

Values

Press technology gives growing fabricator quicker setups and higher throughput

An object becomes an heirloom when a descendant prizes the item, then passes it on to a relative who will do the same. The article might not be anything more than a recipe or a piece of antique furniture but the stories, memories and nuggets of wisdom these treasures evoke are what family members value.

If you ask Peter and Dale Davis about their inheritance, the first thing they will tell you is that they are second-generation tool-and-die makers. “We grew up in the trade,” says Peter Davis, president and co-owner of Dundee Manufacturing Co. in Dundee, Michigan. He and his brother Dale, co-owner and vice-president, are committed to carrying the Davis legacy forward.

Peter Davis credits their father, Lynwood, and uncles Harold Davis and Joseph Butcko with passing “those skill sets on to us”.

In the 1970s, Lynwood Davis worked with the owner of Yeck Manufacturing to retool the shop for progressive dies and streamline operations. The changes boosted profit margins and gave Lynwood the opportunity to acquire the company in 1979. He renamed it Dundee Manufacturing.

“Dale and I bought the company from our father in 2003 and added applications

for the solar and automotive markets,” explains Peter Davis.

A new approach

“We see ourselves as a can-do company,” he adds. “Our central theme is to keep moving forward. We started with a workforce of 10, and today, we have 44 employees. Dale and I sat down about six years ago and asked ourselves, ‘What is our why?’ We spent four days in a Houston hotel developing our mission statement and solidifying our values as a company. We came up with a three-pronged approach that focused on equipment, personnel and a stable financial foundation.”

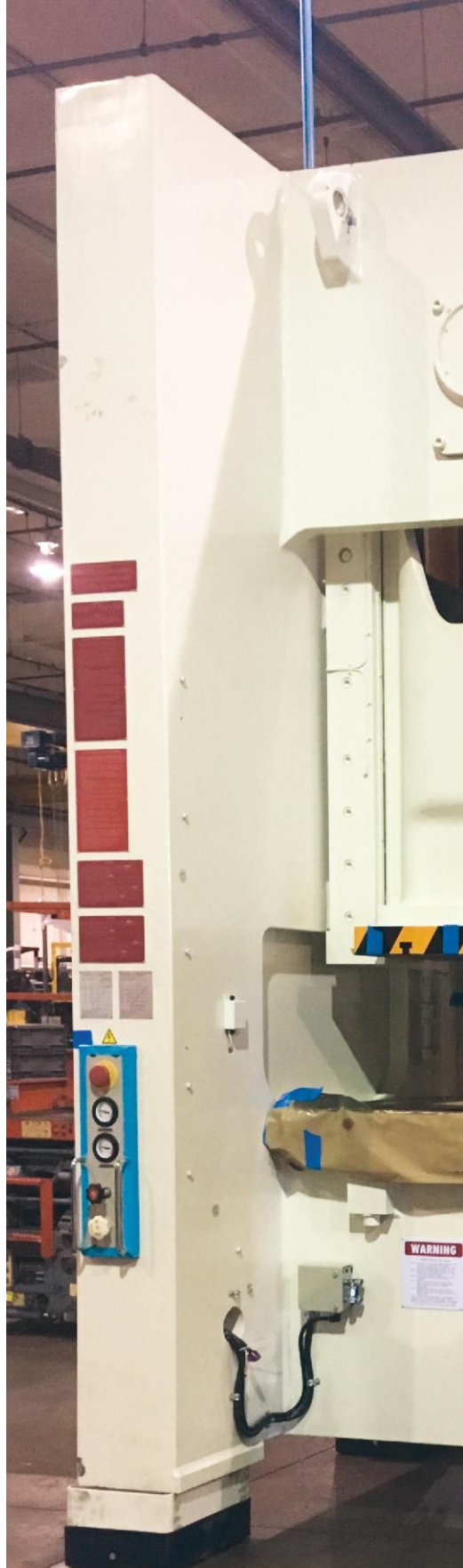
Dundee Manufacturing produces engineered components and parts for the plumbing, electrical, solar and motor vehicle industries. Services include research and development, rapid prototyping, die design and build, precision stamping, tube fabrication, weldments and assemblies, bending, heat treating and powder coating. The company specializes in taking a part from concept to finished product.

To expand capacity, Dundee Manufacturing purchased two 165-ton AIDA NC Series mechanical gap frame presses in 2017 (one used, one new).

