

## Easy Cutting Of Acrylic

Logically it is very easy to cut acrylic, generally speaking, the maximum laser output is set and the speed is adjusted so that the material is cut through. Very high-quality cutting results, however, can only be achieved with carefully selected parameters, at slow speeds, the cut edges achieved are rather more polished. Though, if cutting is too slow, the resulting cut is wide and extends outwards towards the bottom. Yet, this also depends on the point of focus and the focal length used. Do use a focal length of 2.5 inch for thicknesses between 3 and 8 mm, for thicker materials the focal length set should be 5 inch. The focal point should not lie on the surface but approximately a third of the way inside the material. The striation increases with speeds that are too high, and gas flow should be set as low as possible to achieve the best possible quality. So, a higher gas flow allows faster cutting speeds. Simple acrylic used is also very important. It may be cast or extruded, cast acrylic is excellently suited to laser cutting, with extruded acrylic, the cut edges become milky after cutting due to the stresses released.

Here it is also important to achieve clean adjustment of the beam since the cut edges are not vertical if there are any astigmatism and exhibit different angles, depending on the direction of displacement. So, the selection of a laser source with good beam quality is particularly crucial.

As well, it is particularly important to prevent reflections of the laser beam as far as possible since they cause visible unevenness in the cut edges. It is this reason; the material may not lie completely flat on the processing surface. Do use a special cutting table for this purpose. Because of result the beam will barely be reflected and you will get clean-cut edges. Few jobs where a lot of cap material is being removed become coated with dust and residue. It can happen on pieces that contain large open areas of text or graphics or on jobs where a lot of detail is being removed all across the surface, particularly as seen in photo laser engraving. The dust particles can smear into the substrate and ruin the job if they are wiped with a dry or, even worse, a wet cloth. The dust contains colorants and is so fine that when mixed with any fluid almost immediately turns into a kind of paint. It is the best way to eliminate the dust without ruining the background is to place transfer or masking tape over the entire surface. Do press it down and squeegee it in place several times, peel it off, and the dust particles will adhere to the masking. Generally after one application of the masking, the sign can be cleaned using a spray cleaner and cloth. Few jobs, especially photos, two or three applications of masking may be necessary.

## About the Author

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