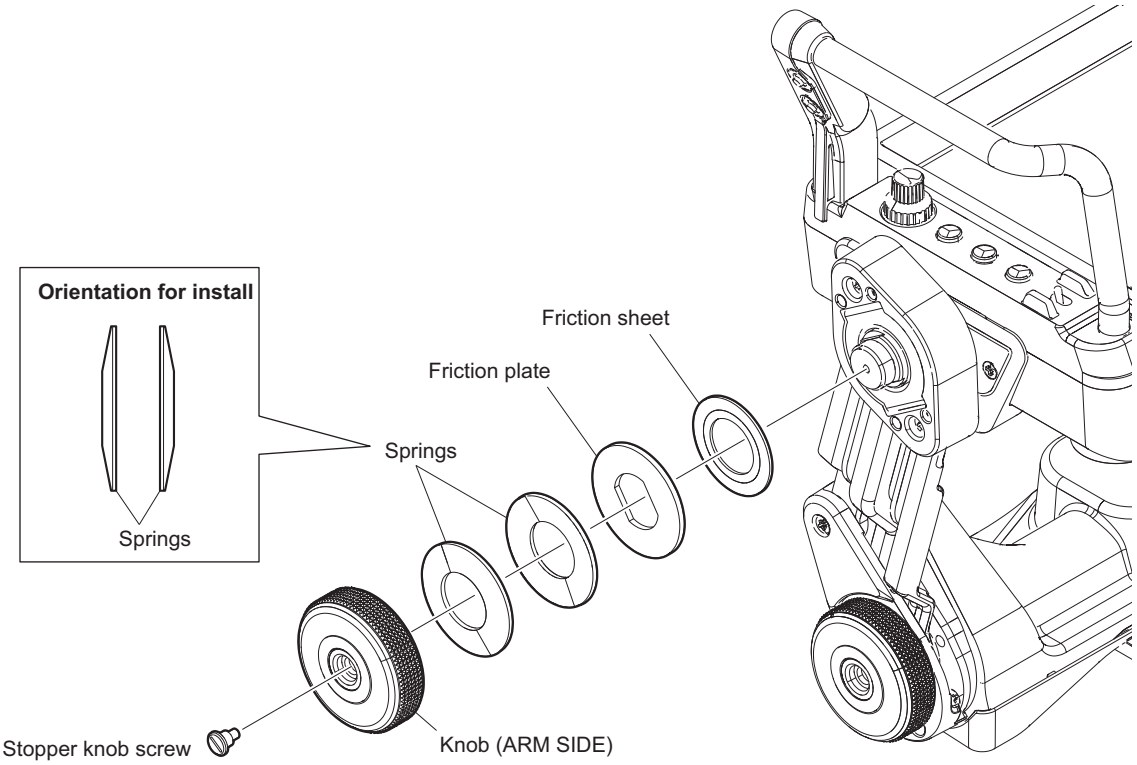
2-11. Arm (L) Sub Assembly (HDVF-L770)

Tip

When applying the grease, refer to the "1-7. Locations for Greasing".

Procedure

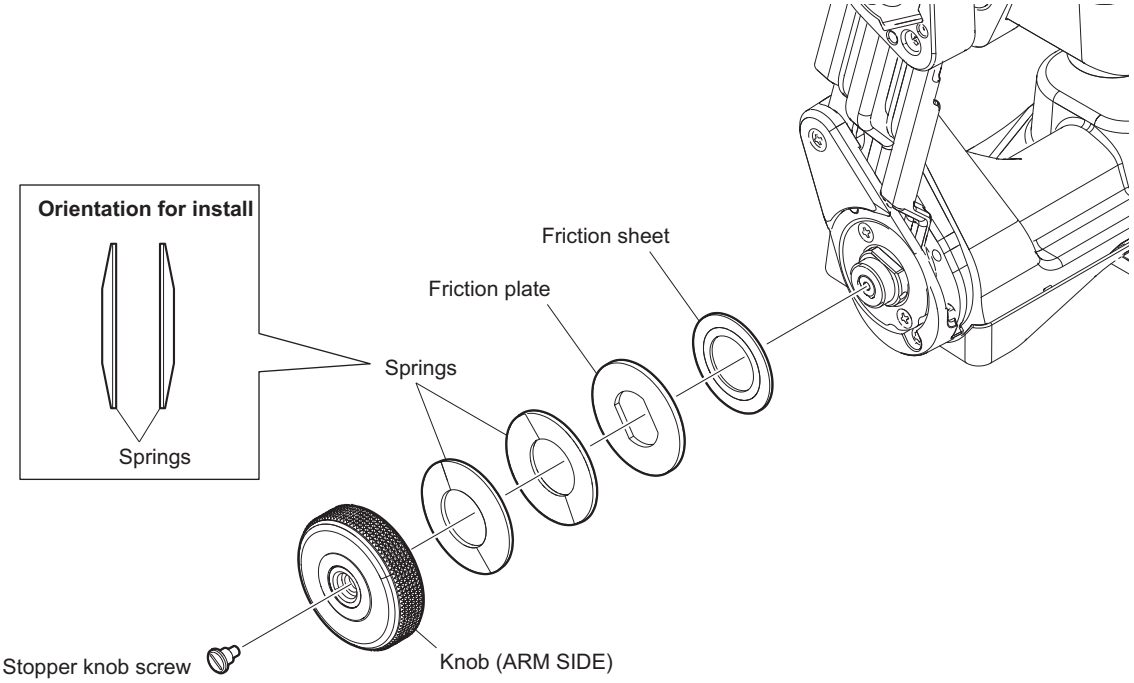
1. Remove the stopper knob screw to detach the two springs, friction plate, and the friction sheet.



Note

When installing the springs, pay attention to the orientation of the springs.

2. Remove the stopper knob screw to detach the two springs, friction plate, and the friction sheet.



Note

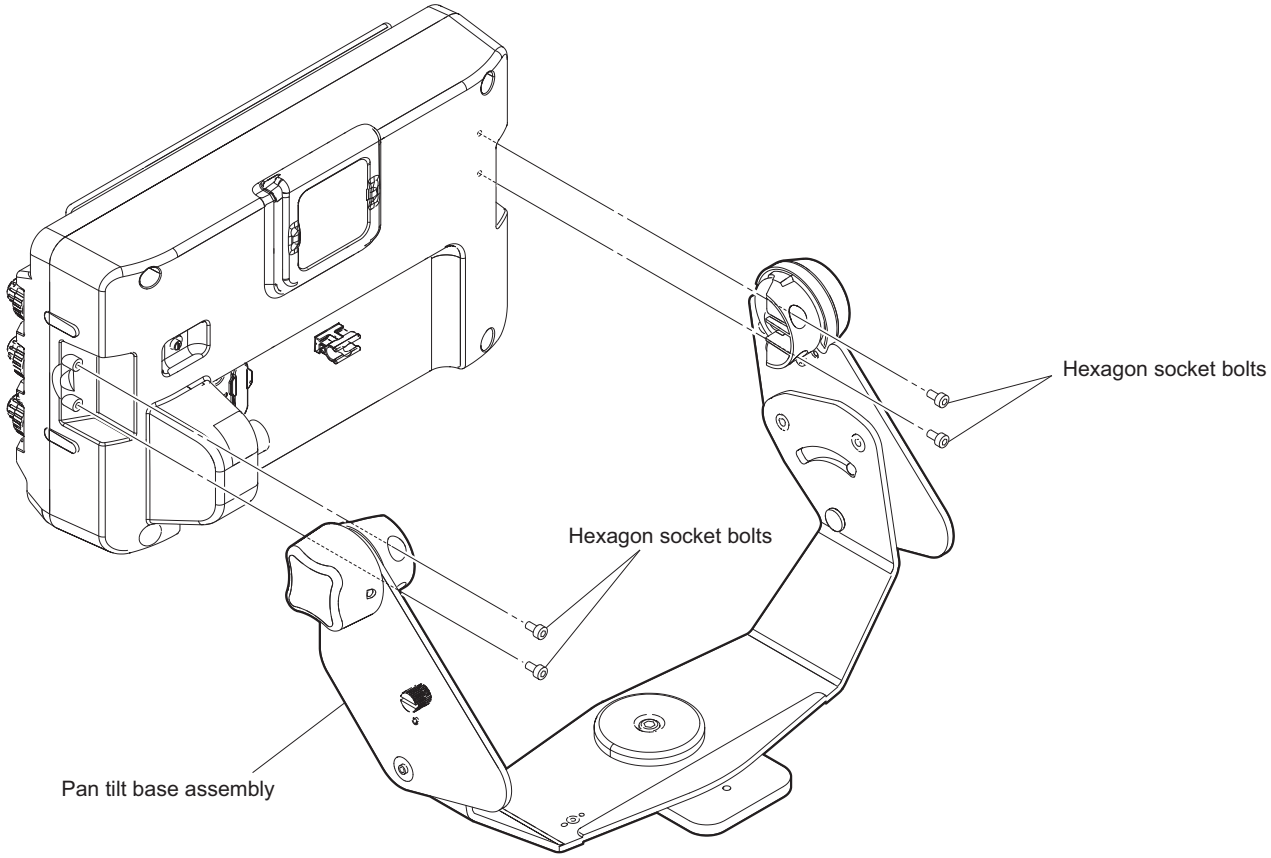
When installing the springs, pay attention to the orientation of the springs.

3. Following disassembly is the same as arm (R) sub assembly. refer to the "2-10. Arm (R) Sub Assembly (HDVF-L770)".
4. Install the removed parts by reversing the steps of removal.

2-12. Pan Tilt Base Assembly (HDVF-750)

Procedure

1. Remove the four hexagon socket bolts to detach the pan tilt base assembly.



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

Section 3
Diagnostics

This unit has a diagnostics function for internal errors and multiple internal test signal generator circuits.
This section describes troubleshooting.

3-1. STATUS Indicator

This unit has a warning system based on lamp display. The STATUS indicator lights or blinks when an error occurs.

