NEC

Versa P520

Disassembly Manual

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Overview

This document contains step-by-step disassembly instructions for the Versa P520 chassis. The instructions are illustrated where necessary with images of the part that is being removed or disassembled. Furthermore, the screws that are removed are shown next to the image of the parts themselves.

NEC reserves the right to make changes to the Versa P520 chassis without notice.

Technician Notes

Only technicians authorized by NEC Computers International BV should attempt to repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module level repair. Because of the complexity of the individual boards and subassemblies, no one should attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard. Any indication of component replacement or printed wiring board modifications may void any warranty or exchange allowances.

Disassembly Instructions

When disassembling the system unit, follow these general rules:

- Do not disassemble the system into parts that are smaller than those specified in the instructions.
- Label all removed connectors. Note where the connector goes and in what position it was installed.
- Turn off the power and disconnect all power and all options.

Reassembly Instructions

Reassembly is the reverse of the disassembly process. Use care to ensure that all cables and screws are returned to their proper positions. Check that no tools or any loose parts have been left inside the chassis. Check that everything is properly installed and tightened.

Required Tools

All disassembly procedures can be performed using the following tools:

- Philips screwdriver
- Small flatbed screwdriver
- HEX bolt screwdriver 5mm
- A plastic flatbed screwdriver

Hazardous Voltage

There is hazardous voltage present inside the computer when it is connected to an AC supply, even when the computer's power switch is off. Exposure to hazardous voltage could cause personal injury. To avoid risk of injury, contact an Authorized Service Provider for proper (un)installation of optional hardware devices.

Avoid Electrostatic Discharge

Electrostatic electricity can easily damage circuit cards and integrated circuits (ICs). To reduce risk of damage, store them in protective packaging whenever they are not installed in your system.

Add-in cards can be extremely sensitive to ESD and always require careful handling. After removing the card from the computer, place the card flat on a grounded, static-free surface, component-side up. Use a conductive foam pad if available, but not the card wrapper. Do not slide the card over any surface.

Before you install or remove memory modules, video memory, disk drives, circuit cards or other devices, protect them from static electricity. To do so, make sure your computer's power switch is OFF. Then, unplug the computer's AC power cord. Before picking up the device you (un)install, you should wear an anti-static wrist wrap (available at electronic supply stores). Be sure to connect the wrist wrap to an unpainted metal portion of the computer chassis. As an alternative, you can dissipate electrostatic build-up by touching an unpainted metal portion of the computer chassis with one hand. Then touch the device you are (un)installing with the other hand, and maintain continuous contact with it until it is (un)installed in the computer.

Power Supply Unit

Under no circumstances should you attempt to disassemble the power supply. The power supply contains no user-serviceable parts. Inside the power supply are hazardous voltages that can cause serious personal injury. Always return a defective power supply to your dealer.

WARNING
Ensure that the computer is disconnected from its power source and from all telecommunications links, networks, or modem lines whenever the chassis cover is removed. Do not operate the computer with the cover removed.

AVERTISSEMENT
Assurez-vous que le système est débranché de son alimentation ainsi que de toutes les liaisons de télécommunication, des réseaux, et des lignes de modem avant d'enlever le capot. Ne pas utiliser le système quand le capot est enlevé.

WARNUNG
Das System darf weder an eine Stromquelle angeschlossen sein noch eine Verbindung mit einer Telekommunikationseinrichtung, einem Netzwerk oder einer Modem-Leitung haben, wenn die Gehäuseabdeckung entfernt wird. Nehmen Sie das System nicht ohne die Abdeckung in Betrieb.

ADVERTENCIA
Asegúrese de que cada vez que se quite la cubierta del chasis, el sistema haya sido desconectado de la red de alimentación y de todos lo enlaces de telecomunicaciones, de red y de líneas de módem. No ponga en funcionamiento el sistema mientras la cubierta esté quitada.

WAARSCHUWING
Zorg er voor dat alle verbindingen van en naar de computer (stroom, modem netwerk, etc) verbroken worden voordat de behuizing geopend wordt. Zet de computer nooit aan als de behuizing geopend is.

AVVERTENZA
Prima di rimuovere il coperchio del telaio, assicurarsi che il sistema sia scollegato dall'alimentazione, da tutti i collegamenti di comunicazione, reti o linee di modem. Non avviare il sistema senza aver prima messo a posto il coperchio

Removing the Battery

1. Make sure the notebook is powered off.
2. Close the lid of the notebook.
3. Turn the unit upside down.
4. Unlock the battery and lift it out of its place.

