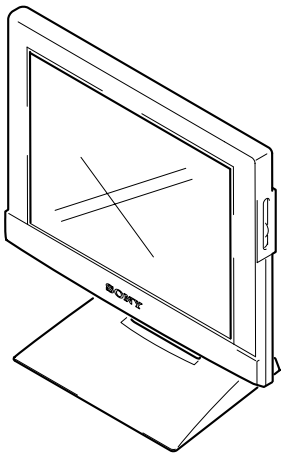
PCVA-15XD2

SERVICE MANUAL

US Model
Canadian Model



VAIO

SPECIFICATIONS

LCD panel

Panel type: a-Si TFT Active Matrix
Picture size: 15 inch (38cm)
Picture element: 99.99%

Resolution

Horizontal: Max. 1024 dots
Vertical: Max. 768 lines

Power requirements

— AC adapter
Input: AC 100 – 240V/ 1A/50 – 60Hz
Output: DC 12V/3A
— LCD Display
Input: DC12V/1.7A

Power consumption

Max. 36W (less than 3W in power saving mode)

Dimensions (width/height/depth)

Approx. 380 × 360 × 200 mm
($15 \times 14\ ^{1}/_{4} \times 7\ ^{7}/_{8}$ inches)

Mass

Approx. 5.5 kg (12 lb 2 oz)

Plug & Play

DDC1/DDC2B

Accessories

- LCD display
- AC adapter
- Power cord
- Warranty Card
- This instruction manual

Design and specifications are subject to change without notice.

15 INCH TFT LCD DIGITAL DISPLAY

SONY®

9-928-380-11

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Caution Markings for Lithium/Ion Battery - The following or similar texts shall be provided on battery pack of equipment or in both the operating and the service instructions.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

CAUTION: The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (212°F) or incinerate.
Dispose of used battery promptly.
Keep away from children.

Service and Inspection Precautions

1. Obey precautionary markings and instructions

Labels and stamps on the cabinet, chassis, and components identify areas requiring special precautions. Be sure to observe these precautions, as well as all precautions listed in the operating manual and other associated documents.

2. Use designated parts only

The set's components possess important safety characteristics, such as noncombustibility and the ability to tolerate large voltages. Be sure that replacement parts possess the same safety characteristics as the originals. Also remember that the ⚠ mark, which appears in circuit diagrams and parts lists, denotes components that have particularly important safety functions; be extra sure to use only the designated components.

3. Always follow the original design when mounting parts and routing wires

The original layout includes various safety features, such as inclusion of insulating materials (tubes and tape) and the mounting of parts above the printer board. In addition, internal wiring has been routed and clamped so as to keep it away from hot or high-voltage parts. When mounting parts or routing wires, therefore, be sure to duplicate the original layout.

4. Inspect after completing service

After servicing, inspect to make sure that all screws, components, and wiring have been returned to their original condition. Also check the area around the repair location to ensure that repair work has caused no damage, and confirm safety.

5. When replacing chip components...

Never reuse components. Also remember that the negative side of tantalum capacitors is easily damaged by heat.

6. When handling flexible print boards...

- The temperature of the soldering-iron tip should be about 270C.
- Do not apply the tip more than three times to the same pattern.
- Handle patterns with care; never apply force.

Caution: Remember that hard disk drives are easily damaged by vibration. Always handle with care.

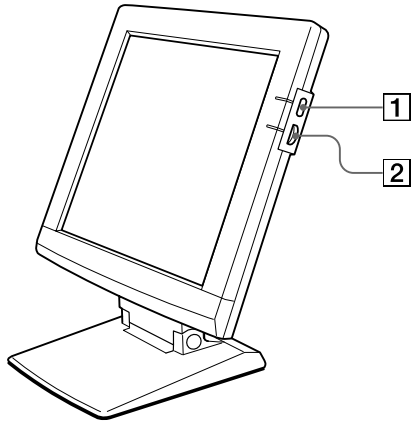
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!
LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

TABLE OF CONTENTS

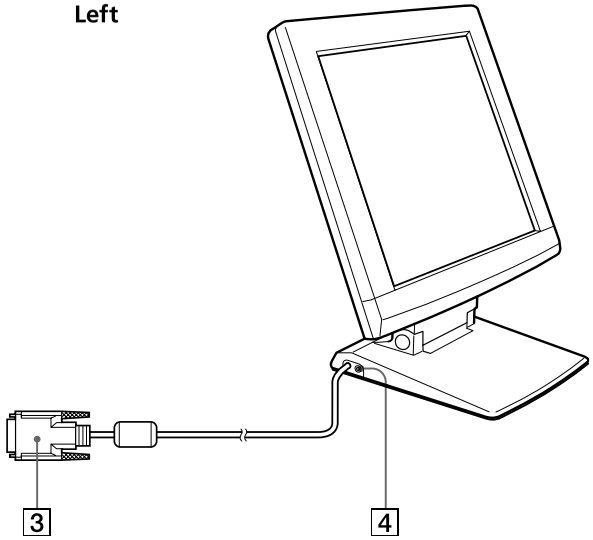
Identifying parts and controls

See the pages in parentheses for further details.

Right



Left



(Continued)

1 ⏻ Power switch and indicator (pages 10, 12)

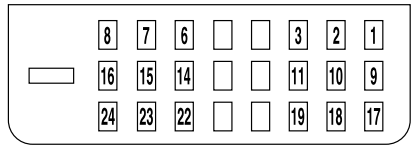
This switch turns the display on and off.
The indicator lights up in green when the display is turned on.
The indicator lights up in orange when the display is in power saving mode.

2 ◿ +/– Brightness control

This control adjusts the brightness of the screen.

3 DVI video input connector (page 9)

This connector inputs digital RGB video signals.



Pin No.	Signal
1	TMDS Data 2–
2	TDMS Data 2+
3	TDMS Data 2 Shield
6	DDC Clock
7	DDC Data
9	TDMS Data 1–
10	TDMS Data 1+
11	TDMS Data 1 Shield

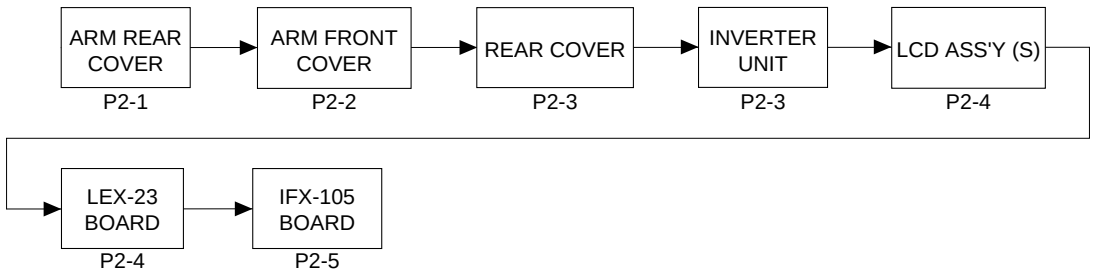
Pin No.	Signal
14	+5V Power
15	Ground (for +5V)
16	Hot Plug Detect
17	TDMS Data 0–
18	TDMS Data 0+
19	TDMS Data 0 Shield
22	TDMS Clock Shield
23	TDMS Clock+
24	TDMS Clock–

4 DC IN connector (page 10)

This connector provides DC power to the display. Connect the AC adapter to this connector.

