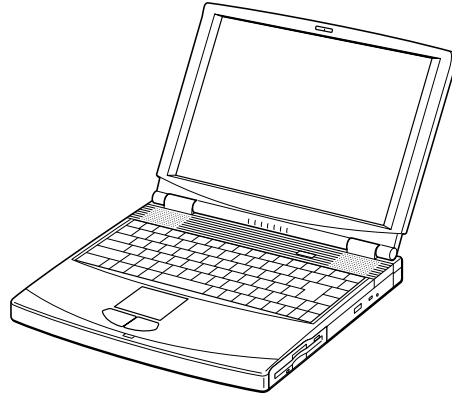


PCG-FX210

SERVICE MANUAL

US Model
Canadian Model



 **i** S400



Confidential

NOTEBOOK COMPUTER

SONY®

Information in this document is subject to change without notice.

Sony and VAIO are trademarks of Sony. Intel logo and Intel Inside logo are registered trademarks of Intel Corporation. Pentium MMX is a trademark of Intel Corporation. Microsoft, MS-DOS, Windows, the Windows 95 and Windows 98 logo are trademarks of Microsoft Corporation.

All other trademarks are trademarks or registered trademarks of their respective owners. Other trademarks and trade names may be used in this document to refer to the entities claiming the marks and names or their produces. Sony Corporation disclaims any proprietary interest in trademarks and trade names other than its own.

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.

CAUTION: Changing the back up battery.

- Overcharging, short circuiting, reverse charging, mutilation or incineration of the cells must be avoided to prevent one or more of the following occurrences; release of toxic materials, release of hydrogen and/or oxygen gas, rise in surface temperature.
- If a cell has leaked or vented, it should be replaced immediately while avoiding to touch it without any protection.



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 Δ 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.

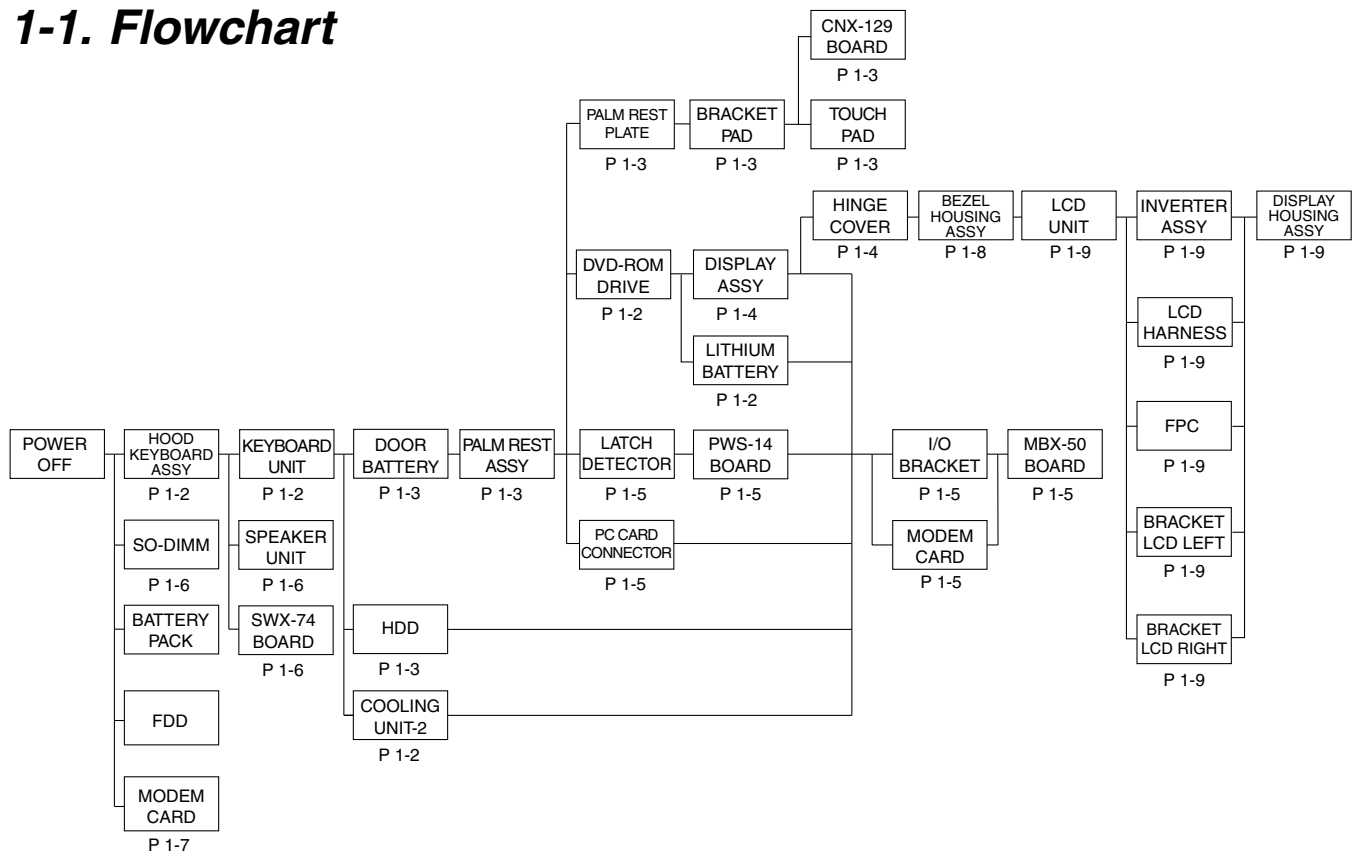
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE Δ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

TABLE OF CONTENTS

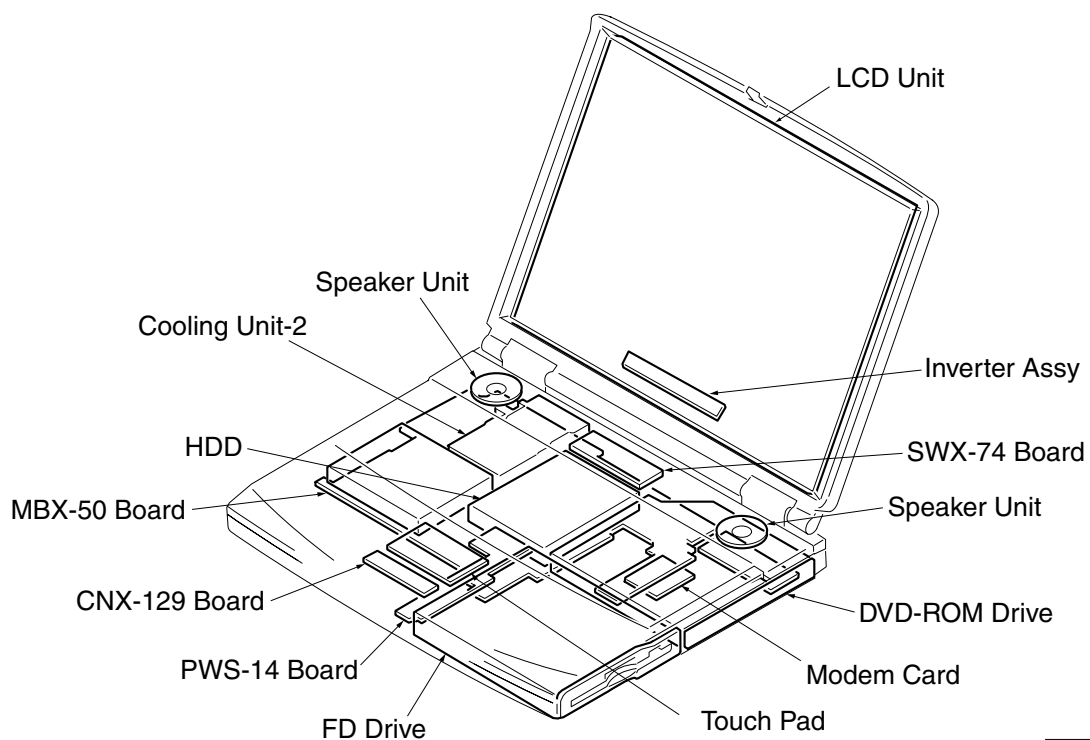
<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
CHAPTER 1. REMOVAL			CHAPTER 2. SELF DIAGNOSTICS		
1-1.	Flowchart	1-1			2-1
1-2.	Main Electrical Parts Location Diagram	1-1			(to 2-1)
1-3.	Removal	1-2	CHAPTER 3. BLOCK DIAGRAM		
1.	Hood Keyboard Assy, Keyboard Unit	1-2			3-1
2.	Cooling Unit-2, Lithium Battery, DVD-ROM Drive	1-2			(to 3-2)
3.	HDD, Door Battery	1-3	CHAPTER 4. FRAME HARNESS DIAGRAM		
4.	Palm Rest Assy, Touch Pad, CNX-129 Board, Palm Rest Plate, Bracket Pad	1-3			4-1
5.	Display Assy, Hinge Cover	1-4			(to 4-2)
6.	PWS-14 Board, Latch Detector	1-5	CHAPTER 5. EXPLODED VIEWS AND PARTS LIST		
7.	PC Card Connector, Modem Card, MBX-50 Board, I/O Bracket	1-5	5-1.	Main Section	5-2
8.	Speaker Unit, SWX-74 Board	1-6	5-2.	LCD Section – Made by AC –	5-5
9.	SO-DIMM	1-6	5-3.	Connector Section	5-7
10.	Modem Card (Removing from the bottom)	1-7			(to 5-8)
11.	LCD Section – Made by AC –	1-8	• Abbreviations		
1.	Bezel Housing Assy (14.1 inch)	1-8	UC : US model / Canadian model		
2.	Bracket LCD Left, Bracket LCD Right, LCD Unit (14.1 inch)	1-9			
3.	FPC, Inverter Assy, Display Housing Assy, LCD Harness	1-9			
1-4.	Replacing the CPU	1-10			
1.	Removing the CPU	1-10			
2.	Installing the CPU	1-10			
1-5.	Replacing Various Connector on the MBX-50 Board ...	1-11			
1.	Removing the I/O Bracket	1-11			
2.	Removing the Various Connectors	1-11			
1-6.	DIP Switch Setting of the MBX-50 Board	1-12			
		(to 1-12)			

