

# PRINCIPLE AND FUNCTION OF CO2 LASER MARKING MACHINE (CO2 LASER ENGRAVING)

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The CO2 laser marking machine (CO2 laser marking machine) has higher power among the same products in the current market, and can be used for various identification applications, including engraving applications. The printing speed of the high-performance CO2 laser engraving machine is 2100 per second, which can meet the needs of the pharmaceutical, tobacco and beverage industries for high-speed and high-yield identification on glass and plastic packaging materials. They can also be used to carve various individual products.

The light CO2 laser marking machine is widely used, which can efficiently handle simple marking applications and is applicable to various materials. These laser printers are suitable for small and medium-sized enterprises, and the laser engraving cost is low.

The CO2 laser marking machine includes the laser source and controller as well as the carving surface. The laser beam itself is a carving tool; The controller controls the beam direction and carves the desired pattern on the surface. The controller determines the direction, intensity, moving speed and width of the laser beam.

The point where the laser beam touches the surface should be its focus. This point is usually very small, and may be less than a fraction of a millimeter (depending on the wavelength of the light wave). Only the surface area inside this focus will be affected by the laser beam, which will change the surface of the material. It may heat the surface of the material to make it evaporate, and may also cause the material to break and peel off. The way of laser engraving metal is usually to cut the coating of metal parts.

The laser marking machine can remove materials efficiently because most of the light energy of the beam is converted into heat. When these heat evaporates the surface material, it is necessary to use a blower or vacuum pump for ventilation to remove the toxic gas and smoke generated, and remove the debris on the surface to continue carving.

The laser engraving machine provides the shelf-life code and batch number by carving numbers and letters on the surface of products moving on the industrial production line. This allows plastic and glass containers to be coded when moving on the production line.