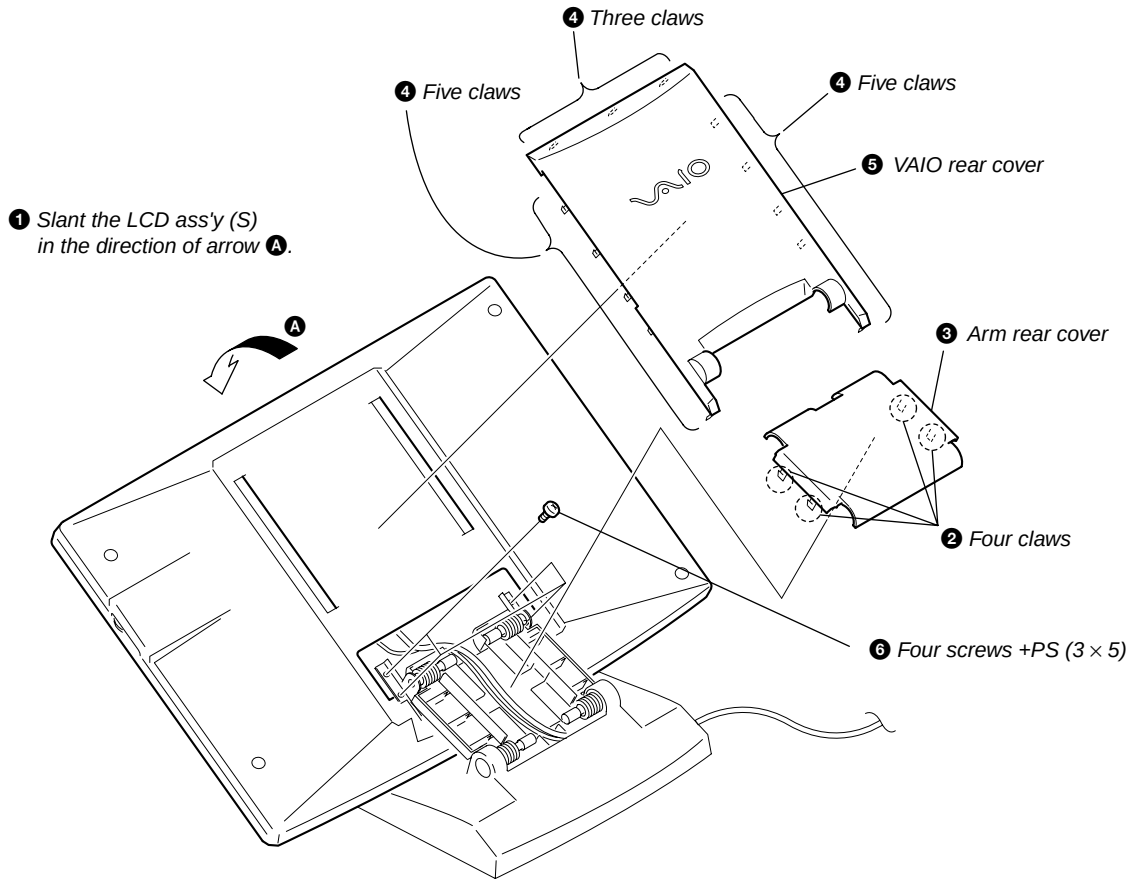
SECTION 2
DISASSEMBLY

2-1. FLOWCHART

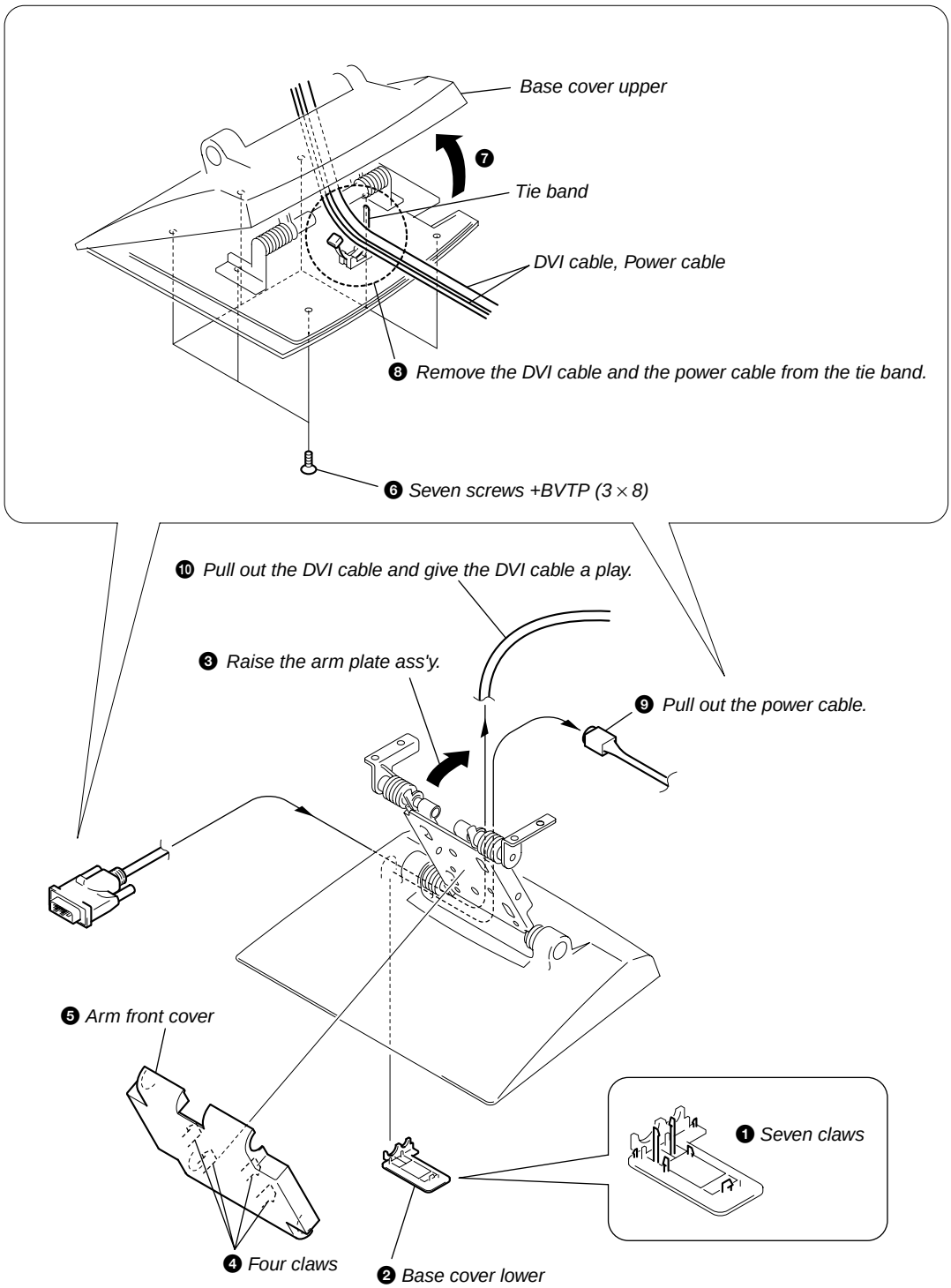


- P X-X means pages that appears in this manual.

