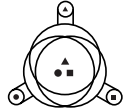


SCREEN

tips

News and application reports on screening, sifting, scalping, dewatering, and fluid bed drying, cooling, moisturizing



kason

FROM KASON CORPORATION

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High capacity screening of resin powder at -275°F (-170°C)

HILLSBOROUGH, NJ—Among varied techniques to pulverize materials on a toll basis, the Custom Services Group of Solvay Solexis cryogenically grinds and screens plastic resins such as fluoropolymers, nylons, polypropylenes, engineering resins, polyurethanes and polyesters.

The grinding processes involve screening at custom sizes, which can place extreme demands on screening equipment, particularly at cryogenic temperatures from -50° to -275°F (-46° to -170°C).

"Sifter screens are more susceptible to breakage under cryogenic conditions due to embrittlement from the cold," says Craig Davis, sales and marketing manager. "It is critical to minimize downtime when this happens because system components can freeze, and material left in the system can become wet."

He continues, "The choice of sifter is crucial to a grinding operation in terms of its ability to keep up with the grinding process at a variety of screen sizes, and

its impact on the operation from a maintenance standpoint."

Solvay Solexis found circular vibratory separators easy to clean and maintain, but blinding occurred at sizes finer than 300 microns with powder containing as much as 30-50% of oversized material. To achieve a respectable throughput rate, the separator needs to be large in diameter, which can pose a problem if space is at a premium.

Rectangular gyratory screeners, Solvay Solexis concluded, have adequate screen area to keep pace with grinding operations, but their service in cryogenic operations requires a considerable amount of upkeep due to frame warpage and wear and tear on gaskets and wire cloth. When a problem occurs with a rectangular screener, Davis says it requires a minimum of one hour for an experienced person to remove, comb through, repair, and replace 8-12 screens. The long downtime can lead to startup difficulties in a cryogenic operation.

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The Custom Services Group of Solvay Solexis cryogenically screens ground plastic resins at temperatures of -50° to -275°F (-46° to -170°C), placing extreme demands on its centrifugal screening equipment.



Henry Alamzad named Kason President

Henry Alamzad has been named president of Kason Corporation, it was announced by Lawrence H. Stone, Chairman and CEO.

He previously held the position of Vice President Sales and Marketing, USA.

According to Alamzad, innovative engineering will continue to fuel the company's success.

"Sales of Kason's circular vibratory fluid bed dryers, coolers and moisturizers, grew last year because they outperform other designs costing significantly more," says Alamzad, adding, "Kason's new quick-clean centrifugal screener with three-bearing cantilevered shaft has commanded the majority of our sifter sales and many of our competitors; so our ads will feature these and other advances that differentiate Kason designs from other manufacturers."

"Continuing on our engineering theme, several new products will be introduced early in 2004," he said.

Alamzad holds an MBA in Marketing from New York Institute of Technology, a Masters in Chemical Engineering from City University of New York, and a BS in Chemical Engineering from University of Rhode Island.

Fluid bed dryer-screener quadruples production of granular chemical

A 48-inch (1220 mm) diameter Circular Fluid Bed Dryer equipped with an integral Circular Vibratory Screener quadrupled production of a proprietary granular chemical product while improving uniformity.

Granules are Pre-Screened, Dried, Re-Screened

The product is comprised of a granular carrier material, a filler material and an active ingredient. The granular carrier is screened into a narrow size range using a 48-inch (1220 mm) diameter, two-deck Kason Vibroscreen® circular vibratory screener, after which the filler material and active ingredient are added, and the batch undergoes a proprietary conversion process.

A 48-inch (1220 mm) diameter Circular Fluid Bed Dryer reduces moisture content of the converted material to less than 1.0 percent at 120°F (49°C), after which it is discharged into an integral 48-inch (1220 mm) diameter, two-deck Vibroscreen separator that removes (oversize) agglomerates and (undersize) fines, and discharges into storage containers at a rate of 2000 lb/h (907 kg/h).