Fig. 1: *Removing the battery*

Make sure that in all the disassembly steps that the battery is removed!

Removing the memory module

1. Unscrew one screw to remove the memory module slot cover.
2. Pull apart the clips retaining the memory module in order to release the module
3. Remove the memory module

M2.3x3

Fig. 2: *Removing the memory module*

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Removing the Wireless LAN Mini PCI Card

1.   Unscrew one screw to remove the Wireless LAN Module slot cover.
2.   Carefully disconnect the two antenna wires connected to the mini PCI card.
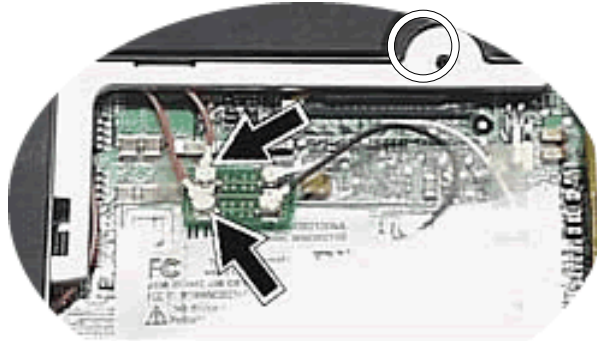
M2.3x3

Fig. 3: Disconnecting the antenna wires

3.   Pull apart the clips retaining the mini PCI card in order to release the LAN wireless mini PCI card a put it aside.
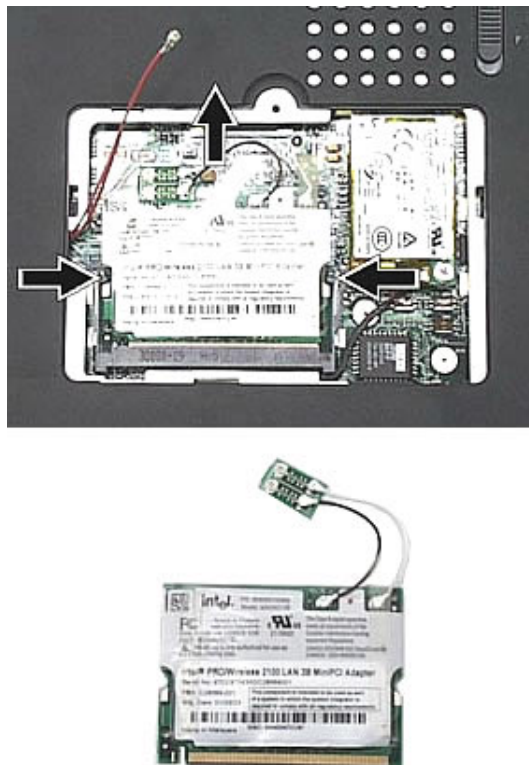

Fig. 4: Removing the Wireless LAN mini PCI card

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Removing the Multi Bay Floppy Disk Drive

1. Slide the latch as shown in the picture to unlock the Multi Bay Device.
2. Carefully extract the Multi Bay floppy disk drive from its location.

Fig. 5: Removing the floppy disk drive

Removing the Versa Bay IV Optical Drive

1. Slide the latch as shown in the picture to unlock the Versa Bay Optical drive.
2. Carefully extract the Versa Bay IV drive from its location.

Fig. 6: Removing the Versa Bay IV optical drive

Removing the Keyboard Cover

1. Carefully insert a flat screwdriver in the positions as shown in the picture, release the keyboard cover and put it aside.

Fig. 7: Removing the keyboard cover

Removing the Keyboard

1. Remove the keyboard cover.
2. Carefully lift up the keyboard and put it face down on the front of the notebook taking care not to rip off the keyboard flat cable.

Fig. 8: Lifting up the keyboard
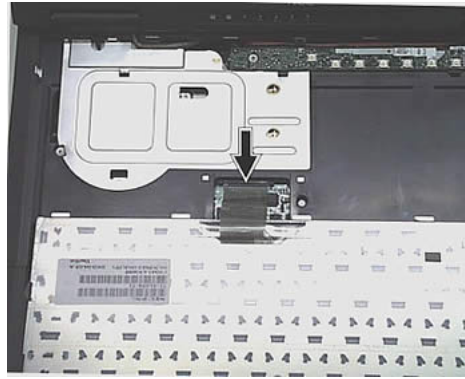
3. Locate the connector on the main board where the keyboard cable is connected.

