

PRODUCT REVIEW:

VISION

MAX Pro

Computerized Engraving System

By Jackie Zack

Vision Engraving Systems,

Phoenix, AZ, touts its new MAX Pro computerized engraving machine as its “most versatile machine to date.” That’s a very big claim for any company to make, but after trying the system recently, I would tend to agree. Designed specifically for the jewelry and gift engraving markets, this innovative machine can handle a heart-shaped silver locket, a tapered glass vase or the inside of a ring as easily as it can engrave a luggage tag or plaque plate. And although jewelry and gift engraving is MAX Pro’s claim to fame, it can also be used for some industrial engraving applications like engraving legend plates and marking small machine parts, capabilities that expand this system’s versatility even further. Coupled with Vision’s proprietary Vision Pro software, the MAX Pro engraving machine is one of the most user-friendly rotary systems to date, which adds to its appeal.

Vision Engraving Systems introduced the MAX Pro to their line of computerized mechanical (rotary) engraving machines in 2006 as a solution for engravers who needed an easy-to-use system to engrave flat, deep, round and odd-shaped items—exactly the type of products you find in the jewelry and gift market. I had the opportunity to do a hands-on review of the system (conveniently, just in time for holiday gift-giving!) and found that the MAX Pro Engraver pretty much lives up to all the claims surrounding it.



The Basic Package

The MAX Pro Engraver is a mid-price range engraving system with a base cost of \$13,995. For that, you receive a machine with a T-slot table for engraving flatwork, a self-centering vise for holding jewelry and other small, odd-shaped items and a complete cylindrical attachment for engraving round work like glasses and vases. You also receive Vision’s top-of-the-line engraving software package, Vision Pro 7.0, which comes standard with numerous fonts, graphics capabilities (like automatic vector tracing and multiple fill routines) and many helpful software “wizards” that walk you through job setups for specific engraving applications, such as inside-ring engraving. The latter is something I found especially appealing because you don’t have to remember the steps or refer to the manual; the software does it all for you!

The MAX Pro engraver from Vision, Phoenix, AZ, allows for engraving of flat, deep, round or odd-shaped items in one compact, easy-to-use machine.



The standard spindle on this unit is an $11/64$ " top-loading rotary spindle.

Copyright © 2007 by Davis Multimedia Intl., Inc.
All Rights Reserved.

As printed in June 2007, Volume 32,
No. 12 of The Engravers Journal.

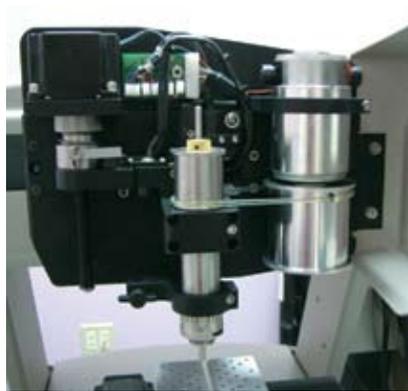
You also receive an accessory kit, two engraving cutters of your choice, a two-year limited parts and labor warranty and an operator's manual. The manual is actually fairly well written and easy to follow. It includes the basics for engraving different types of jobs, some tutorials and a walk-through of the main features in the software. If you need more help, you can use Vision's online Technical Assistant Center. Vision also offers on-site training and installation with the purchase of this system.

Different package options are also available, depending on your needs. For example, in addition to the above-mentioned items, you can add the ring engraving accessory, additional cutters, a burnishing adaptor and three different holding jigs for a total of \$16,710, including freight.

For all it has to offer, the MAX Pro is fairly compact, measuring 28" long x 28" wide x 26" high and weighing 150 lbs. I had the unit sitting on an office desk and there was a little more than half the desktop left over for work-space.

An $1\frac{1}{4}$ " top-loading spindle with adjustable speeds up to 16,000 rpm is standard on this machine. This allows you to use industry standard rotary engraving cutters for materials like plastics, rotating diamond burnishing cutters for glass or non-rotating diamonds for traditional diamond engraving. Optional spindles are available as well, including a 6 mm or $\frac{1}{4}$ " top-loading spindle, top/bottom-loading collet spindles or high frequency spindles (40,000 or 50,000 rpm) for special, high production work.

