6-4 Replacing the CPU

The shape and replacement method of the CPU fan may be different depending on the model.

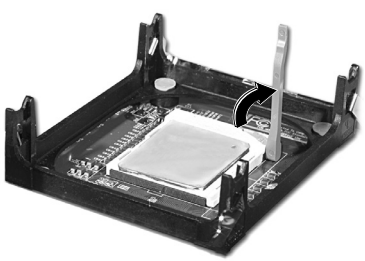
1 Remove 4 screws and then disassemble the computer case as the arrow indic ates.

Caution

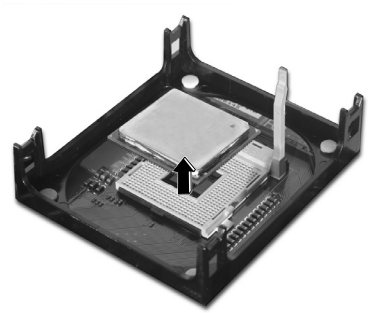
Align the groove to the right position, pins can easily be broken.

2 Clamps on both sides of the CPU fasten the fan tightly to the CPU socket. raise the handle❶, release the clamps, and then spread them outward❷.

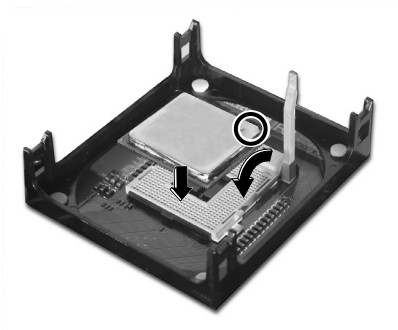
3 After releasing the clamps, lift and remove the CPU.



4 Raise the handle on the CPU socket to unlock the CPU.



5 Lift the CPU straight up. Be careful not to damage the pins at the bottom of the CPU.



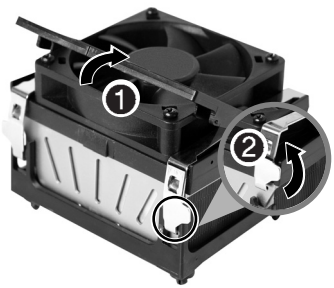
6 Align the identifying marks at the corners of the new CPU and socket, and carefully install the CPU in the socket. Lower the handle to lock the CPU in place.

Caution

Always wear gloves to avoid injuries.

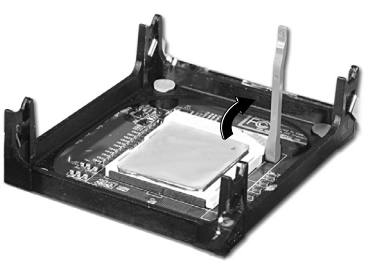
Replacing CPU

1 Clamps on both sides of the CPU fasten the fan tightly to the CPU socket. raise the handle❶, release the clamps, and then spread them outward❷.

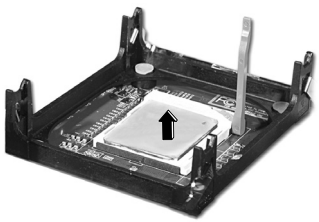


2 After releasing the clamps, lift and remove the CPU fan from the socket.

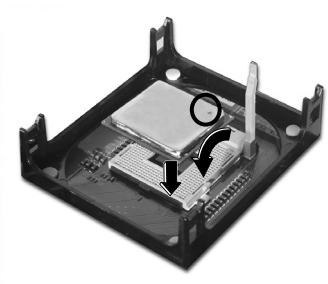
3 Raise the handle on the CPU socket to unlock the CPU.



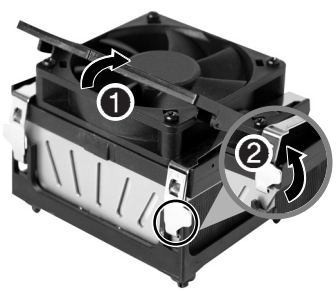
4 Lift the CPU straight up. Be careful not to damage the pins at the bottom of the CPU.



