

Multimix Vertical Sand Mill VSM

Multimix Vertical Sand Mill VSM is designed for the purpose of wet milling upon dispersion process mainly in the manufacturing of water & solvent based coatings, printing inks & toners, fertilizer chemicals, calcium carbonate, sulphur dispersion, metal oxides and minerals chemicals applications.

Features

The main features of the VSM is designed to be able to clean easily upon process as cleaning is a heavy task for conventional fixed type of vertical mill. The hydraulic lifting of the mill allows cleaning & maintenances can be carried out easily and thus reduce time & cost savings.

Besides that, the VSM is designed in which milling process is carried out under pressure as this eliminate solvent loss due to evaporation, thus, provides higher solid content process and comply with air Quality Standard Act. Vacuum process can be carried out if required.

The versatile and compact design of the VSM provides a simple operation, low maintenance and power consumption. The design allows also temperature of the fluid to be monitored and controlled.

Principle of Operation

VSM is based on circulation between a grinding chamber and a large holding tank which is generally about ten time the size of the grinding chamber. Averagely, the fluid will pass through about 8 times per hour. Grinding beads are added into the grinding chamber. Fluid dispersed materials is transferred into a water jacketed grinding chamber by a variable speed control pump. The fluid in the chamber is subjected to a tremendous shearing force & intense impact and thus provides a reduction of particle size and a homogeneous material. This is explained by the principle of "preferential milling" in which the fast pumping through the agitated fluid bed provides the grinding chamber acts as dynamic sieve or filter, allowing the fine particles to pass and move quickly through while the coarser particles follows a more high impact reaction inside the fluid bed. With this principle of circulation, the fluid is having many passes through the grinding chamber until the desired particle is obtained.

Grinding beads are retained in the chamber by a screen which allows only the fluid to flow and collected.

Fineness of the fluid depends largely on the type of bead used, be it glass, ceramic or zirconium bead, the size of the beads used, "stay time" in the chamber or the number of circulation the fluid passes through the grinding chamber, formulation of the premix & material's quality used. It is important that fluid is to be properly dispersed prior milling process.