The machine features three inches of Z travel (up/down movement),



Here is a close-up look at the spindle assembly on the MAX Pro machine.

which is notably larger than similar machines available on the market. You can adjust the "lift" of the spindle as needed, i.e. the amount the spindle lifts between each cutter during engraving. This is useful in situations such as engraving the inside of a bowl or a tapered item to prevent the cutter from smashing into the high spots. The amount of downward pressure exerted against the material can also be modified using a manual spring dampening pressure adjustment on the spindle. Typically, you need more pressure on harder materials, like brass, and less pressure on more fragile materials, such as glass or when diamond engraving materials of various hardness.

The machine is powered by micro stepper motors, which are surprisingly quiet. I had the machine running in a quiet office setting and it didn't disturb anyone. According to Vision, they opted against servo motors, normally touted as providing smoother and faster engraving, due to the speed and performance of the stepper motors. As a side note, Vision Engraving Systems has its own in-house machine shop, so nearly every component on this machine (as well as the others in their line) is manufactured in their Arizona factory.

The Control Center

The MAX Pro is equipped with Vision's most up-to-date Series 3 controller. On this model, the controller is built into the machine and all of the various engraving features and operations can be accessed using a hand-held pendant mounted on the side of the unit. Note that the hand-held version of the controller is a \$750 option on Vision's other units but it's standard with the MAX Pro. Personally, I didn't find it necessary to remove the pendant from the cradle as it is already



The Vision Pro software allows you to scan and vectorize logos and then apply fill routines for engraving.



Engraving features and controls can be accessed using the hand-held pendant conveniently located on the side of the machine.

in a usable location on the side of the machine. For example, it is very convenient to push buttons on the pendant to jog the spindle around while looking at the work area as opposed to the pendant. And because it isn't a separate unit, it doesn't take up any added work space, which can be precious in many retail operations. The pendant features 15 buttons and an LCD display, but don't let the 15 buttons scare you; I found the pendant very user-friendly.

Using the hand-held pendant you can set the Z speed (how fast the spindle moves down to the material), the spindle rpm and the feed rate (X,Y engraving speed). The maximum feed rate, by the way, is 10 inches per second, which is quite fast for this type of machine. Note that you can also make machine adjustments like these in the software, but most engravers will probably prefer using the pendant. This is easier and faster and allows you to make adjustments "on the fly." For example, if you decide you need a higher spindle speed or slower engraving speed, you can adjust the speed using a knob on the pendant while the job is engraving.

Vision's controller also offers other state-of-the-art features, such as open architecture and high speed Ethernet connectivity to your PC. In addition to

Vision's own engraving program, you can also run the MAX Pro using other software, including CorelDRAW. For those of you who want to take your engraving skills to the next level, you can utilize the system's 2½D and 3D engraving capabilities by pairing it with a 3D engraving program like CASmate's EnRoute, for example.

Workholding Options

One of the best features of this machine is the multiple workholding options that are built right into it. There's a T-slot table for flat work, a dowel pin vise that accepts a variety of jigs for odd-shaped items, a cylindrical attachment for engraving roundwork and even a ring engraver (although the latter is optional). It's not just the multiple workholding options that make the MAX Pro so versatile, however. It's the fact that you can switch from one method to another with extreme ease. Are you finished with that name badge job? Remove the T-slot table and slip on the holding cones for a champagne bottle and glasses. Finished with that? Remove the cones and attach the ring engraver to personalize a set of wedding rings. Obviously, there is time involved in setting up each job, but the hardware changeover between jobs is really easy.

Each holding option has its own driver installed in the software, so you simply select the driver based on the type of work you are engraving. That's where some of the Vision Pro software's "wizardry" comes in. By selecting the appropriate driver, the software communicates to the engraving machine the proper home position (upper left corner for the T-slot table, center for the vise) and engraving orientation. You can also add up to nine of



The self-centering dowel pin vise on the MAX Pro accepts a variety of interchangeable holding jigs, such as this Universal Pin Jig, for holding odd-shaped jewelry and gift items.

your own drivers and save them for future use, e.g. for quick setup for certain styles of pens or other items that you frequently engrave.