1-1. Flowchart



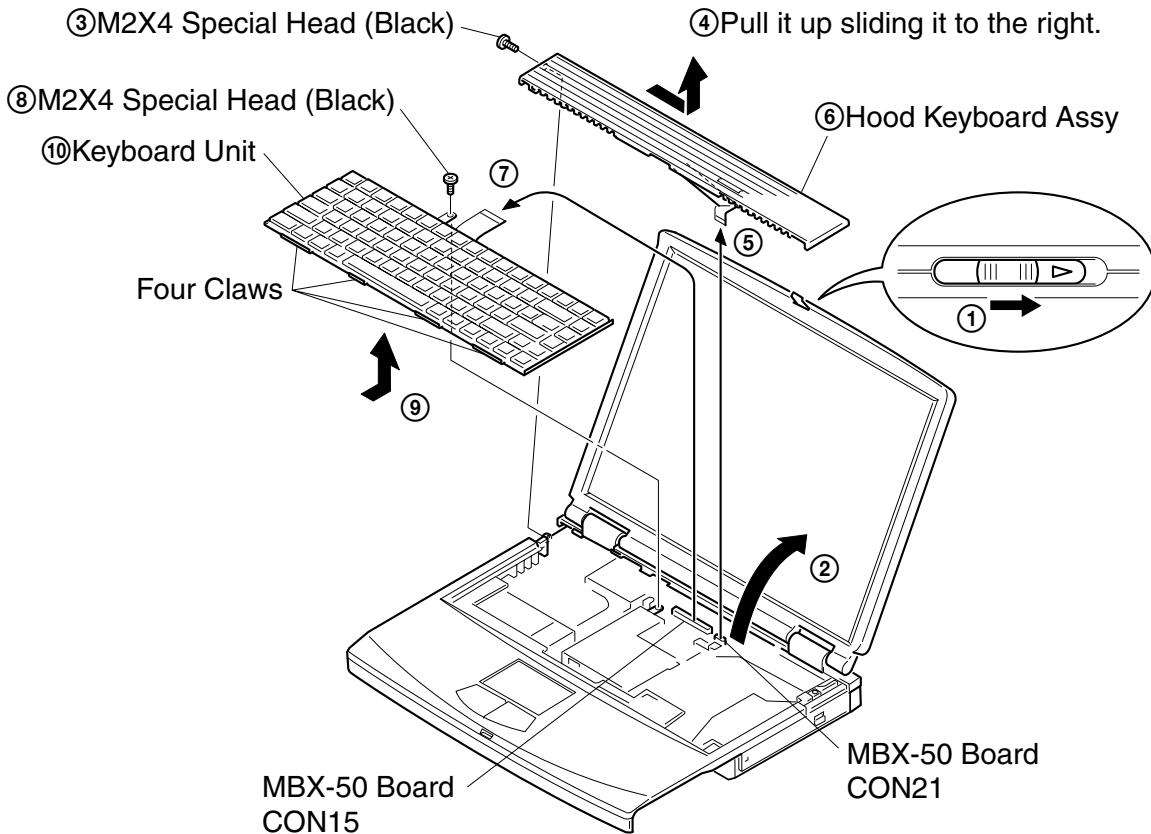
- P XX means pages that appears in this manual.
- Remember that hard disk drives are easily damaged by vibration. Always handle with care.

1-2. Main Electrical Parts Location Diagram

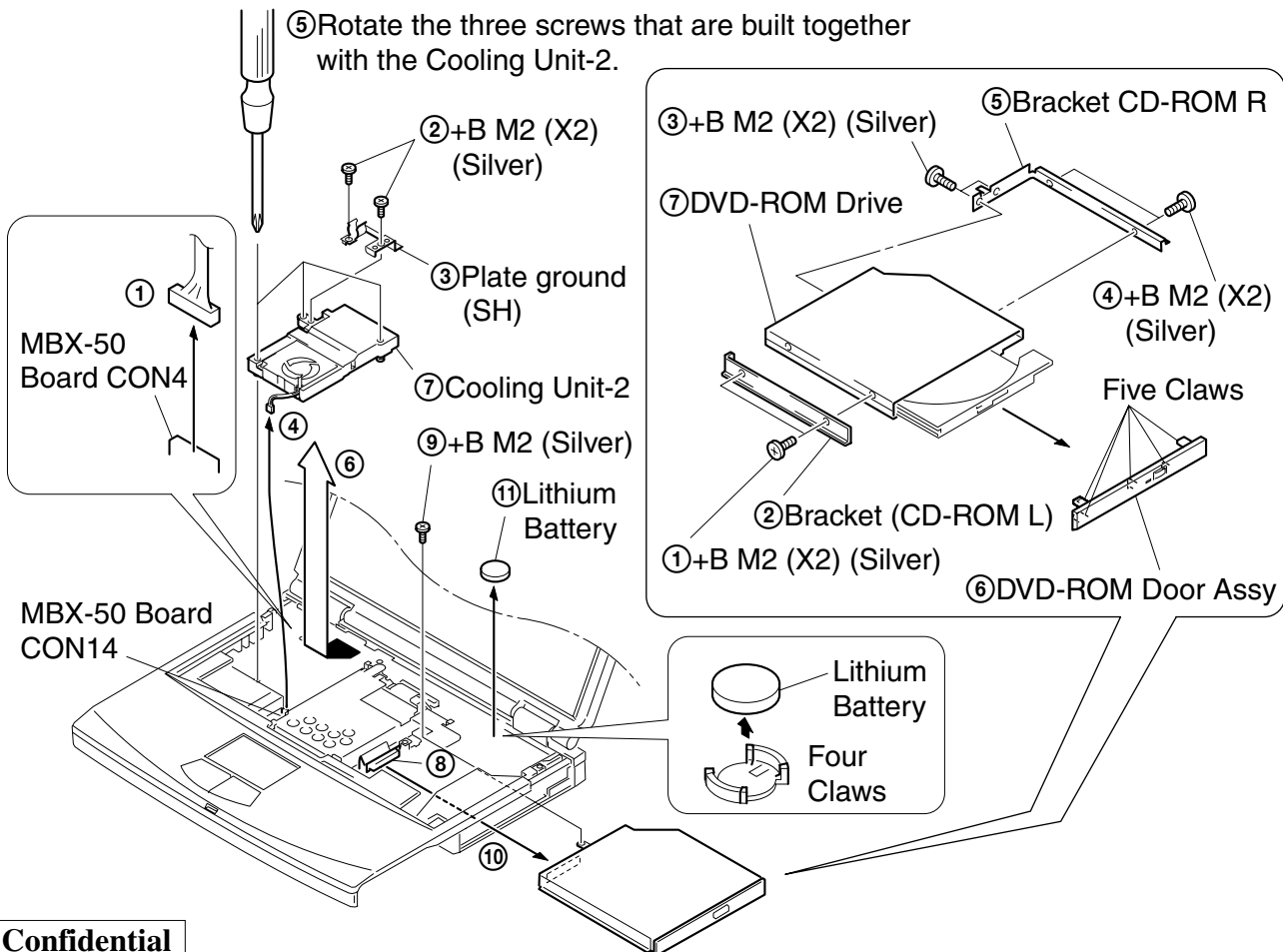


1-3. Removal

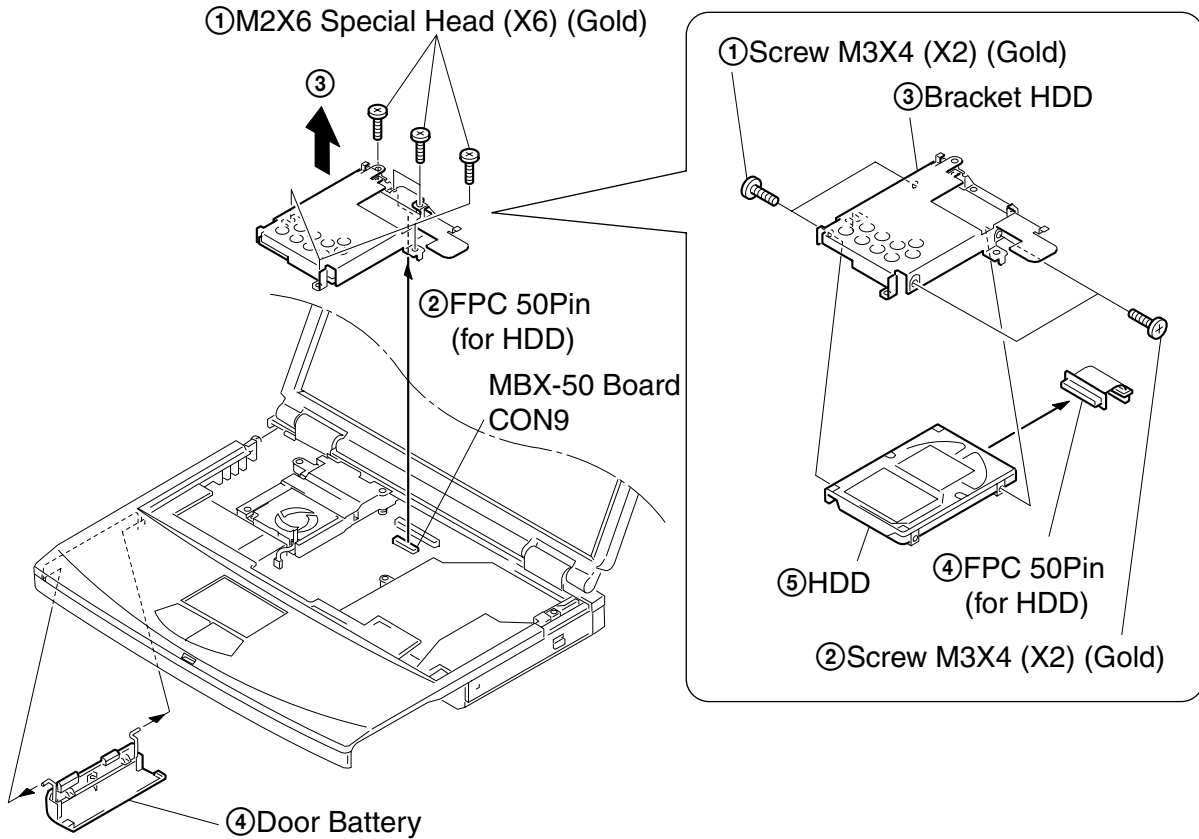
1. Hood Keyboard Assy, Keyboard Unit



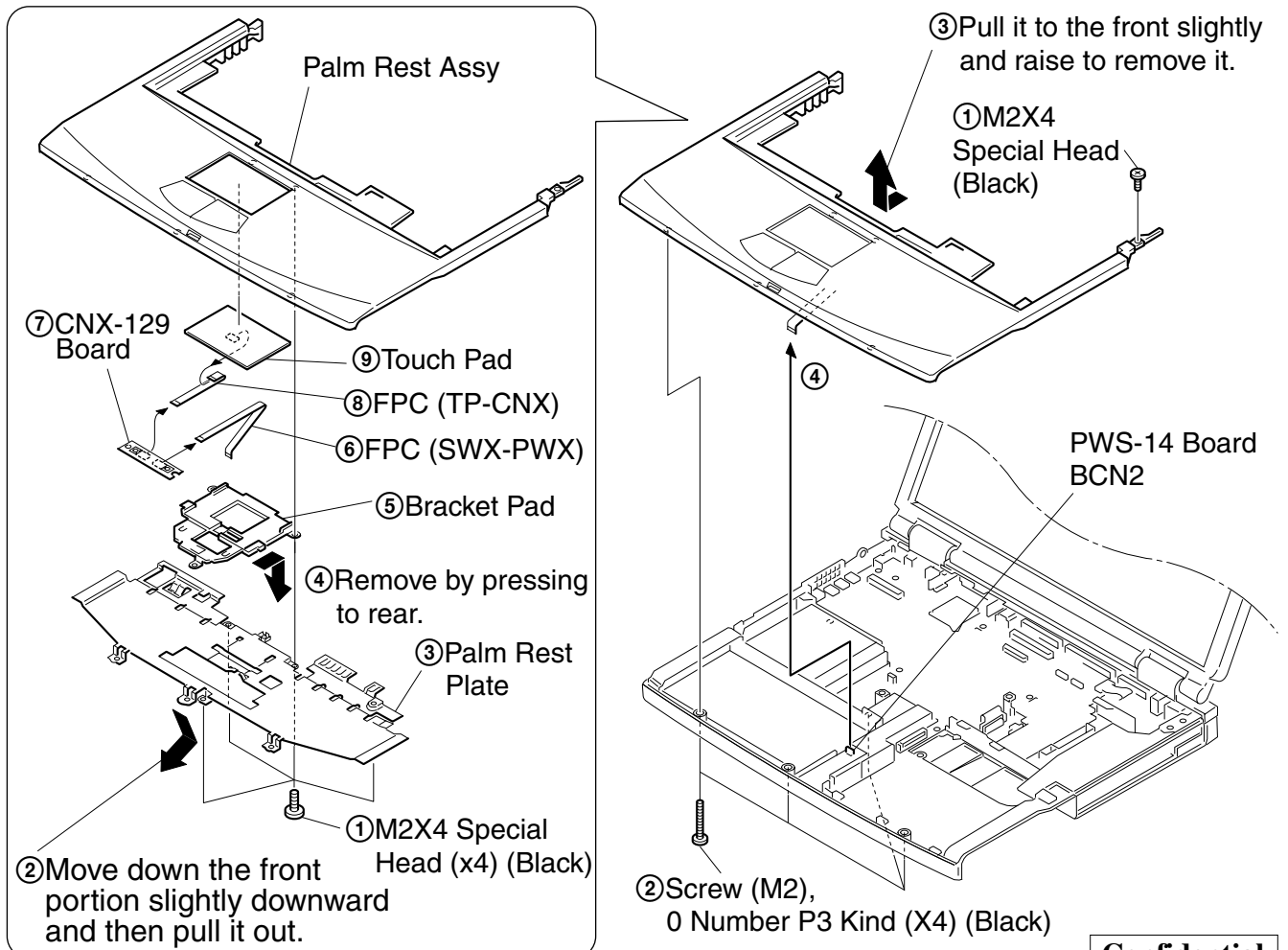
2. Cooling Unit-2, Lithium Battery, DVD-ROM Drive