5 Align the identifying marks at the corners of the new CPU and socket, and carefully install the CPU in the socket. Lower the handle to lock the CPU in place.



6 Lower the handle as shown picture❶ and lock the clamps as shown picture ❷.



Caution

In a specific system, clamps are not fully open. Raise the CPU fan from the fully opened space. To assemble it, install from the opposite side.

6-5. Increasing the memory

If you run out of memory while using the computer, you may want to increase the amount of memory in your computer.

About memory

Your computer uses DDR(Double Data Rate) SDRAM DIMM(Dual In-Line Memory Module) with 184 pins. Your computer supports Unbuffered DDR SDRAM DIMM of 128MB up to 1024MB in size in each socket, and 2048MB total.

Note

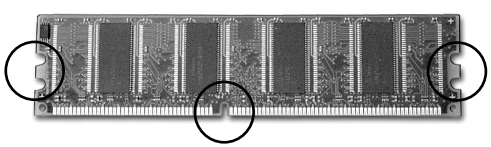
- Windows 95, 98SE, ME supports memory up to 512MB total. Increasing the memory beyond 512MB in these systems may cause errors while using the computer.

Before increasing the memory

- Always wear gloves to avoid injury when disassembling the computer
- Static electricity can damage memory modules be sure to minimize the static electricity when replacing memory.
- Make sure to replace the memory of the same type as the installed memory.
- DIMM is different from SIMM in that it is configured for 64 bit operation; therefore, your computer can operate with only one DIMM installed.

Note

- Use a 2.5V DDR SDRAM DIMM.(The shape of the memory may be different depending on the model) DDR SDRAM enhances the rate of data transmission of the SDRAM and looks different from SDRAM.



DDR

Caution

- Your computer supports PC2700/3200 DDR memory.
- Use Unbuffered DDR SDRAM DIMM only to increase the memory.
- Dual channel mode operates when each identical memory is installed in the same color of DIMM slot.

FSB Frequency	Supported memory type
533/800MHz	PC2700/3200-DDR SDRAM 333/400MHz

Purchasing a memory

Check the type of memory installed in your computer and refer to the memory configuration chart before purchasing a memory.

Specification: PC2700/3200(184 pin DDR SDRAM DIMM)
Speed: 333MHz(166MHz X 2), 400MHz(200MHz X 2)
Size: 256MB, 512MB

Memory configuration chart

Total memory	DIMM 1	DIMM 2	DIMM 3	DIMM 4	DUAL/SINGLE
256MB	256				SINGLE
512MB	256MB		256MB		DUAL
		256MB		256MB	DUAL
	512 (1/4)				SINGLE
1024MB	256MB	256MB	256MB	256MB	DUAL
	512MB		512MB		DUAL
		512MB		512MB	DUAL
2048MB	512MB	512MB	512MB	512MB	DUAL

Note

- Dual channel improves the efficiency of the system.
- Each identical memory should be used for dual channel setting.
- Dual channel setting is recommended.

Replacing the memory

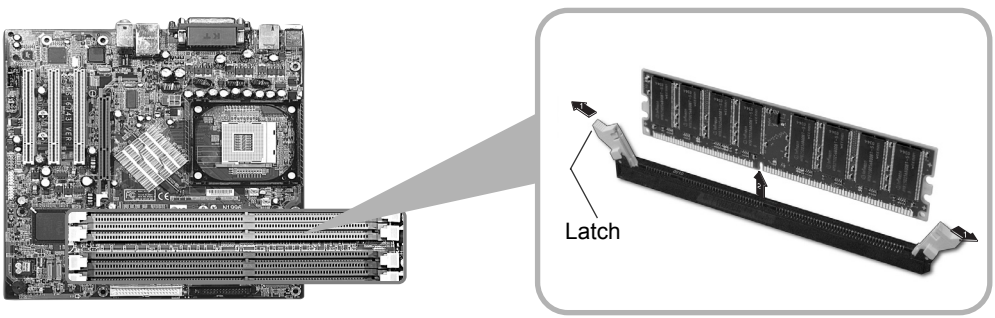
The main board configuration, memory socket, and the shape of memory may be different depending on the model.

