

## Removing and replacing a FRU

This chapter presents directions and drawings for use in removing and replacing a FRU. Be sure to observe the following general rules:

1. Do not try 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 79.
3. Begin by removing any FRUs that have to be removed before the failing FRU. Any 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 for removing the FRU, as given in the drawings by the numbers in square callouts.
5. When turning a screw to replace a FRU, turn it in the direction as given by the arrow in the drawing.
6. When removing the FRU, move it in the direction as given by the arrow in the drawing.
7. To put the new FRU in place, reverse the removal procedure and follow any notes that pertain to replacement. For information about connecting and arranging internal cables, see “Locations” on page 161.
8. When replacing a 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 interconnecting cables.

**Attention:** After replacing a 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 by using an electrostatic discharge (ESD) strap (P/N 6405959).

## Before servicing ThinkPad X200, X200s, X200si, X201, X201i, and X201s

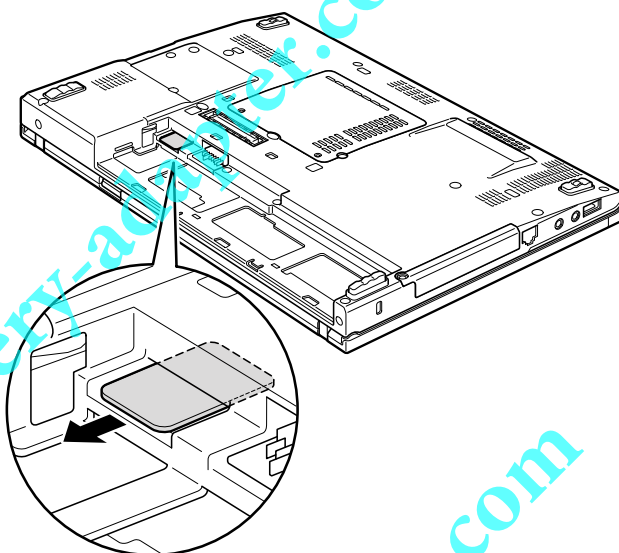
### Removing the SIM card:

Some models of the ThinkPad X200, X200s, X200si, X201, X201i, and X201s you are servicing might have the SIM card that the customer has been installed.

If the computer you are servicing has the SIM card, remove it before you start the servicing.

To remove the SIM card, you need to remove the battery pack first. (See "1010 Battery pack" on page 85.)

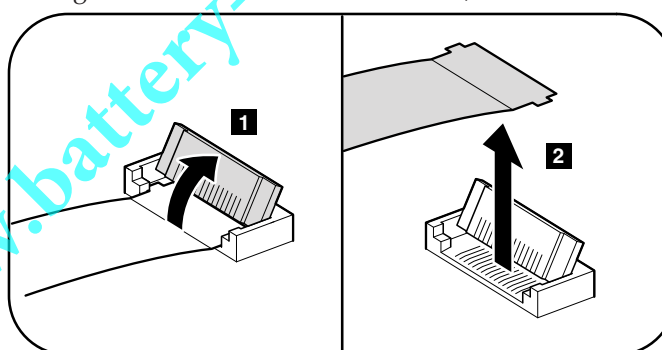
After you finish the servicing, make sure that you insert the card back into the slot firmly.



### Notice on disconnecting the cable from flip-lock ZIF connector:

Some cables used in the ThinkPad X200, X200s, X200si, X201, X201i, and X201s are connected to the flip-lock ZIF connectors.

When disconnecting the cable from those connectors, do as shown in this figure.



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## 1010 Battery pack

**Important notice for replacing a battery pack:**

Lenovo ThinkVantage Toolbox (in Windows 7) and Lenovo System Toolbox (in Windows Vista and Windows XP) have an automatic battery diagnostic that determines if the battery pack is defective. A battery pack FRU should not be replaced unless this diagnostic shows that the battery is defective.

The only exception to this is if the battery pack is physically damaged or a customer is reporting a possible safety issue.

If ThinkVantage Toolbox or Lenovo System Toolbox is not installed in the computer, the customer should download this program before a non-physically damaged battery pack is replaced. Note that a physically damaged battery pack is non-warranty replacement.

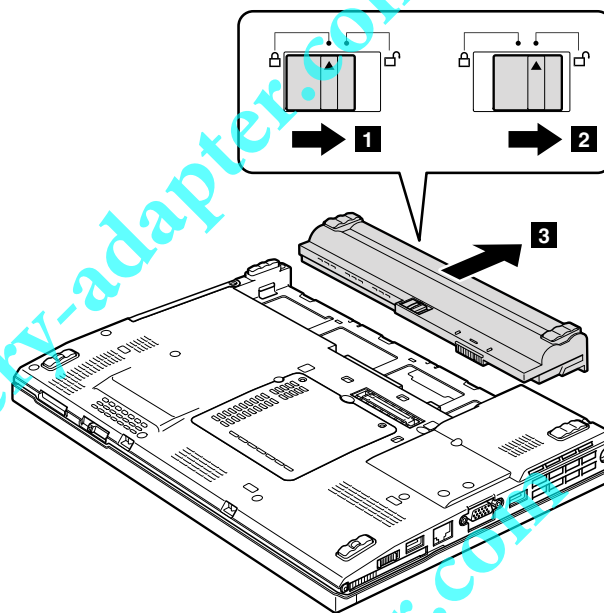
Table 9. Removal steps of battery pack



**DANGER**

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

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.

## 1020 Hard disk drive (HDD) cover, HDD, and HDD rubber rails or solid state drive (SSD) and storage converter

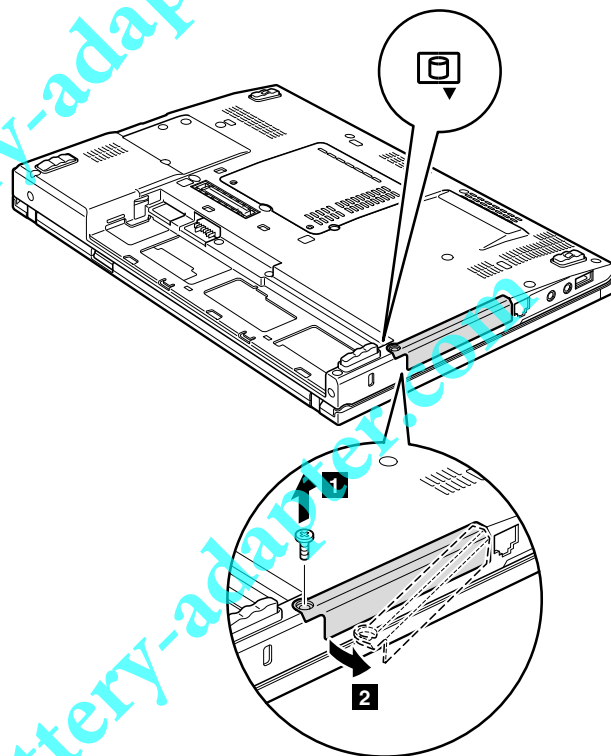
For access, remove this FRU:

- "1010 Battery pack" on page 85

### Attention:

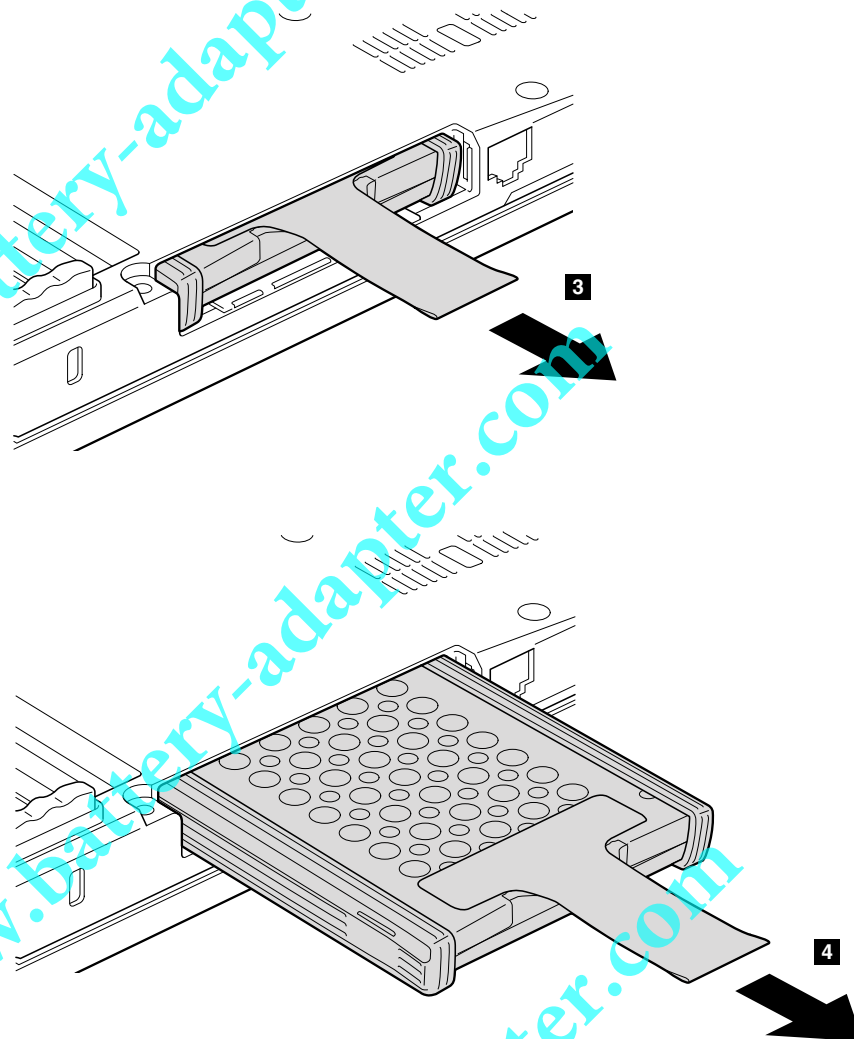
- Do not drop the hard disk drive or apply any physical shock to it. The hard disk drive is sensitive to physical shock. Improper handling can cause damage and permanent loss of data.
- Before removing the drive, have the user make a backup copy of all the information on it if possible.
- Never remove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

Table 10. Removal steps of HDD cover, HDD, and HDD drive rubber rails or SSD and storage converter



Step	Screw (quantity)	Color	Torque
1	Hard disk drive screw, M3 × 3 mm, wafer-head, nylon-coated (1)	Black	0.392 Nm (4 kgfcm)

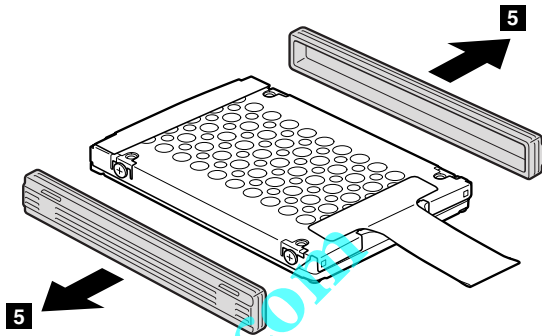
Table 10. Removal steps of HDD cover, HDD, and HDD drive rubber rails or SSD and storage converter (continued)



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

Table 10. Removal steps of HDD cover, HDD, and HDD drive rubber rails or SSD and storage converter (continued)

HDD and HDD rubber rails:



**When installing:** The rubber rails on the hard disk drive must be attached to the replacement drive. Otherwise the drive cannot be installed properly.

SSD and storage converter:

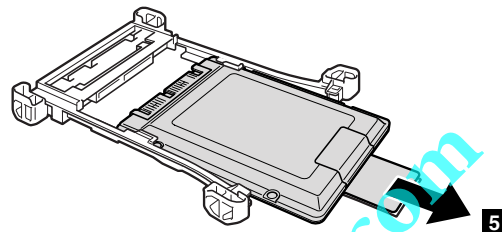
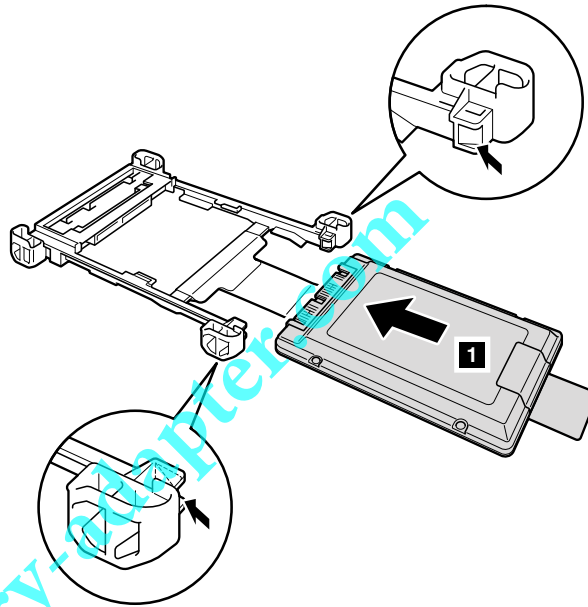


Table 10. Removal steps of HDD cover, HDD, and HDD drive rubber rails or SSD and storage converter (continued)

**When installing:** When you install the SSD in the storage converter, do as follows.





## 1030 DIMM

For access, remove this FRU in order:

- “1010 Battery pack” on page 85

Table 11. Removal steps of dimm

Remove the DIMM slot cover as shown in this figure.

**Note:** Loosen the screws **1**, but do not remove them.

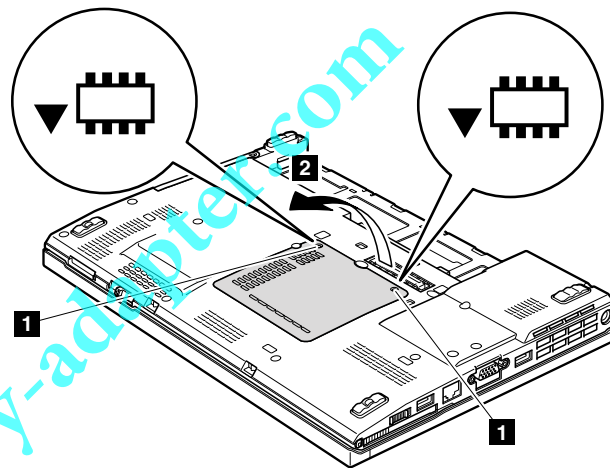


Table 11. Removal steps of dimm (continued)

**Note:** For ThinkPad X200, X200s, and X200si, if only one DIMM is used on the computer you are servicing, the card must be installed in SLOT-0 ( **a** ), but not in SLOT-1 ( **b** ).

