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 69.
- 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.

Notes:

- · The illustrations used in this section are of the Lenovo G570, unless otherwise stated.
- The following procedures about removing and replacing FRUs are the same .57: for the G470&G475&G570&G575.

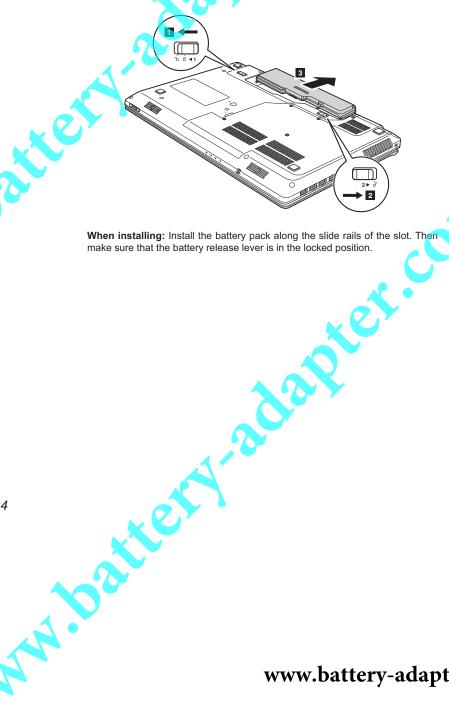
1010 Battery pack

⚠ 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 . Holding the battery release lever in the unlocked position 2, remove the battery pack in the direction shown by arrow



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.

Lenovo G470/G475/G570/G575

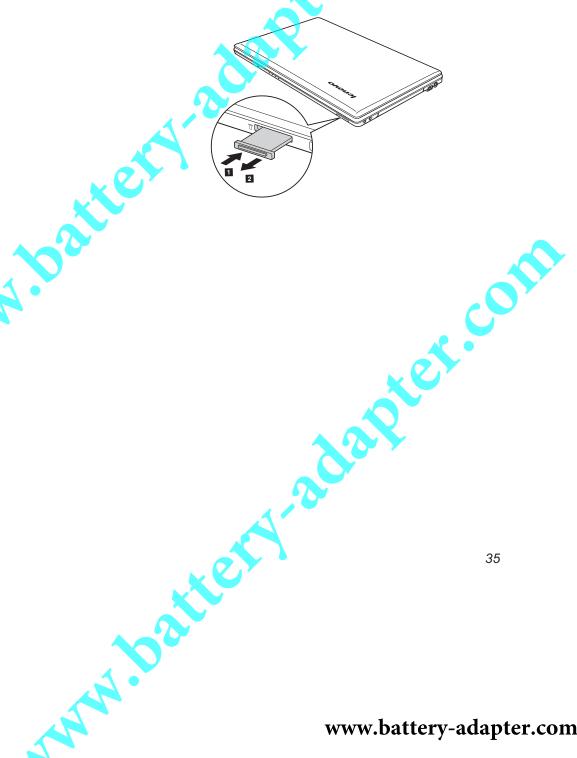
1020 Dummy card

For access, remove this FRU:

• "1010 Battery pack" on page 34

Figure 2. Removal steps of dummy card

Remove dummy card in the direction shown by arrows 2.



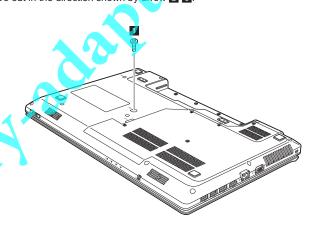
1030 Optical drive

For access, remove these FRUs in order:

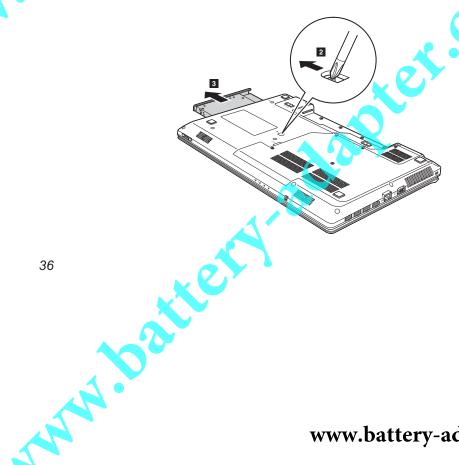
• "1010 Battery pack" on page 34

Figure 3. Removal steps of optical drive

Remove the screw shown in the illustration , and then gently pull the optical drive out in the direction shown by arrow 2 3.