Display	Description	Remedy
Blinking in intervals of 0.5 seconds.	A failure was detected during self-diagnosis.	Check the contents of a failure in “S08 DIAGNOSIS” of a SERVICE menu. (Refer to “4-2-3. SERVICE Menu”) The error messages below may be displayed. BACKUP ERROR: The backup data of EEPROM does not co-incide in checksum. DEVICE ERROR: Device errors other than those described above

3-2. Device Check

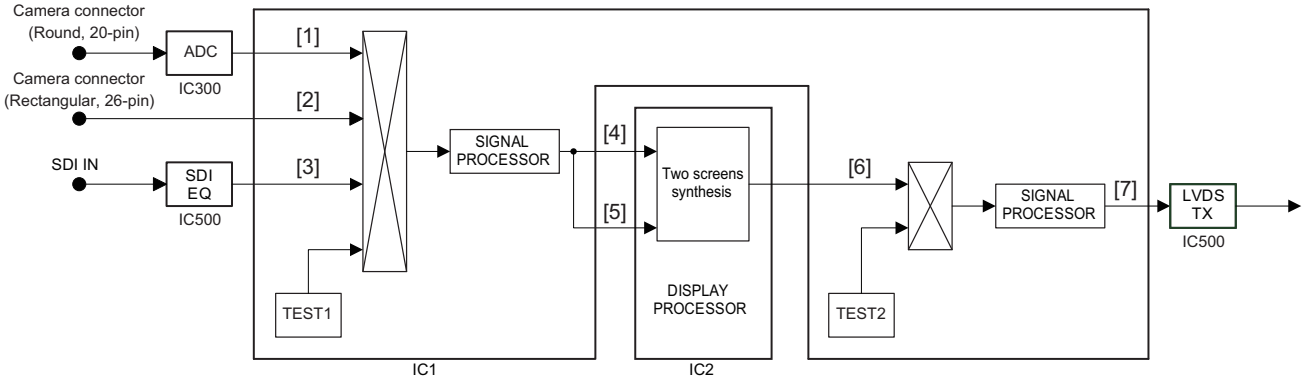
This unit has a self-diagnosis function that checks the communication function of each device.
The result of diagnosis is displayed in “S08 DIAGNOSIS” of a SERVICE menu. (For more details, refer to “4. Setup Menu” , “4-2-3. SERVICE Menu”)

3-3. Internal Test Signal

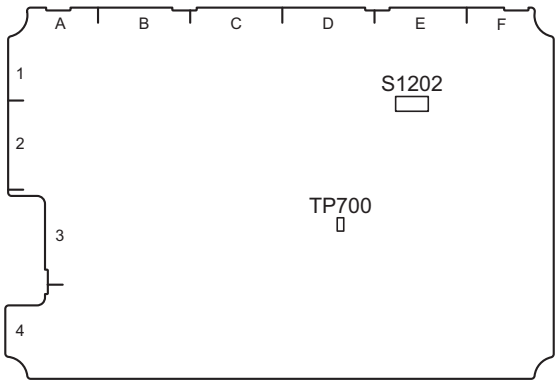
A PR-332 board mounts an internal test signal generator circuit and a test pin (TP700) for checking waveform.
An internal test signal (TEST1, TEST2) can be selected from the SERVICE menu, and can be outputted. (For more details, refer to “4. Setup Menu” , “4-2-3. SERVICE Menu”)

Test point for waveform

The signal waveform of the test points ([1] to [7]) can be outputted to the test pin (TP700) .
A defective point can be specified by observing the waveforms at test pin (TP700) .



Test signal setting switch/ Test pin



PR-332 board (A side)

TEST SIGNAL

Switch the S1202 (bits 1 and 2) to change the kind of the signal to output to the test pin (TP700) .

Output signal	S1202 setting	
	bit1	bit2
Y or G	OFF	OFF
Pb or B	ON	OFF
Pr or R	OFF	ON
——— (No output)	ON	ON

TEST POINT

Switch the S1202 (bits 3,4 and 5) to change the point ([1] to [7]) of the signal to output to the test pin (TP700) .

Check point	S1202 setting		
	bit3	bit4	bit5
[1]	OFF	OFF	OFF

Continued

Check point	S1202 setting		
	bit3	bit4	bit5
[2]	ON	OFF	OFF
[3]	OFF	ON	OFF
[4]	ON	ON	OFF
[5]	OFF	OFF	ON
[6]	ON	OFF	ON
[7]	OFF	ON	ON
——— ([7])	ON	ON	ON

Section 4
Setup Menu

4-1. Setting Menu

The setting menu is used for selection or adjustment of various setting values.

4-1-1. Setting Menu Configuration

The setting menu consists of the menus below.

- OPERATION menu
- SERVICE menu

Tip

The TOP menu screen is available as another screen that displays the whole configuration of menu items.
To display the TOP menu, refer to “4-2-1. TOP Menu”.

4-1-2. Description of Switches

MENU control

This control selects a menu item or changes a setting value.

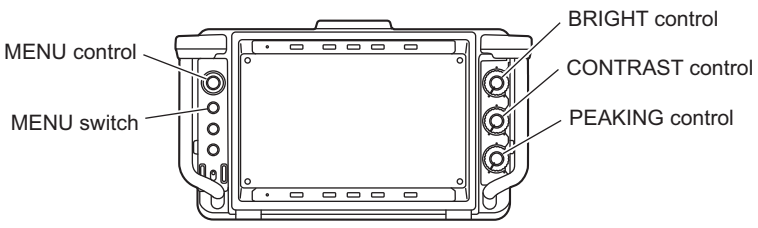
- Turn: Shifts a page or item and changes a setting value.
- Press: Determines a page or item and determines a setting value.

MENU switch

This switch displays a setting menu.
The MENU switch is used when canceling the contents of setting in progress and returning to the page selection mode or TOP menu.

BRIGHT control
CONTRAST control
PEAKING control

This control setting is required when entering a TOP menu.



4-1-3. Basic Operations

1. Display the menu.

The OPERATION menu is displayed when you press the MENU switch.

2. Select the menu page.

Turn the MENU control with the “?” mark displayed before the page number (in the page selection mode), display the desired page, and press the MENU control.

3. Select the item.

Turn the MENU control with the "→" mark displayed in the setting item of the selected page (in the item selection mode), move the "→" mark to the item to be changed, and press the MENU control.

4. Change the setting value.

Turn the MENU control with the "?" mark displayed in a setting value (in the setting value change mode) and change the setting value.

For a setting value consisting of numeric characters, the numeric value increases when you turn the MENU control clockwise. It decreases when you turn the MENU control counterclockwise.

The numeric value much changes when you rapidly turn the MENU control. It can be fine-adjusted when you slowly turn the MENU control.

5. Determine the setting value.

Press the MENU control.

The setting value is determined, and the current state is returned to the item selection mode.

Note

When you press the MENU switch before pressing the MENU control, the setting value is returned to the value before change and the current state is returned to the item selection mode.

6. Exit the menu display.

The screen is returned to the item selection mode, page selection mode, and then TOP menu [*1] whenever you press the MENU switch.

After that, the menu display disappears when you press the MENU switch.

7. Return the setting value to the factory-setting value.

Press the MENU control for two seconds or more with the "?" mark displayed in the setting value to be returned to the factory setting (in the setting value change mode).

---

*1: The operation above is applied to only the operation from a TOP menu. Refer to "4-2-1. TOP Menu"

4-2. Description of Menu

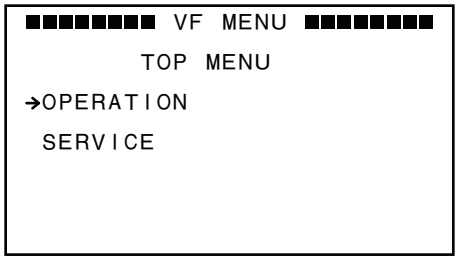
4-2-1. TOP Menu

The TOP menu is a screen that displays the whole configuration of menu items.

How to display the TOP menu

1. Set the three controls as described below.
   - BRIGHT control: Fully clockwise
   - CONTRAST control: Fully counterclockwise
   - PEAKING control: Fully clockwise
2. Press the MENU switch while holding down the MENU control.
   The TOP menu is displayed.

TOP MENU screen



Menu item	Description
OPERATION	The setting items required for operation of this unit are summarized.
SERVICE	The items required for maintenance of this unit such as the electrical adjustment, hours meter, or self-diagnosis function of this unit are summarized.

4-2-2. OPERATION Menu

The setting items required for operation of this unit are summarized in this OPERATION menu.
For more details, refer to the Operation Manual supplied for this unit.

4-2-3. SERVICE Menu

The items required for maintenance of this unit such as the electrical adjustment, hours meter, or self-diagnosis function of this unit are summarized in this SERVICE menu.

Note

- The item may be not able to be selected in the menu item below by the current menu item setting.
- For the item that cannot be selected, "— — —" is displayed in the setting value.

Page	Menu	Item	setting ([ ] is a factory setting value.)	Function
S01	FUNCTION2	MAG REL TIME	1 to [5] to 10	Sets the time required until returning from the expanded display to the ordinary display when MAGNIFICATION AUTO RELEASE is set to AUTO.*1
		VF ASSIGN SW	[FRONT] , LEFT , RIGHT	Switches combination of switches that are settable for the camera ASSIGNABLE switch.*2 FRONT: ASSIGN. 1/2 of the front side is assigned. LEFT: ASSIGN SW L1/L2 of the left handle is assigned. RIGHT: ASSIGN SW R1/R2 of the right handle is assigned.
		SECRET IND	[OFF] , ON	Enables or disables the secret indicator. OFF: Disabled ON: Enabled
S02	TEST	TEST1	[OFF] , BARS , SAW , RASTER , WINDOW	Sets the internal test signal on the input side before scaling.*3 OFF: Outputs no test signal. BARS: Outputs a color bars signal. SAW: Outputs the test signal of a sawtooth waveform. RASTER: Outputs a rectangular test signal. WINDOW: Outputs a window test signal.
		COLOR SELECT	[W] , R , G , B , YL , CY , MG	Sets the display color during selection of test signal (RASTER rectangular or WINDOW) in TEST1.
		TEST LEVEL	0 % to [100 %] to 109 % , MAX	Sets the signal level during selection of test signal (RASTER rectangular or WINDOW) in TEST1.
		TEST2	[OFF] , BARS , SAW , RASTER , WINDOW	Sets the internal test signal after scaling.*3 OFF: Outputs no test signal. BARS: Outputs a color bars signal. SAW: Outputs the test signal of a sawtooth waveform. RASTER: Outputs a rectangular test signal. WINDOW: Outputs a window test signal.
		COLOR SELECT	[W] , R , G , B , YL , CY , MG	Sets the display color during selection of test signal (RASTER rectangular or WINDOW) in TEST2.
		TEST LEVEL	0 % to [100 %] to 109 % , MAX	Sets the signal level during selection of test signal (RASTER rectangular or WINDOW) in TEST2.
S03	C.TEMP/BACKLIGHT	GAIN R	0 to [xx] to 255	Adjusts the color balance (gain R).
		GAIN G	0 to [xx] to 255	Adjusts the color balance (gain G).
		GAIN B	0 to [xx] to 255	Adjusts the color balance (gain B).
		DIMMER	0 to [xx] to 255	Adjusts the luminance level.