Here's a more detailed look at the MAX Pro's workholding options:

T-Slot Table

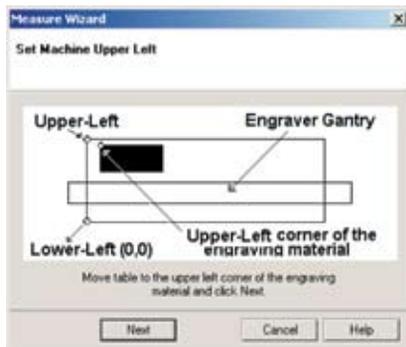
The MAX Pro's aluminum T-slot table is used for holding and engraving flat items, such as trophy and plaque plates, name badges, luggage tags, etc. The table has an 8" x 12" engraving area and will handle items measuring 14" wide x 3" thick x any length since the material can extend beyond the table's limits. Four Allen screws secure the table to the vise, so removing or installing it is a matter of removing or installing the screws. Materials can be

held to the table using Vision's quick-lock vise fixture (included) or their "Multi Mat" material, a self-adhesive material that can be placed directly on the table to provide a rubber-coated gripping surface. Vision also sells other clamping accessories, such as an edge clamp that clamps down on top of the material, wedge clamps and corner clamps.

The Workholding Vise

When the T-slot table is removed, you have access to the unit's vise for holding various odd-shaped items either directly in the vise or in conjunction with a variety of holding jigs. The self-centering dowel pin vise on this unit is modeled after the timeless "SC-3" workholder, which originated on the highly versatile GTX series pantograph engraving machines that many long-time engravers still own. The great advantage here is interchangeability—you can use any of the industry standard holding jigs you may already have on this machine in addition to Vision's own line of holding jigs.

Vision holding jigs for this vise include a pen/medallion fixture, a seal fixture and their universal pin jig. The universal pin jig features a series of holes that you insert pins into to secure items. This is a particularly good accessory to have on hand since these jigs can handle many small, odd-shaped items like ornaments, jewelry, letter



With the Measure Wizard, you can use the system's red pointer to define the engraving area on odd-shaped items.



The Measure Wizard allows you to define the engraving area using a red pointer and then preview that engraving area.

openers, charms and medals.

The vise has an 18-inch wide opening capacity, a spindle clearance of seven inches and can be opened and closed either automatically by pressing the shift and arrow keys on the pendant or manually by using the adjustment wheel. You can also tilt the vise 15 degrees to the left or right to improve the cut with tapered items such as pilsner glasses. Note, too, that you can select the "vise rotated" driver in the software when holding items sideways in the vise and the software will automatically rotate the layout 90 degrees.

Roundwork

The MAX Pro's built-in roundwork engraving capabilities add to the versatility of this machine, enabling you to engrave mugs, glasses, vases and more. To switch to roundwork engraving on this unit, remove the T-slot table or any jigs from the vise and slip on the holding cones. A flat cone mounts on the follower side of the vise (right side) and a tapered cone slips onto the gearbox side.

This system is capable of engraving round items measuring up to six inches in diameter and 12 inches long, which encompasses most round gift and award items. To clamp an item, simply open the vise, position the item on the cones and then close the vise by

using either the motorized feature or the manual hand wheel. When doing this, I did break a couple of glasses. While I obviously over-tightened the vise, it may not have been so "touchy" if I had cushioned the tapered cone (or both) with foam, rubber or some other "springy" material.

Setting up to do cylindrical engraving is straightforward and quick. Simply select the "rotary axis" key on the pendant, choose between "standard mode" and "ring mode" and enter the diameter of the object to be engraved. Note that Vision provides some nifty digital calipers for doing this accurately and easily.

The built-in self-contained coolant system for engraving glass is another nice feature. The system has a recirculating coolant pump and a trough to catch the coolant. A tube connects to a plastic nose cone on the spindle, which streams water or other water-based coolants over the item during engraving. You can also adjust the liquid flow as needed. As a side note, the machine is manufactured with all stainless steel machine components, including the rotary spindle, so there are no worries about rust when using the coolant system. With the exception of a few broken glasses, I found this glass engraving setup to be one of easiest I've ever used and the results were very attractive. Vision also throws in tubes of Gold Leaf, Silver Leaf and Antique Silver Rub 'n Buff to color fill the engraved glass.