For ThinkPad X200, X200s, and X200si:

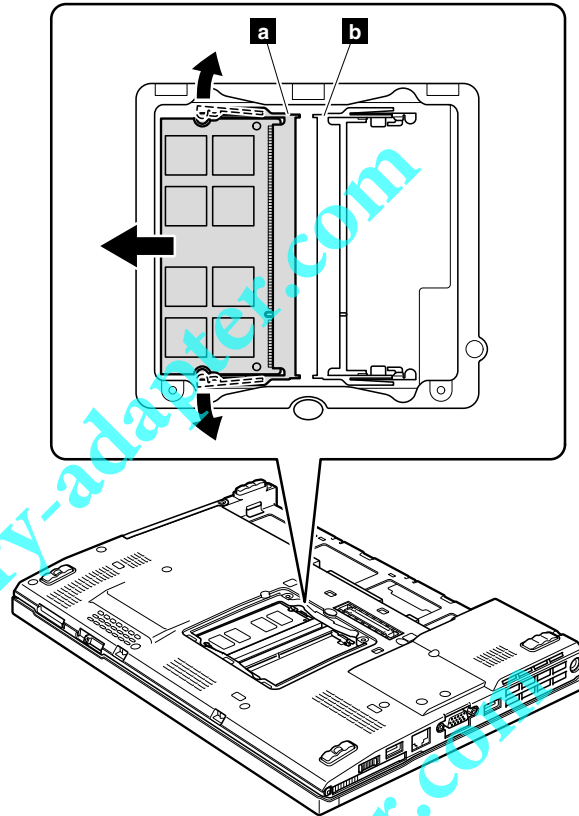
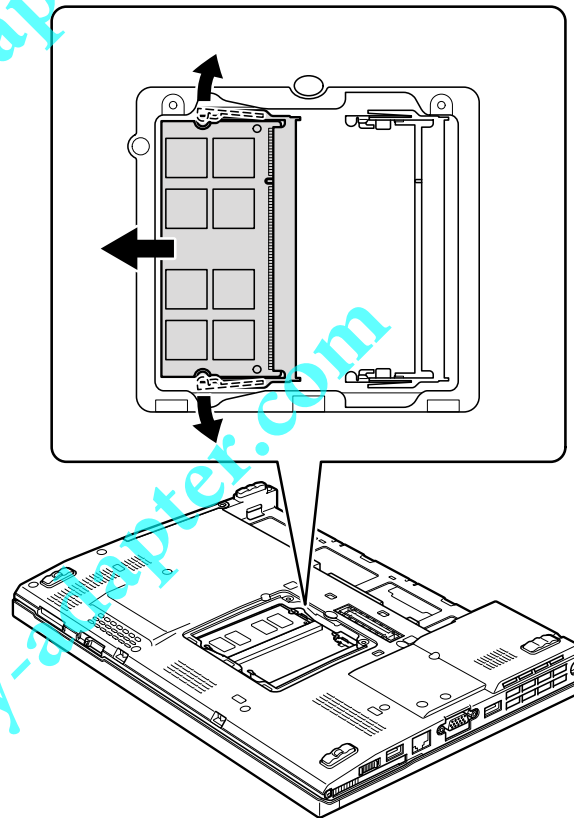


Table 11. Removal steps of dimm (continued)

For ThinkPad X201, X201i, and X201s:



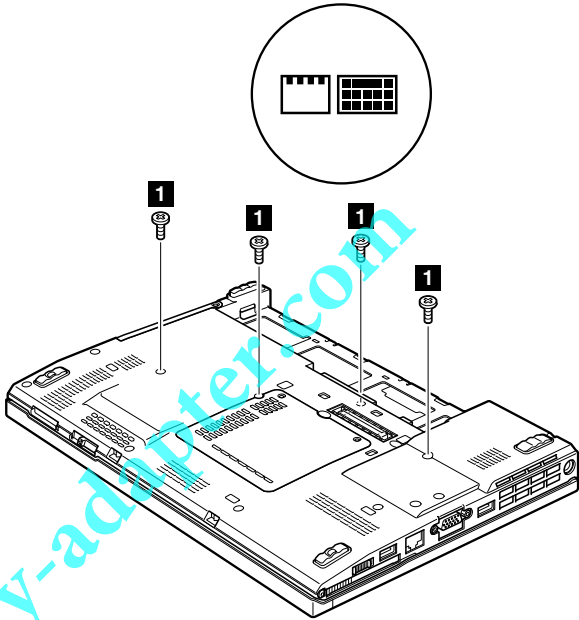
**When installing:** Insert the notched end of the DIMM into the socket. Press the DIMM firmly, and pivot it until it snaps into the place. Make sure that it is firmly fixed in the slot and does not move easily.

1040 Keyboard

For access, remove this FRU in order:

- “1010 Battery pack” on page 85

Table 12. Removal steps of keyboard



Step	Icon	Screw (quantity)	Color	Torque
1		M2 × 5 mm, wafer-head, nylon-coated (4)	Black	0.181 Nm (1.85 kgfcm)

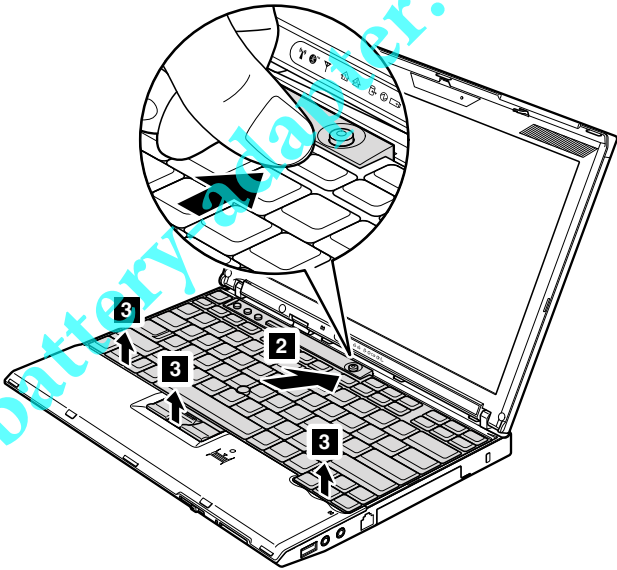


Table 12. Removal steps of keyboard (continued)

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

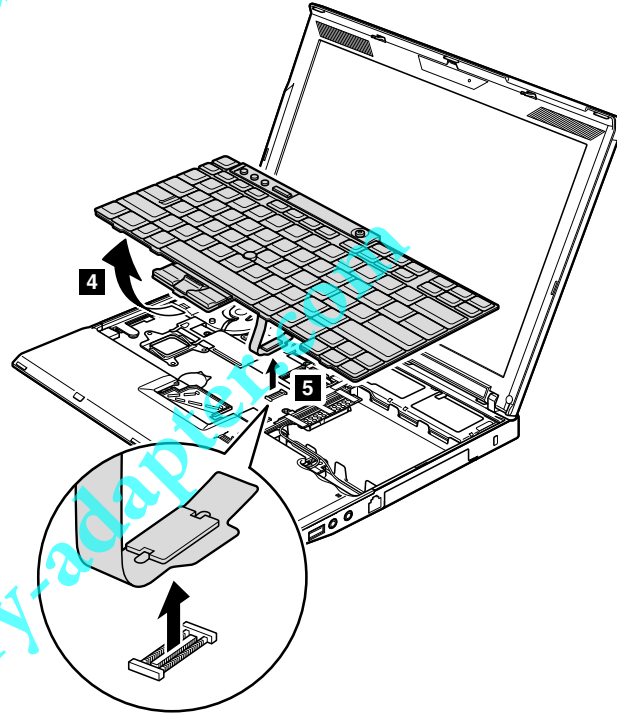
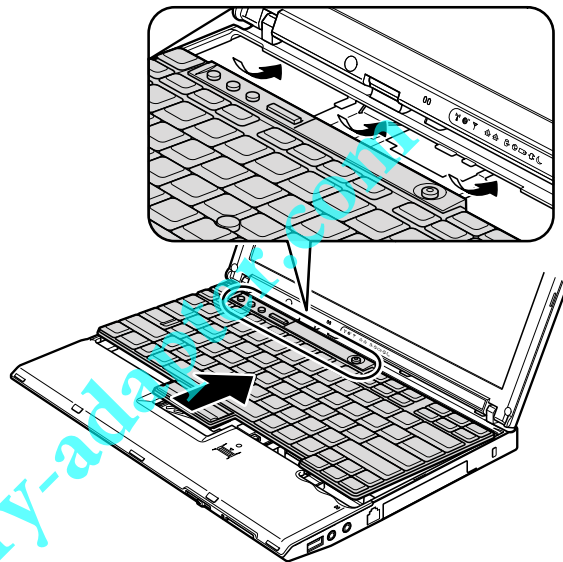


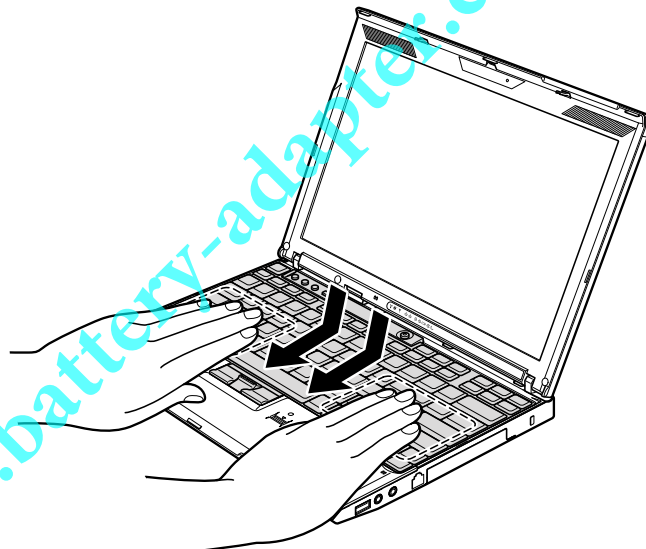
Table 12. Removal steps of keyboard (continued)

**When installing:**

1. Attach the keyboard connector firmly.
2. Make sure that the keyboard edges are under the frame as shown in this figure. Then press the keys to latch the keyboard firmly in place.



3. To make sure that the front side of the keyboard is housed firmly, gently press the keys with your thumbs and try to slide the keyboard toward you.



4. Secure the keyboard by tightening the screws from the bottom side of the computer.

## 1050 Palm rest or palm rest with fingerprint reader

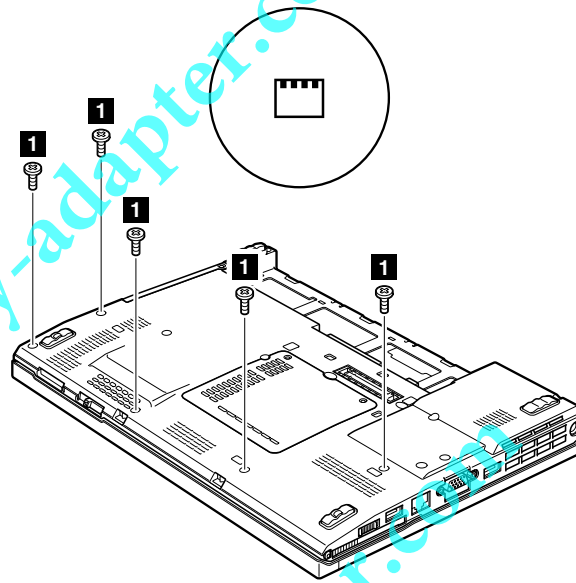
For access, remove this FRU in order:

- “1010 Battery pack” on page 85
- “1040 Keyboard” on page 94

**Note:**

In models with the fingerprint reader, the sensor is attached to the palm rest FRU. If the fingerprint reader has any defects, you can replace it by the procedures given in this section, which are the same for a palm rest with or without a fingerprint reader.

Table 13. Removal steps of palm rest




Step	Icon	Screw (quantity)	Color	Torque
<b>1</b>		M2 × 5 mm, wafer-head, nylon-coated (5)	Black	0.181 Nm (1.85 kgfcm)

Table 13. Removal steps of palm rest (continued)

**Note:** Step **2** is only for models with the fingerprint reader. For models without the fingerprint reader, skip step **2**.

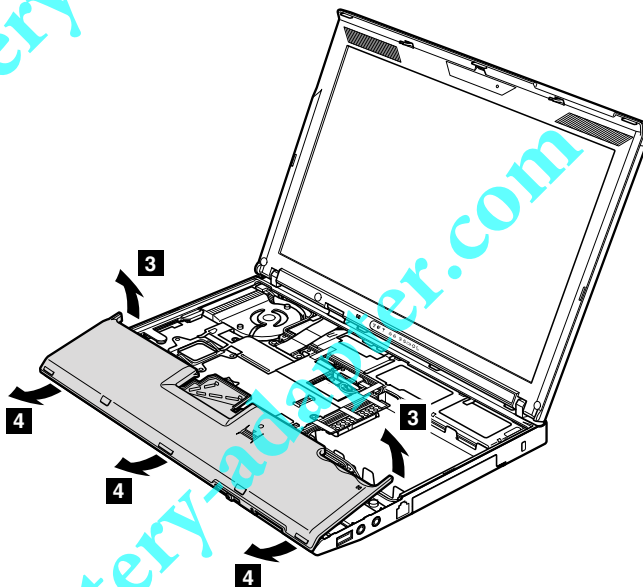
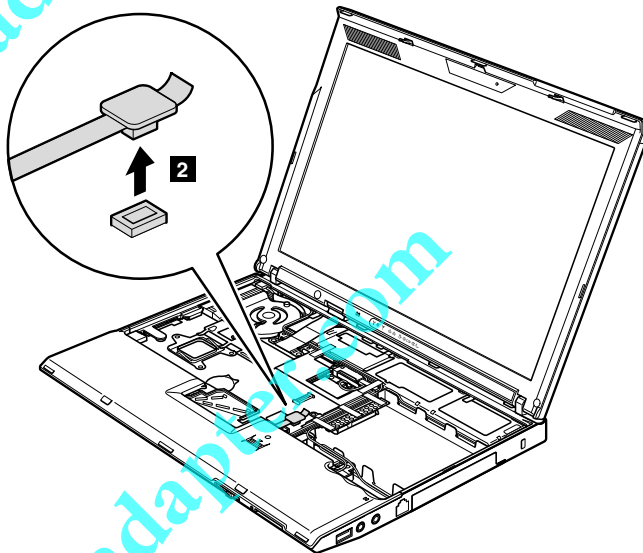
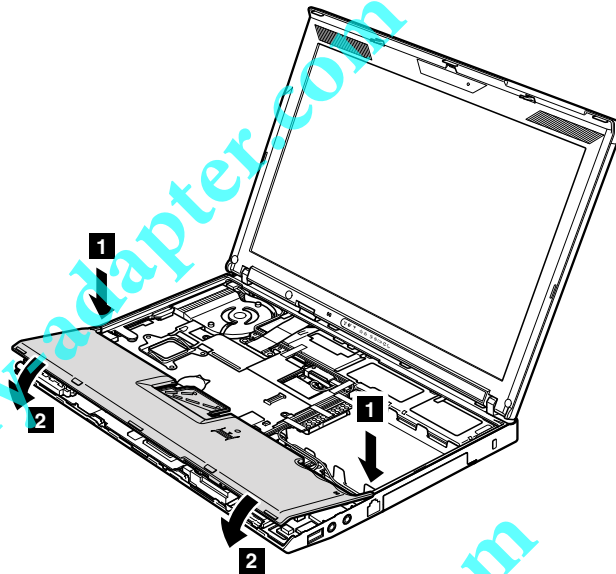




Table 13. Removal steps of palm rest (continued)

**When installing:**

1. In models with the fingerprint reader, attach the fingerprint reader connector firmly to the system board.
2. Press the left and right top edges of the palm rest to fit it into place.
3. Push the front side of the palm rest until it clicks into place.



