

RAYMOND BARTLETT SNOW THERMAL PROCESSING EQUIPMENT

With a 130 years of experience, Raymond Bartlett Snow thermal products have successfully provided solutions in heat transfer applications for industries worldwide.

Raymond Bartlett Snow's long established capability to supply thermal processing equipment and systems is the key to the success of our product line. It is the result of many years of specialized experience in the design, development and application of reliable equipment for the process industries that includes chemical, petrochemical, ceramic, magnetic, metals, food, fertilizer, plastic, nuclear and industrial solid waste.

Our extensive knowledge, with over 5,000 worldwide installations, covers the full spectrum of drying, cooling, and calcining applications, as well as resource recovery applications, such as activated carbon regeneration, tire pyrolysis, metal reclamation and soil remediation.

Providing Full Scope of Services to Our Customers

ENGINEERING CAPABILITIES

Every unit is custom designed utilizing the latest engineering techniques and processes. Two and three dimensional CAD modeling tools; Finite Element Analysis (FEA) for mechanical and thermal stress analysis and Computational Fluid Dynamics (CFD) for optimizing designs for airflow and heat transfer related issues.

MANUFACTURING

Our primary manufacturing location is in Wellsville, NY. This ISO 9001-2008 certified facility is equipped with state-of-the-art manufacturing resource planning systems, production equipment, and quality assurance techniques in support of fabrication, welding, machining, assembly and testing.

TESTING RESOURCES

Our twenty-five thousand square foot pilot plant testing facility located in Naperville, IL, is used exclusively to test and demonstrate the capabilities of our equipment under simulated production conditions. It houses a wide range of pilot and full-scale equipment capable of grinding, classifying and thermal processing a wide variety of minerals, chemicals, foods, and other materials. Tests are conducted on large material lots to determine the physical data needed for proper equipment selection. Following each test an analytical report detailing the results with equipment recommendations is provided.

OEM REPLACEMENT PARTS

Bartlett-Snow and Raymond original parts are the best match for your equipment. We maintain a database of the original specifications of all equipment, by serial number and model. This results in an accurate record for each piece of equipment, including custom designed variations for specific applications, ensuring that the parts you order are always correct.

TECHNICAL SERVICES

Experienced field service engineers are available to assist with equipment commissioning, maintenance, and service of our complete product line.



Bartlett-Snow™ and Raymond® Thermal Processing Equipment

Bartlett-Snow rotary thermal processing equipment share many of the same basic design features. Material is fed into an inclined rotating cylinder causing the material to be transported through the unit. The cylinder is supported by riding rings mounted on the cylinder; each ring rests on a trunnion roll assembly. Thrust rolls located on both sides of one ring help constrain lateral movement of the cylinder. The cylinder is rotated by either a chain and sprocket or girth gear and pinion in conjunction with a reducer and drive motor. The ends of the cylinder are enclosed by breechings that contain the material feeding and discharge provisions, as well as seal components that prevent transfer of process atmosphere with the ambient environment.



Bartlett-Snow™ Rotary Calciners

Indirectly heated by a series of burners or electrical heating elements, the calciner is ideal for processing fine powders, pellets and extrudates, and granular materials in high temperature oxidizing, reducing or inert atmospheres.

- Sizes from 6" to 120" diameter, 7' to 100' long.
- Cylinder materials and temperatures available metallic - 2460°F, ceramic - 2800°F and graphite - 3990°F.
- Options include integral cooling, pre-piping, pre-wiring, and internal bed temperature monitoring.



Bartlett-Snow™ Rotary Indirect Lab Calciners

Ideal for laboratory, pilot plant, or small quantity production. Features a 2" screw feeder, four zone electrically heated furnace, breechings with bellows seals, indirect water spray cooling section and cylinder drive mounted on a frame with support legs and provisions for slope adjustment.

- Size 6.5" diameter x 11' long.
- Standard operating temperature to 2010°F.
- Special designs to 3990°F.
- Knocker assemblies for sticky materials.
- Temperature and power controls in free standing panels.



Bartlett-Snow™ Rotary Dryers

Directly heated dryers bring heated air, tempered products of combustion, or other heated specialty gases into contact with the process material. Drying media can be provided by a breeching mounted burner, independent air heater, steam coils, or waste heat sources.

- Sizes from 18" to 156" diameter, 10' to 100' long.
- Process temperature to 930°F.
- Option for pre-piping and pre-wiring of burner train.



Bartlett-Snow™ Rotary Indirect Dryers

Indirectly heated by a series of burners, electric heating elements, or a waste heat source, the indirect dryer is designed for removing moisture or volatiles from powders, pellets, extrudates, and granular materials in oxidizing, internal reducing or inert atmospheres.

- Sizes from 6" to 120" diameter, 10' to 100' long.
- Process temperature to 930°F.
- Option including integral cooling, pre-piping and pre-wiring of burner train, and bed temperature monitoring.



Bartlett-Snow™ Rotary Coolers

The direct air swept design with internal flighting, brings hot material into direct contact with the cooling medium, in a countercurrent flow configuration. The cooling medium may be ambient air, cooled air or special gases. The cooled material temperature can approach to within 10 to 20°F (5 to 10°C) of the cooling media temperature.

