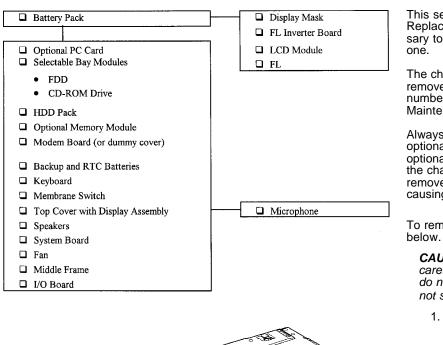
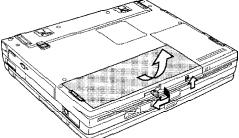
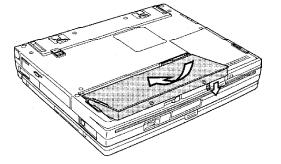
The information offered in this section is an overview of the Maintenance Manual, Chapter 4, Replacement Procedures. If you have any questions or concerns regarding the proper procedure please refer to the Maintenance Manual through the Toshiba Service and Support Website *before* you proceed.







This section explains how to remove Field Replaceable Units (FRUs). It may not be necessary to remove all the FRUs in order to replace one.

The chart is a guide to which FRUs need to be removed in order to remove others. The section numbers on the chart refer to the sections in the Maintenance Manual, Chapter 4.

Always start by removing the battery pack, next, optional items such as the optional PC card and optional memory module, then follow the line on the chart to determine which FRU you must remove next in order to repair the one you think is causing the computer to operate improperly.

To remove the battery pack, follow the steps below.

CAUTION: When handling battery packs, be careful not to short circuit the terminals. Also do not drop, hit or otherwise apply impact; do not scratch or break the casing.

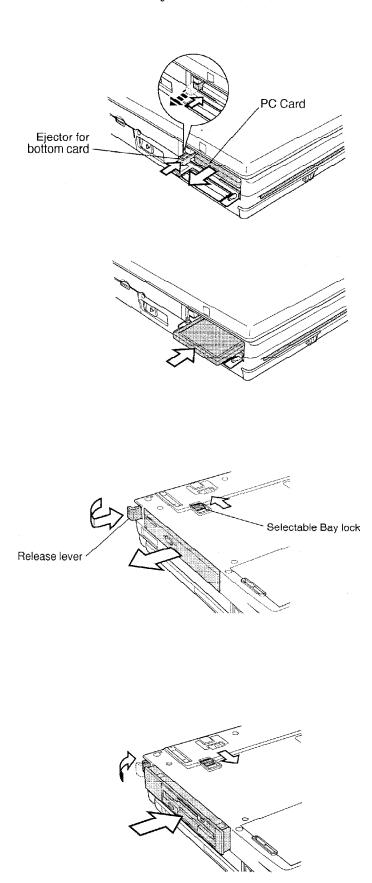
- Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- 2. Turn the computer upside down with the front facing you and push the battery lock up to unlock it. A red dot shows when the lock is in the unlock position.
- 3. Pull the battery's release lever out and slide it to the left to pop the battery up slightly.
- 4. Grasp the battery pack and lift it out.

To install the battery pack, follow the steps below.

WARNING: The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled, or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by Toshiba as replacements.

NOTE: Check the battery terminals visually. If they are dirty, wipe them clean with a dry cloth.

- Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- 2. Make sure the battery release lever is pulled out, then carefully insert the new or recharged battery pack.
- 3. Place your fingers just above two pins on the battery pack that fit into the locking mechanisms in the battery socket. Push the battery pack down carefully until it locks into place.
- 4. Push the battery lock down to secure it. The red dot will be covered.



To remove the optional PC card, make sure the computer is in boot mode, then follow the steps below.

- 1. Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- 2. Remove the battery pack.
- 3.
- Open or remove the PC card slot cover. Press in slightly on the **eject button** for 4 the upper and/or lower card and the button will pop out fully.
- 5. Press the button firmly to pop the PC **card** out partially. Grasp the PC card and remove it.
- 6. Close or replace the PC card slot 7. cover.

To install a PC card, follow the steps below.

- Open or remove the PC card slot cover. 1. Insert the PC card and press gently to 2.
- ensure a firm connection. 3. Close the slot's cover or replace the cover with an appropriate one.
- Install the battery pack. 4.