4. Close the LCD cover and turn the computer over. Then fasten the five screws to secure the palm rest.

## 1060 Backup battery



### DANGER

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

For access, remove these FRUs in order:

- "1010 Battery pack" on page 85
- "1040 Keyboard" on page 94
- "1050 Palm rest or palm rest with fingerprint reader" on page 97

Table 14. Removal steps of backup battery

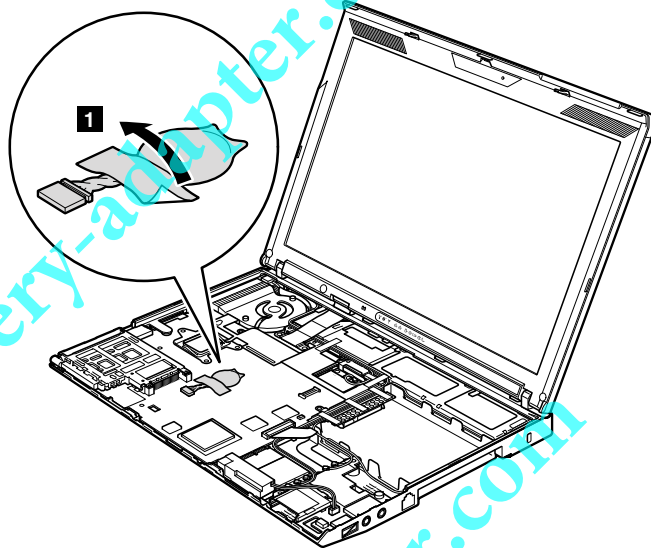
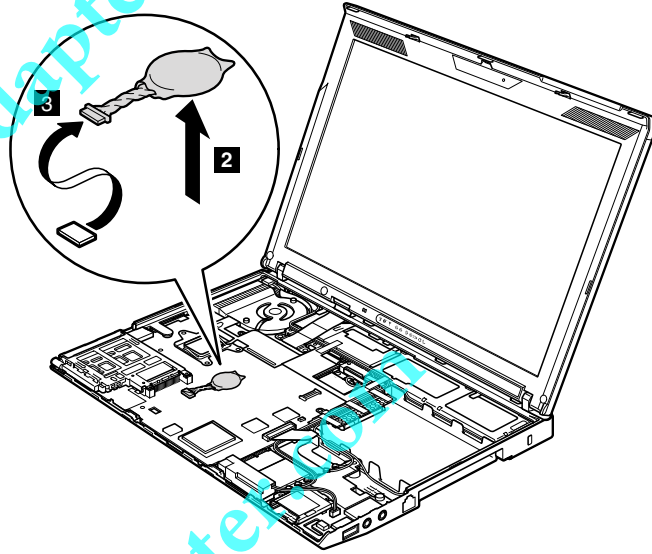


Table 14. Removal steps of backup battery (continued)



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

## 1070 PCI Express Mini Card for wireless LAN/WiMAX

For access, remove these FRUs in order:

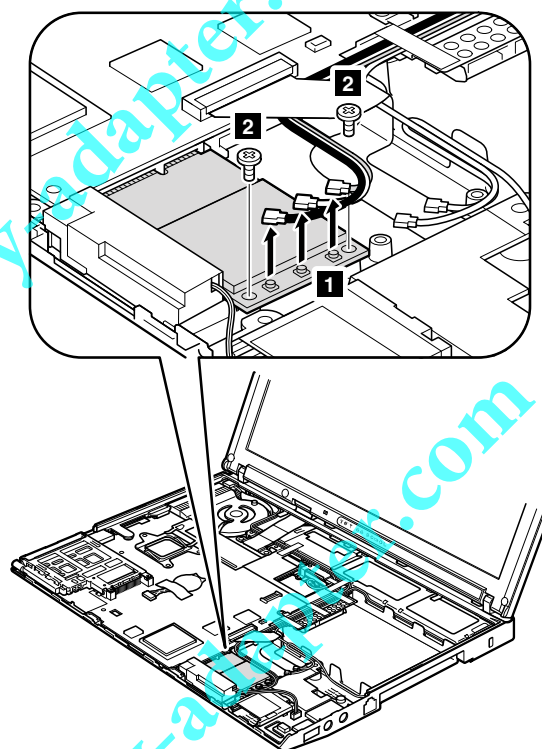
- “1010 Battery pack” on page 85
- “1040 Keyboard” on page 94
- “1050 Palm rest or palm rest with fingerprint reader” on page 97

Table 15. Removal steps of PCI Express Mini Card for wireless LAN/WiMAX

### Full size PCI Express Mini Card:

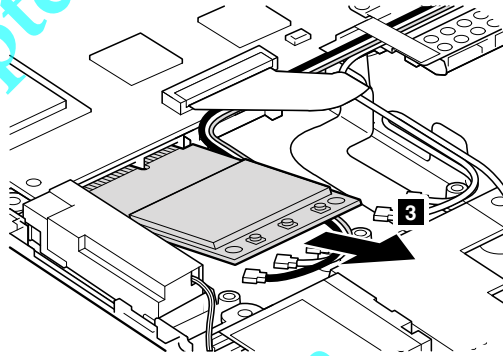
In step **1**, unplug the jacks by using the removal tool antenna RF connector (P/N: 08K7159) or pick the connectors with your fingers and gently unplug them in direction of the arrow.

**Note:** Some models might have two antenna cables in step **1**.



Step	Screw (quantity)	Color	Torque
<b>2</b>	M2 × 3 mm, wafer-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgfcm)

Table 15. Removal steps of PCI Express Mini Card for wireless LAN/WiMAX (continued)



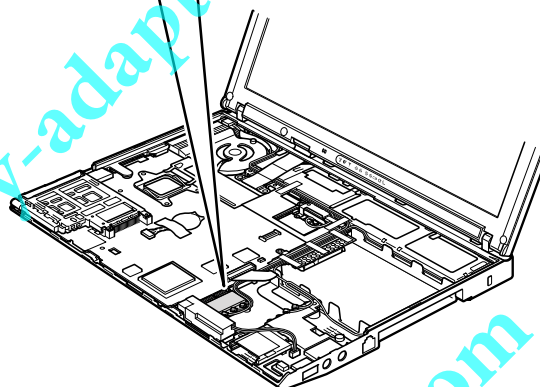
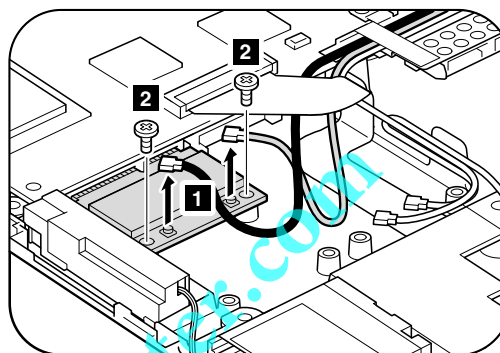
**When installing:**

- In models with wireless LAN card that has two antenna connectors, plug the gray cable into the jack labeled **MAIN** or **M** on the card, and the black cable into the jack labeled **AUX** or **A**. If the computer you are servicing has three cables, put the white cable in the cable protection tube.
- In models with wireless LAN card that has three antenna connector, plug the gray cable (MAIN) into the jack labeled **TR1**, the white cable (3rd) into jack labeled **RO** or **TR3**, and the black cable (AUX) into jack labeled **TR2** on the card.

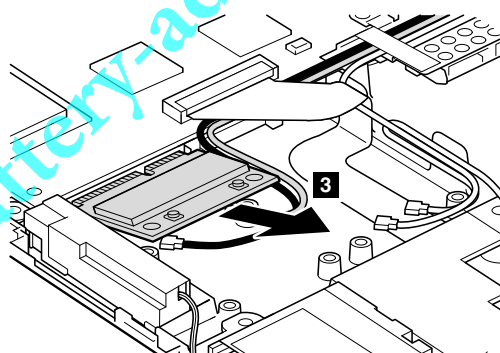
Table 15. Removal steps of PCI Express Mini Card for wireless LAN/WiMAX (continued)

**Half size PCI Express Mini Card:**

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



Step	Screw (quantity)	Color	Torque
<b>2</b>	M2 × 3 mm, wafer-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgfcm)



**When installing:** Plug the gray cable into the jack labeled **MAIN** on the card, and the black cable into the jack labeled **AUX**.

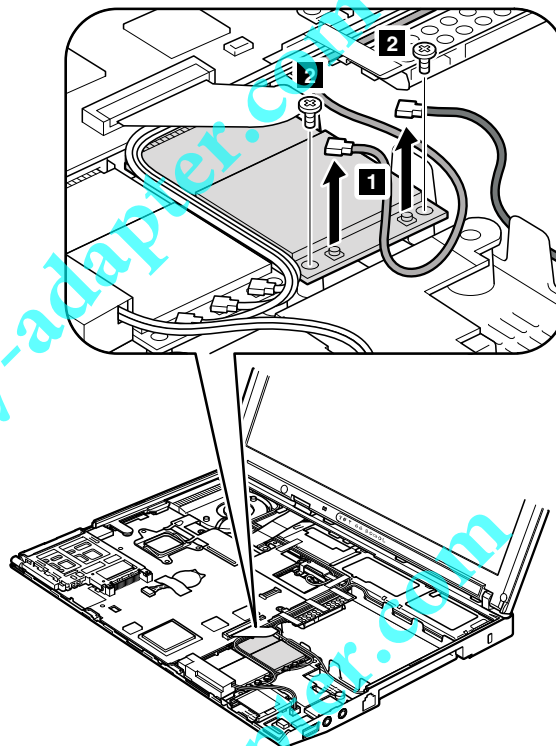
## 1080 PCI Express Mini Card for wireless WAN

For access, remove these FRUs in order:

- “1010 Battery pack” on page 85
- “1040 Keyboard” on page 94
- “1050 Palm rest or palm rest with fingerprint reader” on page 97

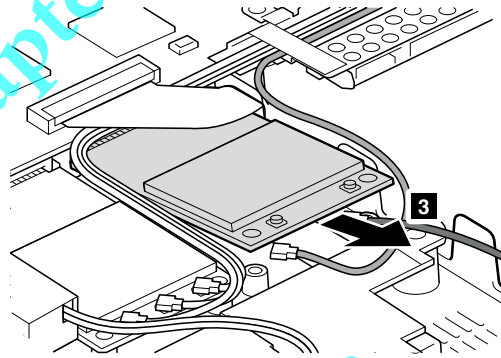
Table 16. Removal steps of PCI Express Mini Card for wireless WAN

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



Step	Screw (quantity)	Color	Torque
<b>3</b>	M2 × 3 mm, wafer-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgfcm)

Table 16. Removal steps of PCI Express Mini Card for wireless WAN (continued)



**When installing:** Plug the red cable into the jack labeled MAIN on the card, and the blue cable into the jack labeled AUX.



## 1090 Intel Turbo Memory Minicard or Wireless USB PCI Express Half-Mini Card

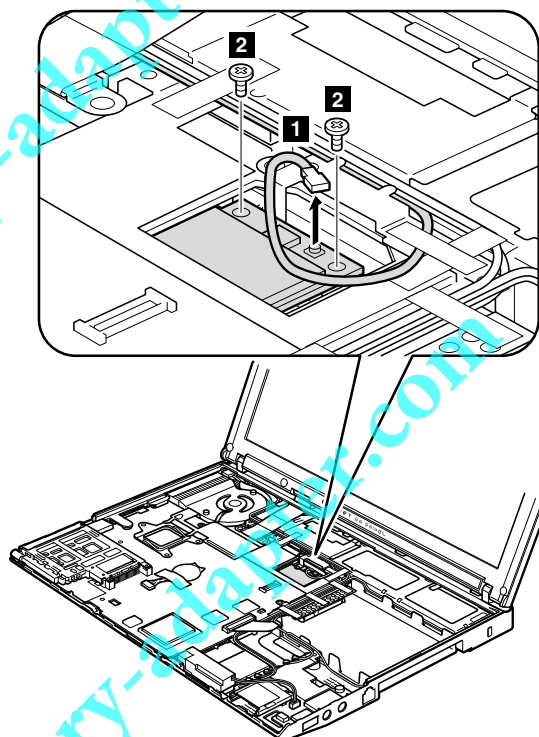
For access, remove these FRUs in order:

- “1010 Battery pack” on page 85
- “1040 Keyboard” on page 94
- “1050 Palm rest or palm rest with fingerprint reader” on page 97

Table 17. Removal steps of Intel Turbo Memory Minicard or Wireless USB PCI Express Half-Mini Card

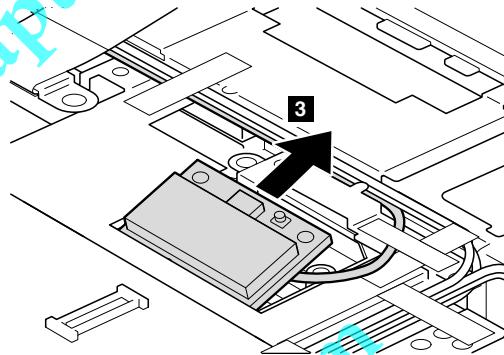
**Note:** Step **1** is only for models with the Wireless USB PCI Express Half-Mini Card. For models with the Intel® Turbo Memory Minicard, skip step **1**.

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



Step	Screw (quantity)	Color	Torque
<b>2</b>	M2 × 3 mm, wafer-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgfcm)

Table 17. Removal steps of Intel Turbo Memory Minicard or Wireless USB PCI Express Half-Mini Card (continued)



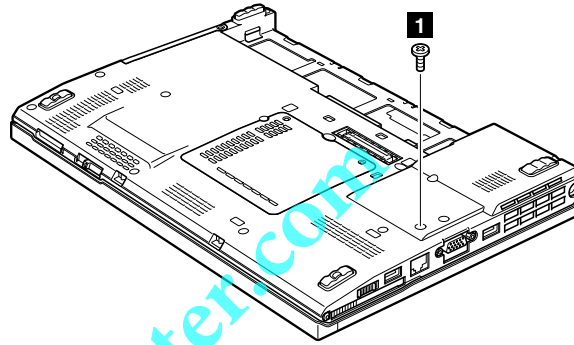
**When installing:** In models with the Wireless USB PCI Express Half-Mini Card, plug the yellow cable into the jack on the card.

## 1100 Keyboard bezel

For access, remove these FRUs in order:

- “1010 Battery pack” on page 85
- “1040 Keyboard” on page 94
- “1050 Palm rest or palm rest with fingerprint reader” on page 97

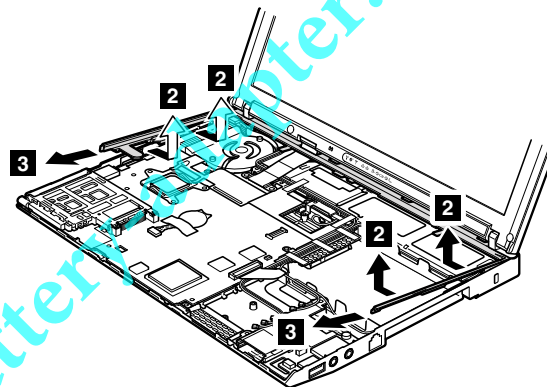
Table 18. Removal steps of keyboard bezel



Step	Screw (quantity)	Color	Torque
<b>1</b>	M2 × 5 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgfcm)

In step **2**, detach the claws. Then remove the keyboard bezel in the direction shown by arrow **3**.

**Attention:** When you service the keyboard bezel, avoid any kind of rough handling.



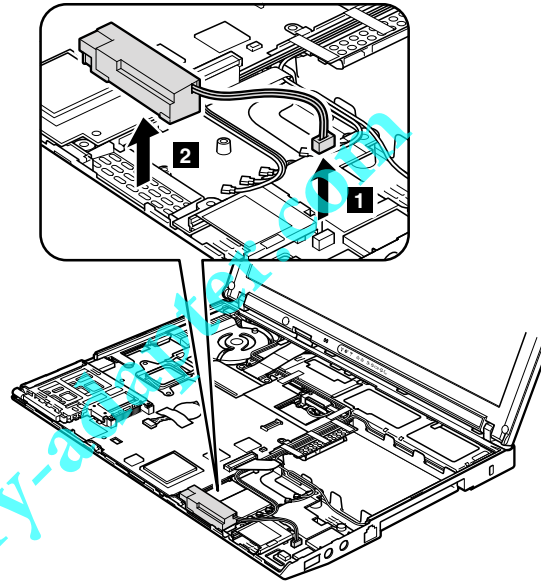
**When installing:** Make sure that all the claws are attached firmly.