Rectangular Fluid Bed Dryers Considered

The company's engineering manager says he considered a rectangular fluidized bed dryer but found it cumbersome and costly. "Rectangular fluidized beds," he explains, "work fine but are twice as large as a circular unit, requiring massive infrastructure and ancillary equipment, and they require higher airflow, consuming more energy.

"We were impressed with the circulating unit's small footprint, fluidizing action, speed of drying, and modularity—you can move it without difficulty. We also had operating experience and a comfort level with circular vibratory screeners that look and function similar to a circular fluidized bed dryer," he says.

Operation of the Circular Fluid Bed Dryer/Screener

Converted material from storage containers is fed into the top inlet of the dryer by a bucket elevator. It

the fluid bed chamber, the material vibrates on a circular screen within a rising column of 120°F (49°C) air created by an upstream heater/blower ducted into the bottom of the chamber. The continuous air flow, and vibration induced by two vibratory motors and spring suspension, separate and fluidize individual particles, maximizing surface area and drying efficiency. The vibratory action also causes material to travel from the center of the screen to a discharge spout at the screen's periphery in controlled spiral pathways on a first-in-first-out basis, ultimately discharging dried material into the top-center inlet of the circular vibratory screener.

An imbalanced-weight gyratory motor positioned beneath the chamber of the screener vibrates two screening decks. Oversize particles travel from the center of the screen to a spout at the screen's periphery where they are discharged for reprocessing.

On-size and undersized particles pass rapidly through the top screen onto a bowl-shaped feed tray that

directs the material to the center of the lower screen. On-size particles are discharged through a spout at the screen's periphery, while under-size material passes through the lower screen onto an integral metal chute that discharges it for reprocessing.

Analysis of Separated Material

Since any increase in the ratio of active ingredient to carrier and filler increases the occurrence of agglomeration, the company monitors the ratio of agglomerates to on-size material to detect whether any process variation has affected distribution of the active ingredient.

Because the drying-screening portion of the overall process operates off-line, it is also utilized to dry raw materials containing excess moisture, and to dry other bulk products manufactured by the company. In anticipation of wide-ranging drying applications, the system was engineered to operate at temperatures higher than those required to dry the proprietary chemical.



This skid-mounted, turnkey dryer/screener system configures a 48-inch (1225 mm) Fluid Bed Dryer and two-deck Circular Vibratory Screener in series to dry proprietary chemical powder while removing undersize and oversize particles at the rate of 2000 lbs/h (907 kg/h). The screener is equipped with a bulk bag hanger and extended discharge spout to align with the bag intake spout and magnetic ferrule to remove tramp metal from the finished product prior to packaging.

Exact-fit parts for any circular vibratory screener shipped fast

Kason offers same-day shipment of long-lasting replacement parts for virtually any make and model of circular vibratory screener from 18" to 100" (460mm to 2540mm) in diameter, and Quick Shipment service on special and custom orders. And because they meet or exceed the performance of third-party aftermarket parts as well as parts of competitive OEMs, genuine Kason parts maximize uptime while minimizing cost. Kason's innovative designs, quality materials of construction, unsurpassed workmanship and overnight deliveries get you back on line in minimum time—all at competitive prices. Call the Kason Parts Department for a quotation and contract pricing: 973-467-8140.



Any component of virtually any make and model of circular vibratory screener, of any diameter, is available from Kason. Replacement parts for centrifugal screeners are also available.



Low profile screener allows rapid cleaning, screen changes

A new Vibroscreen® Flo-Thru low profile, high capacity screener introduced by Kason features an Air-Lift device that allows rapid disassembly, cleaning, inspection and screen changes.

The screen is readily changed, or the internal parts of the unit are easily accessed for thorough wash down by loosening one clamp ring assembly that connects top and bottom housing sections, then activating the Air-Lift device to raise the upper section.

Lifting the upper frame/cover assembly of the screener pneumatically allows operators to change screens and have access to the inside of the unit for cleaning many times faster, and allows one operator to perform what was previously a two person task, depending on screen diameter.

