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Use of Hand Tools

(Computer Systems Servicing)

Safe Use of Tools

Environmental Safety and Health Program requires the following:

- All tools be kept in good condition with regular maintenance
- The right tool be used for the job
- Each tool be examined before use AND damaged or defective tools NOT to be used
- Tools be operated according to manufacturer's instructions
- The right protective equipment for the tool and activity be used
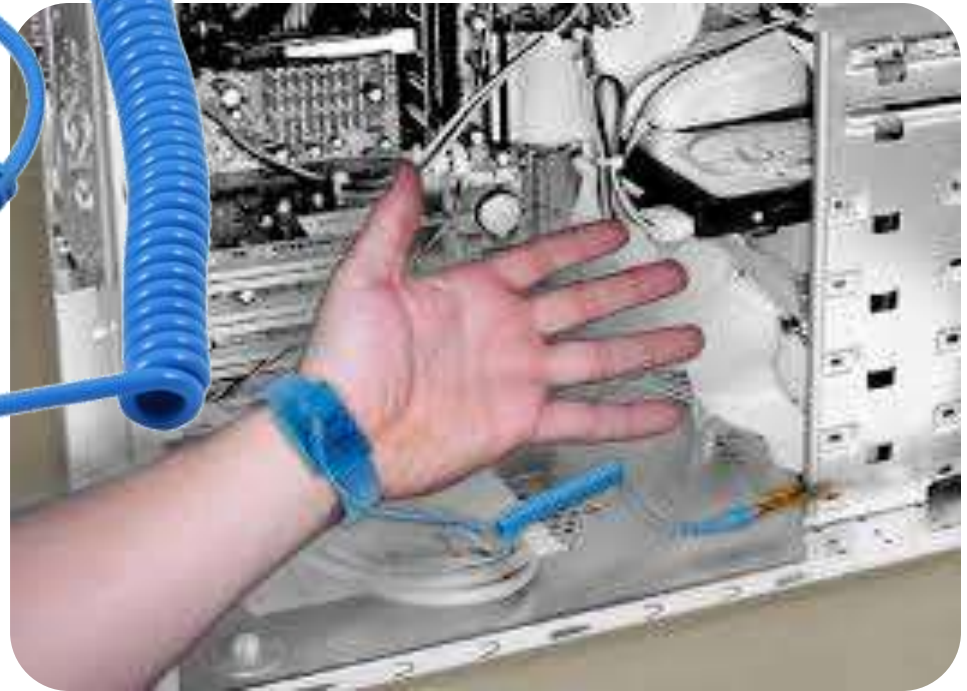
Hardware Tools

To complete hardware repairs, it is important to have a toolkit that should contain all of the necessary tools. As you gain experience, you will learn which tools to have available for different types of jobs. **Hardware tools** are grouped into these **four categories**:

- *Electro-Static Discharge (ESD) tools*
- *Hand tools*
- *Cleaning tools*
- *Diagnostic tools*
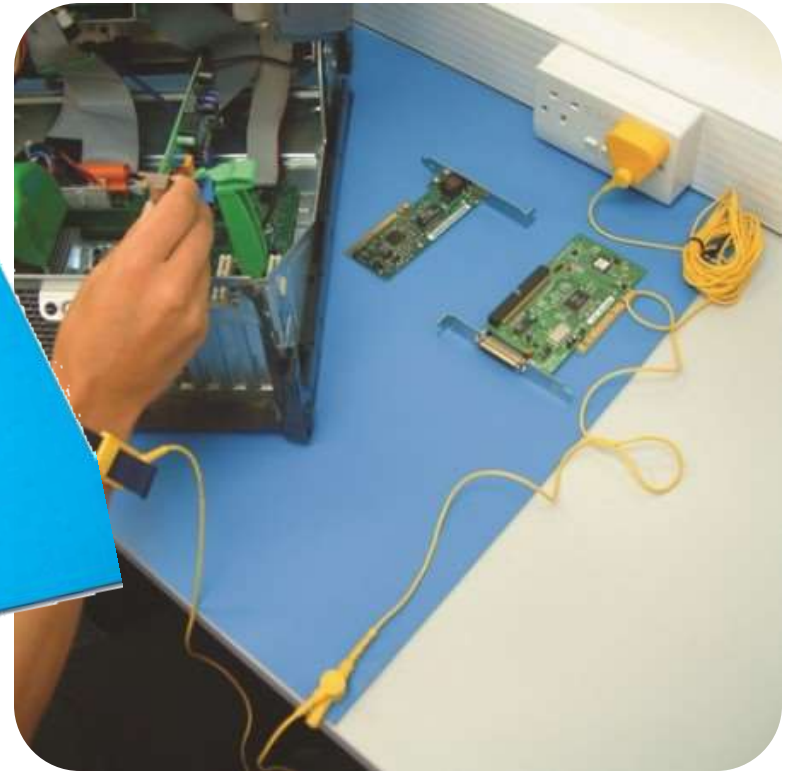
ELECTRO-STATIC DISCHARGE TOOLS