- Sizes from 18" to 156" diameter, 10' to 100' long.
- Standard metallic design to 1290°F.
- Specialized designs to 2910°F.



Bartlett-Snow™ Rotary Indirect Coolers

The indirect design consists of a cylinder enclosed in a cooler jacket with water sprays along its active length. Appropriate for applications involving fine powders, pellets, granular materials in oxidizing, reducing or inert atmospheres.

- Sizes from 6" to 120" diameter, 10' to 100' long.
- Standard metallic design to 2370°F.
- Cooled material temperature can approach 212°F.



Bartlett-Snow™ Rotary Kilns

Directly fired refractory lined kilns are effective for processing materials in a oxidizing or slightly reducing atmospheres that can be in direct contact with products of combustion and/or the burner flame envelope. Material particle size range, shape and specific gravity must accommodate the gas velocities within the cylinder.

- Sizes from 24" to 144" diameter, 12' to 160' long.
- Process temperatures to 2910°F.
- Gas, oil or dual fuel burners.
- Co-current or counter-current operation.
- Option for pre-piping or pre-wiring of burner train.



Raymond® Flash Drying Systems

Process material is conveyed in the drying media, thus providing the rapid removal of moisture from mesh and micron sized particles that quickly release water, primarily as surface moisture. They are easy to operate and can process materials that are fine, sticky, moderately abrasive and heat sensitive. Flash cooling and flash calcining are also available.

- Evaporative capacity up to 44,000 lbs/hr.
- Oxygen control using recirculation of vent gases.
- Fuel sources include gas, oil, steam coils and customer waste heat. or dual fuel burners.
- Cooling medium is typically ambient or conditioned air.

Design features common to the various arrangements of Raymond flash drying systems typically include a feeder, vertical column in which the majority of the drying, cooling or calcining is done, cyclone collector, secondary collector, system fan and connective ductwork. These systems can also include a double paddle mixer for conditioning and homogenizing the feed, cage mill to help deagglomerate the material as fed, and provisions for heating or cooling the transport media.

RAYMOND BARTLETT-SNOW THERMAL PROCESSING EQUIPMENT

OEM Replacement Parts

Cylinders - replacement cylinders fabricated from basic carbon steel through exotic alloys. Can be manufactured by use of rolled plate, molds for centrifugal and static castings, or dies for isostatically pressed extrusions.

Riding Rings - forged high carbon steel alloy with straight or taper sided configurations.

Girt Gear, Girt Sprockets & Pinions - forged or cast high carbon steel alloys, one piece or split with surface and through hardening as required.

Trunnion Rolls, Shafts & Bearings - forged high carbon steel alloys with heat treated tread surfaces. **Thrust Rolls, Shafts & Bearings** - straight or tapered sided thrust rolls in forged high carbon steel alloys with heat treated tread surfaces.

Rotary Seal Components

There are four types of seals used on rotary equipment. For less maintenance, longer life and increased performance, retrofit packages can be provided for seal design upgrades.

1. Angle seals - the most basic of the rotary seal designs and are a non contact labyrinth type for use on medium to high leakage applications. Replaceable seal segments can be supplied in ceramic, teflon and rubber materials.
2. Iris seals - flexible overlapping segments that provide a more positive seal for medium to low leakage applications. Replaceable seal segments can be supplied in appropriate metallic materials.
3. Flex seals - face contact seal for more positive seal on low leakage applications. Replaceable flex elements can be supplied in various non-metallic materials with replaceable floating seal rings in metallic, Teflon™ and graphite materials.
4. Bellow seals - most positive face contact type of seal and are utilized on gas tight applications. Replaceable bellows can be supplied in various metallic materials, with the replaceable floating seal rings in metallic, Teflon™ and graphite materials.

Technical Services

FIELD SERVICE: Our experienced field service representatives are available for startup, maintenance and troubleshooting of our entire product line. They can help you find trouble spots and eliminate them for better performance.

EQUIPMENT INSPECTIONS: Regular equipment inspections are an important factor in both reducing maintenance and improving equipment performance. A member of our technical service staff can visit your plant to conduct indepth inspections of your equipment.

OPERATING SEMINARS: Conducted at your facility by an experienced technical service representative, these one or two day seminars have proven to be extremely beneficial in aiding plant personnel to operate equipment.

Pilot Plant Testing Facility

BARTLETT-SNOW & RAYMOND CAPABILITIES

- Bartlett-Snow High Temp Rotary Calciner
- Bartlett-Snow Rotary Dryer
- Bartlett-Snow Rotary Kiln
- Bartlett-Snow Rotary Cooker
- Raymond Flash Drying System

RAYMOND PULVERIZING CAPABILITIES

- Raymond Roller Mill
- Raymond Imp Mill
- Raymond Vertical Mill
- Raymond Ultra Fine Mill
- Raymond Bowl (Table) Mill

RAYMOND PARTICLE SIZE SEPARATION

- Jet Stream Classifier
- Dynamic Turbine Classifiers for Mills
- Mechanical Air Separators
- Screen Tests