The screener employs two imbalanced-weight gyratory motors mounted on opposing exterior sidewalls of the unit, instead of one motor positioned beneath the screening chamber, reducing minimum height requirements significantly. The design also allows vertical alignment of the top inlet

and bottom outlet, allowing on-size material to descend through the screen in a straight-through path at high rates. Oversize material is ejected through a spout at the periphery of the screen.

The Flo-Thru low profile screener and the Air-Lift device, both of which are Kason innovations, are offered in diameters from 18" to 84" (460mm to 2135mm), and available to 3-A, FDA, BISSC and other sanitary standards.



Kason Vibroscreen® Flo-Thru Screener with Air-Lift Device

High capacity screening cont. from page 1

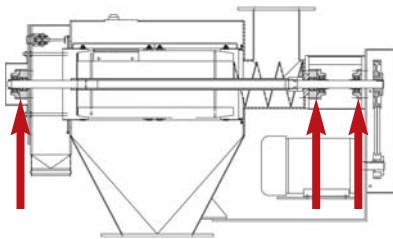
Tough screening problem solved centrifugally

"Centrifugal screeners provide a compromise because they keep up with grinding processes with the same efficiency as a rectangular screener, but are easy to clean and maintain like circular vibratory screeners," he says. Solvay Solexis uses centrifugal screeners in many of its cryogenic processes.

Centrifugal separators contain a stationary, horizontally-oriented wire cylinder, inside of which are rotating helical paddles that continuously propel and accelerate on-size material through the cylinder walls, ejecting oversize particles through the downstream end of the cylinder into a discharge spout.

Davis found centrifugal screeners to meet his capacity requirements and—due to the action of the rotating paddles, which do not contact the screen—to aid in the break down of loose agglomerates, increasing yield while reducing the incidence of screen breakage per ton of polymer screened.

Solvay Solexis recently added the "Quick-Clean Centri-Sifter" separator from Kason Corporation. This unit is equipped with three roller bearings located outside of the screening chamber instead of the normal two.



The bearings at the motor end of the shaft and on a hinged cover at the discharge end provide the support needed to handle the high speeds and loads of

high capacity screening without vibration. When the end cover is hinged open, the shaft becomes a cantilever supported by the two bearings located between the motor and Centri-Sifter body, allowing the screens and/or paddles to be removed rapidly for replacement or wash-down.

In low temperature applications, rapid screen changes not only minimize interruptions, but allow restarting of the frigid unit before the formation of ice can hamper or prevent restarting. As a toll processor, Solvay Solexis also benefits from rapid wash-downs it frequently performs to prevent cross-contamination of custom production runs.

Solvay Solexis also micronizes, screens and blends resins and other materials at ambient temperatures in conjunction with 15 milling operations, and packages liquids and solids in containers ranging from bulk bags to small sample packs. Products handled include additives for paints, inks, polymers, and nutritional products (nutraceuticals), compounds, adhesives, and specialty resins suited for sintering, composites, and fabric coating applications.



Cantilevered shaft and hinged door of centrifugal screener allow screens to be replaced before icing can prevent restarting of the frigid unit, and permit rapid wash-downs between varied production runs, preventing cross-contamination.



NEW
Centrifugal Screener Selection Guide

MILLBURN, NJ—A new, eight-page selection guide on the Kason line of Centri-Sifter® centrifugal screeners covers both gravity-fed models, and pressurized models for screening in-line with pneumatic conveying systems.

Five models are detailed:

- Standard Gravity-Fed Centrifugal Screeners
- Dedicated Centrifugal Dewatering Screeners
- Quick-Clean Miniature Centrifugal Screeners
- Pneumati-Sifter Centrifugal Screeners
- Quick-Clean Centrifugal Screeners with a three-bearing cantilevered shaft

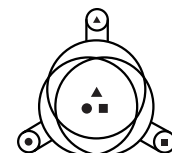
Specialized designs shown include Centri-Sifter bag dump stations, twin Centri-Sifter configurations, clean-in-place Centri-Sifter screeners, Centri-Sifter screeners with integral feeders, and low-profile Centri-Sifter screeners for areas with limited headroom.

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