EPILOG LASER

Metal Marking and Bar Coding Guide

Discover the unique solutions that an Epilog laser system can provide for your metal marking, data matrix and bar coding needs!

An Epilog CO_2 laser system is the ideal tool for permanently marking many metals. Some metals, like anodized aluminum, Alumamark, and coated or painted metals can be marked directly. Other metals, like stainless steel, bare aluminum, titanium, carbon steel, and chrome plating can be easily marked using a metal marking compound like CerMark™ or Thermark™ in combination with a CO_2 laser. Whether you're marking one piece or a thousand, nothing compares to the fast and affordable metal marking solutions that an Epilog laser system offers.

EPILOG mini

EPILOG LEGEND EXT

The Advantages of CO_2 Laser Metal Marking

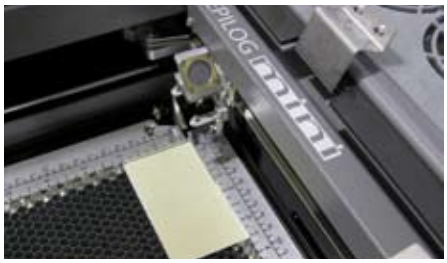
Laser marking of different metals using a CO_2 laser is finding increased applications as the industry develops a better understanding of how the CO_2 engraving process works. Some metals – anodized aluminum for instance – have been marked with CO_2 lasers for years. Products like serial tags, identification plates, and control panels are all excellent examples of how well the laser marking process works with anodized aluminum. Other metals, like stainless steel and titanium have traditionally not been marked with a CO_2 laser; however with the advent of metal marking compounds, CO_2 lasers can now easily mark these materials by producing a dark, high contrast mark that cannot be duplicated using other methods.

Marking with CO_2 lasers using metal marking compounds

Marking on materials like stainless steel with an Epilog laser system is achieved using a simple three step process that is fast, easy and produces a higher contrast mark than can be achieved with any other laser marking method.

Step 1) Simply apply a metal marking compound such as CerMark™ or TherMark™ directly to the metal you wish to mark. The laser marking material is easy to apply and comes in a spray can or in paste form that can be brushed on. After the marking material has dried for a few minutes the part is ready to be engraved.

Stainless Steel with CerMark



Step 2) Place your metal part on the engraving table and "print" your job to the laser. The laser is connected to your PC computer through an Ethernet or USB connection just like a paper printer, but instead of putting ink on paper, the laser engraves onto the surface of the material being processed. Since the laser system acts like a printer, you can use a wide variety of PC compatible software programs to print bar codes, serial tags, data matrix or even graphic images such as your company logo.

Step 3) After the part has been engraved, simply wash off the excess metal marking compound with water. The resulting laser mark will be a crisp, clear, permanent, high contrast mark. This simple three step process can be used on a variety of bare metals, including stainless steel, aluminum, chromed steel, titanium and tungsten carbide.

Is the mark permanent?

Physical testing on stainless steel has shown that the laser mark survives testing with organic solvents, acids/bases, hot/cold cycling, abrasion (scratch resistance), salt water spray, lubricants and blow torch. The dark, crisp, clean mark produced using a CO_2 laser with the metal marking compound is an easy, simple solution for your data matrix, bar coding and other metal marking applications.

UID Laser Marking Solution

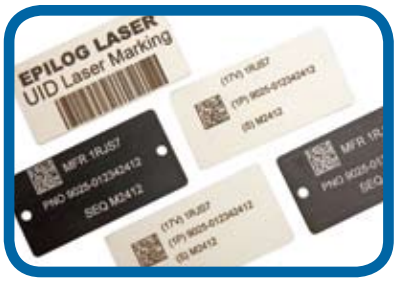
What is UID?

Unique Identification (UID) is a Department of Defense (DoD) designed program for identification, traceability and accountability of government property purchases. Incorporating bar codes, data matrix codes and human readable text, the unique identification mark allows for the lifecycle tracking of UID required items. Whether applied directly to an individual part or to a non-removable tag affixed to the item, Epilog laser systems provide an inexpensive solution for UID marking requirements.

An Epilog Laser for Your UID Solution

Epilog Laser is an Original Equipment Manufacturer (OEM) of CO_2 laser systems, specifically designed for marking applications. With "open architecture" compatibility, Epilog lasers work with a variety of PC based bar coding, word processing and graphics software program. As one of the approved UID marking methods, CO_2 laser processing is fast, reliable, permanent and verifiable.

With Epilog's 17 years of experience in laser processing and applications, we are well suited to assist with UID requirements. With an in-house applications lab, we offer material testing and verification to ensure the highest quality and verifiable marks. Our OEM laser systems are perfectly suited to marking many types of individual items and common non-removable tags including:



- Anodized Aluminum
- Aluminum
- AlumaMark
- Chromed metals
- Stainless Steel
- Titanium

Working with Anodized and Painted Metals

A CO_2 laser is an ideal tool for marking anodized aluminum and some painted metals. When engraving with anodized aluminum, the CO_2 laser bleaches the anodized coating and produces a very high contrast, permanent mark that neither damages the coating nor affects the structural integrity of the metal. There is no better way to permanently mark anodized aluminum control panels, serial tags, production parts, or any other anodized parts that require marking.

Painted materials can also be marked using a CO_2 laser system. The CO_2 laser can easily penetrate most paint coatings to expose the underlying material creating a high contrast mark. Marking painted surfaces is a great solution where adhesive labels or other marking methods will not work.

Additional Industrial Applications for a CO_2 Laser from Epilog

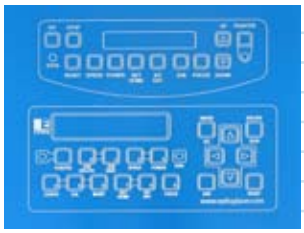
Gasket Cutting

Gasket prototyping can be a time consuming and expensive process without a laser system. With a CO_2 laser, you can create a custom prototype gasket in a few seconds by simply printing your design to an Epilog laser system. Cut a variety of gasket materials, including PTFE, Teflon, Rubber, Nylon, Cork, Cork Composite, Neoprene, Mylar and Viton.

You can create your gasket design in a variety of graphic design and CAD software programs. With your image drawn to scale, send the file to the laser to cut out the image from a variety of non-metallic materials.

Control Panel Marking

Control panel engraving is extremely fast and efficient with an Epilog laser system. Typically produced using anodized aluminum or engravers plastic, control panels can be engraved at high speeds. Set up your design in AutoCAD or many other graphic software packages and print the design to the engraver.



Customize each control panel, create one-up designs or mass produce the panels with your Epilog laser system.

Industrial Cutting and Prototyping

Epilog's laser systems can cut through non-metallic materials up to 1" thick in a single pass. Laser cutting through acrylic, wood, fabric, plastic and even paper is an ideal way to create product prototypes in a fraction of the time required by other cutting methods. Produce custom manufactured jigs for your shop floor in a matter of minutes with your laser system.

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