

# RAYMOND®

## GUIDE TO QUALITY EQUIPMENT

**With a 130 years of experience, Raymond is a leader in the design and manufacture of industrial milling equipment and has set the standard in size reduction.**

Raymond's long established capability to supply processing equipment and systems is the key to the success of our product line. It is a result of many years of specialized experience in the design, development and application of reliable equipment for the process industries.

Raymond equipment and systems are known for their quality and ability to perform, and are supported by our engineering staff, OEM aftermarket products and technical service departments. Starting with fully objective, practical and cost-conscious recommendations, we custom design and manufacture our equipment to meet your specific needs.

### Providing Full Scope of Services to Our Customers

#### ENGINEERING CAPABILITIES

Every unit is custom designed utilizing the latest engineering techniques and processes. This includes two and three dimensional CAD modeling; 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 products are primarily manufactured 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 pilot plant facility located in Naperville, IL, is used exclusively to test and demonstrate the capabilities of Raymond equipment under simulated production conditions. It houses a wide range of pilot and full-scale equipment capable of grinding or classifying virtually any non-hazardous mineral, chemical, food or other material. Tests are conducted on large material lots to determine the physical data needed for proper equipment selection. Following each test pre and post-processing chemical and physical analytical reports detailing the results with equipment recommendations is provided.

#### OEM REPLACEMENT PARTS

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, resulting 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

Our experienced field service engineers are available to assist with commissioning, maintenance and troubleshooting for our complete product line.



**RAYMOND  
BARTLETT SNOW**

# INDUSTRIAL MILLING EQUIPMENT



## RAYMOND ROLLER MILL

A air-swept vertical ring-roll mill with an integral classification system for fine and medium-grinding of a variety of soft to medium hard non-metallic minerals.

- Available in 8 sizes, ring diameter from 30" to 120".
- Capacities to 80 tph, fineness from 20 mesh to 99.99% passing 325 mesh.
- Static or dynamic classifier options.
- Flash drying capability.



## RAYMOND IMP™ MILL

Versatile and dependable high-speed, air-swept, swing hammer impact mill well suited for fine and medium-fine grinding of softer non-metallic minerals, coal, grains, various chemicals, and fibrous materials.

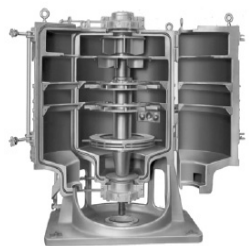
- Range of capacities 1/4 to 80 tph of pulverized product, fineness from 20 mesh to 99.9% passing 324 mesh.
- Heavy-duty design for continuous 24 hour operation with minimum maintenance.
- Ideal for simultaneous thermal processing applications.



## RAYMOND HP BOWL MILL

An air-swept vertical mill that is considered to be the finest machine available for pulverizing coal and petroleum coke. It provides a safe and efficient means of uniformly drying and pulverizing these fuels.

- Grinds quietly, no metal-to-metal contact.
- Low maintenance, minimum wear.
- Capacities to 100 tph, fineness up to 95% minus 200 mesh.
- Integral drying system permits handling high moisture fuels.
- Hybrid dynamic classifier option available.



## RAYMOND VERTICAL MILL

Specialized unit for pulverizing materials in the extreme fineness range. A vertically arranged high-speed, air-swept hammermill with integral air classification.

- Two sizes provide capacities from 100 to 10,000 pounds per hour, fineness to 95-99% finer than 5-10 microns.
- Unit swings open easily for inspection, cleaning and maintenance.
- Compact design requires minimal floor space.



## RAYMOND ULTRA FINE MILL

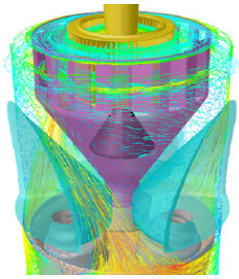
Air-swept vertical ring mill with integral classification designed to produce extremely fine powders for use in various applications including coatings, fillers and pigments.

