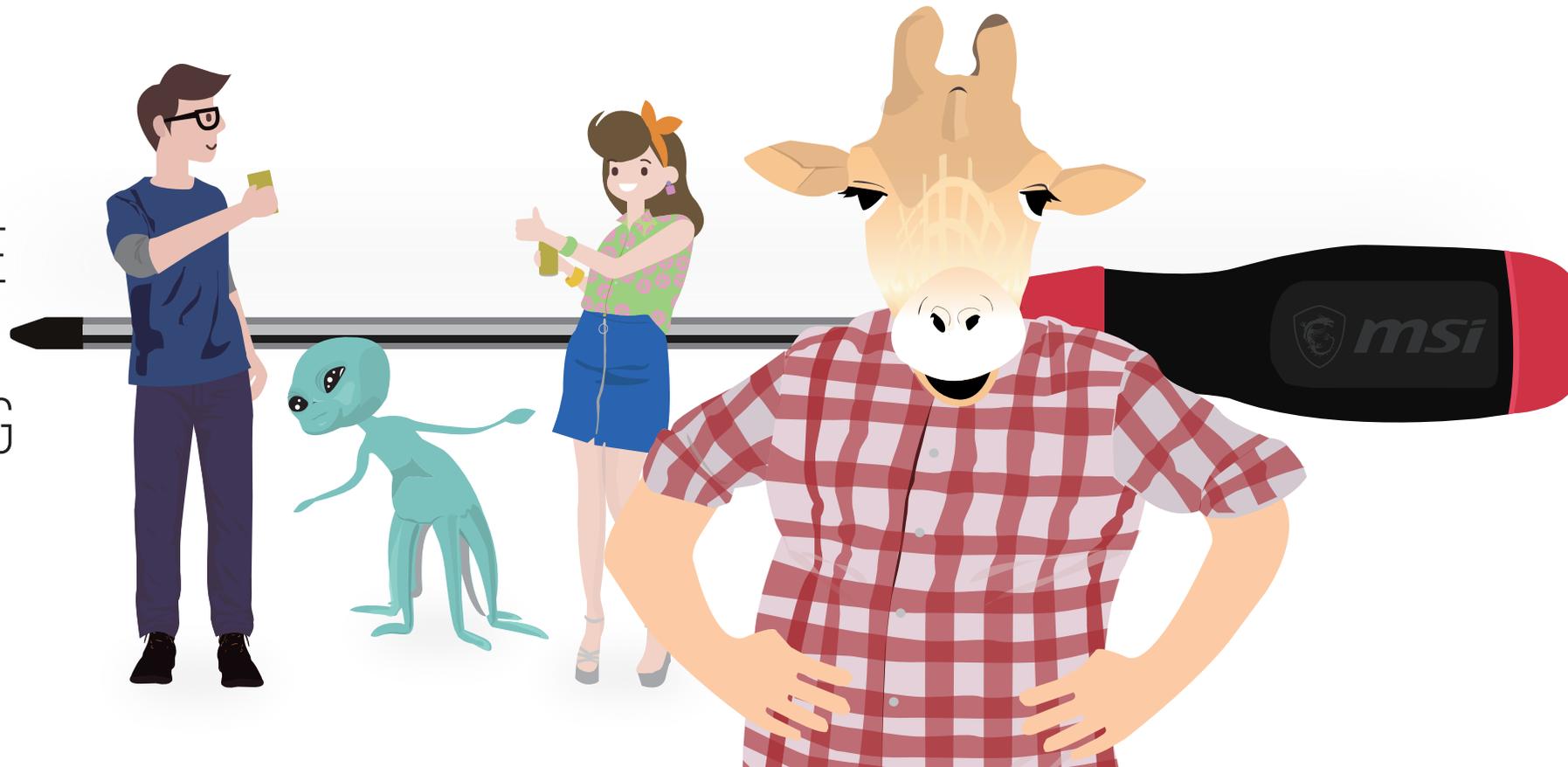




HOW TO BUILD A PC

A COMPLETE
HOW-TO
PC BUILDING
GUIDE FOR
BEGINNERS

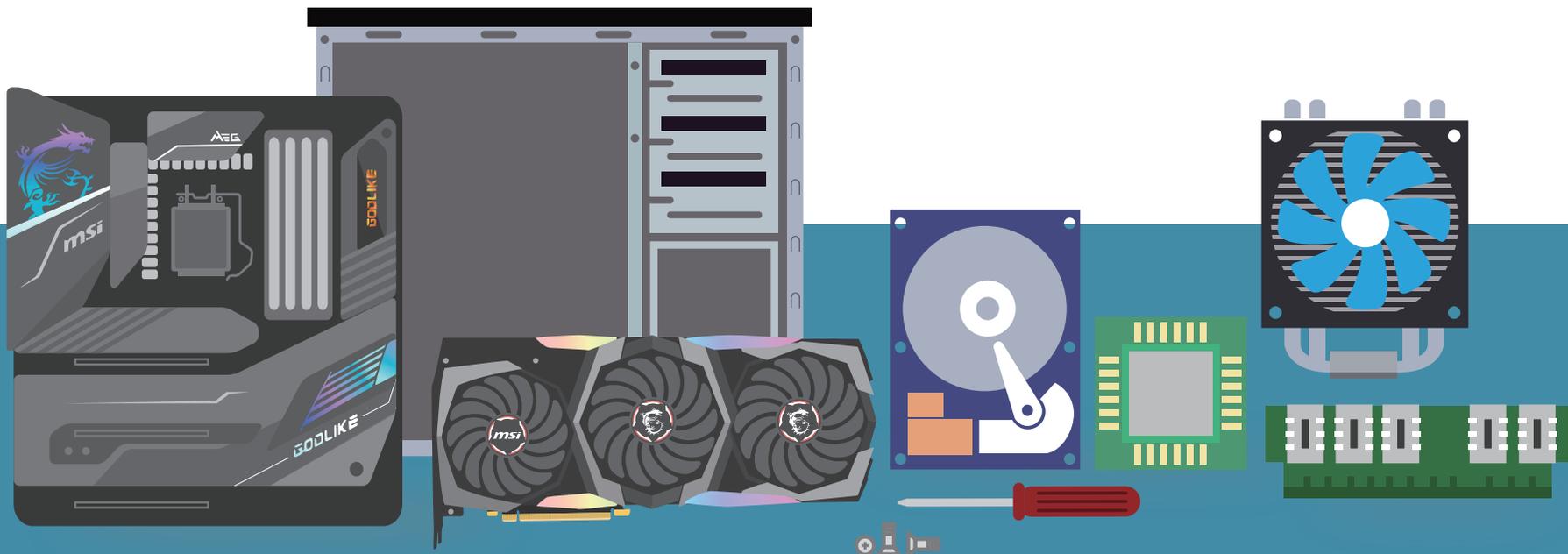


WHAT DO YOU NEED TO BUILD A PC

Although building a PC is as easy as putting together a LEGO set, you should know about the building blocks before starting.

PC builds can have many styles and uses, but some components are fundamental and must be a part of every PC.

Let's learn the basics of each part, shall we?



PC BUILDING GUIDE & CHECKLIST

Define Your Usage Needs

- Gaming
- Office
- Content Creation
- AI tasks

Set Your Budget

Recommended allocation for balanced builds:

- CPU + GPU: 50–65%
- Motherboard: 10–15%
- RAM + SSD + PSU + Case + Cooler: 25–40%

Mission Start

Choose a CPU

- Intel or AMD?
- Does it include integrated graphics?

Choose a Motherboard

- Compatible with the selected CPU
[CPU socket table](#)
- Confirm the form factor you need
- Check Wi-Fi & LAN support
- Need extra M.2 slots or PCIe lanes?

Choose a Graphics Card

- Determine how much VRAM your workload or games require
- Target resolution and frame rate (1080p/1440p/4K, 60–144Hz+)

Choose a Power Supply

- Total wattage required
[Power requirement calculator](#)
- ATX 3.1 and 16-pin 12V-2x6 support (for RTX 40/50)

- Personal Preference:** Do you want a build with RGB lighting or an all-white aesthetic?
→ This may affect your choice of motherboard, GPU, RAM, CPU cooler, case and power supply.

Choose a Storage

- Enough M.2 slots on motherboard
- Need a 2TB+ SSD for games or work files?
- (Optional) Add SSD or HDD for backup

Choose a Memory(RAM)

- DDR4 or DDR5?
(must match motherboard)
- Capacity & Speed based on you needs

Choose a CPU Cooler

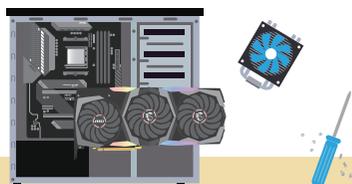
- Air cooler or AIO liquid cooler?