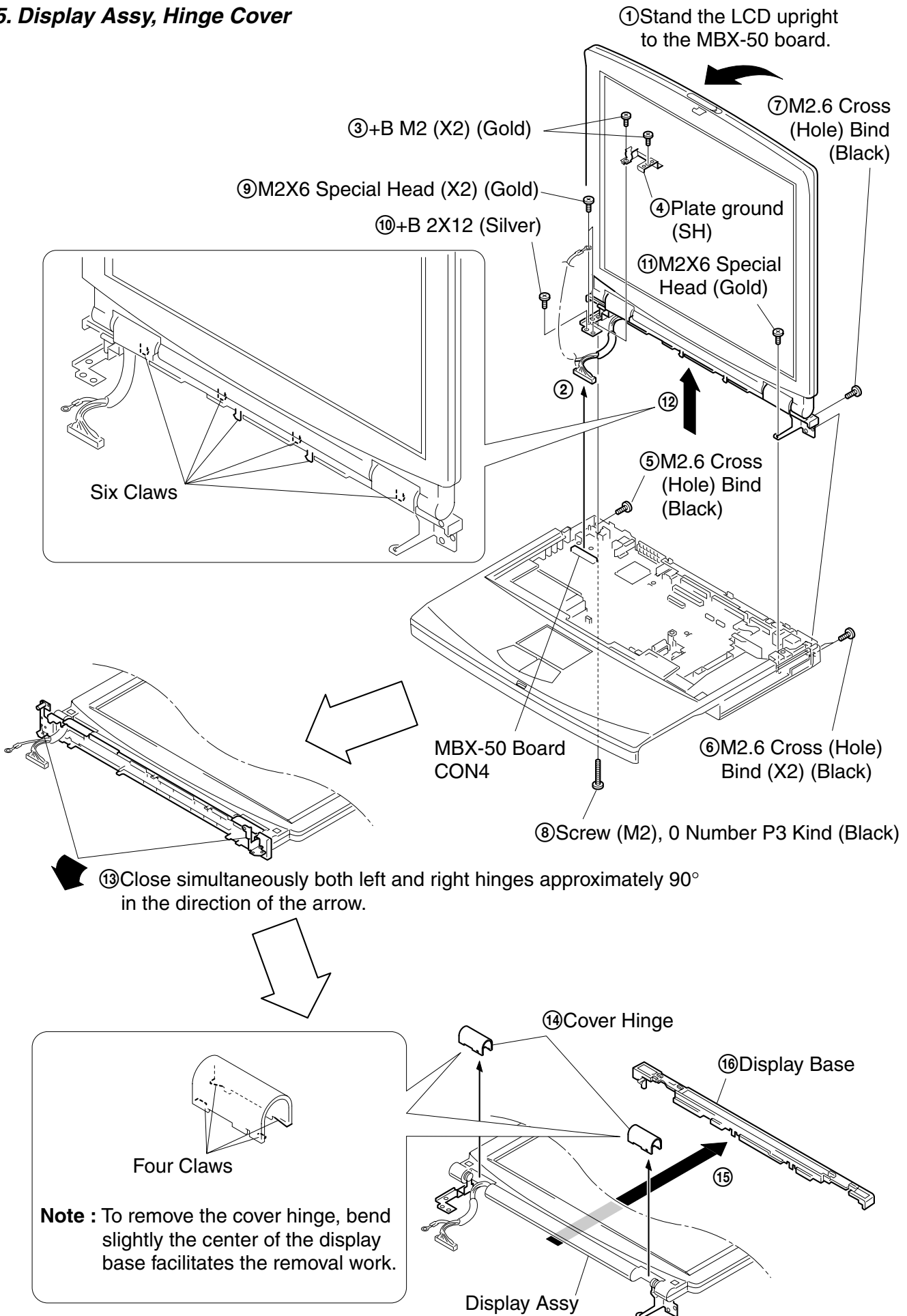
3. HDD, Door Battery



4. Palm Rest Assy, Touch Pad, CNX-129 Board, Palm Rest Plate, Bracket Pad

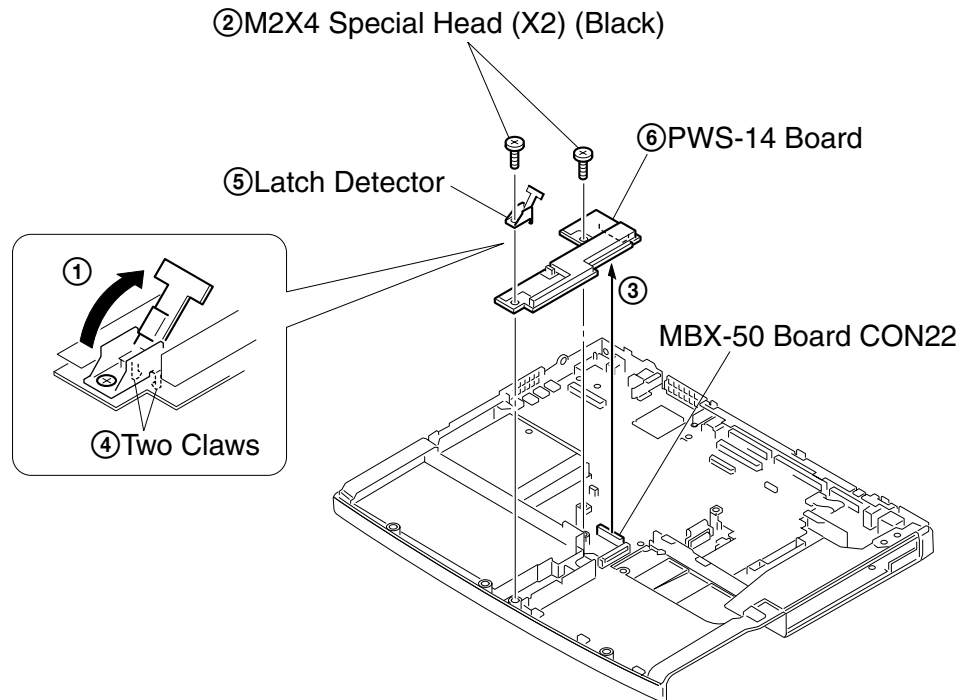


5. Display Assy, Hinge Cover

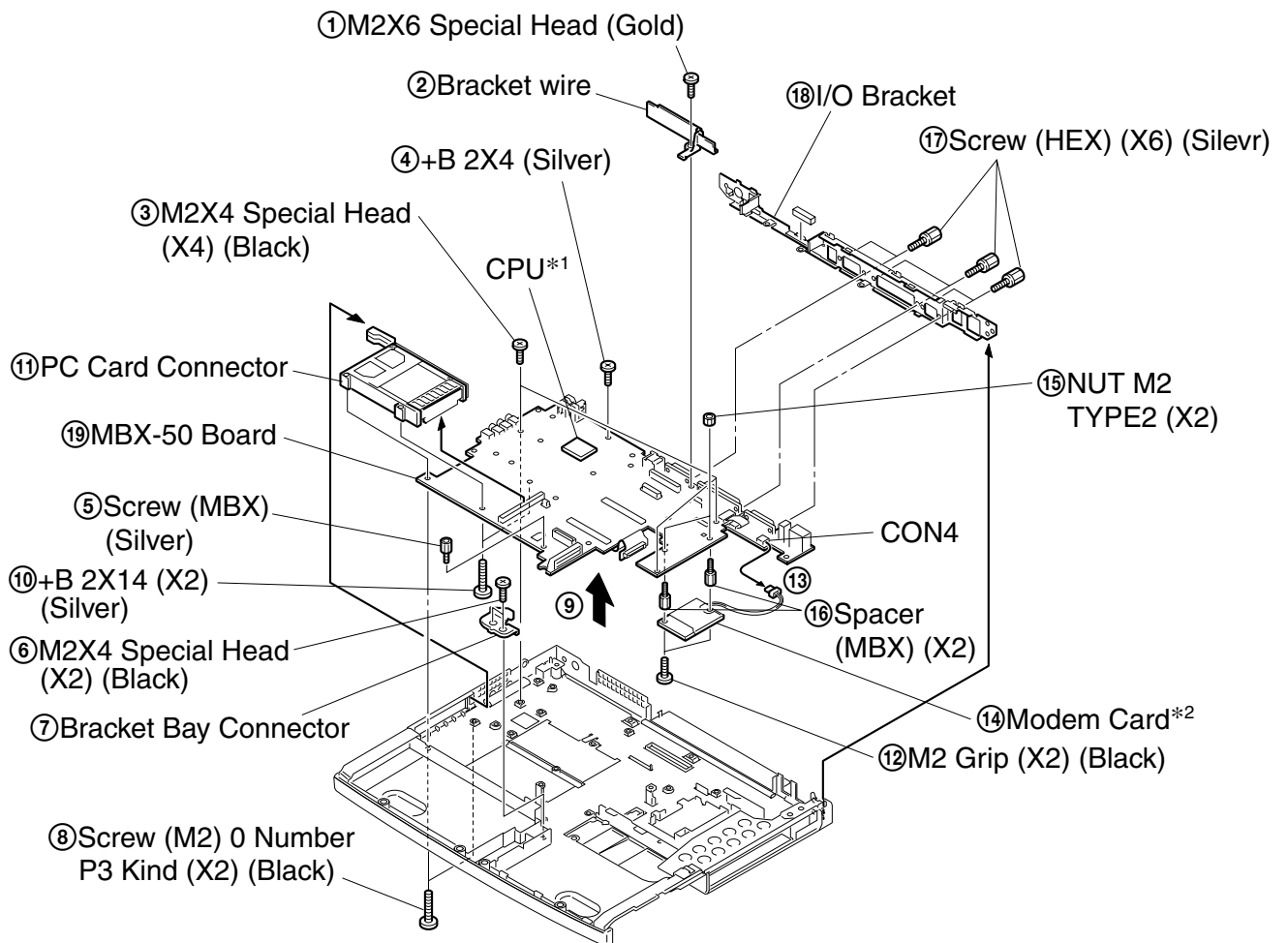


Confidential

6. PWS-14 Board, Latch Detector



7. PC Card Connector, Modem Card, MBX-50 Board, I/O Bracket



*1 When removing the CPU, refer to “ 1-4. Replacing the CPU ”.

