

Removing and replacing an FRU

This section presents exploded figures with the instructions to indicate how to remove and replace the FRU. Make sure to observe the following general rules:

1. Do not attempt to service any computer unless you have been trained and certified. An untrained person runs the risk of damaging parts.
2. Before replacing any FRU, review "FRU replacement notices" on page 32.
3. Begin by removing any FRUs that have to be removed before the failing FRU. Any of such FRUs are listed at the top of the page. Remove them in the order in which they are listed.
4. Follow the correct sequence in the steps to remove the FRU, as given in the figures by the numbers in square callouts.
5. When turning a screw to replace an FRU, turn it in the direction as given by the arrow in the figure.
6. When removing the FRU, move it in the direction as given by the arrow in the figure.
7. To put the new FRU in place, reverse the removal procedures and follow any of the notes that pertain to replacement. For information about connecting and arranging internal cables, see "Locations" on page 66.
8. When replacing an FRU, use the correct screw as shown in the procedures.

DANGER

Before removing any FRU, turn off the computer, unplug all power cords from electrical outlets, remove the battery pack, and then disconnect any of the interconnecting cables.

Attention: After replacing an FRU, do not turn on the computer until you have made sure that all screws, springs, and other small parts are in place and none are loose inside the computer. Verify this by shaking the computer gently and listening for rattling sounds. Metallic parts or metal flakes can cause electrical short circuits.

Attention: The system board is sensitive to, and can be damaged by, electrostatic discharge. Before touching it, establish personal grounding by touching a ground point with one hand or using an electrostatic discharge (ESD) strap (P/N 6405959) to remove potential shock reasons.

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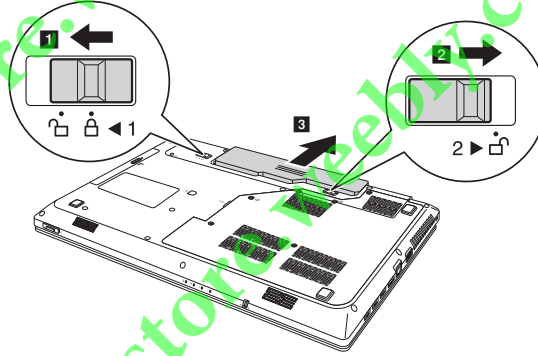
1010 Battery pack

⚠ DANGER

Only use the battery specified in the parts list for your computer. Any other battery could ignite or explode.

Figure 1. Removal steps of battery pack

Unlock the battery release lever **1**. Holding the battery release lever in the unlocked position **2**, remove the battery pack in the direction shown by arrow **3**.



When installing: Install the battery pack along the slide rails of the slot. Then make sure that the battery release lever is in the locked position.

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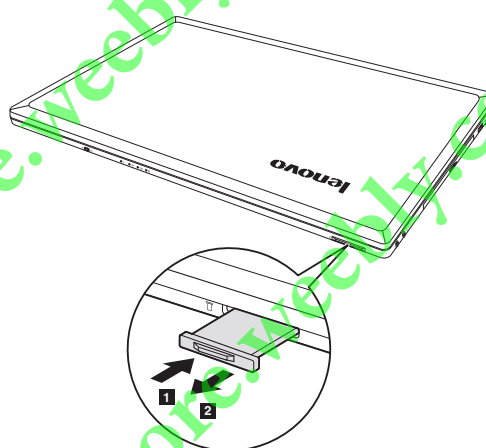
1020 Dummy card

For access, remove this FRU:

- "1010 Battery pack" on page 34

Figure 2. Removal steps of dummy cards

Remove the dummy card in the direction shown by arrows **1** **2**.



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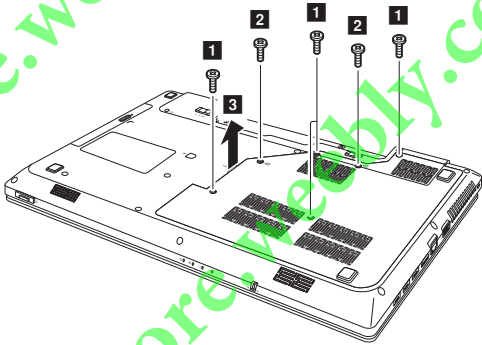
1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover

For access, remove this FRU:

- “1010 Battery pack” on page 34

Figure 3. Removal steps of HDD/Memory/Mini PCI Express Card slot compartment cover

Loosen four screws **1**, and remove two screws **2**, then remove the compartment cover **3**



Step	Screw (quantity)	Color	Torque
2	M2.5 × 8 mm, flat-head, nylokcoated (2)	Black	2.0 kgfcm

1040 Hard disk drive

For access, remove these FRUs in order:

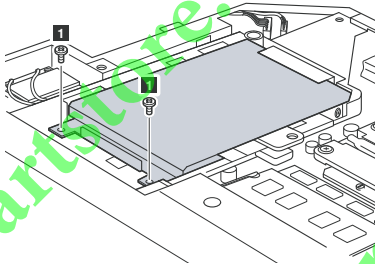
- “1010 Battery pack” on page 34
- “1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover” on page 36

Attention:

- **Do not drop the hard disk drive or apply any physical shock to it.**
The hard disk drive is sensitive to physical shock. Improper handling can cause damages and permanent loss of data.
- Before removing the drive, suggest the customer to backup all the information on it if possible.
- Never remove the drive while the system is operating or is in suspend mode.