- Check TDP rating
- Fits inside case without blocking parts

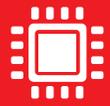
Choose a PC Case

- Match your motherboard form-factor
- GPU length compatibility
- CPU cooler height compatibility
- Greater airflow design for intensive gaming or workloads
- Include fans or not

Start to Build a PC now!

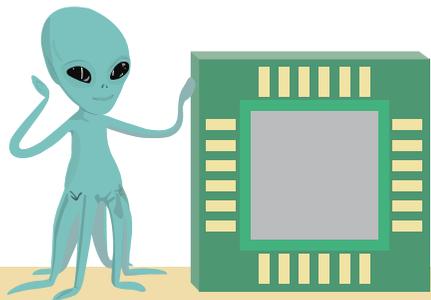
[Check out the step-by-step guide](#)





CPU SOCKET TABLE

	Processor	Socket	Motherboard Chipset
Intel	Core Ultra 9/7/5 2xx	LGA1851	Z890 / B860 / H810
	Core i9/7/5/3-14xxx	LGA1700	Z790 / B760 / Z690 / B660 / H670 / H610
	Core i9/7/5/3-13xxx		
	Core i9/7/5/3-12xxx		
	Core i9/7/5/3-11xxx	LGA1200	Z590 / B560 / H510 / Z490 / B460 / H470 / H410
	Core i9/7/5/3-10xxx		
AMD	AMD Ryzen 9000 / 8000 / 7000 Series	AM5	X870(E) / B850 / B840 / X670 / B650 / A620
	AMD Ryzen 5000 / 3000 Series	AM4	X570 / B550 / A520 / X470 / B450
	AMD Ryzen Threadripper	sTRX4	TRX40



USEFUL TOOL : PCPARTPICKER

PLAN YOUR BUILD LIST: PCPARTPICKER

PLAN YOUR BUILD LIST: PCPARTPICKER



PCPARTPICKER

The most crucial part of building a PC is not the "building" itself; it's crafting a part list that aligns with your needs. After all, what significantly affects your PC's performance is its hardware. To help you tailor your own build list, we recommend using a helpful resource like PCPartPicker

(<https://pcpartpicker.com/>)

CHOOSE THE PARTS

PCPartPicker offers stunningly detailed product information, including user reviews, and even offers links to buy said product. By switching the website to different regions, buy links will correspondingly link to the local e-tailer website. It not only provides a wide selection of available products, but it also gives you a reference of price and place to buy them – helping you save both time and money.

