CONTAINMENT SOLUTIONS

DOWNFLOW BOOTH
OPERATOR PROTECTION TO <100µg/m³ (ACHIEVABLE <1µg/m³)

CONTAINMENT ISOLATOR
OPERATOR PROTECTION TO <1µg/m³

PACK OFF AND PROCESS
DUST FREE OFFLOAD TO cGMP STANDARD

FACILITIES

SAMPLING FACILITY
CUSTOM DESIGN TO SUIT THE CUSTOMER’S SPECIFIC APPLICATION
Complete containment solutions based around an innovative range of Downflow Containment Booths bring different features and benefits to your application. But all have one thing in common: they provide a Guaranteed Working Environment.

Design Features

- Available in epoxy coated mild steel, 304/316L stainless steel or a combination of both.
- Various heights and widths (up to 6m) are available.

As a provider of total containment solutions we can tailor Downflow Containment Booths to your exact requirements. However, you will find a summary of some of our standard optional features:

- Stainless steel or epoxy – coated mild steel construction.
- High efficiency EC fan system
- Safe change filters
- Overhead lighting within supply plenum
- Mobile workbenches
- Hazardous area electrics
- Flush mounted computer integration
- Front/side access doors
- Glass walls and windows
- Flood/cooling interfaces
- Breathtight controlled audible and visual alarm packages
- Pallet stop rails
- Cooling coils and controls
- Increased internal height
- Photo sensitive lighting
- High level exhausts grilles
- Incorporation of lifting and tipping equipment
- Materials and personnel airlocks
- Roller conveyors, rapid roller doors and turntables

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70% ENERGY SAVINGS
LOWER CAPITAL COST
SHORTER LEAD TIMES DUE TO BATCH COMPONENT PRODUCTION AND MODULAR DESIGN
FLUSH LIGHT FITTINGS WITH TERMINAL HEPA FILTERS.
IMPROVED LIGHTING LEVELS WITH EASY LIGHT ACCESS
MODULAR CONSTRUCTION AND MULTIPLE CONFIGURATIONS TOGETHER WITH AN EXTENSIVE LIST OF OPTIONS
LOWER NOISE LEVELS DUE TO IMPROVED FAN AND CEILING PLENUM DESIGN
QUICKER INSTALLATION AND COMMISSIONING TIMES

Low noise levels (<70 dBA)

Incorporating the Extract Technology patented Flexible® or Rigid Screens into a Downflow Booth provides a physical barrier between the active product and the operator, thereby immediately improving the attainable containment levels.

Independent tests have confirmed that levels of <1μg/m³ can be achieved, depending upon the application.

Dimensions

- Lower noise levels (<70 dBA)
- Single pass/once through airflow systems used in applications where solvent vapours are present

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Providing a suitable cGMP environment for operators to perform either sampling or dispensing tasks in a safe and comfortable atmosphere. Extract Technology facilities are high class state of art pieces of equipment. Complete with material and personnel airlocks and a downflow booth, the facility operates with a positive pressure to aid in achieving a clean cGMP environment.

Thru made to order, facilities are usually designed around our standard downflow booth sizes which can be suitably selected to accommodate the client’s process. Facilities can be designed to house any operations from small scale sampling to large material handling processes - operational aids such as post hoists, conveyor lines, workbenches etc. can be integrated into the equipment.

DESIGN FEATURES
- Internal furnishings
- Battery backup LED lighting in airlocks
- PLC control with touch screen HMI interface available
- Signalling between facility and clients BMS available
- Rapid roller shutter doors for material entry and exit
- Single Pass airflow for solvent/liquid handling available, complete with full air handling packages
- Cascading pressure regime

SECONDARY CONTAINMENT SOLUTIONS
A wide variety of secondary containment solutions can be used in conjunction with the Extract Technology Pack Off Heads to improve the overall containment level. These include Horizontal Laminar Flow Booths, X-Flow Booths, Isolators and Continuous Liner Discharges.