	A.			
	Step	Screw (quantity)	Color	Torque
4		M2.5 × 8 mm, flat-head, nylon-coated (1)	Black	2.0kgfcm
	S	3	e	



Lenovo G470/G475/G570/G575

1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover

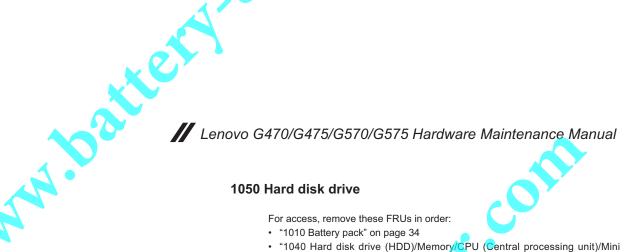
For access, remove this FRU:

"1010 Battery pack" on page 3

Figure 4. Removal steps of HDD/Memory/CPU/Mini PCI ExpressCard slot compartment cover

Note: Loosen the screws, but do not remove them. Remove the HDD/Memory/CPU/Mini PCI ExpressCard slot compartment cover in the direction shown by arrow 2.





1050 Hard disk drive

For access, remove these FRUs in order:

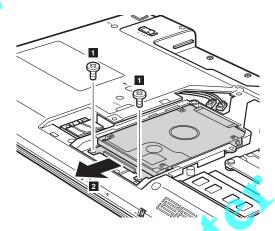
- "1010 Battery pack" on page 34
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover on page 37

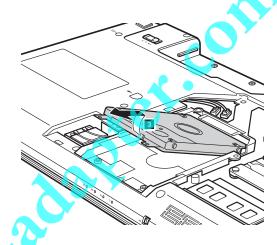
Attention:

- 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 5. Removal steps of Hard disk drive

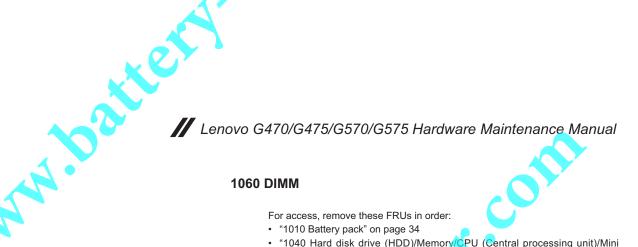
Remove two screws . Pull the HDD bracket in the direction shown by arrow 2. Take out the hard disk drive secured in a metal frame 3.





	Step	Screw (quantity)	Color	Torque
1		M2.0 × 4 mm, flat-head, nylon-coated (2)	Black	2.0kgfcm

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



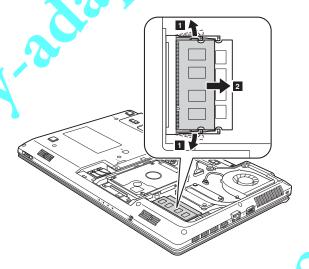
1060 DIMM

For access, remove these FRUs in order:

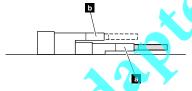
- "1010 Battery pack" on page 34
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover "on page 37

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 and then unplug the DIMM in the direction shown



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.

Lenovo G470/G475/G570/G575

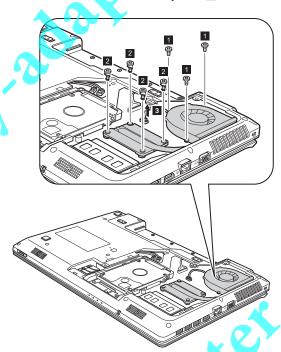
1070 Fan assembly and Heat Sink assembly

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover on page 37

Figure 7. Removal steps of fan assembly and heat sink assembly

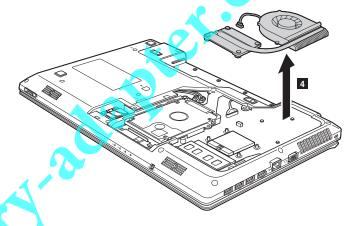
Note: Remove three screws and four spring screws 2. Unplug the connector in the direction shown by arrow 3.