Ring Engraving

For \$1,995 you can add ring engraving capabilities to this machine, allowing you to engrave the inside and outside of most rings and bracelets. The ring accessory consists of a three-jaw chuck that holds the ring/bracelet and an L-shaped diamond graver used to do the actual engraving. To set up the machine, you secure the chuck to the gearbox side of the vise using set-screws and mount the diamond adaptor to a bracket located next to the spindle. Next, set the position of the cutter by lowering it until the end of it touches one of the holding pegs in the chuck.

Several holding pegs are provided with the chuck to accommodate different sizes of rings. The ring or bracelet can be positioned over or under the pegs, depending on whether you are engraving the inside or outside of the



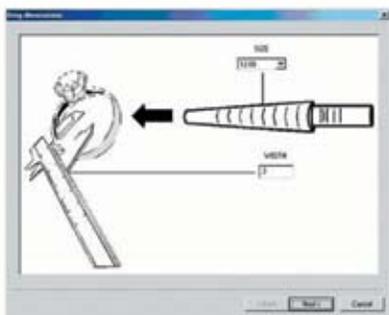
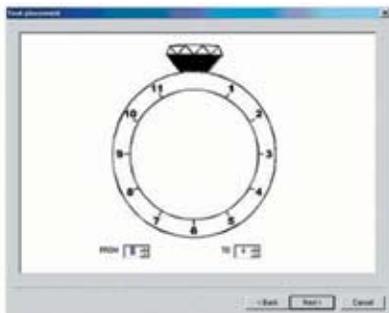
The optional ring accessory allows you to engrave the inside and outside of most rings and bracelets.

ring. The remainder of the setup is a snap thanks to the "Ring Wizard" in the Vision Pro software. The wizard takes you step by step through the setup process and even includes illustrations showing you where and how to measure the ring and where on the ring the engraving will be placed.

After selecting inside or outside engraving, the software prompts you to measure the size of the ring with the ring size tool provided, as well as the width of the ring with the digital calipers. Next, you can select where within the circle the engraving will be placed by entering a "from" and "to" point on the ring. Then enter the text, including the font, character size and the top and bottom margins. For the text size and top and bottom margins, you enter a percentage of the ring width (shank thickness). So, for example, if the ring width is .25" and you enter 50% for the text size, then the text height will be .125". If you enter 10% for the margins, then the margins will be .25". You can also enter a second line of text if desired in the same manner. This step-by-step guidance is a great feature for jewelers who can't afford to make an engraving mistake on an expensive ring.

Impressive Engraving Features

For many non-rotating engraving jobs, MAX Pro has a built-in proximity sensor to set the engraving depth. With this feature, the cutter automatically lowers and detects the material surface so you don't have to "set the surface" manually, which was standard practice in rotary engraving for many years. This surface-sensing feature automatically adjusts the cutter throughout the entire engraving process to maintain a uniform engraving depth, an especially



The Ring Wizard in the Vision Pro software takes you step-by-step through the ring engraving process.

useful feature when engraving curved and tapered items.

Another major highlight of the MAX Pro is its auto laser layout feature used in conjunction with the software's "Measure Wizard." Say, for example, you are engraving a heart-shaped compact where the engraving area is difficult to determine in terms of X, Y coordinates. When the "Measure Wizard" is activated, a red laser pointer on the machine automatically turns on and the software prompts you to jog the spindle to mark the upper left and lower right corners of the engraving area. This information is automatically sent to the software as the "plate size" and you can design your layout from there. The pendant will even prompt you to "outline" the material, which causes the red pointer to outline the engraving area for visual verification. This is an awesome feature that I found extremely useful and time-saving for even simple jobs like luggage tags (no more calipers and rulers!). Note that for some reason this feature is not available with the Vise Rotated driver. You can also use the red pointer for a "dry run," meaning the red pointer and not the cutter will "engrave" the job. This is really useful when engraving expensive items.