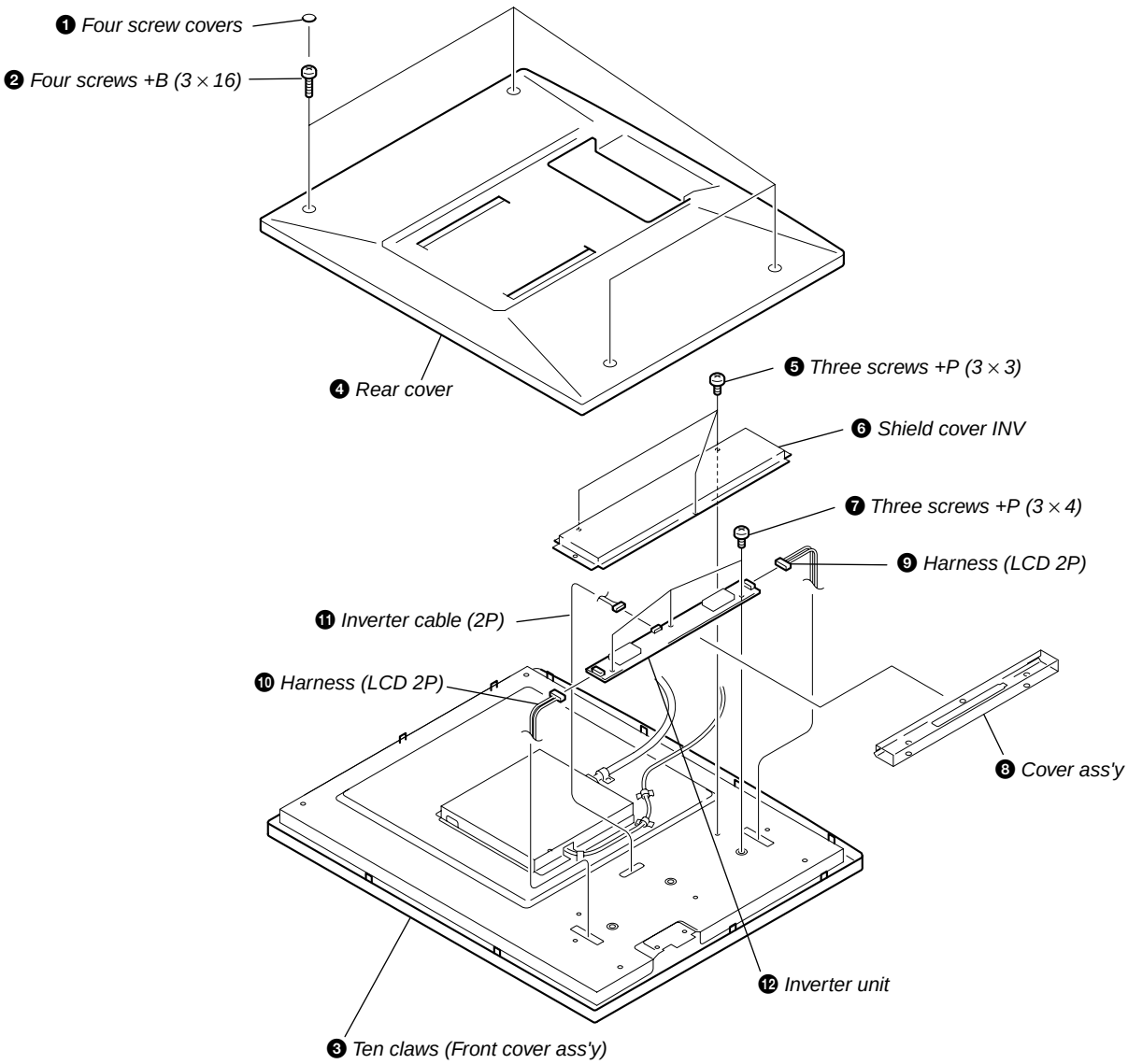
2-2. ARM REAR COVER



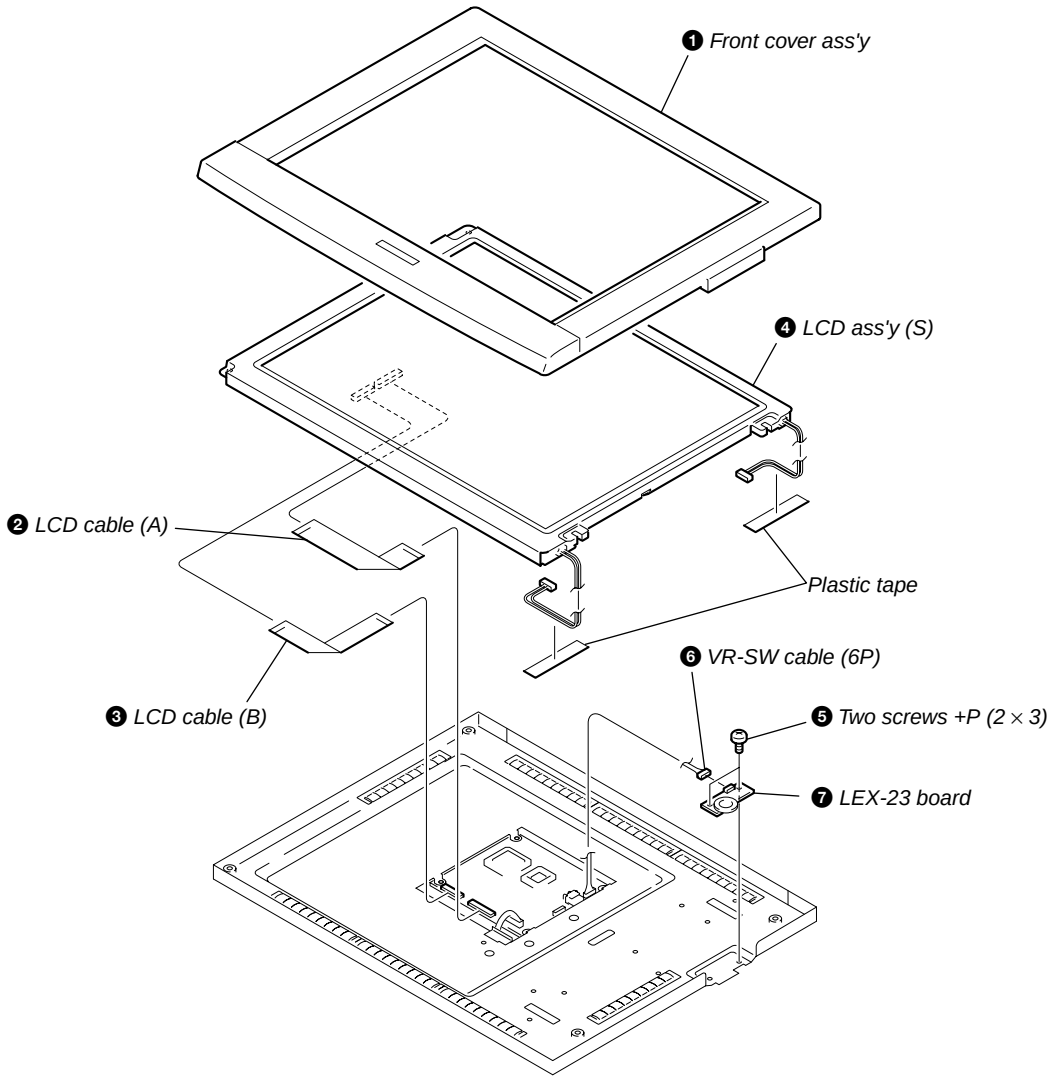
2-3. ARM FRONT COVER



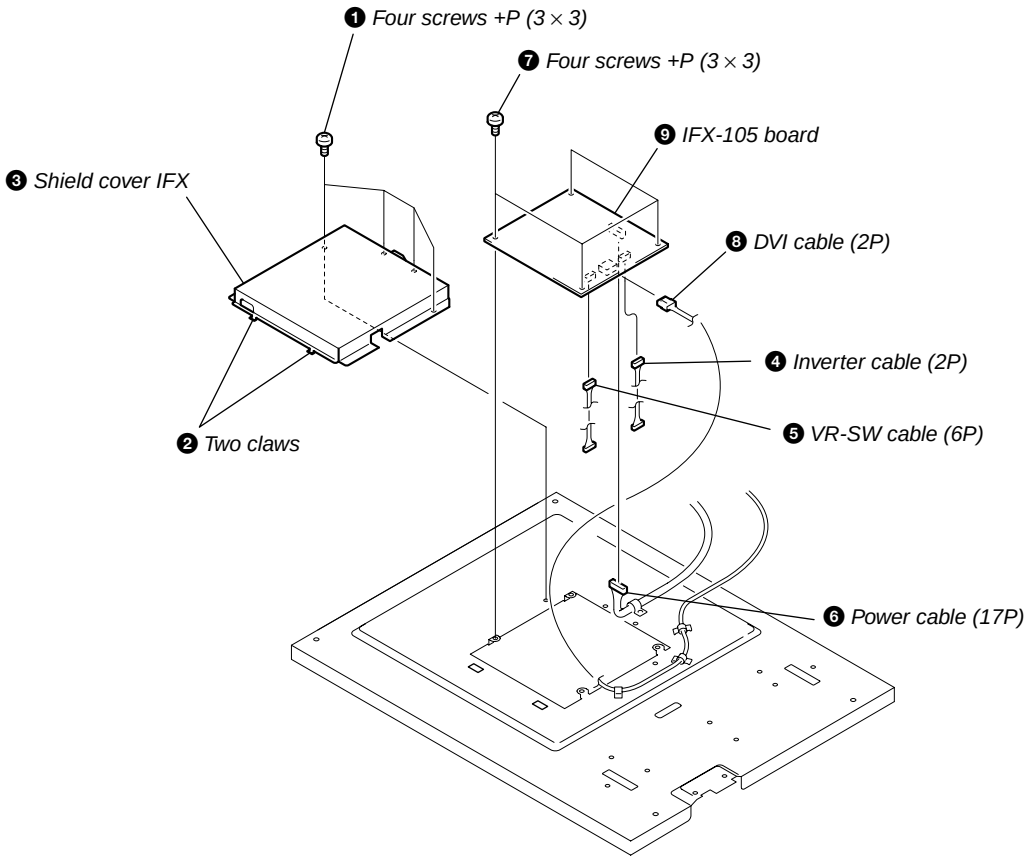
2-4. REAR COVER, INVERTER UNIT



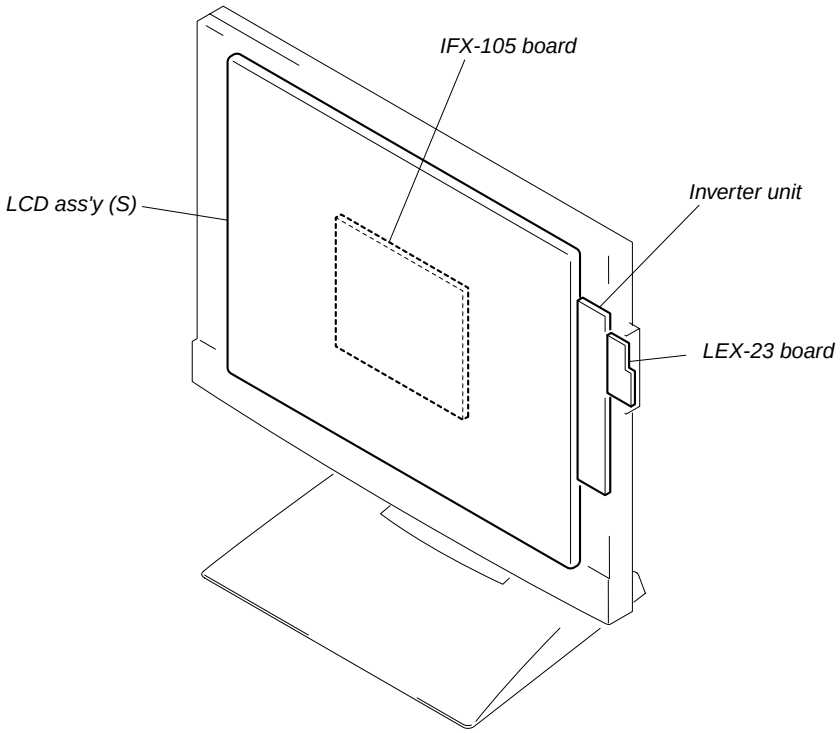
2-5. LCD ASS'Y (S), LEX-23 BOARD



2-6. IFX-105 BOARD

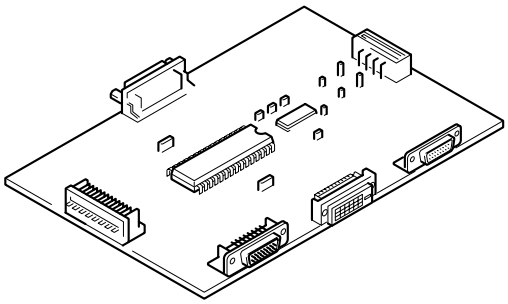
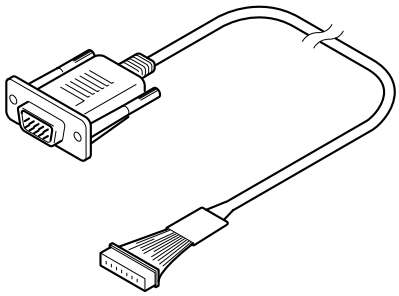


2-7. MAIN ELECTRICAL PARTS LOCATION DIAGRAM



SECTION 3
SERVICE OVERVIEW

3-1. SERVICE TOOLS

Ref. No.	1	2
Name	EDID writing tool	Firmware writing cable
Parts code	J-2500-446-1	J-2500-447-1
Application	Used to connect the DVI cable and the PC during EDID writing of the PCVA-15XD2.	Used to connect the pin-7 connector (CN2) on the IFX-105 mounted board during firmware writing of the PCVA-15XD2.
Outside drawing		

3-2. PROCEDURE FOR WRITING EDID DATA

1. Required tools

- EDID writing tool
- PC
- Serial cable (cross cable: D-sub pin-9 female ⇔ D-sub pin-9 female)
- EDID writing software disk
  Before starting writing, copy the writing software program (EDIDUPD) and the data file (XXXXXXX.bin) to the bootable floppy disk already containing the system file.
- Power supply (for writing tool: + 5 V)

2. Procedure

1. Connect the serial cable to the serial connector of the EDID writing tool and the serial port COM1 of the PC.
