

BATCH FLUID BEDS

Optimized fluid bed systems for solid processing
Based on German technology



Through-the-wall installation

By positioning the support column at the back of the fluid bed, a through-the-wall installation is achieved which ensures that all the auxiliary equipment is housed outside the process room. This greatly simplifies compliance with GMP guidelines.

Spraying systems

Nozzles, pumps and liquid preparation units are supplied according to process needs.

Product Discharge

For automatic product discharge, pneumatic conveying or gravity-based systems are available for use with the Non-Sifting Gill Plate air distributor technology.

Inlet air preparation unit

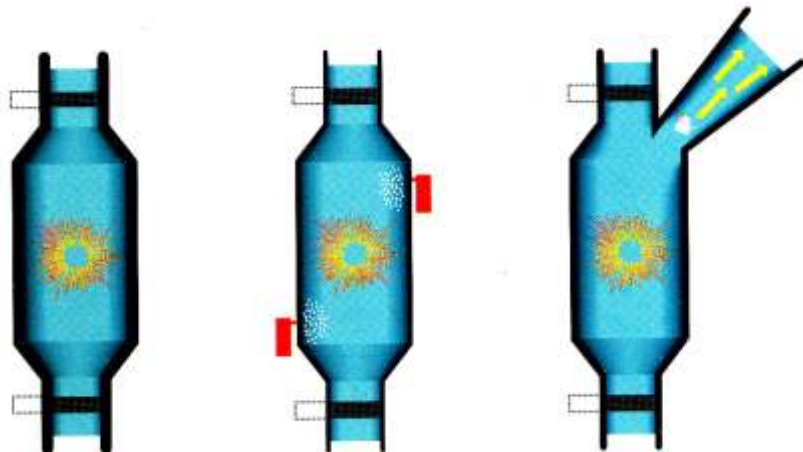
Inlet air is treated using a series of filters and conditioning units according to the sensitivity of the process and the ambient climatic conditions. Options range from the basic minimum, consisting of a pre-filter, heater and final filter, to full air-conditioning to provide consistent processing conditions all year round. Condensers are used for dehumidifying in most applications, but for hygroscopic or effervescent products which require a very low dew point, additional adsorption device can be installed.

CIP and WIP

Fluid beds can be supplied with washing-in-place and fully automated cleaning-in-place systems. The most advanced systems allow cleaning to take place without removal of the process filters (stainless steel cartridges).

Safety

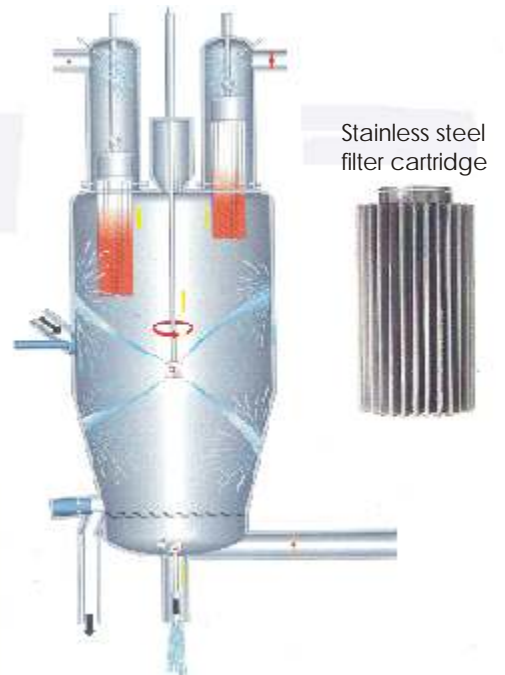
Gemini can supply fluid beds to required explosion-proof and pressure shock resistant (PSR) design standards.