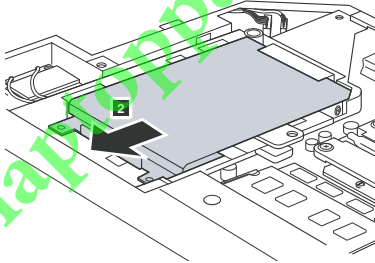
Figure 4. Removal steps of hard disk drive

Remove the frame fixing screws **1**.



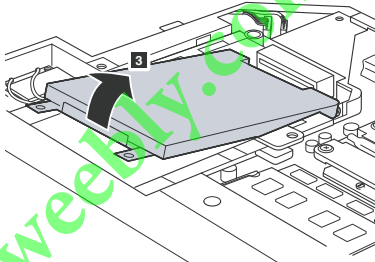
Step	Screw (quantity)	Color	Torque
1	M2.5 × 4 mm, flat-head, nylok-coated (2)	Black	2.0 kgfcm

Pull the HDD bracket in the direction shown by arrow **2**.

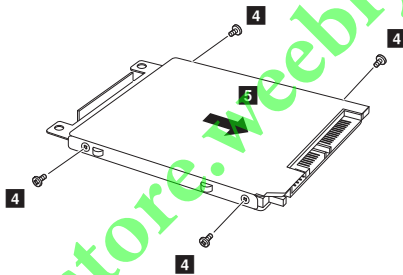


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Take out the hard disk drive secured in a metal frame **3**.



Remove four screws **4** and detach the metal frame from the hard disk drive **5**.



Step	Screw (quantity)	Color	Torque
4	M3 × 3 mm, flat-head, nylok-coated (4)	Black	2.5 kgfcm

When installing: Make sure that the HDD connector is attached firmly.

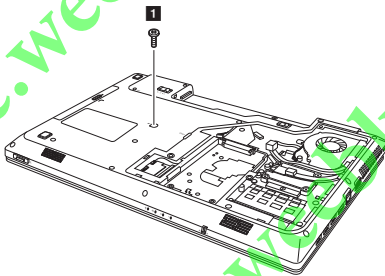
1050 Optical drive

For access, remove this FRU:

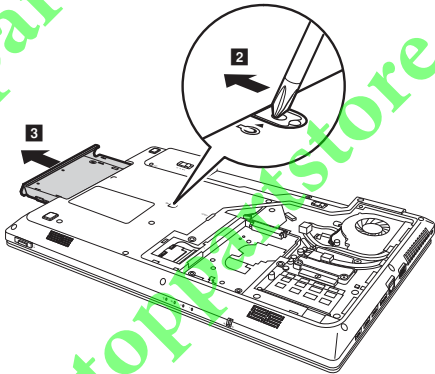
- “1010 Battery pack” on page 34

Figure 5. Removal steps of optical drive

Remove the screw **1**, insert a screwdriver into the screw hole and push the optical drive in the direction shown by arrow **2**. Pull the optical drive out in the direction shown by arrow **3**.



Step	Screw (quantity)	Color	Torque
1	M2.5 × 8 mm, flat-head, nylok-coated (1)	Black	2.0 kgfcm



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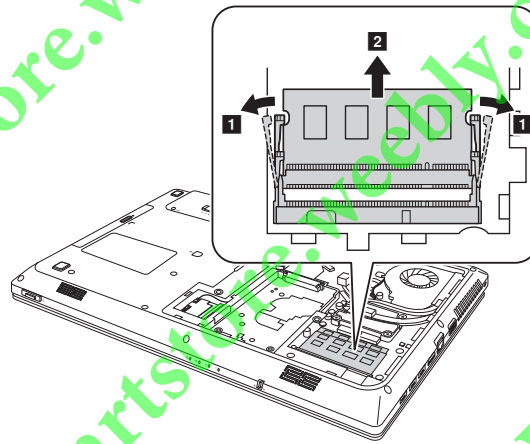
1060 DIMM

For access, remove these FRUs in order:

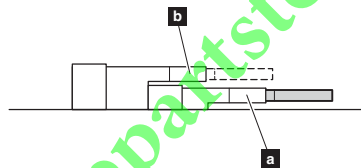
- "1010 Battery pack" on page 34
- "1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover" on page 36

Figure 6. Removal steps of DIMM

Release the two latches on both edges of the socket at the same time in the direction shown by arrows **1**, and then unplug the DIMM in the direction shown by arrow **2**.



Note: If only one DIMM is used on the computer you are servicing, the card must be installed in SLOT-0 (**a** : lower slot), but not in SLOT-1 (**b** : upper slot).

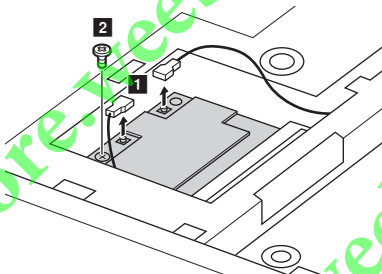


When installing: Insert the notched end of the DIMM into the socket. Push the DIMM firmly, and pivot it until it snaps into the place. Make sure that it is firmly fixed in the slot and difficult to be moved.

1070 PCI Express Mini Card for wireless LAN/WAN

- For access, remove these FRUs in order:
- “1010 Battery pack” on page 34
 - “1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover” on page 36

Figure 7. Removal steps of PCI Express Mini Card for wireless LAN/WAN



Disconnect the two wireless LAN cables (black, white) **1**, and then remove the screw **2**.