2. Connect the DVI cable of the display to the DVI connector of the writing tool.
3. Supply power to the writing tool.
4. Insert the writing software disk into the floppy drive.
5. Start up the PC from the floppy disk.
6. After the MS-DOS prompt appears, input the newest EDID data file name shown below.
   A:\>EDIDUPD/d:XXXXXXX.bin [enter]
7. After the writing software starts up, press the [w] key.
8. The prompt “Do you want to transfer? (y=space)” appears.
9. Press the [Space] key to start writing.
   Transferring...
   +>>>>----------+ } ← The above indicates the progress.
10. When writing ends normally, “Verifying...” appears for a moment, then “Transferring succeeded. (y=continue)” appears.
11. Press the [ESC] key twice and press the [Q] key to terminate writing.
12. After the MS-DOS prompt appears, disconnect the power supply from the writing tool.
13. Disconnect the DVI cable of the display from the DVI connector of the writing tool.
14. Disconnect the serial cable.
15. Turn off the power of the PC.

3-3. PROCEDURE FOR WRITING FIRMWARE

1. Required tools

- PC
- Cable for firmware writing
- Firmware writing software disk
  Before starting writing, copy the writing software program (F51PBSLAA) and the firmware file (XXXXXXX.bin) to the bootable floppy disk already containing the system file.