Fig. 9: Disconnecting the keyboard flat cable from the main board

4.   Gently unlock the keyboard flat cable form the connector on the main board and free up the keyboard cable.
5.   Take out the keyboard and put it aside.

Removing the LED's and Switch Board

1.   Remove the keyboard Cover
2.   Lift up the keyboard.
3.   Unscrew the one screw retaining the LED's and switch board and remove it.

Fig. 10: Removing the LED's and switch board

M2x6

Removing the Thermal Plate

4. Remove the keyboard cover.
5. Remove the Keyboard.
6. Remove the LED's and switch board.
7. Remove the screws maintaining the Thermal Plate as shown in the picture below.

Fig. 11: Removing the thermal plate

(14)=M2x4

(Arrows) 3xM2x6

Removing the CPU Fan

1. Remove the thermal plate.
2. Disconnect the connector fan.
3. Unscrew the screws (18) and (10).
4. Extract carefully the CPU fan.
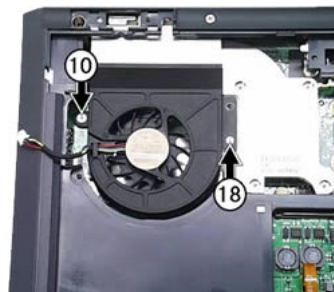
Fig. 12: Removing the CPU fan

(**10)=**M2.3x5

(18)=M2x4

Removing the CPU Heat Sink

1.   Remove the thermal plate.
2.   Remove the CPU fan.
3.   Unscrew the four screws (12) in sequence 1>2>3>4 and remove carefully the CPU heat sink.
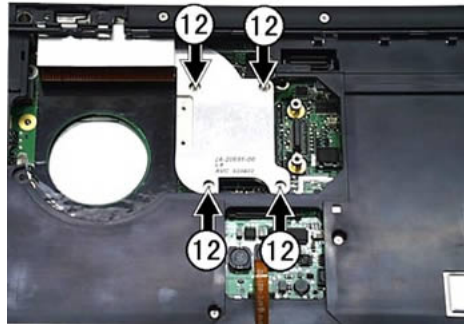
(12)=M2.3x9

Fig. 13: *Removing the CPU heat sink*

Removing the CPU

1.   Remove the thermal plate.
2.   Remove the CPU fan.
3.   Remove CPU heat sink.
4.   Unlock the CPU with an appropriate screwdriver, turning it anti clockwise and extract carefully the CPU.

Fig. 14: *Removing the CPU*

Removing the LCD Assembly

1.   Disconnect the antenna wires from the mini PCI wireless LAN card.
2.   Remove the keyboard cover.
3.   Remove the Keyboard.
4.   Remove the LED's and switch board.
5.   Remove the thermal plate.

6.   Remove the left and right hinge plastic covers with an appropriate screwdriver.

Fig. 15: Removing the plastic hinge covers

7.   Disconnect the cover switch cable connector (A =2 pin).
8.   Disconnect the LCD flat cable connector (B).
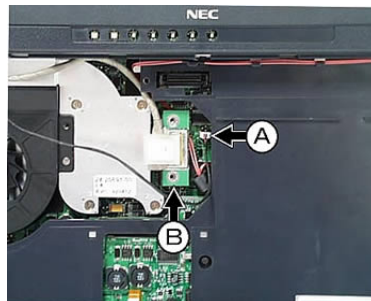
Fig. 16: Removing the LCD flat cable connector

9. Free up the wireless antenna wires.

Fig. 17: *Freeing up the wireless antenna wires*

10. Release the wireless antenna wires.

Fig. 18: *Releasing the wireless antenna wires*

11. Close the LCD cover, turn upside down the system and remove the 2 bottom hinge screws (12）.
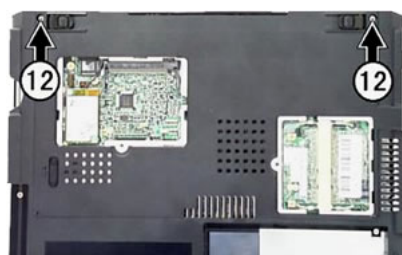
Fig. 19: *Removing the 2 bottom hinge screws*

12. Turn the system and remove the 2 rear hinge screws (11) and 2 rear screws (10) as shown in the picture.

(**12)=**M2.3x9

(10)=M2.3x.5

(11)=M2.3x7

Fig. 20: Removing the 2 rear hinge screws

13.   Carefully now open the LCD cover and while freeing the LCD flat cable and the antenna wires, lift up carefully the LCD Assembly and put it aside.

