

# OPTIMIZING THE DAILY GRIND

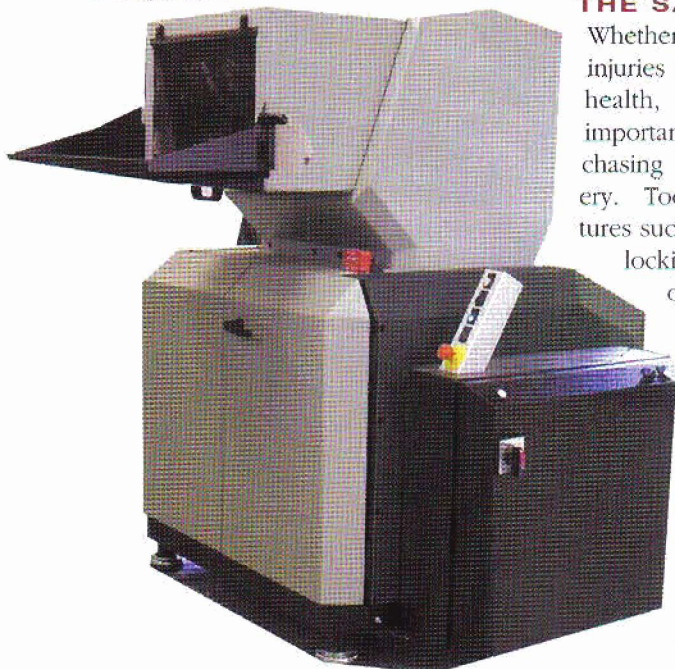
Granulators are inherently green and efficient, reintroducing scrap plastics into your process. But auxiliary equipment manufacturers are building in new efficiencies, controls and safety features for added value for the processor.

By Umair Abdul, assistant editor

**B**y now, most processors are very familiar with the variety of granulators available through auxiliary equipment manufacturers. These suppliers have long extolled the virtues of different granulator characteristics: central systems versus beside-the-press

Conair's CBW and CGW series granulators provide easy access to the cutting chamber, reducing the time needed for cleanout and material changeover.

Courtesy of: Conair



granulators, screens versus screenless units, low versus high throughputs, and the list goes on.

However, when it comes to choosing the right granulator for your operation, the devil is often in the details. The granulators available today are highly sophisticated machines that can help you improve operational efficiency and meet your company's occupational health and environmental goals.

## THE SAFEST BETS

Whether it is to reduce time-loss injuries or improve general worker health, safety measures are an important consideration when purchasing any new piece of machinery. Today's granulators offer features such as machine guarding and locking to reduce the likelihood of operator injuries.

Additionally, Ontario recently lowered its average maximum permitted noise exposure level to 85 dB(A) over an eight-hour shift, and Quebec is expected to follow suit. Although it is unlikely that a single granulator would result in non-compliance, noise reduction has evi-

dently become a priority in industrial workplaces.

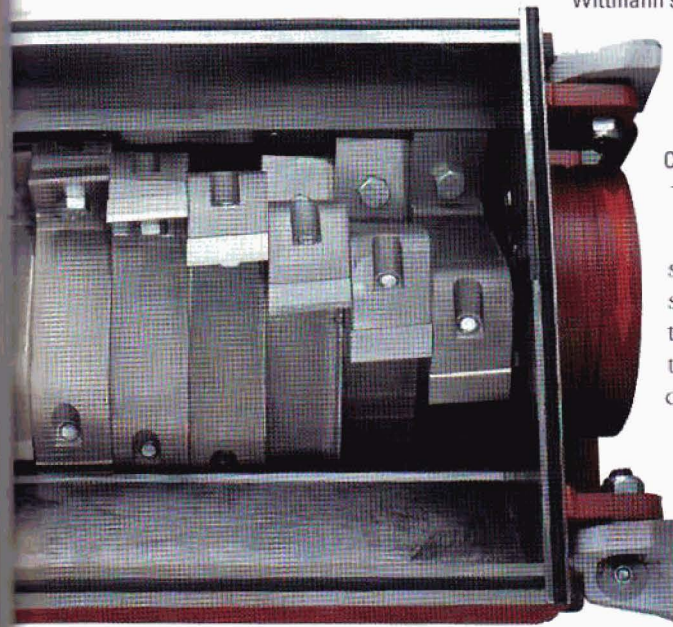
Pittsburgh, Penn.-based Conair's new CBW and CGW series granulators feature a low RPM motor and a flywheel-assisted drive system, which deliver maximum cutting power with less energy consumption and noise. The company also offers sound enclosures to cut decibel levels to below 85 dB(A).