2. Procedure

1. Remove the rear cover from the display.
2. Connect the cable for writing to the serial port COM1 of the PC.
3. Connect the cable for writing to the pin-7 connector (CN2) on the IFX board.
4. Insert the writing software disk into the floppy drive.
5. Start up the PC from the floppy disk.
6. After the MS-DOS prompt appears, input A:\>F51PBSLA [enter].

7. After the menu of the firmware writing software appears, connect the AC adapter to DC IN of the display and press the Power switch.
   * The display does not change and the power LED does not light after the above operation.

```
--------------------------------------------------------------------------------
FlashFlex51 Boot-Strap Loader
SST Embedded Controller Applications Group
Ver.1.1, 1999.10.20
SECURITY : UNKNOW ! !
CHIP TYPE : NOT SET ! !, COM PORT : 1, BAUD RATE : bps
STATUS : SELECT CHIP TYPE AND COM PORT FIRST !

MENU SELECTIONs
0, Press 0 to EXIT to DOS
1, Press 1 to SELECT CHIP TYPE & COM PORT
2, Press 2 to DOWNLOAD BINRY FILE TO PRIMARY BLOCK
3, Press 3 to READ DATA IN PRIMARY BLOCK & SAVE AS A BINAY FILE
4, Press 4 to BLANK CHECK
5, Press 5 to SECTOR ERASE
6, Press 6 to LOCK CHIP

Enter Choice ( 0 to 6 ) : _
--------------------------------------------------------------------------------
```