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

s	Step	Screw (quantity)		Color	Torque	
	1	M2.0 × 4 mm, flat-head, nylo	n-coated (3)	Silver	2.0kgfcm	
2		M2.0 × 3.2 mm, with spring,	nylon-coated (4)	Black	2.0kgfcm	
		eri				41
THE STATE OF THE S			www.ba	atte	ry-ada	apt

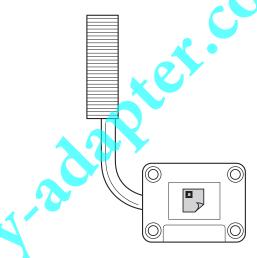
Figure 7. Removal steps of fan assembly and heat sink assembly (continued) Lift the fan assembly and heat sink assembly in the direction shown by arrow 4. Be careful not to damage the connector.



Attention: Do not handle the heat sink assembly roughly. Improper handling can cause distortion or deformation and imperfect contact with components.

Lenovo G470/G475/G570/G575

Figure 7. Removal steps of fan assembly and heat sink assembly (continued)



When installing:

Augustan adapter com Before you attach the fan assembly to the computer, apply thermal grease, at an amount of 0.2 grams, to the a part shown in the figure above. Either

1080 CPU

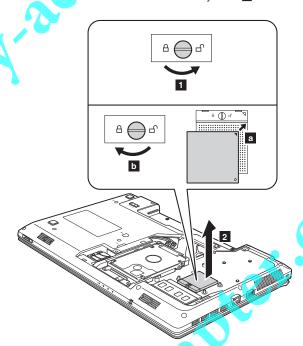
For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover " on page 37
- "1070 Fan assembly and Heat Sink assembly" on page 41

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

Figure 8. Removal steps of CPU

Rotate the head of the screw in the direction shown by arrow 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.

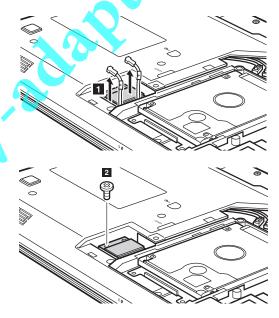
AN Pattern 1090 PCI Express Mini Card for wireless LAN

For access, remove these FRUs in order:

• "1010 Battery pack" on page 34

 "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover on page 37

Figure 9. Removal steps of PCI Express Mini Card for wireless LAN



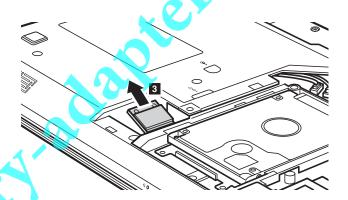
Disconnect the two wireless LAN cables (black, white) in the direction shown by arrows , and then remove the screw 2.

Step	Screw (quantity)	Color	Torque
2	M2.0 × 3 mm, flat-head, nylon-coated (1)	Black	2.0kgfcm

In step , 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.

wireless LAN card in some models may have 3 cables in step ...

Figure 9. Removal steps of PCI Express Mini Card for wireless LAN (continued) Remove the card in the direction shown by arrow 3.



When installing:

W. battery adapter com In models with a wireless LAN card that has two antenna connectors, plug the black cable into the jack labeled 1, and the white cable into the jack

Lenovo G470/G475/G570/G575

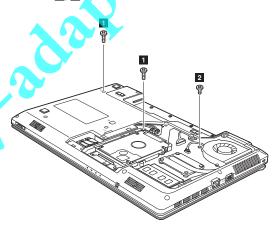
1100 Keyboard

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover "on page 37

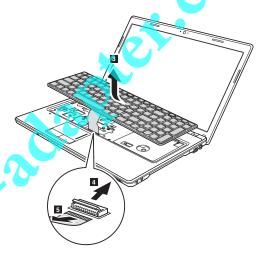
Figure 10. Removal steps of keyboard

Remove the screws , 2 on the bottom.



00				
	Step	Screw (quantity)	Color	Torque
		M2.5 × 8 mm, flat-head, nylon-coated (2)	Black	2.0kgfcm
	2	M2.5 × 4 mm, flat-head, nylon-coated (1)	Black	2.0kgfcm
		12		
				47

Figure 10. Removal steps of keyboard (continued) Lift the keyboard a little 3, unlock the FPC connector and then detach the connector in the direction shown by arrows 4 5.