All you need to do is to enter

<https://pcpartpicker.com/list/> and you can choose your parts.

Component	Selection	Base	Promo	Shipping	Tax	Price	Where
CPU	AMD Ryzen 9 3950X 3.5 GHz 16-Core Processor	\$724.99	---	FREE	---	\$724.99	BH Buy
CPU Cooler	MSI MAG CORE LIQUID 360R 78.73 CFM Liquid CPU Cooler	\$129.99	---	FREE	---	\$129.99	BH Buy
Motherboard	MSI MAG X570 TOMAHAWK WIFI ATX AM4 Motherboard	\$249.99	---	FREE	---	\$249.99	newer Buy
Memory	G.Skill Trident Z RGB 16 GB (2 x 8 GB) DDR4-3600 CL18 Memory	\$114.99	---	FREE	---	\$114.99	newer Buy
+ Add Additional Memory							
Storage	Seagate BarraCuda 4 TB 3.5" 5400RPM Internal Hard Drive	\$88.99	---	FREE	---	\$88.99	newer Buy
Storage	Seagate FireCuda 520 1 TB M.2-2280 NVME Solid State Drive	\$179.99	---	FREE	---	\$179.99	BH Buy

READY AND GO

MOTHERBOARD PRODUCT DETAIL

MSI MAG X570 TOMAHAWK WIFI ATX AM4 Motherboard

(35 Ratings, 4.9 Average)

Merchant	Base	Promo	Shipping	Tax	Availability	Total
newer	\$249.99	---	-FREE s/h	---	In stock	\$249.99 Buy
Adorama	\$249.99	---	-\$7.00 s/h	---	In stock	\$256.99 Buy
amazon.com	\$264.67	---	---	---	In stock	\$264.67+ Buy

(22 new from \$264.67, 4 used from \$193.59, Last updated 21 minutes ago.)

When you finish creating your ideal build list, there are a few functions you can leverage:

Save. Simply save the planned build list first if you haven't yet decided to purchase your rig at the moment. Take your time to compare and consider.

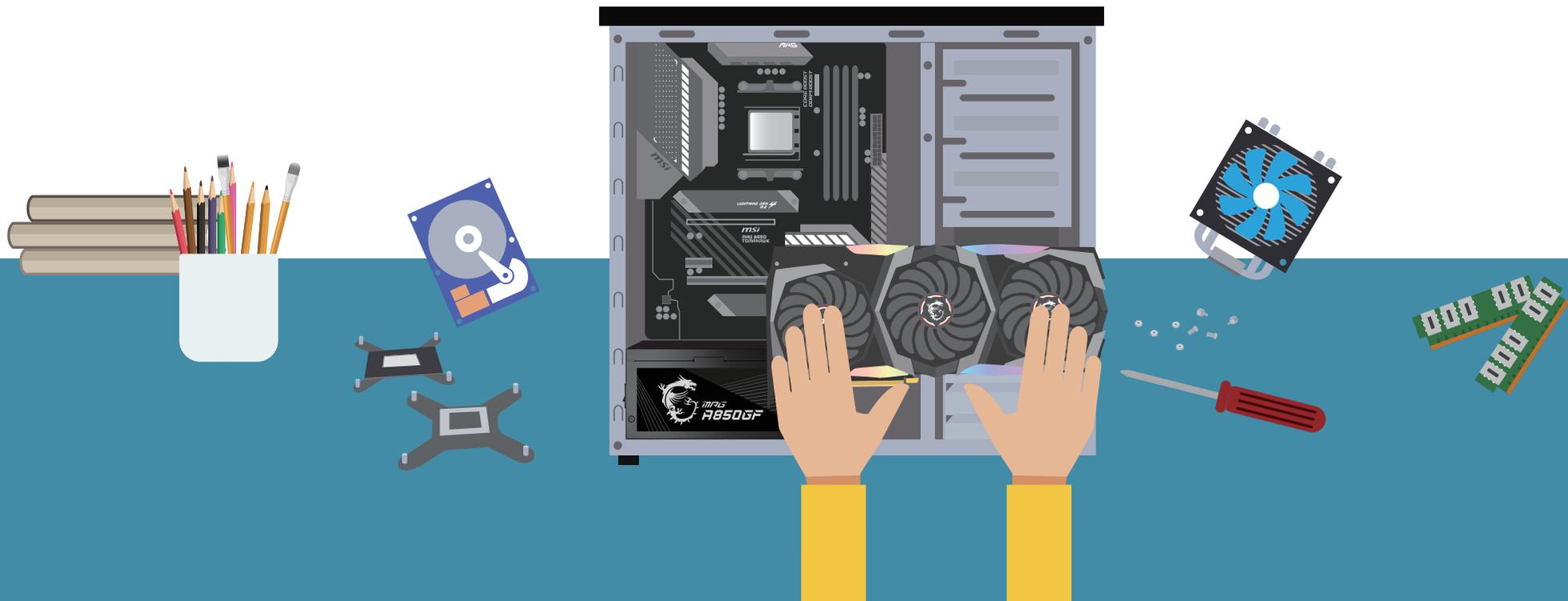
Share. You can share the build list with your friends or to the forum for more opinion on you PC build.

