

RAPID PROTOTYPING AND CLOSE TOLERANCE MANUFACTURING



ORION's design engineering group has a new tool in its arsenal: a state of the art **Waterjet Machining Center**.

Prototype and production parts alike can be produced with amazing accuracy, and with a fraction of the lead time normally associated with steel rule die manufacture.

Tool Free Manufacture

During the early phases in a product's design cycle, only a few parts may be needed to initially verify its fit/function. Typically these parts are subject to later design changes, often *after* tooling has been built. These tool modifications can add up to extra delays and extra expense.

ORION's highly skilled engineering team needs only your flat DXF or DWG file to produce high quality parts - *FAST*. Our waterjet is ideal for parts with very small, intricate features that may otherwise require expensive hard tooling, or which cannot be cut with tooling at all. Most of our materials are able to be cut with plain water, using a diamond orifice which generates a 0.005" diameter stream of water. This saves money on expensive abrasives. In most cases, we can produce your parts in less than one hour from the time we receive your CAD file !

Improved Cutting Tolerances

Generally, steel rule die boards can be manufactured to tolerances within +/- 0.005". After adding cutting rule, and the behavior of different materials, most plastics are capable of tolerances in the range of +/- 0.015". Foams and difficult to cut materials are usually cut within +/- 0.030" or greater.

With waterjet cutting, we have experienced variations on many of our materials within +/- 0.002", while most of our materials can be cut to within +/- 0.005". This includes many difficult to cut materials such as solid silicone rubber and gap filling materials.

Difficult to Cut Materials

Most thicker plastics and dense rubbers are difficult to cut with steel rule dies. Plastics over 0.040" in thickness are rigid enough to deform die blades, causing poor quality of cut, and inaccurate dimensions. Many high durometer neoprenes and silicones are difficult to cut since compression of the part during the cutting creates edge and hole distortion. The waterjet cuts with no lateral forces and no compressive forces outside of the cut radius. There is *no* deformation or cupping - all you get is a clean straight edge, every time, with dimensional accuracy that cannot be achieved with any other method of fabrication.



ORION's Waterjet is capable of abrasive & plain water cutting

Materials commonly cut with water only:

- Mylar®
- Lexan® (0.060" & under)
- Formex®
- PVC
- Poron® Silicone
- Sil Pad® (all types & thickness')
- Gap Pad® (all types & thickness')

Materials usually requiring abrasive cutting:

- Steel
- Aluminum
- Lexan (over 0.060")

Dense Silicone Sponge



Steel Rule Die Cut Edges



Waterjet Cut Edges

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