All in the details

Luxor A light 250 with two bins.

Ancillary equipment is vital to the process line. In this competitive race where bigger is not necessarily better, these are a few companies that are making their technology more cost and energy saving. ***APN*** takes a look.

The Luxor A light is a suitable machine for manufacturing with low energy consumption and yet is able to expand systems economically, without any problems and large capital outlay. This Motan system dryer is designed for material feeding and is compatible with standard applications. The Can-Bus technology offers a high degree of flexibility – it enables expansion and flexible configuration if the number of controlled units in the local panel of the processor is not exceeded.

The system dryer is equipped with the Luxornet light control, which can easily be integrated into the Motan Controlnet through the Ethernet interface. This enables decentralised control or centralised monitoring of the system Luxornet controls up to eight Luxor A bins, including their own material feeding, and in addition, up to 12 hopper or machine loaders on the processing machines. Another advantage is the low energy consumption. It is achieved through the patented ETA-process elements, such as heat exchanger in the drying and regeneration process, as well as closed-loop cooling.

Energy-saving technology

An innovative drying system with a new wheel-dryer design and a unique airflow pattern enables processors of PET resin to save on plant space, maintenance, and energy while obtaining consistent performance as a result of automatic adjustment to rate and material variations, according to Maguire Asia.

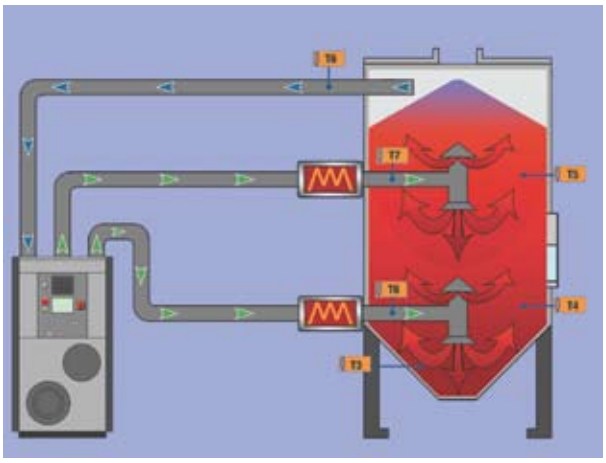
The company's new Intellipet drying system takes up only 55 to 60 percent of the floor space required for the competing wheel dryer-based system for PET, and uses 40 to 50 percent less energy than conventional systems based on dual desiccant bed dryers, according to Hubert Nerlich, managing director of Maguire Asia. Automated temperature and speed controls adjust to variations in throughput rate, moisture level, and material temperature, provide a constant temperature of the resin as it exits the hopper, ensure product consistency, and eliminate need for operator intervention.

The key components of the Intellipet system are a desiccant wheel dryer similar to Maguire's NovaWheel model, a two-zone drying hopper, an electric or gas-fired heater with 90 percent efficiency, a cyclone, and an optional self-cleaning "pulse"-type dust collector. In comparison, the competing wheel dryer-based system for PET includes an entire additional drying circuit centered on a hot air dryer and has two cyclones, two dust collectors with cartridges that require periodic changing, and two low-efficiency gas heaters.

"Because of its greater size and complexity, the competing wheel dryer-based system entails higher costs for initial investment, installation, and lifetime maintenance," said Nerlich.

One key to the efficiency and simplicity of the Intellipet system is the re-use of heat in the air returning to the dryer from the hopper. Within the dryer, the air is filtered and then enters a blower, beyond which it is split into two near-equal streams. The air in one stream is cooled before passing through the desiccant wheel and subsequently re-heated before entering the lower zone of the hopper. The air in the other stream is still at such a high temperature that it requires only minimal re-heating before entering the upper zone, thus saving energy.

The Intellipet color touch screen control also contributes to energy savings. It tracks readings from 11 strategically placed thermocouples as well as air flow and automatically optimizes them without human intervention.



Wheel dryer is at left, two-zone drying hopper at right. Cooler air from the hopper is transferred back to the dryer (air flow at top), where it is split into two streams. One stream is still warm enough to be returned to the top zone of the hopper (air flow in middle), saving energy. The other stream is cooled before passing through desiccant inside the dryer, then reheated and transferred to the lower zone of the hopper (air flow at bottom).

Rapid cutting equipment

The 600 Series are the largest of Rapid's open-hearted range of easy access granulators. These allow cleaning and maintenance time to be reduced by up to 50 percent, without compromising safety or regrind quality.

According to Kirk J. Winstead, president, Rapid Granulator Incorporation: "The 600-Series uses the same patented technology that has already proven to be highly successful in Rapid's 300, 400 and 500-Series. The concept is completely modular and can be tailored to any application within the plastics processing and recycling industry."

"Open-hearted describes the machine's ergonomic design that, during a production change for example, allows the operator to gain complete access to the rotor and cutter at the heart of the machine in just three steps and without the aid of any tools. This provides for a very rapid 'visibly clean' confirmation, eliminating the risk of granulate contamination after color or material changes. The same quick access benefits maintenance work as well. In both cases it significantly reduces machine downtime and improves productivity," says Winstead.

"And when you think that apart from initial investment, cleaning and maintenance represent the biggest cost factor over a granulators lifecycle," he adds, "any time savings that can safely be made enhances the processors bottom line. The 600-Series can make that saving possible."

Centrally located or beside-the-press, the 600-Series is designed for the high volume granulation of injection molded, blow molded or extruded plastic parts and waste, and can handle throughput up to 5,000 lbs / 2,500 kg per hour The series, which has a rotor diameter of 24" / 600mm, is available in 36" / 900 mm, 48" / 1,200 mm and even 60" / 1 500 mm widths. In addition, to give even greater flexibility, the machines can be equipped with Rapid's Super Tangential Cutter House to allow the granulation of parts bigger than the rotor diameter.

Operation of the open hearted 600-Series is based on the well-established Rapid cutting technique, comprising clean, double-scissor cutting action and a constant cutting circle, to produce uniform-size granules with minimal dust. Moreover, this cutting action reduces the force needed to slice through the plastics waste and therefore gives the added benefit of reduced energy consumption.