Buy. An easy button for you to buy the product on the e-tailer sites with ease.

HOW TO BUILD A PC

STEP-BY-STEP BUILD GUIDE IN 10 STEPS

Time to get your hands dirty! With hands-on PC building instruction, even first timers can build a gorgeous, high-performance PC. Grab a screwdriver, up that passion, and you're good to go!



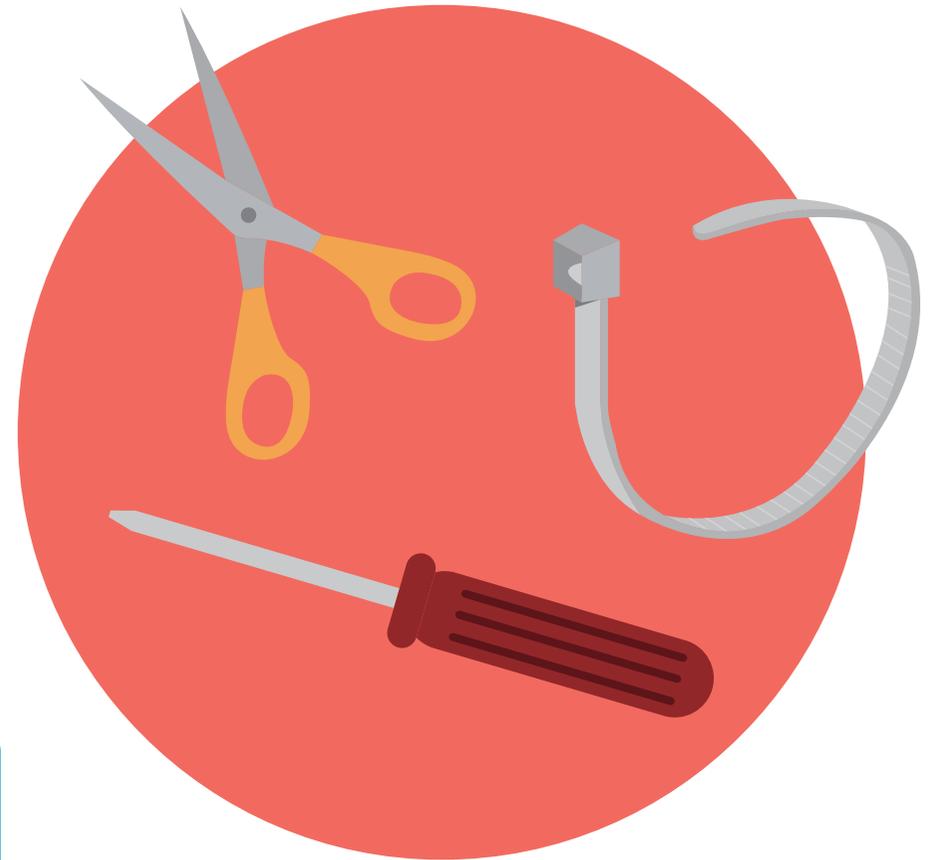
STEP 0. PREPARATION

Before start, some simple things to be prepared:

- 1 A magnetic screwdriver.
- 2 Some zip ties /velcro strips and a pair of scissors.
- 3 A clean non conductive surface to build your PC onto.
- 4 Take a deep breath, read the manuals first and you are good to go!

Caution:

Pins on the motherboard are vulnerable, so be careful to not bend them.

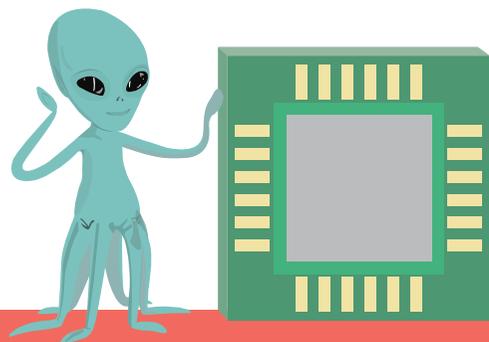
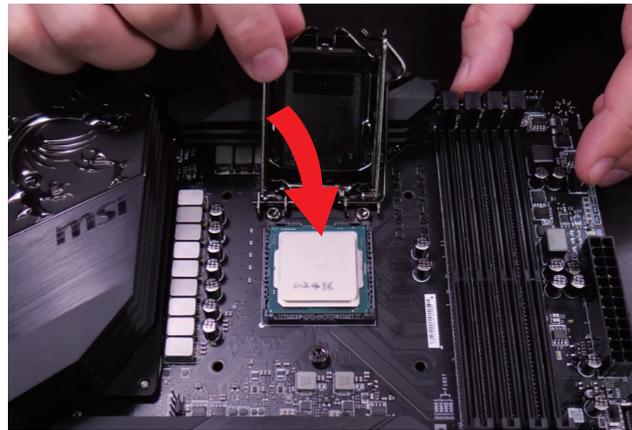
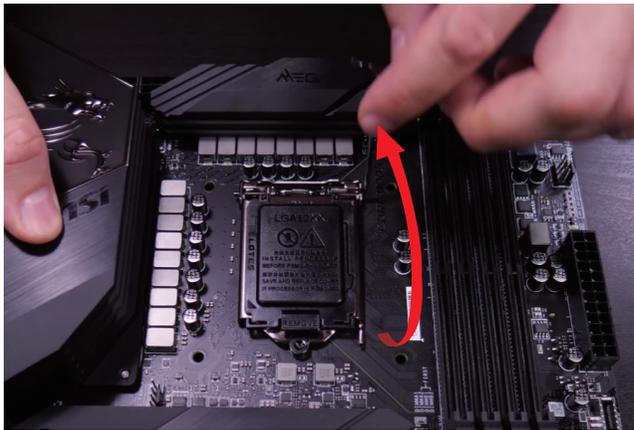