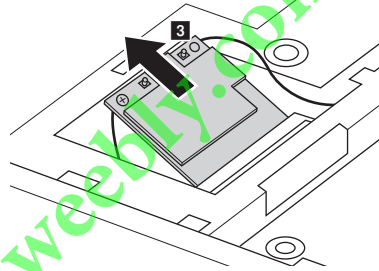
In step **1**, unplug the jacks by using the removal tool antenna RF connector (P/N: 08K7159), or pick up the connectors with your fingers and gently unplug them in the direction shown by arrows.

Notes: wireless LAN card has 2 cables in step **1**.
wireless LAN card in some models may have 3 cables in step **1**.

Step	Screw (quantity)	Color	Torque
2	M2 × 3 mm, flat-head, nylok-coated (1)	Black	1.6 kgfcm

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Figure 7. Removal steps of PCI Express Mini Card for wireless LAN/WAN (continued)
Remove the card in the direction shown by arrow **3**.



When installing:

- In models with a wireless LAN card that has two antenna connectors, plug the black cable (1st) (MAIN) into the jack labeled **1**, and the white cable (2nd) (AUX) into jack labeled **2** on the card.
- In models with a wireless LAN card that has three antenna connectors, plug the black cable (1st) (MAIN) into the jack labeled **1**, the grey cable (3rd) into jack labeled **3**, and the white cable (2nd) (AUX) into jack labeled **2** on the card.

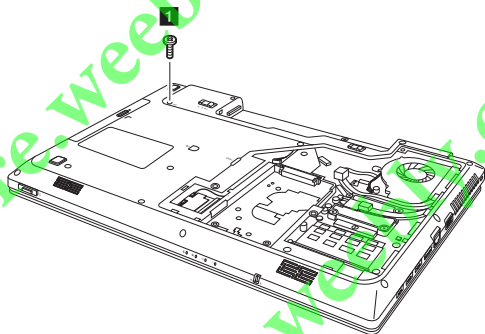
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1080 Keyboard

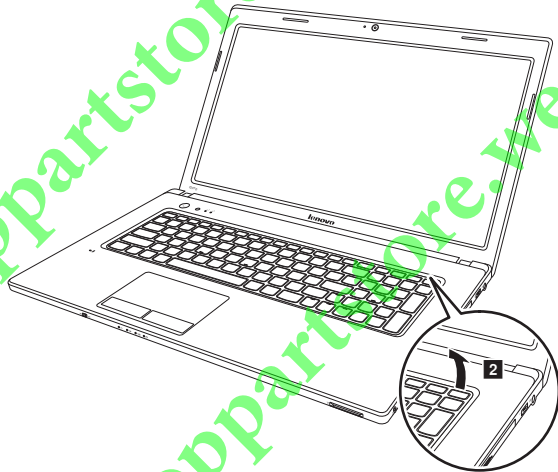
- For access, remove this FRU:
- “1010 Battery pack” on page 34

Figure 8. Removal steps of keyboard

Remove the screw **1**.



Loosen the keyboard with fingers in the direction shown by arrow **2**.

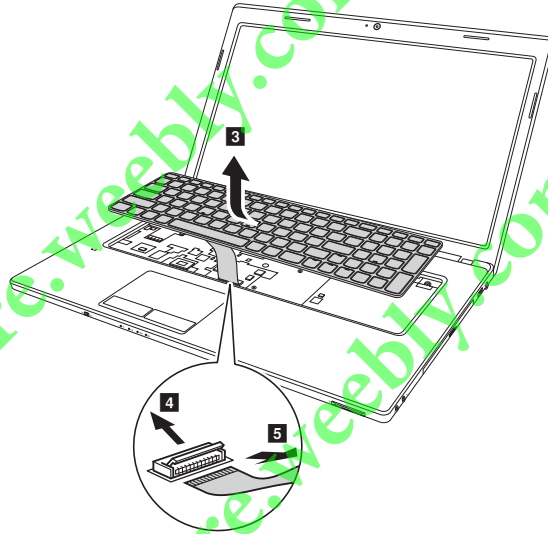


Step	Screw (quantity)	Color	Torque
1	M2.5 × 8 mm, flat-head, nylok-coated (1)	Black	2.0 kgfcm

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Figure 8. Removal steps of keyboard (continued)

Lift the keyboard a little **3**, and then detach the connector in the direction shown by arrows **4** **5**.

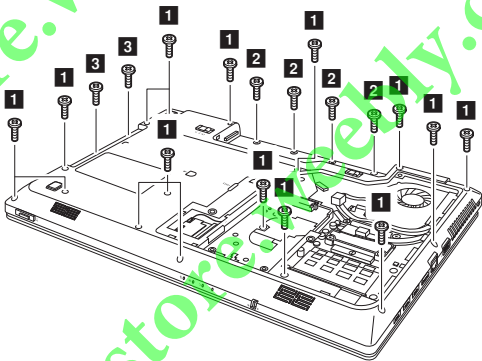


When installing: Make sure that the FPC connector is attached firmly.

1090 Keyboard bezel

- For access, remove these FRUs in order:
- “1010 Battery pack” on page 34
 - “1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover” on page 36
 - “1050 Optical drive” on page 39
 - “1080 Keyboard” on page 43

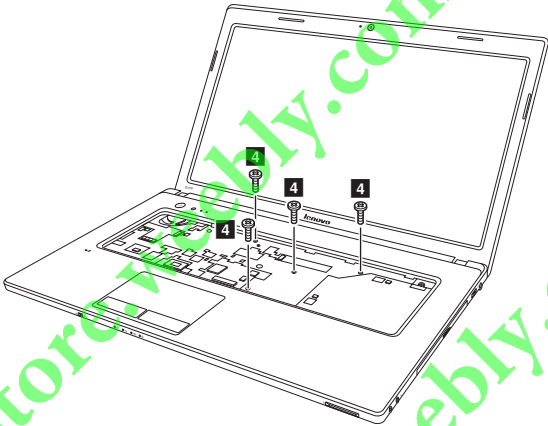
Figure 9. Removal steps of keyboard bezel
Remove sixteen screws **1**, four screws **2** and two screws **3** on the bottom.



