

# Fluid Bed Dryer

Coal Systems



# Introduction

Schwing Bioset now offers drying technologies for moisture removal in a variety of coals. Extremely high thermal efficiencies are achievable with the use of a fluidized bed in the process. Due to the

intimate, continuous mixing of solids in the bed, a very homogeneous treatment and rapid heating (or cooling) process can be built to suit your requirements.

## Benefits:

- Removes surface moisture in a controlled fashion and improves downstream handling and flowability of coal
- Makes use of a wide variety of low or high temperature thermal energy sources-steam, condensate, waste heat
- Drying, cooling and classifying can be combined in one unit
- Can be configured to work in open or closed drying gas loop
- Closed loop configuration in which oxygen is controlled to low levels is possible for reactive types of coal such as lignite
- Inert gas sources such as flue gas, nitrogen, carbon dioxide and others can be used to further enhance the inherent operating safety
- The natural classification effects in a fluidized bed can be enhanced, if desired, as dust and oversized material fractions can be isolated and removed

- Particle size reduction in more friable coals such as lignite occurs in the process reducing crushing costs
- Process requires a minimum of moving parts-in fact, within the fluidized bed there are no internal conveyance mechanisms needed

## Applications:

- Excess surface moisture removal in coals prior to combustion
- Removal of excess surface and internal moistures in coals prior to gasification
- Beneficial use of low temperature and otherwise unusable energy sources at power generation plants
- Technologies are well-suited to retrofitting in existing facilities or in tandem with new sites

