

HIGH CONTAINMENT DOWNFLOW BOOTH TECHNOLOGY



HOSOKAWA VITALAIR

A Division of Hosokawa Micron Ltd.

High Containment Technology



A leading manufacturer of vertical downflow booths and ancillary equipment, Hosokawa Vitalair offer a complete turnkey facility provision to meet individual customer requirements.

Hosokawa Vitalair's extensive experience of clean air environments and associated technology means we are able to work closely with our customers from initial front end specification stage to installation and commissioning to meet individual requirements, budgets and deadlines.



Our skilled engineers are able to undertake design and manufacture of complete stand alone facilities or work with you to integrate our clean air technology into existing facilities.

As concern over personal health and safety, containment and production standards increase, Vitalair technology is being integrated into numerous new and diverse applications but is predominately utilised within pharmaceutical, fine chemical and food industries where it is regarded an industry standard.

All units, where applicable are pre-built in our premises to enable full testing of all components to performance criteria to take

place and for inspection by client personnel prior to dismantling and dispatch for final installation and commissioning by our team of skilled engineers.

Typical Applications:

- Dispensary areas for recipe production or powder batching operations
- Raw materials and finished goods sampling areas
- Integrated with keg-filling and weigh systems
- IBC and big bag filling or discharge stations
- Manual and automated keg and drum handling and tipping systems

Downflow Recirculation Booths

Achieving a minimum 99.99% filtration performance, Hosokawa Vitalair's downflow recirculation booths are used particularly where hazardous, toxic or sensitizing powders are handled, typically in the pharmaceutical, fine chemical and food industries.

The high levels of operator protection, and product integrity offered with this type of system makes them ideally suited to specific powder handling applications:

- Product dispensaries
- Raw material transfer
- Finished goods sampling
- Weighing and mixing areas
- CIP work areas



Features:

- Interlocked high performance fan and lighting circuits
- Dedicated electrical panel for booth
- Alarm system fitted as standard
- Manufactured to AMP and FDA standards
- Internal service access behind flush fitting rear wall covers
- Fully automatic dust-burden compensation system built-in

Internally constructed in satin polished stainless steel or white powder-coated zintec steel, the Hosokawa Vitalair booths are available in a range of standard sizes from 2m to 4m wide and with a safe working depth of between 1.3m and 1.8m.

Hosokawa Vitalair are able to supply downflow recirculation booths as a stand alone "plug in" facility requiring only a 3 phase electrical supply or as a fully integrated system purpose-designed into an existing facility.

The air recirculation system ensures complete safety for personnel as a conditioned downflow of air passes vertically from the booth's ceiling inlet plenum pushing any dust or vapours downwards and away from the operator's breathing zone.



Options:

- High containment work zones
- Glove ports and ventilated benches for active powder handling
- Chiller and heater coils for temperature control
- Extensive range of fully fitted internal equipment; cupboards, computer stations etc.
- Barrier-bag safe-change filter housing



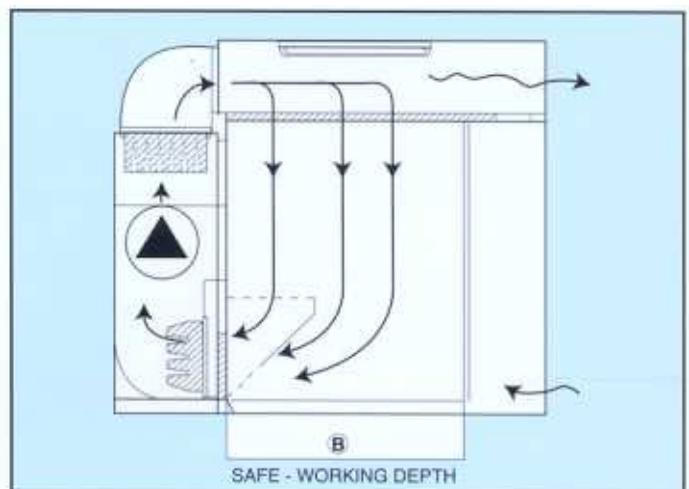
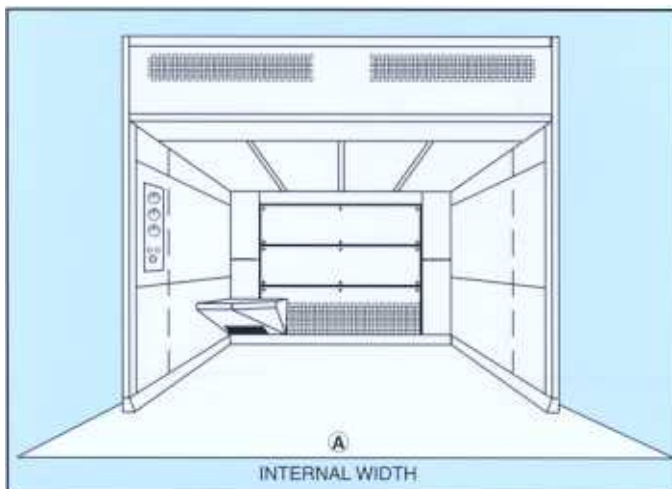
The air is extracted from the booth via low level grills mounted in the rear wall.