Step	Screw (quantity)	Color	Torque
1	M2.5 × 8 mm, flat-head, nylok-coated (16)	Black	2.0 kgfcm
2	M2 × 2 mm, flat-head, nylok-coated (4)	Black	1.6 kgfcm
3	M2 × 3 mm, flat-head, nylok-coated (2)	Black	1.6 kgfcm

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Figure 9. Removal steps of keyboard bezel (continued)
Remove four screws **4**.

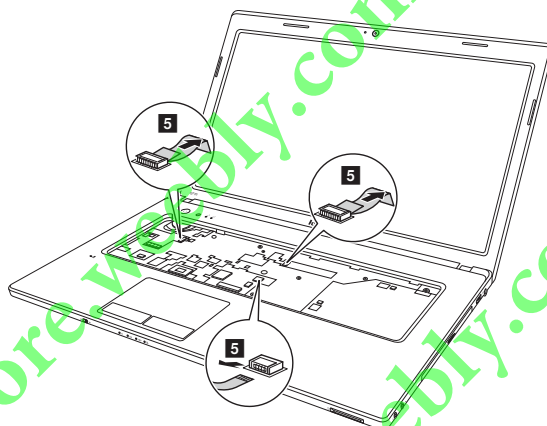


Step	Screw (quantity)	Color	Torque
4	M2.5 × 5 mm, flat-head, nylok-coated (4)	White	2.0 kgfcm

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Figure 9. Removal steps of keyboard bezel (continued)

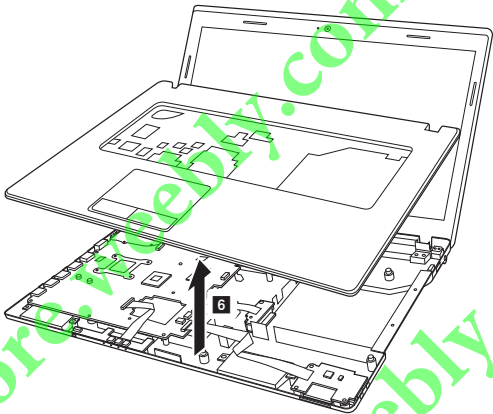
Detach three FPC connectors in the direction shown by arrows **5**.



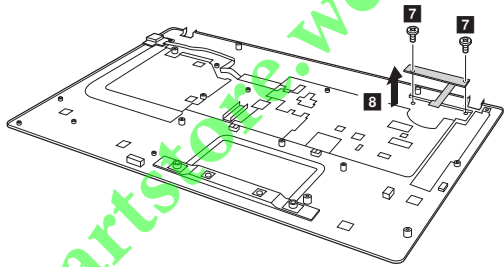
When installing: Make sure that all the FPC connectors, microphone connectors and LCD connector are attached firmly.

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Figure 9. Removal steps of keyboard bezel (continued)
Remove the keyboard bezel in the direction shown by arrow **6**.

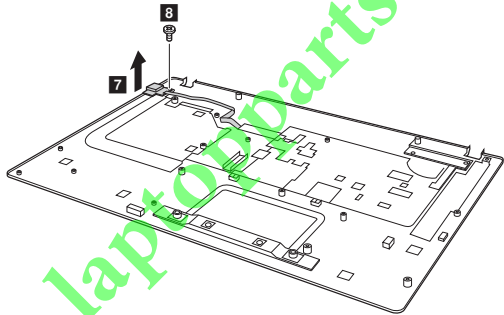


Remove two screws **7**, and then remove the power board **8**.



Step	Screw (quantity)	Color	Torque
7	M2 × 3 mm, flat-head, nylok-coated (2)	Black	1.6 kgfcm

Remove the screw **9** to lift the USB board **10**.



Step	Screw (quantity)	Color	Torque
9	M2 × 3 mm, flat-head, nylok-coated (1)	Black	1.6 kgfcm

1100 System board

Important notices for handling the system board:

When handling the system board, bear the following in mind.

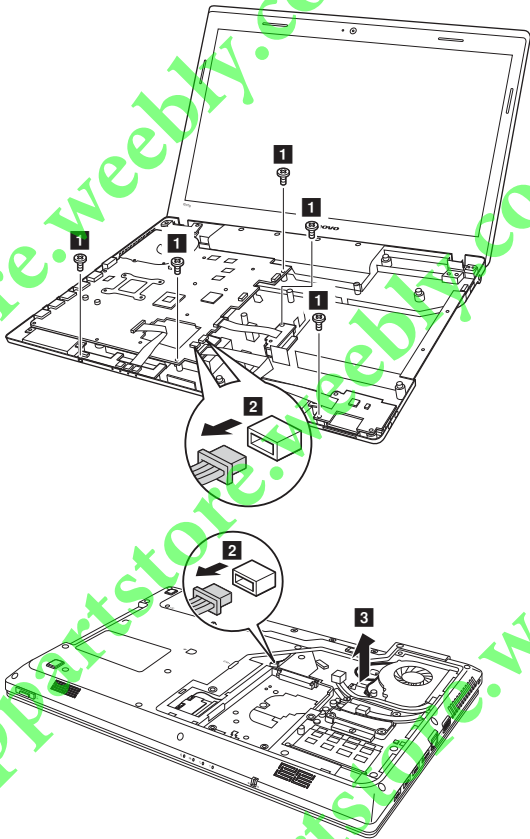
- Be careful not to drop the system board on a bench top that has a hard surface, such as metal, wood, or composite.
- Avoid rough handling of any kind.
- In the whole process, make sure not to drop or stack the system board.
- If you put a system board down, make sure to put it only on a padded surface such as an ESD mat or conductive corrugated material.

