

Fluidized Bed Cooler

JOEST vibrating fluid bed coolers for bulk materials use convection to transfer heat to the cooling element, i.e. via direct heat transfer, so the heat transfer medium comes directly into contact with the product. Product is moved in the cooler 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 done using ambient air, but tempered air or conditioned process air can also be used for special applications. Depending on the application, coolers can be divided into different cooling zones. 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 coolers can be delivered in a variety of materials including normal or stainless steels, or a combination thereof.

The product to be cooled is introduced by a fluidization plate with ambient, tempered or conditioned cooling air. 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 cooling results. In combination with the customization possibilities of the vibration system, having one cooler model for different layer thicknesses means greater flexibility even with changing operating modes and product properties. 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 cooling air and ensures efficient operation.

Proven vibration system drive concepts are responsible for driving the vibrating fluid bed cooler, 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 cooler.

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

OPTIONS

- Individual machines or complete systems
- Models available as single or multistage coolers 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 possible
- ATEX model



ADVANTAGES

- ✓ Convective heat transfer with high levels of efficiency
- ✓ Low energy consumption
- ✓ Compact design
- ✓ User friendly and low maintenance
- ✓ Models customizable to suit the application



APPLICATIONS

- Chemical products
- Rubber
- Plastics
- Food
- Fertilizer
- Stone
- Minerals
- Coal

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