## 1110 Monaural speaker assembly (for X200, X200s, X201s, and X201si)

For access, remove these FRUs in order:

- “1010 Battery pack” on page 85
- “1040 Keyboard” on page 94
- “1050 Palm rest or palm rest with fingerprint reader” on page 97

Table 19. Removal steps of monaural speaker assembly (for X200, X200s, X201s, and X201si)



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

## 1120 I/O card assembly

For access, remove these FRUs in order:

- “1010 Battery pack” on page 85
- “1040 Keyboard” on page 94
- “1050 Palm rest or palm rest with fingerprint reader” on page 97
- “1110 Monaural speaker assembly (for X200, X200s, X201s, and X201si)” on page 110

Table 20. Removal steps of I/O card assembly

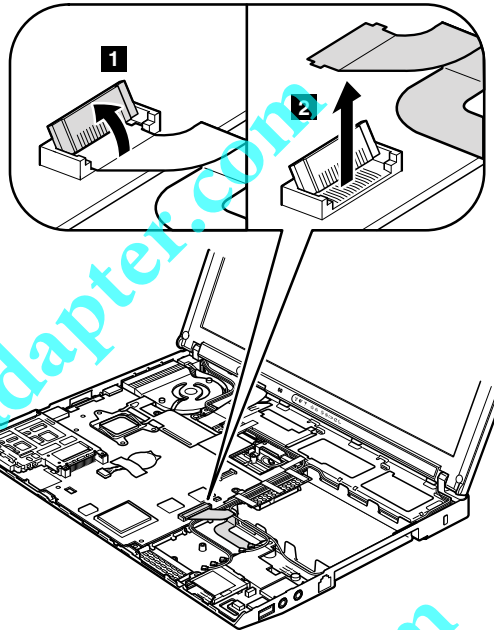
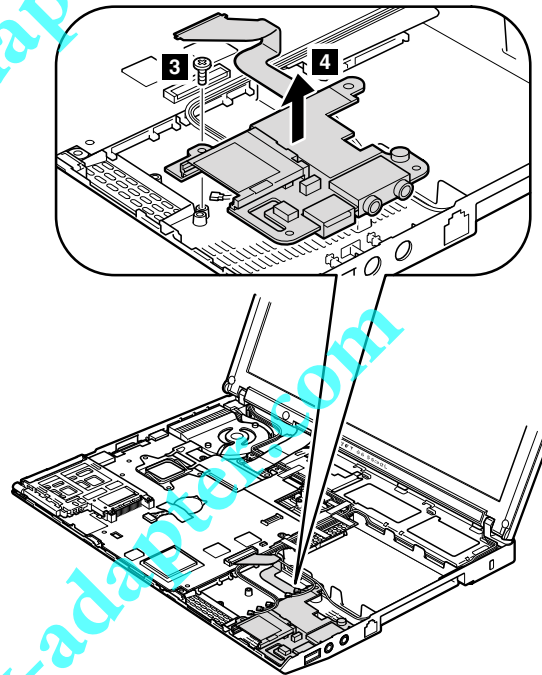


Table 20. Removal steps of I/O card assembly (continued)

**Note:** The cable is secured with a double-faced adhesive tape.

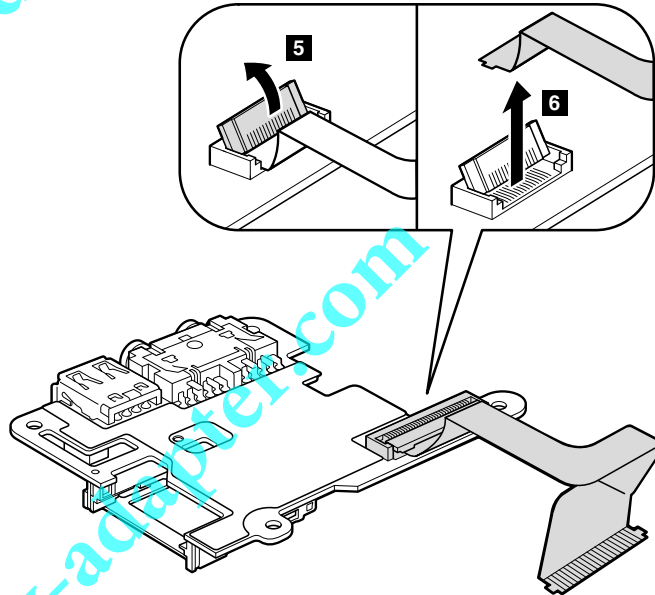


**Note:** Step **a** is only for ThinkPad X201. For the other models, skip the step **a**.

Step	Screw (quantity)	Color	Torque
<b>2</b>	M2 × 3.5 mm, wafer-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

Table 20. Removal steps of I/O card assembly (continued)

Turn the I/O card over, and then disconnect the cable from the flip-lock ZIF connector.

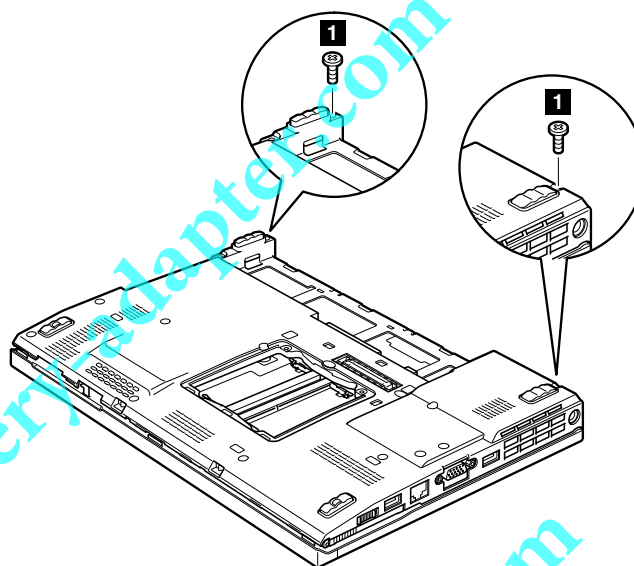


## 1130 LCD assembly

For access, remove these FRUs in order:

- "1010 Battery pack" on page 85
- "1040 Keyboard" on page 94
- "1050 Palm rest or palm rest with fingerprint reader" on page 97
- "1070 PCI Express Mini Card for wireless LAN/WiMAX" on page 102
- "1080 PCI Express Mini Card for wireless WAN" on page 105
- "1090 Intel Turbo Memory Minicard or Wireless USB PCI Express Half-Mini Card" on page 107
- "1100 Keyboard bezel" on page 109

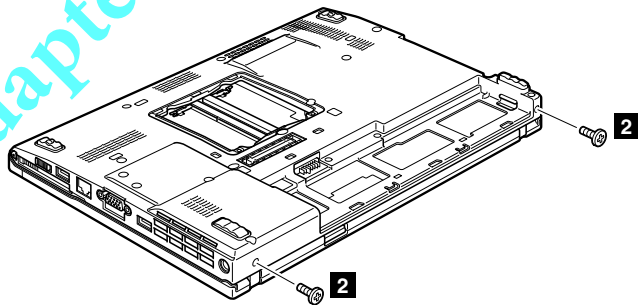
Table 21. Removal steps of LCD assembly



Step	Screw (quantity)	Color	Torque
<b>1</b>	M2 × 5 mm, wafer-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgfcm)

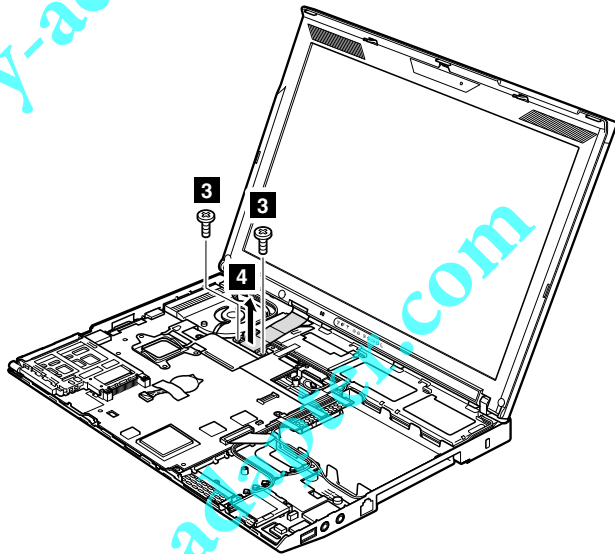


Table 21. Removal steps of LCD assembly (continued)



Step	Screw (quantity)	Color	Torque
2	M2 × 5 mm, wafer-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgfcm)

Before step 3, strip off the tapes securing the antenna cables, and release the cables from the cable guides of the frame.



Step	Screw (quantity)	Color	Torque
3	M2 × 5 mm, wafer-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgfcm)

Table 21. Removal steps of LCD assembly (continued)

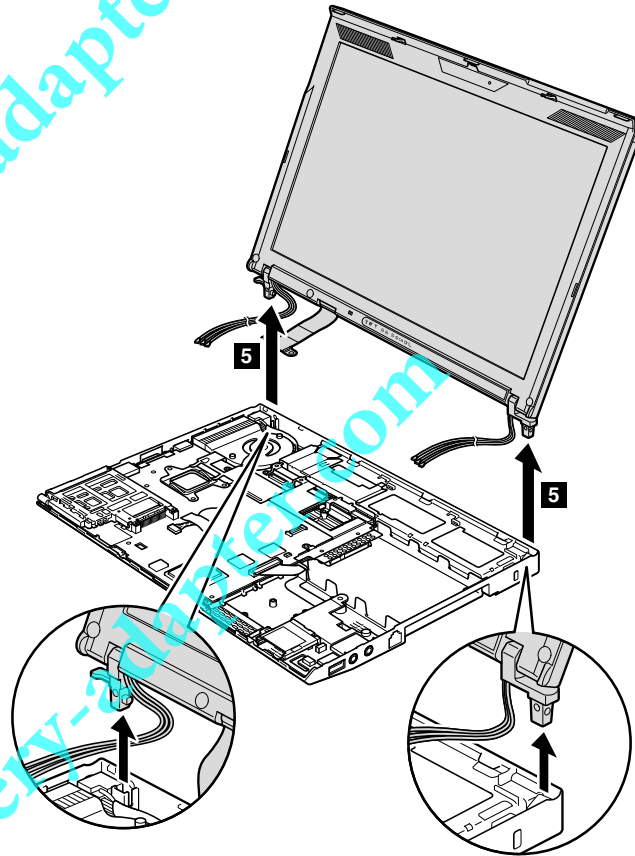
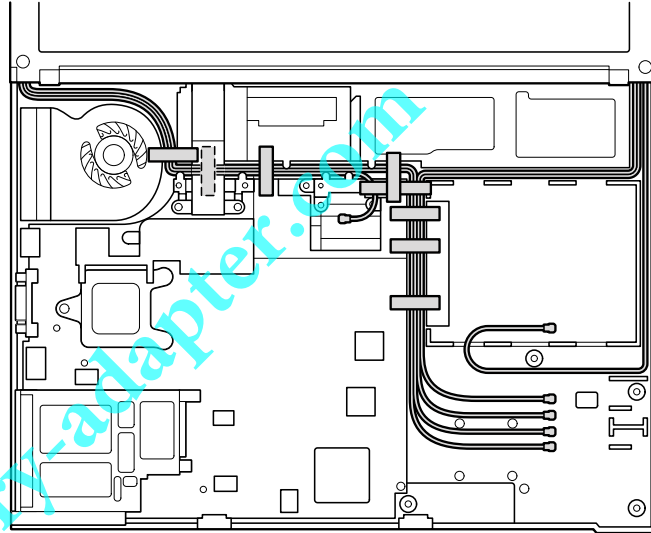


Table 21. Removal steps of LCD assembly (continued)

**When installing:**

1. Route the antenna cables along the cable guides and secure them with the 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.
2. Make sure that the LCD connector is attached firmly.



## 1140 Base cover assembly and stereo speaker assembly for X201 and X201i

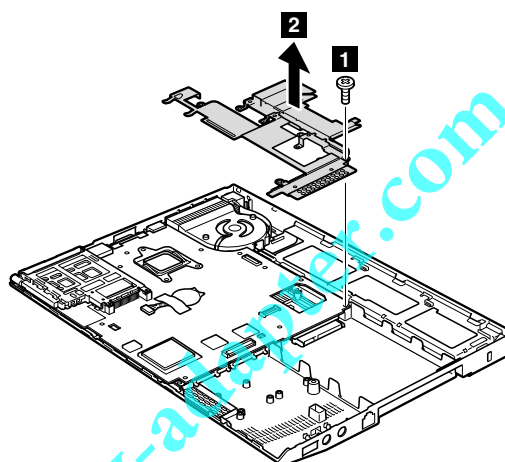
For access, remove these FRUs in order:

- "1010 Battery pack" on page 85
- "1020 Hard disk drive (HDD) cover, HDD, and HDD rubber rails or solid state drive (SSD) and storage converter" on page 87
- "1030 DIMM" on page 91
- "1040 Keyboard" on page 94
- "1050 Palm rest or palm rest with fingerprint reader" on page 97
- "1060 Backup battery" on page 100
- "1070 PCI Express Mini Card for wireless LAN/WiMAX" on page 102
- "1080 PCI Express Mini Card for wireless WAN" on page 105
- "1090 Intel Turbo Memory Minicard or Wireless USB PCI Express Half-Mini Card" on page 107
- "1100 Keyboard bezel" on page 109
- "1110 Monaural speaker assembly (for X200, X200s, X201s, and X201si)" on page 110
- "1120 I/O card assembly" on page 111
- "1130 LCD assembly" on page 114

Table 22. Removal steps of base cover assembly for ThinkPad X200, X201, and X201i

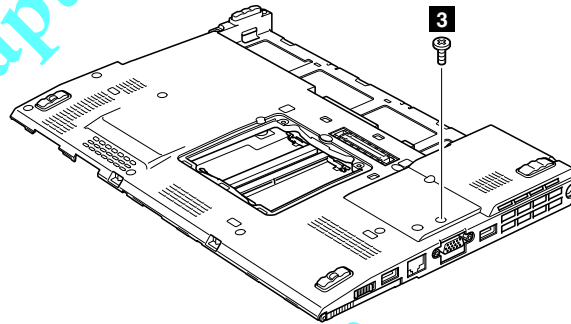
### ThinkPad X200, X201, and X201i:

Remove the top shielding assembly at first.

