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Application Newsletter

Deep Engraving

Using lasers for deep engraving has proven to create many advantages and cost savings over conventional deep engraving processes.

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Deep Engraving

Using lasers for deep engraving is not a new concept for the laser industry. Deep engraving is the process of machining characters, images, or other features into the surface of any material or mold. Most manufacturers deep engrave their logos, serial numbers, or tool name into metals to help with branding of their company as well as identification of their products. Conventional methods of CNC machining to deep engrave have been one approach used to accomplish their needs, although using this method places a strain on systems and can create high tooling costs. Using lasers for deep engraving has proven to create many advantages and cost savings over conventional deep engraving processes.

- 1/20th electrical consumption
- Virtually no maintenance
- High engraving speeds
- Intricate engraving
- Flexibility
- High resolution with small spot sizes

Engraving Process

The deep engraving process involves pulsing a high peak



power laser at high repetition rates typically in the 40-100 kHz range. This is usually dependent upon the material used and the depth required. Traditional marking laser systems should not be used for the deep engraving process. The design of the system and the laser are not suited for this type of constant modulation. Many marking systems are designed for marking purposes only; there can be detrimental problems to the system if they are used for other processes. Careful considerations need to be taken in the decision making process to determine the correct system to use for the application.

Purchase Today

The decision to purchase a system should include the material considerations and the engraving considerations. Some materials need to be modulated at different khz ranges. For example, aluminum requires shorter pulses at higher powers than some steel materials. Engraving considerations should be accounted for as well. The depth of the engraving will dictate which optics to use and the power of the laser.

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