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover" on page 36
- "1040 Hard disk drive" on page 37
- "1050 Optical drive" on page 39
- "1060 DIMM" on page 40
- "1070 PCI Express Mini Card for wireless LAN/WAN" on page 41
- "1080 Keyboard" on page 43
- "1090 Keyboard bezel" on page 45

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Figure 10. Removal steps of system board
Remove five screws **1**. Unplug three microphone connectors in the direction shown by arrows **2** and the LCD connector in the direction shown by arrow **3**.



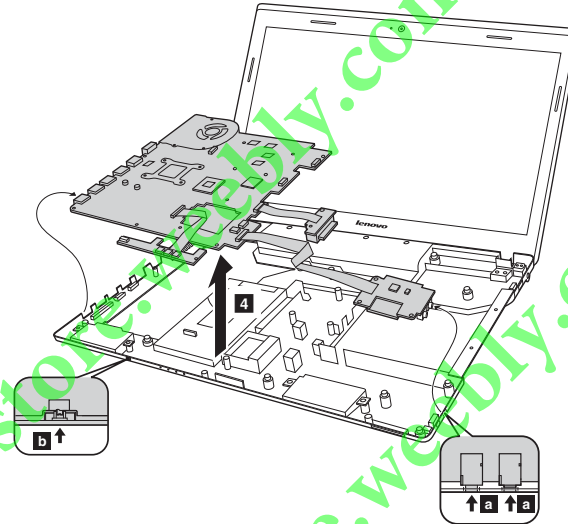
When installing: Make sure that all the connectors are attached firmly.

Step	Screw (quantity)	Color	Torque
1	M2.5 × 4 mm, flat-head, nylok-coated (5)	Black	2.0 kgfcm

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Figure 10. Removal steps of system board (continued)

Remove the system board in the direction shown by arrow **4**.



When installing: When attaching the system board to the base cover, adjust the placement of the wireless radio switch as shown in **b**, and make sure that both of the audio jack and the microphone jack are attached to the holes on the base cover as shown in **a**. Improper placement of the switch or those jacks might cause a damage.

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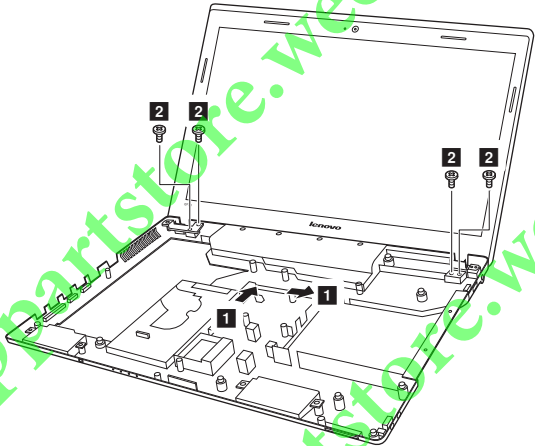
1110 LCD unit

For access, remove these FRUs in order:

- “1010 Battery pack” on page 34
- “1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover” on page 36
- “1040 Hard disk drive” on page 37
- “1050 Optical drive” on page 39
- “1060 DIMM” on page 40
- “1070 PCI Express Mini Card for wireless LAN/WAN” on page 41
- “1080 Keyboard” on page 43
- “1090 Keyboard bezel” on page 45
- “1100 System board” on page 49

Figure 11. Removal steps of LCD unit

Release the antenna cables from the cable guides in the direction shown by arrows **1**. Remove four screws **2**.



Step	Screw (quantity)	Color	Torque
2	M2.5 × 5 mm, flat-head, nylok-coated (4)	White	2.0 kgfcm

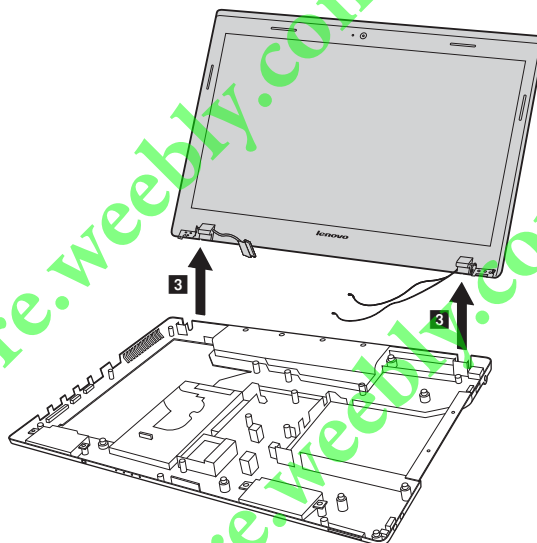
When installing:

- Route the antenna cables along the cable guides. As you route the cables, make sure that they are not subjected to any tension. Tension could cause the cables to be damaged by the cable guides, or a wire to be broken.
- Make sure that the LCD connector is attached firmly and make sure that you do not pinch the antenna cables when you attach the LCD assembly. Route the LCD cable along the cable guides.