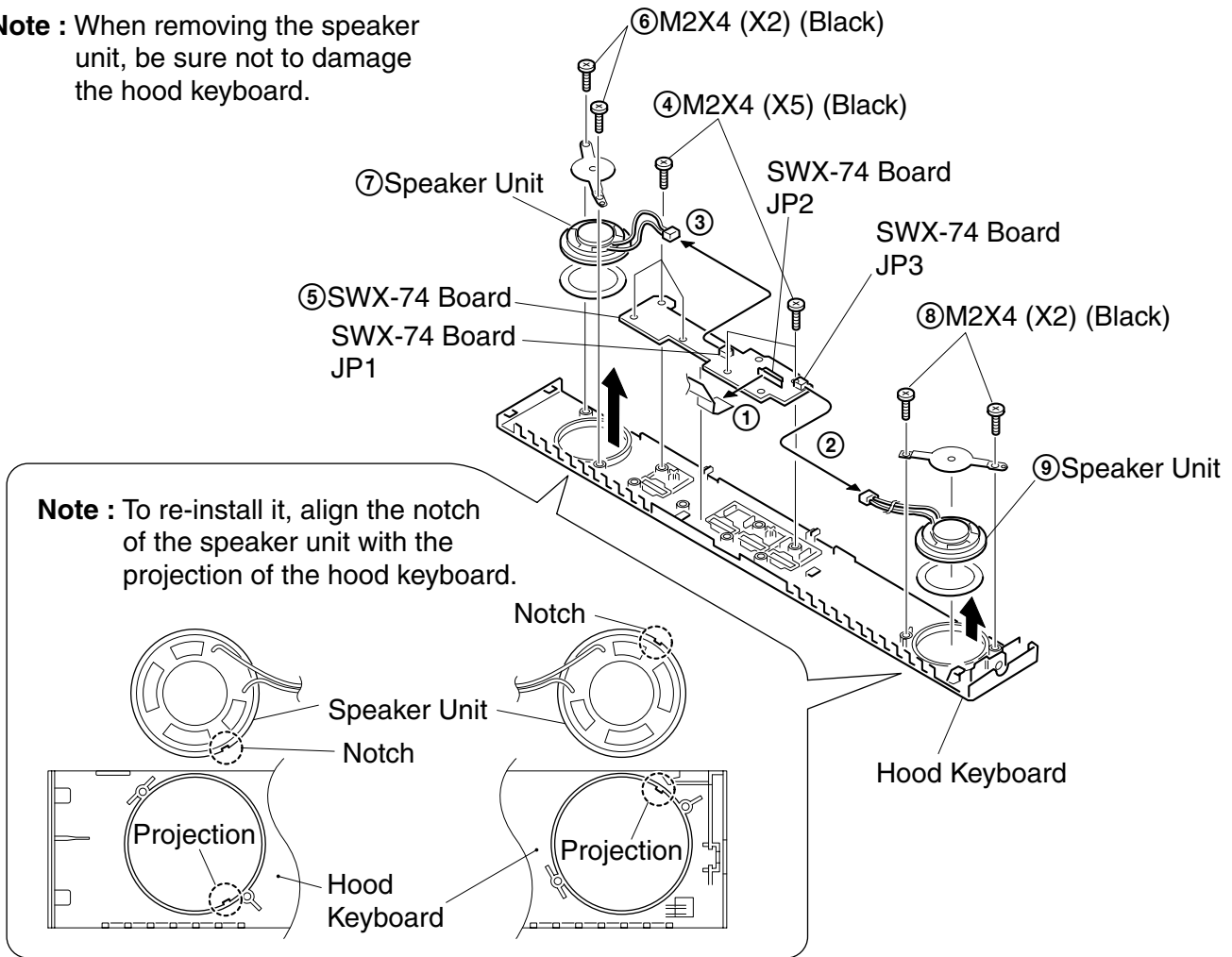
*2 Modem card can be removed from the bottom.

Refer to the subsequent paragraph “ 10. Modem card ” for more details.

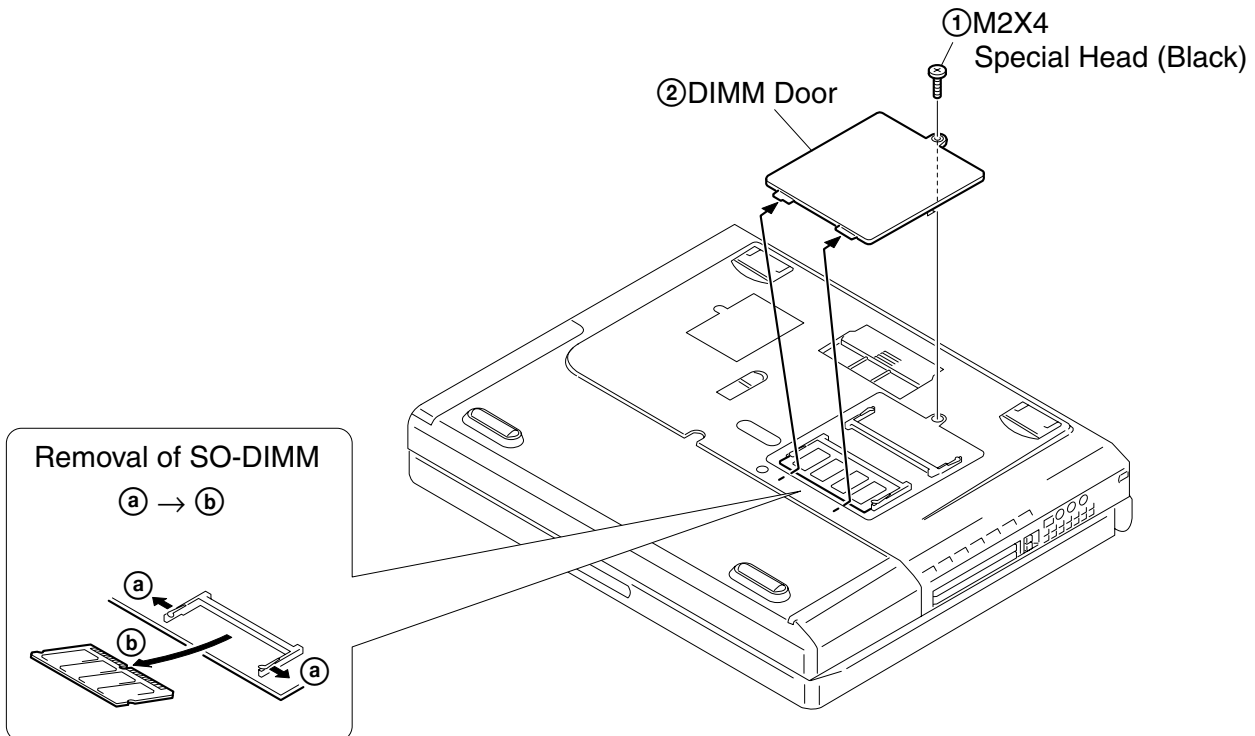
Confidential

8. Speaker Unit, SWX-74 Board

Note : When removing the speaker unit, be sure not to damage the hood keyboard.