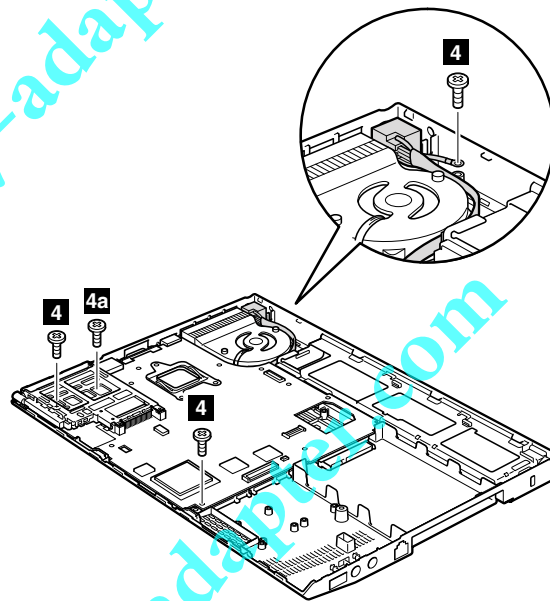


Step	Screw (quantity)	Color	Torque
<b>1</b>	M2 × 3 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgfcm)

Table 22. Removal steps of base cover assembly for ThinkPad X200, X201, and X201i (continued)



Step	Screw (quantity)	Color	Torque
<b>3</b>	M2 × 3.5 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgfcm)

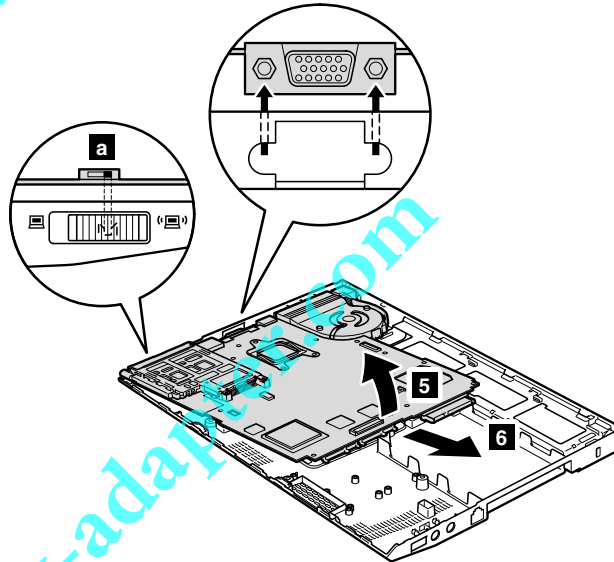


Note: Step **4a** is only for X201 and X201i.

Step	Screw (quantity)	Color	Torque
<b>4</b>	M2 × 3.5 mm, wafer-head, nylon-coated (3)	Silver	0.181 Nm (1.85 kgfcm)
<b>4a</b>	M2 × 3.5 mm, wafer-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

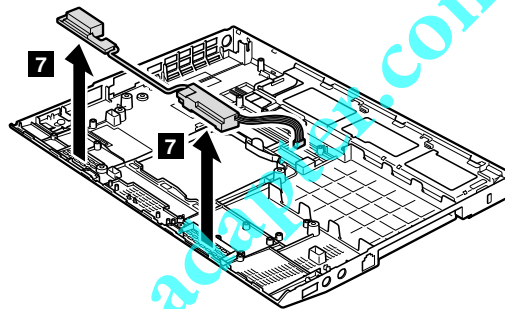
Table 22. Removal steps of base cover assembly for ThinkPad X200, X201, and X201i (continued)

In step **5** and **6**, remove the system board, the DC-in connector, and the fan assembly together from the base cover assembly.



**When installing:** Check the position of the wireless switch **a**, and firmly fit the system board into the base cover assembly.

**Note:** Following step is only for ThinkPad X201 and X201i.



**Cable routing:** Route the speaker cable as shown in this figure.

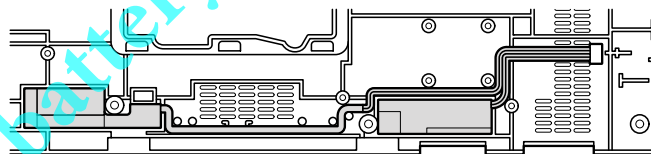
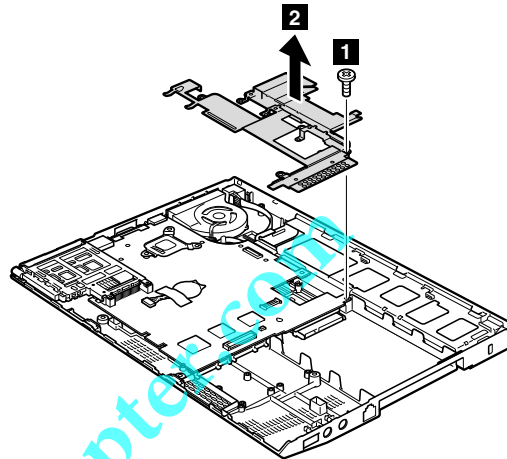


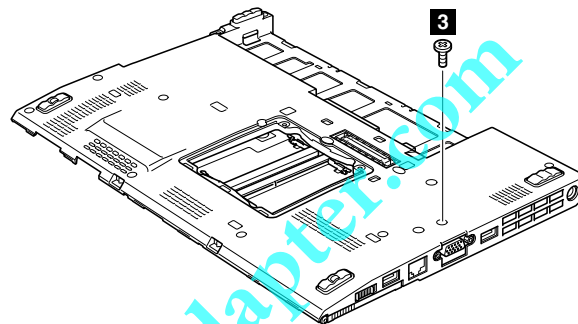
Table 23. Removal steps of base cover assembly for ThinkPad X200s, X200si, and X201s

**ThinkPad X200s, X200si and X201s:**

Remove the top shielding assembly at first.

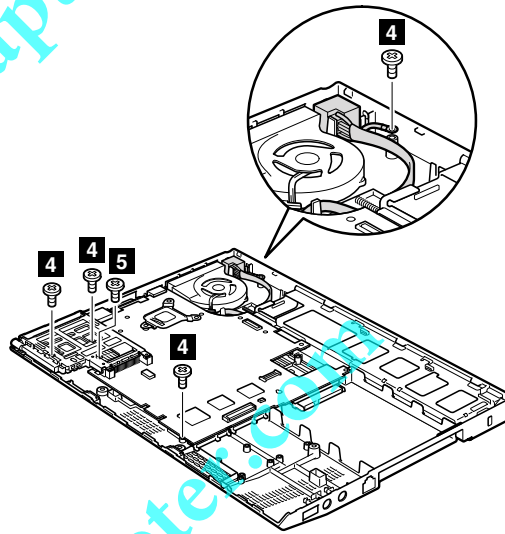


Step	Screw (quantity)	Color	Torque
<b>1</b>	M2 × 3 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgfcm)



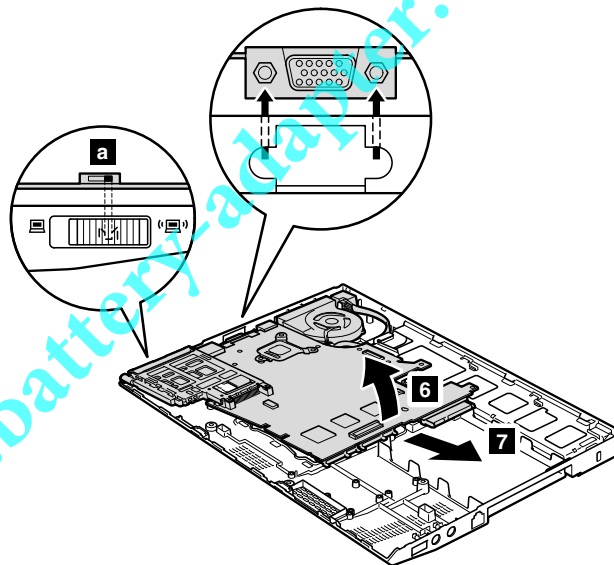
Step	Screw (quantity)	Color	Torque
<b>3</b>	M2 × 3.5 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgfcm)

Table 23. Removal steps of base cover assembly for ThinkPad X200s, X200si, and X201s (continued)



Step	Screw (quantity)	Color	Torque
<b>4</b>	M2 × 3.5 mm, wafer-head, nylon-coated (4)	Silver	0.181 Nm (1.85 kgfcm)
<b>5</b>	M2 × 3 mm, large-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

In step **6** and **7**, remove the system board, the DC-in connector, and the fan assembly together from the base cover assembly.



**When installing:** Attach the wireless radio switch as shown in the figure **a**.



#### 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 labels:

- 1** Product label
- 2** Homologation label
- 2a** Non-mercury label

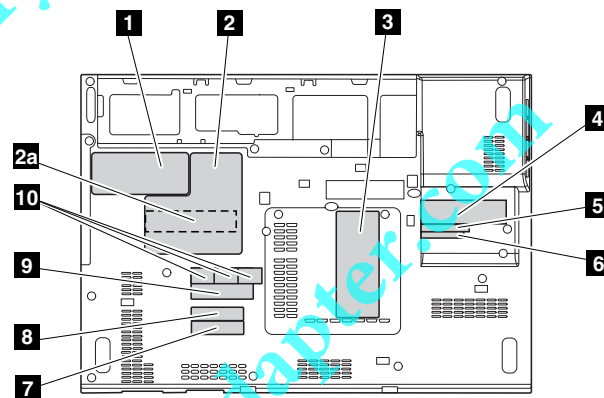
**Note:** If the computer you are servicing is an LED-backlight LCD model, you need to paste this label so that the notice for mercury is covered.

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

- 3** Windows license label (COA)
- 4** Serial number label
- 5** MAC address label
- 6** IMEI label
- 7** FCC-ID label for Wireless LAN
- 8** FCC-ID label for Wireless WAN
- 9** China modem label
- 10** SIRIM label

For some models, you need to apply one or two FCC labels, **7** or **8**. 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:



---

## 1150 Systemboard, DC-in connector, fan, and ExpressCard slot assembly

**Note:** When you replace any of the following system boards, be sure that the new one has the same ROM size as the original one.

**60Y3787**

System board with Intel® Core™ 2 Duo mobile processor P8600 (2.4 GHz), non-AMT, TPM, 8-MB ROM

**60Y3839**

System board with Intel Core 2 Duo mobile processor P8600 (2.4 GHz), non-AMT, TPM, 4-MB ROM

**60Y3790**

System board with Intel Core 2 Duo mobile processor P8600 (2.4 GHz), non-AMT, non-TPM, 8-MB ROM

**60Y3840**

System board with Intel Core 2 Duo mobile processor P8600 (2.4 GHz), non-AMT, non-TPM, 4-MB ROM

- To identify the system board originally installed in your computer, go to PEW at the following web site: <http://www.lenovo.com/support/site.wss/document.do?lndocid=LOOK-WARNTY>  
Select Warranty Lookup. Input the machine type and the serial number. Use the system board listed on PEW.
- Business Partners using Eclaim can access PEW at the following web site: <https://wca.eclaim.com>  
Select Entitlement Lookup. Input the Loc ID, the machine type, and the serial number. Use the system board listed on PEW.

**Important notices for handling the system board:**

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

- The system board has an accelerometer, which can be broken by applying several thousands of G-forces.

**Note:** Dropping a system board from a height of as little as 6 inches so that it falls flat on a hard bench can subject the accelerometer to as much as 6,000 G's of shock.

- Be careful not to drop the system board on a bench top that has a hard surface, such as metal, wood, or composite.
- If a system board is dropped, you must test it, using PC-Doctor for DOS, to make sure that the HDD Active Protection still functions (see below).

**Note:** If the test shows that HDD Active Protection is not functioning, be sure to document the drop in any reject report, and replace the system board.

- Avoid rough handling of any kind.
- At every point in the process, be sure not to drop or stack the system board.
- If you put a system board down, be sure to put it only on a padded surface such as an ESD mat or conductive corrugated material.

After replacing the system board, run PC-Doctor for DOS to make sure that HDD Active Protection still functions. The procedure is as follows:

1. Place the computer on a horizontal surface.
2. Run **Diagnostics --> ThinkPad Devices --> HDD Active Protection Test**.

**Attention:** Do not apply physical shock to the computer while the test is running.

For access, remove these FRUs in order:

- "1010 Battery pack" on page 85
- "1020 Hard disk drive (HDD) cover, HDD, and HDD rubber rails or solid state drive (SSD) and storage converter" on page 87
- "1030 DIMM" on page 91
- "1040 Keyboard" on page 94
- "1050 Palm rest or palm rest with fingerprint reader" on page 97
- "1060 Backup battery" on page 100
- "1070 PCI Express Mini Card for wireless LAN/WiMAX" on page 102
- "1080 PCI Express Mini Card for wireless WAN" on page 105
- "1090 Intel Turbo Memory Minicard or Wireless USB PCI Express Half-Mini Card" on page 107
- "1100 Keyboard bezel" on page 109
- "1110 Monaural speaker assembly (for X200, X200s, X201s, and X201si)" on page 110
- "1120 I/O card assembly" on page 111
- "1130 LCD assembly" on page 114
- "1140 Base cover assembly and stereo speaker assembly for X201 and X201i" on page 118

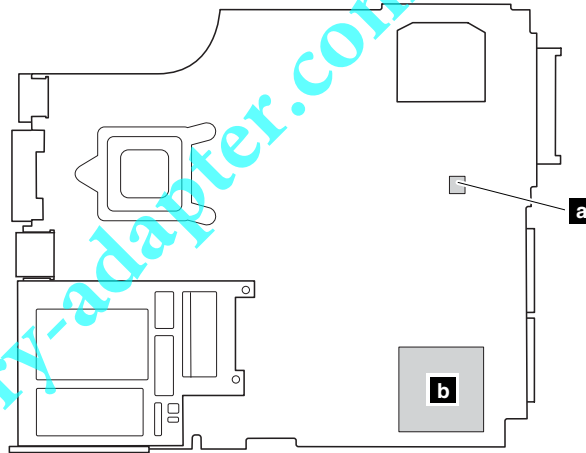
Table 24. Removal steps of system board, DC-in connector, fan, and ExpressCard slot assembly for ThinkPad X200, X201, and X201i

Following components soldered on the system board are extremely sensitive. When you service the system board, avoid any kind of rough handling.

