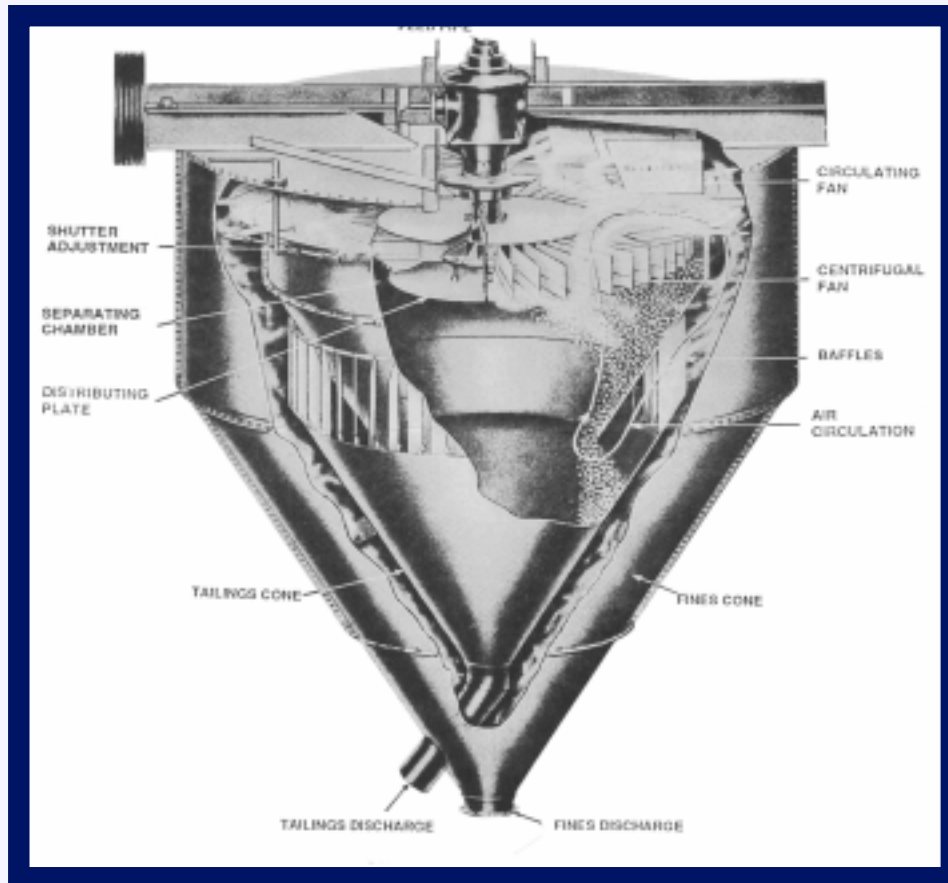




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## CENTRIFUGAL AIR CLASSIFIER



**FOR CLASSIFICATION OF 60 MESH (250 MICRON)  
TO 400 MESH (37 MICRON) DRY MATERIAL**

## The Gayco Centrifugal Separator

The Gayco was the first dry air centrifugal air separator used in industry. These units have undergone much use and many modifications have been made to the original model, and today they meet most operating specifications for classifying dry material in the size range of 60 mesh to 400 mesh. Among the applications that these machines have been utilized for over the years are mineral classification, metals classification, chemicals classification, food products and fine grinding mill circuits. By using an air classifier and removing the undersize while recirculating the oversize material, mill production may increase up to 300% over an open circuit mill.

### Dedusting

In standard operation, the fine fraction is the finished product. It is possible to also remove excess fines from a coarse product. In aggregate plants, fine limestone may be removed in the air classifier to be used in agricultural limestone. Most materials can be dedusted in the Gayco Air Classifier. Since the air required for operation is self contained, a minimum of auxiliary dust collection is required. The coarse fraction is collected in one area requiring no venting and the fine fraction is collected in a bin which requires only enough venting (and dust collection equipment) to relieve the bin pressure and discharge clean air to the atmosphere. The volume of dust laden air that is required to be treated for particulate removal is very small, since the Gayco Air Classifier uses very little external (1 CFM) air in its operation. This feature would drastically reduce the cost of removing fines from process air in the baghouse dust collection system.

### Operation

The upper or circulating fan causes the air in the separator to flow upward through the inner, separating chamber and downward in the outer, collecting chamber. The amount of air flow is controlled by external adjustment of the shutters under the circulating fan. The lower, centrifugal fan controls the angular velocity of the air and the centrifugal force which is the principle factor in separation in the air classifier. By balancing the air flow and the centrifugal force, separation of most materials can be controlled in a particle size range of from 60 mesh (250 microns) down to 400 mesh (37 microns). Materials to be classified enter the separator through a stationary feed pipe and are evenly spread by a distributing plate. The larger particles are forced to the outside by the centrifugal force, and out of the rising column of ascending air. The large particles then fall to the tailings discharge. The fine particles are carried by the air column through the circulating fan and are collected in the outer chamber. The cleaned air recirculates through the baffles to complete the cycle.

Product classification size is regulated by adjusting air flow, without changing the separator speed.