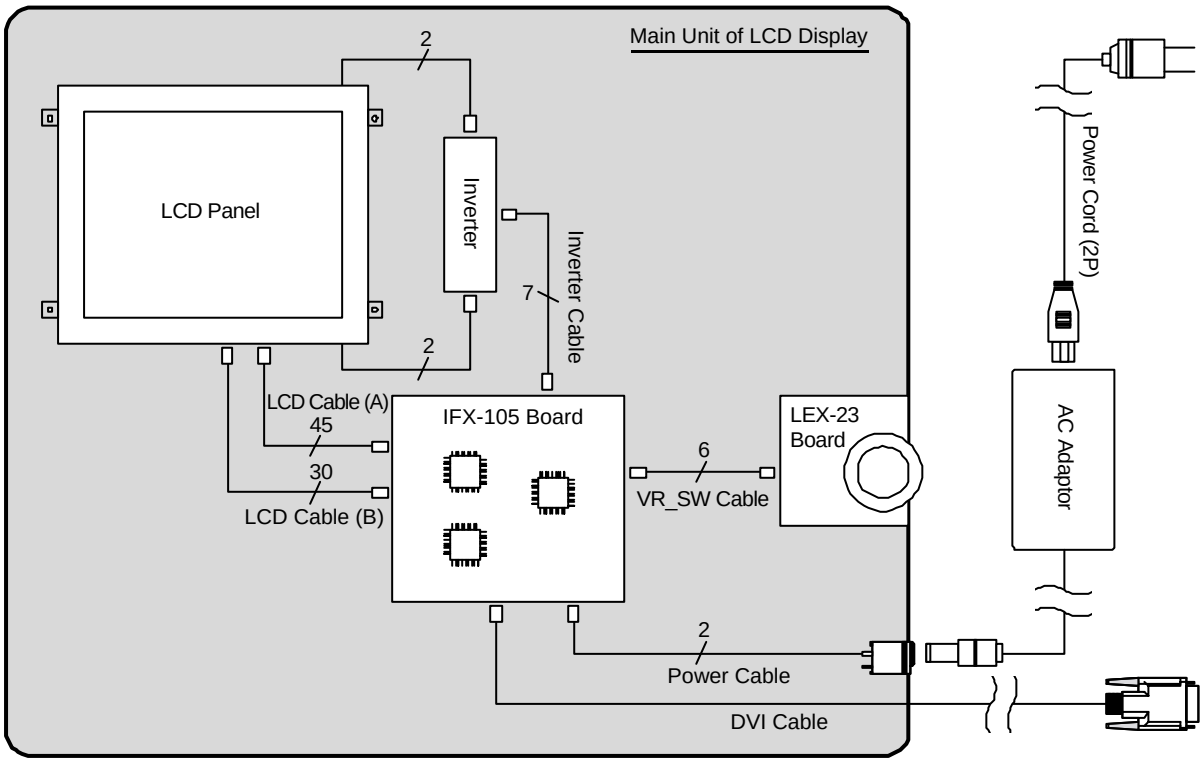
8. Input 1 (“SELECT CHIP TYPE & COM PORT”) in Enter Choice.
9. After “Please enter SST MCU chip type (54, 58 or 59):” appears, input 58 [enter].
10. After “Please enter COM PORT It is displayed with (1 for COM1 OR 2 for COM2):” appears, input 1 [enter].
11. “Please enter Baud Rate: 0 for AUTO DEFECT. 1 for 38.4k, 2 for 19.2k, 3 for 9.6k, 4 for 4.8k, 5 for 2.4k, 6 for 1.2k, 7 for 600 or 8 for It is displayed with 300:” appears, input 0 [enter].
12. When the communication is established normally, “Testing 38.4k bps on COM1 port...PASS...” appears and “CHIP TYPE: SST89x58, COM PORT: 1, BAUD RATE: 38.4k bps” appears on the top of the menu.
13. Input 2 (“DOWNLOAD BINARY FILE TO PRIMARY BLOCK”) in Enter Choice.
14. After “Input full name of file (.bin or Intel hex):” appears, input the newest firmware name XXXXXXX.bin [enter].

Wait for two or three minutes.
---

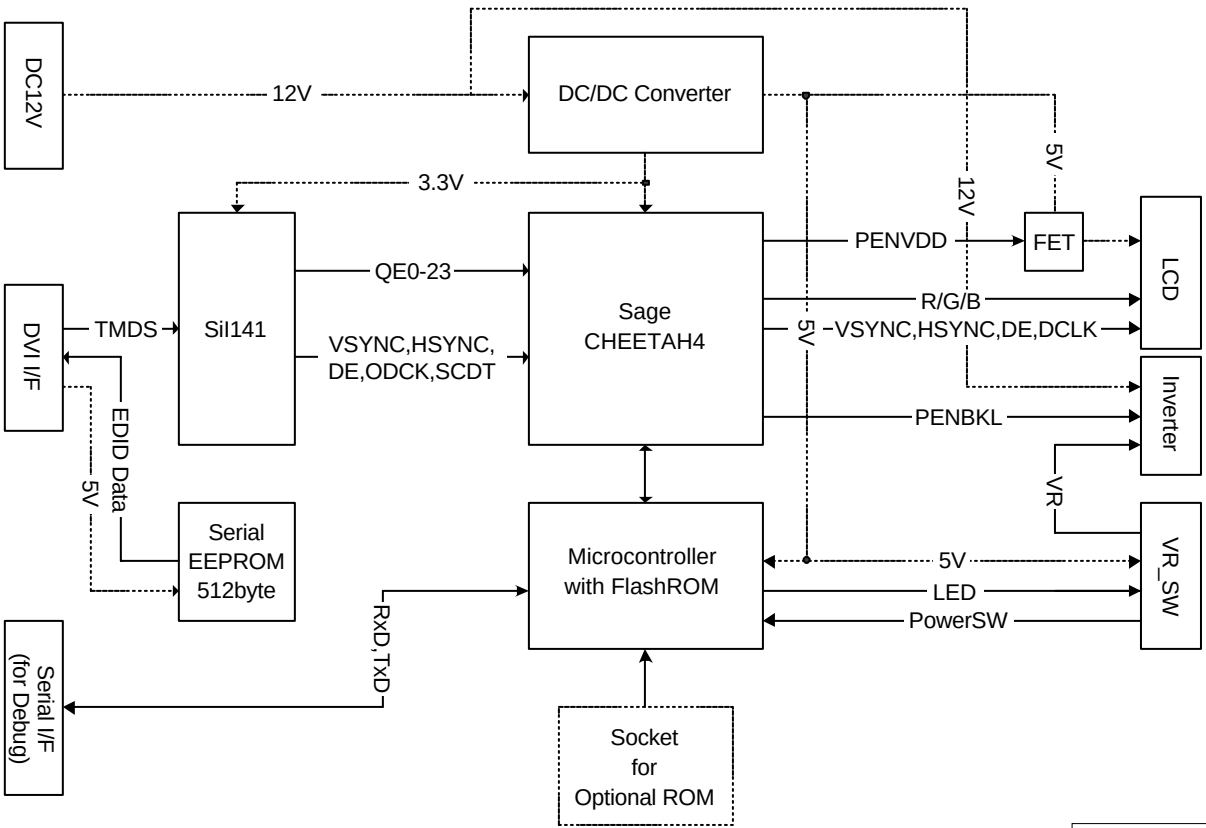
15. After writing ends normally, “STATUS: VERIFY OK!” appears on the top of the menu.
16. Input 0 (“EXIT to DOS”) in Enter Choice.
17. After the MS-DOS prompt appears, disconnect the AC adapter from the display.
    * The power cannot be turned off by using the Power switch.
18. Disconnect the cable for writing.
19. Turn off the power of the PC.