**ThinkPad X200:**

- a** Accelerometer chip for the HDD Active Protection System™
- b** ICH (I/O Controller Hub)
- c** CPU
- d** MCH (Memory Controller Hub)

**Top**



**Bottom**

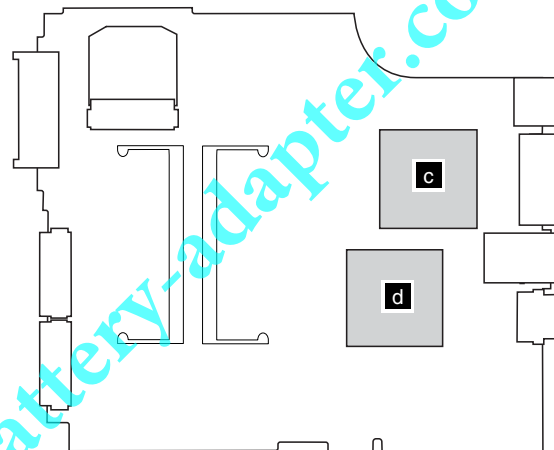
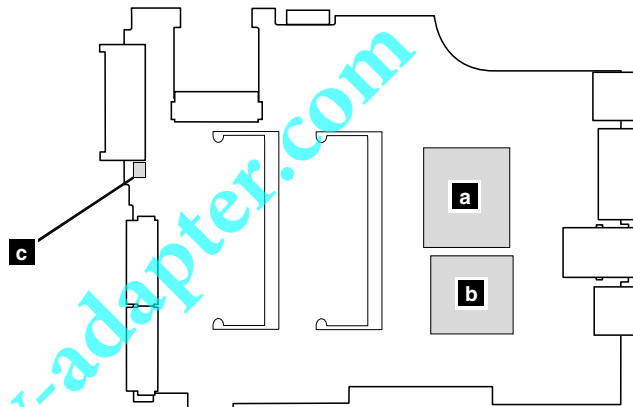


Table 24. Removal steps of system board, DC-in connector, fan, and ExpressCard slot assembly for ThinkPad X200, X201, and X201i (continued)

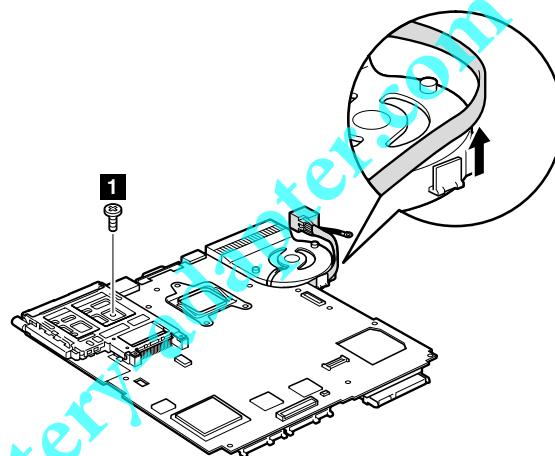
ThinkPad X201 and X201i:

- a** CPU
- b** PCH (Platform Controller Hub)
- c** Accelerometer chip for the HDD Active Protection System

Bottom



**Note:** The DC-in connector and the fan assembly are attached to the underside of the system board.

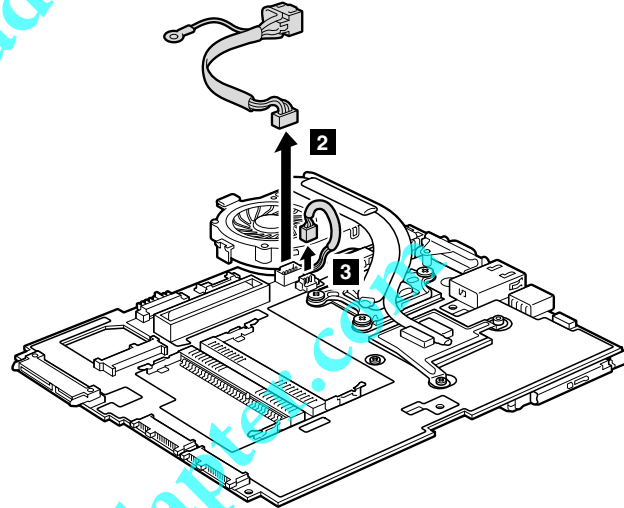


**Note:** Step 1 is only for ThinkPad X200.

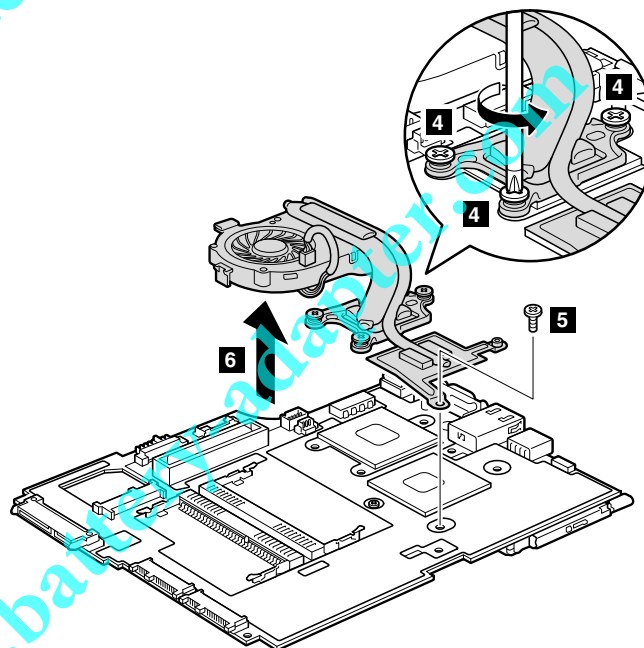
Step	Screw (quantity)	Color	Torque
1	M2 × 3.5 mm, wafer-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

Table 24. Removal steps of system board, DC-in connector, fan, and ExpressCard slot assembly for ThinkPad X200, X201, and X201i (continued)

Turn the system board over, and then disconnect the DC-in connector and the fan connector from the system board.



**When installing:** Make sure that the DC-in connector and the fan connector are attached to the system board firmly.



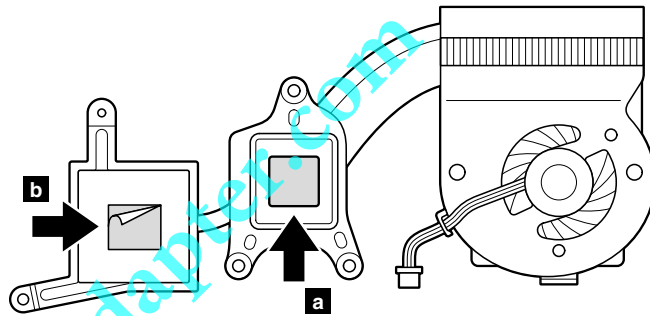
Step	Screw (quantity)	Color	Torque
5	M2 × 3.5 mm, flat-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

Table 24. Removal steps of system board, DC-in connector, fan, and ExpressCard slot assembly for ThinkPad X200, X201, and X201i (continued)

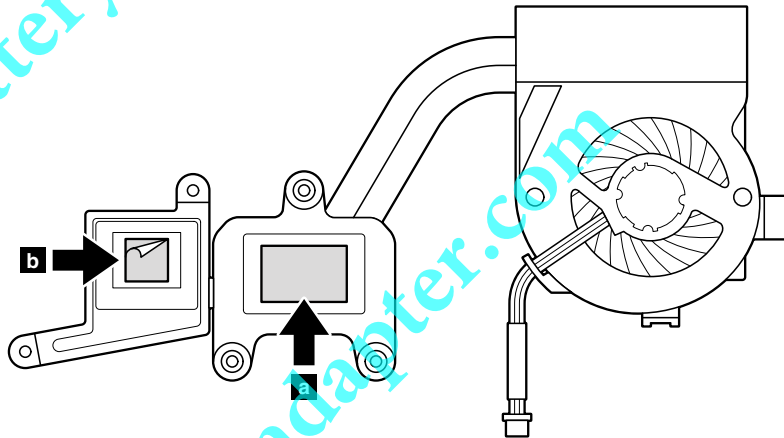
**When installing:**

- Before you attach the fan assembly to the computer, apply thermal grease, at an amount of 0.2 grams, on the part marked **a** as in the following figure. Either too much or too less application of grease can cause a thermal problem due to imperfect contact with a component. You need to peel the thin film off from the rubber **b**.

**For ThinkPad X200:**



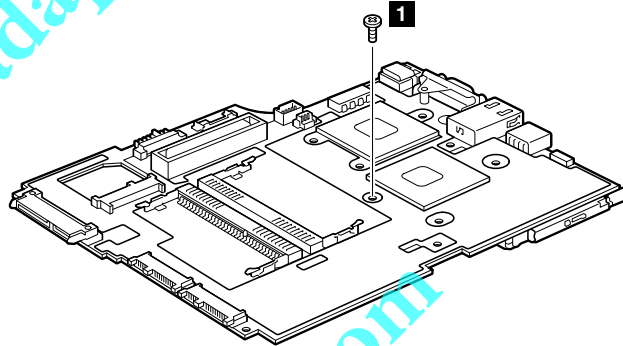
**For ThinkPad X201 and X201i:**



- Make sure that the fan connector is attached firmly.

Table 24. Removal steps of system board, DC-in connector, fan, and ExpressCard slot assembly for ThinkPad X200, X201, and X201i (continued)

**Note:** The ExpressCard slot assembly is attached to the system board.



Step	Screw (quantity)	Color	Torque
<b>1</b>	M2 × 3.5 mm, flat-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

Turn the system board over, and then remove the ExpressCard slot assembly from the system board.

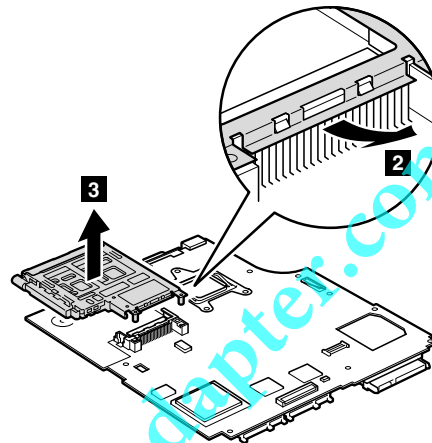




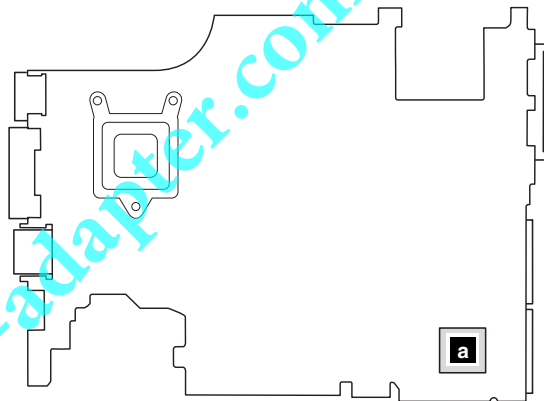
Table 25. Removal steps of system board, DC-in connector, fan, and ExpressCard slot assembly for ThinkPad X200s and X201s

**ThinkPad X200s:**

Following components soldered on the system board are extremely sensitive. When you service the system board, avoid any kind of rough handling.

- a** ICH (I/O Controller Hub)
- b** CPU
- c** MCH (Memory Controller Hub)
- d** Accelerometer chip for the HDD Active Protection System

**Top**



**Bottom**

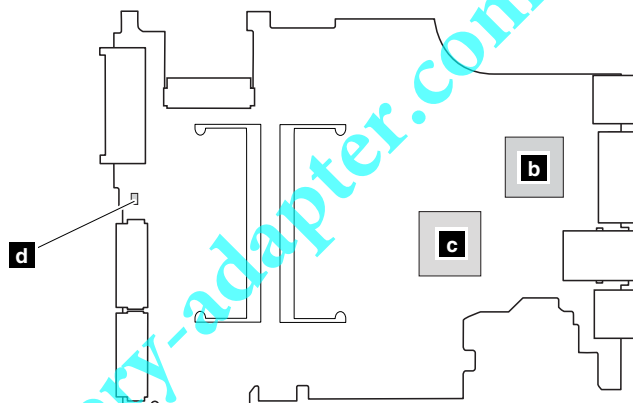


Table 25. Removal steps of system board, DC-in connector, fan, and ExpressCard slot assembly for ThinkPad X200s and X201s (continued)

**ThinkPad X201s:**

- a** CPU
- b** PCH (Platform Controller Hub)
- c** Accelerometer chip for the HDD Active Protection System

**Bottom**

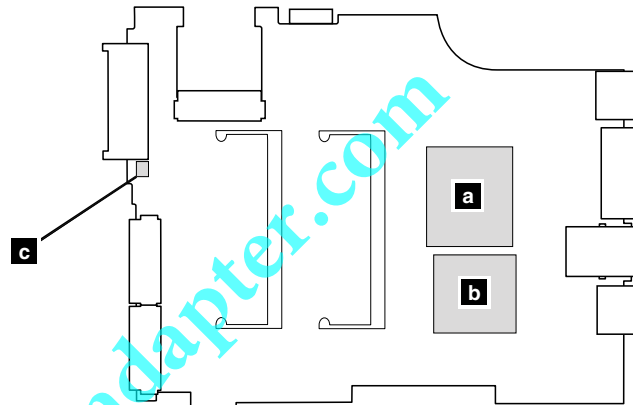
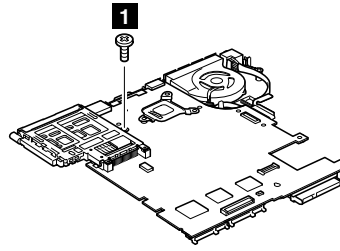


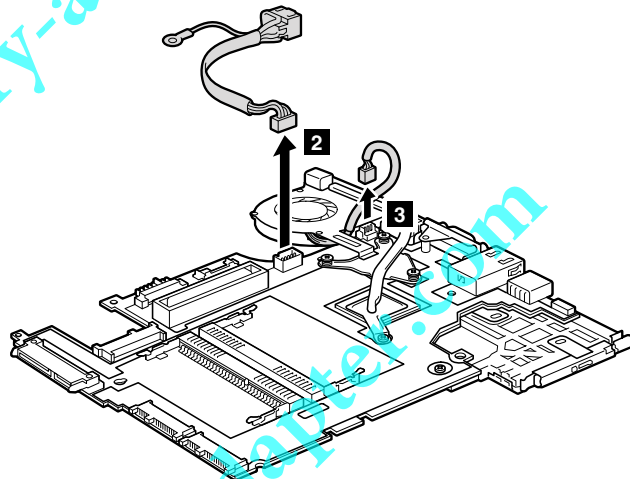
Table 25. Removal steps of system board, DC-in connector, fan, and ExpressCard slot assembly for ThinkPad X200s and X201s (continued)



**Note:** Step **1** in only for ThinkPad X201s.

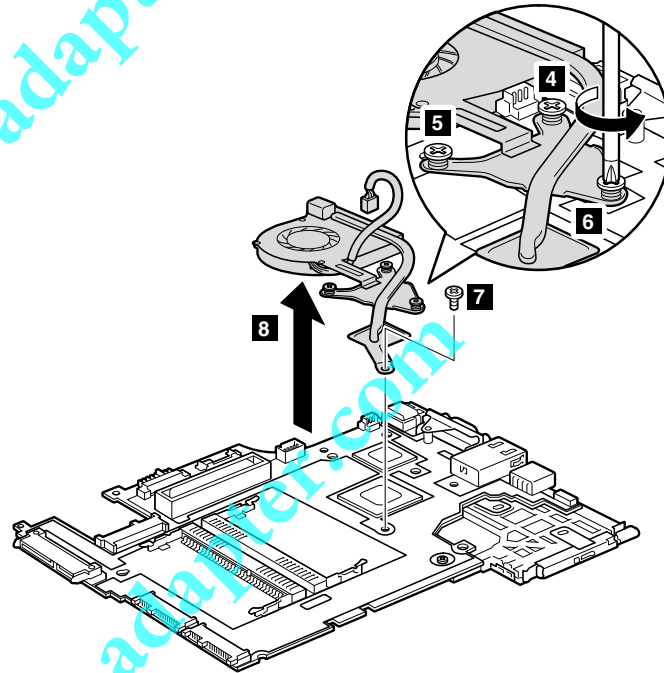
Step	Screw (quantity)	Color	Torque
<b>1</b>	M2 × 3.5 mm, wafer-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

**Note:** The DC-in connector and the fan assembly are attached to the underside of the system board.



**When installing:** Make sure that the DC-in connector and the fan connector are attached to the system board firmly.

Table 25. Removal steps of system board, DC-in connector, fan, and ExpressCard slot assembly for ThinkPad X200s and X201s (continued)



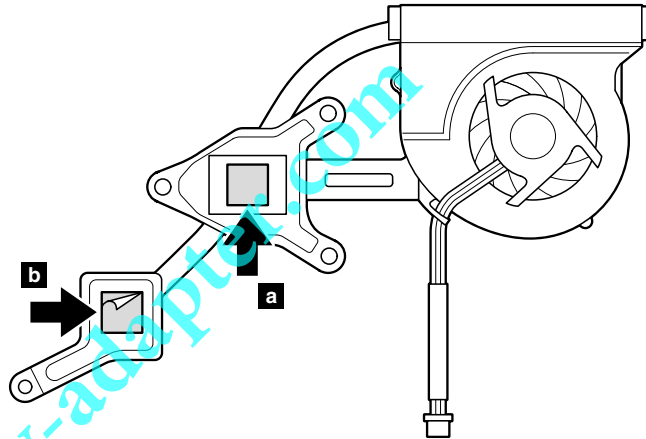
Step	Screw (quantity)	Color	Torque
<b>7</b>	M2 × 3.5 mm, wafer-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

Table 25. Removal steps of system board, DC-in connector, fan, and ExpressCard slot assembly for ThinkPad X200s and X201s (continued)

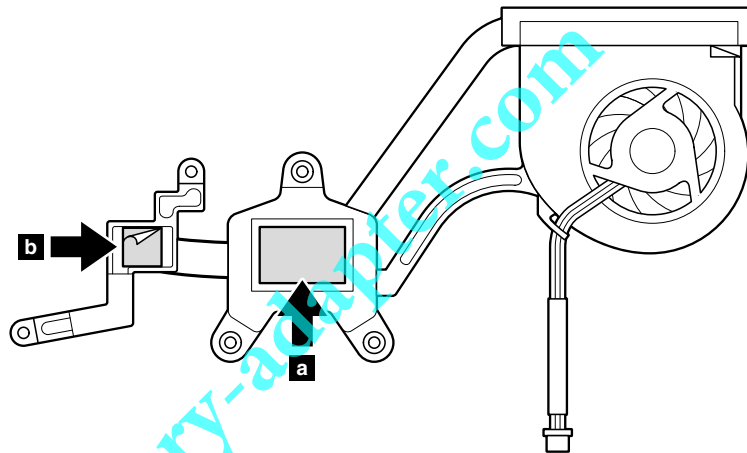
**When installing:**

- Before you attach the fan assembly to the computer, apply thermal grease, at an amount of 0.2 grams, on the part marked **a** as in the following figure. Either too much or too less application of grease can cause a thermal problem due to imperfect contact with a component. You need to peel the thin film off from the rubber **b**.

