

## Installing a Hard Drive

Installing a Hard Drive is a medium level job. You can do it, but it might not be fun. If you are confident in yourself and would like to save the money a computer guy would charge to do it, go ahead and do it yourself. It won't be that bad.

---

Before starting, make sure you have a Startup disk. This is a disk that has the necessary files for your computer to boot off of. You need to make sure your system disk works now. You will need to boot your system with it in order to complete the set up of your new hard drive.

If you are adding a second hard drive, you need to decide which one will be the *master* and which one will be the *slave*. The master is your drive C. The other one is the slave. Look at the instructions for the hard drive. It will tell you how to make the drive a master or a slave. They usually come configured as a master, and you simply adjust a jumper on the back of the drive to make it a slave. Pre-286 computers can't handle two [Hard Drive Install](#). A later computer can handle two [Hard Drive Install](#) hard drives per IDE channel. This is more than enough for most people.

Get the setup in your mind. Which IDE channel? Master or slave? As a consideration, don't put the hard drive on the same channel as your CD-ROM unless you have to.

### Physical Installation

Okay, now lets do it. If you are only installing a second hard drive or a new one, you can skip down to step 5, although this might help as a reference.

1. Back up your old hard drive, turn the computer off, unplug it, and take the case off. You'll want to make sure you back up your old drive first. You can do this with a tape-backup drive or some other form of removable storage. I'd recommend the later of these options, due to their speed and capacity. Also, you may want to make some quick sketches of just how everything is in there: Which direction is everything facing? Where and how are the cables connected? For some people, such sketches help to put everything back when you are done.
2. Remove the cables from the old drive. You will see both a wide IDE [Hard Drive Install](#) and a small 4-pin power plug. Do not force them out. The ribbon cable is usually quite easy to remove. Sometimes, though, the power connector can become stuck. Just rock it back and forth, taking care not to rip the connector off the drive.
3. Remove the mounting screws that hold the drive to the case frame. Sometimes, you may need to tip the case or get into some strange positions to reach all the screws. But, that's part of the fun.
4. Remove the old drive from the case. Be sure not to bump anything too hard on the way out.
5. Slide the new drive in right where the other one came out. If it is smaller than the drive bay ( if you are installing a 3.5" drive into a 5.25" drive bay ), you may need to add rails or a mounting bracket to make it fit. If you are adding a second drive, just pick any empty drive bay. Screw the drive into place.
6. If you need a separate controller card, install it now into any unused motherboard slot. If you are replacing a non-IDE drive with an IDE drive, you'll need to throw a new IDE controller card in. Most of today's motherboards have two built-on IDE controllers. It is easiest to use

- these controllers when available, and it saves a slot for something more fun.
7. Attach the cables to the hard drive. Just like a floppy drive, connect the ribbon cable and the power cable. The ribbon cable goes from the controller to the drive. Make sure the red edge of the ribbon cable is in line with Pin 1 on the drive. If you place the cable on backwards, you may get strange errors that make your new drive sound like it has died already. If you are adding a second drive, simply choose a connector on the same ribbon cable that is not used. Most ribbon cables come with three connectors: one on the end and one mid-way, then one further away on the other end which connects to the motherboard. In this case, it doesn't matter which plug goes in what drive. The computer looks at the master/slave jumpers to see which one is Master. Make the second hard drive the slave. The manual should show you how to do this on your particular drive, although many drives have the jumper settings conveniently labeled on the drive itself.
  8. If you have not yet done so, replace the screws. First double check your work, though. Also, make sure you use screws short enough not to damage the drive when tightened. Do not force the screws to tighten.
  9. Plug the system in , and turn it on with your system disk in Drive A:. It is best to leave the case cover off for now in case you need to fiddle with something or troubleshoot the installation.
  10. New hard drives need to be prepared before they will work. You will need to configure it and set the CMOS. When you turn the system on, immediately hit the Hot Key sequence necessary to enter CMOS setup. A lot of times, this is Delete. Go to the section on IDE auto-detection, if your BIOS has this option. Follow the prompt under this section and it will auto-detect the drive. If your BIOS does not support this, then you will need to manually plug the necessary information into setup for the drive. When this is done, exit CMOS and save your changes. The system will reboot. Leave the system disk in Drive A:.
  11. When the system completes boot up, it should stop at the A: prompt. Type "fdisk" and hit enter. Follow the prompts to partition the drive.
  12. When FDISK is done, you should be able to switch to the C: drive, or whatever letter the new drive happens to be. Now, all you need to do is format the drive. At the A: prompt, type "format x: /s". Replace "x" with the letter of this new drive. This will proceed to format the drive and copy necessary system files to it. After that, you will be able to boot the system off the new hard drive.
  13. Now you can copy files to it or whatever. If this is to be your main drive, you can install your operating system now.