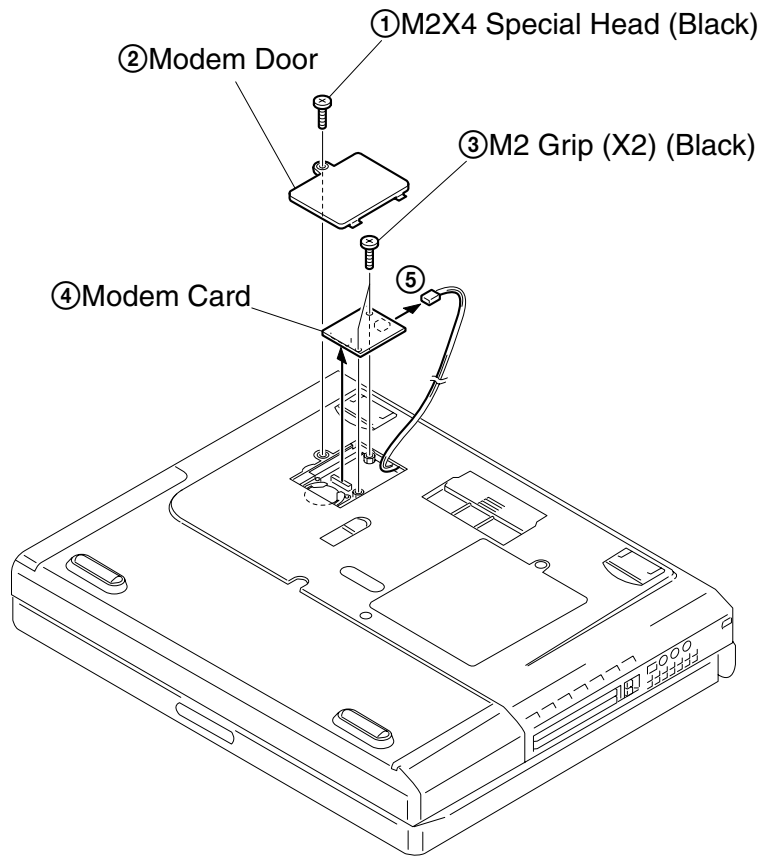


9. SO-DIMM

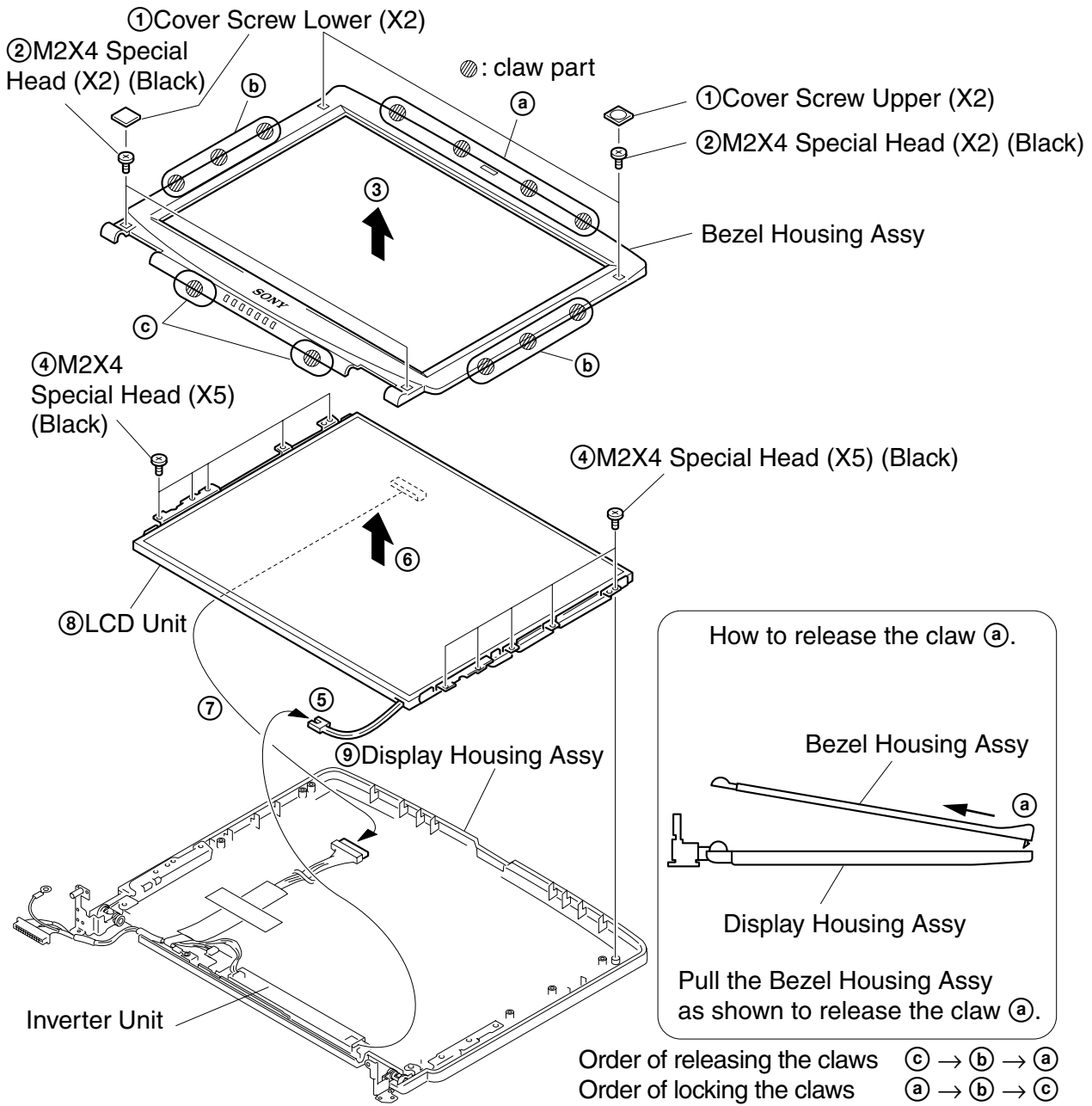


Confidential

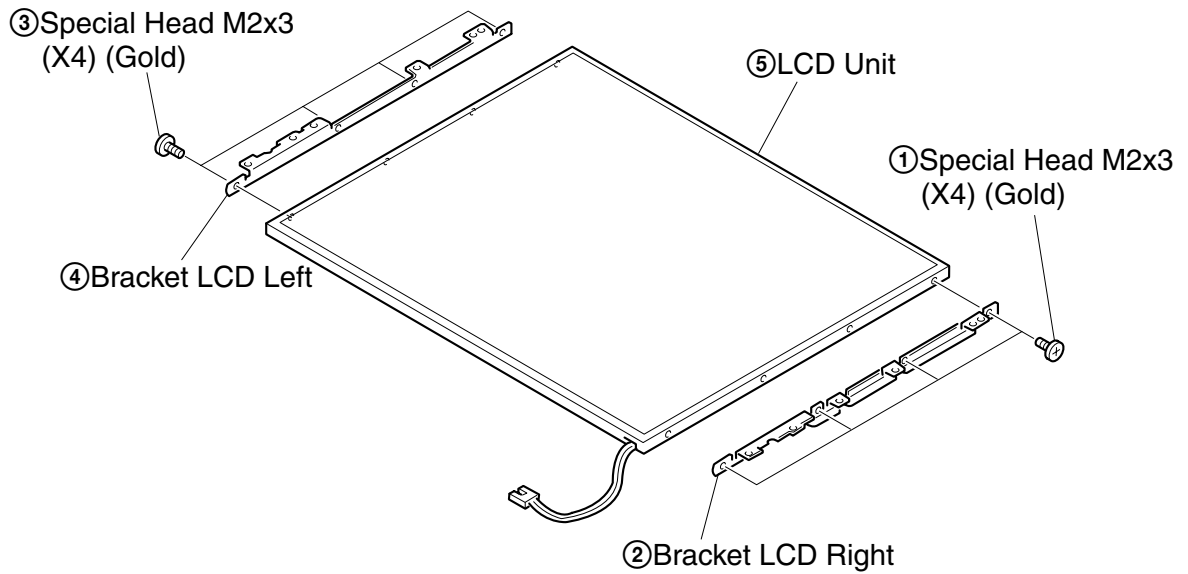
10. Modem Card (Removing from the bottom)



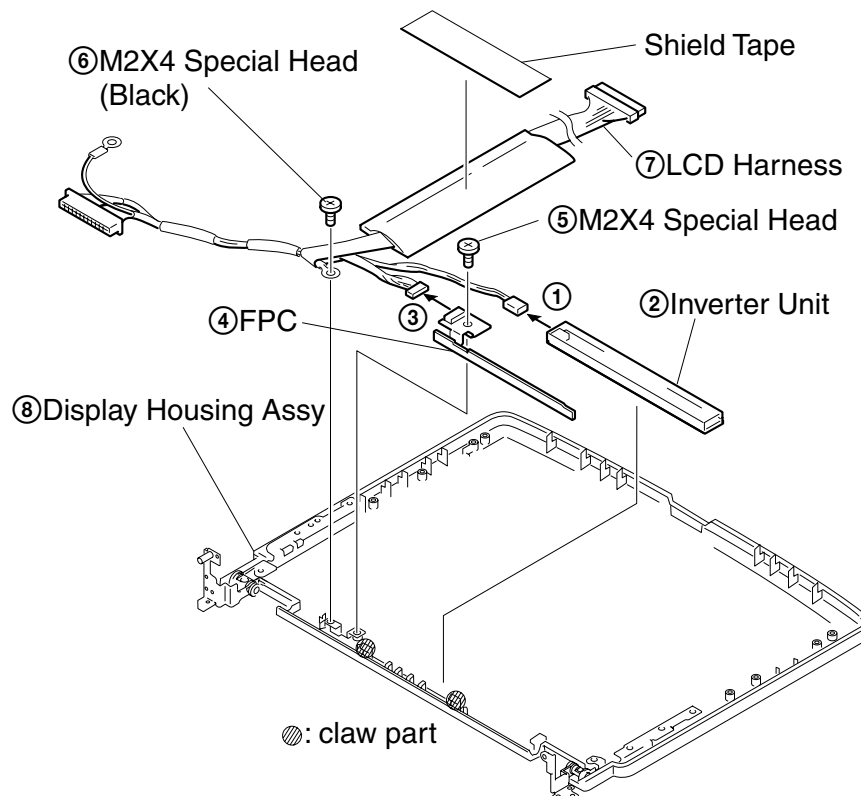
11. LCD Section – Made by AC –
1. Bezel Housing Assy (14.1 inch)



2. Bracket LCD Left, Bracket LCD Right, LCD Unit (14.1 inch)

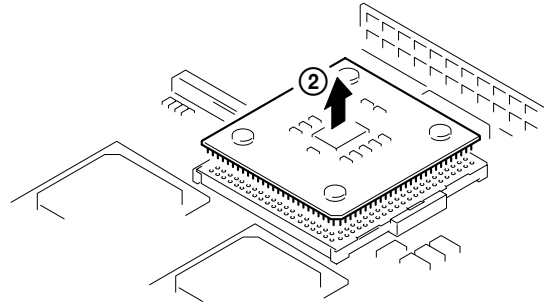
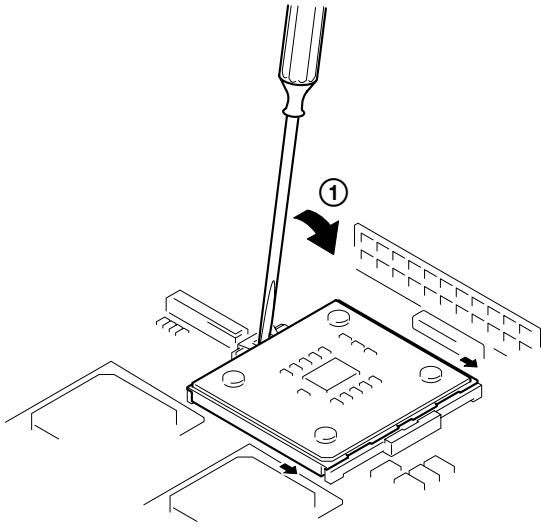


3. FPC, Inverter Assy, Display Housing Assy, LCD Harness



1-4.Replacing the CPU

1. Removing the CPU



- ① Insert a screwdriver tip into the groove as shown and slant it in the direction of the arrow.

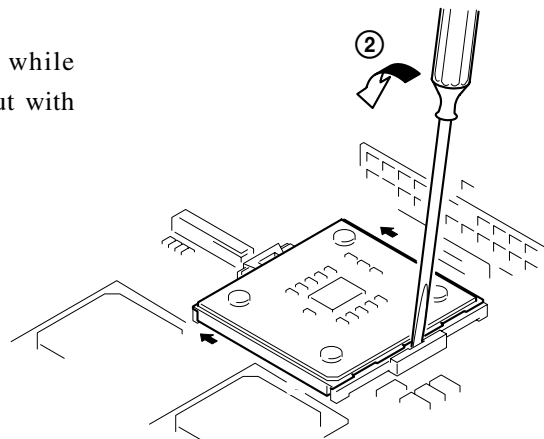
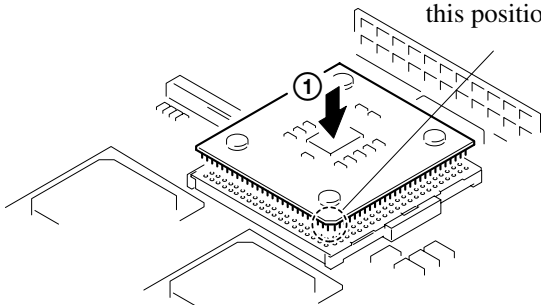
- ② The CPU can be removed upward.

NOTE: Do not use screwdrivers having a large tip than the width of the groove.
Otherwise, it may cause the groove to be damaged.

The base under the CPU moves slightly in the direction of the arrow and the lock is released.

2. Installing the CPU

Attach the CPU while aligning the cut-out with this position.



- ① Insert all pins of the replacement CPU into the holes of the base and push the CPU in the direction of the arrow.

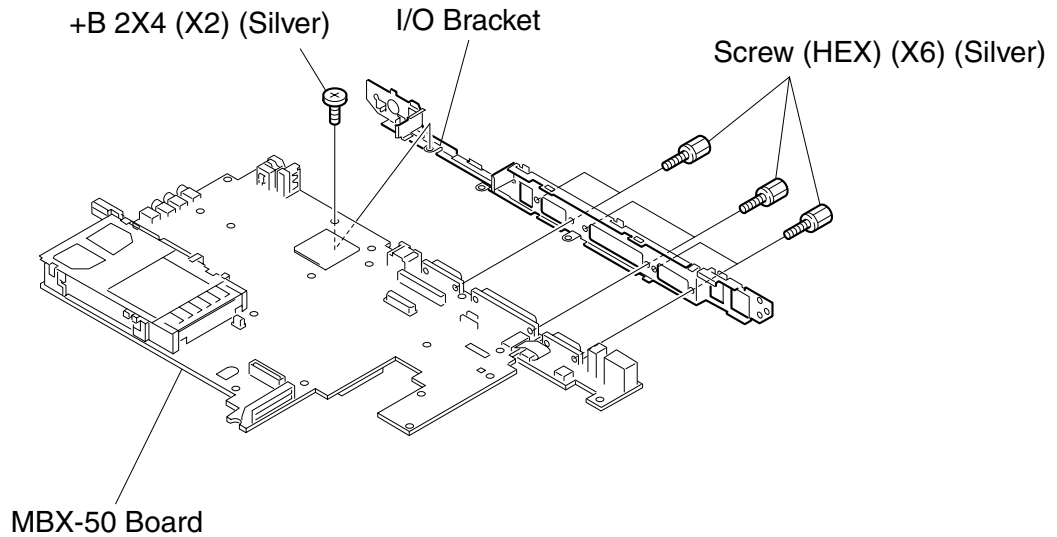
- ② Insert a screwdriver tip into the groove as shown and slant it in the direction of the arrow. The base under the CPU moves slightly in the direction of the arrow and the CPU is locked.

1-5. Replacing Various Connectors on the MBX-50 Board

Replace the connectors of “5-3. Connector Section” as follows.

