



## Helping You Turn Prints into Parts

### Saving Costs When Designing for Aluminum Extrusions

Producing parts from aluminum extrusion can be very cost effective especially when combined with these important design variables:

**Quantity** – Even in short production runs, aluminum extrusion may “break even” and become more economical than alternative processes, particularly when secondary savings such as reduced machining, finishing and assembly are factored in.

A product may be manufactured initially using standard extruded shapes, but as product volume increases, it often becomes more economical to redesign components as custom extrusions, matched more precisely to product needs.

At large volumes, manufacturers can benefit from the volume-prices available on large mill runs of a shape.

**Product Shape** - Shape also influences product economics, generally semi-hollow, and hollow extrusions are about the same in cost, solid shapes are more economical than hollows, and symmetrical shapes are more economical than asymmetrical shapes.

Extrusions, can often save a manufacturer money in “hidden” ways. A more complex extrusion may be well worth some moderate expense for the savings it creates in reducing machining, forming, joining, assembling, shipping or other costs.

**Tolerances** - Extrusions produced to industry standard tolerances are more economical than those requiring special tolerances.

Product fabrication and assembly techniques sometimes change, making special tolerances less necessary. Periodical review of an extrusion design may reveal an opportunity to reduce costs by easing or eliminating special tolerances.

**Alloy** - For an extrusion design there may be several alloys and tempers that would be suitable for production. The selection is usually made on the basis of structural or fabrication requirements, but it’s a good idea to look for the most economical alloy among several that may be functionally equivalent in the specific application at hand.

**Surface Finish** - Careful production, handling and shipping can deliver extrusions with premium-quality surface finishes.

It is critical to know from concept start what surface is, and is not critical or cosmetic. But a premium finish may not be needed on all faces of an extruded shape, and as circumstances change the need for premium finishes may diminish or disappear. It may be possible, upon review of an extrusion design, to reduce or eliminate premium finish specifications.

**Length** - At relatively low product volumes, fabricators often purchase extrusions in economic warehouse lengths. As production volume increases, however, even greater savings may be gained by purchasing extrusions in exact required lengths or multiples of exact lengths, to reduce scrap.

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