Note

■ Before opening the case, turn off the computer and peripheral devices, and remove the power cords.

1 Remove the screws on the rear of the computer, and open the com puter case.

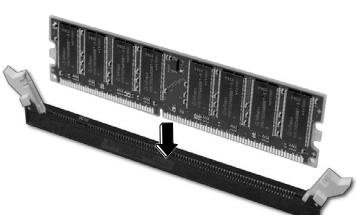
2 Pull the latch on each side of a memory socket to release the memory.



Installing a memory

1 Pull the latch on each side of a memory socket.

2 Align the notch at the bottom of the memory with a protrusion in the middle of the socket, and then insert the memory straight down.



Note

■ For dual channel system, each mem ory should be installed in independent slot(1&3 slot or 2&4 slot) when using DDR Memory

It is recognized as a single channel if there is a difference between dual channel 1 and 3, 2 and 4.

❶
❷
❸
❹

Firmly push the latch to lock the memory.

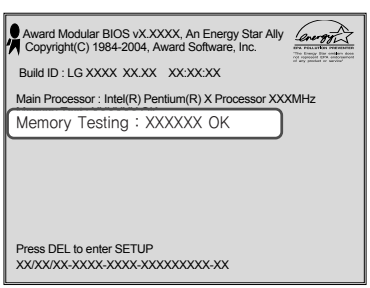
Checking the size of the installed memory

The computer automatically recognizes the newly installed memory; therefore, you do not need to change the system setup. Follow the instruction below to check the size of the installed memory.

1 Connect the power cord and other devices, and turn on the computer and monitor. The following screen appears to inspect the status of the computer.

2 If the following screen appears, press **[Esc]**. POST screen appears.

3 If the following screen appears, press **[Pause]** key to pause the screen. Make sure **[Memory Testing : XXXXXX OK]** appears.



Note

■ To stop the logo screen for a moment, press **[Delete]** key ➡ Advanced BIOS Features ➡ Full Screen Logo Show Selectable, and then select Disable.

4 After check the memory, press **[Esc]**. Windows screen appears.

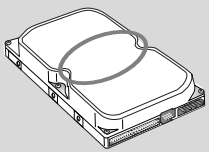
6-6. Adding a hard disk drive

Your computer supports up to 4 E-IDE controllers and 2 hard disk drives.

Before adding a hard disk drive

The following instruction describes the most typical configuration where your computer already has a master hard disk drive and you are adding a slave hard disk drive.

Note

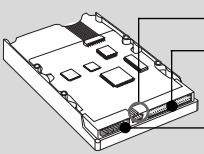


- Check and write down the jumper settings, size, and number of cylinders, heads, and sectors of the hard disk drive where you can refer to when you use the system setup.

  (Some hard disk drives do not have the information written on the drive)

Adding a hard disk drive

Note



- Prepare the hard disk you want to add.
- Purchase an E-IDE hard disk drive.
- Set the jumper setting in the slave hard to SL: Slave.
- The jumper settings differ from one hard disk drive to another, so make sure you follow the jumper setting information on top of the drive.

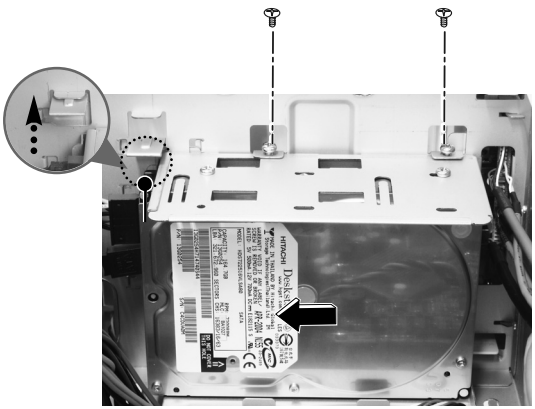
Caution

- Always wear gloves to avoid injury when disassembling the computer.
- If the master hard drive is set to CS(Cable Select), the slave drive must also be set to CS(Cable Select).
- Using screws other than the ones provided with the hard disk drive can damage the drive. Using longer or thicker screws can be fatal to the disk drive. A hard disk drive must be mounted securely in order to provide reliable performance.