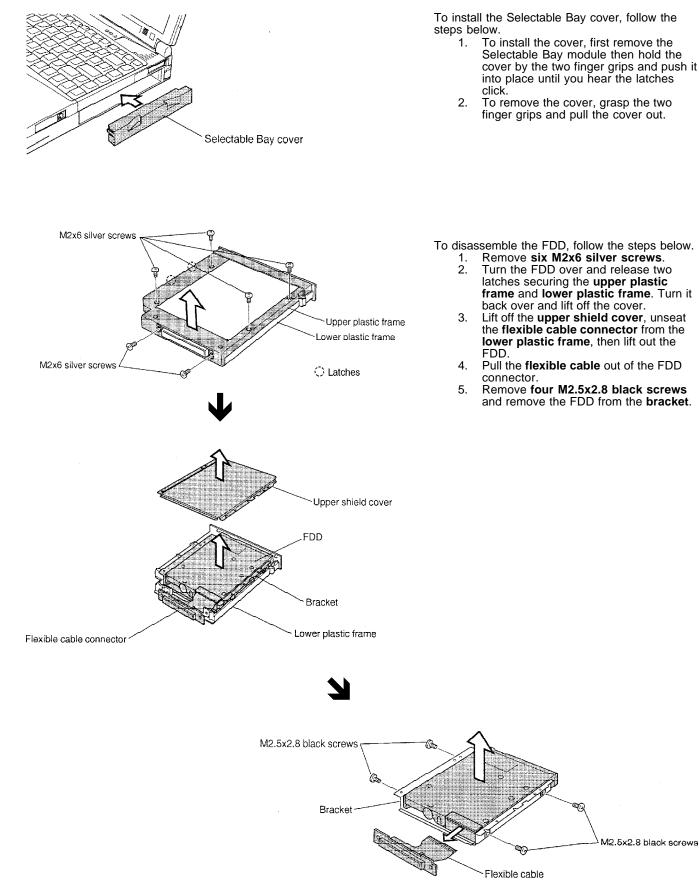
To remove the Selectable Bay module, follow the steps below.

- Turn off the power to the computer. 1. ' Disconnect the AC adapter and all external cables connected to the computer.
- 2. Remove the battery pack.
- Turn the computer upside down and slide the **Selectable Bay lock** so that a 3. red mark appears. If cables are attached to the computer, be careful not to put pressure on the cables.
- Lay the computer back down and pull 4. out the release lever.
- 5. Push the release lever in firmly to pop the Selectable Bay module partially out of the bay.
- 6. Grasp the module and pull it out.

CAUTION: The Selectable Bay modules can become hot with use. Be careful when removing the module.

Install the Selectable Bay modules as described below.

- Verify the Selectable Bay lock is 1. unlocked.
- 2. Insert the module in the computer and press until it locks into place.
- 3. Fold the release lever into the closed position.
- 4 Slide the Selectable Bay lock so that the red mark is covered.
- 5. Install the battery pack.

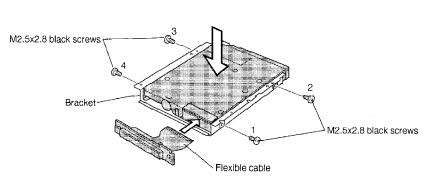


To install the Selectable Bay cover, follow the

- To install the cover, first remove the Selectable Bay module then hold the cover by the two finger grips and push it into place until you hear the latches
- To remove the cover, grasp the two finger grips and pull the cover out.

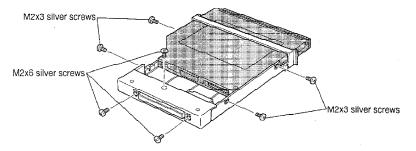
To disassemble the FDD, follow the steps below.

- latches securing the upper plastic frame and lower plastic frame. Turn it back over and lift off the cover.
- Lift off the upper shield cover, unseat the flexible cable connector from the lower plastic frame, then lift out the
- Pull the flexible cable out of the FDD
- Remove four M2.5x2.8 black screws and remove the FDD from the bracket.



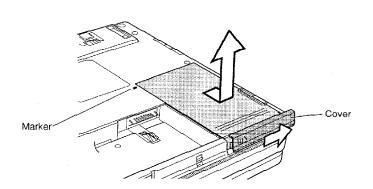
To assemble the FDD, follow the steps below.

- Seat the FDD in the bracket and secure the bracket with four M2.5x2.8 black screws in the order numbered on the case. Tighten screws to a torque of less than 2.2 kgfcm.
 Insert the flexible cable into the
- Insert the flexible cable into the connector. Press gently to ensure a firm connection.
- 3. Seat the FDD in the **lower plastic frame** and set the **upper shield cover** in place.
- 4. Seat the **flexible cable connector** into the **lower plastic frame**.
- 5. Set the **upper plastic frame** in place, snap the two latches closed and secure **six M2x6 silver screws.**



To disassemble the CD-ROM drive, follow the steps below.

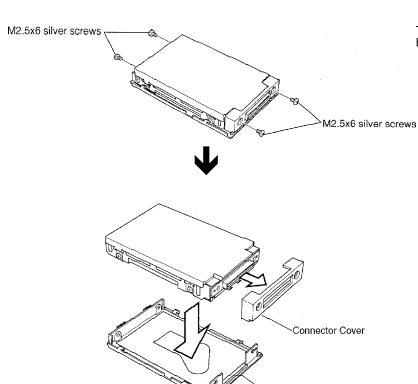
- Remove four M2x3 screws and three M2x6 silver screws securing the frame to the CD-ROM drive.
- 2. Slide the drive partially out of the drive frame.
- 3. Remove the connector cover and lift out the flexible cable.