Fig. 21: Removing the LCD assembly

Removing the Glide Pad Assembly

1.   Remove the keyboard cover.
2.   Remove the keyboard.
3.   Disconnect the Glide Pad flat cable from the main board as is shown in Fig 22.

Fig. 22: *Disconnecting the glide pad flat cable*

4. Close the LCD cover (if you did not disassemble the LCD assembly) and turn the system upside down in order to remove the following screws (10, 11, 13).
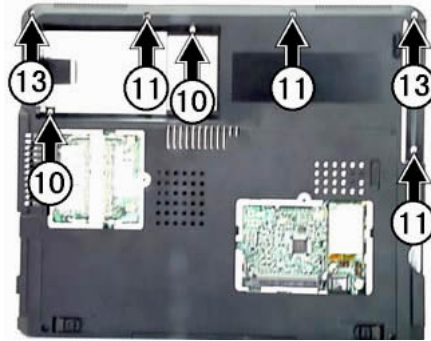
Fig. 23: *Removing the bottom screws retaining the glide pad assembly*

5. Put back the system in normal position and remove the glide pad assembly.

Fig. 24: *Removing the glide pad assembly*

6. On the other side of the glide pad assembly, remove the 4 screws (16) in order to remove the glide pad module as shown in Fig 25.

(**10)=**M2.3x5

(11)=M2.3x7

(13)=M2.3x12
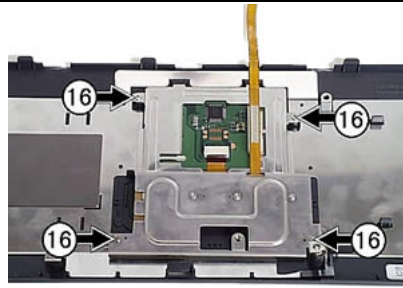
(16)=M2x4

Fig. 25: *Removing the 4 screws retaining the glide pad*

7.   Disconnect the glide pad internal flat cable in order to separate the glide pad electronic form the metal support.
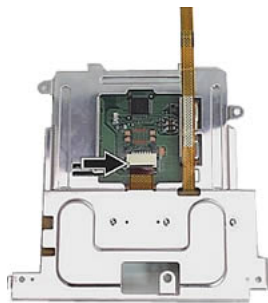
Fig. 26: *Disconnecting the glide pad internal flat cable*

Removing the Hard disk drive

1.   Remove the keyboard cover.
2.   Remove the Keyboard.
3.   Remove the glide pad assembly without disassembling the glide pad module.
4.   Remove the screws (17) holding the hard disk drive assembly and disconnect the hard disk drive as shown in the following picture.
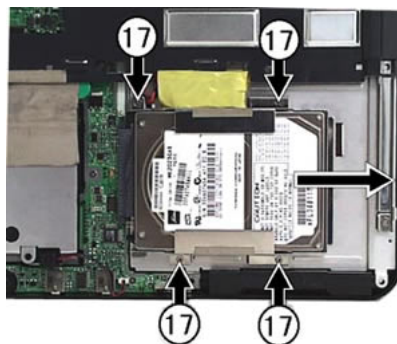
(17)=M2x4.5

Fig. 27: *Removing the hard disk drive assembly*

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5.　　　Put the hard disk drive assembly aside in order to disassemble the hard disk drive.
6.　　　Remove the four screws (9) as shows in the following picture.

Black

(9)=M3x3
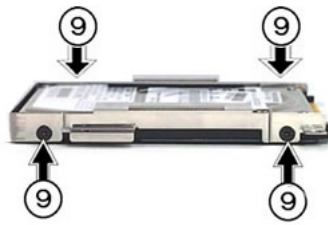
Fig. 28: Removing the 4 screws retaining the hard disk drive frame

7.　　　Once the screws (9) are removed, the hard disk drive assembly can be disassembled
　　in the following parts.

Fig. 29: Removing the hard disk drive

Removing the Top Cover

1. Remove the LCD Assembly.
2. Remove the Glide Pad Assembly.
3. Remove the following screws (14), (16), (17) as shown in the picture below and take out carefully the top cover.

