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*According to Otis Inc. reports.

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The ROI Threshold

What happens when demand for parts from a supplier increases so that an OEM can scale up production? Determining the ideal time to transition to a more economical alternative can be challenging, but a "one-stop" parts supplier can scale with demand, facilitating the transition to hard tooling, mixing and matching metalworking techniques for multi-component assemblies, and incorporating hybrid and secondary tooling approaches to further reduce costs.



By **Bob Denholtz**

February 10, 2018

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Deciding on the best technique to manufacture a part involves a careful analysis of the production volume versus the cost of the hard tooling. A one-stop-shop can offer a full progression of options. Instead of spending a lot of money initially on tooling for stamping, a part can be fabricated. As the customer ramps up production per month, they can move from fabrication to hard tooling in a smooth transition with the same one-stop-shop. (Photo by Andrew Werner) (first view)



When original equipment manufacturers (OEMs) outsource component parts manufacturing, the type of fabrication, stamping or machining technique utilized is often a major factor in determining the final per-piece cost of the job bid. The initial volumes required may also dictate the metalworking technique or process that is selected, particularly for components used on new products that are just beginning to find a market. Certain complex metal parts can only be machined, while other thinner gauge parts and enclosures are typically stamped using hard tooling or fabricated using lasers, turret presses or press brakes. For start-up shops or smaller companies with more modest production requirements, avoiding the high upfront costs of hard tooling can be appealing. As a result, fabrication alternatives that do not require that hard tooling investment – even if the cost per piece is higher – are the better initial choice.

But what happens when demand increases and the OEM needs to scale up production? When this is the case, determining the ideal time to transition to a more economical alternative can be challenging. Sometimes it can even involve the difficult decision to move from a trusted supplier. After all, most sheet metal fabricators do not also offer stamping capabilities, and vice versa. These situations are where more sophisticated "one-stop" metal parts manufacturers can deliver a significant advantage: by offering the full gamut of sheet metal fabrication, stamping and machining options under one roof, these larger operations are in a much better position to scale with the customer as their demand increases. This includes facilitating the transition to hard tooling, mixing and matching metalworking



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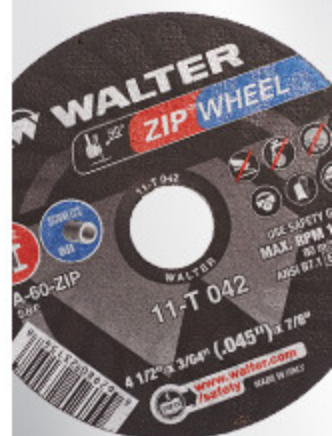
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techniques for multi-component assemblies, and incorporating hybrid and secondary tooling approaches to further reduce costs.

A PROGRESSION OF OPTIONS

Deciding on the best technique to manufacture a part involves a careful analysis of the production volume versus the cost of the hard tooling: A sheet metal part that costs \$10 to fabricate may only cost \$6 when stamped, but the OEM may have to spend \$30,000 to 40,000 in press tooling for stamping. So for that \$4 saving per part, the OEM must make sure they have 10,000 to 20,000 stamped parts to pay off the tooling investment quickly. A one-stop-shop can work with an OEM by offering a full progression of options based on “the ROI threshold.” For example, a startup OEM needs 500 units per month, but it may not make sense to spend the money on tooling for stamping, so the part can be fabricated. As the program matures and the OEM goes from 500 units to 5,000 units per month, they can move from fabrication to hard tooling in a smooth transition with the same one-stop-shop.

In one real-world example, an OEM was spending \$18 for a power supply chassis with a \$4 cover. As volume requirements increased, their one-stop-shop supplier suggested it was time for them to move to hard tooling. This reduced their overall cost from \$22 to \$14. This OEM is now saving \$8 a unit and they have ramped up to over 3,000 units a month. Their tooling cost is \$80,000, so at \$24,000 in savings each month it took them 3.5 months to get their money back. Had it not been cost effective to use hard tooling for the box, it many have been for the cover because it is a cheaper tool. In that case, the OEM could continue to receive a set of parts from the same one-stop-shop.