1. Removing the I/O Bracket

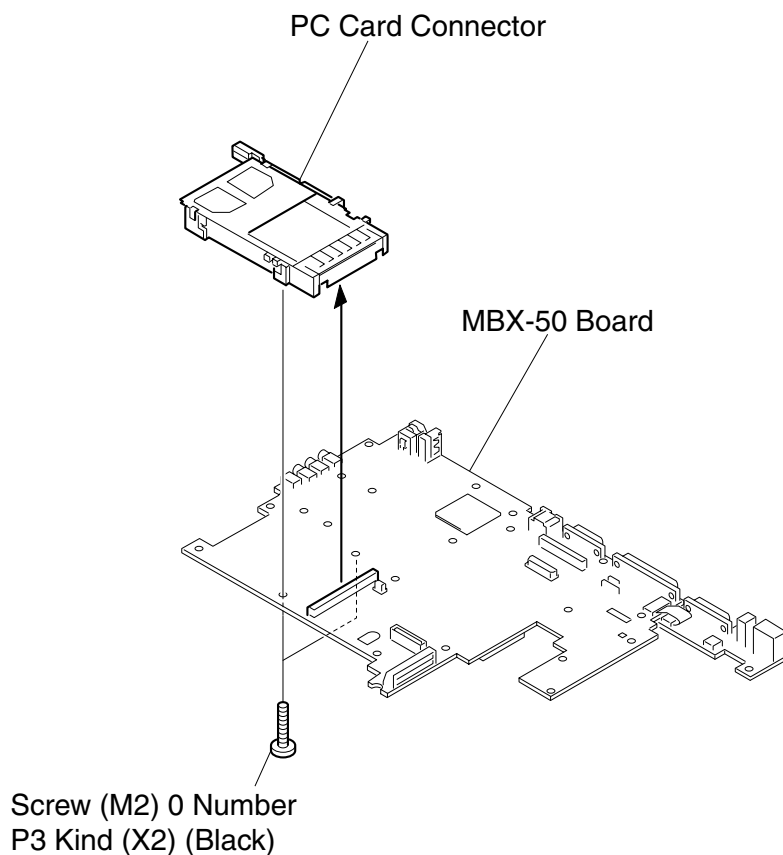
When removing the connectors of reference numbers 901, 902, 903, 904 and 169 (refer to page 5-7), remove the I/O bracket first.



2. Removing the Various Connectors

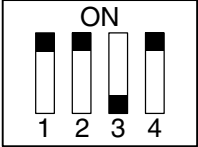
Remove the PC card connector by removing the screws as follows.

The other connectors (Refer to page 5-7, 5-8) are connected by soldering, remove the soldering first then remove the connectors.



1-6. DIP Switch Setting of the MBX-50 Board

The DIP switch on the MBX-50 board (main board) is set to match with the LCD that is used in this computer.

Part No.	DIP switch setting										
1-476-166-11	<div data-bbox="501 479 699 624" style="text-align: center;"></div> <p data-bbox="427 651 879 730">The upper position where ON indication is shown is the ON position . The lower position is the OFF position.</p> <table border="1" data-bbox="472 757 738 831"><thead><tr><th>No.</th><th>1</th><th>2</th><th>3</th><th>4</th></tr></thead><tbody><tr><td>ON/OFF</td><td>0</td><td>0</td><td>1</td><td>0</td></tr></tbody></table> <p data-bbox="557 837 732 864">0 : ON 1: OFF</p>	No.	1	2	3	4	ON/OFF	0	0	1	0
No.	1	2	3	4							
ON/OFF	0	0	1	0							

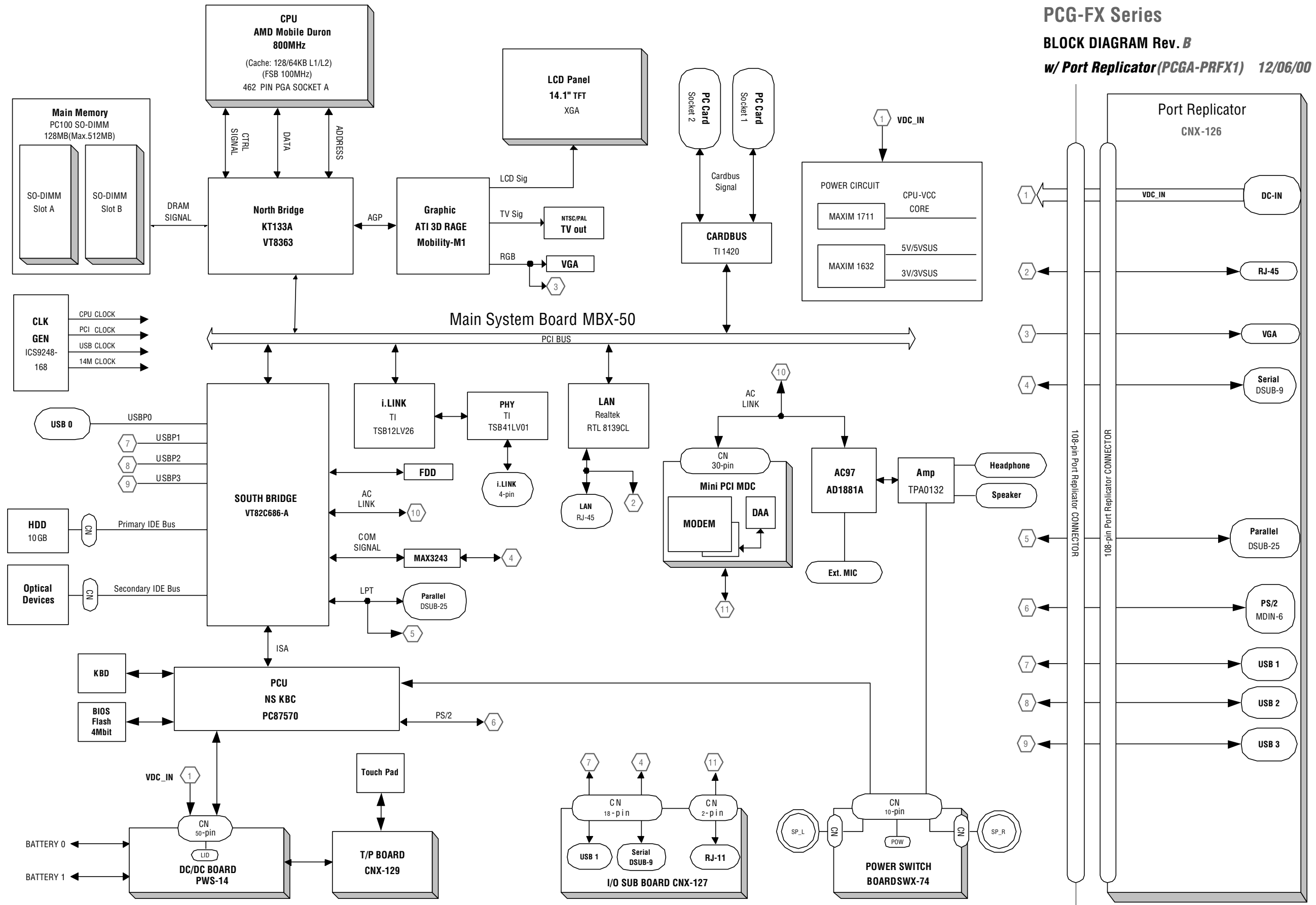
CHAPTER 2.

SELF DIAGNOSTICS

ATTENTION

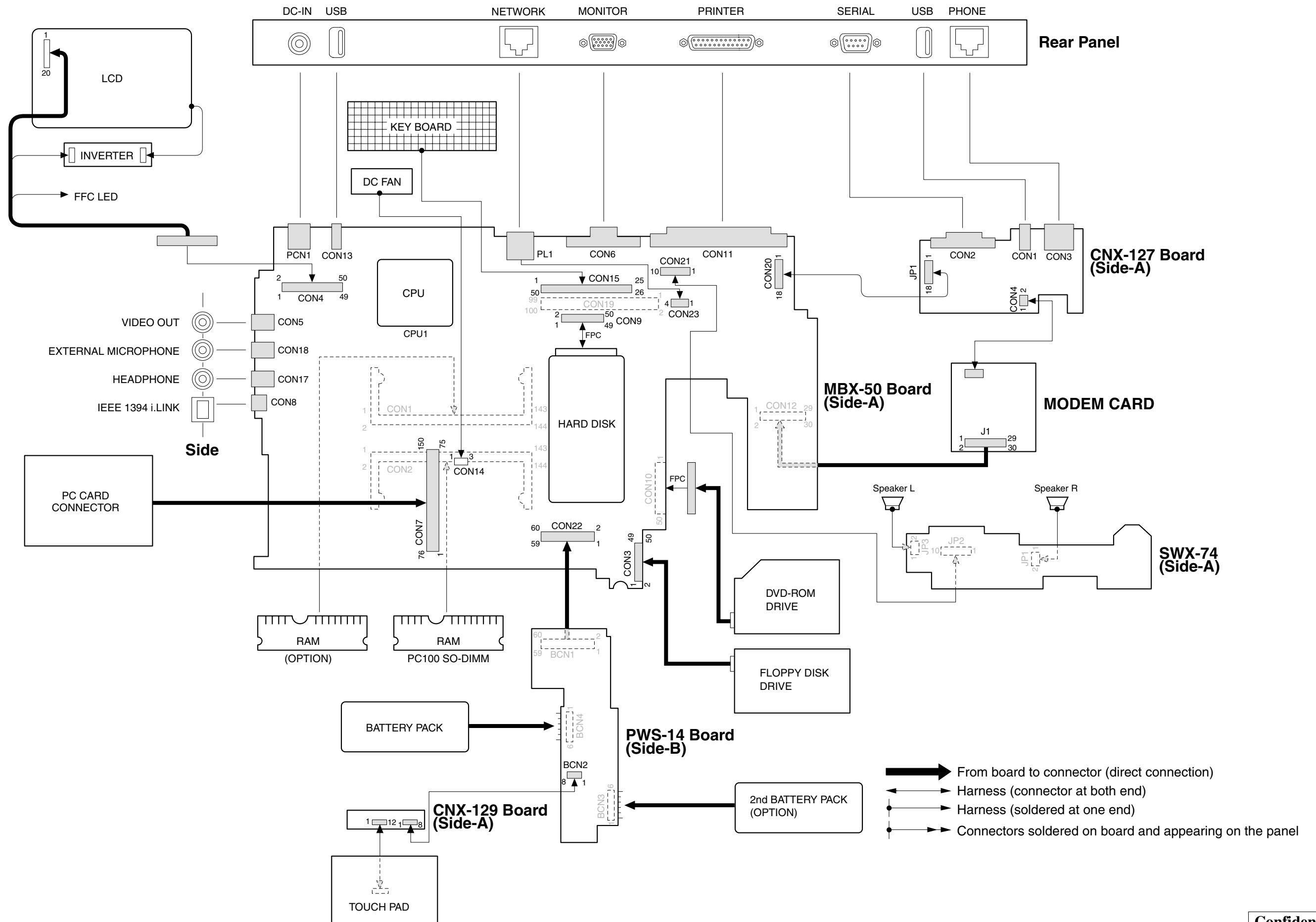
Please confirm “Self Diagnostics” method which will be informed you with distribution of “Self Diagnostics” software.