Fig. 30: Removing the plastic top cover

(14)=M2x6

(16)=M2.3x4

(17)=M2x6

Removing the RTC Battery, Microphone and connector

1. Once you have removed the top cover disconnect the RTC battery (B), the Microphone (C) and the connector (C) as shown in the picture below and put these items aside.
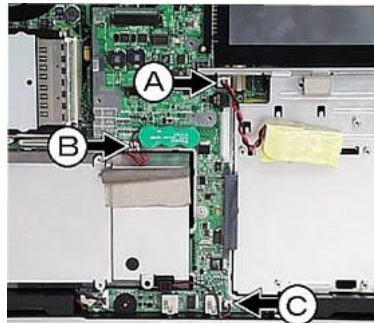
Fig. 31: Removing the RTC battery (B), the microphone (C) and connector (A)

Removing the Audio board

1. Remove the RTC battery, microphone and connector module.
2. Remove the top cover.
3. Disconnect the speaker connector.
4. Unscrew the one screw retaining the audio board as shown in the picture below.
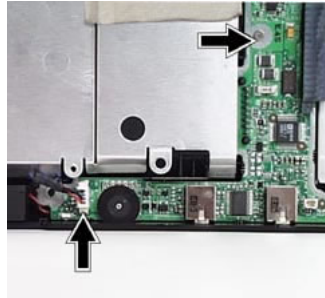
M2x4

Fig. 32: Removing the audio board screw and disconnecting the speakers

4. Remove the Audio board and free up the front audio panel.
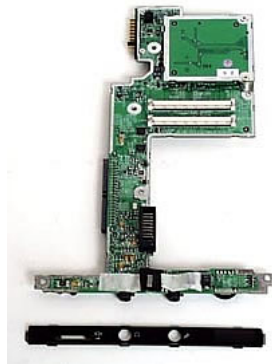
Fig. 33: Removing the audio board and the front audio panel

Pay attention on the audio board the charger board is still connected!

Removing the charger board

1. Unscrew the two screws (14) retaining the charger board on the audio board
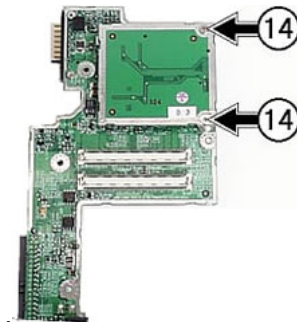
Fig. 34: Removing the charger board

(14)=M2.3x4

2. Disconnect the charger board from the audio board.

Removing the Versa Bay IV Frame Plate

1. Remove hard disk drive assembly.
2. Remove the top cover.
3. Remove the audio board.
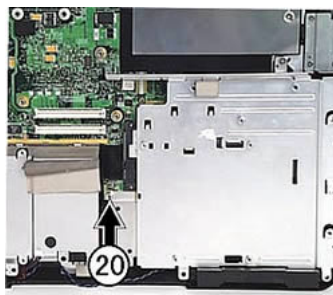4. Unscrew the screw (20) and remove the Versa Bay IV plate.

Fig. 35: Removing the Versa Bay IV frame plate

Hex Bolt
(20)=H=7 L=6

Removing the Multi Bay rails left and right

1. Remove hard disk drive assembly.
2. Remove the top cover.
3. Remove the audio board.
4. Remove the Versa Bay IV frame plate.
5. Unscrew the screws (20), (25), (10) and remove the two rails. See Fig 36.
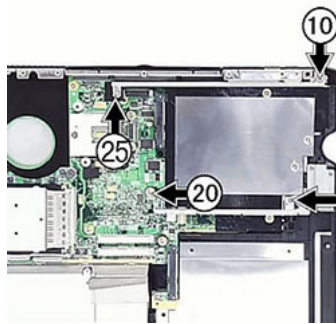
Fig. 36: Removing the Multi Bay rails left and right