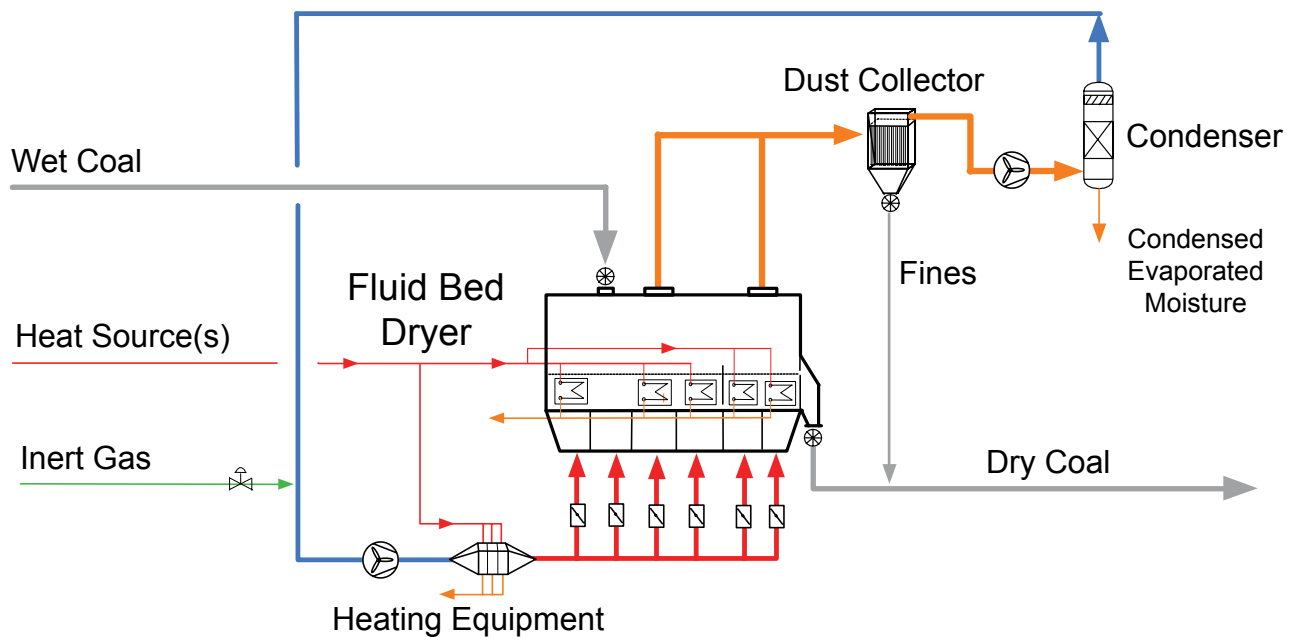


# Coal Drying Process

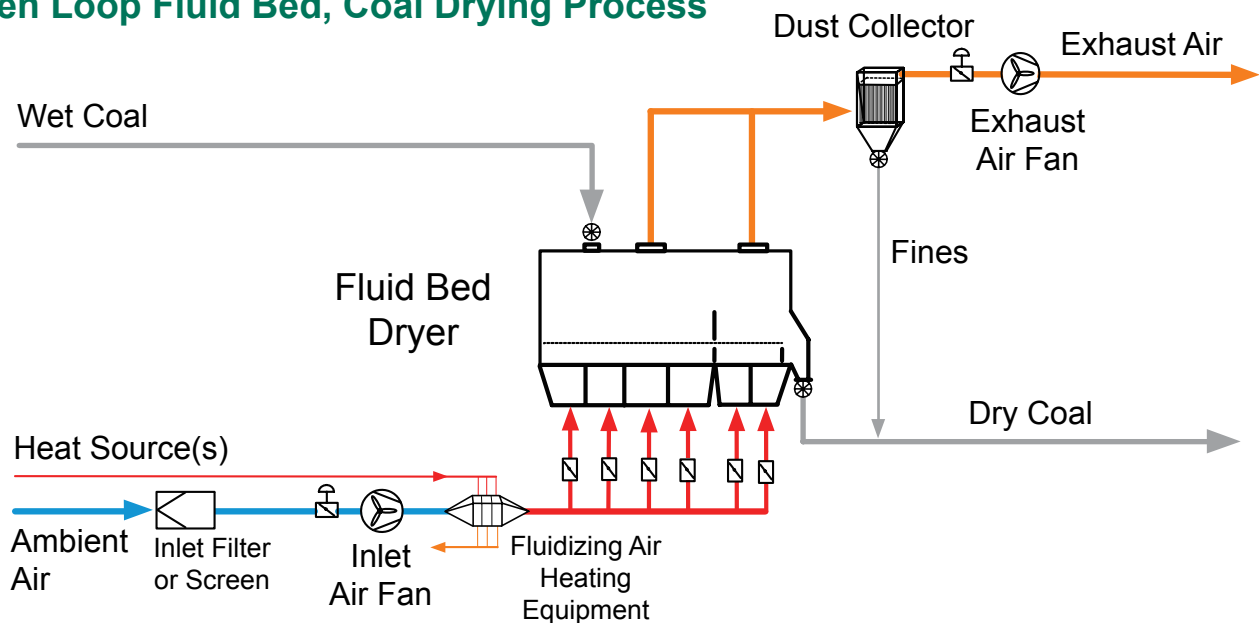
A variety of designs and features are available to achieve your performance targets:

- Open or closed loop configurations
- Direct and indirect heating arrangements
- Fluid bed designs with or without internal heating
- Use of inert gas for enhanced safety
- Heat can be provided from a variety of sources: steam, condensate, waste heat, etc.
- Enhance dust and oversize material removal
- Self-cleaning and maintenance access features