W.battery.adapter.com When installing: Make sure that the FPC connector is attached firmly and then

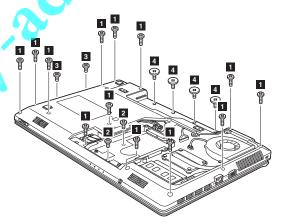
1110 Keyboard bezel

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1030 Optical drive" on page 36
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover " on page 37
- "1050 Hard disk drive" on page 38
- "1100 Keyboard" on page 47

Figure 11. Removal steps of keyboard bezel

Remove thirteen screws , two screws 2, two screws 3 and four screws 4



Step	Screw (quantity)	Color Torque
	M2.5 × 8 mm, flat-head, nylon-coated (13)	Black 2.0kgfcm
2	M2.0 × 5 mm, flat-head, nylon-coated (2)	Black 2.0kgfcm
3	M2.0 × 3 mm, flat-head, nylon-coated (2)	Black 2.0kgfcm
4	M2.0 × 2 mm, flat-head, nylon-coated (4)	Black 2.0kgfcm
		49
J		attery-adap

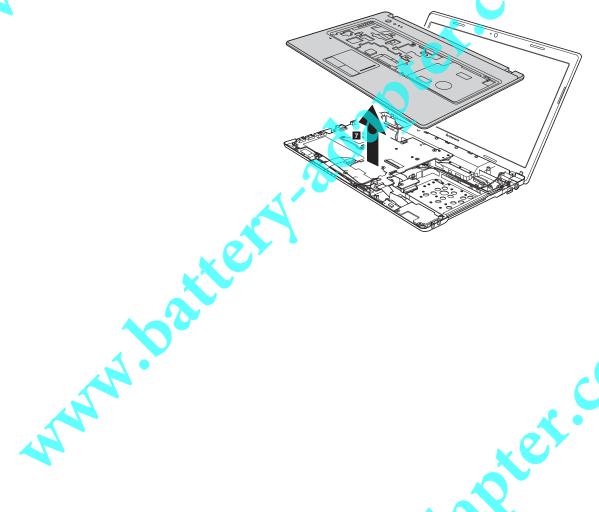
Figure 11. Removal steps of keyboard bezel (continued) Remove one screw 5 and detach three FPC connectors in the direction shown by arrows 6.



	Step	Screw (quantity)		Color	Torque	
	5	M2.5 × 8 mm, flat-head, nylon-co	oated (1)	Black	2.0kgfcm	
	When inst	alling: Make sure that all the FF	PC connecto			310
			25	e		
50	*	ery				
NW!	500	W	ww.b	attery	-adap	oter.coı

Lenovo G470/G475/G570/G575

Figure 11. Removal steps of keyboard bezel (continued) Remove the keyboard bezel in the direction shown by arrows 7

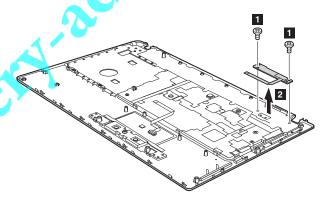


1120 Power board and touch inductive panel

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1030 Optical drive" on page 36
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover " on page 37
- "1050 Hard disk drive" on page 38
- "1100 Keyboard" on page 47
- "1110 Keyboard bezel" on page 49

Figure 12. Removal steps of power board and touch inductive panel Remove two screws and remove the power board 2.



Notes: The touch inductive panel is fixed on the keyboard bezel.

	Step	Screw (quantity)	Color	Torque
		M2.0 × 3 mm, flat-head, nylon-coated (2)	Black	2.0kgfcm
2		W.E.O. WO HINT, Het Hode, Hylon codice (2)	Diduity	2. Orgioni
		www.b	attery	-adap

1130 System board

Important notices for handling the system board:

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

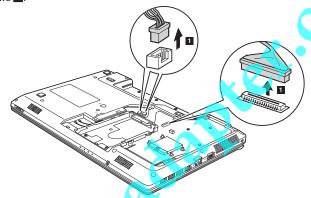
- Be careful not to drop the system board on a bench top that has a hard surface, such as mostal wood or composite. such as metal, wood, or composite.
- · Avoid rough handling of any kind.
- In the whole process, make sure not to drop or stack the system board.
- If you put a system board down, make 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
- "1020 Dummy card" on page 35
- "1030 Optical drive" on page 36
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini ExpressCard slot compartment cover " on page 37
- "105<mark>0</mark> Hard disk drive " on page 38
- #1060 DIMM" on page 40
- "1070 Fan assembly and Heat Sink assembly" on page 41
- "1090 PCI Express Mini Card for wireless LAN" on page 45
- "1100 Keyboard" on page 47
- "1110 Keyboard bezel" on page 49

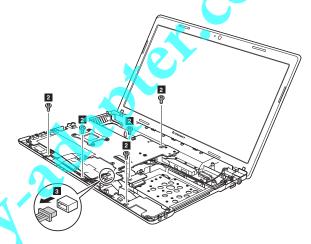
Figure 13. Removal steps of system board

Unplug the LCD connector and detach two connectors in the direction shown by arrows .



When installing: Make sure that the connectors are attached firmly. And to alter

Figure 13. Removal steps of system board (continued) Remove five screws 2 and detach a connector in the direction shown by arrow 3.

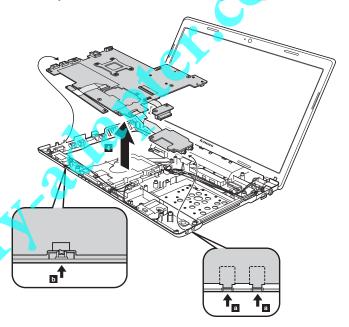


When installing: Make sure that the connector is attached firmly.

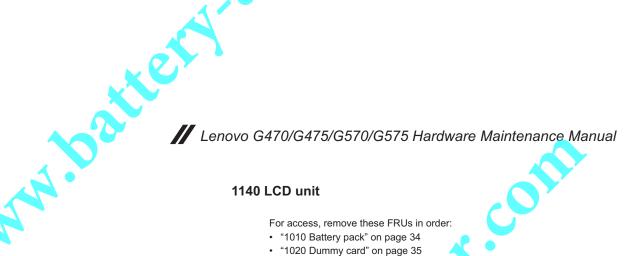
	Step	Screw (quantity)	Color	Torque	
	2	M2.5 × 4 mm, flat-head, nylon-coated (5)	Black	2.0kgfcm	
54					
THE STATE OF THE S		www	batter	y-adapter.	CO

Lenovo G470/G475/G570/G575

Figure 13. Removal steps of system board (continued) Remove the system board in the direction shown by arrow 3



When installing: When attaching the system board to the base cover, adjust the h. vitch or th. 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



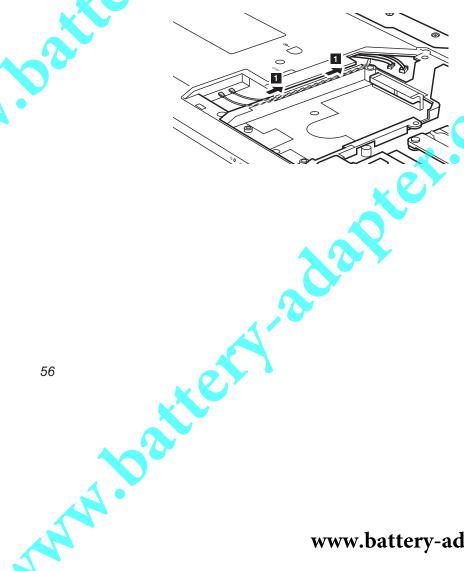
1140 LCD unit

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1020 Dummy card" on page 35
- "1030 Optical drive" on page 36
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover " on page 37
- "1050 Hard disk drive" on page 38
- "1060 DIMM" on page 40
- "1070 Fan assembly and Heat Sink assembly" on page 41
- "1090 PCI Express Mini Card for wireless LAN" on page 45
- "1100 Keyboard" on page 47
- "1110 Keyboard bezel" on page 49
- "1130 System board" on page 53

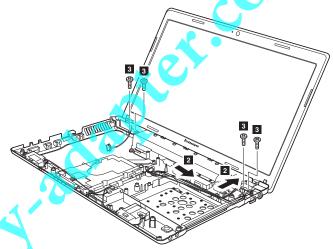
Figure 14. Removal steps of LCD unit

Pull out the two antenna cables from the guide hole in the direction shown by arrows and release them from the cable guides in the direction shown by arrows 2. Remove four screws 3.