STEP 1. CPU INSTALLATION

- 1 Unlatch the lid of the CPU socket.
- 2 Line up the notch printed on the CPU with the guiding notches marked on the socket; carefully insert it inside the socket.
- 3 Make sure the CPU is placed properly then resecure the lid and lock it onto the processor.

Caution:

Be careful with the CPU socket pins (or CPU pins), as it is made of gold, which is soft material. They are exceedingly fragile, any slight collision can bend the pins, which might cause functional errors.

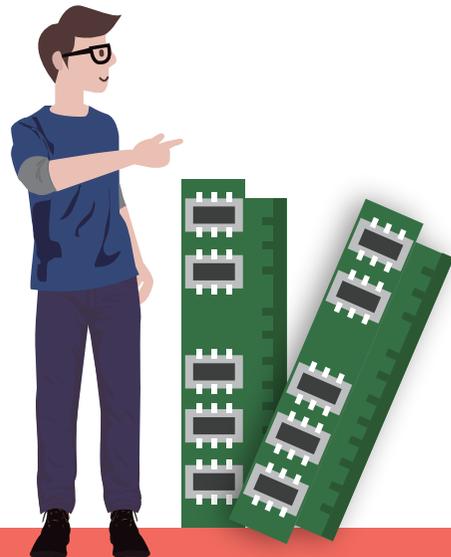
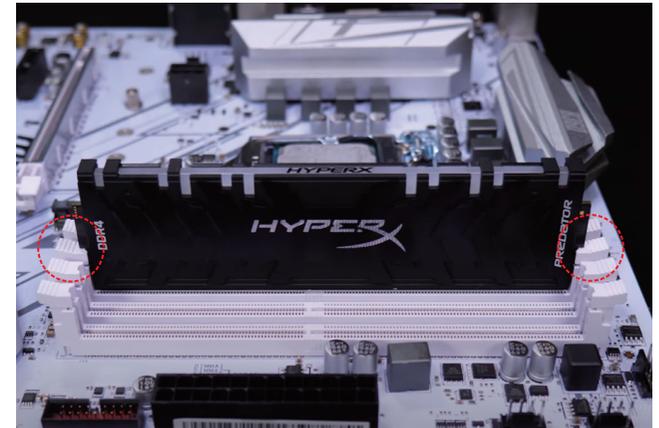
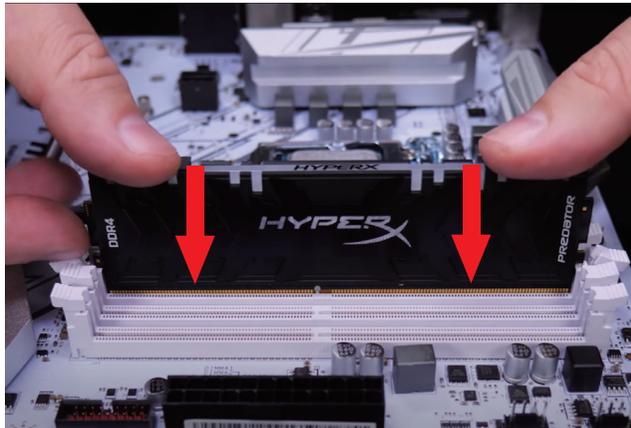
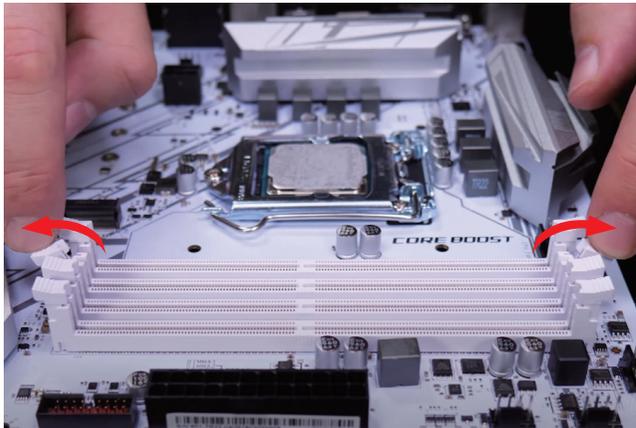


STEP 2. MEMORY INSTALLATION

- 1 Pressing down on the lock/ejector tabs that are located at the ends of the memory socket.
- 2 Check the memory module installation order outlined in the motherboard manual, and make sure which the suggested matching memory slots to insert first.
- 3 Push the modules down until you hear a “click” as the retention clips are pushed upwards and lock the module.

Tips:

The suggested sequence of which memory slots to be installed first may differ due to different motherboards. Take MSI motherboards as example, you are suggested to insert the memory kit into Dimm1 slot first.