- Will generate product as fine as 50% passing 2 microns or as coarse as 50% passing 10 microns.
- Low classifier speed, high fineness separation.
- Efficient ultra fine grinding with low specific energy consumption.
- Flexible grinding element arrangement to suit product requirements.

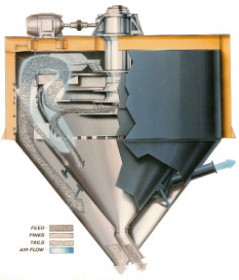
## CLASSIFICATION EQUIPMENT

### RAYMOND CLASSIFIERS

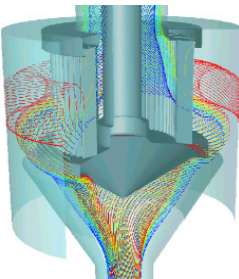
Designed for use as independent units or in circuit with pulverizing equipment, efficient designs maintain optimal control of fineness.



**RAYMOND HYBRID TURBINE CLASSIFIER FOR RB BOWL MILLS**  
The patented design enhances system and process performance. Produces particle size distribution compatible with improved flame characteristics while reducing emissions.



**RAYMOND MECHANICAL AIR SEPARATORS**  
Single and double whizzer in sizes from 30" to 24'. Accurate fines separation to 325 mesh (44 microns).



**RAYMOND JET-STREAM™ CLASSIFIER**  
Available in 4 sizes and capable of producing material having a top size of 5 microns or less.

### RAYMOND INTEGRAL OR INSTREAM CLASSIFIER

Double cone, single or double whizzer and turbine classifiers for use in conjunction with Raymond Roller, Imp, and Bowl Mills. Top size classification from 20 mesh to 10 microns or less.

## FLASH DRYING EQUIPMENT

### RAYMOND FLASH DRYING SYSTEMS

Raymond Flash Drying Systems are simple to operate and well known for their high on-line availability for tough applications involving fine, non-metallic, low to moderately abrasive, sticky and heat sensitive materials. They are proven in a variety of industries worldwide including chemical, petrochemical, ceramic, pharmaceutical, food, fertilizer, plastics and many others.

### SYSTEM OVERVIEW

Flash drying can be simultaneously combined with other functions such as pulverizing, separating, classifying and conveying for utilization in additional process applications.

Cage mill flash dryers are designed to bring wet, lumpy, and dispersible products into contact with a high velocity hot gas stream. The agitation and turbulence created by the cage mill provides for effective deagglomeration, dispersal, and drying of the material. The technology is appropriate for applications involving fine or lump-filled friable material, low product temperatures, surface moisture, and retention times for drying of a few seconds. With conditioning mixers, applications involving filter cakes, sludges, and slurriers can also be handled.

Imp mill flash dryers are used when size reduction of the process material is required. The rotating high speed hammer mill provides for the grinding action that results in particle size reduction and assists in bringing internal moisture to the surface. Convection heat transfer is dominant, with conduction and radiation effects minimal. The technology is particularly suited for applications involving lumpy or coarse material that is low to mildly abrasive, internal or unbound moisture, low product temperature, and retention times for drying of a few seconds.

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### OEM Replacement Parts

Since our customers prefer to order OEM replacement parts, we maintain a large inventory for immediate shipment. We stock most wearing parts that include, but are not limited to, grinding rolls, bull rings, plow tips, liners, hammers, whizzer blades, mixer paddles, and feed rolls, as well as bushings and bearings. We also stock many non-wearing parts including journal heads and housings, complete journal assemblies, shafts, spiders, plow supports, gears and pinions.

Outstanding customer service and a commitment to ship parts on time - every time - is our top priority.

### Pilot Plant Testing Facility

#### 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

#### BARTLETT-SNOW & RAYMOND CAPABILITIES

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

### 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 in-depth inspections of your Raymond 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.

**MODIFICATION AND UPGRADE PACKAGES:** We have developed a number of equipment improvements that can be installed in existing equipment as conversion packages. We provide these packages for control system upgrades, vertical shaft conversions and roller mill journals.