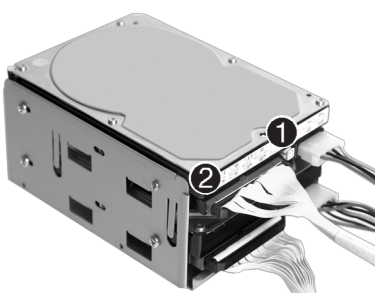
Adding a hard disk drive

1 Refer to Opening the computer case (page 66) to remove the computer case cover.

2 Remove 4 screws on the hard drive case and open the hard drive case as the direction of the arrow.



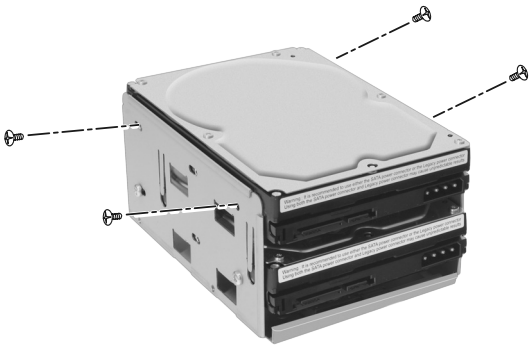
3 Connect the power cable connector as shown No1 and the signal cable connector as shown No 2 to the new hard disk you want to replace in the hard disk case.



Warning

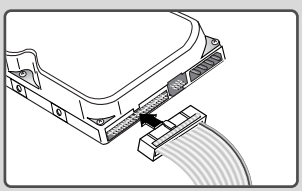
Incorrect connection of the signal and power cord may cause disfunction to the computer or electrical shock.

4 Install the hard disk drive case to the computer and fasten the 4 screws.

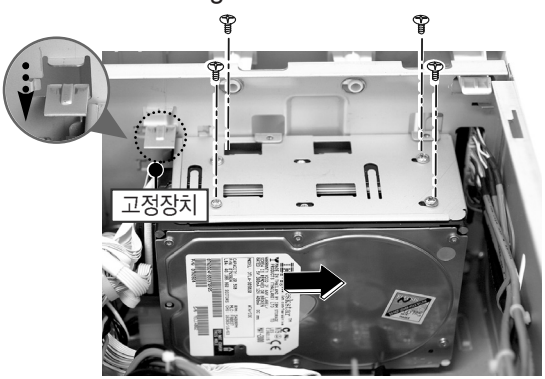


Note

■ Incorrect connection of the power and signal cables to a hard disk drive may damage the drive.



5 Fasten 4 screws after installing the hard disk drive as shown on the picture.



6 Refer to Closing the computer case (page 66) to close the computer case cover.

Note

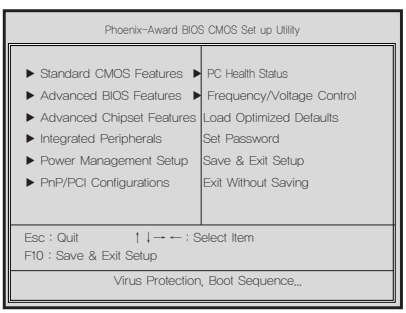
■ You should setup and format your computer after installing the hard disk. Refer to the Hard disk setup (page82).

