

# Assembling a Computer

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A computer is a machine used to respond to and execute instructions. The purpose of this description is to explain the working components of a computer in hopes that others will see how easy it is to assemble after attaining all the right parts. Computers are useful machines that can make sharing information easier. Once a person knows what parts go into a computer and how they work, he or she could easily construct one eliminating cost and customizing to personal needs.

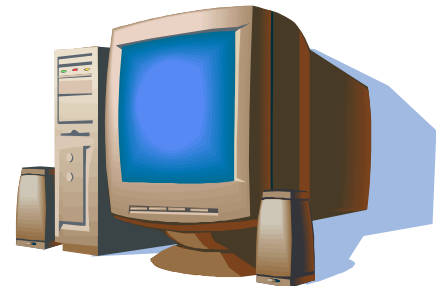


Figure 1

## Purchasing Components

Most computer parts are found in chain stores, local retailers or over the Internet. One of the biggest sellers online is Newegg.com.

### Case

The case is the protective shell in which all the other parts fit into. Size does matter when purchasing a case. Larger cases allow more air flow and allow a bigger workspace when putting parts in. A small case does not allow room for extra components, but takes up a smaller space.

### Power Supply

Supplying power to the computer, the power supply converts electricity from an alternating current to a direct current. It also regulates the amount of energy the computer is receiving to safe operating levels. Some power supplies are included when purchasing the case, but consumers should look for a wattage level that will suit their needs.

### Motherboard

A motherboard is the main component of a computer, linking all information between the processor, graphics card, RAM and other peripherals used by the computer. When purchasing this component, pay attention to specifications the motherboard can support before buying additional parts.

### Central Processing Unit

The most important element of the computer system is the CPU, or processor, which acts as a moderator for all other computing processes. There are two brands: AMD and Intel. Processors are also designated by how many cores they have. More cores make it easier for the processor to handle more information at a time.

### Parts Needed:

- ✓ Case
- ✓ Power supply
- ✓ Motherboard
- ✓ CPU
- ✓ RAM
- ✓ Graphics card
- ✓ Hard drive
- ✓ Optical drive
- ✓ Operating System
- ✓ Keyboard
- ✓ Mouse
- ✓ Monitor
- ✓ Speakers

## RAM

RAM is a memory source that can be used in different processes and accessed at any given time. Before purchasing, look for the front side bus (FSB) number on the CPU. Compatible RAM speed will be roughly half of the FSB number.

## Graphics Card

The graphics card is an adapter, enabling the computer to send video output to the monitor. Depending on how graphically demanding the processes are, a larger graphics card may be needed to support higher video demands.

## Hard Drive

Used to store personal data and processes for the computer, a hard drive writes information on a primary disk that can be retrieved at any time by the user. Specifications for the motherboard give information on what hard drive is compatible with it.

## Optical Drive

The optical drive is the component that reads and writes data onto a disk. Some optical drives are specific for CD, DVD or both, and some are capable of light scribe.

## Operating System

An operating system is a program that gives a useable interface to the operator of the computer. With this program, the user can access all functions of the hardware installed in the computer or plugged into it.



Figure 2

## Putting it Together

Most of the parts will include manuals for further instructions on assembling each component in the case and on the motherboard. Builders can also find useful information on the Internet if he or she is stuck.

Follow these step by step instructions:

1. Put power supply in case with fan side out and secure with screws
2. Align motherboard with holes in case and secure with screws
3. Lock CPU chip on motherboard with lever
4. Place heat sink over the processor and secure four corners
5. Insert RAM into motherboard slots and secure with rotating arms
6. Insert graphics card and lock with lever
7. Remove front faceplate and slide optical drive into place
8. Slide hard drive into case
9. Hook optical and hard drive to power supply and motherboard
10. Plug power supply into motherboard
11. Plug in remaining cables to motherboard using the manual
12. Plug in monitor, keyboard, mouse and speakers
13. Load chosen Operating System