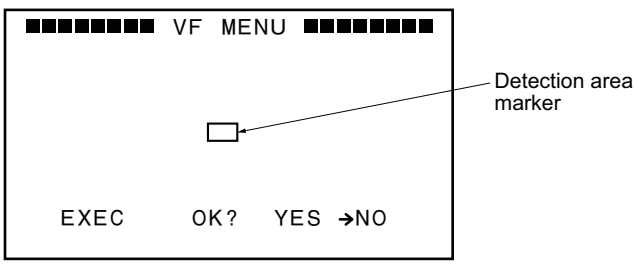
Continued

*1: Refer to AUTO RELEASE of OPERATION MENU 03 MAGNIFICATION.
*2: Check whether the camera to be connected supports VF ASSIGNABLE SW.
*3: Necessarily operates in the OFF state when the power is turned on.

Page	Menu	Item	setting ([ ] is a factory setting value.)	Function
S04	KNEE	KNEE	[OFF] , ON	Sets a knee correction circuit to OFF and ON. OFF: Invalid ON: Valid
		KNEE POINT	0 to [223] to 255	Sets a knee point level.
		KNEE SLOPE	1/2 , [1/3] , 1/4	Sets a knee slope level.
S05	PEAKING1	PEAKING MODE	[STD] , PLUS	Select a PEAKING mode. TD: Ordinary mode PLUS: PEAKING PLUS mode
		COLOR/AREA SEL	[COLOR] , AREA , BOTH	In the PEAKING mode, select the mode during selection of PLUS. COLOR: Emphasizes the contour of only the selected color. AREA: Emphasizes the contour of only the selected area. BOTH: Emphasizes the contour of only the selected color and area.
		POSITION	[CENTER] , UPPER , RIGHT, LOWER , LEFT	Select the contour correction target area when AREA or BOTH is selected in COLOR/AREA SEL. CENTER: The center is emphasized in contour. UPPER: The upper part is emphasized in contour. RIGHT: The right is emphasized in contour. LOWER: The lower part is emphasized in contour. LEFT: The left is emphasized in contour.
		PEAKING UP	[OFF] , ON	Sets a function, which increases the amount of peaking by +6 dB in the PEAKING mode during selection of PLUS, to OFF and ON. OFF: RANGE setting value ON: RANGE setting value +6 dB
		COLOR DETECT	EXEC	Automatic color detection function **Note** These functions only when COLOR or BOTH is selected. The current display is shifted to the execution screen when moving the marker to the color of the desired subject and pressing the MENU control.*1
		LUMINANCE	0 to [512] to 1023	Sets the center value of the luminance to be peaked.

Continued

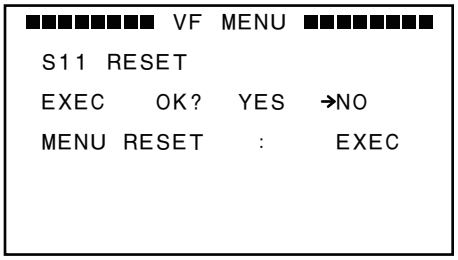
*1: The current display is shifted to the execution screen below by moving a "→" mark to EXEC and pressing the MENU control.
Place the detection area marker at the color you want to correct.
This function is executed by moving the "→" mark to "YES" and pressing the MENU control.



Page	Menu	Item	setting ([ ] is a factory setting value.)	Function
		HUE	0 to [512] to 1023	Sets the center phase of the hue to be peaked.
		SATURATION	0 to [512] to 1023	Sets the center value of the saturation to be peaked.
		LUMI WIDTH	0 to [1023]	Sets the range of the luminance to be peaked.
		HUE WIDTH	0 to [64] to 127	Sets the range of the hue to be peaked.
		SAT WIDTH	0 to [128] to 255	Sets the range of the saturation to be peaked.
S06	PEAKING2	FREQUENCY	L , [M] , MH , H	Sets the center frequency of a peaking signal.
		RANGE	1 to [2] to 3	Sets variable peaking amount.
		CRISPENING	0 to [12] to 63	Sets the level in which a peaking is crispened.
S07	HOURS METER	RESET METER	EXEC	Resets operation time. The current display is shifted to the execution screen when you press the MENU control.*1
		OPERATION	Only display	Total power-on time (resettable)
		TOTAL	Only display	Total power-on time
S08	DIAGNOSIS	EEPROM	Only display	Displays the self-diagnosis result of EEPROM (IC1208) on the PR-332 board. OK: Normal NG: A problem exists in communication or saved data.
		SCALER	Only display	Displays the self-diagnosis result of an image processing IC (IC2) on the PR-326 board. OK: Normal NG: A problem exists in communication.
		FPGA	Only display	Displays the self-diagnosis result of FPGA (IC1) on the PR-332 board. OK: Normal NG: A problem exists in communication.
		LPF	Only display	Displays the self-diagnosis result of a LPF (IC207) on the PR-332 board. OK: Normal NG: A problem exists in communication.

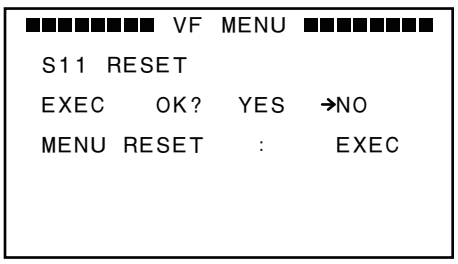
Continued

*1: The current display is shifted to the execution screen below by moving a "→" mark to EXEC and pressing the MENU control.
Place the detection area marker at the color you want to correct.
This function is executed by moving the "→" mark to "YES" and pressing the MENU control.



Page	Menu	Item	setting ([ ] is a factory setting value.)	Function
		ADC	Only display	Displays the self-diagnosis result of ADC (IC300) on the PR-332 board. OK: Normal NG: A problem exists in communication.
S09	VERSION	SOFTWARE	Only display	Displays the software version of IC1203 on the PR-332 board.
		FPGA	Only display	Displays the FPGA version of IC1 on the PR-332 board.
S10	SERIAL NO.	STORE	EXEC	Writes the serial number of this unit into EEPROM (IC105) on the PR-332 board. The current display is shifted to the execution screen when you press the MENU control.*1
		NO.	xxxxxx	Displays and sets the serial number of this unit.
		MODEL	Only display	Displays the model name of this unit.
S11	RESET	MENU RESET	EXEC	Returns the setting values in a menu to the factory-setting values.*2 The current display is shifted to the execution screen when you press the MENU control.*1

*1: The current display is shifted to the execution screen below by moving a "→" mark to EXEC and pressing the MENU control.
Place the detection area marker at the color you want to correct.
This function is executed by moving the "→" mark to "YES" and pressing the MENU control.



*2: The items on page S03 in the SERVICE menu is adjusted during factory setting. They are not reset even if MENU RESET is executed.
For the adjustment, refer to "5. Electrical Adjustment" .
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Section 5
Electrical Adjustment

5-1. Actions to Be Taken When Replacing the LCD Module

Tip

An adjustment data label is stuck to a new LCD module. Information required for settings is written on the adjustment data label.

Procedure

1. Replace the LCD module. (Refer to “2-5. LCD Module”)
2. Connect the unit to the camera and turn on the power of the unit. Check that a video image is displayed on the LCD.
3. Display the SERVICE menu. (Refer to “4-2-1. TOP Menu”)
4. Enter the set values written on the adjustment data label in all items of the “S03: C. TEMP/BACKLIGHT” menu.
5. Check that the set values entered in step 4 is the same as the set values written on the adjustment data label.
6. Turn off and on the power and check that a video image is displayed.

