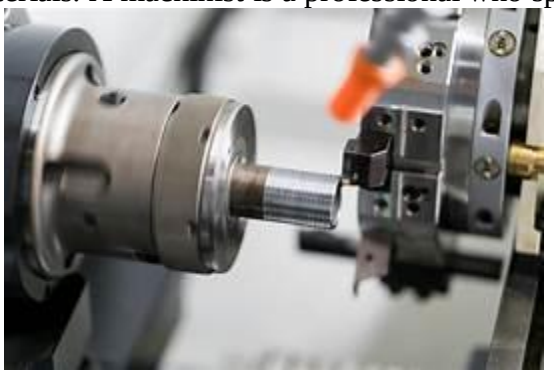
MACHINING

Machining is a prototype and manufacturing process in which undesired material is removed from a bigger piece of material to achieve the desired final shape. In these procedures, a part is created by removing material; this is known as subtractive manufacturing, as opposed to additive manufacturing, which uses a controlled addition of material. The exact meaning of the "controlled" element of the phrase varies, although it typically refers to the usage of machine tools. Machining is employed in the production of numerous metal items, but it can also be applied to wood, plastic, ceramics, and composite materials. A machinist is a professional who specializes in machining.



To develop a finished product from an unfinished item that requires machining, some material must be taken away. A finished product is a workpiece that meets the standards outlined in engineering drawings or blueprints. For example, a workpiece may be required to have a certain outer diameter. A lathe is a machine tool that can be used to achieve that diameter by turning a metal workpiece such that a cutting tool can remove metal, resulting in a smooth, round surface with the desired diameter and surface finish.

Machining Tool :

A machine tool is a device for manipulating or machining metal or other hard materials, typically through cutting, drilling, grinding, shearing, or other forms of deformation. Machine tools use some form of tool to do the cutting or shaping.

All machine tools include a mechanism for restricting the workpiece and guiding the movement of the machine's parts. Thus, the machine controls or constrains the relative movement between the workpiece and the cutting tool (known as the toolpath), rather than being totally "offhand" or "freehand".

MACHINING TOOLS:

Boring tools: These are commonly used as finishing equipment to expand previously cut holes in the material.

Cutting tools:
Cutting instruments include saws and shears. They are commonly used to cut material with preset dimensions, such as sheet metal, into the appropriate shape.

Drilling tools:
Drilling tools are two-edged rotating devices that produce circular holes parallel to the axis of rotation.

Grinding tools:
Grinding tools use a rotating wheel to create a fine finish or produce light cuts on a product.
Milling tools use a spinning cutting surface with many blades to make non-circular holes or cut out distinctive shapes from the material.
Turning tools:

Turning tools rotate a workpiece along its axis, whilst cutting tools shape it. Lathes are the most popular type of turning machine