Fluidizes Bed Dryer

JOEST vibrating fluid bed dryers for bulk materials use convection to transfer the heat energy required for drying, i.e. via direct heat transfer, so the heat transfer medium comes directly into contact with the product. Product is moved in the dryer using the micro throwing movement, a well-known method in vibration feeding technology that can be individually set up for each application and machine type through the adjustment of swing, frequency and articulation (throw angle). Heat transfer is typically achieved using temperature-controlled warm or hot air, a process into which any available exhaust fumes or other waste heat sources can also be integrated. Depending on the application, dryers can be divided into different zones for drying and downstream cooling. They can also be set up for fresh-air mode or exhaust-air and partial-air recirculation. Models with resonating and stationary exhaust air hoods are also available. Vibrating fluid bed dryers can be delivered in a variety of materials including normal or stainless steels, or a combination thereof.

In order to dry the product in question, temperature-controlled warm or hot air is introduced through a fluidization plate. The plate speed can be selected specifically for each product, resulting in the fluidization of the product and efficient circulation of the individual product particles. The special design of the air distribution chamber(s) below the fluidization plate, with the fluidization plate above it, ensures uniform distribution of air and airflow for the product layer on the plate, even with changing layer thicknesses. This uniformity of airflow leads to equally uniform drying results. In combination with the customization possibilities of the vibration system, having one dryer model for different process air temperatures and layer thicknesses means greater flexibility even with changing operating modes and product features. In combination with the customized fluidization plate, having a fluidization plate speed that can be adjusted to the application in question reduces the required ventilator output for process air and ensures efficient operation.

Proven vibration system drive concepts are responsible for running the vibrating fluid bed dryer, including unbalance motors, directed exciters, crankshaft drives and exciter cells, all optimized for the size of the dryer model. Electronic control of the vibration angle is also available, for example to manage the dwell time of the product in the dryer.

JÖST delivers the individual machine, including the complete drying system with air technology equipment, exhaust air purification, plumbing, and structural steel work (including system control) as part of our complete delivery program

A member of the JOEST group

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JOEST®

ADVANTAGES

- ☑ Convective heat transfer with high levels of efficiency
- ☑ Low energy consumption
- ☑ Compact design
- ☑ User friendly and low maintenance
- ☑ Use of different energy sources possible
- ☑ Use of existing waste heat sources possible
- ☑ Models customizable to suit the application

APPLICATIONS

- Stone
- Minerals
- Sand
- Coal
- Fertilizer
- Chemical Products
- Rubber
- Thermal Processing
- Plastics

TECHNICAL DATA

- **Plate width:**
  Standard from 450 mm to 2,500 mm
  as well as special sizes
- **Plate length:**
  Standard 14,000 mm as well as special sizes
- **Plate surface area:** up to 60 m²
- **Process air temperatures:** Standard up to 400 °C
- **Energy sources for process air heating:**
  natural gas, fuel oil, steam, hot water
  (others upon request)

OPTIONS

- Individual machines or complete systems
- Models available as single or multistage dryers with one or more zones
- Equipped with electronic vibration angle control
- A variety of structural material and surface material options
- Oscillating or static exhaust air hoods
- Model with integrated cooling zones
- ATEX model

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