Hard disk drive setup

1 Turn on the computer and monitor.

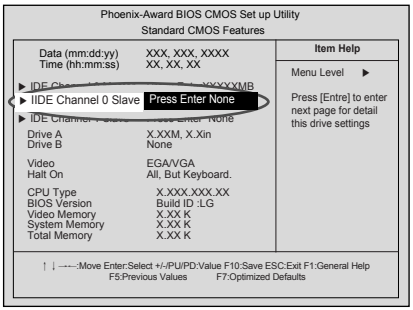
2 Press **[Delete]**key when the logo screen appears.

3 The CMOS Setup Utility opens.

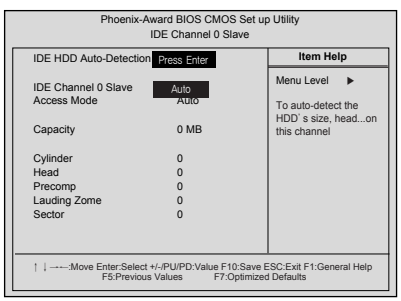


4 Use arrow [↑],[↓],[←], and [→] keys to select **Standard CMOS Features**, and press Enter.

5 Use arrow [↑],[↓],[←], and [→] keys to select **IDE Channel 0 Slave**, and press **[Enter]**.



6 After setting **IDE Channel 0 Slave** to **Auto** by pressing **[Enter]**, press **[Enter]** in **IDE HDD Auto-Detection** so the system automatically recognizes the newly installed slave hard disk drive.



7 Press **[F10]** to save the new setting.

8 If the following message appears, press **[Enter]**. The computer restarts.

SAVE to CMOS and EXIT(Y/N)? Y

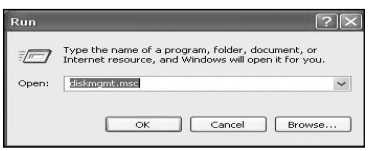
Hard disk setup (Hard disk with factory default setting)

Caution

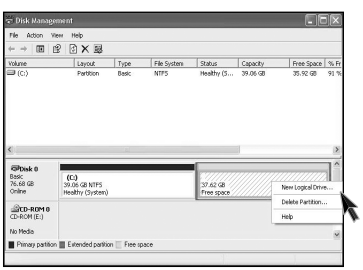
Be careful, Using <diskmgmt.msc> to divide partition delete data in a selected driver.

1 Click **[Start]** and **[Run]**.

2 Type '**diskmgmt.msc**' and press **[OK]**.

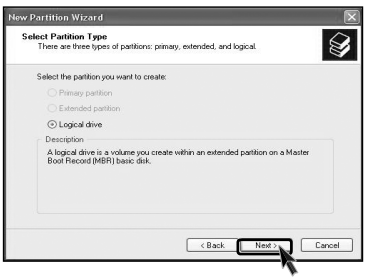


3 If the following window appears, select disk1. Click right button on the mouse to select New partition.

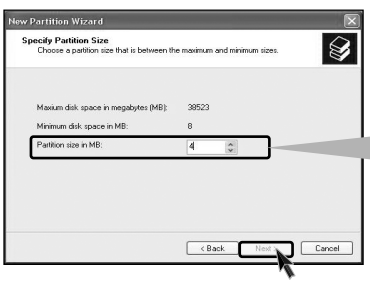


4 Click **[Next]** if the following message appears.

5 Select a partition and click **[Next]**.



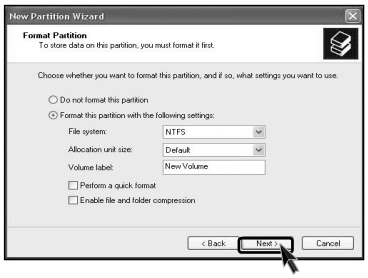
6 Select the maximum size and click **[Next]**.



A selected space of the disk will be available to use.

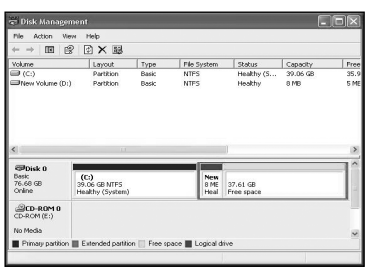
7 Click **[Next]** after selecting a drive value.