Static electricity is easily generated by friction on carpets, tile flooring, clothing, hair, fabric, and etc. The friction of moving air alone will charge suspended particles and cause the buildup of static electrical charges on people and objects in the environment. **Grounded anti-static work mats** used with **anti-static wrist straps** provide the most basic means for the controlled discharge of **electro-static electricity**.

Anti-static wrist strap

used to **prevent** ESD damage to computer equipment.
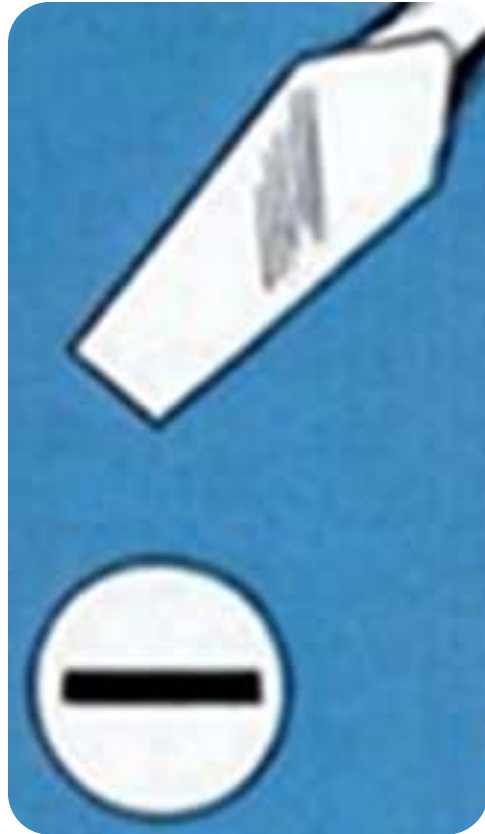
Anti-static Mat

used to **stand on** or **place hardware on** to prevent static electricity from building up.

HAND TOOLS

It is a device for performing work on **material** or a **physical system** using only hands.

It can be manually used employing force, or electrically powered, using **electrical current**.

Flat head screw driver

used to **loosen** or **tighten** slotted screws.

Philips Head Screwdriver

used to **loosen** or **tighten** crosshead screws.

