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Crushing and Pulverising / Air Classifying Mill

AIR CLASSIFYING MILL

THE ACM PULVERISER:

ACM is an air-classifying mill with integrated grinding, classifying, conveying and collecting operations. The milling if required may be carried out in a closed loop operation with dry air or inert gas if required. This flexibility makes the plant suitable to handle explosive, heat sensitive or hygroscopic materials.

THE PRINCIPLE OF OPERATION:

The material to be ground is conveyed from the hopper

- 1. to the grinding chamber by the variable fees screw mechanism
- 2. The grinding occurs when the product comes into contact with a pin or bar type rotor disc.
- 3. As the product size is reduced it is conveyed by an airstreams which enters below the rotor assembly via shroud and baffle ring
- 4. The particles are then deflected by an air dispersion ring
- 5. To the separator assembly
- 6. Acceptable product is drawn through the exhaust
- 7. And is collected by a Dust Collector.



Oversize particles are returned by the internal airstreams to the rotor disc for further reduction.

SAFETY DEVICES

All ACM mills are required with protection devices for safe operation. These measures include a safety switch on the cover of the grinding chamber. It is there by ensured that the drive motors cannot be switched on when the grinding chamber cover is open.

ELECTRICAL EQUIPMENTS

The plant is supplied along with a control panel and MCC, which provide the necessary interlocks and operating switches.

MACHINE FRAME

The mill and all drive components are mounted on a rigid welded steel frame. All rotating parts are dynamically balanced for smooth operation. There is no need for special foundation.

THE ROTOR ASSEMBLY

The assembly comprises of the following components: the separator wheel assembly, the rotor disc, bearing housing and the V-belt pulleys. The complete assembly is secured to the grinding chamber housing by four retaining bolts. All bearings are lubricated and are protected against ingress of ground product and dirt, moisture by means of special sealing rings.

THE GRINDING CHAMBER

The Grinding Chamber is sealed by a hinged cover held in position by hand wheels. When the hand wheels are released the entire cover assembly tilts upwards giving access to the milling components, these consist of: the air dispersion ring, the shroud and baffle ring, multiple deflector liners and the rotor assembly.

DRIVES

All driven motors are fixed to the chassis and are easily accessible, power is transmitted by V-belts. A tachometer is supplied to indicate the speed and allows operator at a glance to select the correct speed for any pre-determined product fineness.

THE ACM PLANT INCLUDES

- 1. ACM Mill for grinding and classifying.
- 2. Dust Collector fully automatic Pulse Jet cleaning ensures dust free operation.
- 3. Rotary Airlock used as an air seal and discharge material from dust collector.
- 4. Fan to provide air flow through the mill and the collector for product conveying and cooling.
- 5. Control Panel for sequential starting and stopping of the milling plant.

The following table shows some of the results obtained with ACM mills.

Product	Fineness in microns	Capacity ACM 10 Kg/h (approx)
Epoxy	90 max	250
Electrostatic Coating powder	50% 32	32
Polyester resin	95% 71	32
Whirl sintering powder	2% 500	21
Phenolic resin	32 max	170
Melamine resin	100 max	170
Organic pigment	20 max	85
Milk powder / Sugar mixture	20 max	140
Sorbitol	300 max	230
Iron Oxide	5 max	60
Sulphur	40 max	200
Potassium Sterate	40 max	110
Ammonium Phosphate	71 max	110
Magnesium Oxide	20 max	230
Fish meal	100 max	100