WATCH
THE VIDEO

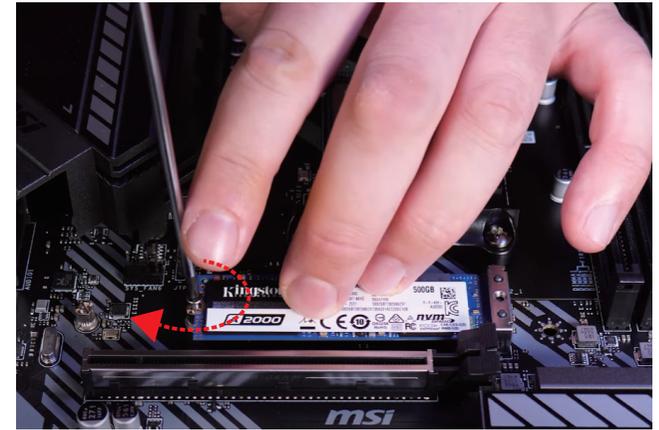
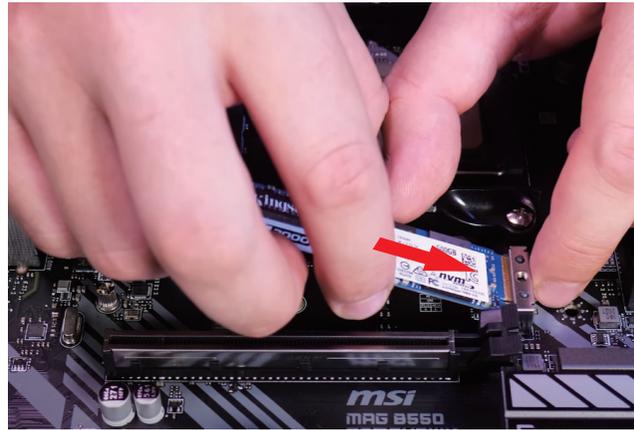
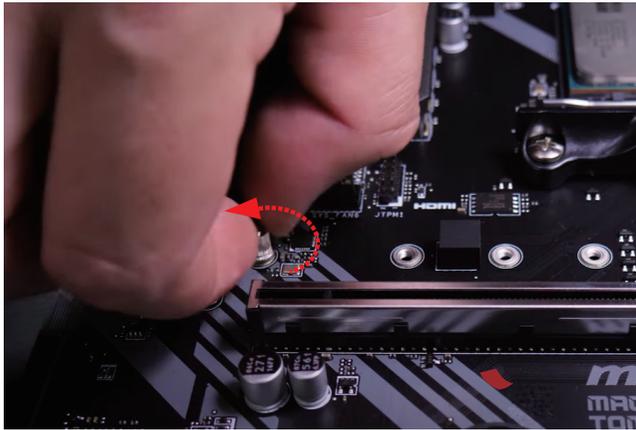


STEP 3. M.2 DRIVE INSTALLATION

- 1 Move and fasten riser screws on the M.2 standoff.
- 2 Take your drive and gently insert it into the connector at a 45 degree angle.
- 3 Push it down towards the standoff and secure it with the little screw.

Tips:

Some high-end motherboards come with EZ DIY solutions such as EZ M.2 Shield Frozr II and EZ M.2 CLIP II to make installation seamless. You can refer to motherboard manual for installation steps.



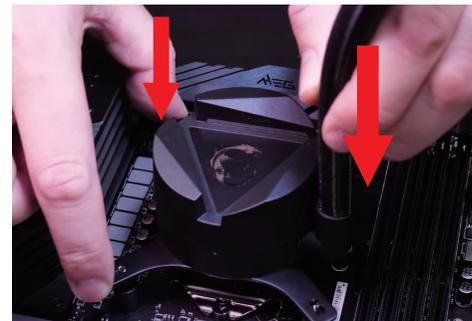
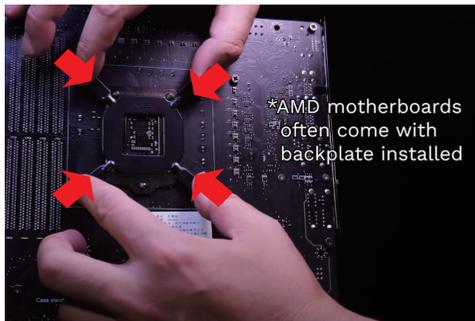
STEP 4. CPU COOLER INSTALLATION

- 1 Mount the back- plate onto the back of the motherboard. (If you have one)
- 2 Apply a drop of thermal paste onto the surface of the processor.
- 3 Connect CPU Fan Cable to CPU Fan Header on the motherboard.
- 4 Lower the cooler vertically and place it onto the CPU.
Secure it evenly tightening opposite screws progressively.

Caution:

Make sure you apply thermal paste with the right amount. Too little or too much will cause bad contact or get paste into the socket relatively.

Make sure the screws are tightened properly, and the pressure applied at the corners is even to avoid CPU damage and cooling performance degradation.



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THE VIDEO



STEP 5. MOTHERBOARD INSTALLATION

- 1 Install I/O shield onto the back of the case.
- 2 Take your motherboard and gently lower it at a 45 degree angle into the case.
- 3 Match the mounting holes on the motherboard with the stand-offs in the case.
- 4 Secure the board with each of the supplied screws.

Tips:

Don't leave out screws - a solid mount will be very helpful to secure the motherboard in place to avoid unsteady movement.



