Rotary or Laser engraving? The choice is yours

As consumers we are exposed to a plethora of choices. On the product side, these choices can range from toothpaste to automobiles, and on the service side from dining to doctors. While one can appreciate the advantages of having so many choices, one can also be overwhelmed. We consumers are pummeled with television commercials, radio jingles, print ads, advertising specialty gadgets and flashy packaging every single day of our lives. Overwhelming? You're not kidding! Knowing what your needs are can help to determine which products or services suit you.

If you attend trade shows and/or read industry publications within the awards and engraving market, you have been exposed to choices such as digital printing, sublimation, rotary-engraving, laser-engraving and so on. Which one is right for you? Is it naïve to believe the equipment you already own is suitable? Or do you need to consider investing in new products and technology? Maybe. But you should first consider whether or not the machine you already have has reached its potential, in terms of efficiency. After all, you don't want to be stuck with a piece of machinery that is going to sit in the corner of your shop collecting dust, do you?

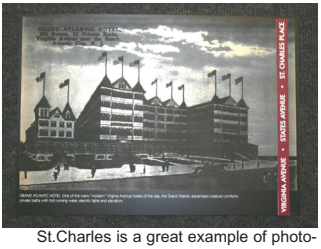
Laser engraving and cutting is a fast-growing technology that has made a big impact on the awards and engraving industry. Although the industry craze seems to be focused around lasers, let's not forget old reliable… your friend the rotary engraver. Sure, lasers have their advantages. They include speed, versatility, ease of file set-up and compatibility with standard graphic design software. But consider the fact that there are things a laser cannot do that 'old reliable' can. "What?" you ask? Read on…

Rotary and laser engraving machines have the capability to engrave a wide variety of materials, and have the ability to profile (or cut through) most materials. However, rotary machines are able to fabricate some materials that lasers cannot. Generally speaking, rotary engraving is a highly effective method of profiling many materials. While the rotary engraver possesses profiling capabilities, it can also achieve a decorative beveled edge as well. Although cutter wear and breakage are potential challenges you may encounter, you can generally cut through most materials by making multiple cutter passes, cutting deeper with each pass. This feature will give you the ability to create items such as name badge blanks, custom-shaped awards and plaques.

Another advantage of rotary engraving over the laser is clarity. Often times when you try to laser engrave a piece of material that is not engineered to be lasered, you may end up with a discoloured core. Rotary engraving, when done well, offers a crisp, clean cut without discolouration. This allows for greater flexibility when selecting materials to be used for any given job.

Granites Deluxe Hot Springs Sign is a great example of a rotary engraved sign

One might argue that lasering is superior to rotary engraving because only vector (line) images can be engraved on a rotary machine. While this is true, one must also realise that bitmap images (those made of pixels) can be converted into vector images before they are engraved. Tracing and vector conversion are features that can be found in many of today's engraving and graphic design programs, taking the manual labour out of the equation.



St.Charles is a great example of photo-engraving that can be achieved with a laser engraver

In the case of plastic engraving stock, both methods of engraving essentially leave the same kind of mark. Both techniques remove a specified area of the cap layer, exposing the contrasting core underneath. Laser engravers work by the light of a laser beam that vaporises the cap of the material being marked, without physically touching it. Traditional rotary engravers work by means of a rotating bit that routs out the material's cap. The cutter used by a rotary machine allows the engraver to achieve depth control. The depth of the cut made by a rotary engraver typically makes a deeper mark than the laser engraver does. What does this mean? This deeper cut can be translated into a product that has a greater life expectancy. In addition, special effects (including 3-D, using special software) can be achieved using a rotary engraver.

One primary weakness the laser possesses, particularly regarding plastic engraving stock, is heat, which can result in warp. The larger the size of the graphic engraved into the substrate, the more potential there is for warp to occur. This outcome can be attributed to the heat required to 'burn' away the cap layer of material in the lasering process. Plastic absorbs the heat, and consequently, the plastic curls causing warp. Generally speaking, rotary engraving is not prone to warp. In the case of rotary engraving, the excess cap material is routed away, resulting in virtually no heat damage, burning and warping.

Another consideration in choosing rotary over laser engraving is size. While the size of the machine is certainly something to think about, I am referring to the size of projects you plan to tackle using the machine. Traditionally, rotary machines are ideal for larger jobs, such as industrial applications, large format signage and panel making.

Don't forget to consider the materials you plan to use with your machine. While either method of engraving will lend itself to name badges, signage, plaques, awards and gifts, there are some substrates that are not recommended for laser engraving. Bare metal is a prime example. If you are in the business of gifts and jewellery, rotary engraving is most likely your best bet.

You should also be aware that while some substrates can be laser engraved, better results are achieved through rotary engraving. An example of such a product is glass.

And finally, cost should be a point of consideration. In general, the initial investment of a rotary machine is less than that of a laser machine. It is important to remember that purchasing decisions cannot be based on price alone. Several factors must be taken into consideration, such as those discussed in this writing.

Once you've weighed up all of the options, you'll find that your choice will depend on what works best for you. And… at the end of your journey, you might decide the best decision is to rekindle an old friendship with 'old reliable…' your rotary engraver.

Our thanks to Jennifer Schoenberger at Rowmark for writing this article.