

Ball Mill Oxide System

OPERATION

Lead Ingots are melted in the Melting Pot. The Molten Lead in the Melting Pot is pumped in to the Cylinder casting Machine. The Lead cylinders are casted in the Cylinder casting machine at a rate higher than that of the oxidation process. These Lead cylinders are conveyed and stored in a Silo.

The Silo feeds the required amount of Lead Cylinders into the Mill as and when required. The amount of Lead Cylinders being discharged from the Silo is adjustable from the PLC system. Lead Cylinders tumbling inside the Ball Mill drum create heat due to friction between them. This heat initiates the oxidation process. The oxidation process is also an exothermic reaction. This exothermic heat raises the temperature of the material which in turn accelerates the oxidation process. A draft of air through the Ball Mill drum gives oxygen for the oxidation process and also carries the Battery Oxide to the collection system.

The Collection System includes a combination of cyclone and dust collector or just dust collector. Battery oxide is collected and conveyed to storage silos. The Silos storing Battery Oxide are purged with Nitrogen to keep the temperature of the Oxide in check.

PROCESS CONTROL

PLC based control system controls the various parameters. Various sensors are located at different locations to sense the various process parameters.

Reaction Temperature:

Reaction Temperature is monitored using thermocouples and is controlled by periodic water cooling.

Load in the Ball Mill:

The Load in the Ball Mill can be monitored by Load cells or by current consumption. According to the load in the mill, new material is fed automatically when the load reduces.

System Draft:

The System draft or air flow through the Ball Mill is very precisely controlled and monitored. The air flow volume is controlled by a motorized butterfly valve and the corresponding static pressure is monitored by pressure sensors.



OTHER FEATURES

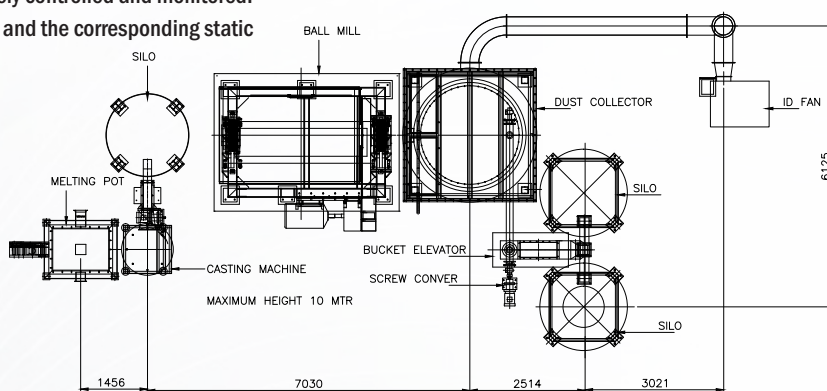
Fully automatic with PLC based controlled system.

Totally enclosed system

Touch Screen based interfaced

One Button Start/Stop

24 Hour Operation



Production Rate :

Model	Capacity
ACS/BLM/5T	5000 Kg/24Hrs
ACS/BLM/7T	7000 Kg/24Hrs
ACS/BLM/12T	12000 Kg/24Hrs

Oxide Specifications (Battery Oxide):

OXIDE SPECIFICATIONS	UNIT	RANGE
Total PbO	%	75-68
Free LEAD	%	25-32
Apparent Density	grams/cc	1.2-1.6
Acid Absorption	Milligrams/gram	220 - 260
Average Particle Size	Micron	2-3