Another handy feature is the ability to restart the engraving anywhere in the job. For example, if a cutter breaks or the engraving depth is uneven in the middle of a job, you simply jog the spindle over to that point and restart the engraving. The machine will automatically reengrave starting at the character closest to the spindle position.

Software Highlights

Vision Engraving Systems offers three levels of its proprietary software: Vision, Vision Pro LT and Vision Pro. Vision Pro 7.0 is the latest and most advanced package and is standard with the MAX Pro engraving machine. To use it, you'll need: Windows 95, 98, ME, 2000, XP or NT; 400 Mhz Pentium processor; 128 to 256 MB RAM, depending on the operating system; 50 MB of hard disk space; a CD ROM drive and an available serial port and USB port.

Vision Pro is essentially the EngraveLab package developed by CADlink with some added features, such as the wizards and the engraving controls particular to Vision's MAX Pro system.

As with nearly all software programs available today, Vision Pro has many different features, icons, buttons and toolbars to get used to. The hardware on this system is really easy to operate; it's the software that could present a learning curve. Vision Pro can be used to run other machines as well, including routers, laser engravers, color printers and vinyl plotters so there may be features that you don't use regularly, if at all, depending on your applications. Some of the icons are a little small and unclear for my liking, but it shouldn't take too long to become comfortable with the software. And, as mentioned earlier, the wizards help tremendously.

The fonts provided with this software include 65 engraving fonts, Braille fonts, 1,100+ TrueType fonts and a clip art package. There are plenty of type styles to choose from, although I find many of them to be very similar to each other.

Like most engraving programs on the market today, you can choose your method of layout, i.e., a visual WYSIWYG approach or a mathematical method where you enter dimensions to do a "fixed layout." The software includes standard auto layout features that allow you to define certain parameters to fit into a specified area, e.g. automatic kerning modes, set margins, etc. A multiple plate feature allows you to merge text files with layouts to create batch or multiple plate jobs, which is a time saver for quantities of name plates or badges. There are also features for arc engraving, fitting text to a path, dials and rulers for industrial engraving and engraving by color.

A nice extra in this package is the bitmap-to-vector conversion software. With this, you can scan a logo or design, double-click on it and select the trace option to create a vectorized im-

age. You can then edit that image and add a fill routine to prepare it for engraving. The software includes various fill routines for creating cutter paths, including S-sweep, line sweep, island and spiral fills. The whole process is fairly straightforward and provides good results. In this respect, rotary engraving has come a long way since the old days in terms of using logos and other custom graphics in your engraving jobs.

Braille conversion is another feature of this software. After translating the text to Grade 2 Braille, which is the correct type for ADA signage, you can tell the engraving machine to automatically drill holes for Braille "rasters" or automatically rout out the material leaving raised dots. This, of course, is a must for those using the machine to create ADA signage.

The Verdict

The user friendliness of this machine can't be overstated. Vision has obviously made it a priority to make jewelry and gift engraving extremely easy. I was impressed with how quickly I was up-and-running and switching from engraving a luggage tag to a flask to a pilsner glass or from a charm to a humidor. And the software wizards are a fantastic addition to the software. I'm not much for rulers, so the "Measure Wizard" served as a nearly foolproof means for setting up a job, while the "Ring Wizard" saved time looking up specifics in the manual.

As you can surmise from this review, I found the MAX Pro to be an excellent system for the gift and jewelry engraving market as well as most award applications. If this were my business' forte I would definitely be looking at this machine, and if it happens to be yours, I would suggest you do the same. 

Copyright © 2007 by Davis Multimedia Intl., Inc. All Rights Reserved.
As printed in June 2007, Volume 32, No. 12 of The Engravers Journal.

Jackie Zack

Jackie Zack began her career in the industry with **The Engravers Journal** in 1985. She has authored hundreds of articles for **EJ** and has covered almost every related industry topic. Her dedication to the industry really shines in her one-of-a-kind Rotary and Laser Buyer's Guides.

Jackie can be reached by E-mail at jzack@engraversjournal.com.

