

New Technological Breakthrough!

Clean Burning Bio-fuel Powder from Wood and Agricultural Wastes

KDS
MicronexTM

Innovative Bio-Fuel Technology

The KDS Micronex extreme velocity impact mill transforms a wide range of biomass (wood and agricultural waste) into fine dry powder with excellent combustion characteristics. When burned in suspension, the fine biomass powder burns with a high intensity controllable flame. Controls on the KDS including an internal classifier can be adjusted to control moisture and particle size of the output material. In many cases, it is possible to replace liquid fuels such as natural gas or oil with a powder burning system.

Profitable

Low capital and operating costs

Efficient

Combined grinding and mechanical drying

Simple

Few moving parts, low maintenance

Convenient

Easy to set-up and integrate with other systems

Flexible

Wide range of feedstocks (ie. wood, manures, and coal)

Advantages of Powder Burning to Create Power

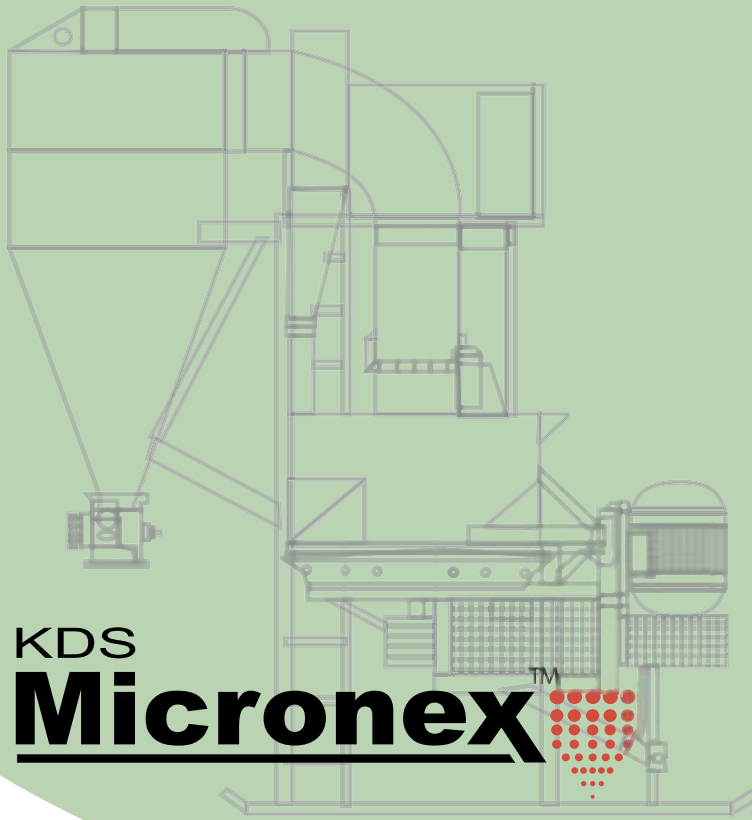
Fine, dry biomass powder burns with the characteristics of a liquid fuel. Powder burners are a well proven technology (>30 yr. history) for combusting fine wood powder and the KDS turns a variety of biomass (wood, bark, manure, nut shells, etc.) into bio-fuel powders with the same burning characteristics.

- Increased efficiency and lower costs than conventional biomass power plants. Less fuel is required when fuel is dry because the energy in wet fuel is used to vaporize moisture in the fuel instead of to create power.
- Comparable or lower capital cost than conventional biomass power plants
- Dust burners allow for excellent control over boiler operation and helps optimize plant operations and control emissions
- Dust burners can accept preheated air, increasing power plant efficiency.
- Flexibility of fuels – wide variety of biomass feedstocks possible and ability to co-combust with coal or liquid fuels.



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The All-In-One Processor for Grinding and Drying



Details

Machine Specifications - KDS250S4

Feed Rate:	1- 4 tonnes per hour
Output Feed Size:	100 to 2000 microns (biomass)
Machine Size:	564cm (18' 6")H x 458cm (15')D x 366cm(12')W (Footprint = 180 sq. ft., 16.7sq. m.)
Machine Weight:	4170 kg. (9,200 lbs)
Motors:	HP 250, 50, 3, 2, 1, 1 Electric or other power
Power Consumption:	130-175 kW
Feed Size:	Up to 15 cm (6") in length
Operation:	System can be fully automated or run with 1-2 staff

Advantages

- ◆ Low initial capital and operating cost
- ◆ Small footprint
- ◆ Flexibility of operation – wide range of feedstocks
- ◆ Ability to control particle size 100 to 2000 microns (325 to 30 mesh)
- ◆ Low maintenance requirements (robust design with few moving parts)
- ◆ No compressed air or natural gas required for drying
- ◆ Fuel produced has excellent combustion characteristic and can be used to replace natural gas or propane in industrial applications

An overview of the KDS Micronex™ Technology

The KDS Micronex™ employs intense kinetic energy to simultaneously pulverize and dewater a wide variety of virgin and recovered materials into fine dry powders. The innovative vertical shaft impact mill design incorporates high rotational speed and high velocity airflows to achieve superior grinding and drying results without requiring supplemental heat. The energy used for drying can be as low as one-third the energy used by a drum dryer. An internal classifier in the unit controls the output particle size within the range between 100-2000 microns. (Finer particle sizing can be achieved when processing minerals.) The production rate ranges between 1-4 tonnes per hour depending on the material characteristics and moisture removal required.

While many conventional grinding or milling systems require dried feed material, the KDS Micronex™ can process materials containing up to 70% moisture and can reduce it to less than 5% moisture. For some applications, supplemental drying with a flash dryer (heated pneumatic conveyor) can enhance drying efficiency.

First American Scientific is committed to providing full installation and operational support to ensure that all our customers' production goals are achieved or exceeded.



To arrange for free testing of your material or for a confidential evaluation of your processing needs please contact:



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