CAUTION: Be very careful not to press on the top or bottom of the HDD. Pressure can destroy data or damage the drive.

To remove the HDD pack, follow the steps below.

- Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- 2. Remove the battery pack.
- 3. Turn the computer upside down.
- 4. Slide the **cover** to the right and push the HDD pack forward until the back edge is aligned with a **marker** next to the HDD slot.
- 5. Lift up on the cover to remove the HDD pack.



To disassemble the HDD Pack, follow the steps below.

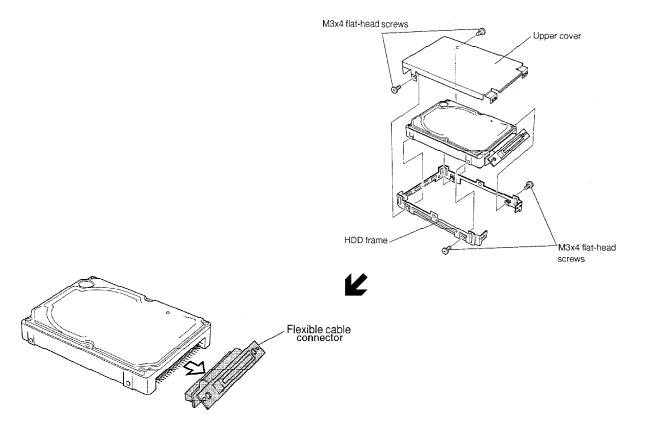
- After removing the HDD pack, lift the left 1. end of the **cover** up. Slide the **cover** all the way to the right.
- 2.
- 3.
- Lift the cover up and remove it. Remove four M2.5x6 silver screws from HDD pack. 4.
- 5. Remove the HDD tray and connector cover.
- Remove four M3x4 flat-head screws. Remove the flexible cable. 6.
- 7.

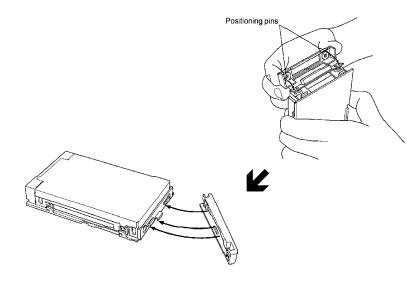
CAUTION: Do not try to disconnect by pulling on the flexible cable.

CAUTION: Do not apply pressure to the top or bottom of the HDD.

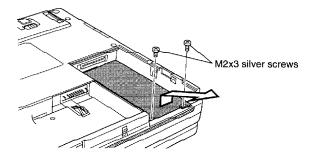


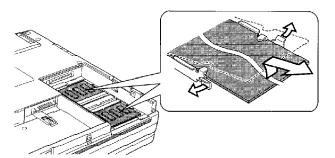
HDD Tray





Marker





To assemble the HDD pack, follow the steps below.

- Connect the flexible cable connector 1. to the HDD
- 2. Seat the HDD into the metal cover and secure four M3x4 flat-head screws.
- Connect the connector cover to the 3. flexible cable connector. When seating the connector cover, match the positioning pins to the holes on the flexible cable and metal cover.

CAUTION: Don't hold the HDD by its flat surfaces. It may damage the HDD.

- Secure four M2.5x6 silver screws. 4.
- Mount the cover onto the HDD. 5.
- To install the HDD pack, follow the steps below.
 - Align the HDD pack with a marker on 1. the computer and seat the HDD so that tabs on the HDD fit into notches on the computer.
 - Make sure the cover is pushed fully to the right and push the HDD back to 2. ensure a firm connection.
 - Slide the cover to the left to lock the 3. HDD into the slot.
 - 4. Install the battery pack.

To remove the memory module(s), make sure the computer is in boot mode and follow the steps below.

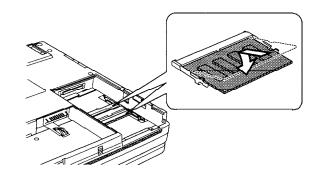
CAUTION: Do not try to remove a memory module(s) with the computer turned on. You can damage the computer and the memory module(s).

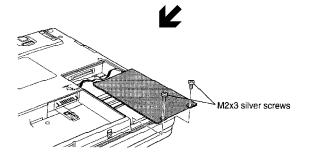
- Turn off the power to the computer. 1. Disconnect the AC adapter and all external cables connected to the computer.
- Remove the battery pack, and HDD. Remove **two M2x3 silver screws** 2.
- 3. securing the memory module socket cover and remove the cover.
- 4. Use a slender object to press two latches on either side of a memory module to the outside and the memory module will pop up.

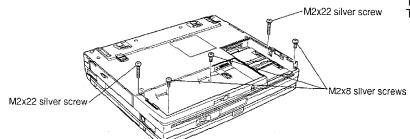
NOTE: There could be two memory modules.