Lenovo G470/G475/G570/G575

Figure 14. Removal steps of LCD unit (continued)



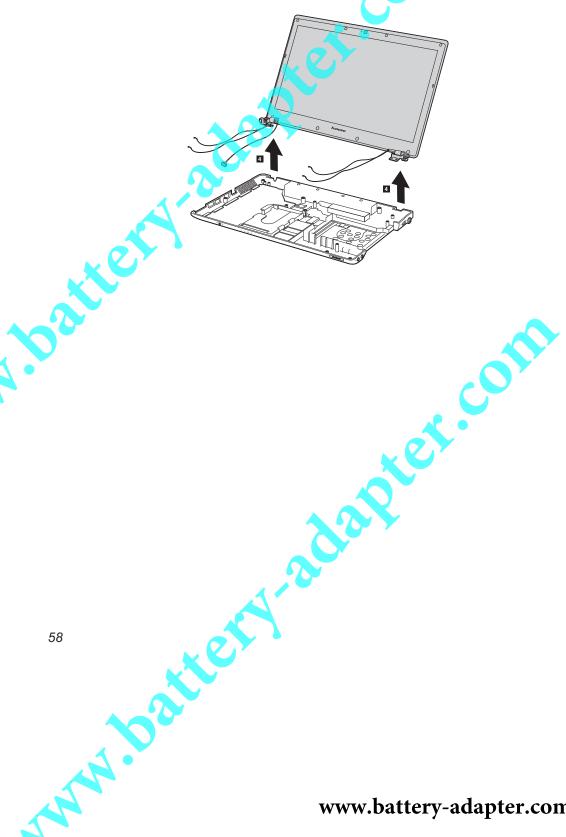
When installing:

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.

	Step	Screw (quantity)	Color	Torque
0	3	M2.5 × 5 mm, flat-head, nylon-coated (4)	Black	2.0kgfcm
			x e	
		eri		57
	X			57
				57



Figure 14. Removal steps of LCD unit (continued) Remove the LCD unit in the direction shown by arrows



Lenovo G470/G475/G570/G575

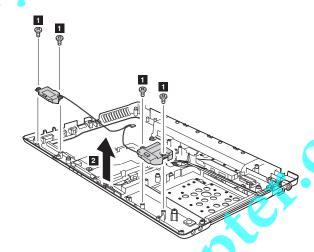
1150 Speakers, bluetooth daughter card and base cover

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1020 Dummy card" on page 35
- "1030 Optical drive" on page 36
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover " on page 37
- "1050 Hard disk drive" on page 38
- "1060 DIMM" on page 40
- "1070 Fan assembly and Heat Sink assembly" on page 41
- "1090 PCI Express Mini Card for wireless LAN" on page 45
- "1100 Keyboard" on page 47
- "1110 Keyboard bezel" on page 49
- "1130 System board" on page 53

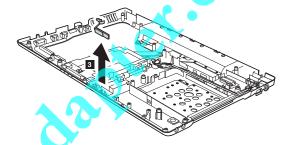
Figure 15. Speakers, bluetooth daughter card and base cover

Remove four screws , release the speaker cables from the cable guides in the direction shown by arrows 2, and then remove the speakers.



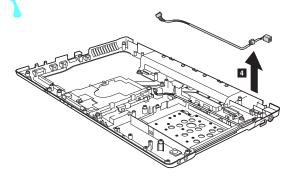
Step	Screw (quantity)	Color	Torque
	M2.5 × 5.7 mm, flat-head, nylon-coated (4)	Black	2.0kgfcm
			59
	TAZTAZTAZ]	hatter	y-adap
	*** *** ***	valler	y-auap

Figure 15. Removal steps of bluetooth daughter card and base cover (continued) The Bluetooth daughter card is attached to the base cover. Remove the Bluetooth daughter card in the direction shown by arrows 3.



