PRINCIPLE AND APPLICATION OF LASER ENGRAVING MACHINE

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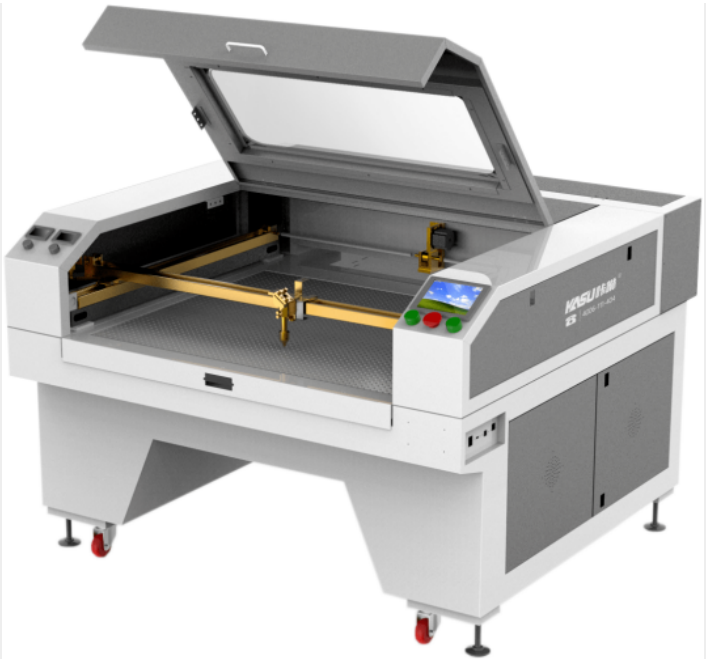

Category: Laser Engraver News

The laser engraving machine consists of a laser and a controller. The laser beam is controlled by the controller to carve patterns on the surface to be carved. The controller not only determines the moving direction of the laser beam on the surface with engraving, but also determines its moving intensity, speed and width.

The contact point between the laser beam and the target material surface is the focus. This point is usually very small, often less than a fraction of a millimeter. When the beam passes through the surface, only the area in the focus will be significantly affected, which makes the engraving result very accurate.

The laser engraving machine is very efficient. Its beam provides the carving surface by converting light energy into heat energy. The heat energy changes the surface of the material according to the different materials. It evaporates natural materials such as plastic or wood, leaving the required marks. For hard surfaces (such as glass or stone), it will cause the material to break and peel off the surface.

In industry, laser engraving is widely used to identify various materials, including plastic, glass, rubber and metal. For metal parts and packaging, laser engraving is usually used to cut the metal surface coating. When laser carving vaporizes the surface of the material to be carved, ventilation is required to remove the toxic gas and smoke generated in the process, and remove the debris on the surface that may hinder the continued carving.

Different carving materials have different requirements for power. Wood and paper require less than 10 watts of power to change the surface color of the material to produce the required identification. The rubber can be carved, or the impression can be carved at lower power. Coated and painted metal can be clearly identified with 30 watts of power.

A good example of the application of laser engraving machine in industry is its application in production line. Here, the beam of the laser engraving machine is guided to the rotating or vibrating mirror, which moves to carve numbers and letters on the surface to be marked. This is an effective way to mark the production code, shelf life and batch number on the products and packages. Laser engraving can identify various products and packages made of plastic and glass moving along the production line. Therefore, today's laser engraving machine (laser coding machine) has replaced many older and slower identification technologies, such as hot stamping and pad printing, thus improving the production efficiency of many companies.