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Figure 11. Removal steps of LCD unit (continued)

Remove the LCD unit in the direction shown by arrows **3**.



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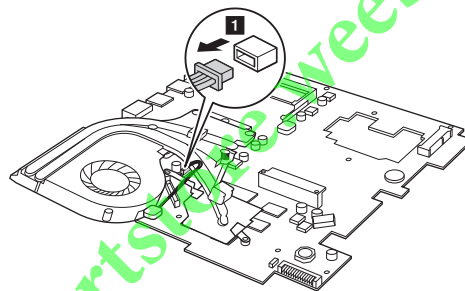
1120 Fan assembly and Heat Sink assembly

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover" on page 36
- "1040 Hard disk drive" on page 37
- "1050 Optical drive" on page 39
- "1060 DIMM" on page 40
- "1070 PCI Express Mini Card for wireless LAN/WAN" on page 41
- "1080 Keyboard" on page 43
- "1090 Keyboard bezel" on page 45
- "1100 System board" on page 49

Figure 12. Removal steps of fan assembly and heat sink assembly

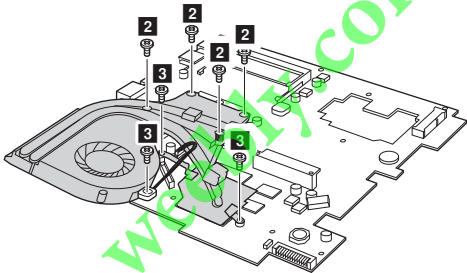
Detach the fan connector in the direction shown by arrow **1**.



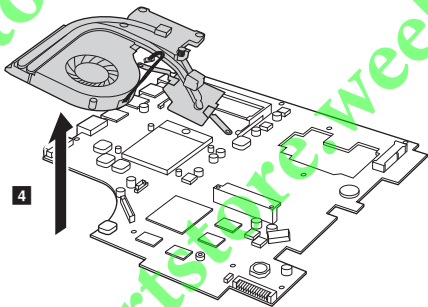
When installing: Make sure that the fan connector is attached firmly to the system board.

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Figure 12. Removal steps of fan assembly and heat sink assembly (continued)
Remove four screws **2** and three screws **3**.



Lift the fan assembly and heat sink assembly in the direction shown by arrow **4**. Be careful not to damage the connector.



Step	Screw (quantity)	Color	Torque
2	M2 × 2 mm, flat-head, nylok-coated (4)	Black	1.6 kgfcm
3	M2.5 × 4 mm, flat-head, nylok-coated (3)	Black	2.0 kgfcm

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1130 CPU

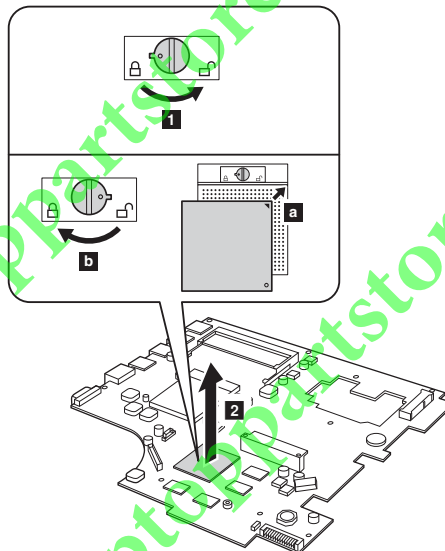
For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover" on page 36
- "1040 Hard disk drive" on page 37
- "1050 Optical drive" on page 39
- "1060 DIMM" on page 40
- "1070 PCI Express Mini Card for wireless LAN/WAN" on page 41
- "1080 Keyboard" on page 43
- "1090 Keyboard bezel" on page 45
- "1100 System board" on page 49
- "1120 Fan assembly and Heat Sink assembly" on page 54

Attention: CPU is extremely sensitive. When you service the CPU, avoid any kind of rough handling.

Figure 13. Removal steps of CPU

Rotate the head of the screw in the direction shown by arrow **1** to release the lock, then remove the CPU in the direction shown by arrow **2**.



When installing: Place the CPU on the CPU socket in the direction shown by arrow **a**, and then rotate the head of the screw in the direction shown by arrow **b** to secure the CPU.

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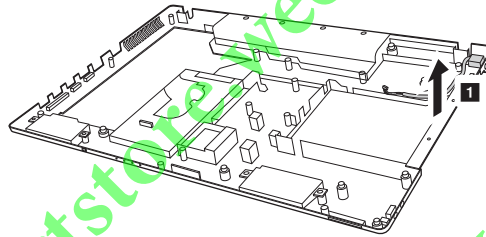
1140 Base cover, speakers, bluetooth card and power assembly

For access, remove these FRUs in order:

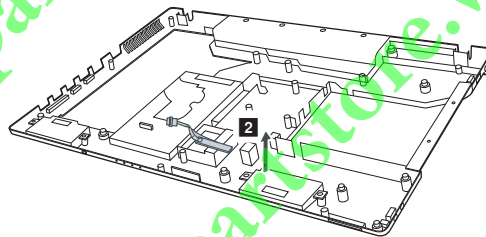
- "1010 Battery pack" on page 34
- "1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover" on page 36
- "1040 Hard disk drive" on page 37
- "1050 Optical drive" on page 39
- "1060 DIMM" on page 40
- "1070 PCI Express Mini Card for wireless LAN/WAN" on page 41
- "1080 Keyboard" on page 43
- "1090 Keyboard bezel" on page 45
- "1110 LCD unit" on page 52
- "1100 System board" on page 49

Figure 14. Removal steps of base cover, speakers, bluetooth card and power assembly

Lift the power assembly in the direction shown by arrow **1**.