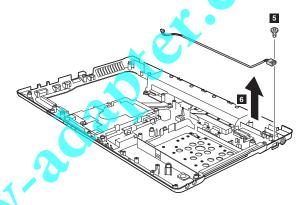
When installing: Make sure that the connector is attached firmly.

Figure 15. Removal steps of bluetooth daughter card and base cover Remove the power assembly in the direction shown by arrow 4.



s at Took When installing: Make sure that the power connector is attached firmly.

Figure 15. Removal steps of bluetooth daughter card and base cover (continued) Remove one screw 5 and then remove the USB assembly in the direction shown by arrow 6.



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

	Step	Screw (quantity)	Color	Torque	
	5	M2.0 × 3 mm, flat-head, nylon-coated	(1) Black	2.0kgfcm	
			Q Le	الم	
		eri		61	
THAN .		wwv	v.batter	y-adapt	er.cor

Note: Applying labels to the base cover

The illustrations used in this Note are of the Lenovo G470.

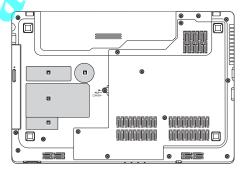
The new base cover FRU is shipped with a kit containing labels of several kinds. When you replace the base cover, you need to apply the following label:

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

For models in China:

- a Windows license label (COA)
- b ENERGY label
- c Rating label
- d PRC CODE label

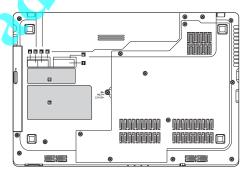
For the location of each label, refer to the following figure:



For models in other countries or regions:

- a Bluetooth label (for US/CA/TW/Indonesia)
- b SIRIM Bluetooth label
- c SIRIM WLAN label
- d Bluetooth label (for Brazil)
- e WLAN label (for Brazil/Israel)
- f WLAN label (for US/CA/TW/Indonesia)
- g Windows license label (COA)
- h Rating label

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



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.

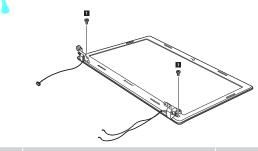
1160 LCD front bezel

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1020 Dummy card" on page 35
- "1030 Optical drive" on page 36
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover " on page 37
- "1050 Hard disk drive" on page 38
- "1060 DIMM" on page 40
- "1070 Fan assembly and Heat Sink assembly" on page 41
- "1090 PCI Express Mini Card for wireless LAN" on page 45
- "1100 Keyboard" on page 47
- "1110 Keyboard bezel" on page 49
- "1130 System board" on page 53
- "1140 LCD unit" on page 56

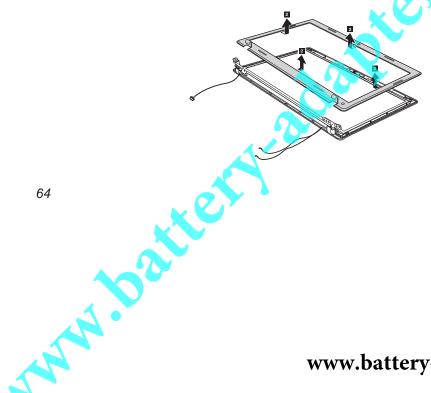
Figure 16. Removal steps of LCD front bezel

Remove two screws



M2.5 × 5 mm, flat-head, nylon-coated (2) Silver 2.0kg	que	
IVIZ.5 × 5 mm, hat-nead, hylon-coated (2) Silver Z.ok	gfcm	

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



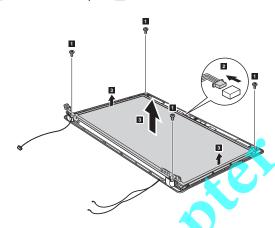
1170 LCD panel and hinges

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1020 Dummy card" on page 35
- "1030 Optical drive" on page 36
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini
 POLE Transport PCI ExpressCard slot compartment cover " on page 37
- "1050 Hard disk drive" on page 38
- "1060 DIMM" on page 40
- "1070 Fan assembly and Heat Sink assembly" on page 41
- "1090 PCI Express Mini Card for wireless LAN" on page 45
- "1100 Keyboard" on page 47
- "1110 Keyboard bezel" on page 49
- "1130 System board" on page 53
- "1140 LCD unit" on page 56
- "1160 LCD front bezel" on page 64

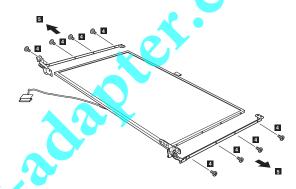
Figure 17. Removal steps of LCD panel and hinges

Remove four screws , and then release the LCD panel. Lift the LCD panel a little and detach the integrated camera connector in the direction shown by arrow 2. Remove the LCD panel 3.