Removing the metal DC-IN bracket

1. Remove the top cover.
2. Unscrew the two screws (10) and remove the DC-in bracket.

Fig. 37: Removing the DC-in bracket
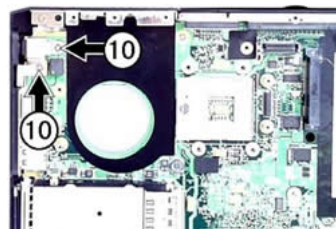

(10)=M2.3x6

Arrow
M2.3x 4

Hex Bolt
(20)=H7 L6

Hex Bolt
(25)=H11.7
L=5.5

Removing the Main board

To remove the main board make sure that the following steps have been performed:
1. Removing the top cover
2. Removing the audio board
3. Removing the Versa Bay IV Frame Plate
4. Removing the Multi Bay rails left and right
5. Removing the metal DC-IN bracket
6. Remove the screws and hex. Bolts as shown in the Fig 38.
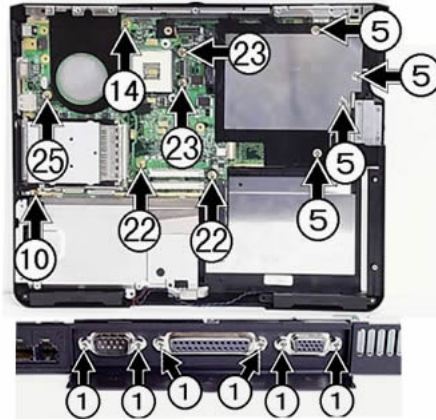
Fig. 38: *Removing screws and hex bolts retaining the main board*

7. Free up and remove carefully the main board.

Fig. 39: *Removing the main board*

Removing the MDC Modem cable

1. Remove the main board.
2. Turn upside down the main board.
3. Disconnect on both sides the modem cable and put it aside
4. Unscrew the screws (14) and remove the MDC modem as shown in Fig 40.

Hex Bolt
(1)=M2.3x4.5

Cone
(5)=M2.3x4.5

(10)=M2.3x4.5

(14)=M2.3x4.5

Hex Bolt
(22)=H8 L6

Hex Bolt
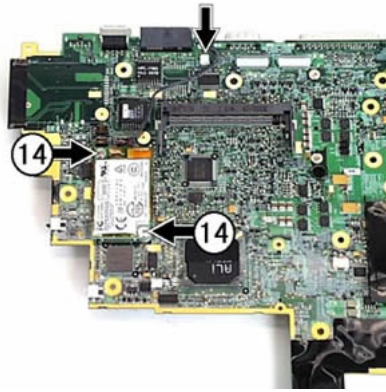**(23)=**H7.0

Hex Bolt
(25)= 11.7
L=5.5

Fig. 40: *Removing the MDC modem and his cable*

Note: To remove the MDC modem only you do not need to remove the Main board, You can remove it by opening the mini PCI wireless and MDC modem slot cover on the back of the system. !!!

(14)=M2.3x4.5
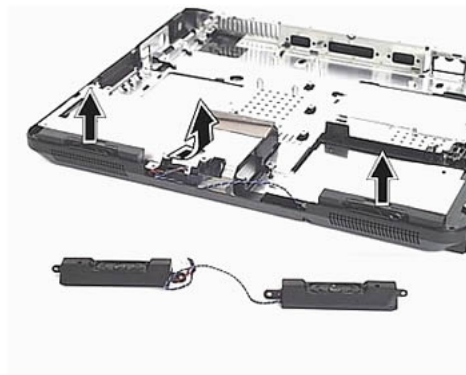
Removing the Speakers Set

As shown in Fig 41.

Fig. 41: *Removing the speaker set*
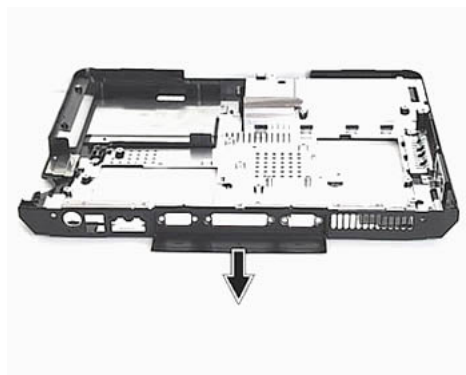
Removing the I/O Door

As shown in Fig 42.