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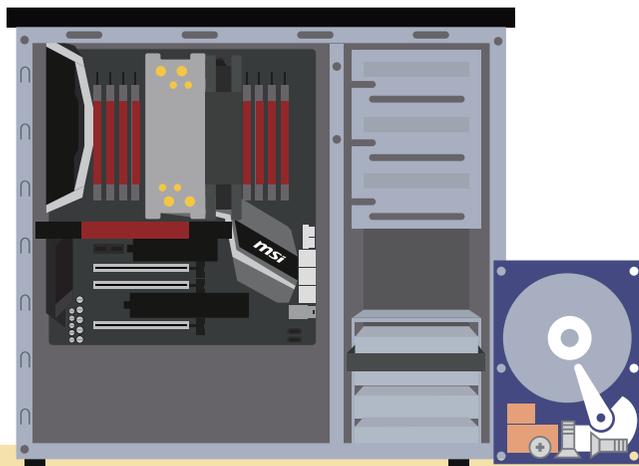
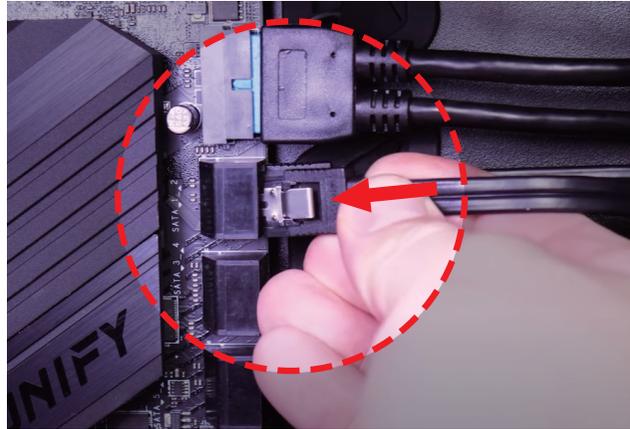


STEP 6. STORAGE INSTALLATION

- 1 Connect one end of the SATA cable to the SATA ports on the motherboard, and the other end to the storage devices (2.5" inches / 3.5" inches) itself.

Caution:

Make sure you mount the hard drive tight to avoid damage.



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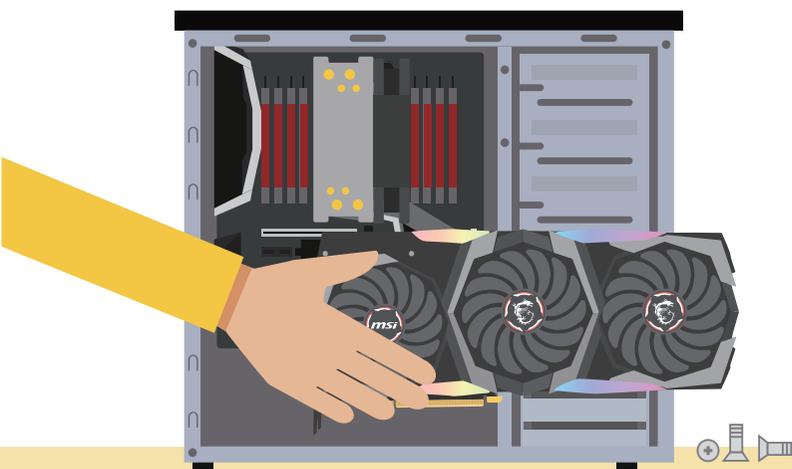
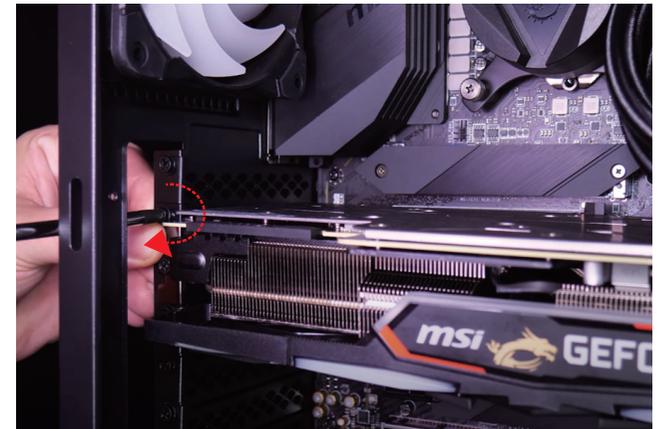
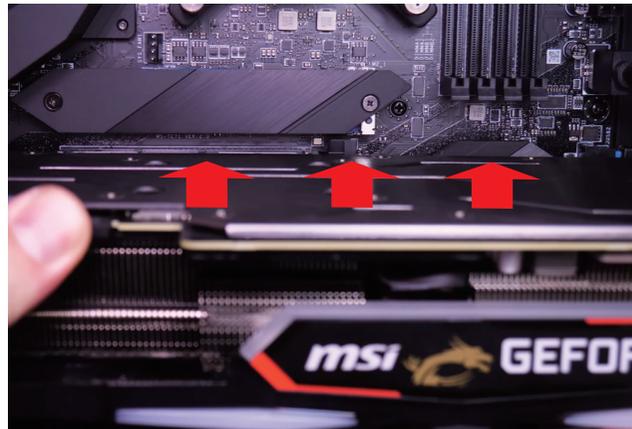


STEP 7. GRAPHICS CARD INSTALLATION

- 1 Remove rear PCI-e bracket from the case.
- 2 Unlock the PCI-e slot by pushing back the small plastic lock located at the rear of the slot.
- 3 Hold the card with two hands, lower the graphics card into the case and install into the PCI-e slot of the motherboard.
- 4 Secure the graphics card with the required screws to the back of the chassis.