## Closed Loop Coal Drying Process



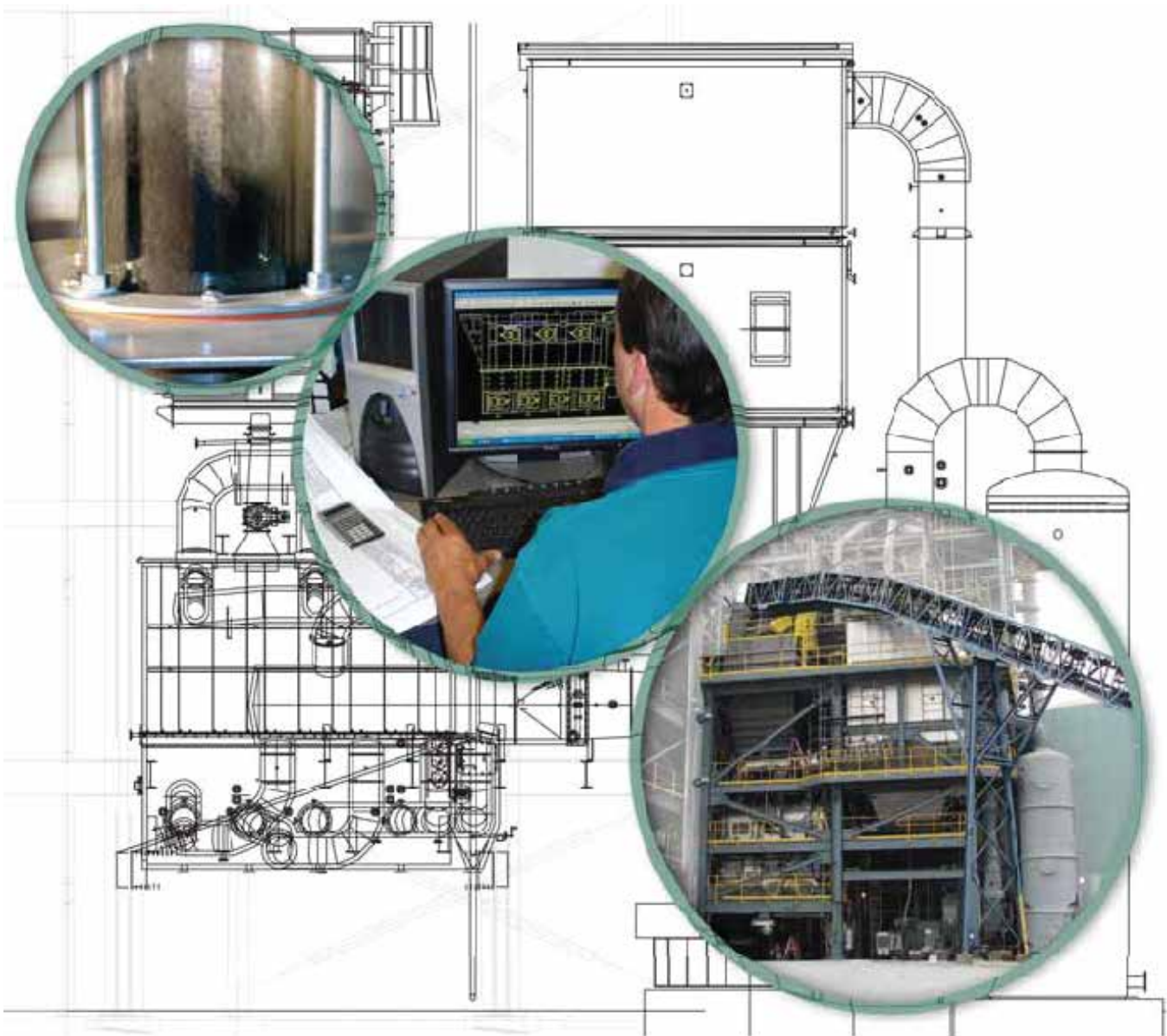
## Open Loop Fluid Bed, Coal Drying Process



## From Concept to Completion

Schwing Bioset can provide the necessary engineering support, equipment, and project execution services to ensure your projects success. We offer:

- Feasibility, engineering and lab studies based on your material and project requirements
- Project scope and equipment supply tailored to your preferences
- In-house expertise in upstream and downstream solids conveying and storage
- Equipment layout and arrangement assistance
- Field assistance in erection and commissioning phases
- Spare parts



## The Features You Need



*Gas distribution plate designs to enhance material flow and minimize back-sieving*



*Adjustable bed level and underflow gate*



*A variety of surface finishes are available*



*External reinforcement suited to the operating pressure range*



*Quick opening inspection and access doors*



*In-duct venturis for continuous flow measurement and control*

# A Name You Can Trust

## Screw Press Dewatering



SBI's Screw Press provides excellent dewatering capabilities with a system that is virtually maintenance free, and can be run unattended.

## Piston Pumps



Schwing Bioset, Inc. is the recognized leader in sludge pump technology. SBI units pump dewatered biosolids from Presses and Centrifuges with dry solids content up to 55%. These versatile pumps were born in the concrete industry, but have been used successfully in wastewater plants since the mid 1980's.

## Operating & Marketing Services



Schwing Bioset's partnership with Biosolids Distribution Services Inc. creates the unique ability to offer complete handling solutions with engineering, equipment, and distribution of Class A biosolids, responsibly offered by a single provider.

## Sliding Frame



Sliding frame systems, whether used as truck receiving, truck loading, or as intermediate storage, offer a flexible means of storing dewatered solids while eliminating bridging. The flexible design allows for various process requirements.

## Container Wagon



Due to plant layout restrictions, many facilities face the challenge of transporting solids from one loading / unloading point into and out of the process stream. The SBI Container Wagon system provides a variety of solutions.

## Bioset Process



Schwing Bioset offers the Bioset lime stabilization process, which is approved to EPA's 503 regulations. The Bioset process provides municipalities a low cost Class A system that is affordable to operate and easy to maintain.

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