Section 6
Spare Parts

6-1. Note on Repair Parts

1. Safety Related Components Warning

WARNING

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

2. Standardization of Parts

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

3. Stock of Parts

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

4. Harness

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

1. 安全重要部品

⚠警告

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

2. 部品の共通化

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

3. 部品の在庫

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

4. ハーネス

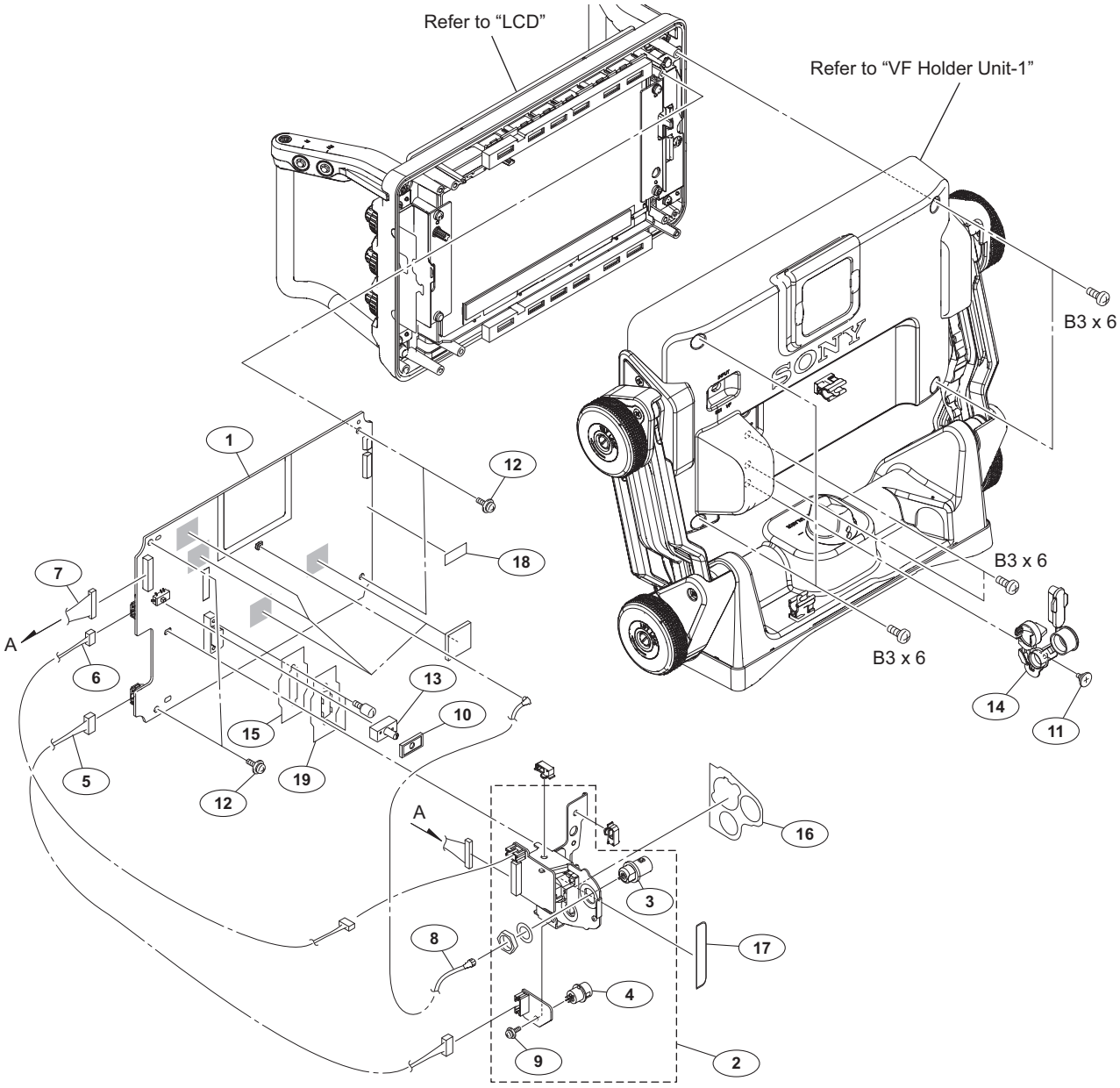
部品番号の記載されていないハーネスは，サービス部品として登録されていません。

6-2. Exploded Views

Overall

Tip

Illustration: HDVF-L770

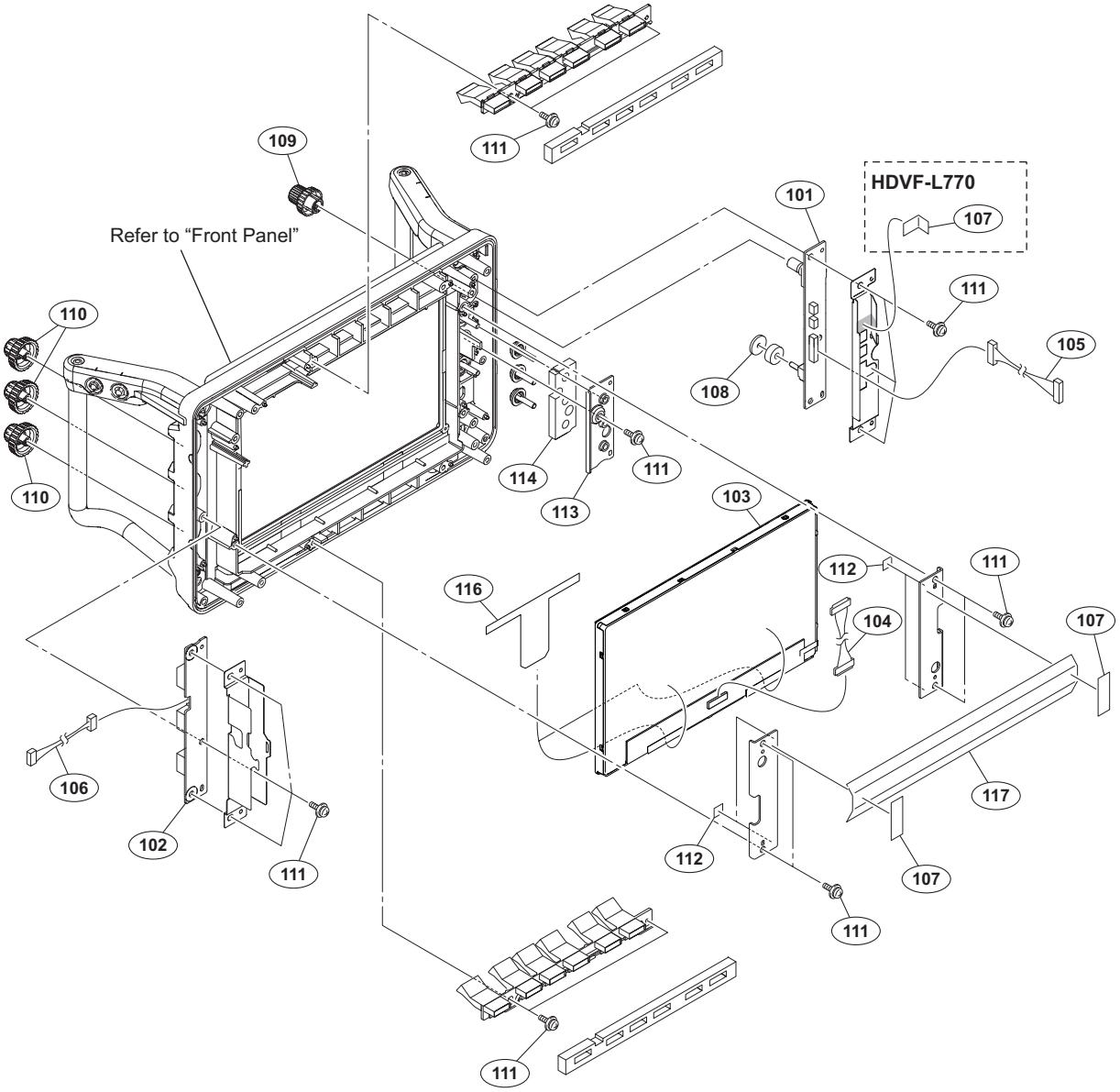


No.	Part No.	SP	Description
1	A-2054-974-A	s	MOUNTED CIRCUIT BOARD, PR-332
2	A-2058-274-A	s	CN ASSY
3	1-784-240-11	s	CONVERTER, COAXIAL CONNECTOR
4	1-818-828-11	s	CONNECTOR, ROUND TYPE (RF) 4P
5	1-970-420-11	s	HARNESS, SUB (POWER1)
6	1-970-421-11	s	HARNESS, SUB (POWER2)
7	1-970-423-11	s	HARNESS, SUB (VIDEO_IN)
8	1-970-463-11	s	HARNESS, COAXIAL (130MM)
9	3-669-607-91	s	+PSW (SMALL ROUND) (2.6) [PSW 2.6X6]
10	3-796-995-01	s	DROP PROTECTION(SW)
11	3-965-077-02	s	SCREW, SPECIAL (M2)
12	4-382-854-01	s	SCREW (M3X8), P, SW (+)
13	4-472-863-01	s	KNOB (B), SWITCH
14	4-541-321-01	s	CN-CAP
15	4-542-839-01	s	PLATE, 26PIN CONNECTOR
16	4-542-845-01	s	SHEET (1), DROP PROTECTION
17	4-542-846-01	s	SHEET (3), DROP PROTECTION
18	3-080-272-01	s	TAPE (A)
19	4-547-416-01	s	PLATE, VF GND
	7-682-547-09	s	SCREW +B 3X6

LCD

Tip

Illustration: HDVF-L770

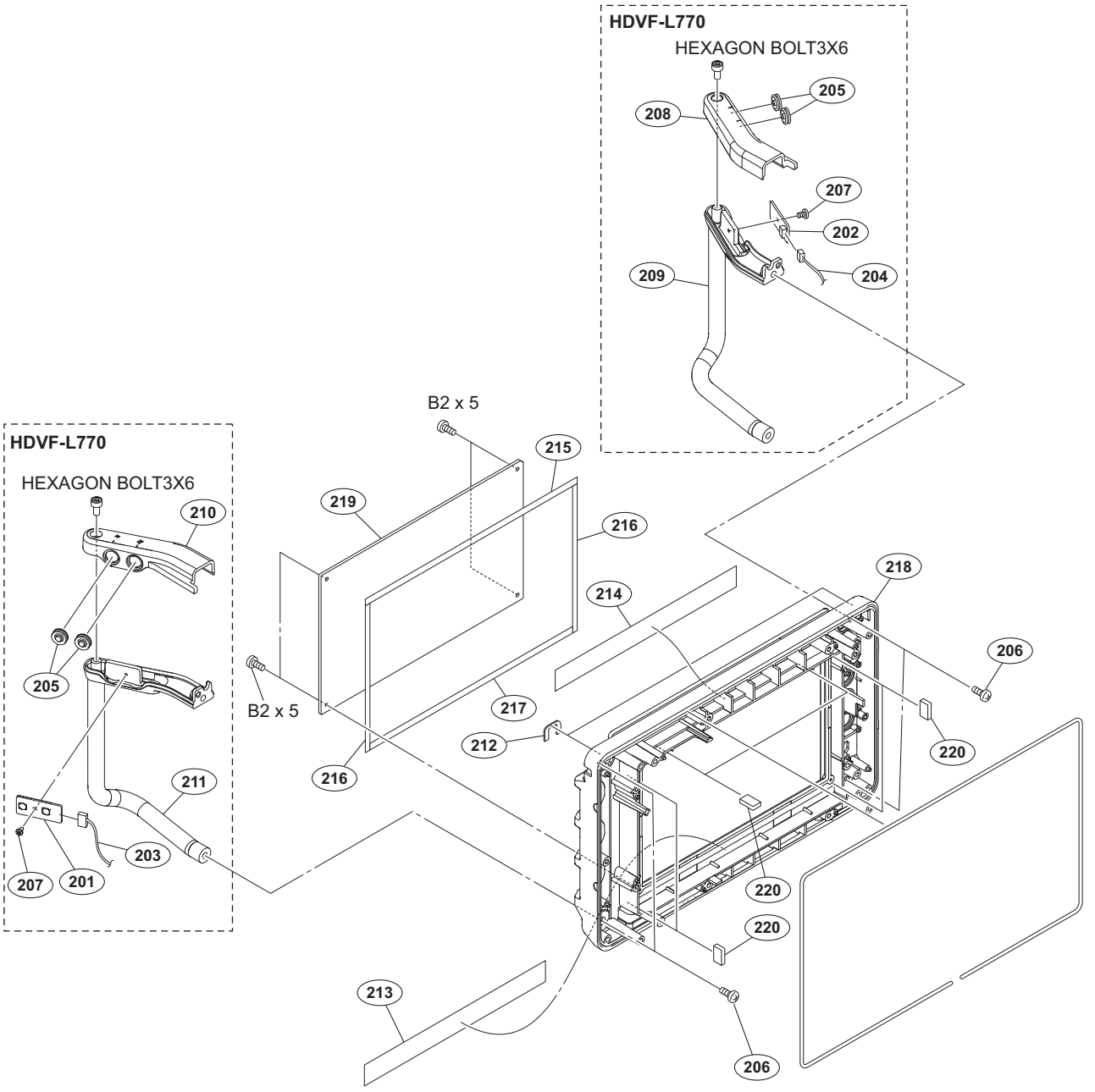


No.	Part No.	SP	Description
101	A-2054-970-A	s	MOUNTED CIRCUIT BOARD, SW-1636
102	A-2054-973-A	s	MOUNTED CIRCUIT BOARD, VR-352
103	1-812-029-11	s	LCD MODULE
104	1-969-506-12	s	HARNESS (LCD)
105	1-970-422-11	s	HARNESS, SUB (SW1)
106	1-970-424-11	s	HARNESS, SUB (VR)
107	3-080-272-01	s	TAPE (A)
108	3-869-883-01	s	RUBER, DROP PROTECTION
109	4-183-519-01	s	KNOB(B), RE (HDVF-L770)
	3-692-111-02	s	KNOB, RE (HDVF-L750)
110	4-195-859-04	s	KNOB, VOLUME
111	4-382-854-01	s	SCREW (M3X8), P, SW (+)
112	4-542-838-01	s	CUSHION, LCD
113	4-542-840-01	s	COVER, BUTTON
114	4-542-841-01	s	SHEET, SEALING
116	4-547-667-01	s	SHEET (1), NOISE SUPPRESSION
117	4-547-668-01	s	SHEET (2), NOISE SUPPRESSION