8 If the following window appears, select File system, Allocation unit size and Volume label ,and click [Next].



9 New Partition Wizard is complete, click [Finish].

10 After the format is complete, the hard disk operates normally.



6-7.Installing expansion cards

When you are using the computer, you may need to install expansion cards to improve funtionality. The following instruction describes how to install expansion cards.

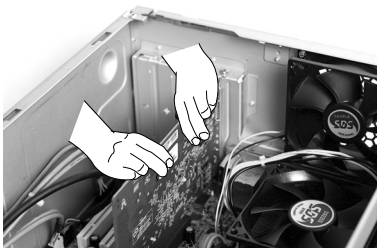
1 Refer to Opening the computer case to open the computer case cover.

2 Use the driver and remove the metal slot cover.
(Remove it, only when installing an additional extension card.)

Warning

- Always use a screwdriver to open the case cover. There is the risk of injury.
- In order not to be injured when disassembling the computer, wear the gloves.

3 Hold the expansion card with both hands and align the expansion card and slot. Push down evenly to insert the card into the slot.



Caution

- Incorrect installation of an expansion card may damage the main board and result in a computer malfunction.

4 Fasten 2 screws after installing the extension slot.

Warning

- Using the computer without closing the case may result in fire, electric shock, injury, and/or damage to the computer.

5 Install the driver program for the new expansion card.

Specifications *KG model

※ **Specifications below differ depending on the models.**

CPU	Intel Pentium 4 / Celeron mPGA478 type (2.4GHz or above)
System memory	256MB (up to 2.0 GB) - If built-in VGA is used, maximum 16MB and minimum 1MB is applied for Video Frame buffer in DOS Mode, but Windows Mode automatically manages the video memory (up to 96MB depending on System Memory size).
Cache memory	L1: 8KB/16KB or above, L2: 128KB/256KB/512KB/1024KB or above.
Hard disk drive	40GB or above (E-IDE type)
Floppy disk drive	One 3.5inch 1.44MB drive
Keyboard	PS/2 keyboard (104keys)
Mouse	PS/2 mouse or USB (ball / wheel)
Video	Integrated or external AGP graphic
Sound	Built-in AC'97 audio. Support MIC-IN, SPEAKER-OUT and LINE-IN.(Support virtual 5.1 channel output)
LAN	Integrated 10/100Base-T Ethernet
USB	6ports (support USB 2.0)
Serial I/O	One RS-232C (9pins)
Front I/O	One 1394 port, Two USB ports and audio ports (SPEAKER-OUT and MIC-IN)
Parallel I/O	One printer port (25pins)
IEEE1394	One 1394(Front), One 1394(Rear)
Extension slot	One AGP
Product size	Width 170 x Height 357 x Depth 406(mm)
Cable	Power cable length 1.8m
Power spec	100~127 / 200~240VAC, 6.3/4A, 50/60Hz or 200~240VAC. 4A, 50/60Hz
Environmental requirement	Temperature:Average temperature:77℉(25℃) Operating temperature:41℉~95℉ (5~35℃) Storage temperature:-4℉~131℉(-25~55℃)/Humidity:Average humidity:60%(RH) Operating humidity:30%~80%(RH)/Storage humidity:30%~80%(RH)
Option mark	1394 port(Front/Rear)

-NOTE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to pro-vide reasonable protection against harmful interference in a residential installa-tion. This equipment generates, uses and can radi-ate radio frequency energy and, if not in-stalled and used in accordance with the in-structions, may cause harmful interference to radio communications. However, there is no guarantee that interfer-ence will not occur in a particular installation. If this equip-ment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the fol-lowing measures:

-. Reorient or relocate the receiving antenna.
-. Increase the separation between the equip-ment and receiver.
-. Connect the equipment into an outlet on a circuit different from that to which the re-ceiver is connected.
-. Consult the dealer or an experienced radio/TV technician for help.

Caution

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

memo

memo