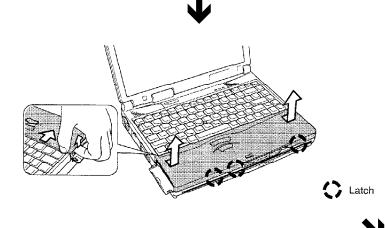
Grasp the memory module by the sides 5. and pull it out.

CAUTION: Do not touch the connectors on the memory module(s) or on the computer. Debris on the connectors may cause memory access problems.









To install a memory module(s), make sure the computer is in boot mode and follow the steps below.

CAUTION: Do not try to install a memory module(s) with the computer turned on. You can damage the computer and the module(s).

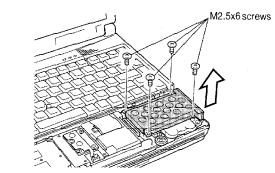
 Position the connector on the bottom of the module over the corresponding connector on the computer. Place your fingers above the connector and press firmly but gently to ensure a solid connection. The module should be seated level.

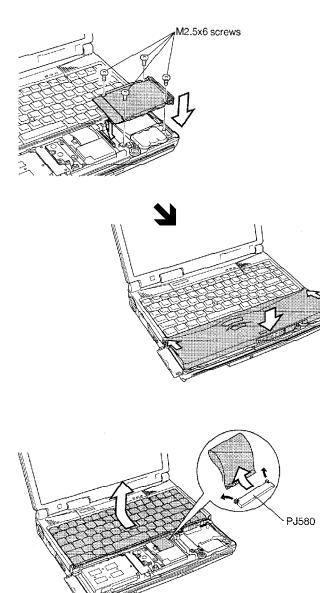
CAUTION: Do not touch the connectors on the memory module(s) or on the computer. Debris on the connectors may cause memory access problems.

- 2. Lay the cover in place and secure it with **two M2x3 silver screws**.
- 3. Install the battery pack, and HDD.

The modem board is located under the palmrest. To open the palmrest, follow the steps below.

- Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- 2. Remove the battery pack, HDD pack, and optional memory module.
- With the computer upside down, remove three M2x8 silver screws and two M2x22 silver screws.
- 4. Turn the computer right side up and open the display panel and the PC card cover.
- 5. Grasp the sides of the palmrest and pull it forward until tabs on either side clear holes on the top cover.
- Carefully lift the palmrest to avoid damage. Three latches are located under the palmrest as shown below.
 Remove four M2.5x6 screws in the
- Remove four M2.5x6 screws in the modem slot and lift out the modem pack.
- 8. Disconnect the modem pack flexible connector from the system board.





To install a modem board, follow the steps below.

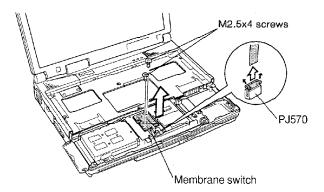
1. Place the modem pack and secure the connector on the modem board to PJ660 on the system board.

NOTE: Be sure a plastic insulator tab lies on top of the green backup battery, when you seat the modem board.

- 2. Make sure holes in the modem casing are aligned with screw holes in the computer and secure the modem board with **four M2.5x6 screws**. 3. Lay the palmrest in place and press
- down to seat it firmly.
- Close the PC card slot cover and the 4. display panel.
- Turn the computer upside down. 5.
- Secure two M2x22 silver screws and 6. three M2x8 silver screws to the bottom of the computer.
- Install the battery pack, HDD pack, and 7. optional memory module.

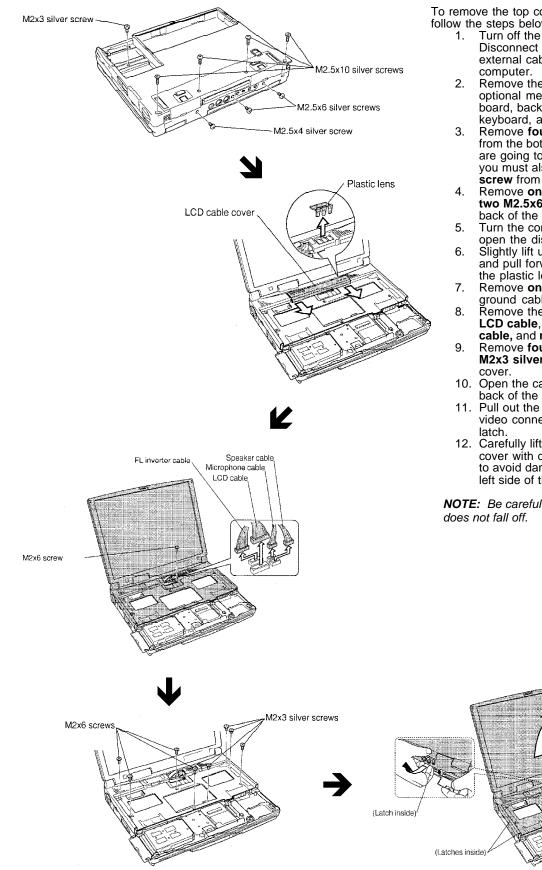
To remove the keyboard, follow the steps below.