CHAPTER 3. BLOCK DIAGRAM



PCG-FX Series
BLOCK DIAGRAM Rev. B
w/ Port Replicator (PCGA-PRFX1) 12/06/00

CHAPTER 4. FRAME HARNESS DIAGRAM



EXPLODED VIEWS AND PARTS LIST

NOTE:

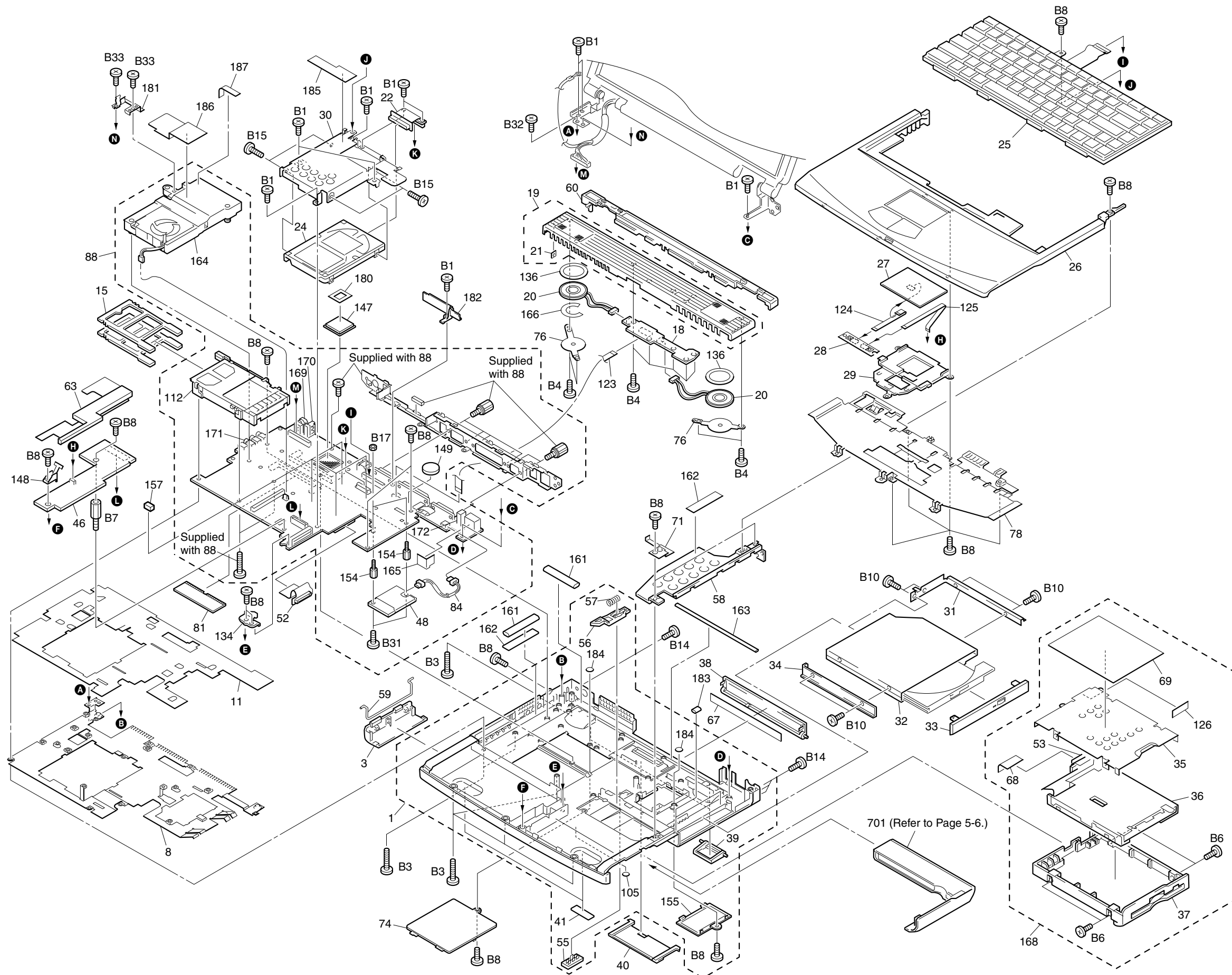
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- When two or more parts are shown in parallel, use the part described first as the main part.

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

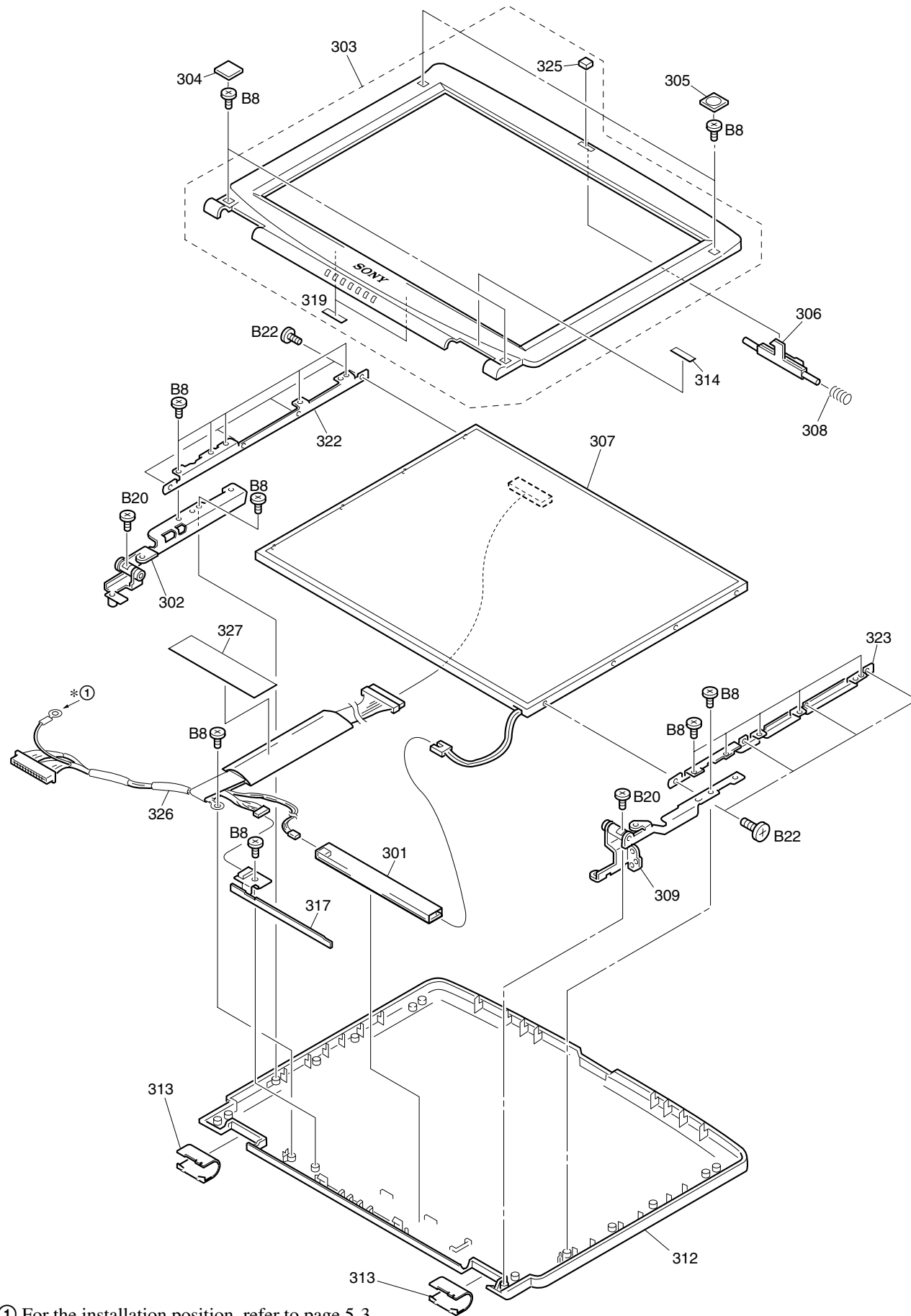
Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5-1. Main Section

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
1	X-4623-386-1	ASSY BOTTOM (A)	148	X-4623-561-2	ASSY LATCH DETECTOR
3	4-640-837-22	DOOR BATTERY	149	1-756-148-11	SECONDARY BATTERY, LITHIUM
* 8	4-651-706-01	HEATSINK BOTTOM	154	4-651-989-01	SPACER (MBX)
* 11	4-651-707-21	INSULATOR HEATSINK BOTTOM	155	4-651-701-01	DOOR MODEM
15	4-643-832-21	DUMMY CARD	157	4-654-701-01	CUSHION (HD-M2)
18	A-8049-276-A	COMPLETE PWB SWX-74	161	4-654-019-01	GASKET (AV)
19	X-4623-389-1	ASSY HOOD KEYBOARD Z (P)	162	4-654-047-01	SHIELD (AV)
20	1-529-287-11	SPEAKER UNIT	163	4-653-936-01	GASKET (HB/M)
21	3-718-233-01	NUT, PLATE	164	A-8049-300-A	COOLING UNIT-2
22	1-790-639-22	FPC 50PIN (FOR HDD)	165	4-644-667-01	COVER RJ-11
24	A-8049-219-A	ASSY HDD 10GB (FJ) (S)	166	4-654-631-01	GUARD SPK
25	1-476-647-11	KEY BOARD UNIT (US)	168	A-8048-966-A	ASSY BAY FDD (TE)
26	X-4623-390-1	ASSY PALMREST	169	1-779-745-21	JACK, DC
27	1-772-529-72	PAD, TOUCH	170	1-815-422-11	USB CONNECTOR (VERTICAL)
28	A-8049-275-A	COMPLETE PWB CNX-129	171	1-695-514-21	JACK (SMALL TYPE) 1P
* 29	4-651-699-01	BRACKET PAD	172	1-815-221-21	CONNECTOR, USB (VERTICAL)
* 30	4-651-708-11	BRACKET (HDD)	180	4-655-267-01	TAPE CPU (D)
31	4-640-861-04	BRACKET CD-ROM R	* 181	4-654-398-01	PLATE GROUND (SH)
32	1-796-018-11	DVD-ROM (X8 SD-C2502)	* 182	4-654-626-01	BRACKET WIRE
32	1-772-854-21	DVD-ROM (SD-G200, 8X)	183	4-655-511-01	GASKET (DRIVE)
33	X-4623-426-1	ASSY DOOR DVD-ROM (TO)	184	4-654-776-01	INSULATOR (SCREW)
34	4-640-860-03	BRACKET (CD-ROM L)	185	4-654-783-01	SHIELD TAPE (HDD)
35	4-640-828-01	PLATE FDD	186	4-655-042-01	SHIELD SHEET (FAN)
36	1-772-034-21	FDD (FD-5HG-5760)	187	4-654-478-01	SHIELD TAPE (FAN)
37	X-4623-528-1	ASSY BOTTOM FDD Z (TCY2)	B1	4-641-726-41	SCREW (M2), SPECIAL HEAD
38	4-651-713-02	DOOR I/O	B3	4-644-899-01	SCREW (M2), 0 NUMBER P3 KIND
39	4-651-844-01	FOOT REAR	B4	4-639-112-01	SCREW M2X4
40	4-651-714-11	DOOR DOCKING CONNECTOR	B6	4-646-807-01	0 PLATE M2.5 (FDD)
41	4-640-851-11	FOOT FRONT	B7	4-644-402-12	SCREW (MBX)
46	A-8049-270-A	COMPLETE PWB PWS-14	B8	4-641-726-11	SCREW (M2), SPECIAL HEAD
48	1-761-380-22	CARD, MODEM	B10	4-652-498-01	+B M2 (NOJI)
52	1-790-640-11	FPC 50PIN (FOR CD-ROM)	B14	4-645-497-01	SCREW (M2.6), CROSS (HOLE) BIND
53	1-790-641-11	FPC 50PIN (FOR FDD)	B15	4-635-301-01	SCREW M3X4
55	4-640-845-11	BUTTON BAY	B17	7-622-205-05	NUT M2 TYPE2
56	4-644-349-01	LATCH BAY	B31	4-645-214-11	GRIP, M2
* 57	4-640-854-01	SPRING BAY	B32	7-621-772-68	SCREW +B 2X12
* 58	4-651-850-01	BRACKET BOTTOM	B33	4-642-852-21	+B M2
* 59	4-640-857-01	DOOR BATTERY SPRING			
60	4-651-698-01	DISPLAY BASE			
63	4-651-928-01	COVER BATTERY CONNECTOR			
67	4-652-099-02	LABEL I/O			
68	4-641-629-01	INSULATOR FDD			
69	4-641-763-21	LABEL FD			
* 71	4-641-851-02	SPRING (FDD), PLATE			
74	4-651-702-01	DOOR DIMM			
* 76	4-644-361-01	BRACKET SPK			
* 78	4-644-362-11	PLATE PALMREST			
81	8-749-019-00	IC HYM71V16M655AT6-P (PC-100 SO-DIMM (128MB CL2))			
81	8-749-019-88	IC V436516Y04VATG-10PC (PC-100 SO-DIMM (128MB CL2))			
84	1-960-827-21	HARNESS (2 PIN)			
88	A-8025-251-A	MBX-50 ASSY (S)			
105	4-641-630-11	COVER BAY HOLE			
112	1-815-505-11	CONNECTOR, 2 SLOT CARD BUS			
123	1-790-711-21	FPC (PPK)			
124	1-757-767-11	FPC (TP-CNX)			
125	1-790-710-11	FPC (SWX-PWS)			
126	4-644-053-01	SPACER FDD			
* 134	4-645-433-01	BRACKET BAY CONNECTOR			
136	4-644-357-01	CUSHION SPK			
147	6-700-426-01	IC D800AVS1B (DURON 800MHz)			