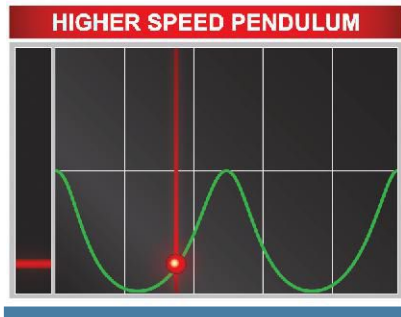
“We had pretty good success with the

““ We asked the plant manager about his die maintenance costs with servo. He said, ‘What die maintenance costs?’ ””

Dale Davis, Dundee Manufacturing Co.



Peter Davis, left, co-owner and president, with brother Dale Davis, vice president.



Fully programmable and optimized stroke lengths can be used for each job, allowing AIDA DSF servo presses to minimize the non-working portion of the stroke and increase parts per minute.

machines so we started looking at the cost of a new press,” says Dale. “We noted that the AIDA presses seemed to hold their value. There was only \$20,000 difference between a used press and a new one. So, we opened a dialogue with AIDA. That led to a tour of their North American headquarters and manufacturing facility in Dayton, Ohio. We liked the fact that most parts are made here in the United States.”

Further research prompted Dundee Manufacturing to consider AIDA’s DSF Series direct-drive servo straightside press. “We see the market going toward servo, but the press was more expensive and, at first, it was hard for us to justify,” continues Dale Davis. “What sold it was when Pete and I visited one of AIDA’s customers. We asked the plant manager, ‘What are your die maintenance costs like?’ He said, ‘What die maintenance costs?’”

Outcome

The results resonated with Dundee’s owners. “We had to sharpen punches for a tool on a conventional press every 100,000 hits,” says Dale Davis. After installing a 220-ton AIDA DSF Series direct-drive servo straightside press in January 2018, the company ran the same tool on the machine. “We achieved 900,000 hits on the servo press before we needed to sharpen the punches,” he says. “On a job that required high-strength low-alloy material, we were able to slow the forming speed down while increasing parts per minute by 18 percent.”

Tool life improved because the tooling wasn’t taking a beating from the heat build-up on the tool steel. Work hardening of the part itself was also reduced. In addition to longer tool life and achieving more parts

Stamping/Presses

per minute, the programmable servo technology gives Dundee Manufacturing the ability to eliminate secondary operations.

“The press can be programmed to pause, delay and trigger other activities, such as nut insertion or assembly of another part,” Peter Davis says.

AIDA’s direct drive provides the same torque rating as a conventional mechanical press, yet full torque is available down to one stroke a minute. During die setup, tryout or development, the CNC hand-wheel control (step feed) allows the operator to slowly move the slide at 0.004-in. increments to control the action and timing of the tool.

“A stamper can choose from several pre-programmed slide motion profiles or write one that is tailored to a specific job,” says Shrinivas Patil, applications engineer and senior product engineer for AIDA-America. “Stroke length can then be chosen to suit the part being run in the press.”

“Design flexibility was the other key ingredient,” Dale Davis remarks. “A press



that can draw, control reverse tonnage, perform blanking operations as well as control how the strip moves through the press means that, from a design perspec-

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The operator can slow forming speed for high-strength low-alloy material while increasing parts per minute by 18 percent.

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“I’m not locked in by the constraints I would have on a mechanical press.”

In addition to installing the servo presses over a year ago, Dundee Manufacturing installed two AIDA 110-ton NC Series mechanical gap frame presses this past December.



Dundee Manufacturing employees commemorate a technology milestone: the arrival of the AIDA DSF Series direct-drive servo straightside press.

“We’re looking to put in three to four press lines [all AIDA] so that the machines are identical,” says Peter Davis. “That will allow us to standardize processing for all our components. I also chose the continuous demand option because we pack a lot of parts in corrugated boxes. We’re looking at automating that task with a pick-and-place robot.”

A software system installed in 2017 monitors the equipment and tracks production in real time. “I’ve been able to solve inventory problems on my phone at home,” says Dale Davis, “or modify a control plan long distance from my laptop.”

Equally important is the investment Dundee Manufacturing continues to make in its employees.

“We’re big on teamwork, accountability and having fun,” Peter Davis says. “People are spending 8 to 10 hours a day here, so we have a lot of little events from doughnuts every Friday, Can Do awards, Rockstar of the Week and even a surprise breakfast cooked by Dale.”

The company holds weekly plant meetings to keep employees informed of current events, sales and production metrics, and to recognize employee contributions.

“When the AIDA servo press was delivered, we asked everyone to come out into the parking lot to be part of a photo shoot because getting the direct-drive servo press was a huge milestone for the company and for Dale and I as owners,” Peter Davis says. “It is important that our employees understand that servo technology is a game changer with respect to our capabilities as a company.”

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