CEMENT

PRECISION
PRECISION MACHINE & MANUFACTURING, INC.

SOLUTION: RAW MATERIAL FEEDERS

Raw Material
Raw material grinding is one of the core operations in a cement plant. Today, vertical roller mills (VRM's) are the preferred choice in most of North America. Along with clinker/finish grinding, raw material grinding is typically the biggest user of electrical energy with gearboxes approaching 5000-HP. Sizing for 500 -1000 TPH is becoming common.

An overlooked part of the mill system is the feeding device that transports the limestone and other materials into the mill in a steady manner. Today, the majority of the raw mills in North America are fed with a large capacity rotary feeder. Referred to by the European mill manufacturers as a "rotary sluice," the rotary feeder has a pair of very important functions in an efficient raw milling operation.

First is maintaining efficient feed rates. In most operations, a variable speed belt pulls the raw materials from their storage location and the belt speed establishes the basic tonnage rate into the mill. The rotary feeder fine-tunes this feed rate by discharging a specific volume rate of material each revolution of the rotor. Consistent feeding leads to a uniform bed-depth in the VRM, which provides effective, uniform grinding.

The second function of a rotary feeder in the raw mill is to act as an important airlock, which minimizes false air introduction into the milling process. The importance is two-fold: Creating conditions inside the mill for efficient, uniform grinding and to minimize fan horsepower.

Two years of operation between rebuilds

Most competitive raw mill material feeders require regular ongoing maintenance and adjustment, which oftentimes leads to a major rebuild during the annual outage. Precision's PMCA raw mill material feeders turned the industry upside down by eliminating annual rebuilds! In fact, we can confidently boast that the PMCA feeder will operate without a rebuild for every two years and in some applications, we believe that three years of operation between rebuilds is possible under the right conditions.

Avoiding the cost of a rebuild every year can save Plant Managers up to $100K a year in capital expenditures.

Reduced false air induction
False air induction can wreak havoc on a raw mill material delivery system and increase turbulence inside the mill! Precision's manufacturing processes allow PMCA feeders to be built with rotor-to-barrel clearance of 0.045" to 0.075" per side, depending on the size of the feeder. These industry leading tight clearances reduces false air introduction by thousands of cubic feet per minute.

In addition, reducing false air will result in more uniform grinding and consistent particle size distribution.

Low or no recurring maintenance costs!
PMCA feeders are designed to cost less over the lifespan of the feeder! There are no adjustable rotor tips, flap diverters, removable sides, or other maintenance-intensive items to worry about.

It is really as simple as get the PMCA installed, start it up, and go to work!

Maintenance Requirements: Precision recommends a bi-monthly lubrication of the bearings and a semi-annual inspection of the wear plates. Otherwise, less is more!

MADE IN THE USA

Most customers get two rebuilds out of every PMCA Feeder!

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RAW MATERIALS FEEDER

PMCA ROTARY FEEDER

TRI-BRAZE

Barrels and rotors manufactured of specialty alloys for maximum abrasion-resistance and extended-life.

ENDBELL PORTS

Available hot-air / hot-gas endbell ports and hollow-core rotors to help minimize material build-up in the rotor.

NORD DRIVE

Integrated shaft-mounted or flange-mounted gear drive package with torque-limiting clutch.

TRANSITIONS

Available upper and/ or lower transitions to facilitate slide-out / slide-in replacement.

SIX-VANE ROTORS

Six-vane rotors with rounded pockets to minimize build-up… even with wet raw materials.

FEEDER	
PMCA-35	up to 175 TPH
PMCA-48	up to 400 TPH
PMCA-60	up to 800 TPH
PMCA-72	up to 1250 TP

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