- Turn off the power to the computer. 1. Disconnect the AC adapter and all external cables connected to the computer.
- Remove the battery pack, HDD pack, 2. optional memory module, modem board, and backup and RTC batteries.
- Remove the tape and disconnect the 3. flexible cable from PJ580 on the system board.
- 4. Lift up the front edge of the keyboard and lift it out ..



To remove the membrane switch, follow the steps below.

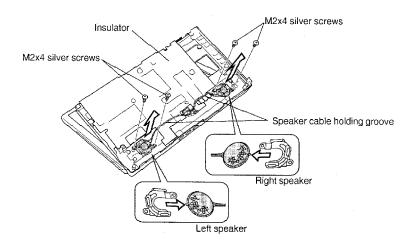
- 1. Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- 2. Remove the battery pack, HDD pack, optional memory module, modem board, backup and RTC batteries, and keyboard.
- Disconnect the membrane switch 3. cable from PJ570.
- 4. Remove two M2.5x4 screws securing the membrane switch unit and lift off the unit.

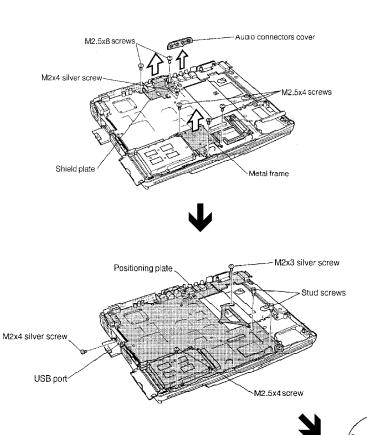


To remove the top cover with display assembly, follow the steps below.

- Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- 2. Remove the battery pack, HDD pack, optional memory module, modem board, backup and RTC batteries, keyboard, and membrane switch.
- Remove four M2.5x10 silver screws from the bottom of the computer. If you are going to remove the middle frame, you must also remove one M2x3 silver screw from the memory slot.
- Remove one M2.5x4 silver screw and two M2.5x6 silver screws from the back of the computer.
- 5. Turn the computer right side up and open the display panel.
- Slightly lift up on the LCD cable cover and pull forward to remove it. Remove the plastic lens.
- 7. Remove one M2x6 screw securing the ground cable.
- 8. Remove the tape and disconnect the LCD cable, FL inverter cable, speaker cable, and microphone cable.
- Remove four M2x6 screws and four M2x3 silver screws securing the top cover.
- 10. Open the camera port cover on the back of the computer.
- 11. Pull out the top cover just below the video connector (yellow) to release a latch.
- 12. Carefully lift the back side of the top cover with display assembly. Lift slowly to avoid damage to two latches on the left side of the computer.

NOTE: Be careful that the sound port cover does not fall off.





To remove the speakers, follow the steps below.

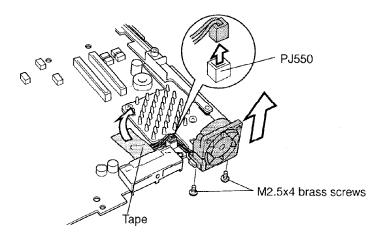
- Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- Remove the battery pack, HDD pack, optional memory module, modem board, backup and RTC batteries, keyboard, membrane switch, and top cover with display assembly.
- 3. Remove **four M2x4 silver screws** securing the speaker holders.
- 4. Lift out the **speakers** with cables and holders.
- 5. Pull the **speakers** out of the holders.
- 6. Remove the tape securing the cables to the **insulator** and remove the speakers.

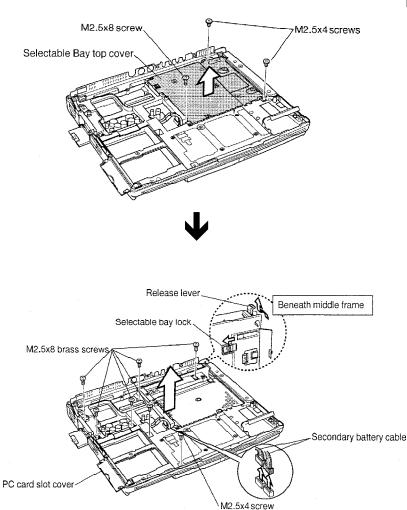
NOTE: The speaker wire is color coded. Note how the cables are routed.

To remove the system board, follow the steps below.

