



## Ballnose Fact Sheet

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### Description

Like 3-D cutters, ballnose cutters are intended for reverse engraving in acrylic. The main difference is the shape of the cutter. The 3-D cutter produces a narrow, "V" shaped groove with a flat bottom, while the ballnose cutter produces a straight walled cut with a rounded bottom.

When letters made with a 3-D cutter are filled, they show an obvious transition between the bottom and the side of the cut. Letters made with a ballnose cutter appear smooth and rounded. One of the most dramatic effects that can be achieved with the ballnose cutter is to fill the letters with fluorescent paint.

### Technique

The techniques for engraving with ballnose cutters are much the same as those for 3-D cutters. Depth of cut is important, but it is not necessary to engrave as deeply with the ballnose cutter to achieve the desired effect. However, due to its inherent geometry, more of the cutting edge is in contact with the material and the melting problem can be magnified - especially at the bottom of the cut - if the engraving speed and cutter speed are too fast.

Ballnose cutters are available in tip sizes from .060" to the full width of the cutter. Since they are similar to a parallel cutter, the smaller tip sizes tend to be weaker and prone to breakage if extreme care is not exercised. A good rule-of-thumb is to engrave to a depth no greater than the cutter tip diameter (.060" deep if using a .060 cutter, etc.).