The exhaust air volume is taken through an EU4 primary filter, a EU8 2nd stage fine dust filter and finally a 3rd stage EU13 HEPA filter prior to recirculation into the booth.



Designed with flush fitting panels and with no contamination prone crevices all our downflow recirculation booths are also available in non-standard sizes and layouts to suit customer requirements.

Non-standard sizes systems have been supplied between 1.5m and 12.0m wide and from 2.0m to 9.0m high internally.



Down Flow Single Pass Booths



Ideal for use when fume or solvent - laden substances are being handled, or when high potency products demand a once-through philosophy.

Constructed with all contact parts in satin polished stainless steel or white powder coated zintec steel the single pass booth operates using a vertical airflow similar to the recirculation booth but in this case the air is discharged 100% to atmosphere instead of allowing recirculation. The vertical downflow air pushes dust or vapours downwards to ensure clean air in the operator's breathing zone and very high levels of containment.

The single pass booth utilises dedicated air supply and exhaust fan sets, both are normally fitted with input and exhaust filtration systems to HEPA standards (99.99% filtration performance).

Applications:

- Liquid and solvent pumping and dispensing
- Potent drug dispensing areas
- Drum and IBC filling operation
- Mixing and blending areas

Features:

- Interlocked input and exhaust fan systems for safe operations
- On board system monitoring gauges
- Alarm system fitted as standard

Options:

- Standard sizes between 2 - 4m wide
- Electrical upgrade suitable for Zone I / Zone II
- Integrated drum invertors, bulk pump filling systems.

Horizontal Laminar Flow Booths and Hoods



A controlled, once through, non turbulent air flow ensures good operator protection from dust and fumes. Individually designed to meet individual requirements the flow booths are usually supplied with integral fan/motor systems with equipment zoned according to area classifications.

Features:

- Construction normally in satin-polished stainless steel
- Air flow monitor gauges fitted as standard
- Size 1.5m to 4.0m wide as standard

Options:

- Exhaust filtration either inbuilt, or to local dust collection system

Drum and sack tipping hoods can be designed to meet individual applications ie reactor-vessels etc.



Drum Handling Equipment



Hosokawa Vitalair manufacture a range of automatic and manual drum and keg tipping equipment designed to offer safe product transfer. Product tipping units can be integrated with downflow booths, laminar flow booths or be free-standing. Additionally they can incorporate glove box facilities and HEPA safe-change filters.

Suitable for fibreboard kegs or plastic or steel drums up to 200 ltr and 250kg and conforming to current COSHH regulations, all units are individually designed to meet customer requirements.

Features:

- Rotation by intrinsically safe air motor or manually
- Special container clamps suitable to handle a range of weights/sizes
- Integration of product control valves.

Option:

- Operation interlock to client's process management systems

Applications:

- Discharge into hopper, isolator or directly into process vessel

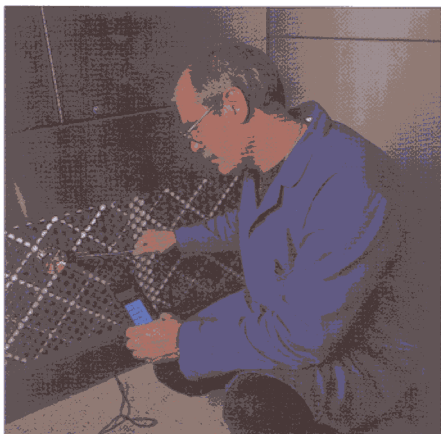
All booth systems are tested to pre-set performance criteria which are agreed with the client beforehand and full IQ/OQ protocols are conformed to. All units when fully pre-built are also given a DOP type filter integrity test of their on board systems. This independently audited testing gives clients confirmed performance records.

Full certification regarding test results is then integrated into the system's documentation manual.



After Sales Service

Our experienced engineers are available to carry out programmed installation, giving customers the added security of full system testing and hand over.



We are on hand to carry out full operator and maintenance training to ensure smooth operations and start up of Hosokawa Vitalair clean air systems.

Alternatively fully trained installation and commissioning engineers are available to supervise client's own staff prior to the handover on site.

A regular programme for inspection and maintenance is offered with all equipment to ensure trouble free use. Our engineers are fully trained to carry out this maintenance schedule on your behalf to enable you to conform to legislation. Regular inspection and retest of systems

of this type, where health and safety of operatives and product integrity is vital, is a mandatory legal requirement.



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Hosokawa Vitalair is a member of the Hosokawa Micron Group, responding to global needs through an emphasis on materials science and engineering. The Group is an international provider of equipment and technology for powder and particle processing, product recovery, plastics processing and confectionery products. The Group maintains facilities for research, engineering, manufacturing and service in each of the world's major industrial markets.

