

CASE STUDY

A Press for Complex Parts

When a laundry OEM orders large, complicated laundry appliance parts, the part supplier finds the solution in two specially configured straightside presses.

Appliance consumers today have an appetite for more color options, accessories, and unique profiles. Making the parts to support these appliance means adding stamping operations and forming shapes that are more complex.

Component manufacturer Flextronics International (www.flextronics.com) recently was given the task of producing the largest consumer washer and dryer parts on the market. This called for press equipment with an extra long bed length to accommodate the number of die stations needed to deep draw laundry front panels.

The appliance OEM provided the part requirements and also recommended a press manufacturer and model. As a result, the part manufacturer purchased two AIDA NST 1200-ton straight-



The Flextronics NST can accommodate up to seven dies on a bolster and transfer the part up to seven times. A variable position exit conveyor on the final transfer station is integrated with safety interlocks on the press control to allow the conveyor position to be linked to specific part numbers with specific numbers of stations.

side presses from AIDA-America Corp. (Dayton, OH, U.S.; www.aida-global.com). This is the same press being run at their appliance customer's manufacturing plant. "Our customer owns the tooling we're using to run this job," said Rick Thompson, senior director for Flextronics' Juárez Operations.

The press has the Hydraulic Overload Protection system (HOLP), which operates 7 to 10 times faster than other systems. The slide connection itself is configured to operate as a high-speed valve, eliminating pressure relief valves and large hydraulic flow systems found on older design presses with wrist pin and saddle bushing connections. As a result die and press components are protected beyond the level provided by conventional presses.

"By using the same equipment we were able to ensure our customer's dies were operating in a safe press, an advantage for us," Thompson added.

In addition to front panels, the presses in Juárez produce tops, sides, bases, and other laundry components from cold roll, galvanized, and stainless steel. The equipment runs 24 hours a day, five to six days a week, generating more than 500,000 parts each month. The laundry appliances were recently launched in major retail stores in the United States, along with television and magazine advertising featuring a major celebrity.

Part requirements dictated a press with greater right to left bolster

and slide area to accommodate additional dies and a bed size of 84 by 288 in. with dual moving bolsters. The two presses were also fitted with three-axis HMS servo transfer systems with 48-in. wide coil feeding systems. “The bed length was the largest ever produced at AIDA-America, and the 1200-ton straightsides are the largest presses in the world for Flextronics,” Thompson said.

One press can accommodate seven dies on a bolster and transfer up to seven times. The final transfer is performed on a variable position exit conveyor integrated with safety interlocks in the press control to allow the conveyor position to be linked to specific part numbers with specific numbers of stations. Parts are then shipped locally in returnable containers to the OEM’s plant, giving the appliance producer about four hours of parts prior to paint.

The straightsides’ automatic quick die change supports Flextronics’ lean manufacturing methodologies. “We’re able to run the smallest possible batches,” said Thompson, “minimizing working capital, inventory, and floor space requirements while optimizing flexibility, cycle times, and capacity.”

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The rolling bolsters facilitate die changes, which can be made in 4 min. “It actually takes me longer to change a coil than it does to set a new die set,” Thompson said. As the facility increases its expertise on the programming of the transfer system, Thompson expects to see increased press speeds and greater capacity.

While the addition of extra dies and more operating stations typically amplifies off-center loading and its negative effects, Flextronics finds the straightsides’ lube-free preloaded roller slide guide systems minimize the condition. Zero clearance improves slide guiding while the system’s “preloaded” characteristic provides immediate resistance to any lateral slide movement caused by off-center loads. “We can see by the tonnage monitor, which records tonnage at all four corners and registers different tonnages when smaller tool sets are running, that the dry slide guides are managing the off center loading from these tools,” Thompson said.

“The sheet metal operation we’ve launched with the NST straightsides allows us to showcase our press and tooling maintenance/repair expertise to prospective customers,” Thompson said. “We want to grow the breadth and depth of our metal operation at the Juárez campus and continue capturing non-traditional work. It also supports our goal of providing customers with a vertically integrated facility that meets their manufacturing, repair, and logistics challenges.”

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