Caution:

Some high-end cards are longer or use up even more PCI space. Make sure to check that beforehand to choose the appropriate case that could fit the graphics card.

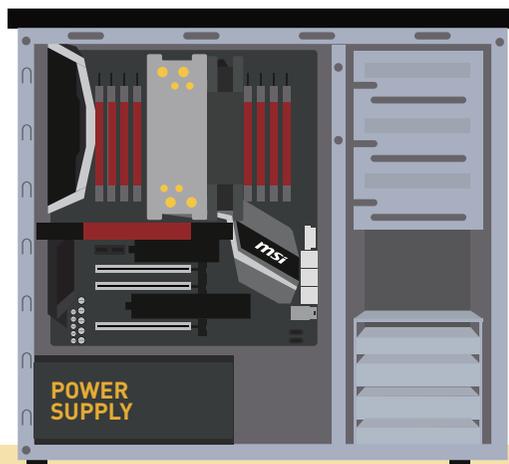
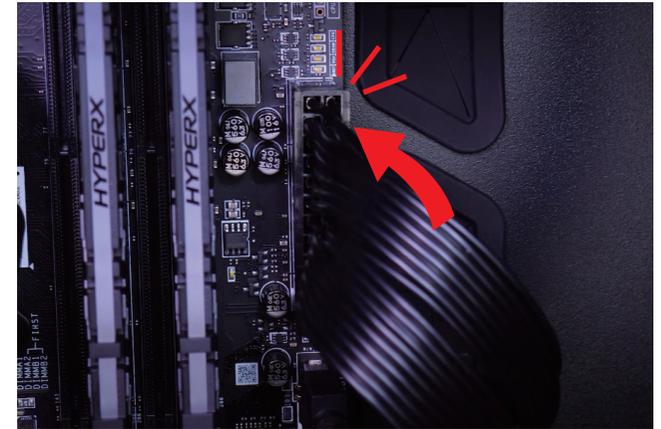
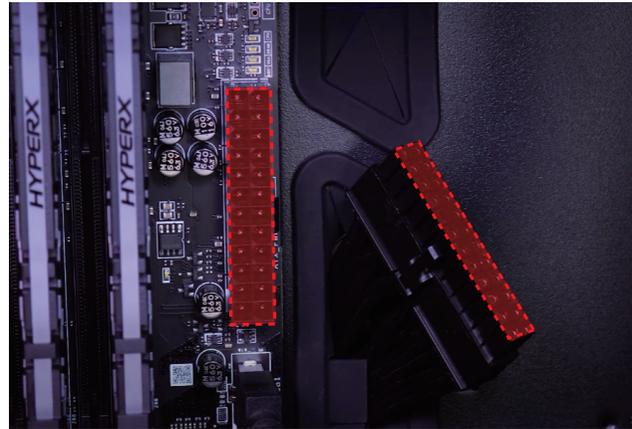


STEP 8. POWER SUPPLY INSTALLATION

- 1 Mount the Power Supply (PSU) into the chassis and secure it with all the screws.
- 2 Connect 24-pin power connector into the socket on the motherboard.
- 3 Connect 8-pin CPU power connector to motherboard.
- 4 Connect 16-pin 12V-2x6 cable to graphics card (or 6+2 Pin PCI-E, depending on the model).
- 5 Clip in your SATA power connector to hard drive.
- 6 Connect other Molex connectors(with 4 horizontal pins) to extra devices (e.g. DVD/CD Optical Drives).

Tips:

Choosing the appropriate wattage for a Power Supply is essential. You can use online PC build simulators such as PC Part Picker or MSI Power Supply Calculator tool to get an estimation of the power required by your build. Make sure to purchase a Power Supply with a little headroom to account for future upgrades.



STEP 9. FRONT PANEL CONNECTORS AND CABLE MANAGEMENT

- 1 Connect Power switch / Reset switch / Power LED/ HDD(Hard Drive) LED Cable to motherboard JFP1 Pin header.
- 2 Connect front USB cables to USB pin headers on the motherboard.
- 3 USB 3.0 / USB 2.0 Cable to USB 3.0 / USB 2.0 Pin Header.
- 4 Front USB Type-C Cable to Front USBType-C Pin Header.
- 5 Connect the Audio(Speaker) Cable to the motherboard JAUD1 Pin header.
- 6 Use zip ties or velcro strips to secure the cables in tight bundles to the back of the case.

Tips:

Check the maximum amount of USB ports on the motherboard before purchasing a PC case. Make sure the case you want to purchase also support enough USB ports as the motherboard does.



STEP 10. OPERATION SYSTEM INSTALLATION

- 1 Prepare an 8GB or larger USB 3.0 thumb drive.
On a computer with internet access, go to the Microsoft website and download
- 2 the Windows 11 Installation Media Tool. Run the tool and choose to create the installation image on the USB. This process will format your USB drive.
- 3 Plug the installation USB into a rear USB 3.0 port on your new PC, use a fast red USB 3.2 port or a standard blue USB 3.0 port. On first boot, the BIOS screen may appear, just save and exit. The system should restart and boot from the USB, allowing you to proceed with Windows 11 installation.

* Depends on the latest/suggested version you want to install

Tips:

If your system can't be booted from the installation devices, enter the BIOS and prioritize the boot sequence.





msi



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