

# Energy edge

Energy saving is key to the range of crystallisers offered by Motan ([www.motan.com](http://www.motan.com)) optimised for PET and PLA recycling — the Luxor HDC crystalliser and Luxorbin C mixing bin which offer 80 to 900 kg/h material throughput.

Shown at K2007, the crystallisers are suitable for in-line thermoforming processes and minimise hydrolytic material decomposition. This is due to an open process Motan utilises in which the material is pre-dried with process air of low relative moisture.

The crystallisers save energy through integrated heat exchangers and frequency-controlled blowers that continuously adapt the air flow to the material feeding temperature. For material flows that vary, the crystallisers automatically limit the material feed in order to maintain the crystallisation quality.

The standard crystallisers include a pneumatically operated slide valve at the bin outlet, with an exhaust air filter, heat exchanger and cyclone, with dust collection bin available as optional equipment. The split bin cone allows easy access to the lower part and large cross-section lower bearings facilitate unobstructed material discharge.

Motan also introduces metal separators that detect and separate ferromagnetic metals as well as stainless steel, aluminium, copper, brass and lead, preventing machine breakdowns that result when a metal particle reaches the melt with the granules and blocks the nozzle, filter or hot runner, causing damage to plasticising screws and cylinders.

Motan offers three types of metal separators that scan free-flowing regrind, recycled and virgin materials. The Metro SC metal separator is installed horizontally or vertically in a conveying system, while the Metro SF metal separator is used where contaminants are detected from free-falling bulk materials. The Metro SM metal separator removes metal impurities from slow-moving bulk material columns.

The latest from TSM Control Systems ([www.tsm-controls.com](http://www.tsm-controls.com)) is the Opti-Mix batch blender that offers a 1 to 200 kg/h

Ancillary equipment makers are tailoring their technology platforms to processor needs, particularly for energy saving

The Luxor HDC crystalliser from Motan saves energy through heat exchangers and blowers controlled by exhaust air temperature



throughput. It features a patented TSM superior reverse-flight auger mixer technology that is said to guarantee an optimum level of material dosing precision and blend homogeneity resulting in masterbatch savings.

The blender's four easily removable hoppers with individual integrated slide valves allow for fast material changes, and recipe change and selection is made simple with a remote colour graphical touch screen operator interface.

Up to 100 job recipes can be pre-programmed, and easily accessed to make quick order changes. It has a 'Recipe Select' feature to allow fast loading of a new job, including blend percentages or job size.

The new lineup of equipment recently showcased by Piovani ([www.piovan.com](http://www.piovan.com)) at K2007 include a desiccant wheel dryer range, gravimetric

blender model MDW600, and mould temperature controllers Series THW, THO and THP.

The desiccant dryer series consists of four models (HR50, HR100, HR150 and HR200) that operate in a 80-150°C temperature range, with air flows from 50 to 200 m<sup>3</sup>/h. They are suitable for injection and blow moulding, extrusion, PET and optical disc applications.

Said to reduce the use of energy by up to 50%, the HR dryers require only electric power, and therefore no further expenses will be incurred for the connection of cooling water or compressed air.

Offered as standard are energy-saving devices, Intelligent Energy Supervisor (IES) and Intelligent Material Drying (IMD) which self-adjust drying parameters to the real machine throughput — the granule therefore receives only the quantity of heat necessary with little waste. Other advantages include a stable dew point featuring set-up values down to -50°C, easy access to all machine components, and dust-free properties suitable for medical and optical applications.

The dryers are equipped with a new drive mechanism with a wear-resistant Kevlar-reinforced belt that ensures continuous operation of the honeycomb motor, eliminating traditional maintenance or lubrication requirements. The HR units can be coupled with drying hoppers having capacities up to 600 litres.

### Integrated packaging solutions

Conair ([www.conairnet.com](http://www.conairnet.com)) has reached a joint agreement with Husky Injection Molding Systems to provide complete manufacturing solutions for the global PET preform market, allowing for closer integration and joint development of Husky's preform production machines and Conair's ancillary systems.

The recently developed Conair EnergySmart PET drying technology will be integrated with the HyPET preform manufacturing system, which offers the fastest cycle times in the industry. The new EnergySmart system is said

Piovan's new HR dryer series in single hopper configuration, designed with energy saving features for a range of applications



to have the capability to help PET processors save up to 67% of drying energy.

"We are excited to be working with Husky who, like Conair, is committed to bringing the best technologies to customers, whether applied to a single line or a complete turnkey installation," says Conair president Chris Keller. "The combination of Husky's HyPET and our EnergySmart PET drying technology will help customers achieve better cycle times and minimise their energy costs."

Husky's broad product lines offer its customers the ability to manufacture a wide range of plastics products such as bottles and caps for beverages, containers for food, automotive components, and consumer electronic parts.

For better control of operations, the new ControlWorks from Conair allows plastics processors to monitor their ancillary processes from a central location. Boosting convenience and productivity at an affordable price, the system lets processors check and change control settings on blenders, loaders, dryers, mould temperature control units and robots without having to move across the production floor.

In addition to providing a central connection, ControlWorks can be connected remotely via Ethernet cable to multiple points around a plant. The system is web-enabled so users can view process data, alarm and diagnostic messages, and control screens from any computer with internet



access, including a wireless PDA.

Also related to energy saving in the drying process is the X Technology project developed by Moretto ([www.moretto.com](http://www.moretto.com)), where the success of the X dryer has led to the increasing of the range using this technology.

The XD26 model has higher performances reaching 350 m<sup>3</sup>/h airflow and reducing the consumptions up to 72% compared to conventional dryers. With this new series, the SX version has also been developed and it boasts a strong market acceptance because of its high performance, according to Moretto.

Another exclusive is the new XD600 series

with three models with airflow of 250-2,500 m<sup>3</sup>/h. The main feature is the capacity to reduce energy consumption, with the total energy recovery from the regeneration and the working without cooling water in the regeneration circuit. The variable airflow is a standard equipment for all the XD series.

Another PET-related development is the X PET-PRO, a special hopper planned for the treatment of highly hygroscopic technical polymers that has been realised with a CTX — Crossed Thermal Exchanger. This hopper, coupled with the XD600, is specifically planned for the PET sector. The CTX is able to help processors reduce electrical consumption.

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