**For ThinkPad X200s:**



**For ThinkPad X201s:**

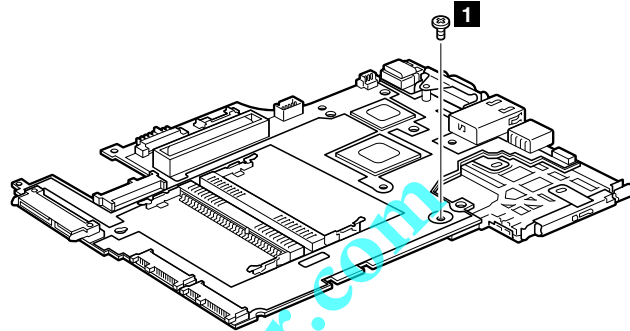


- Make sure that the fan connector is attached firmly.

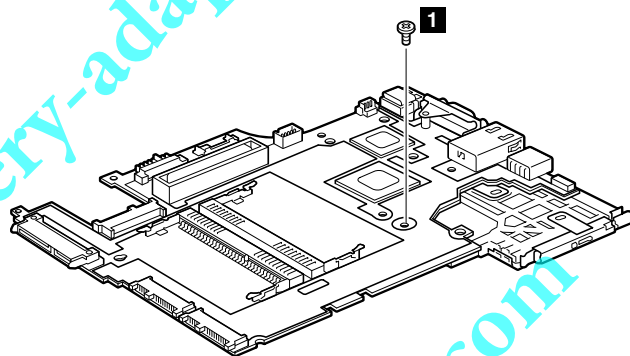
Table 25. Removal steps of system board, DC-in connector, fan, and ExpressCard slot assembly for ThinkPad X200s and X201s (continued)

**Note:** The ExpressCard slot assembly is attached to the system board.

**For ThinkPad X200s:**



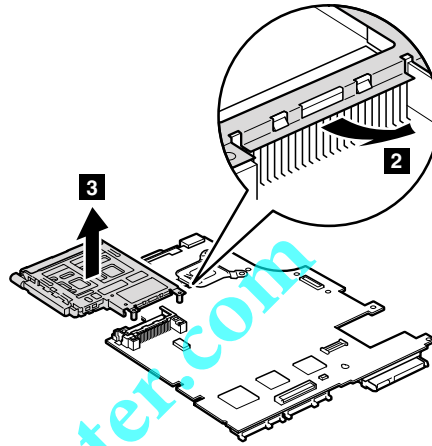
**For ThinkPad X201s:**



Step	Screw (quantity)	Color	Torque
<b>1</b>	M2 × 3.5 mm, wafer-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

Table 25. Removal steps of system board, DC-in connector, fan, and ExpressCard slot assembly for ThinkPad X200s and X201s (continued)

Turn the system board over, and then remove the ExpressCard slot assembly from the system board.



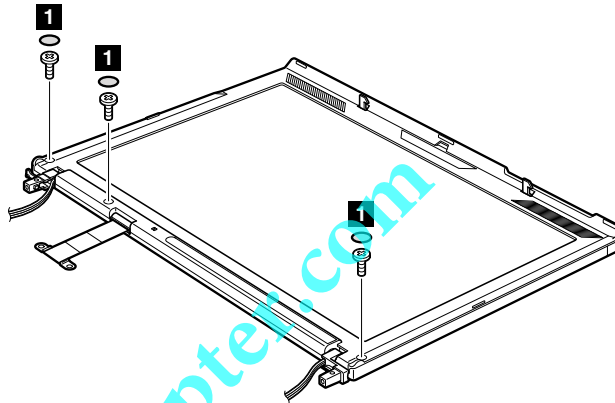
## 2010 LCD front bezel

For access, remove this FRU:

- “1010 Battery pack” on page 85

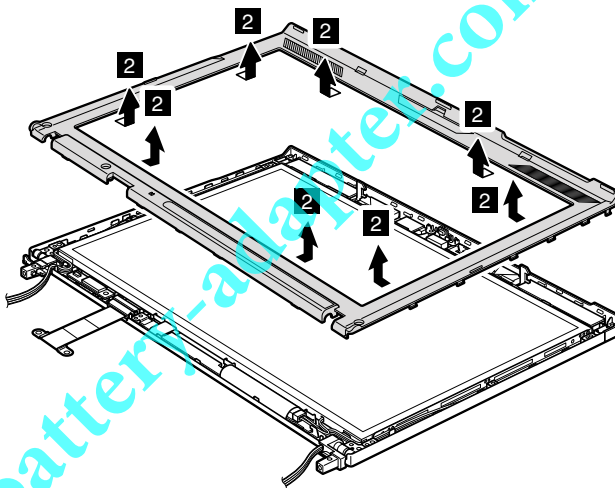
Table 26. Removal steps of LCD front bezel for 12.1-in. WXGA LCD model

12.1-in. WXGA LCD model:



Step	Screw cap	Screw (quantity)	Color	Torque
<b>1</b>	○	M2.5 × 4 mm, wafer-head, nylon-coated (3)	Black	0.392 Nm (4 kgfcm)

In step **2**, detach the claws. Then remove the LCD front bezel.

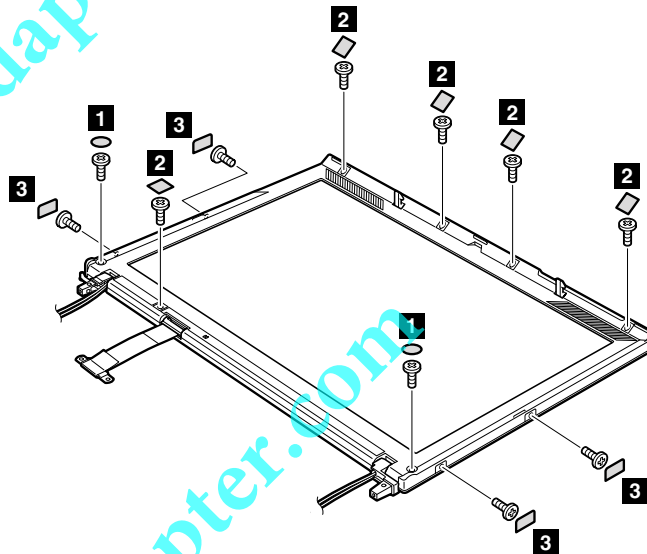


**When installing:** Make sure that all the claws are attached firmly.



Table 27. Removal steps of LCD front bezel for 12.1-in. WXGA+ LCD model

12.1-in. WXGA+ LCD model:






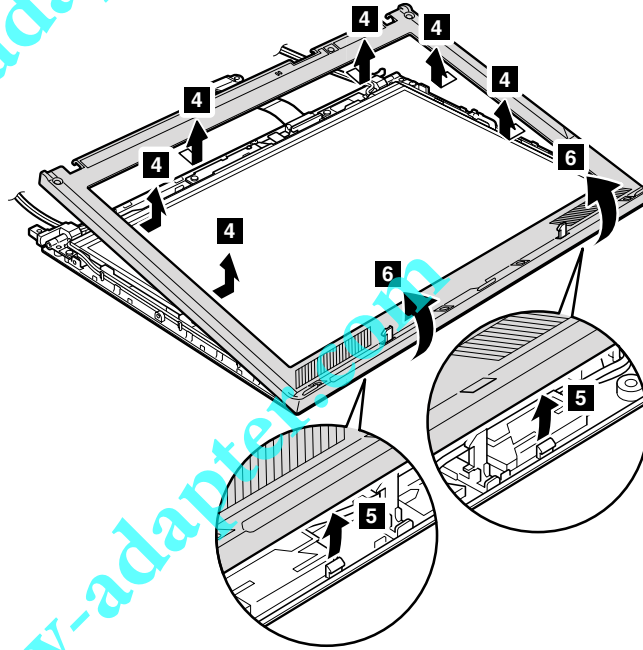
Step	Screw cap	Screw (quantity)	Color	Torque
1		M2.5 × 4 mm, wafer-head, nylon-coated (2)	Black	0.392 Nm (4 kgfcm)
2		M2.5 × 4 mm, wafer-head, nylon-coated (5)	Black	0.392 Nm (4 kgfcm)
3		M2 × 3.5 mm, wafer-head, nylon-coated (4)	Silver	0.181 Nm (1.85 kgfcm)

Table 27. Removal steps of LCD front bezel for 12.1-in. WXGA+ LCD model (continued)

In step **4** and **5**, detach the claws. Then remove the LCD front bezel.



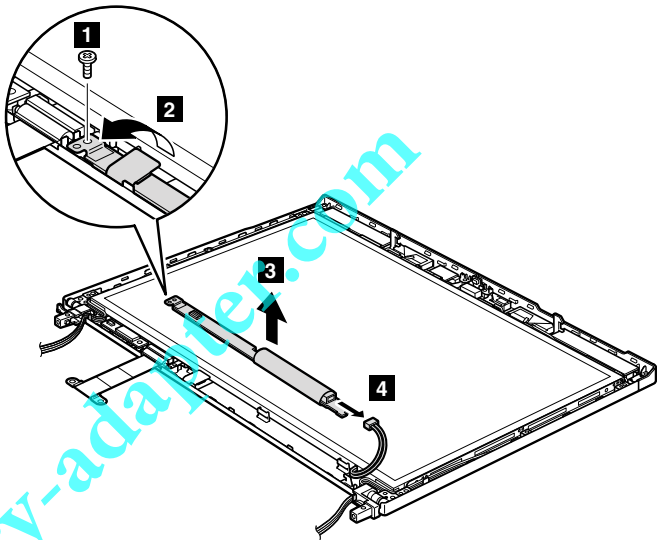
**When installing:** Make sure that all the claws are attached firmly.

2020 Inverter card or LED board

- For access, remove these FRUs in order:
- “1010 Battery pack” on page 85
  - “2010 LCD front bezel” on page 138

Table 28. Removal steps of inverter card or LED board

For ThinkPad X200, X200s, and X200si:



Step	Screw (quantity)	Color	Torque
1	M2 × 3.5 mm, wafer-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

**When installing:** Make sure that the connector **2** and **4** are attached firmly.

**Cabling:** When replacing the inverter card or the LED board, route the connector cable as in this figure.

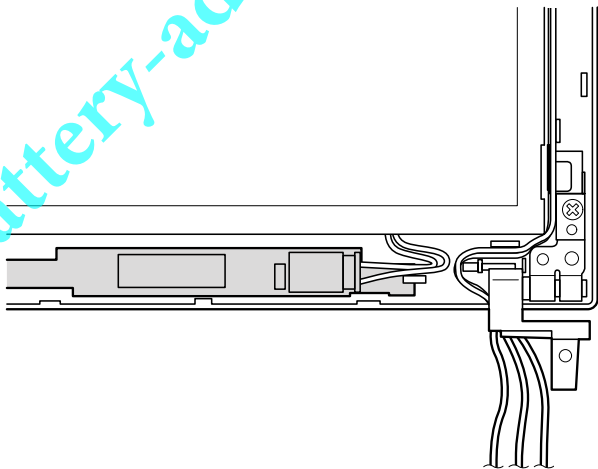
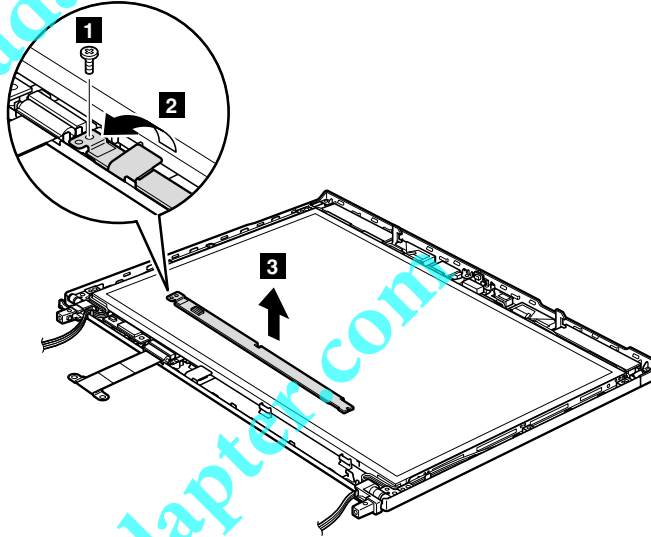


Table 28. Removal steps of inverter card or LED board (continued)

For ThinkPad X201, X201i, and X201s:



Step	Screw (quantity)	Color	Torque
<b>1</b>	M2 × 3.5 mm, wafer-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

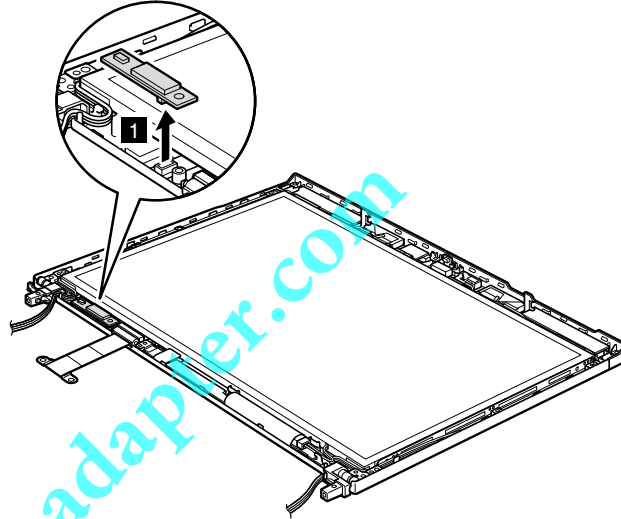
**When installing:** Make sure that the connector **2** is attached firmly.

