

10 2014 Breakthrough Products



Wastewater aeration blower package is energy efficient

EBS rotary screw blower package

Energy efficiency, reliability and ease of maintenance make this blower a significant solution for process industries. Energy is the highest operating cost in a wastewater treatment plant, with blowers for aeration being the single highest energy consumer. Moreover, wastewater treatment — municipal or industrial — is a critical process where there is no room for downtime. The

EBS delivers an efficiency advantage of up to 30 percent over traditional blower designs.

In addition to the significant energy efficiency advantage, the blowers lead the industry in integration, monitoring and package design. These packages feature a full scope of supply, with each and every component

selected for optimal efficiency. In addition to saving time and money spent specifying and purchasing blower system components, after the sale, there is only one manufacturer to contact for technical support.

EBS packages offer unparalleled communications capabilities and come standard with a full complement of sensors to monitor critical operating parameters. The onboard controller has long-term data storage for analyzing energy consumption and blower operation. An Ethernet port with built-in web server for remote viewing and a wide range of industrial communications interfaces allow seamless integration into plant control/monitoring systems.

The blower is a major breakthrough in engineering an energy-efficient, cost-effective, fully integrated package, its maker says. It represents solutions-based technology focused on giving customers the tools they need to improve their plant operations, proactively monitor energy consumption, and keep their processes running smoothly.

Kaeser Compressors

us.kaeser.com

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A less blunt instrument that frees agglomerations

Material Master bulk-bag material-conditioning system

Material Transfer says it developed industry's first hydraulic bulk-bag material-conditioning system and that its latest system is unique, patented and includes features that make it valuable to the handling equipment industry.

As more materials are imported in bulk bags, discharge of agglomerated or hardened materials is a growing problem. Materials in bulk bags agglomerate, cake, harden or solidify due to heat, humidity, transport or storage.

The system replaces less effective, time-consuming and dangerous ways of bag conditioning, including the use of baseball bats, pipes, hammers or forklifts.

Hydraulically actuated conditioning arms and a rotary lift table quickly, safely and efficiently return hardened or agglomerated materials in bulk bags to a free-flowing state within minutes.

Pivoting conditioning arm provides deeper material penetration for maximum conditioning results, outperforming vertical compression plates.

Unit is available as a stand-alone design or integrated with a Bulk Bag Discharger.

The latest design accepts a wider variety of bag sizes.

Discharging bulk bags containing material that has solidified, hardened

or agglomerated can be extremely difficult, dangerous and time consuming.

Hydraulically actuated pivoting conditioning arms with extended travel efficiently return even the most severely agglomerated materials to a free-flowing state. Unit accepts a wide range of bulk bag sizes.

Bulk bags are loaded into the unit via forklift, activating the PLC-based conditioning sequence. Operator interface allows access to bulk bag and material conditioning parameters, recipe management, system status and manual mode controls. Unit features an ultra-compact footprint and full machine guarding for operator safety.



Material Transfer & Storage, Inc.

www.materialtransfer.com

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Different kind of reactor allows more complete feedstock expenditure

BioSPR ShockWave Power biogas reactor

Biogas is the production of methane through the digestion of mostly waste materials such as agricultural waste, food scraps or manure. Biogas is a widely used form of alternative energy in Europe and growing elsewhere. This biogas reactor makes the

fats, sugars, proteins and starches more accessible to the bacteria, which increases methane gas yield and can reduce viscosity.

Major markets include Germany with approximately 7,500 plants and Italy with 800 plants. These plants are often small and located on farms, but there is also a cluster of larger facilities that utilize waste food as a feedstock. The reactor allows for more complete utilization of the feedstock and higher yields of biogas.

Often biofuels become mired in a "food versus fuel" debate, but biogas breaks this mold.

Biogas uses purely waste agricultural material and waste food to produce an economic product. The BioSPR is a small footprint and easy to install

device that can increase gas production by 20 percent or more, making these small facilities even more economic and competitive.

BioSPR allows users to

- increase biogas production
- increase plant biomass load
- increase the percentage of hard-fiber biomass (cheaper feed stock)
- improve plant hydraulics by reducing viscosity.

We are not aware of any other technology able to provide all these benefits. Where similar technologies like ultrasound often work well on a lab scale, BioSPR cavitation can also scale-up and work on flows as large as 2,000 gallons/minute.

The system makes an important renewable energy significantly more efficient and economical, using the physical phenomenon of cavitation, normally known as destructive force, and using it in a manner that is non-damaging to the equipment for tremendous advantage.

It is able to process a highly variable agricultural feedstock that is often abrasive. The design is innovative in its use of hardened materials, a hydraulic design and conversion from machining to casting, and is the result of an international research and development project.

Hydro Dynamics, Inc.

www.hydrodynamics.com

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