One-stop-shops can even use hybrid approach: a part can be fabricated on a turret press or laser cut and then a hard tool is used to form it into a box. Or, tools can be staged to create a blank before a secondary press is used to form it into a box with another hard tool. Finally, if it is determined to be worth the cost, a full-blown progressive die can be purchased that will form the entire box completely with very little labor. This progression of options is not the typical way of doing business. For Michael Milazzo, the chief executive officer of Simon-Aire, Inc. (New York, NY), working with a metal parts supplier that actually initiates suggestions like this is highly unusual. “I’ve worked with many sheet metal fabricators over the years and they are often silent,” he says. “They just keep moving forward without stopping to say, ‘listen, if you do this, you can save yourself 12 passes,’ or ‘the weight of the sheet metal is too heavy, if you use a lower gauge you can reduce your costs.’”

Simon-Aire is an OEM that manufactures Packaged Terminal Air Conditioners, a type of self-contained HVAC system that is commonly found in hotels, senior housing facilities, hospitals, dormitories and apartment buildings. They also offer parts and accessories, including replacement chassis, hydronic heat assemblies, louvers, wall sleeves, room enclosures and control components. For these products, they require a variety of metal parts and components from a one-stop-shop. “I’ll get a phone call saying, ‘have you thought about this?’” notes Milazzo. “That’s a good phone call to get . . . they don’t bill me for that – it doesn’t make them any more money – it’s just part of our relationship. They are not just trying to get more money from me. They are trying to save us money while improving the product to keep us alive another day.”

There are other advantages to working with a one-stop-shop parts manufacturer with experience across the metalworking spectrum. “I basically get to pick their brains on every little ‘what if’ that I’ve been considering,” adds Milazzo. “They are able to pull from their experience with a different customer that makes rifle components or another one that makes a hot dog cooker or a sign for Dunkin Donuts. They pull all of that together to create a technology that I can use in my air conditioning business.” He was also able to pursue a project with the one-stop-shop that would help him reduce the amount of warehouse space required for a volume of large, bulky products in inventory. “Many of our sheet metal components are basically like a box, so they take up a lot of dead air space,” explains Milazzo. “If you have hundreds of them, you’re paying a lot of money to store them.”

The one-stop-shop developed a “knockdown” box that could be stored flat until final finishing and assembly. This would allow 50 or 60 components to be stored in the same space that normally fit about 12. “That is going to make a big difference because it saves a lot of space, which in a warehouse translates into a lot of money,” smiles Milazzo, adding that it also provides him with a competitive edge over his much larger competitors. He says it’s extremely important to have a good, collaborative relationship with this sort of sophisticated metal parts supplier, which works with him from the prototype phase through product development. “It’s very integral the way that I work with them to design each and every component that they do make,” says Milazzo. “It’s a very good cooperation that exists between our company, our engineering, our research and development and their in-house engineers. I’ve come to depend upon them as if they existed under my roof.”

CONSOLIDATING THE VENDOR BASE

By offering a variety of metalworking and fabricating options, a one-stop parts manufacturer can also be used by larger OEMs that deal with hundreds, even thousands, of vendors to consolidate its vendor base. Dealing with one supplier instead of many means one purchase order, one visit to the vendor, one quality survey, and one check to write – greatly simplifying supplier management that previously depended on 10, 20, or 30 different vendors.



Bob Denholtz

Bob Denholtz is the president of DureX, Inc., 5 Stahuber Avenue, Union, NJ 07083, 908-688-0800, www.durexinc.com. Durex is a full service one-stop-shop that provides high quality metal stampings, sheet metal fabrications, CNC vertical machining, powder coating, electro-mechanical assemblies, finished products, packaging and fulfillment to an extremely diversified customer base.

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