- 1. Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- Remove the battery pack, HDD pack, optional memory module, modem board, backup and RTC batteries, keyboard, membrane switch, and top cover with display assembly.
 Remove three M2.5x4 screws
- 3. Remove three M2.5x4 screws securing the metal frame and remove it.
- 4. Remove the audio connectors cover.
- Remove two M2.5x8 screws, and one M2x4 silver screw securing the shield plate to the system board.
- 6. Remove **two stud screws** and **one M2.5x4 screw** securing the system board to the middle frame.
- Remove one M2x3 silver screw securing the positioning plate and lift out the plate. A tongue on the plate fits into a notch.
- Open the USB port cover and remove one M2x4 silver screw securing the USB port to the USB connector.
- 9. Pull the **metal cover** protecting the Svideo and PS/2 ports away from the ports, so it doesn't catch on them when you lift up the board.
- 10. Lift up the system board to disconnect two connectors.

Metal cover





To remove the fan, follow the steps below.

- 1. Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- Remove the battery pack, HDD pack, optional memory module, modem board, backup and RTC batteries, keyboard, membrane switch, top cover with display assembly, and system board.
- 3. Turn the system board upside down and remove the **tape** securing the fan cable.
- 4. Disconnect the fan cable from **PJ550** on the system board.
- 5. Turn the system board right side up and remove two M2.5x4 screws.
- 6. Lift out the fan.

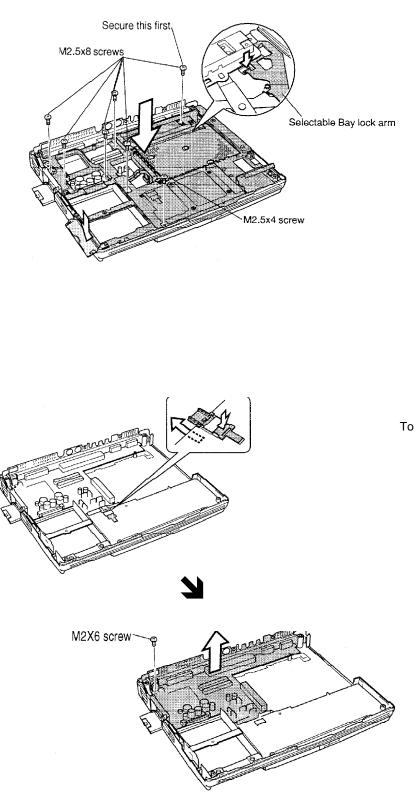
To remove the middle frame, follow the steps below.

- Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- Remove the battery pack, HDD pack, optional memory module, modem board, backup and RTC batteries, keyboard, membrane switch, top cover with display assembly, and system board.
- 3. Remove two M2.5x4 screws and one M2.5x8 screw securing the Selectable Bay top cover to the middle frame.
- Two positioning pins fit into holes on the Selectable Bay top cover. Pry the cover free of the pins then lift off the cover.
- 5. Disconnect **two secondary battery cables** from the I/O board.
- Remove six M2.5x8 screws and one M2.5x4 screw securing the middle frame to the bottom cover.
- 7. Pull out the Selectable Bay release lever and set the Selectable Bay lock to the lock position.

CAUTION: If you remove the middle frame while the Selectable Bay lock is unlocked, the I/O board will be damaged.

NOTE: Make sure the screw in the memory slot has been removed.

- 8. Lift off the **PC card slot cover** and lift out the middle frame.
- 9. Remove one M2x3 screw securing the bracket over the probe pin harness.
- 10. Remove two M2x5 screws securing the probe pin harness to the middle frame.
- 11. Lift out the probe pin harness and note how the cables are threaded.

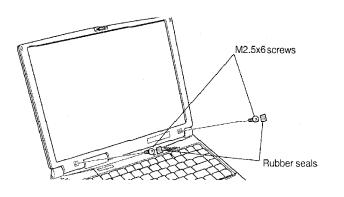


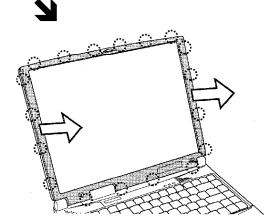
To install the middle frame, follow the steps below.

- 1. Reroute the cables and replace the probe pin harness.
- 2. Secure the probe pin harness to the middle frame with two M2x5 screws.
- 3. Secure the bracket over the probe pin harness with one M2x3 screw.
- Make sure the Selectable Bay release lever is extended and the Selectable Bay lock is in the lock position.
- 5. Seat the middle frame and make sure a small tongue on the middle frame's Selectable Bay locking mechanism fits into a corresponding notch on the external Selectable Bay lock.
- Secure one M2.5x8 screw next to the Selectable Bay lock arm, then secure the other five M2.5x8 screws.
- Secure the middle frame to the bottom cover with one M2.5x4 screw.
- 8. Seat the PC card slot cover.
- Secure the Selectable Bay top cover with two M2.5x4 screws and one M2.5x8 screw.
- 10. Connect two secondary battery cables to the I/O board.
- Install the battery pack, HDD pack, optional memory module, modem board, backup and RTC batteries, keyboard, membrane switch, top cover with display assembly, and system board.

To remove the I/O board, follow the steps below.

- Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- Remove the battery pack, HDD pack, optional memory module, modem board, backup and RTC batteries, keyboard, membrane switch, top cover with display assembly, system board, and middle frame.
- 3. Remove the battery pack jumper as follows:
 - (a) From the bottom of the battery pack slot, push up on the battery jumper contact and slide it forward.
 - (b) Press down on the jumper as shown in the Figure below and slide the jumper out to remove it
- 4. Remove **one M2x6 screw** securing the I/O board to the bottom cover.
- 5. Lift out the I/O board.
- 6. Lift out the base shield assembly.



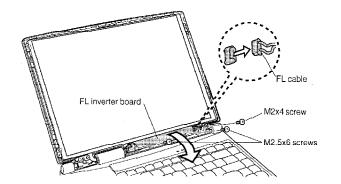


To remove the display mask, follow the steps below.

- 1. Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- 2. Remove the battery pack.
- Remove two rubber seals at the bottom corners of the display assembly.
- 4. Remove **two M2.5x6 screws** that were covered by the rubber seals.

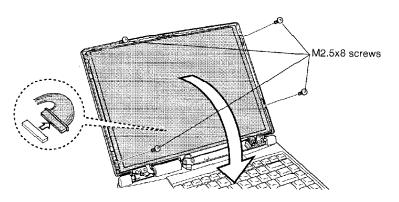
NOTE: Support the display with your hand when you remove the screws.

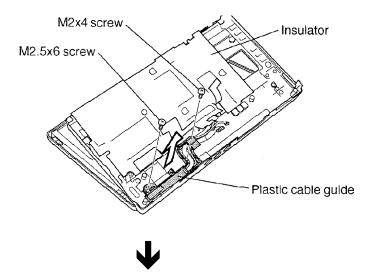
- 5. Release **18 latches** along the edges of the **display mask**. Begin at the top (six latches), continue along the sides (four latches on each side) and the bottom (four latches).
- 6. Remove the display mask.

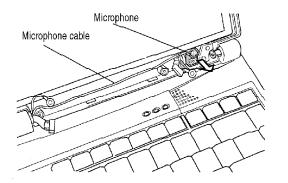


To remove the FL inverter board, follow the steps below.

- 1. Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- 2. Remove the battery pack, and the display mask.
- Lay the display panel on its back and remove one M2x4 screw securing the microphone and its ground cable.
 Remove two M2.5x6 screws securing
- Remove two M2.5x6 screws securing the FL inverter board and its ground cable.
- 5. Rotate out the top end of the FL inverter board and disconnect the FL cable from CN2.
- Disconnect the FL inverter cable from CN1 and lift out the FL inverter board.







NOTE: Be careful not to apply pressure to the ICs along the edge of the LCD module. The ICs are easily damaged.

To remove the LCD module, follow the steps below.

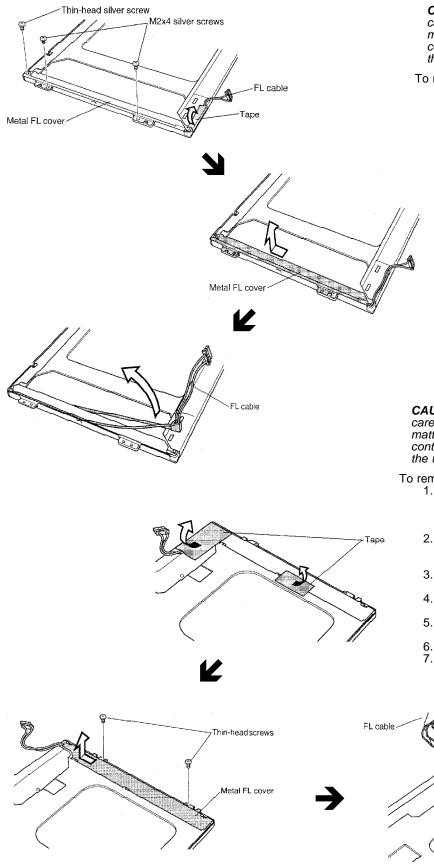
- Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- 2. Remove the battery pack, display mask, and FL inverter board.
- Remove four M2.5x8 screws securing the LCD module to the display assembly.
- Carefully rotate out the top of the LCD module enough to access the display cable, remove the tape, and disconnect the cable.
- 5. Lift out the LCD Module.

CAUTION: The FL cable, FL inverter cable, and microphone cable will only fit one way. Be certain you note how the cables are routed so they can be replaced accurately.

To remove the microphone, follow the steps below.

- Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
- 2. Remove the battery pack, display mask, FL inverter board, and LCD module.
- 3. Lift the microphone holder out of its seat. Remove the microphone from the microphone holder.
- 4. Lay the top cover and display assembly down so that the bottom of the top cover lies flat and faces up.
- 5. Remove one M2x4 screw, under the cable, securing the hinge cover and one M2.5x6 screw securing the plastic cable guide.
- 6. Remove the tape and release the **plastic cable guide**, covering the FL inverter insulator, microphone cable, and Fl inverter cable, from the top cover at the top right corner of the left speaker cable groove.
- 7. Press on the small end of the cable guide, toward the case, to free it.
- 8. Lift the cable guide straight up, pull the microphone cable out of the cable guide, and remove the microphone.