## 2030 Bluetooth daughter card (BDC-2.1)

For access, remove these FRUs in order:

- “1010 Battery pack” on page 85
- “2010 LCD front bezel” on page 138

Table 29. Removal steps of Bluetooth daughter card



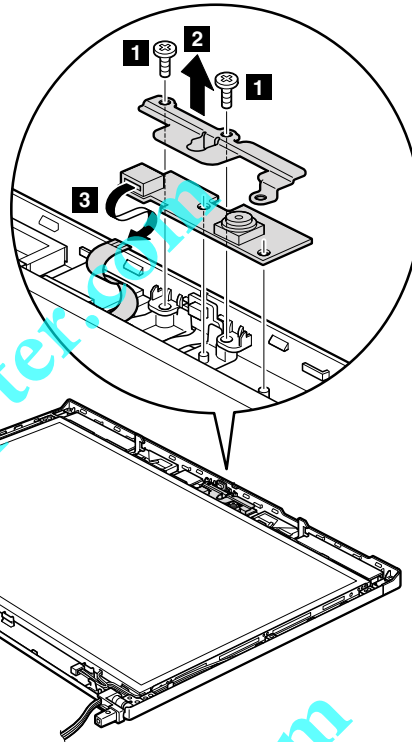
**When installing:** Make sure that the connector **1** is attached firmly.

## 2040 Integrated camera

For access, remove these FRUs in order:

- “1010 Battery pack” on page 85
- “2010 LCD front bezel” on page 138

Table 30. Removal steps of Integrated camera



Step	Screw (quantity)	Color	Torque
<b>1</b>	M2 × 3.5 mm, wafer-head, nylon-coated (2)	Silver	0.181 Nm (1.85 kgfcm)

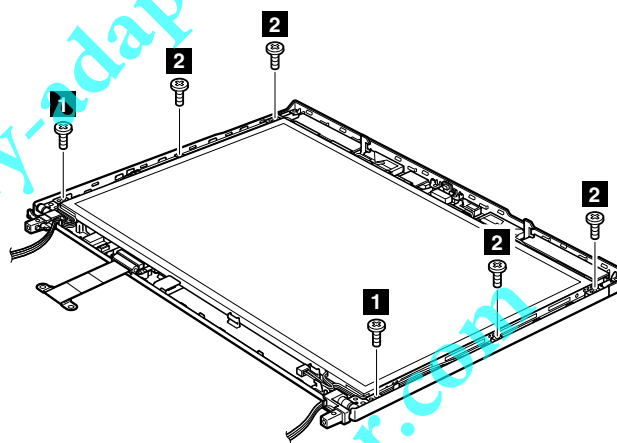
## 2050 LCD panel, LCD brackets, and LCD cable

For access, remove these FRUs in order:

- “1010 Battery pack” on page 85
- “1040 Keyboard” on page 94
- “1050 Palm rest or palm rest with fingerprint reader” on page 97
- “1070 PCI Express Mini Card for wireless LAN/WiMAX” on page 102
- “1080 PCI Express Mini Card for wireless WAN” on page 105
- “1090 Intel Turbo Memory Minicard or Wireless USB PCI Express Half-Mini Card” on page 107
- “1100 Keyboard bezel” on page 109
- “1130 LCD assembly” on page 114
- “2010 LCD front bezel” on page 138
- “2020 Inverter card or LED board” on page 141
- “2030 *Bluetooth* daughter card (BDC-2.1)” on page 143
- “2040 Integrated camera” on page 144

Table 31. Removal steps of LCD panel, LCD brackets, and LCD cable for 12.1-in. WXGA LCD model

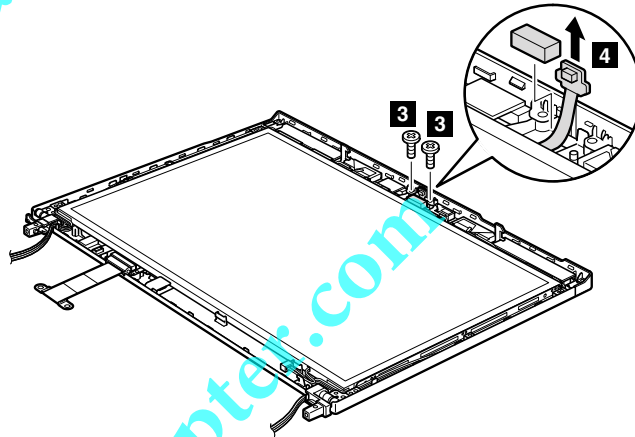
### 12.1-in. WXGA LCD model:



Step	Screw (quantity)	Color	Torque
<b>1</b>	M2.5 × 4 mm, wafer-head, nylon-coated (2)	Black	0.392 Nm (4 kgfcm)
<b>2</b>	M2 × 3.5 mm, wafer-head, nylon-coated (4)	Silver	0.181 Nm (1.85 kgfcm)

Table 31. Removal steps of LCD panel, LCD brackets, and LCD cable for 12.1-in. WXGA LCD model (continued)

**Note:** Step **3** is only for models without the integrated camera. For models with the integrated camera, skip step **3**.



Step	Screw (quantity)	Color	Torque
<b>3</b>	M2 × 3.5 mm, wafer-head, nylon-coated (2)	Silver	0.181 Nm (1.85 kgfcm)

In step **5**, release the antenna cables from the cable guides, and then remove the LCD panel.

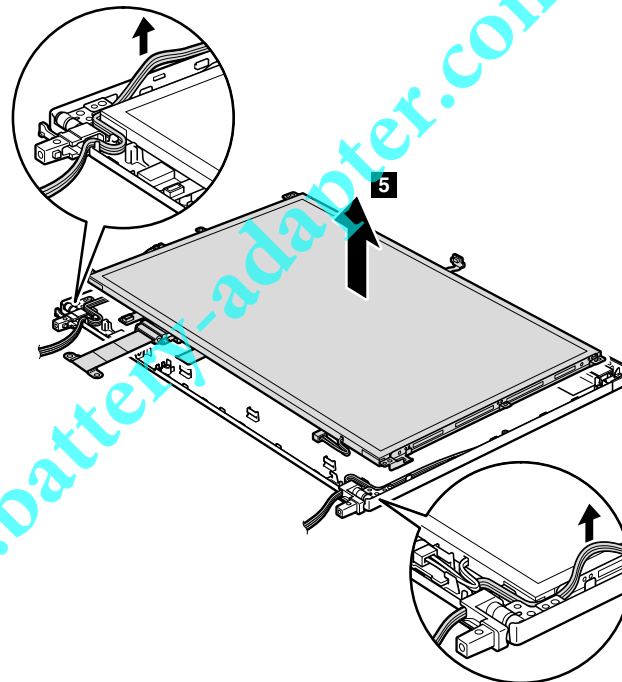
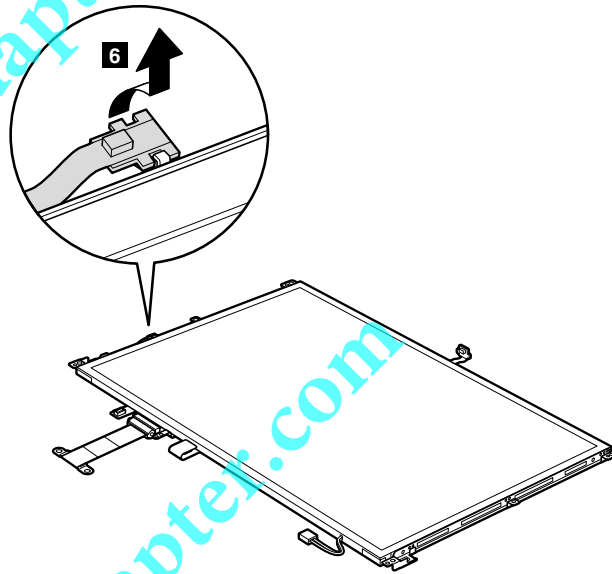
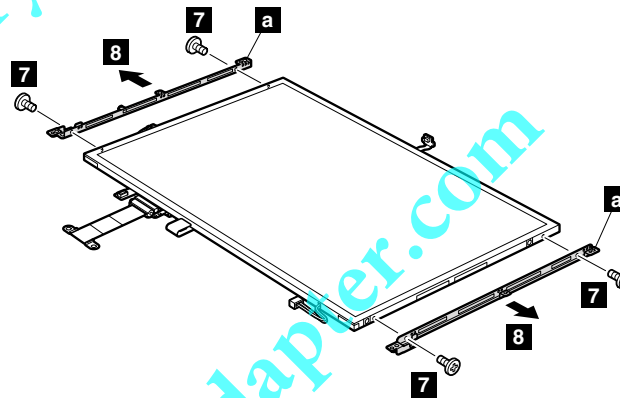




Table 31. Removal steps of LCD panel, LCD brackets, and LCD cable for 12.1-in. WXGA LCD model (continued)



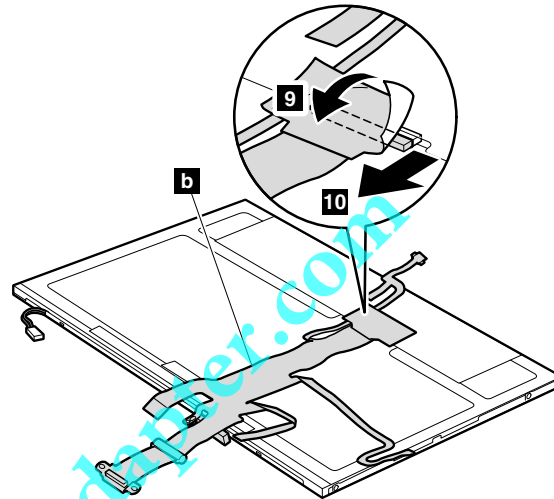
Remove the LCD bracket **a**.



Step	Screw (quantity)	Color	Torque
<b>7</b>	M2 × 2 mm, wafer-head, nylon-coated (4)	Black	0.181 Nm (1.85 kgfcm)

Table 31. Removal steps of LCD panel, LCD brackets, and LCD cable for 12.1-in. WXGA LCD model (continued)

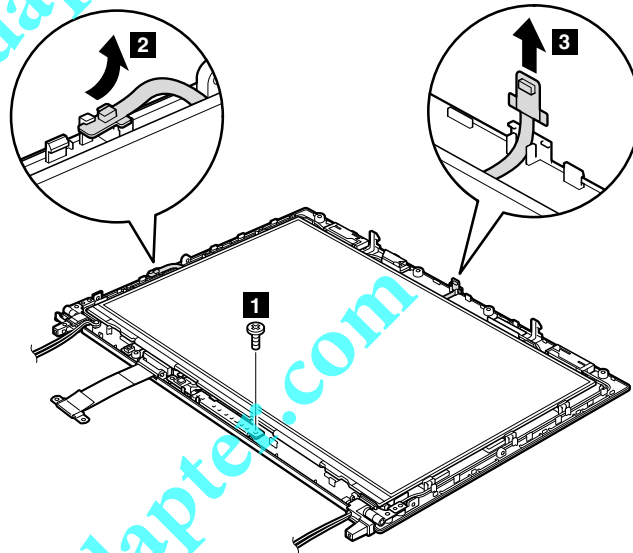
Turn the LCD panel over, and then remove the LCD cable **b** from the LCD panel.



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

Table 32. Removal steps of LCD panel, LCD brackets, and LCD cable for 12.1-in. WXGA+ LCD model

12.1-in. WXGA+ LCD model:



Step	Screw (quantity)	Color	Torque
1	M2 x 2 mm, wafer-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgfcm)

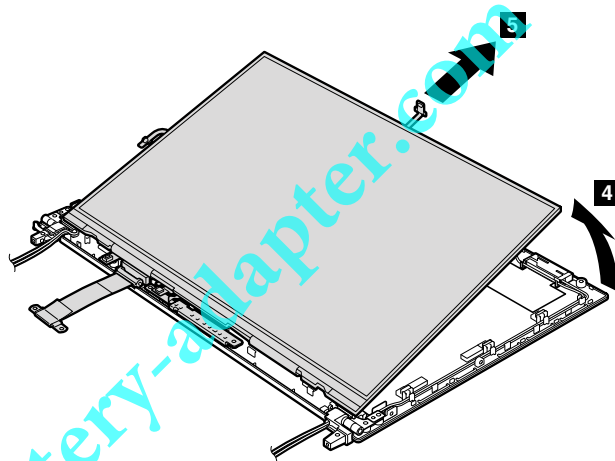
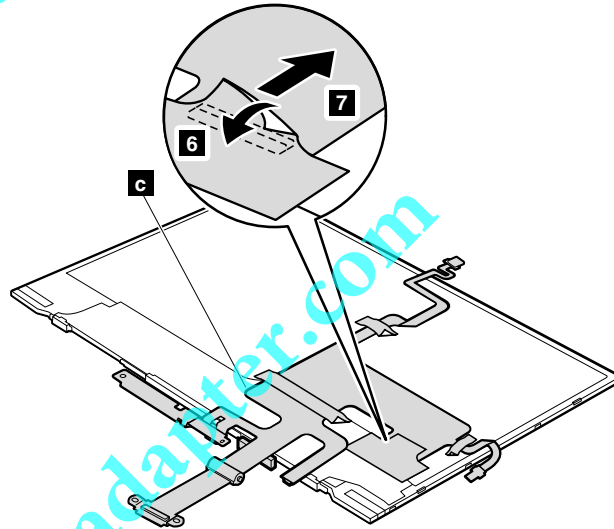


Table 32. Removal steps of LCD panel, LCD brackets, and LCD cable for 12.1-in. WXGA+ LCD model (continued)

Turn the LCD panel over, and then remove the LCD cable **c** from the LCD panel.



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

## 2060 Hinges and hinge brackets

For access, remove these FRUs in order:

- "1010 Battery pack" on page 85
- "1040 Keyboard" on page 94
- "1050 Palm rest or palm rest with fingerprint reader" on page 97
- "1070 PCI Express Mini Card for wireless LAN/WiMAX" on page 102
- "1080 PCI Express Mini Card for wireless WAN" on page 105
- "1090 Intel Turbo Memory Minicard or Wireless USB PCI Express Half-Mini Card" on page 107
- "1100 Keyboard bezel" on page 109
- "1130 LCD assembly" on page 114
- "2010 LCD front bezel" on page 138
- "2020 Inverter card or LED board" on page 141
- "2030 *Bluetooth* daughter card (BDC-2.1)" on page 143
- "2040 Integrated camera" on page 144
- "2050 LCD panel, LCD brackets, and LCD cable" on page 145

Table 33. Removal steps of hinges for 12.1-in. WXGA LCD model

### 12.1-in. WXGA LCD model:

Remove the hinges.

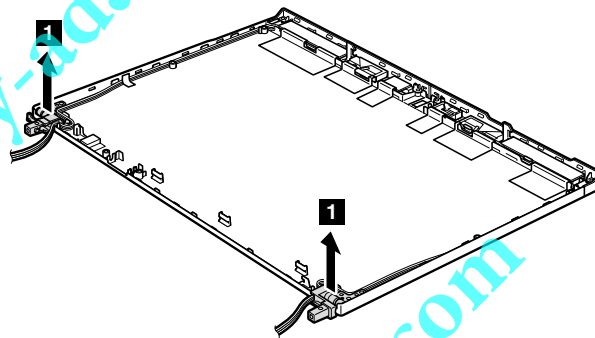


Table 34. Removal steps of hinges and hinge brackets for 12.1-in. WXGA+ LCD model

**12.1-in. WXGA+ LCD model:**

In step **1**, release the antenna cables from the cable guides.