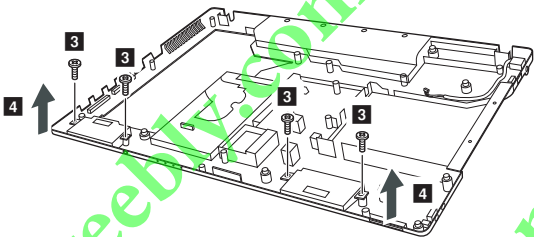


Remove the bluetooth card in the direction shown by arrow **2**.



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Remove four screws **3**, and then remove the speakers in the direction shown by arrows **4**.



Step	Screw (quantity)	Color	Torque
4	M2.5 × 2 mm, flat-head, nylok-coated (4)	Black	2.0 kgfcm

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Note: Applying labels to the base cover

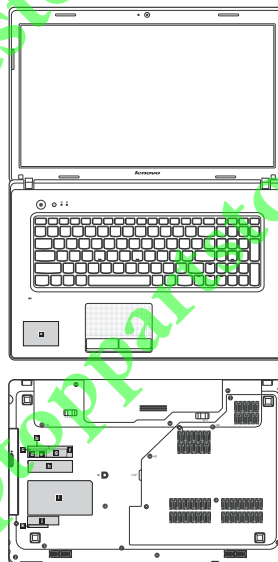
The new base cover FRU is shipped with a kit containing labels of several kinds. When you replace the base cover, you need to apply the following label:

The following labels need to be peeled off from the old base cover, and need to be put on the new base cover.

- a** Palm-rest Label
- b** Brazil Label (BT)
- c** Indonesia(BT) or BT Label for US/CA/TW
- d** Malaysia SIRIM BT Label
- e** Malaysia SIRIM WLAN Label
- f** Brazil Label (WLAN) or Israel LBL for WLAN
- g** WLAN Label for US/CA/TW or Indonesia WLAN or WLAN Label for US/TW
- h** COA Label
- i** Rating Label
- j** PRC/MTM CODE
- k** INDONESIA D-SIDE LABEL

For some models, you also need to apply one or two FCC labels. Check the old base cover; if it has one or two FCC labels, find duplicates of them in the label kit and apply them to the new base cover.

For the location of each label, refer to the following figure:

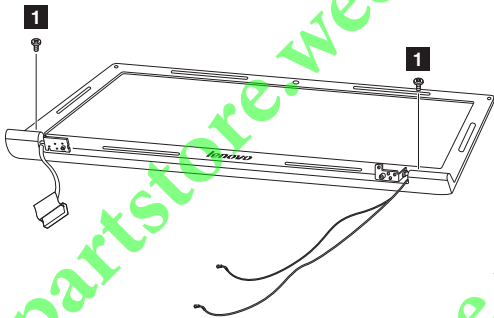


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1150 LCD front bezel

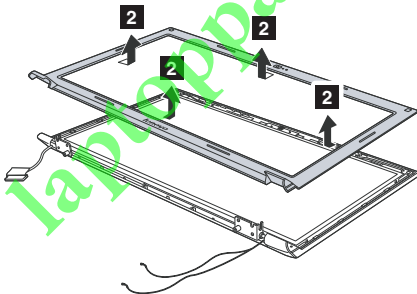
- For access, remove these FRUs in order:
- “1010 Battery pack” on page 34
 - “1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover” on page 36
 - “1040 Hard disk drive” on page 37
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 - “1070 PCI Express Mini Card for wireless LAN/WAN” on page 41
 - “1080 Keyboard” on page 43
 - “1090 Keyboard bezel” on page 45
 - “1100 System board” on page 49
 - “1110 LCD unit” on page 52

Figure 15. Removal steps of LCD front bezel
Remove two screws **1**.



Step	Screw (quantity)	Color	Torque
1	M2.5 × 5 mm, flat-head, nylok-coated (2)	White	2.0 kgfcm

Remove the LCD front bezel in the direction shown by arrows **2**.

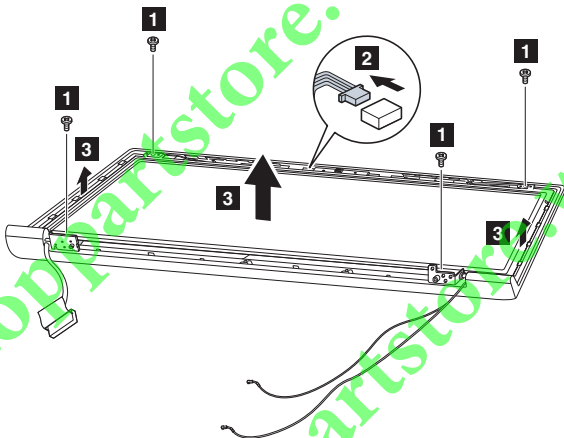


1160 LCD panel, LCD cable and hinges

- For access, remove these FRUs in order:
- “1010 Battery pack” on page 34
 - “1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover” on page 36
 - “1040 Hard disk drive” on page 37
 - “1050 Optical drive” on page 39
 - “1060 DIMM” on page 40
 - “1070 PCI Express Mini Card for wireless LAN/WAN” on page 41
 - “1080 Keyboard” on page 43
 - “1090 Keyboard bezel” on page 45
 - “1100 System board” on page 49
 - “1110 LCD unit” on page 52
 - “1150 LCD front bezel” on page 60

Figure 16. Removal steps of LCD panel, LCD cable and hinges

Remove four screws **1**. Unplug the integrated camera connector in the direction shown by arrow **2**. Lift the LCD panel in the direction shown by arrows **3**.

