

Lab 3.6.4: Floppy Drive, Hard Drive & CD-ROM Installation

Estimated time: 45 Minutes

Objective

In this lab, you will install the floppy drive, hard drive, and CD-ROM drive. Also, you will install the ribbon cables for each drive and the audio cable for the CD-ROM.

Equipment

The following equipment is required for this exercise:

- The computer case you have been working on
- ESD wrist strap
- Safety glasses
- Tool kit and screws
- Floppy drive with ribbon cable
- Hard drive with ribbon cable
- CD-ROM with ribbon cable and audio cable

Scenario

Continue to install the components necessary to complete your friend's computer.

Procedures

When installing devices that use ribbon cables to communicate with the motherboard, such as hard drives and floppy drives, it is important to note the location of pin 1. Examine the ribbon cable and find the red stripe on one side of the cable. Pin 1 is found on the side of the ribbon with the red stripe. The motherboard documentation should show the location of pin 1 for each connector, and pin 1 is also usually labeled on the motherboard for each connector.

Step 1

Locate the half-height (3.5") bays. Locate the top 3.5" bay, if there are two. This is where the floppy drive will be installed. If there is a cover for the top 3.5" bay, reach inside the case and push out the cover.

Step 2

Retrieve the floppy drive and line it up with the upper 3.5" bay. Slide it in until the front lines up with the front of the computer case and the screw holes on the floppy drive line up with the side rails on the case. Use the proper screws and secure the floppy drive to the case. On some cases a long screwdriver may be needed to reach the back side of the floppy drive.

Step 3

Install the hard drive.

Note: the 3.5" cover for the hard drive bay does not have to be removed. Line up the hard drive with the lower 3.5" bay. Slide the hard drive in until screw holes line up with the case rails. Use the proper screws and secure the hard drive to the case.

Step 4

Install the CD-ROM into any of the 5.25" bays. In most computer cases the 5.25" bays are the upper bays.

Locate the 5.25" bay you will use for the CD-ROM. If there is a cover for this bay, reach inside the case and push out the cover. Retrieve the CD-ROM from the parts inventory and slide it in from the front of the case. Push it back until it is flush with the case and the screw holes line up with the case rails. Use the proper screws and secure the CD ROM to the case.

Step 5

The floppy drive is connected to the motherboard with a thirty-four pin, two-connector ribbon cable, which has a twist in it. The twist identifies one of the floppy drives as drive "A:\". Only one floppy drive will be used during this installation. To use the other connector, assign the "B:\\" drive letter.

Select the proper ribbon cable for the floppy drive. Take one end of the ribbon cable and connect it to the back of the floppy drive. Take the other end and connect it to the floppy connector on the motherboard. Do not use excessive force when inserting the ribbon cable. Also, make sure the plug is oriented correctly according to pin 1.

Step 6

The CD-ROM is attached using an IDE, forty-pin, forty-conductor ribbon cable. The CD-ROM cable has two connectors--one for the motherboard and one for the CD-ROM.

Select the proper ribbon cable for the CD-ROM. Take one end of the ribbon cable and connect it to the back of the CD-ROM. Take the other end and connect it to the IDE connector on the motherboard. Do not bend the motherboard with excessive force when inserting the ribbon cable.

Step 7

Connect the audio cable that came with the CD-ROM. Attach one end of the cable to the CD-ROM and the other end to the motherboard. Usually, the audio cable connectors are notched and will plug-in only one way. If this is not the case, simply insert the connectors whichever way they can go in. The only difference it makes is that the audio channels may be swapped.

If however, you do not get any sound after the computer is powered up and the CD-ROM tested, simply go back in the box, pull out the audio cable and reverse the sides. Always consult any manuals that come with components for additional direction on installations.

Step 8

The hard drive is attached using an IDE, forty-pin, eighty-conductor ribbon cable. The hard drive ribbon cable looks similar to the CD-ROM cable. However for each conductor it has an associated ground wire, hence 80 conductors. This cable can fit into a CD-ROM and visa versa, but the hard drive will not work properly if they are switched. The easiest way to tell the difference between the CD-ROM ribbon cable and the hard drive cable is to feel them. Since the hard drive cable has eighty-conductors it is not as coarse as the CD-ROM cable.

Select the proper ribbon cable for the hard drive. Take one end of the ribbon cable and connect it to the back of the hard drive. Take the other end and connect it to the IDE connector on the motherboard. Do not bend the motherboard when inserting the ribbon cable.

Step 9

The power cables are attached to the motherboard and each drive. Examine the power cables that extend from the power supply. There will be one large connector and several smaller connectors. The large 20-pin (ATX 1) attaches to the motherboard, the smaller connectors attach to the drives.

Most power supplies support four IDE drives and two floppy drives. The connectors for the floppy drives and for the IDE drives (CD-ROM & hard drive) are different. Examine the back of each drive. Find the power connectors on the back of each drive and connect the correct power cable to each one.

Next, connect the ATX power connector. Use caution when attaching the ATX cable. Do not bend the motherboard.

Troubleshooting

If the floppy ribbon cable is keyed (can plug in only one way), but the floppy drive does not have a keyed slot, check for a punch out on the drive that can be removed to make room for the keyed slot. Otherwise, a non-keyed floppy ribbon cable will be necessary and can be purchased at a local computer supply store.

Reflection

Briefly summarize the differences between the floppy drive and hard drive ribbon cables:

Write one tip that you learned from the material or in class that helped you with the installation of the components in this lab.