Front Panel

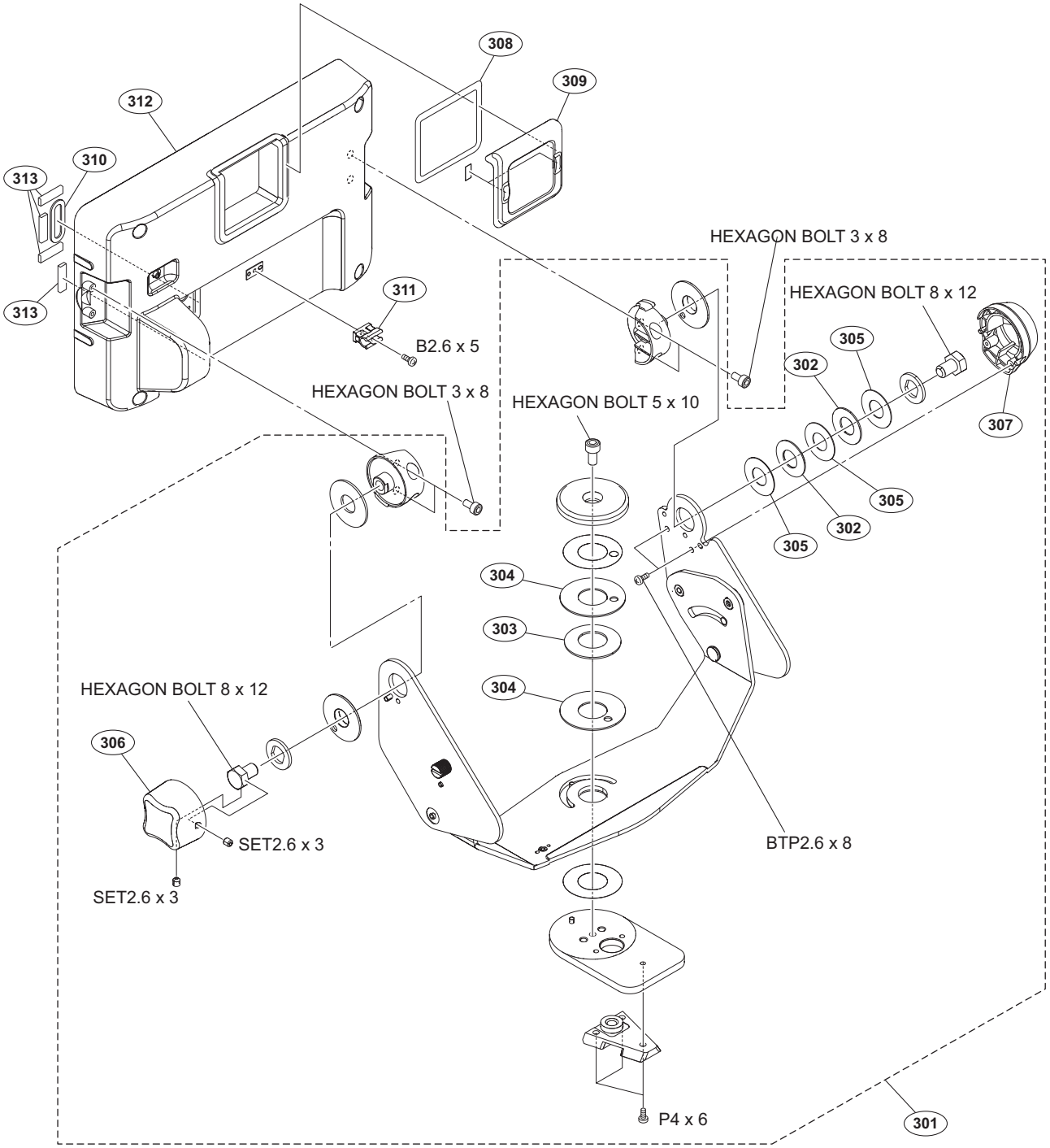
Tip

Illustration: HDVF-L770



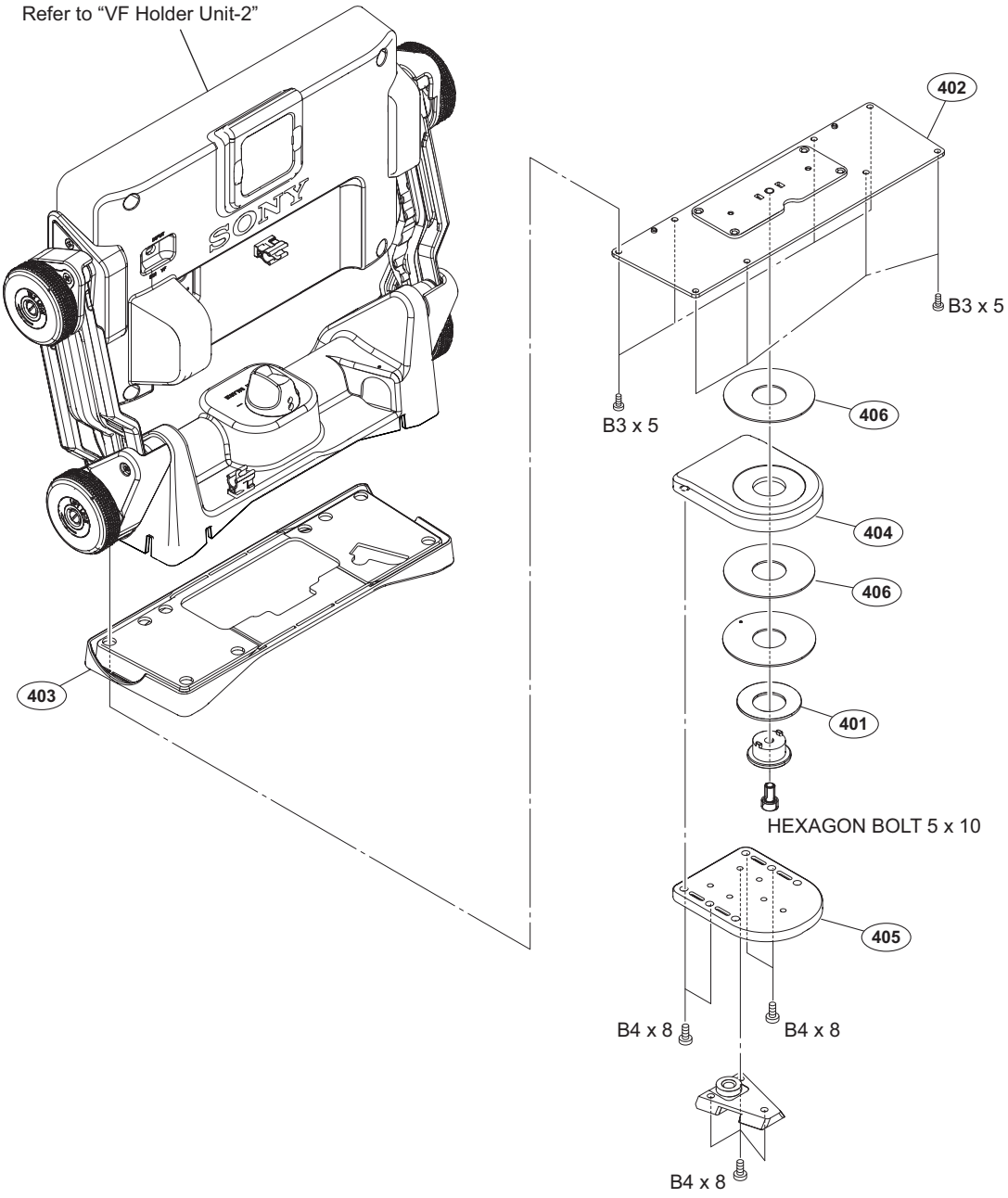
No.	Part No.	SP	Description
201	A-2054-971-A	s	MOUNTED CIRCUIT BOARD, SW-1637
202	A-2054-972-A	s	MOUNTED CIRCUIT BOARD, SW-1638
203	1-970-427-11	s	HARNESS, SUB (SW2)
204	1-970-428-11	s	HARNESS, SUB (SW3)
205	3-676-244-03	s	COVER, SWITCH
206	3-685-694-02	s	NYLOCK +PSW M4 [PSW 4X12]
207	3-729-076-21	s	SCREW (+B) (2X6)
208	4-195-863-01	s	COVER (LEFT), HANDLE
209	4-195-864-02	s	BASE (LEFT), HANDLE
210	4-195-867-01	s	COVER (RIGHT), HANDLE
211	4-195-868-02	s	BASE (RIGHT), HANDLE
212	4-196-282-11	s	SHEET(HANDLE), SEALING
213	4-542-836-01	s	SHEET (LOWER), LED (INDICATION)
214	4-542-837-01	s	SHEET (UPPER), LED (INDICATION)
215	4-542-842-01	s	SHEET (UPPER), DROP PROTECTION
216	4-542-843-01	s	SHEET (SIDE), DROP PROTECTION
217	4-542-844-01	s	SHEET (LOWER), DROP PROTECTION
218	4-542-949-01	s	PANEL, FRONT (HDVF-L770)
	4-542-949-11	s	PANEL, FRONT (HDVF-L750)
219	4-542-951-01	s	PLATE, LCD PROTECTION
220	4-546-726-01	s	LCD SPACER
	7-621-772-20	s	SCREW +B 2X5
	7-683-403-04	s	BOLT, HEXAGON SOCKET 3X6

Base Pan Tilt Assembly (HDVF-L750)



