

HOW TO BUILD A COMPUTER - BASIC STEPS

1. Inspect all parts carefully and compare with provided parts list to ensure that everything is included
2. Setup a work area with an anti-static mat and put on your anti-static wristband
3. If possible, do not work on thick carpet
4. Carefully remove all parts from boxes and lay out (if on floor, I suggest putting down a sheet so small parts don't disappear)
5. Do not throw away any packaging incase items need to be returned
6. Lay case on side and remove side panel for access to inside
7. If case came with an I/O panel guard, remove it
8. Install the I/O panel guard that came with your motherboard—it may require some force
9. Ensure that all wires for front panel connections such as power and LEDs are present and undamaged
10. Install case fans if not already installed—they may snap into place or may require screws
11. Install the optical drives and 3½ inch drives
 - a. Bay shields may have to be removed first
 - b. A metal shield may have to be removed by twisting it
 - c. If using IDE drives, set top drive to master bottom drive to slave using jumpers and key on back
 - d. Either attach sliders to drive and slide in, or slide in and screw into place, depending on case configuration
12. Install components on motherboard
 - a. *Note-if your hard drive bays face into the case, you may want to go to step 13 and install your hard drives first
 - b. If case is equipped with motherboard tray:
 - i. Remove the tray from the case and add the standoffs at the appropriate locations
 - ii. If using a third party CPU cooler, follow instructions to add back plate if necessary before continuing
 - iii. Screw the motherboard into the standoffs using the provided screws. Do not over tighten.
 - iv. Lift the CPU latch
 - v. Install the CPU into the motherboard socket by matching the gold triangle on the CPU with the triangle on the motherboard-the CPU will only go in one way, and should not take force to insert
 - vi. Latch down the CPU
 - vii. If the CPU cooler does not have thermal paste pre-applied:
 1. Put a small dab of paste on the CPU about the size of small bead
 2. Use a business card to evenly spread the paste across the CPU, ensuring that it does not get on the motherboard

3. The coat should be very thin, but should cover the CPU completely
- viii. Install the CPU cooler using the instructions provided
- ix. If the cooler uses a fan, connect it to the appropriate header on the motherboard
- x. Plug the RAM into the motherboard, following the instructions provided in the motherboard booklet—dual channel RAM usually has to be inserted in to particular slots. The RAM has a notch and will only fit in one way.
- xi. Snap the RAM in
- xii. Lower the tray with the motherboard back into the case, being mindful of the I/O shield
- xiii. Lock the tray into place if applicable
- c. If case is not equipped with motherboard tray:
 - i. Set the motherboard down on a sturdy surface
 - ii. If using a third party CPU cooler, follow instructions to add back plate if necessary before continuing
 - iii. Lift the CPU latch
 - iv. Install the CPU into the motherboard socket by matching the gold triangle on the CPU with the triangle on the motherboard-the CPU will only go in one way, and should not take force to insert
 - v. Latch down the CPU
 - vi. If the CPU cooler does not have thermal paste pre-applied:
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 - x. Snap the RAM in
 - xi. Install standoffs in the case at the appropriate locations for the holes in the motherboard
 - xii. Carefully lower the motherboard into the case and onto the standoffs, being mindful of the I/O Shield
 - xiii. Screw the motherboard into the standoffs using the provided screws. Do not over tighten.

13. If your case fans plug into a 3 pin motherboard header, plug them into the motherboard now

14. Install the hard drives

- a. If using IDE drives, set jumpers appropriately

- b. Either attach sliders to drive and slide in, or slide in and screw into place, depending on case configuration

15. Install PCI cards

- a. Remove rear PCI shields for necessary slots. Do not remove extra shields—it is bad for airflow.
- b. Install the video card first, referring to your motherboard booklet to determine which slot it should go in (this often matters if your board has two PCI express ports and you are only using one card)
- c. Install your other PCI cards in the appropriate slots
- d. Screw all the cards in (or snap in if case has tool-less PCI setup)
- e. When possible, leave space between cards to provide better air circulation (especially with video cards)

16. Plug in Headers

- a. Refer to your motherboard documentation closely for the following
- b. Plug in internal USB, internal Firewire, and internal audio if applicable (usually applicable only if your case has ports on the front). Note that sound cards usually do not have ports for front-panel connections.
- c. Plug in motherboard headers for HDD LED, power LED, Power Button, Reset Button, system speaker, etc. Refer to your motherboard booklet for the exact configuration.

17. Add data wires

- a. Run either the IDE or SATA wires from your disc drives to the motherboard and plug in to appropriate connections
- b. If using a floppy drive, run IDE wires to appropriate connection on motherboard and plug in
- c. Run either IDE or SATA wires from your hard drives to the appropriate connection on the motherboard and plug in

18. Install the power supply

- a. If the power supply is modular, plug in the wires you will need.
- b. Slide the power supply into the case
- c. Screw the motherboard in from the rear of the case using the included screws. This may or may not require a special plate depending on the case.

19. Attach power cables

- a. Run a 4 pin molex (for IDE) or a SATA power cable (for SATA) to your disc drives and plug it in
- b. Run a mini molex to your floppy drive (if you're still using one)
- c. Run a 4 pin molex (for IDE) or a SATA power cable (for SATA) to your hard drives and plug it in
- d. If your video card requires supplemental power, run a PCI power cable (either 6 or 8 pins) to it and plug it in. Some require two PCI power cables.
- e. Run the 4 or 8 pin motherboard auxiliary power cable to the appropriate port on the motherboard and plug in

- f. Run the 20 or 24 pin main power cable to the motherboard and plug it in. If the motherboard bends under the pressure needed to plug it in, support the motherboard with your hand.
 - g. If your fans use 4 pin molex connections, plug one into a cable from the power supply, and daisy chain the rest to the first one. If your case has a fan controller, that may need to be plugged in between the power cable and the first fan. Refer to the instructions that came with the case.
- 20. Close up the case, make sure the power supply main switch is on, plug in your peripherals and power, and hit the power button!
- 21. Refer to the motherboard to determine the key needed to enter the bios. Press that key during startup to enter the bios and set it up as you please. I suggest making the disc drive the first boot device so you can install your operating system. Save your settings and exit the bios.
- 22. Put your OS disc in and boot from the disc to install the operating system. Follow the on-screen instructions.
- 23. Once the OS is installed, install all the drivers for your devices. Check online for updated drivers.
- 24. Be sure to run updates on the OS
- 25. Enjoy your new computer!