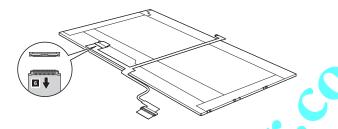
Sto	tep	Screw (quantity)		Color	Torque
		M2.5 × 4 mm, flat-head, nylon-co	ated (4)	Black	2.0kgfcm
	XX	W.Z. 3 " 4 mm, natriedd, nylonidd	acc (1)	DIGON	65
JAN .		W	ww.ba	attery	-adap

Figure 17. Removal steps of LCD panel and hinges (continued)
Remove eight screws 4, and release the hinges from the LCD panel in the direction shown by arrows 5.



Step	Screw (quantity)	Color	Torque
4	M2.0 × 3 mm, flat-head, nylon-coated (8)	Black	2.0kgfcm

Detach the connector on the back of the LCD panel in the direction shown by arrow **6**.



Note: The LCD circuit is attached to the LCD panel, and connected with the LCD cable by an FPC connector.

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

1180 Integrated camera

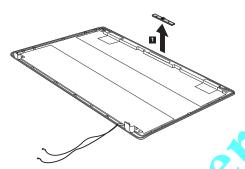
For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1020 Dummy card" on page 35
- "1030 Optical drive" on page 36
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover " on page 37
- "1050 Hard disk drive" on page 38
- "1060 DIMM" on page 40
- "1070 Fan assembly and Heat Sink assembly" on page 41
- "1090 PCI Express Mini Card for wireless LAN" on page 45
- "1100 Keyboard" on page 47
- "1110 Keyboard bezel" on page 49
- "1130 System board" on page 53
- "1140 LCD unit" on page 56
- "1160 LCD front bezel" on page 64
- "1170 LCD panel and hinges" on page 65

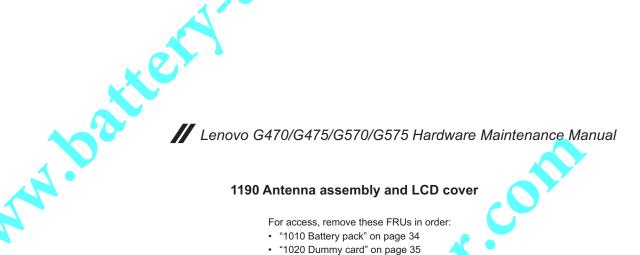
Figure 18. Removal steps of integrated camera

Note: The integrated camera is stuck on the top center of the LCD cover.

Remove the integrated camera in the direction shown by arrow



When installing: Stick the integrated camera to the top center of the LCD cover and ajust the placement of it to make sure the connector is attached firmly. When replacing the integrated camera, noute the connector cable as shown in the figure above.

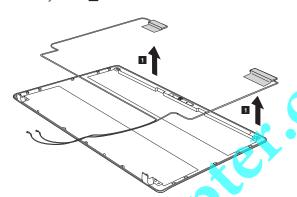


1190 Antenna assembly and LCD cover

For access, remove these FRUs in order:

- "1010 Battery pack" on page 34
- "1020 Dummy card" on page 35
- "1030 Optical drive" on page 36
- "1040 Hard disk drive (HDD)/Memory/CPU (Central processing unit)/Mini PCI ExpressCard slot compartment cover " on page 37
- "1050 Hard disk drive" on page 38
- "1060 DIMM" on page 40
- "1070 Fan assembly and Heat Sink assembly" on page 41
- "1090 PCI Express Mini Card for wireless LAN" on page 45
- "1100 Keyboard" on page 47
- "1110 Keyboard bezel" on page 49
- "1130 System board" on page 53
- "1140 LCD unit" on page 56
- "1160 LCD front bezel" on page 64
- "1170 LCD panel and hinges" on page 65

Figure 19. 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



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.