Torx Screwdriver

used to **loosen** or **tighten** screws that have a star-like depression on the top, a feature that is mainly found on laptop.
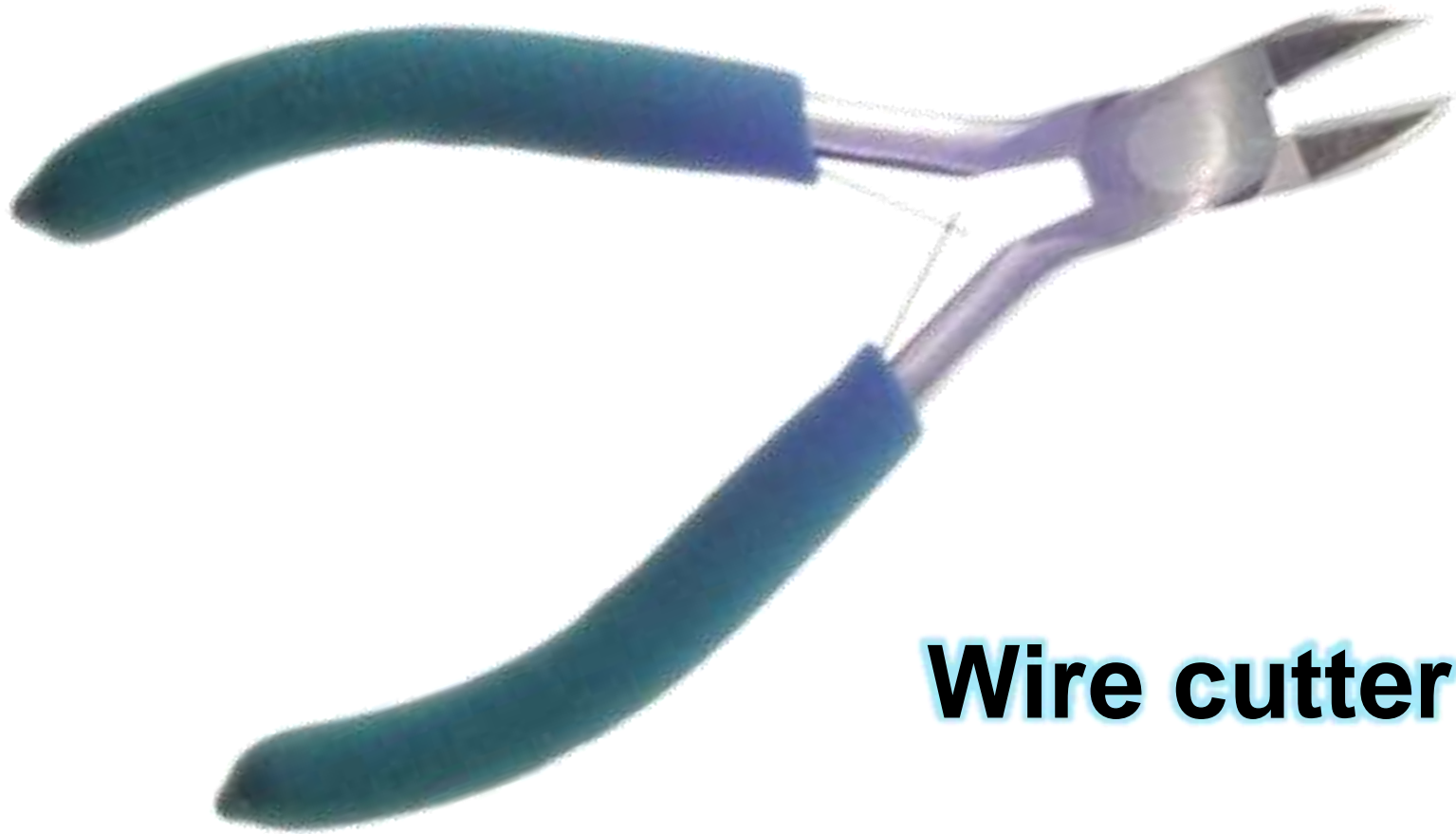
Hex Driver

sometimes called a *nut driver*, is used to **tighten** nuts in the same way that a screwdriver tightens screws.

Needle-nose plier

used to **hold** small parts.

Wire cutter

used to **strip** and **cut** wires.

Tweezers

used to **manipulate** small parts.

Part retriever

used to **retrieve** parts from location that are to small for your hand to fit.

Flash light

used to **light up** areas that you cannot see well.

CLEANING TOOLS

Having the appropriate **cleaning tools** is essential when **maintaining** or **repairing** computers.

Using these tools ensures that computer components are not damaged during **cleaning**.

Lint-free cloth

used to **clean** different computer components without **scratching** or **leaving** debris.

Compressed air

used to **blow away** dust and debris from different computer parts without **touching** the components.

Cable ties

used to **bundle** cables neatly **inside** and **outside** of a computer.

Parts organizer

used to **hold** screw, jumpers, fasteners and other small parts and **prevents them** from **getting mixed** together.

DIAGNOSTIC TOOLS

Computers are easier to use and more

dependable with each new generation of

hardware and operating system update, but that

doesn't mean they're problem-free.

Multimeter

used to **test** the integrity of circuits and the quality of electricity in computer components.

Loopback adapter

used to **test** the functionality of computer ports.

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End of presentation