5-2. LCD Section – Made by AC –



Ref.No.	Part No.	Description
301	1-476-318-11	INVERTER UNIT
302	X-4623-378-1	HINGE LEFT MV
303	X-4623-445-3	ASSY HOU, BEZEL 14SA-Z (EXP)
304	4-635-277-22	COVER SCREW LOWER
305	4-635-276-22	COVER SCREW UPPER
306	4-637-902-41	LATCH
307	1-476-166-11	LCD UNIT (14.1, TFT, XGA)
308	4-637-903-01	SPRING LATCH
309	X-4623-379-1	HINGE RIGHT MV
312	X-4623-458-1	ASSY HOU, DISPLAY 14FV-Z
313	4-642-762-31	COVER HINGE (15)
314	4-653-526-11	LABEL ID (U)
317	1-757-605-11	PWB, FLEXIBLE PRINT (SINGLE)
319	4-654-966-01	SHEET (BEZEL), ADHESIVE
* 322	4-644-163-01	BRACKET LCD LEFT 14 (SA)
* 323	4-644-164-01	BRACKET LCD RIGHT 14 (SA)
325	4-642-760-12	CUSHION CENTER
326	1-961-018-51	HARNES, LCD (XGA-F-N)
327	4-650-831-01	SHIELD TAPE (SK)
B8	4-641-726-11	SCREW (M2), SPECIAL HEAD
B20	7-628-254-00	SCREW +PS 2.6X5
B22	4-641-726-81	SCREW (M2), SPECIAL HEAD

NOTE :

The dip switch on the MBX-50 board (Main board) is set to match with the LCD (1-476-166-11) that is used in this computer.



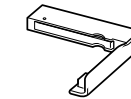
The upper position where ON indication is shown is the ON position. The lower position is the OFF position.

No.	1	2	3	4
ON/OFF	0	0	1	0

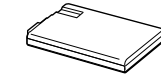
0 : ON 1 : OFF

Ref.No.	Part No.	Description
		ACCESSORIES *****
701	A-8048-965-A	ASSY WEIGHT SAVER (Z) (Refer to Page 5-4.)
△ 702	1-476-342-12	ADAPTOR, AC
703	1-756-167-11	BATTERY PACK, LITHIUM ION
704	1-575-875-51	CORD, CONNECTION
△	1-757-562-21	CORD, POWER

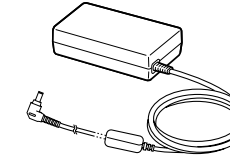
701
Weight saver (1)



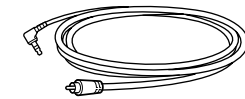
703
Battery pack (1)



702
AC adaptor (1)



704
Video cable (1)



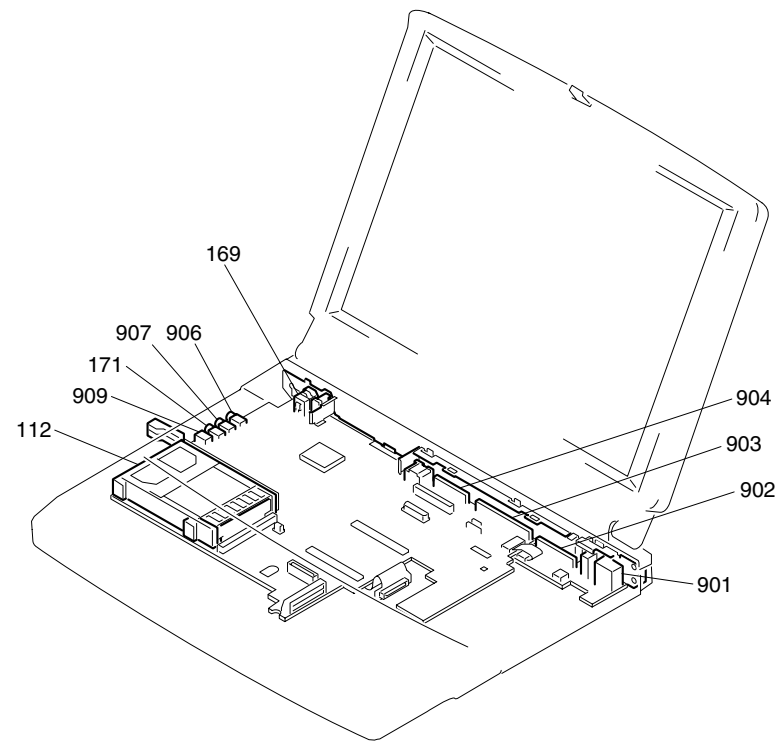
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

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

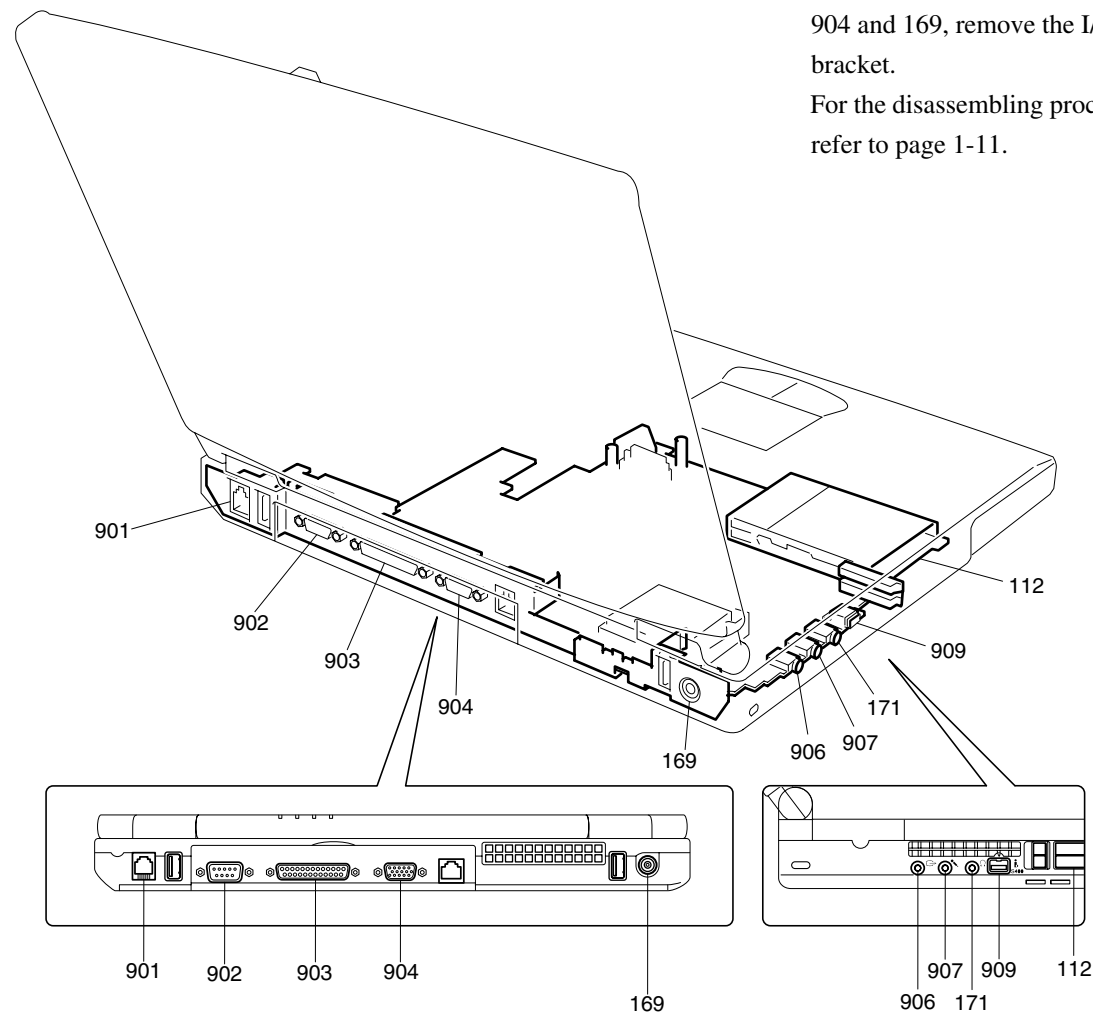
*① For the installation position, refer to page 5-3.

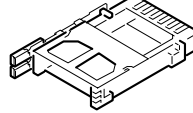
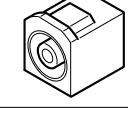
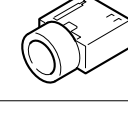
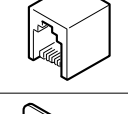
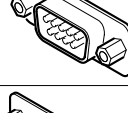
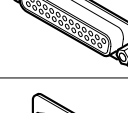
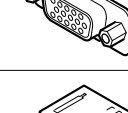
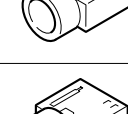
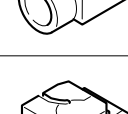
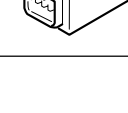
Confidential

5-3. Connector Section



*Before replacing the connector of reference number 901, 902, 903, 904 and 169, remove the I/O bracket. For the disassembling procedure, refer to page 1-11.



Ref.No.	Fig.	Part No.	Description
112		1-815-505-11	CONNECTOR, 2SLOT CARD BUS PC CARD SLOTS connector
169		1-779-745-21	JACK, DC DC IN connector
171		1-695-514-21	JACK (SMALL TYPE) 1P Headphone connector (GREEN)
901		1-565-999-11	JACK, MODULAR 2P Modular jack
902		1-785-976-11	CONNECTOR, D SUB (PLUG) 9P SERIAL connector
903		1-779-499-11	CONNECTOR, D SUB 25P PRINTER connector
904		1-779-498-11	CONNECTOR, D SUB 15P MONITOR connector
906		1-695-514-31	JACK (SMALL TYPE) 1P VIDEO OUT connector (YELLOW)
907		1-793-430-11	JACK, SMALL TYPE MICROPHONE connector (RED)
909		1-785-806-12	CONNECTOR, SQUARE TYPE (INDI 4P) S400 i.LINK (IEEE1934) connector

This manual and the constituent data may not be replicated, copied nor reprinted in whole or in part without prior written authorization of Sony Corporation.