In addition, to address the issue of operator safety, the CBW and CGW granulators have standard redundant safety switches that prevent unintentional operation. An emergency stop button is also conveniently mounted adjacent to the controls.

Shini and Pulian brand granulators come equipped with motor overload and several other safety devices, and the units are compliant with most safety standards in Canada, the U.S. and Europe. Shini and Pulian units are also fully closed and come with multilayered soundproofing, reducing the noise levels generated by the unit.

Wittmann Canada's newest conventional screened granulators address operator noise reduction concerns with a unique rotor technology. Models MAS1 and MAS3 of the MAS series are equipped with staggered rotors, ideal for small to large sprues, small- to





Wittmann's new MAS3 screened granulator is equipped with staggered rotors, suitable for small to large sprues, small- to medium-sized injection molded parts blow molding scrap.

Courtesy of: Wittmann Canada Inc.

For instance, Rapid Granulator, Inc.'s Rapid 300, 400 and 500 Series models feature an "open-hearted" engineering concept. These granulators provide direct and easy access to the "heart" of a machine, allowing for shorter cleaning and maintenance times and short production changeovers.

The easy access allows for "visibly clean" inspection and approval, further reducing the potential for contamination down the line. Rapid's granulators also feature a double scissor-cutting action and constant cutting circle, which allows for the production of uniformly-sized granules and minimal dust content.

Wittmann's MAS models produce a high quality regrind with a reduced number of rotor revolutions and optimally-designed cutting geometries, and the units' feed hoppers can be changed out quickly.

"The detachable hopper can be removed without tools for unobstructed access to the cutting chamber," said Christian Weiss, technical sales, Wittmann Canada, Inc. "This allows for easy clean-up during material changes for faster production change overs."

Also, the staggered rotor knives on the MAS1 and MAS3 units can be sharpened several times depending on the amount of wear, and the cutting geometry allows them to be changed

medium-sized injection molded parts and blow molding scrap. The MAS series is designed for the regrinding of soft and medium hard plastics, and also for reinforced plastics when supplied with a wear-resistant coated cutting chamber.

Since the cutting force is distributed across several rotor knives, the units offer low-noise operation and high cutting performance. The MAS series granulators feature hoppers that are manufactured with a special sandwich design to provide optimal sound insulation, and an optional sound insulated enclosure can also be installed for further noise reductions.

Hosokawa Polymer Systems has introduced a new line of mobile clean room granulators, ideally suited for the medical, electrical and food industries. Much like the company's slow speed line, the clean room granulation system utilizes a stainless steel granulator, Silenator cabinet, pneumatic slide gate and evacuation system.

The granulator's design combined with the Silenator sound attenuating cabinet makes granulation virtually silent.

The full hopper and box in the XT and BM series lines for Moldpro's Tria granulators are soundproofed using a

special polyester and rubber sandwich. The soundproofing technology allows operators to reach a level of 75 to 80 dB(A) in in-line applications.

Meanwhile, AEC's GP800 series granulators come with quiet-running, low horsepower motors from 5HP to 10HP. The GP800 units feature quick-release hand knob access and a removable, pivoting drop-down screen and screen cradle. The feed hopper also has modular access points for feed chute installation, and is fully sound attenuated.

**ECONOMIC & EFFICIENT**

Newer granulators now come with design features that improve the unit's overall efficiency. Manufacturers are improving cutting technology to provide a faster and more uniform process. Several units also allow for easier cleaning, maintenance and changeovers, which helps reduce your downtime.

**THE BENEFITS OF 2-STAGE REDUCTION**

For years, granulators have been viewed as the most efficient way to return regrind to the process. However, some manufacturers are now advocating a 2-stage size reduction process — a pre-shredder and a granulator — as a better concept.

According to Weima America, pre-shredding can allow processors to handle purgings that wouldn't fit into a granulator easily.

"The benefit of pre-shredding is that the single-shaft machine can handle a variety of materials, shapes, sizes and volumes from a couple hundred lbs/hour up to multiple tons/hour," the company noted.

The consistent material size and constant feed-rate output will increase on your granulator, thus further speeding up the recycling process. Smaller, more uniform pieces of scrap also reduce the amount of wear on the granulator.

"Due to the smaller material size, the granulator would not make as many cuts, which in turn will increase knife life and lower the number of replacement cutters," said Weima.

The manufacturer also noted that a two-stage process could lower the energy consumption of a granulator. Large materials in granulators cause a "spike" or increase in amperage to compensate for the load. A steady stream of material results in a steady amp draw.