NOTE: Grasp the top cover by the sides when you rotate it up. Do not pull at the center.



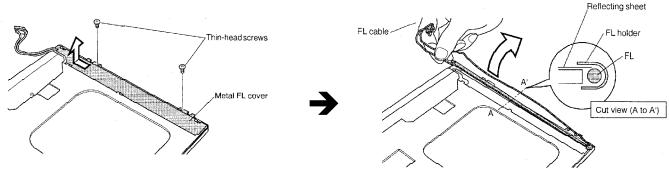
CAUTION: When you remove the FL, be careful not to let any dust or other foreign matter contaminate the **LCD panel**. Any contamination can affect the performance of the unit.

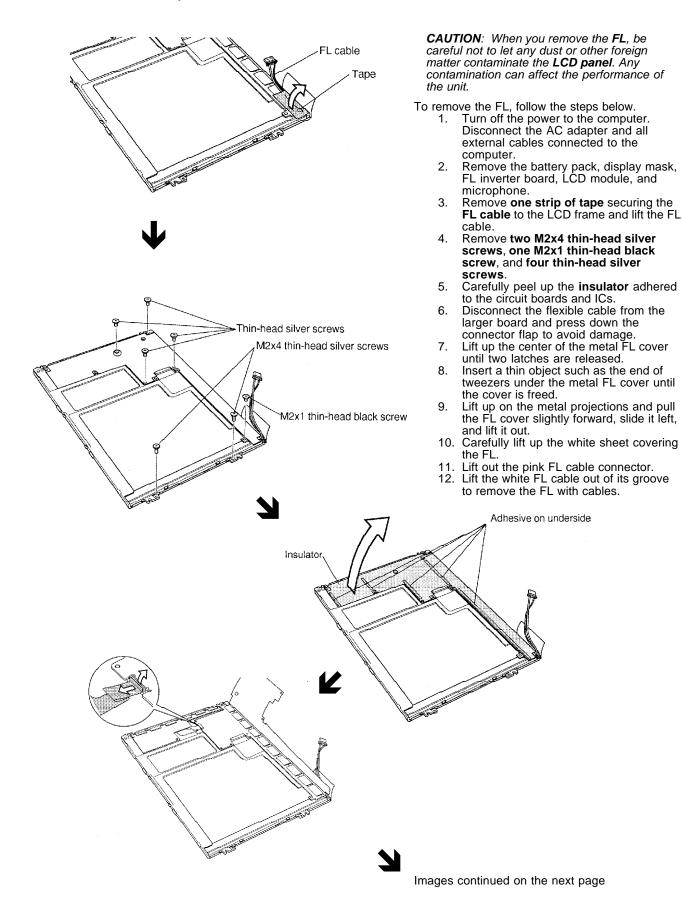
- To remove the FL, follow the steps below. 1. Turn off the power to the computer. Disconnect the AC adapter and all external cables connected to the computer.
 - 2. Remove the battery pack, display mask, FL inverter board, LCD module, and microphone.
 - Remove the tape covering the FL 3. cable.
 - 4. Remove one thin-head silver screw and two M2x4 silver screws securing the metal FL cover.
 - 5. Carefully slide the metal FL cover about 2 mm away from the **FL cables** and lift it up.
 - Lift out the FL cable and the FL. 6.

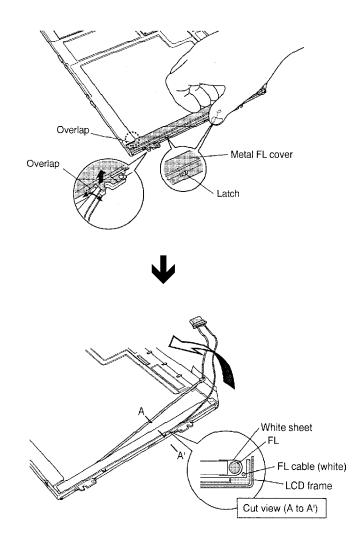
CAUTION: When you remove the FL, be careful not to let any dust or other foreign matter contaminate the LCD panel. Any contamination can affect the performance of the unit.

To remove the FL, follow the steps below. 1. Turn off the power to the computer.

- Disconnect the AC adapter and all external cables connected to the computer.
- Remove the battery pack, display mask, FL inverter board, LCD module, and 2. microphone.
- Remove two strips of tape securing 3. the FL cable and metal FL cover.
- Remove two thin-head screws securing the metal FL cover.
- Slide the metal FL cover forward about 2 mm and lift it off.
- Lift out the FL cable and the FL holder. Remove the FL tube from the FL 7. holder.







Removing the FL, continued.

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