

# Technical Article Series

Circular screen separator accommodates 100 percent capacity increase, boosting vinyl production.

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## New Circular Screen Separator Accommodates 100% Capacity Increase, Helping Vinyl Profile Producer Boost Production

Faced with a healthy demand for vinyl profiles, a Canadian producer replaced a 20 year-old compounder and a conventional circular screen separator with new units. The new compounder doubles capacity, and the new, 48-inch diameter, Kason 'Flo-Thru' screener handles the increased flow of feedstock with ample reserve.

The newly designed and introduced screener prevents contaminants from damaging the extruder die. When contaminants such as metal fragments go through the die, severe damage may result, and repairs and downtime can lead to losses of thousands of dollars. Also, delays can harm productivity, further cutting into profitability. In addition, extraneous materials in the extruded profiles result in culls that curtail out and requires regrinding that adds costs to processing.

The manufacturing plant operates continuously so there's precious little time for repairing equipment. Thus, either it operates and contributes to profitability, or it reduces productivity. Clearly, reliable equipment that minimizes production costs is advantageous.

The 'Flo-Thru' unit's two motor/gyrators are mounted alongside the screen frame, 180 degrees apart, as opposed to a gyrator directly beneath as in traditional circular screen separators. Thus, the fine product can exit freely and flow down into the bin directly below. Not only does this save headroom, but the capacity is constrained only by the mesh and the flowability of the feedstock. Gone are the steeply sloped pan, multiple or oversize spouts, and extra height needed for side exit of traditional circular screen separators merely to transport high flows of scalped product to the spout(s).

The need for close scalping of vinyl compound, which contains some ingredients that tend to blind screens, prompted insertion of a ball tray beneath the mesh to avert potential limitation of capacity. The contribution of anti-blinding devices to maximizing throughput can be significant.

In addition to replacing the conventionally designed circular screen separator with the 'Flo-Thru' unit, the manufacturer tested a few new screens of various mesh sizes. It was important to select the one that does the best job of scalping oversize contaminants and that minimizes the amount of resin entering the oversize container.

Separator Engineering's experience in screening and processing enabled their engineers to suggest appropriate mesh sizes to start with. Service from Separator Engineering was excellent and delivery was on time, said the engineering manager.

Requiring an overhead height of only 28-1/2 inches, the 'Flo-Thru' unit fits well between two 125 cubic foot bins in the manufacturing plant. The top bin's conical outlet allows unscreened resin which has the particle size of ordinary granulated table sugar to drop onto the 34 mesh tensile bolting cloth screen. When a bin underneath the 'Flo-Thru' unit nearly full of screened, contaminant-free resin the bin is taken to a holding hopper near an extruder or to a storage area for holding until the resin of that particular color is needed.

The company offers profiles in a variety of colors. Every day plant maintenance personnel see the importance of screening the resin. They see a wide range of contaminants that fall from the 'Flo-Thru' unit's overs discharge spout into a 45-gallon drum.

Maintenance personnel at the plant have realized another benefit of the 'Flo-Thru' unit in that little maintenance is needed. When it is, they'll find that it is easy to access the outboard gyrator motors.

The profile manufacturer has found that the Kason 'Flo-Thru' Circular Screen Separator simplifies processing

and ensures quality.