

Electrolux Makes the Cut with Stainless Steel

While appliance companies face high stainless-steel costs, Electrolux (Augusta, Georgia, U.S.), has found a way to at least keep down stainless steel production expenses. Instead of having blanks delivered to its Juarez, Mexico refrigerator facility, it processes stainless-steel coils in a cut-to-length (CTL) system.

Originally, the OEM did not plan a stainless steel CTL line. What it did want were two lines to process pre-painted coils. One would be dedicated to wrappers, while the other would produce blanks for doors and



Electrolux tooling engineers, controls engineers, quality personnel, maintenance personnel, and operators all had a hand in choosing cut-to-length lines. CWP has now supplied the Juarez, Mexico, facility with three complete cut-to-length systems, all with special design features to help automate the operation. The most recent line is dedicated to stainless steel material.

back/bottom sheets. Both were to work with critical surface white and black prepainted material. System delivery needed to be planned around the completion of the new facility and the commitment to start production.

Equipment selection came from an Electrolux team consisting of personnel from various disciplines. In March 2004, the company committed to purchase the first two cut-to-length lines from Cooper-Weymouth, Peterson (CWP), a division of Formtek, Inc. (Clinton, Maine, U.S.). "The systems were chosen as they offered the most benefits and had the best return on investment of any of the candidates bidding the project," says Richard Kilduff, senior tooling engineer and the project's leader.

In April, CWP visited Electrolux in Anderson, South Carolina, U.S., for an engineering review meeting. CWP prepared the equipment, and in

January 2005, Electrolux representatives traveled to the supplier's Clinton location for buyoff of the equipment prior to shipment. Parts were produced and inspected to demonstrate that they met specifications. The two systems were shipped to Juarez that month. CWP handled the rigging and installation of both systems, which were operational by February.

"Installation went according to schedule and came up to production capabilities very well and on time," says Kilduff. "Parts were to print in a very short time with no major issues."

The CTL outside wrapper line uncoils the steel, runs through a B&K leveler, slits the coil to width, feeds the coil to the desired length, and shears it off. A belt conveyor then sends the part into the stacker, where the blank is automatically stacked on pallets. Once a pallet is filled to capacity, it is discharged onto a powered mule system that transfers it to one of five staging stations.

The door CTL line uncoils the steel, runs it through another B&K leveler, and feeds the coil to the desired length into a hydraulic press with the desired progressive tool. Either door blanks or insulation support (refrigerator back/bottom) blanks are produced. In the case of the insulation support blank, an adjustable hydraulic shear separates the parts to the desired length of the progression. The door blank tools cut the desired blank in the die. A series of string conveyors then sends the blank into the stacker, where it is automatically stacked on pallets.

"With the success of the first CWP door system, we did a cost study and determined that another system would be purchased to run stainless steel off coil for door blanks," says Kilduff. This system was shipped in June 2006 from Clinton. It was installed by Formtek and operational in July. Unlike the other door system, this one does not produce the insulation support sheets.

All the systems have combination upenders/coilcars to allow critical surface materials to be received with the "eye to the sky" and be rotated 90 degrees and loaded directly onto the spindles of the uncoilers. Systems have B&K corrective levelers to allow for true shape correction of the incoming material. The control platforms were all supplied with Allen Bradley control logics as required.

Hydraulic presses were incorporated into the two door CTL lines and were fully integrated into the control platforms. These allowed for the blanks to be cut with the required notching and punching for downstream operations. Also, in models with an ice/water feature in the door, the dies provided the required knockout for these assemblies.

The stainless steel door system has resulted in considerable savings. In the past, the company worked with supplied stainless steel blanks. "The new equipment eliminates considerable time and cost from the previous method of hand-shearing blanks," Kilduff points out.