LESS COMPLICATIONS, IMPROVED PRODUCTIVITY IN ROBOT-TENDED DUAL-PRESS CELL

A new robot-tended, dual-press cell at Fontaine Spray Suppression in Tennessee brings efficiencies after replacing an aging, complicated, bulky progressive die with trim and form dies split into separate presses.

BY LOUIS A. KREN, SENIOR EDITOR



In January 2025, the Springfield, TN, operation of Fontaine Spray Suppression switched this truck quarter-panel production line from a coil-fed setup with a large-bed press housing an aging, complicated and bulky progressive die to separate trim/pierce and form dies in smaller gap-frame presses, all robot-tended. The result: smaller footprint, eased maintenance, freeing of personnel for other tasks, improved material utilization and more.

Part of the Transportation Products section of The Marmon Group, the Fontaine Spray Suppression plant in Springfield, TN, produces Class-8 truck quarter fenders and mudflap hangers under the brand names of Fleetline and Hogebuilt. Fleetline Products, formed in 1973, was acquired by The Marmon Group subsidiary Fontaine International in 1999. Hogebuilt, in business since 1944, was bought by Marmon Highway Technologies (MHT) in 2004. Fontaine Spray Suppression itself was formed in 2004 to oversee spray-suppression brands within MHT. Both Fleetline and Hogebuilt products are supplied to truck OEMs and the aftermarket.

The 110,000-sq.-ft. Fontaine Spray Suppression Springfield facility operates in a single 60-employee shift and features several mechanical presses with stage tooling to stamp carbon and stainless-steel components from outside-supplied blanks. Via welding, polishing and assembly, finished products then are delivered to OEMs and aftermarket distributors.

A tour by *MetalForming* revealed the heavy use of automation in forming, finishing and assembly operations, including an impressive stamping, deburring and press brake-bending cell tended primarily by robots, as well as several automated grinding, welding and assembly operations all along the shop floor.

Needed to Replace Aging, Bulky Progressive Die

The amount and sophistication of automation under roof at the Springfield Fontaine Spray Suppression speaks to the



The cell, with two robots tending two presses and a smaller grinding robot in the middle, garnered excellence recognition from Fontaine Spray Suppression's parent company, and fits appropriately with the manufacturer's automation-heavy shop floor.

expertise and experience of the company's personnel. So it comes as no surprise that the Springfield team sought an automation solution for an aging pressline tasked with producing Fleetline quarter fenders.

"We had a large progressive die in a two-point mechanical press with the quarter-panel-skin material coil-fed," says Rick Buckelew, engineering manager at Fontaine Spray Suppression, recalling the challenge that led to installation of a new automated press cell. "The press had a large 96-in. bed, which was needed to fit the long die. The die, 11 to 12 yr. old at the time, had become more difficult to maintain and finicky, requiring constant adjustment here and there to make it work with a crash or something breaking."

With a die-design background, Buckelew and his engineering team began considering a new die design.

"We noted that a blank-fed operation—rectangular blanks instead of coil-fed stainless steel—might be an easier and cost-effective solution for delivering material to the press," he says. "A coil-fed die brings variables into the process—the coil, the feed, the straightener—a whole lot that can go wrong even before the material enters the press."

Ideally, we could feed rectangular blanks—all the same size and thickness for the work dedicated to that line," Buckelew continues. "And, by separating the old progressive die into a trim/pierce die and a form die, we could ease maintenance."

The biggest maintenance task on the existing progressive die involved sharpening as die components dulled.

"Whenever sharpening was needed, we had to remove that whole long, heavy die and send it out," Buckelew says, "then wait for it to return, hope that it was sharpened correctly and then reinstall."

No easy task. Instead, by using separate trim and form dies, each was half the size of the old one, which would improve handling and quicken maintenance turnarounds. A die shop about 10 mi. down the road built—and now helps maintain—the new dies.

Switching away from a coil-fed, progressive-die process also would increase material utilization—less scrap, Buckelew reports.



Note the stainless-steel quarter panel on the left side of the photo in front of the rear tires. Fontaine Spray Suppression in Springfield, TN, produces these panels for OEMS and aftermarket customers.

The Answer: Twin-Press, Robot-Fed Cell

With its inhouse expertise and backed by its integrator of choice, Fontaine in Springfield, opted for two 200-mton Aida model-NC1-2000 gap-frame mechanical presses, one for each die. Installed and functioning by January 2025, the two presses are each tended by a Fanuc robot—offset from each press to allow for manual press loading and tending if needed—with a smaller Fanuc inside of the cell to perform deburring. The robots all feature vacuum-cup grippers to help protect the stainless-steel blank and part surfaces.

In practice, to begin the process, the first robot picks a stainless-steel blank from a stack at the back of the cell. The stack features blank-separation technology to ensure single-blank pickup, and each blank has PVC film to provide for surface protection. The robot places the blank on a squaring table to ensure blank orientation, then sets it into the trim press. After, the same robot removes the part and sets it into the deburring station, where a smaller robot uses special end-of-arm tooling to perform that work. The third robot transports the part from the deburring station to another squaring table, then into the form press. After forming, this same robot removes the part and places it onto a conveyor belt for manual handling and transport to assembly stations. During normal operation, the cell produces 700 skins per one-shift day, equating to about 140,000 annually.

Cell operators benefit from simple-to-use human-machine interfaces that communicate smoothly with the Aida press electronics, Buckelew reports. Communication is just one more benefit of the new cell, joining the benefits list of smaller footprint, freeing of personnel for other value-added tasks, improved maintenance, less downtime and greater material utilization. **MF**