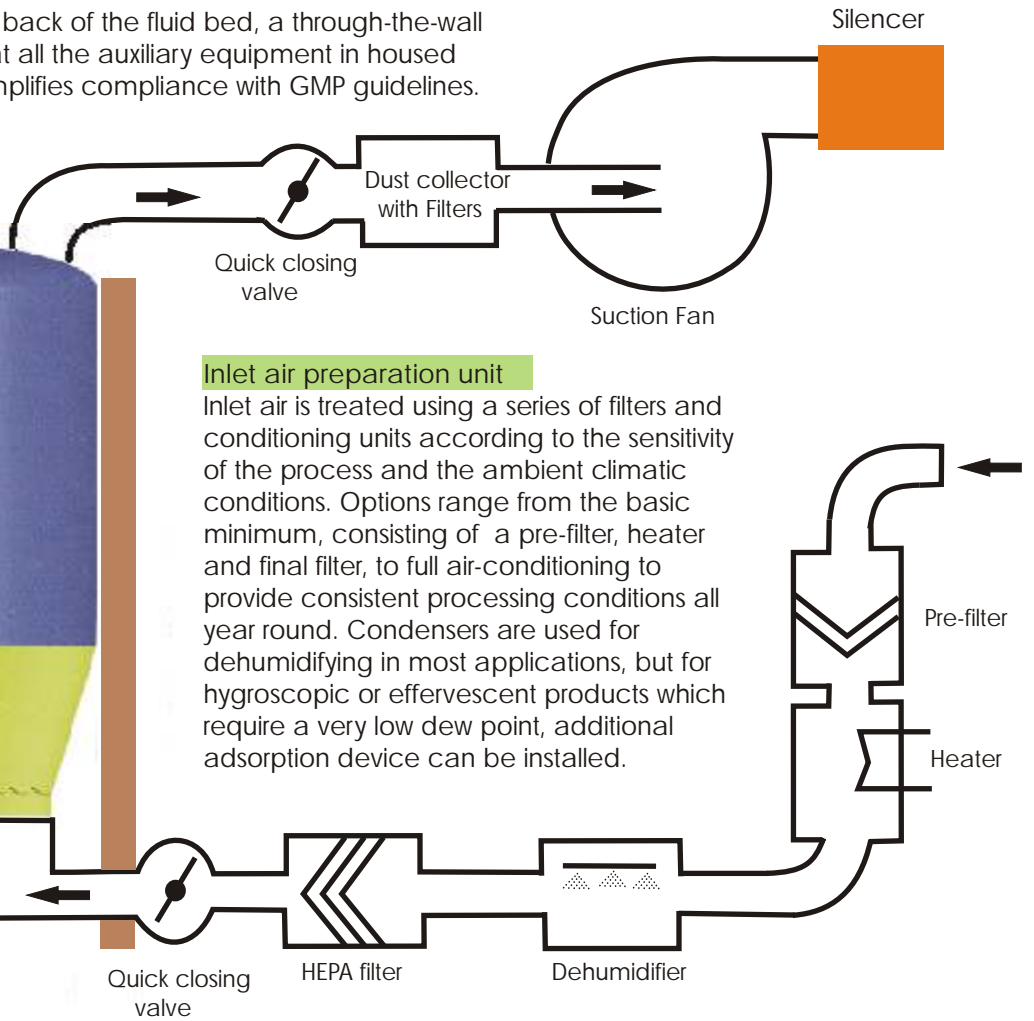
10 bar PSR design (no relief duct necessary)

Explosion suppression system (no relief duct necessary)

2 bar PSR design with explosion relief duct.



Stainless steel filter cartridge

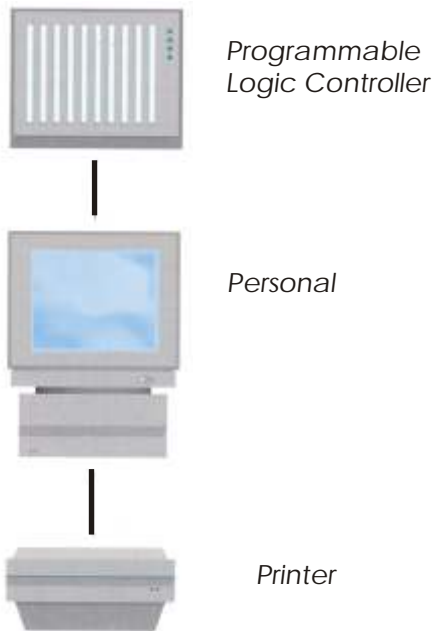


Stop Using Old Designed FBD! Why to use Gemini's Fluid Bed Dryers ?

Compact Design, aseptically designed for chemical, Food and pharmaceutical requirements with the latest technologies, customized, Excellent workmanship, Quick Service, economical, suitable for low budget & environment friendly.

Controls

For optimum compatibility with existing plant control strategies, fluid bed systems are available with a choice of manual or automated controls. Programmable logic controller (PLC) and PC-based options offer a wide range of recipe handling, data acquisition and network communications functions.