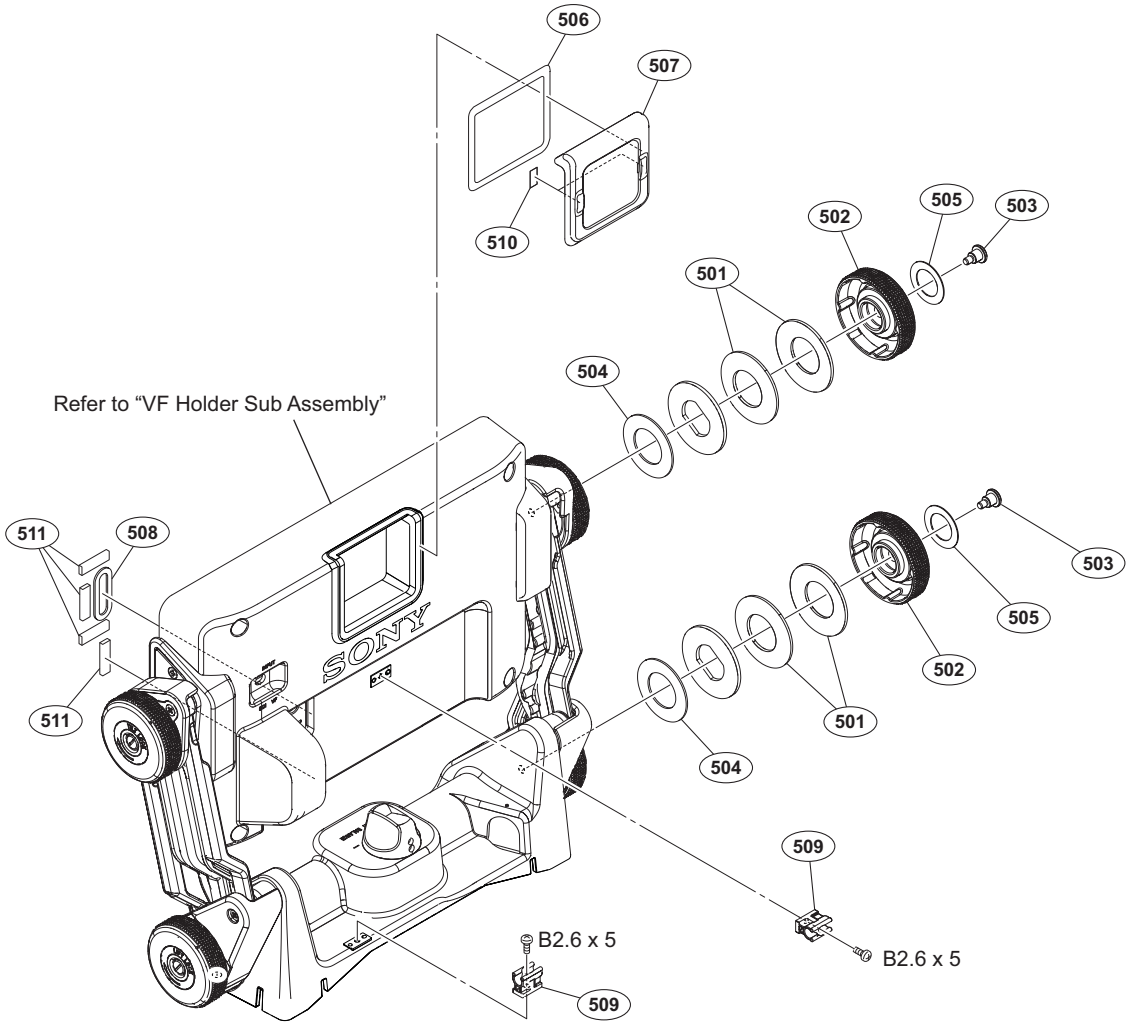
No.	Part No.	SP	Description
301	A-2057-890-A	s	BASE PAN TILT ASSY
302	3-167-487-01	o	SPRING, PLATE
303	4-027-627-01	o	SPRING (DIA. 18)
304	4-126-082-01	s	SPACER, PAN (A)
305	4-126-085-01	s	SPACER (2)
306	4-172-639-01	s	KNOB,TILT
307	4-172-640-01	s	COVER (L)
308	4-195-869-11	s	ADHESIVE(TALLY)
309	4-195-870-02	s	COVER, TALLY
310	4-542-847-01	s	SHEET (4), DROP PROTECTION
311	4-542-878-01	s	HOLDER, CABLE
312	4-542-950-11	s	PANEL, REAR
313	4-547-669-01	s	GASKET, CN
	7-621-734-09	s	SET-SCT, HEX. 2.6X3
	7-621-775-20	s	SCREW +B 2.6X5
	7-682-160-09	s	SCREW +P 4X6
	7-683-378-07	s	BOLT, HEXAGON 8X12
	7-683-404-04	s	BOLT, HEXAGON SOCKET 3X8
	7-683-435-04	s	BOLT, HEXAGON SOCKET 5X10
	7-685-534-19	s	SCREW +BTP 2.6X8 TYPE2 N-S

VF Holder Unit-1 (HDVF-L770)



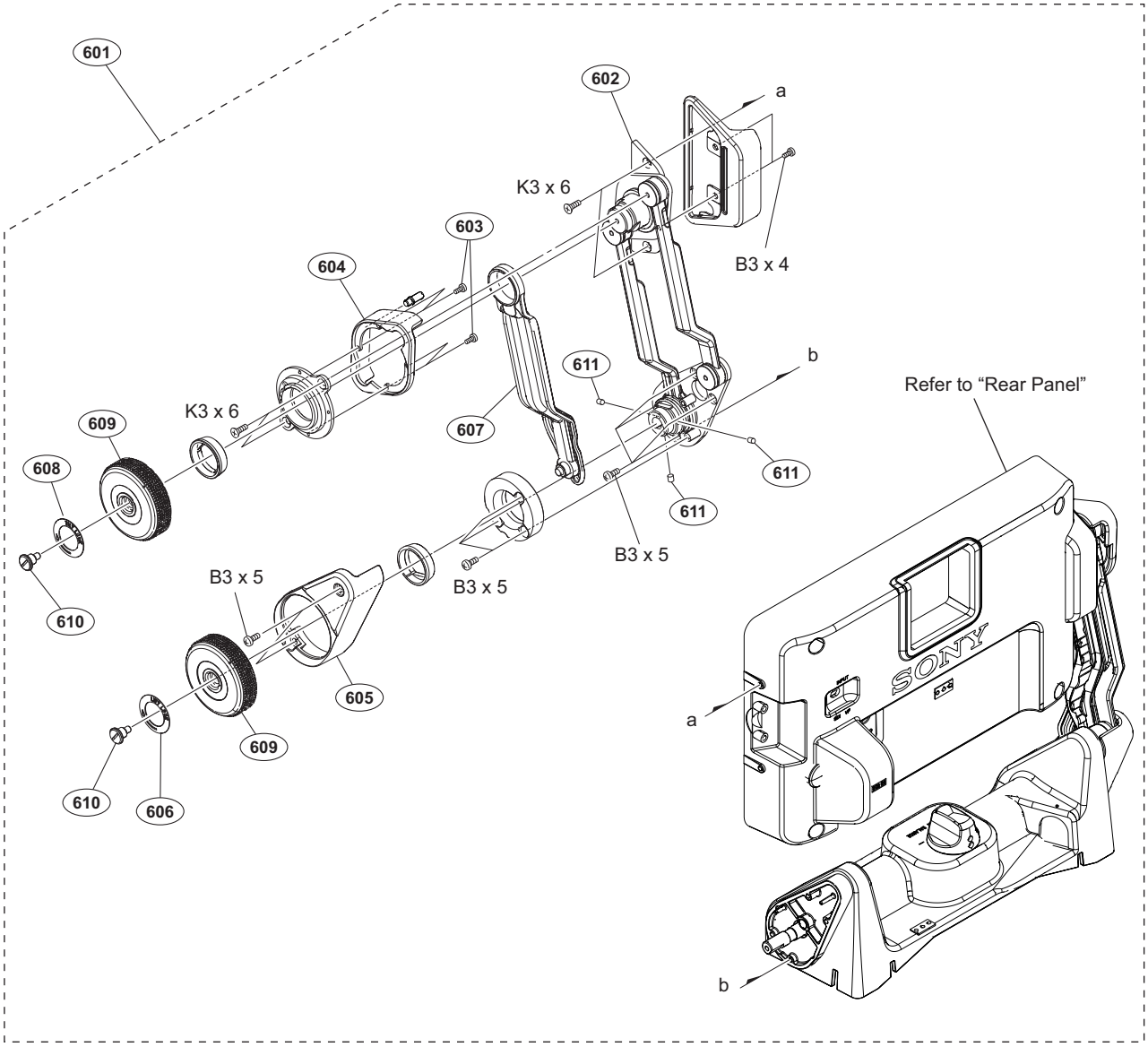
No.	Part No.	SP	Description
401	4-027-627-01	o	SPRING (DIA. 18)
402	4-195-518-01	s	VF HOLDER BASE CONER (P)
403	4-195-519-01	s	BASE GUARD (P)
404	4-195-522-01	s	BASE (TOP), PAN
405	4-195-523-02	s	BASE (BOTTOM), PAN
406	4-195-525-02	s	SHEET, PAN
	7-682-546-09	s	SCREW +B 3X5
	7-682-561-04	s	SCREW +B 4X8
	7-683-435-04	s	BOLT, HEXAGON SOCKET 5X10

VF Holder Unit-2 (HDVF-L770)