SECTION 4
BLOCK DIAGRAM

4-1. SYSTEM CONFIGURATION



4-2. BLOCK DIAGRAM



SECTION 5
FRAME HARNESS

5-1. CONNECTOR LIST

1. IFX-105 BOARD

CN1
pin assignments :

Pin	Signal Name
1	VR
2	VR (GND)
3	CTRL
4	GND
5	GND
6	VIN
7	VIN

CN2
pin assignments :

Pin	Signal Name
1	RXD
2	TXD
3	GND
4	GND
5	GND
6	DL_JP
7	DL_PW

CN4
pin assignments :

Pin	Signal Name
1	+5V
2	BLVR
3	PWR_SW
4	GND
5	SUS_LED
6	PW_LED

CN6
pin assignments :

Pin	Signal Name
1	+12V
2	NO PIN
3	GND

CN9
pin assignments:

Pin	Signal Name	Pin	Signal Name
1	RXC SHIELD	11	NC
2	RXC+	12	RX1–
3	DDC GND	13	RX1 SHIELD
4	RXC–	14	RX1+
5	DDC+5V	15	DDC/SCL
6	NC	16	NC
7	RX0 SHIELD	17	DDC/SDA
8	RX0–	18	RX2–
9	SENSE	19	RX2 SHIELD
10	RX0+	20	RX2+

CN10
pin assignments:

Pin	Signal Name	Pin	Signal Name
1	TEST	24	GO7
2	TEST	25	GND
3	TEST	26	BO0
4	VCC	27	BO1
5	VCC	28	BO2
6	RO0	29	BO3
7	RO1	30	GND
8	RO2	31	BO4
9	RO3	32	BO5
10	GND	33	BO6
11	RO4	34	BO7
12	RO5	35	GND
13	RO6	36	NC
14	RO7	37	GND
15	GND	38	HD
16	GO0	39	GND
17	GO1	40	VD
18	GO2	41	GND
19	GO3	42	DENA
20	GND	43	GND
21	GO4	44	DCLK
22	GO5	45	GND
23	GO6		

CN11
pin assignments:

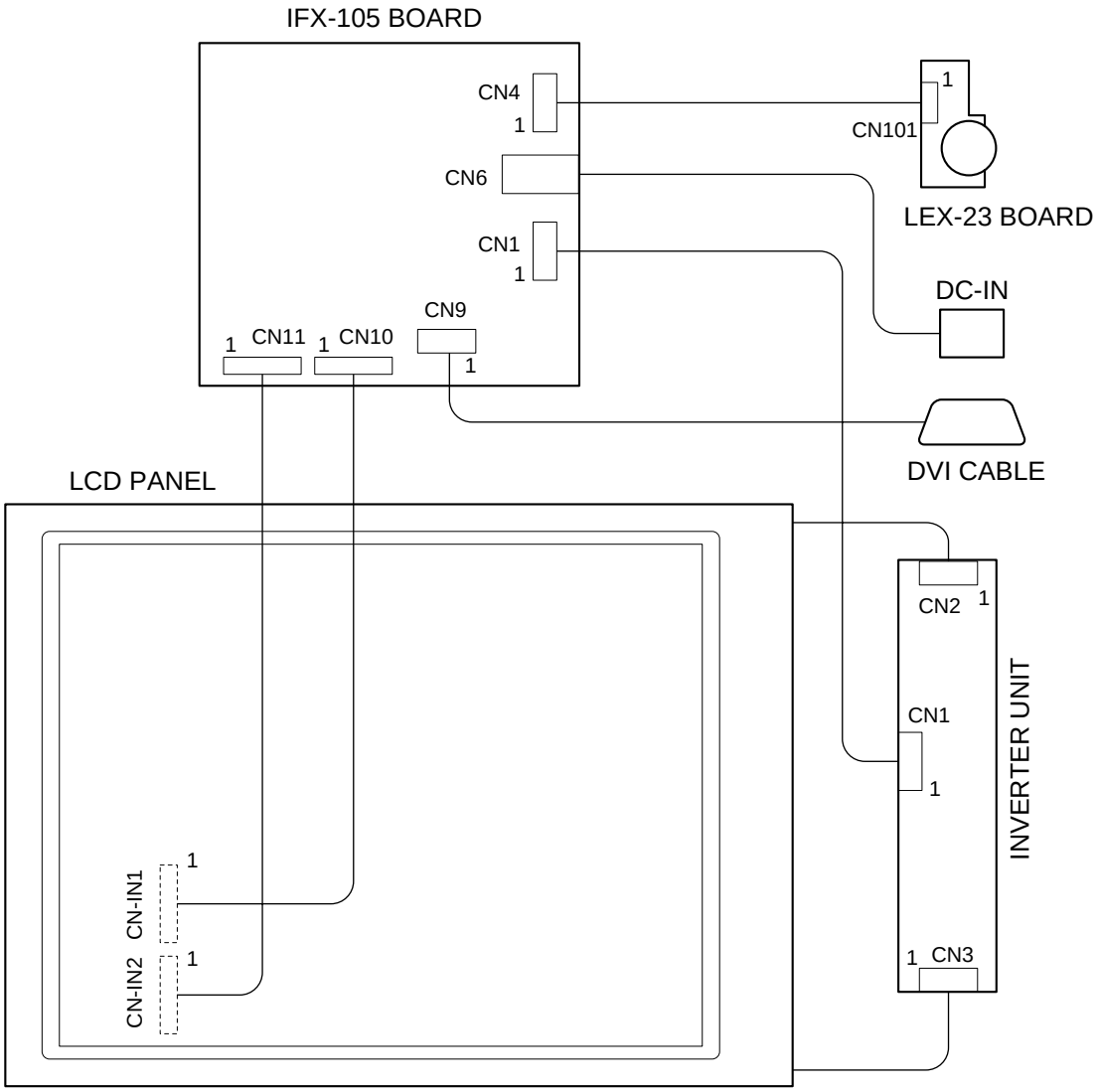
Pin	Signal Name	Pin	Signal Name
1	RE0	16	GE4
2	RE1	17	GE5
3	RE2	18	GE6
4	RE3	19	GE7
5	GND	20	GND
6	RE4	21	BE0
7	RE5	22	BE1
8	RE6	23	BE2
9	RE7	24	BE3
10	GND	25	GND
11	GE0	26	BE4
12	GE1	27	BE5
13	GE2	28	BE6
14	GE3	29	BE7
15	GND	30	GND

2. LEX-23 BOARD

CN101
pin assignments :

