460 HILLSIDE AVE· NEEDHAM, MA · 02494 · 781-431-7663 · WWW.EXACTENGINEERING.NET

Congratulations on your purchase of the Diamond Drag Engraver!

We believe you will be amazed at how fast you can engrave on nearly any substantially stiff material with clean crisp lines. Here are some suggestions for starting out if you are new to diamond drag engraving.

Always follow machine shop safety precautions and wear personal protective equipment when operating machinery.

- Install the Diamond Drag Engraver into a collet such as an R8, ER or end mill holder. **Never install into a drill chuck!**
- Spindle should be turned off when engraving. For some CNC machines, the spindle must be turned on for the table to move. We have successfully engraved materials with the spindle running at low rpm <200rpm. Note that this may prematurely wear the diamond.
- Touch diamond tip onto surface of material to be engraved, then preload the diamond tip by moving the spindle and additional .05-.125 inches closer the surface being engraved. Feel free to experiment with the amount of preload but do not exceed 0.3in! Note the more preload will cause faster wear of the diamond tip.
- The amount of preload will determine the depth and width of the engraving. More preload will increase engraving depth and line width.
- We have tested feed rates up to 100 ipm in hardened steel with excellent results.
- For metals and hard plastics, start out with the stiffest spring (comes installed).
- For glass/brittle materials and soft materials, remove the stiffest spring and install the softer spring. Start out with a preload of .05 and at a slower feed rate ~ 20 ipm.
- To change the spring, remove the set screw from the end of the ½" shank holder and remove the installed spring by pushing the diamond tip into the shank holder to expose the spring. Simply replace it with the desired spring sliding it over the neck of the diamond engraver shank, ensuring it rests on the c-clip. Reinstall the set screw until seated.
- It's a good idea to periodically apply a thin film of grease onto the diamond drag shank to reduce sliding friction and to increase longevity.