

snips



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**Mixing fabric
and metal duct to
boost efficiency**

A sheet metal student on a mission

A magazine for
sheet metal,
heating, cooling
and ventilation
contractors

A helping hand

Knowing when to use an outside company is critical to success for one HVAC equipment manufacturer

When OEMs outsource the manufacturing of component parts, the type of fabrication, stamping or machining technique used is often a major factor in the final, per-piece cost.

However, the initial volumes required may also dictate the metalworking technique or process selected, particularly for new products just beginning to find a market.

While certain complex metal parts can only be machined, thinner gauge parts and enclosures are typically stamped using hard tooling or fabricated using lasers, turret presses or press brakes.

For startups or smaller companies with more modest production requirements, however, avoiding the high, upfront costs of hard tooling can be appealing. As a result, fabrication alternatives that do not require that investment — even if the cost per piece is higher — may be a better initial choice.

But what happens when demand increases and an original equipment manufacturer needs to scale up production?

Determining the ideal time to transition to a more economical alternative can be challenging. In some cases, it can even involve the difficult decision to move from a trusted supplier. For example, many sheet metal fabricators do not offer stamping.

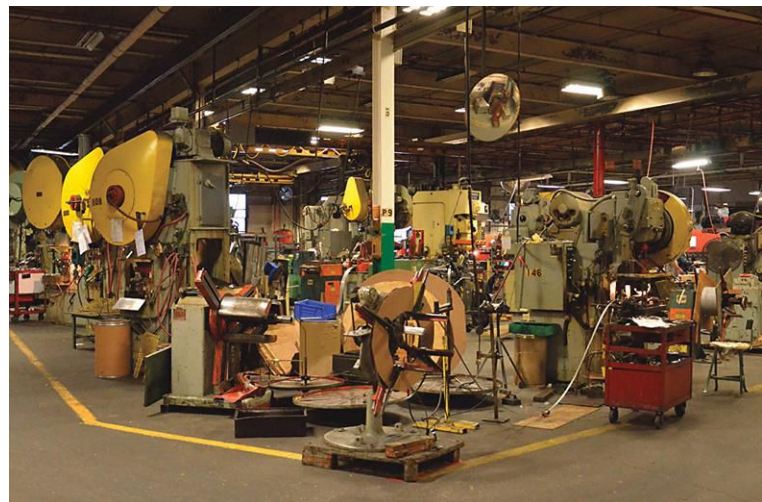
This is where more sophisticated “one-stop” metal parts manufacturers can deliver a significant advantage. By offering the full gamut of sheet metal fabrication,

stamping and machining options under one roof, these larger operations are often in a much better position to scale with the customer as demand increases.

This includes 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.

Options

According to Bob Denholtz, president of DureX Inc., a



DureX operates a 120,000-square-foot facility that provides sheet metal fabrication and computer-numeric-control machining and metal stamping.

sheet metal fabricator based in Union, New Jersey, deciding on the best technique to manufacture a part involves a careful analysis of the production volume versus the cost of the hard tooling.

“With a sheet metal part that costs \$10, it may cost \$6 for stamping, but the OEM may have to spend \$30,000 to \$40,000 in tooling. So for that \$4 saving, they need to make sure they have 10,000-20,000 pieces so they can pay off the tooling quickly,” Denholtz said.

Founded in 1946, DureX Inc. operates a 120,000-square-foot facility that provides metal stamping, sheet metal fabrication and computer-numeric-controlled machining for many industries, including HVAC. The company has more than 50 presses with capacity up to 400 tons, along with laser cutting equipment and turret presses, in addition to value-added services such as powder coating, assembly, packaging and fulfillment.

Denholtz said a one-stop-shop can work with a customer by offering a full progression of options based on what he calls “the ROI (return on investment) threshold.”

For example, for a startup that needs 500 units per



A DureX worker operates a multihead spot welder. Using it increases efficiency by welding four spots in one stroke.

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Outside

“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.”

— Michael Milazzo, CEO, Simon-Aire

month, it may not make sense to spend the money for stamping, so the part can be fabricated.

As the program matures and the OEM goes from 500 to 5,000 units per month, the customer can move from fabrication to hard tooling in a smooth transition with the same supplier.

Saving money

In one real-world example, Denholtz says a customer was spending \$18 for a power supply chassis with a \$4 cover. As volume requirements increased, DureX suggested it was time to move to hard tooling. This reduced the overall cost from \$22 to \$14.

“The customer is saving \$8 a unit and now they are up to over 3,000 units a month,” Denholtz explained. “The tooling cost \$80,000, so at \$24,000 in savings each month it took 3.5 months to get the money back.”

Had it not been cost-effective to use hard tooling for the box, it may have been for the cover because it is a cheaper tool. In that case, the customer could continue to receive a set of parts from the same supplier.

A hybrid approach can even be used.