Fig. 42: *Removing the I/O Door*

LCD disassembly

1. <u>Remove the LCD assembly.</u>
2. Remove the rubbers (A) and the Mylar stickers (B) covering the hinge screws.
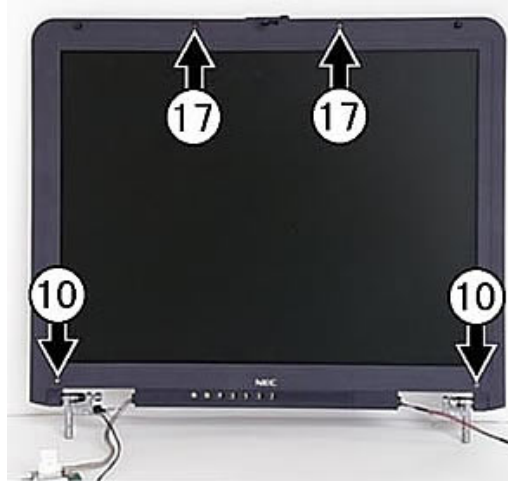
Fig. 43: *Removing LCD Mylar stickers and rubbers*
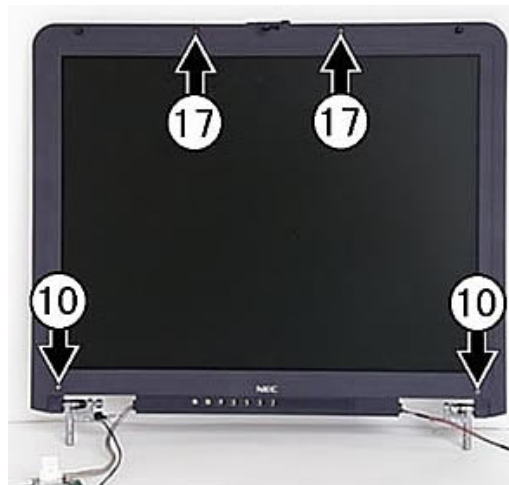
A

B

3. Remove the 2 screws (17) and the 2 screws (10).

Fig. 44: *Removing the LCD front cover screws*

(17)=M2x4

(10)=M2.3x5

4. Carefully unclip the plastic front cover of the LCD in the following sequences (1>2>3>4) as shown in Fig 45.
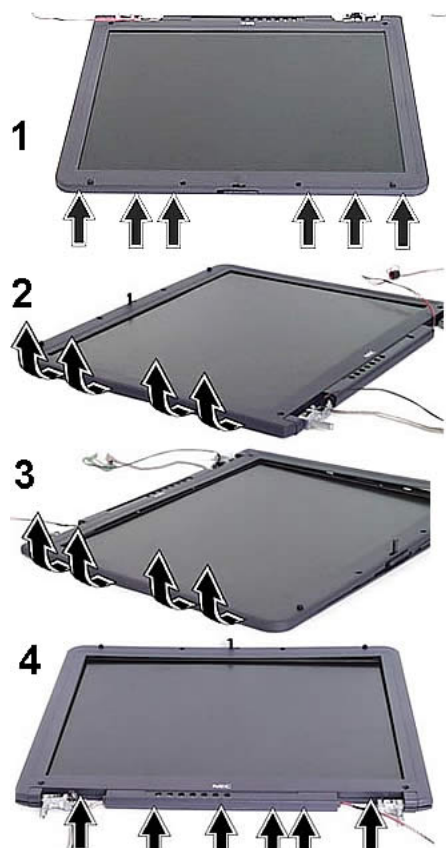
Fig. 45: Unclipping the LCD plastic front cover

4. Put the unclipped plastic front cover of the LCD aside.
5. To remove the LCD latch from the front cover of the LCD do as shown in Fig 46.
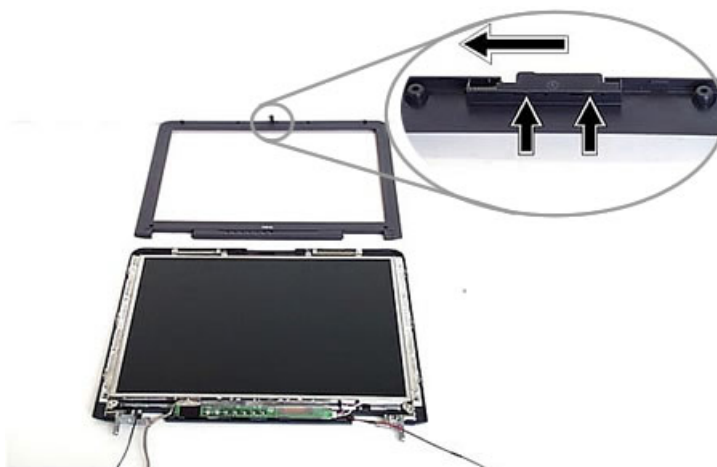

