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Firms add power to thermoforming

By Angie DeRosa

Thermoforming equipment makers were upbeat during NPE, getting orders for equipment in what some called the best NPE in years. Whether it was continuous process or cut sheet, there was one common theme among these equipment makers: Servo was getting the focus as companies seek to build lean and fast machines.

Brown Machine LLC, Bowerton, Mich., has taken the servo concept into its trim presses. The company introduced its new LS Elite Series line of servo-driven horizontal trim presses. These words or phrases were key: speed, precision, easy changeover. Those tool changes have to be achieved much faster in an environment where more products are being manufactured and fewer companies have dedicated lines running day in and day out.

“We've really widened the window of capability and adjustment to achieve superior trim at high speeds,” says Jim Robbins, Brown's VP of sales and marketing. This trim press follows Brown's introduction in 2012 of its Quad Series high-tech thermoformers.

The significance of the servo technology is the ability to profile the speed in the press, particularly with moving the parts from the trim presses into automation systems, he says. A user can slow down, eject and rapidly back up, rather than dealing with a constant speed.

The machine achieves more than 175 strokes per minute and has a changeover time of less than 30 minutes, largely due to a patent-pending, drop-away connecting-rod release for faster changeovers and easy die-set maintenance.

“If you were changing centerline, it would be less than an hour change,” says Robbins. “There are less and less people that run dedicated lines day in and day out.”

Larger companies are meeting customer demand by being able to do tool changes as needed to meet product requirements. This press can run FS, APET, PP and any plant-based resins. For trimming, “what we wanted was very precise, very exact guidance,” says Robbins. For example, for thin-gauge PET, a company would have had a special press and now, a majority of them are going to end up in-line.

Here are the key features that come standard: a high-performance Allen Bradley PanelView human machine interface with compact Logic machine control, coupled with high speed/torque Yaskawa servo motors and drives. The frame has been redesigned and re-balanced. It has precision leveling control and vibration absorption set pads. It has a tubular metal frame and platens that have been stress-relieved and machined for optimal performance.
POWER
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demand for all manufacturers is to be able to increase throughput to justify cost of the machine. Commodore Solutions, Bloomfield, N.Y., introduced two new thermoforming lines for EPS foam in the narrow- and wide-web markets, says President Bruce Hayward. With its SX-28S, officials converted the form station from hydraulic to servo. In the spirit of lean manufacturing, Commodore eliminated at least 50 percent of the mechanical components of a traditional servo form station. How? Rather than toggles at each corner, the SX-28S uses a center drive for the forming platen on a 28-inch wide machine. The form station can run up to 40 cycles per minute.

A longer movable oven design and a stretched forming platen allow more flexibility for more oven shots or longer molds with extra rows. This adaptability translates directly to higher productivity and expands potential applications, including absorbent trays. Commodore also operates a foam production facility and is using the new SX-28S in three shifts a day.

“We have immediately benefitted from this new product offering,” says Hayward. For its wider width models, the SX-42S and the SX-54S, Commodore simplified its servo on that equipment.

"But we used a traditional toggle configuration just because you need control of that platen at that width," he says.

GN Thermoforming Equipment, Chester, Nova Scotia, had on display its plug assist GN 760 producing 120mm diameter lids at 28 cycles per minute with a material thickness of 400 microns. The machine can produce 730,000 lids per day or 5 million per week. “This machine uses servo drives for plugging, material transport, stripping and stacking. It is a cut-in-place machine with a 30-inch by 21-inch forming area. It also expands the company’s line of plug-assist machines and meets the demand for medium- to large-volume runs.

Though the machine has been on the market a while, it has been used primarily for the production of meat and bakery trays, says Jerome Romsey, GN’s marketing manager. A U.S.-based company wanted the ability to produce lids.

“We've perfected the process to meet the production requirements of U.S. manufacturers,” he says. “The volumes with our machine are attractive to U.S. manufacturers, presenting us with a new market opportunity.”

HEAVY DUTY MEETS HIGH DYNAMIC

Geiss LLC, Torrington, Conn., rolled out its all-servo T10 heavy-duty thermoformer at Plastima last year and introduced it to North America at NPE. There, officials were forming ABS-polymethyl methacrylate (PMMA) at a thickness of 4mm. They called the servo motors by Siemens “high dynam-