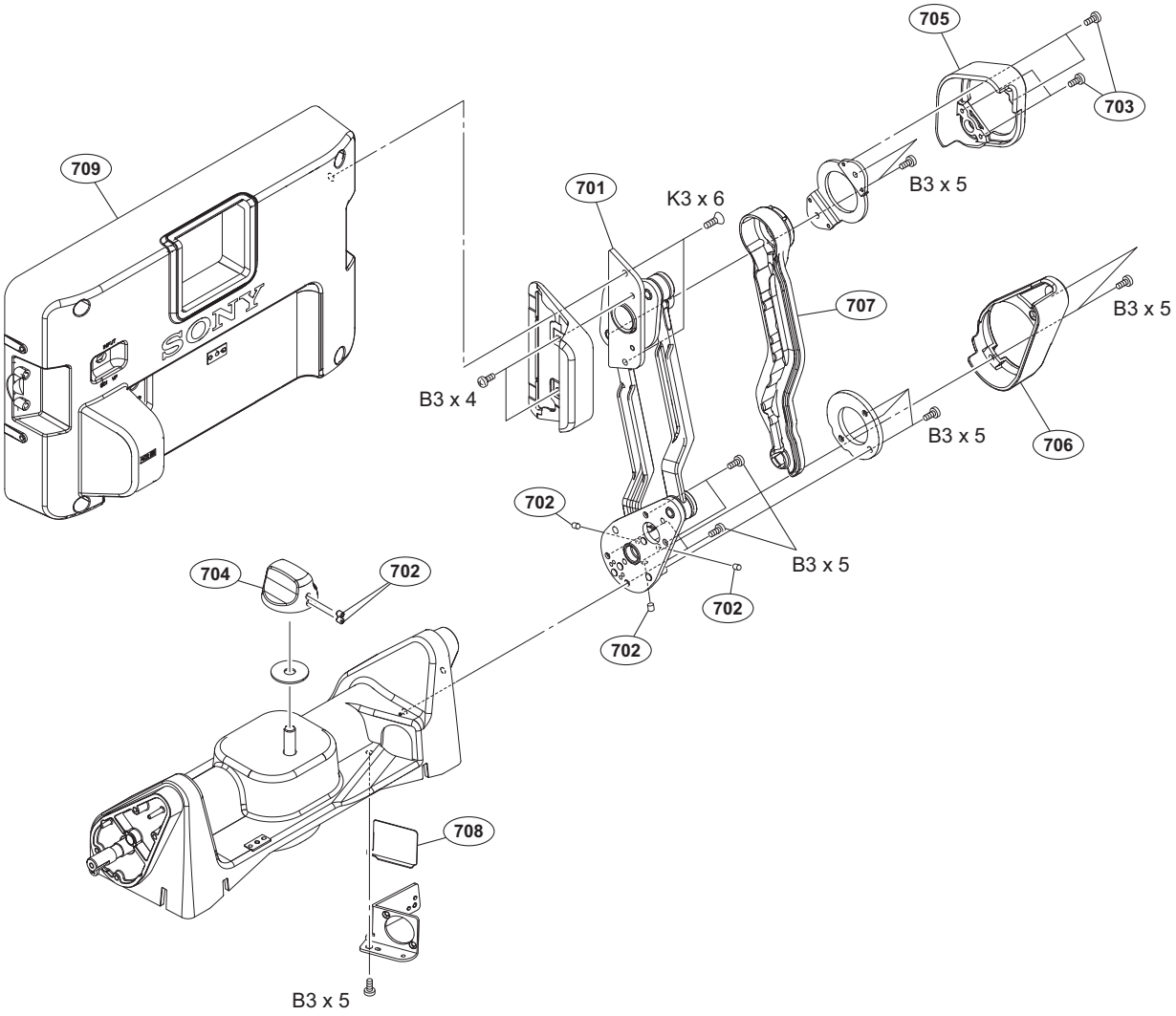
No.	Part No.	SP	Description
501	3-172-801-01	s	SPRING (PIA.20)
502	4-195-444-03	s	KNOB (ARM SIDE)
503	4-195-445-01	s	STOPPER KNOB SCREW
504	4-195-448-02	s	FRICTION SHEET (35X20X1)
505	4-195-452-01	s	NAME PLATE (+- ARROW)
506	4-195-869-11	s	ADHESIVE(TALLY)
507	4-195-870-02	s	COVER, TALLY
508	4-542-847-01	s	SHEET (4), DROP PROTECTION
509	4-542-878-01	s	HOLDER, CABLE
510	4-174-649-11	s	SEAL,TALLY COVER
511	4-547-669-01	s	GASKET, CN
	7-621-775-20	s	SCREW +B 2.6X5

VF Holder Sub Assembly



No.	Part No.	SP	Description
601	A-2059-735-A	s	VF HOLDER SUB ASSY
602	X-2548-740-5	s	ARM(R) SUB ASSY
603	3-719-381-02	s	SCREW (M2X4)
604	4-195-416-01	s	TILT BASE COVER (R)
605	4-195-418-02	s	LIFT BASE COVER (R)
606	4-195-419-01	s	NAME PLATE (LIFT LOCK)
607	4-195-420-01	s	LIFT ARM COVER (R)
608	4-195-421-01	s	NAME PLATE (TILT LOCK)
609	4-195-444-03	s	KNOB (ARM SIDE)
610	4-195-445-01	s	STOPPER KNOB SCREW
611	3-701-506-01	s	SET SCREW, DOUBLE POINT 3X4
	7-682-247-09	s	SCREW +K 3X6
	7-682-545-09	s	SCREW +B 3X4
	7-682-546-09	s	SCREW +B 3X5

Rear Panel (HDVF-L770)



No.	Part No.	SP	Description
701	X-2548-741-6	s	ARM(L) SUB ASSY
702	3-701-506-01	s	SET SCREW, DOUBLE POINT 3X4
703	3-719-381-02	s	SCREW (M2X4)
704	4-195-368-01	s	KNOB (STAGE)
705	4-195-446-01	s	TILT BASE COVER (L)
706	4-195-450-02	s	LIFT BASE COVER (L)
707	4-195-451-02	s	LIFT ARM COVER (L)
708	4-542-880-01	s	COVER, CN
709	4-542-950-01	s	PANEL, REAR
	7-682-247-09	s	SCREW +K 3X6
	7-682-545-09	s	SCREW +B 3X4
	7-682-546-09	s	SCREW +B 3X5

6-3. Supplied Accessories

HDVF-L750

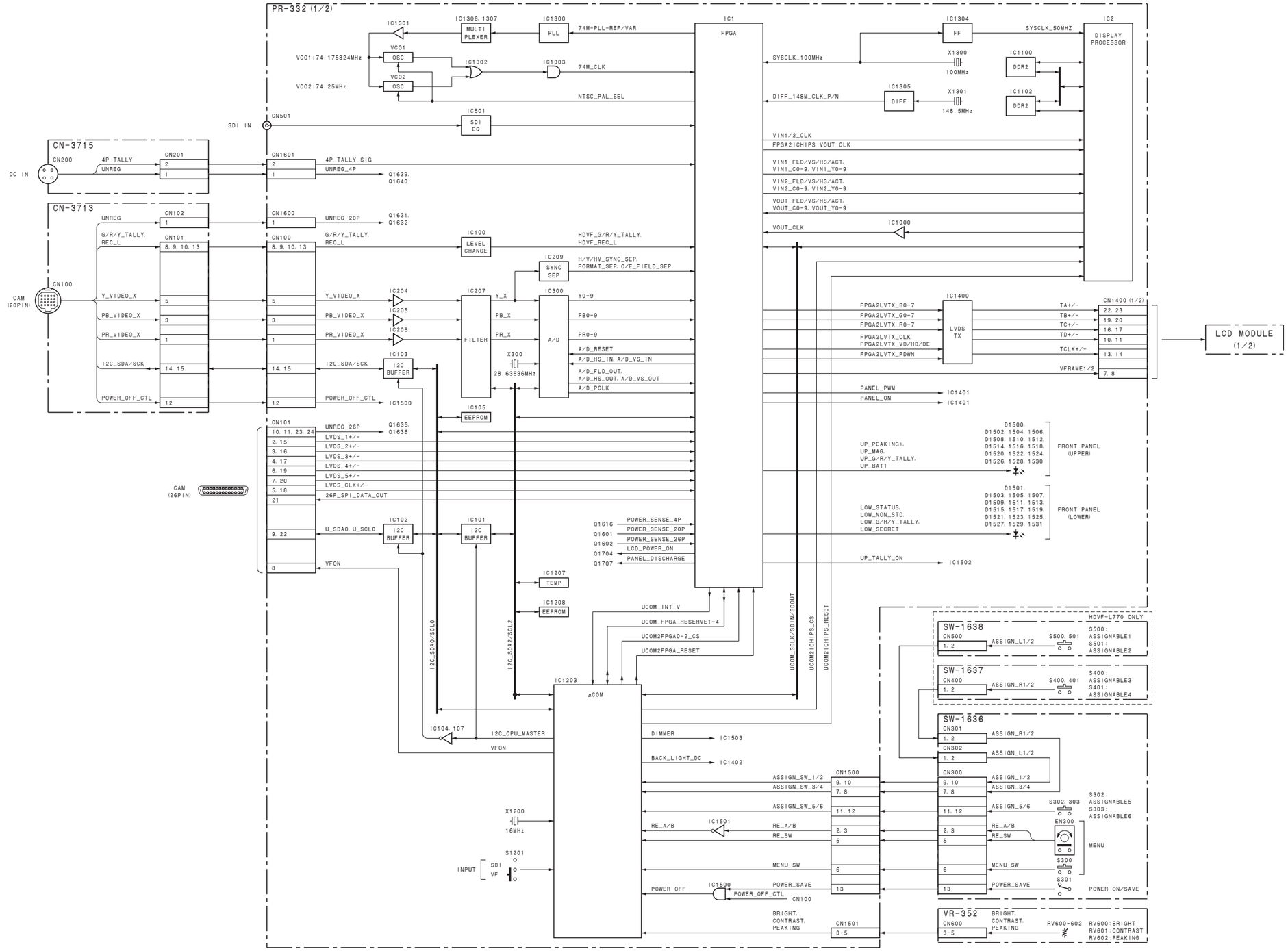
Q'ty	Part No.	SP	Description
1pc	A-2057-914-A	s	HOOD (750) ASSY, INDOOR
1pc	A-7612-405-F	s	SHOE ASSY, V EDGE
1pc	1-838-608-21	s	CORD, CONNECTION (VF) 20P
1pc	1-848-062-21	s	CABLE, CONNECTION (VF) 26P
1pc	4-027-937-03	s	PLATE, NUMBER
1pc	4-542-851-01	s	BRACKET, SHOE CONVERSION
1pc	⚠ 4-543-737-01	s	CD-ROM PACK
1pc	4-544-648-01	s	TUBE, SPIRAL
4pcs	7-682-549-09	s	SCREW +B 3X10
4pcs	7-683-421-04	o	BOLT,HEXAGON SOCKET 4X12
1pc	7-721-130-20	s	WRENCH, L (3.0MM)