Fig. 46: Removing the LCD front cover latch

6. To remove the latch spring do as shown in Fig 47.

Fig. 47: *Removing the latch spring*

7. Remove on both side of the bottom cover of the LCD the 6 screws (4) in order to extract the bare LCD as shown below.

(4)=M2x3

Fig. 48: *Removing the screws retaining the LCD*

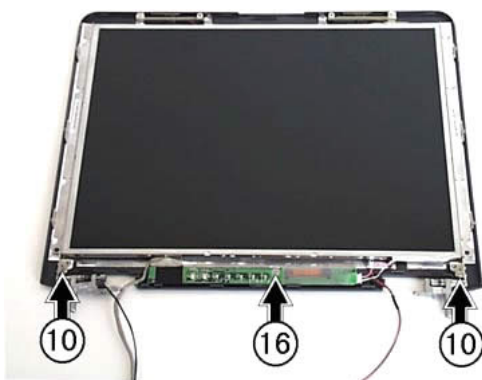8. Remove also the screws (10) and (16) as shown in the following picture.

(10)=M2.3x4.5

(16)=M2x4

Fig. 49: *Removing hinges and inverter screws*

9. Separate the LCD from the bottom cover.
10. Turn upside down the LCD and disconnect the LCD (B) cable and the inverter connector (A) as shown in the following picture.
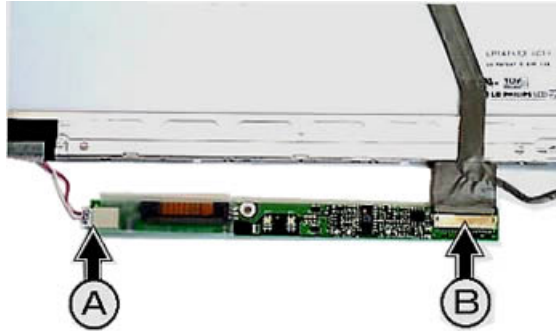

Fig. 50: *Disconnecting the LCD cable and the inverter*

11. Put aside the inverter board and disconnect carefully the LCD cable from the panel and put it aside.

Fig. 51: *Removing the LCD flat cable from the panel*

12. Remove on both sides of the LCD the four screws (4) in order to remove the left and right hinges assembly.

Fig. 52: Removing the LCD left and right hinges assembly

(4)=M2x3

13.   Put aside the hinges assembly and remove the cover switch cable on left hinge assembly as shown in the following picture.
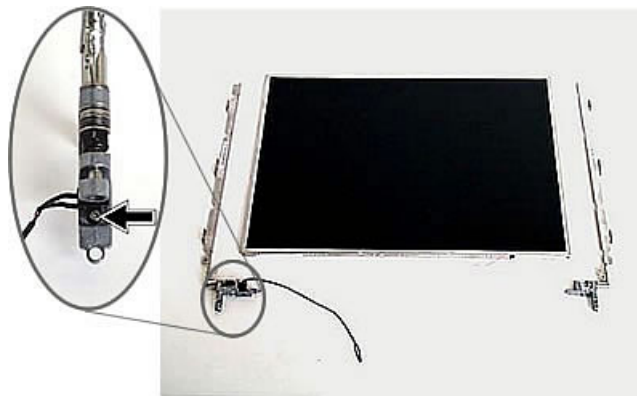

Fig. 53: Removing the cover switch cable

M1.5x5

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14. To remove the antenna wires, unscrew the screws (16) and remove the tapes, which hold the antenna wires on the LCD bottom cover.
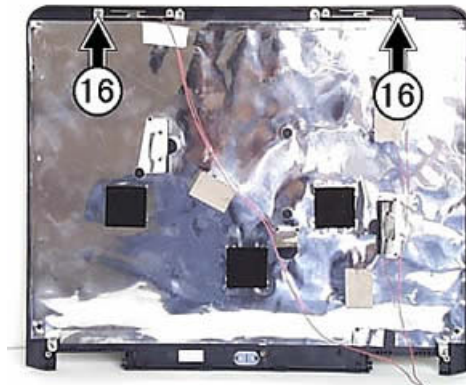

Fig. 54: Removing the antenna wires

(16)=M2x3

Disassembling the Optical drive

1. Remove the screws (5) and (7) from the drive assembly

Fig. 55: Removing the screws retaining the frame of the optical drive

(7)=(4)=M2x3

2. Separate the drive and the plastic frame.

Fig. 56: Separating the optical drive from its frame

3.   To disassemble the plastic frame, do as shown in the following picture.

Fig. 57: Disassembling the plastic frame

4.   To disassemble the front bezel, open the tray with a paper clip and unclip the front bezel as shown in the Fig 58.

Fig. 58: Removing the front bezel

Notice

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