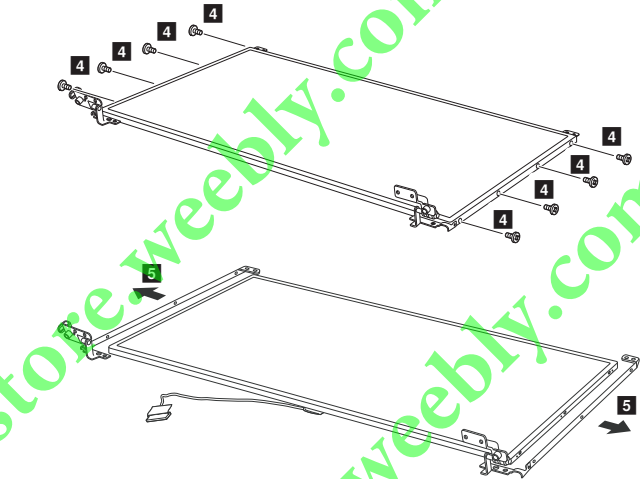


When installing: Make sure that the connector is attached firmly.

Step	Screw (quantity)	Color	Torque
1	M2.5 × 4 mm, flat-head, nylok-coated (4)	Black	2.0 kgfcm

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Figure 16. Removal steps of LCD panel, LCD cable and hinges (continued)
Remove eight screws **4** and the hinges in the direction shown by arrows **5**.



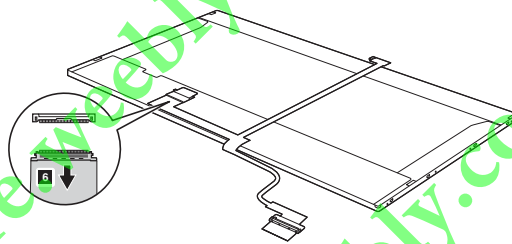
Step	Screw (quantity)	Color	Torque
4	M2 × 3 mm, flat-head, nylokcoated (8)	Black	1.6 kgfcm

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Figure 16. Removal steps of LCD panel, LCD cable and hinges (continued)

Note: The LCD cables are attached to the LCD panel by a metal connector.

Peel off the adhesive tape and detach the connector in the direction shown by arrow **6**.



When installing: Make sure that the metal connector is attached firmly.

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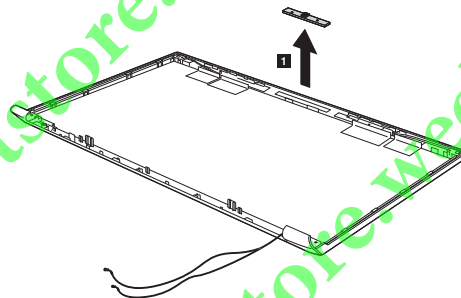
1170 Integrated camera

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover" on page 36
- "1040 Hard disk drive" on page 37
- "1050 Optical drive" on page 39
- "1060 DIMM" on page 40
- "1070 PCI Express Mini Card for wireless LAN/WAN" on page 41
- "1080 Keyboard" on page 43
- "1090 Keyboard bezel" on page 45
- "1100 System board" on page 49
- "1110 LCD unit" on page 52
- "1150 LCD front bezel" on page 60
- "1160 LCD panel, LCD cable and hinges" on page 61

Figure 17. Removal steps of integrated camera

Note: The integrated camera is stuck on the top center of the LCD cover. Remove the integrated camera from the LCD cover **1**.



When installing: Stick the integrated camera to the top center of the LCD cover and adjust the placement of it to make sure the connector is attached firmly.

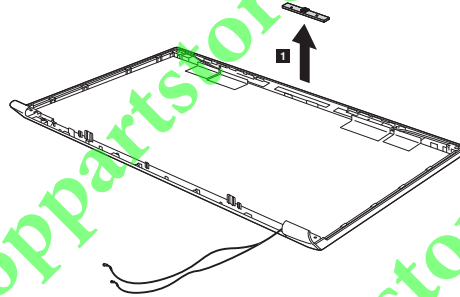
1180 Antenna assembly and LCD cover

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1030 Hard disk drive(HDD)/Memory/Mini PCI Express Card slot compartment cover" on page 36
- "1040 Hard disk drive" on page 37
- "1050 Optical drive" on page 39
- "1060 DIMM" on page 40
- "1070 PCI Express Mini Card for wireless LAN/WAN" on page 41
- "1080 Keyboard" on page 43
- "1090 Keyboard bezel" on page 45
- "1100 System board" on page 49
- "1110 LCD unit" on page 52
- "1150 LCD front bezel" on page 60
- "1160 LCD panel, LCD cable and hinges" on page 61

Figure 18. Removal steps of antenna assembly and LCD cover

Peel off the adhesive tapes securing the antenna boards, release the cables from the cable guide, and then remove the antenna assembly in the direction shown by arrows **1**.



When installing: Route the antenna cables along the cable guides and secure the antenna boards with adhesive tapes. As you route the cables, make sure that they are not subjected to any tension. Tension could cause the cables to be damaged by the cable guides, or a wire to be broken.