HDVF-L770

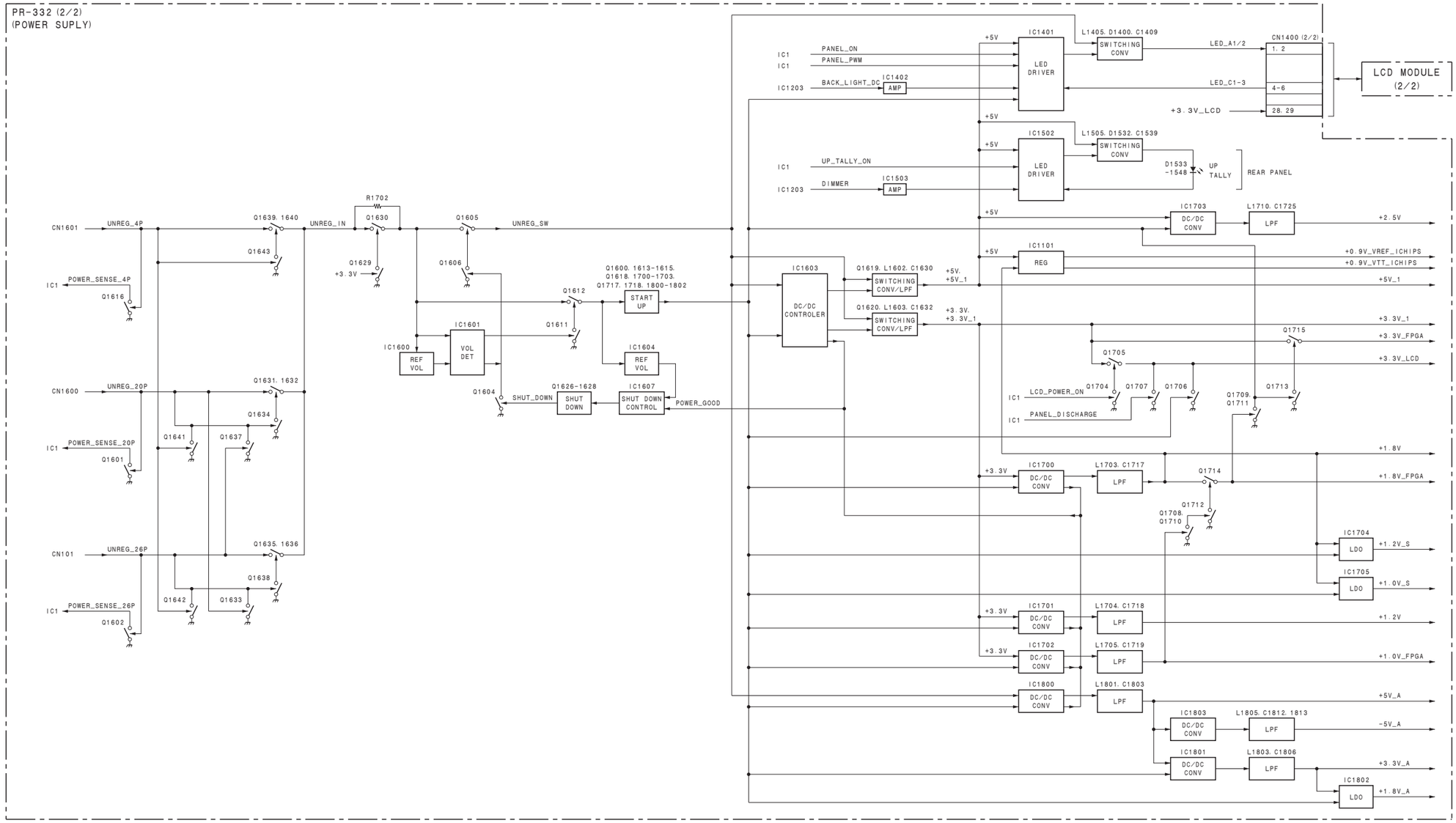
Q'ty	Part No.	SP	Description
1pc	A-1793-995-B	s	HOOD ASSY, INDOOR
1pc	A-7612-405-F	s	SHOE ASSY, V EDGE
1pc	1-838-608-21	s	CORD, CONNECTION (VF) 20P
1pc	4-027-937-03	s	PLATE, NUMBER
1pc	⚠ 4-543-737-01	s	CD-ROM PACK
1pc	4-544-648-01	s	TUBE, SPIRAL
4pcs	7-683-421-04	o	BOLT,HEXAGON SOCKET 4X12
1pc	7-721-130-20	s	WRENCH, L (3.0MM)

Section 7
Diagrams

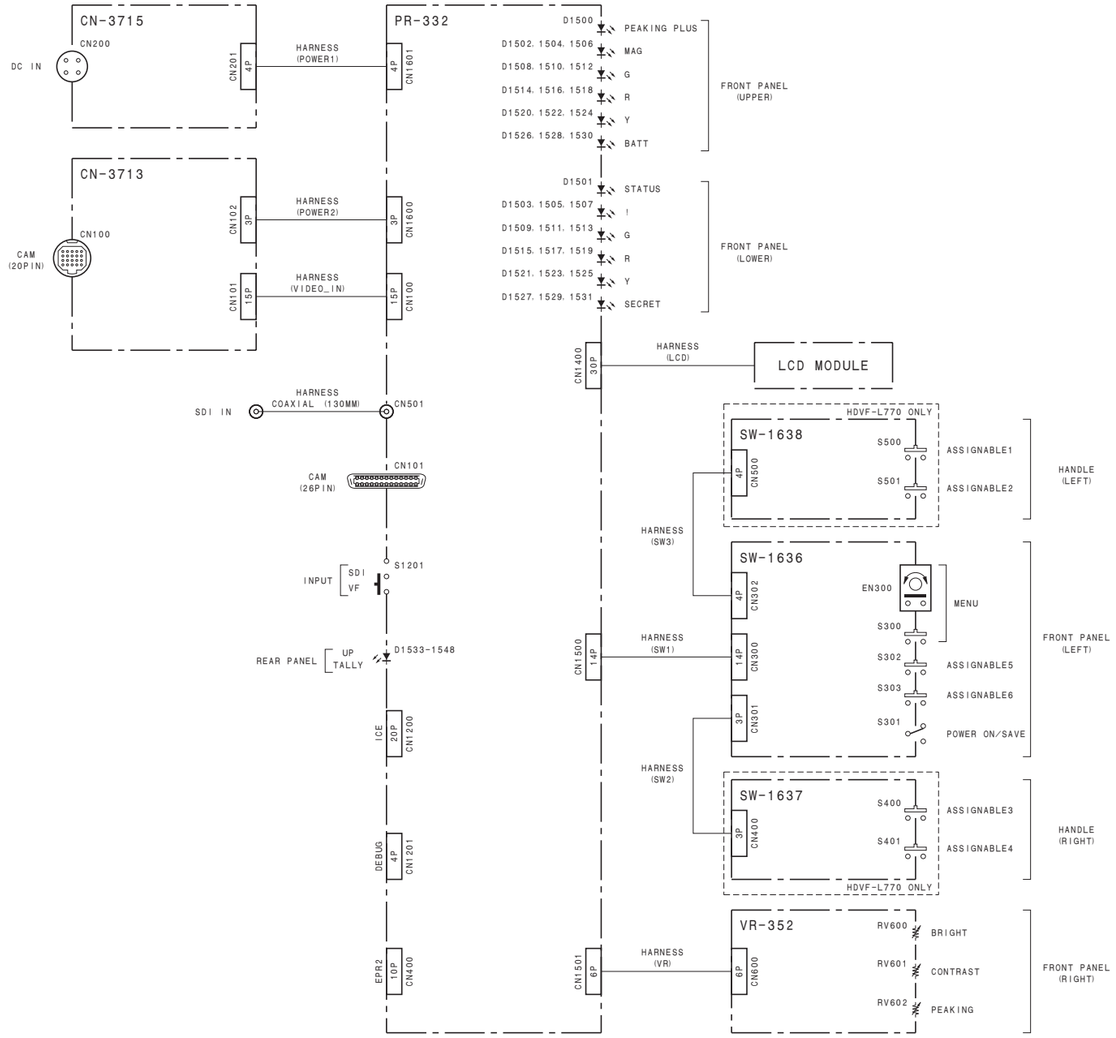
Overall (1/2)



Overall (2/2)


PR-332 (2/2)
(POWER SUPLY)
CN1601
UNREG_4P
Q1639, 1640
UNREG_IN
R1702
Q1630
Q1605
UNREG_SW
Q1643
Q1629
+3.3V
Q1606
IC1
POWER_SENSE_4P
Q1616
Q1612
Q1600, 1613-1615,
Q1618, 1700-1703,
Q1717, 1718, 1800-1802
START UP
IC1601
VOL DET
Q1611
IC1600
REF VOL
IC1604
REF VOL
Q1604
SHUT_DOWN
Q1626-1628
SHUT DOWN
IC1607
SHUT DOWN CONTROL
POWER_GOOD
CN1600
UNREG_20P
Q1631, 1632
Q1634
Q1641
Q1637
IC1
POWER_SENSE_20P
Q1601
CN101
UNREG_26P
Q1635, 1636
Q1638
Q1642
Q1633
IC1
POWER_SENSE_26P
Q1602
IC1603
DC/DC CONTROLER
Q1619, L1602, C1630
SWITCHING CONV/LPF
+5V, +5V_1
Q1620, L1603, C1632
SWITCHING CONV/LPF
+3.3V, +3.3V_1
IC1
PANEL_ON
IC1
PANEL_PWM
IC1203
BACK_LIGHT_DC
IC1402
AMP
+5V
IC1401
LED DRIVER
L1405, D1400, C1409
SWITCHING CONV
LED_A1/2
CN1400 (2/2)
1, 2
LED_C1-3
4-6
+3.3V_LCD
28, 29
LCD MODULE (2/2)
IC1
UP_TALLY_ON
IC1203
DIMMER
IC1503
AMP
IC1502
LED DRIVER
L1505, D1532, C1539
SWITCHING CONV
D1533 -1548
UP TALLY
REAR PANEL
IC1703
DC/DC CONV
L1710, C1725
LPF
+2.5V
IC1101
REG
+0.9V_VREF_ICHIPS
+0.9V_VTT_ICHIPS
+5V_1
+3.3V_1
Q1715
+3.3V_FPGA
Q1705
+3.3V_LCD
IC1
LCD_POWER_ON
Q1704
Q1707
Q1706
Q1709, Q1711
Q1713
IC1
PANEL_DISCHARGE
+1.8V
+3.3V
IC1700
DC/DC CONV
L1703, C1717
LPF
Q1714
+1.8V_FPGA
Q1712
Q1708, Q1710
IC1704
LDO
+1.2V_S
IC1705
LDO
+1.0V_S
+3.3V
IC1701
DC/DC CONV
L1704, C1718
LPF
+1.2V
+3.3V
IC1702
DC/DC CONV
L1705, C1719
LPF
+1.0V_FPGA
IC1800
DC/DC CONV
L1801, C1803
LPF
+5V_A
IC1803
DC/DC CONV
L1805, C1812, 1813
LPF
-5V_A
IC1801
DC/DC CONV
L1803, C1806
LPF
+3.3V_A
IC1802
LDO
+1.8V_A

Frame Wiring



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HDVF-L750 (CN)
HDVF-L770 (SY)
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