Pin	Signal Name
1	PW_LED
2	SUS_LED
3	GND
4	PWR_SW
5	BLVR
6	+5V

5-2. FRAME HARNESS DIAGRAM



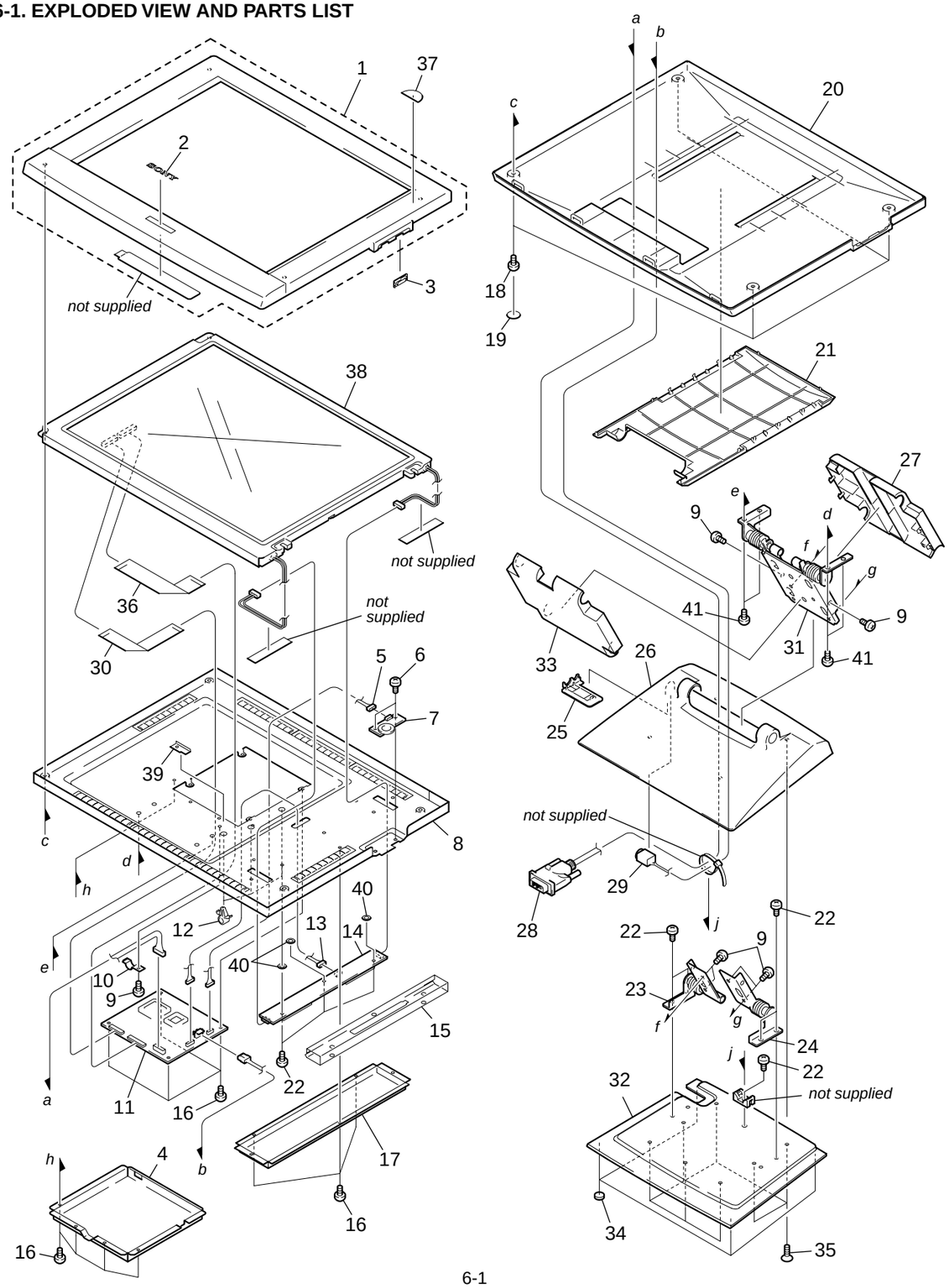
SECTION 6
EXPLODED VIEW

NOTE:
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked “S” in the S/P column are normally required for routine service work. Items marked “O” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

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

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

6-1. EXPLODED VIEW AND PARTS LIST



6-2. PARTS LIST (ACCESSORIES AND PACKING MATERIALS)

S/P	Ref.No.	Part No.	Description
S	1	X-4623-150-1	COVER ASSY, FRONT
S	2	4-045-165-11	EMBLEM (NO.6), SONY
O	3	4-647-422-01	TACT COVER
O	4	4-647-415-01	SHIELD COVER IFX
S	5	1-960-593-11	CABLE, VR-SW
S	6	7-621-255-15	SCREW +P 2X3
S	7	A-8066-021-A	MOUNTED PWB LEX-23
O	8	X-4622-950-1	FRAME ASSY
S	9	7-682-645-01	SCREW +PS 3X4
O	10	4-644-445-01	CLAMP, CABLE
S	11	A-8066-022-A	MOUNTED PWB IFX-105
O	12	4-647-752-01	ANCHOR, MINIATURE CODE
S	13	1-960-592-11	CABLE, INVERTER
S	14	1-476-153-11	INVERTER UNIT
O	15	X-4623-314-1	COVER ASSY
S	16	7-682-144-01	SCREW +P 3X3
O	17	4-647-416-01	SHIELD COVER INV
S	18	7-682-552-09	SCREW +B 3X16
S	19	4-644-474-01	COVER, SCREW
S	20	4-647-413-03	REAR COVER
S	21	4-647-408-11	VAIO REAR COVER
S	22	7-682-145-09	SCREW +P 3X4 (BLACK)
S	23	X-4622-836-1	HINGE ASSY (L)
S	24	X-4622-835-1	HINGE ASSY (R)
S	25	4-647-410-01	BASE COVER LOWER
S	26	4-647-409-02	BASE COVER UPPER
S	27	4-647-406-01	ARM REAR COVER
S	28	1-960-590-11	CABLE, DVI
S	29	1-960-591-11	CABLE, POWER
S	30	1-960-611-11	CABLE, LCD (B)
S	31	X-4622-837-2	PLATE ASSY, ARM
S	32	X-4622-842-1	PLATE, BASE
S	33	4-647-405-01	ARM FRONT COVER
S	34	4-649-451-01	FOOT, RUBBER
S	35	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3
S	36	1-960-610-11	CABLE, LCD (A)
S	37	4-642-125-01	LABEL, ENERGY STAR
S	38	A-8047-289-A	LCD (ADI/15XGA) ASSY(S)
S	39	4-651-656-01	PLATE
S	40	4-651-483-01	SPACER
S	41	7-682-646-01	SCREW +PS 3X5

S/P	Ref.No.	Part No.	Description
⚠S		1-476-159-12	ADAPTOR, AC
⚠S		1-782-614-21	CORD, POWER
S		4-649-778-01	MANUAL, INSTRUCTION

9-928-380-11

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