



PROCESSORS



MultiDisc® Thermal Processor Used in the Mining & Minerals Industry

Heyl & Patterson's Renneburg Division provides custom-engineered processing solutions in a wide range of equipment. MultiDisc® Thermal Processors, Calciners, Agglomerator/Granulators, Screw Presses, Chain/Flail Mills and Pug Mill Mixers allow for delumping, dewatering, pressing, granulating refining and milling of bulk materials.

MultiDisc® Thermal Processor

The Heyl & Patterson Inc. MultiDisc® Thermal Processor is a cost effective and innovative method for indirectly drying and cooling bulk solids, using conduction-convection heat transfer principles. Indirect processing produces a high product-to-surface area ratio, efficient processing at low temperatures and minimal off gas volumes.

The MultiDisc® Thermal Processor is recommended for countless drying and cooling applications. Its innovative design reduces surface fouling, pluggage and power consumption, effectively reducing overall operational costs.



Vintage Photo From Our Archive

SPECIAL FEATURES

- Compact size puts total processing capacity into a footprint that could barely accommodate the drive train of similar processors
- Batch or continuous modes of operation
- Operates horizontally, vertically or inclined
- Small shaft diameter leads to longer bearing life
- First in/first out for controlled residence time
- Angled conveying bars eliminate sidewall bypassing or short circuiting
- Standard shaft assembly for minimal spare parts
- Heat transfer fluids can be circulated in series or parallel flow patterns
- Designs include steam, heat transfer fluid or electric
- Fine materials easily processed without excessive product entrainment in gas stream
- Greatly reduced requirements for emission control or volatile recovery
- Maintain specific process atmospheres: inert, oxidizing, reducing, etc.



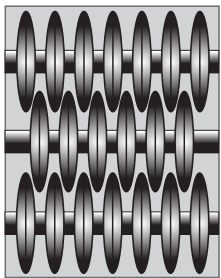
Pilot Plant Lab Facility

ADDED ADVANTAGES

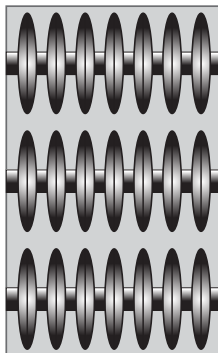
- Pilot plant test facility is available
- Toll processing available in-house or on-site



MultiDisc® Thermal Processor Production Model



Meshed



Non/Meshed

The key to the MultiDisc® design lies in a hollow disc and shaft assembly. Multiple discs are permanently attached to the shaft to create a fixed, sealed and self-contained unit. Cooling water, steam, thermal fluid or refrigerants circulate through the hollow assembly, transferring heat or cooling action to the revolving disc surfaces. An integral electric heating element can also be used to transfer heat. Product flows between and around the discs in the trough, and as a result, is exposed to a very large amount of disc surface area within a relatively small container. This concept offers a very high area to volume processing ratio.

The MultiDisc® Thermal Processor can be configured with meshed discs, non-meshed discs or a combination of the two. The meshed design provides enhanced mixing for difficult-to-transport wet solids or those that adhere to hot surfaces, and is also ideal for batch processing where uniform temperature control is required. Non-meshed discs can dry large capacities and achieve uniform flow at high shaft speeds. Each disc is fitted with agitation clips and breaker bars, an innovative design that breaks up lumps, thoroughly mixes product and maintains a consistent flow.

	Agglomerator/Granulator	Calciner, Fluid Bed	Calciner, Rotary	Dryer, Flash	Dryer, Fluid Bed	Dryer, Rotary	Flail Mill	MultiDisc® Thermal Processor	Pug Mill	Screw Press
Agricultural			●		●	●		●		●
Alternative Fuels			●		●	●				
Biomass/Torrefaction			●	●	●	●				●
Ceramic		●	●		●	●		●		
Chemical	●	●	●	●	●	●		●		
Coal			●		●	●		●		
Environmental		●				●		●	●	
Fertilizers	●			●	●	●	●		●	
Food		●		●	●	●		●	●	●
Glass			●	●	●	●				
Metals			●		●	●		●		
Mining & Minerals	●	●	●	●	●	●	●	●	●	
Petroleum					●	●			●	
Plastics			●	●	●	●				
Pulp & Paper			●	●	●	●				●

Calciners

Heyl & Patterson Renneburg Calciners continuously process bulk materials at medium to high temperatures, with an indirect heat source. Materials are introduced into an enclosed rotating shell, which is externally heated in a stationary furnace. This guarantees complete separation of heat source and product during processing. Separation imparts unmatched processing advantages that are valuable in catalyst manufacturing, waste recycling, hydrocarbon processing and chemical production.

See our Calciners brochure.



Rotary Calciner

Agglomerator/Granulators

Heyl & Patterson rotary and fluid bed agglomerator/granulators process powder and bulk products into spherical pellets. Rotary units utilize a horizontal drum mounted at a slight incline to create agglomerates. Fluid bed units combine drying with particle agglomeration or granulation by spraying wet feed material onto a bed of seed material. The fluidizing action then provides the means for efficient and thorough processing.

See our Dryers & Coolers brochure.



Rotary Agglomerator/Granulators

Screw Presses

Heyl & Patterson continuous screw presses remove excess moisture from material by mechanically pressing it using a screw with flights of decreasing pitch, arrayed on cones of increasing diameter. As the material moves through the press, the decrease in pitch and increase in cone diameter exerts greater pressure on the material being processed. If a material can be squeezed free of liquid by hand, then our multi-stage screw press will do an excellent job of mechanically removing excess moisture.



Screw Press

Chain/Flail Mills

The Heyl & Patterson chain mill or flail mill is a heavy duty double-roll size reduction device, with opposing rotating rotors. It is capable of handling large volumes of material with no plugging. Used in many industries to reduce large flows of material, it uses rotors equipped with different lengths of chains and hardened steel hammers. Housings can be also lined with rubber or removable wear-resistant plates.



Chain/Flail Mill

Pug Mill Mixers

Heyl & Patterson designs a versatile pug mill that continuously mixes all types of products, including dry, free-flowing powders, thin slurries and thick pastes. The compact design of this pug mill allows installation in low headroom areas. Mixing intensity, retention time and product appearance can be controlled simply by changing the agitator speed or paddle orientation.



Pug Mill Mixers



Safe and Secure

Minimizing Risks, Protecting Workers and Equipment

We work diligently to ensure the utmost protection measures are incorporated into everything we do, and take advantage of a facility's available energy options for the utmost efficiency. The safety precautions built into our equipment collectively works against overall component failures, while shielding workers and equipment at optimum levels.

At Heyl & Patterson, we've been pioneering solutions for the chemical processing industry since 1887 – let our experience work for you. For further information, visit www.heylpatterson.com or call today.



MultiDisc® Thermal Processor Used in the Chemical Industry