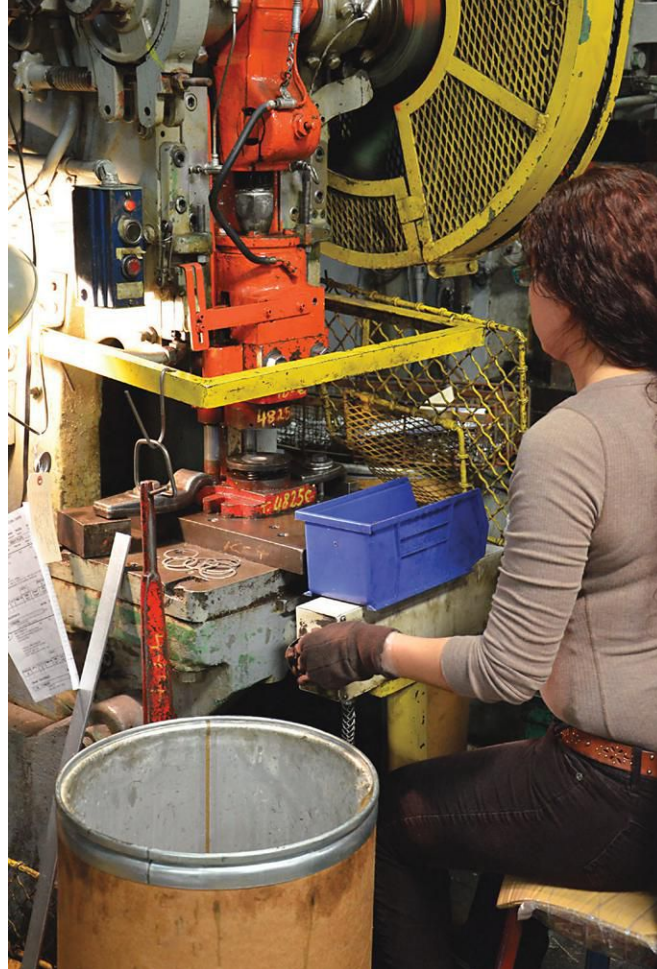
“I may fabricate a part on our turret press or use laser cutting and then use a hard tool to form it into a box,” Denholtz said.

Tools can also 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 that it is worth the cost, a full-blown progressive die can be purchased that will form the entire box completely with very little labor.

For Michael Milazzo, CEO of New York City-based HVAC manufacturer Simon-Aire, working with a metal parts supplier that actually initiates suggestions is highly unusual.

“I’ve worked with many sheet metal fabricators over the years and they are often silent,” he said. “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.’”



Tools can also be staged to create a blank before a secondary press is used to form it into a box with another hard tool.

Ideas

Simon-Aire Inc. manufactures packaged terminal air conditioners, a type of self-contained HVAC system commonly found in hotels, senior housing facilities, hospitals, dormitories and apartment buildings. The company also offers parts and accessories, including replacement chassis, hydronic heat assemblies, louvers, wall sleeves, room enclosures and control components.

For these products, Simon-Aire purchases a variety of metal parts and components from DureX.

“I’ll get a phone call saying ‘Have you thought about this?’” Milazzo said. “That’s a good phone call to get. They don’t bill me for that. It doesn’t make them more money.

It’s just part of the relationship.

“They are not just trying to get more money from me,” he added. “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 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,” Milazzo said. “They are able to pull from their experience with the customer that makes rifle components and the one that makes a hot dog cooker or a sign for Dunkin’ Donuts. They pull all that

together and at the end of it comes a technology that I can use in my air conditioning business.”

Saving space

Milazzo was also able to pursue a project with DureX that would help him reduce the amount of warehouse space required for large, bulky HVAC products in inventory.

“Many of our sheet metal components are basically like a box, so they take up a lot of dead airspace,” explained Milazzo. “If you have hundreds of them, you’re paying a lot of money to store them.”

DureX developed a “knock-down” 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 that saves a lot of space, which in a warehouse translates into money,” said Milazzo, adding that it also provides him with a competitive edge over his much larger competitors.

He said it’s extremely important to have a good, collaborative relationship with metal parts suppliers. This includes

working 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,” Milazzo said. “It’s a very good cooperation that exists between our company, our engineering, our research and development and their in-house engineers.”

In the case of DureX, it’s almost like they’re part of Simon-Aire.

“I’ve come to depend upon them as if they existed under my roof,” Milazzo said.

By offering a variety of metalworking and fabricating options, a one-stop parts manufacturer can also be used by larger companies that deal with hundreds, even thousands, of vendors to consolidate its vendor base.

“By dealing with one vendor instead of many, that means one purchase order, one visit to the vendor, one quality survey, one check to write,” said DureX’s Denholtz. “It can take a lot of managing if you have 10, 20 or 30 vendors.”

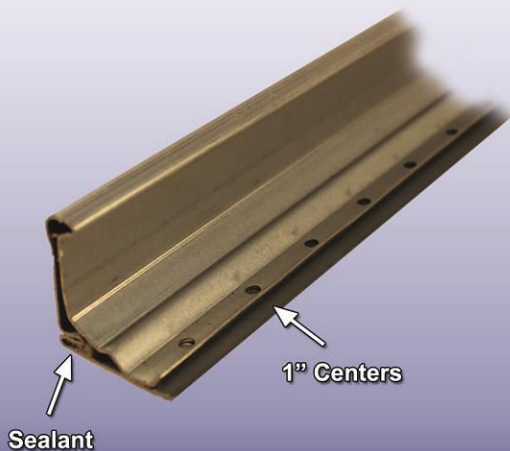
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