Air distributors

The standard air distributor is a sandwich structure made up of a fine metal mesh and a perforated metal plate. It clamps into position in the fluid bed. This is not ideal for cleaning.



For automated systems, and those handling difficult or potent product, the GEMINI uses Non-Sifting Gill Plate with innovative design and a directed air flow to offer excellent uniformity of air distribution, for improved processing and product discharge.



The Non-Sifting Gill Plate is welded into position, making it a good choice for users employing automated CIP. A novel air inlet plenum improves performance and reduces equipment height.

PROCESS



Single Shaker bag filter

A simple, basic filter with a single bag, which is cleaned by shaking. Fluidization stops during filter cleaning.



Multi shaker bag filter

This filter is divided into two or more sections, with a separate filter bag in each one. Bags are cleaned individually by shaking the filter, while fluidization continues in the other sections, for faster and more efficient production.

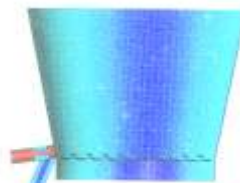


Cartridge filter

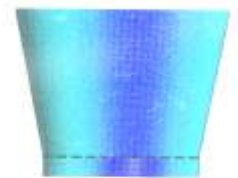
Stainless steel filter cartridges are cleaned one at a time, so that a large proportion of the filter is always available for continuous fluidization.

Unlike bag filters, this system can be cleaned-in-place.

In granulation, drying and most pelletizing applications, a process filter is used to trap small particles, which are returned to the bed when the filter is cleaned. In coating applications, fine particles usually need to be removed. Fluid beds that are used for more than one type of process can be supplied with interchangeable process filters.



Standard container
With side discharge



Standard container
For drying and top-spray processing

Available filling range from 5 kgs to 500 kgs per batch in GMP and TR Model. Complete specification of the product properties is required for the selection from the above range and design to suit customers site.

Quality and innovation by design

GEFPL is one of the leading producers of advanced fluid bed systems for the pharmaceutical, food and chemical industries. The company is renowned for its strong commitment to research, development and high quality standards and has earned an international reputation as a prime innovator in fluid bed technology. Versatility in system design allows optimization of plant configuration and easy integration with other equipment.

Processes

Systems are available for the following processes :

- ✍️ Cooling/drying
- ✍️ Spray granulation
- ✍️ Instantizing
- ✍️ Spray drying granulation
- ✍️ Top spray coating
- ✍️ Wet granulation palletizing
- ✍️ Tablet coating

Configuration Options

Multi-Function Systems :
For maximum process flexibility Multi-processor system offers a single fluid bed unit with interchangeable modules. It is ideal for small

Integrated plant

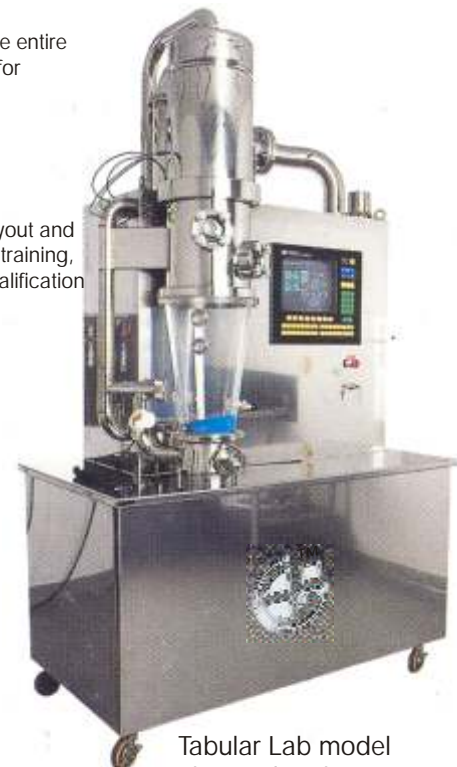
Gemini is a single source for complete, integrated particulate-processing systems. Fluid beds can be combined with other up and down-stream process plant such as mixer/granulators from the company's own leading range, wet and dry mills, granule handling systems and binder preparation units.

Optimized Designs

Dedicated systems for volume production are available for the entire range of fluid bed processes. Each one is custom-designed for optimum process efficiency, using standard components.

A complete service

Gemini offers a complete engineering service from system layout and design through installation, validation and commissioning, to training, servicing and technical support. Installation and operation qualification / documentation is carried out to GAMP guidelines.



Tabular Lab model
5kg.per batch.