

## Containment system VSDIZ

### Isolator, vacuum drying oven and integrated centrifuge

HAPI (Highly Active Pharmaceutical Ingredients) are frequently pretreated in a centrifuge before being dried in a vacuum drying oven. Safe handling between these two production steps often poses a special technological challenge.

The two leading companies in their respective technological fields, FERRUM (centrifuges) and PINK (isolators and vacuum drying ovens), have come up with an innovative solution. This is the VSDIZ Containment System that combines a vacuum drying oven and a centrifuge in an isolator.

Safety-relevant and time-consuming intermediate steps such as the refilling, transfer and infeed of the ingredients are thus a thing of the past. When the centrifuge has been filled, all further steps take place within the isolator.

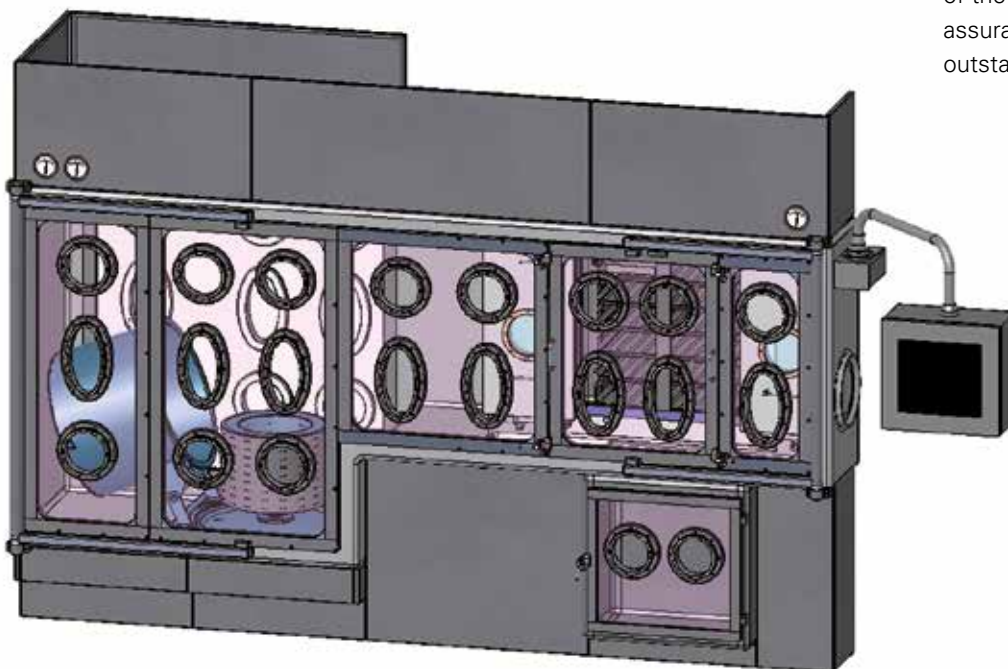
In the containment system, batch sizes of up to 30 litres can be filtered and dried under safe, contamination-free conditions on the solid-liquid separation principle.

This volume makes the system ideal not only for use in pilot plants, but also for similar capacities for industrial applications in pharmaceuticals, chemicals and biotechnology.

#### System features

- Containment system for filtering and drying of highly active substances
- Designed to cGMP/FDA standards
- Protection of operator and product
- Easy to clean by Cleaning In Place (CIP)
- No cross-contamination
- Design suitable for installation and operation in explosion-hazardous environments (ATEX)

With its system advantages and a centrifuge custom-designed for the isolator combination, the patented design principle of the VSD vacuum drying ovens is an assurance of the containment system's outstanding properties.



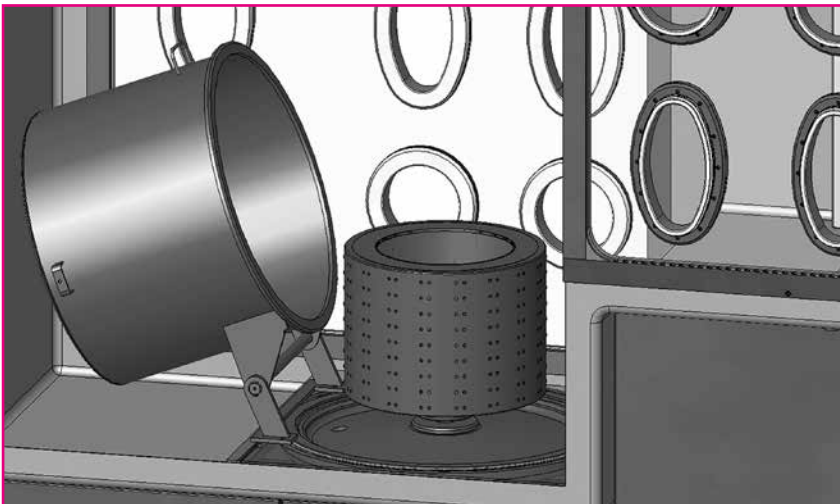
*A variety of options are available for the VSDIZ isolator combination, e.g. RTP ports, push-push filter systems and packaging chambers.*

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### The intelligent isolator combination



*With its double-walled, jointless interior, the VSD system is easy to clean and is therefore ideal for GMP processes.*



#### Isolator

- Designed to cGMP/FDA standards
- Operator protection
- Product protection
- Ergonomic handling
- No cross-contamination
- No product loss
- Easy to clean and check (integrated Cleaning In Place system – CIP)

#### Vacuum drying oven

- No concealed surfaces
- Rounded corners, no sharp edges
- No feed-throughs for the heating medium
- Outstanding surface quality
- Excellent temperature distribution
- Anticorrosive materials
- Turning latches to pharmaceutical standards
- No cross-contamination
- Easy to clean (CIP system)
- EHEGD certified

#### Centrifuge

- High-performance vertical centrifuge (Ferrum VTC 500/350)
- Large-volume basket
- Easy to clean (CIP system)
- Filter bag discharged by means of elevating mechanism
- Outstanding damping (no coupling of vibrations between centrifuge and isolator)

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