HORIZONTAL LAMINAR FLOW BOOTHS
A “once through” even laminar airflow is pulled uniformly across the work area to the rear plenum, extracting any airborne particulate away from the operator and into the fan/filter unit or to the clients own dust collection or scrubbing system. All units are designed specifically for the application, and are supplied with a fan and motor system, suitably zoned for the application area. A fully welded stainless steel construction, they can also incorporate weighing and control systems as required.

CONTINUOUS LINER DISCHARGE
On disconnection of any make and break connection “sealing head inflate/deflate” the issue of powder discharge from the upstream process chute into the atmosphere becomes a contamination issue not only for the operator and surrounding environment but also for the product. By forming a continuous flexible barrier between the process and the surrounding environment this can be prevented.

SPECIAL FEATURES
Integrated exhaust complete with modulating exhaust valve. This valve provides a low rate of exhaust during filling (displaces air removal only) and a high rate of extraction when the seal is detaching capturing airborne material and assisting in operator necking and tying the liner.

AVAILABLE OPTIONS
- Mobile Work Benches
- Hazardous area electrics
- Flush mounted computer integration
- Pallet stop rails
- Cooling coils and controls
- Increased internal height
- Incorporation of lifting and tipping equipment
- Materials and personnel airlocks systems
- Roller conveyors, rapid roller door and turntables
- Customisation available on request

DESIGN ADVANTAGES
- Guaranteed Containment Levels
- Available in a wide range of materials - solvent compatible
- FDA approved seals
- cGMP design throughout - minimum of ledge, easy clean surfaces
- Hazardous Area controls (UL and Atex approved)

Optional: 
- N, Purge CIP Cap
- Support Frames Weighing Systems

INWARD INFLATING HEAD
Ensures a clean dust tight seal as the liner (normally continuous) is compressed against the feed tube so there is no product contact with the FDA approved natural rubber seal.

OUTWARD INFLATING HEAD
Forms a clean and dust tight seal within the open mouth or inner surface of either a continuous liner or single liner within customers containers.

DOWNWARD INFLATING HEAD
The membranes inflates downwards to form a seal against the top of unlined drums or inlet rim of IBCs.

X-FLOW BOOTHS
A unique design of crossflow or “side to side” airflow, removing any airborne particulate away from the operators breathing zone. Air is introduced from one of the side plenums at a constant velocity and is then exhausted at the opposite side, passing through fine dust and Hepa filters before being recirculated back into the booth.

The presence of the operators’ arms does not interfere with the airflow, thus enhancing the containment levels achievable to between 1-20μg/m².

TURNKEY
package solutions

FOR FURTHER INFORMATION ENQUIRY FOR A QUOTE OR INFORMATION ON OUR RANGE OF PRODUCTS AND SERVICES CALL US ON 01865 844 214 OR EMAIL US AT info@extracttechnology.co.uk

1. Mock up

We can create full scale mock-ups which take into account ancillary equipment and manipulation devices. The client review follows, at which stage any necessary modifications are made.

2. Design

We generate conceptual designs based upon proven solutions, before finally compiling product specifications, standard operating procedures (SOPs) and working schematics (P&IDs).

3. Manufacturing

Manufactured in high quality stainless or other alloy steels, the Isolator fabrications are formed, welded and polished to exacting standards and client requirements.

4. Factory Acceptance Testing

Only when the equipment is fully built and fully tested to the design parameters is it exposed to a range of tests and standard operating procedures (SOPs). These can include internal / external surface swabbing, dust in air monitoring, and full scale operational tests of performance, all being performed within our controlled test environment.

**Design Philosophy**

The Isolator is designed to not only provide a physical barrier between the operator and the product but to also provide a controlled environment, negatively pressurised with an atmospheric condition or a reduced oxygen content using an inert gas.

To maximize both operator and equipment interfaces 3D modelling and full scale mock-ups are used extensively to facilitate the best understanding possible of the pharmaceutical process and the operators involvement whilst ensuring high levels of containment are achieved.

**Design Features**

- Ergonomic design
- Safe change “push-push” filters
- PLC control system
- Inflatable seals
- 17mm / 5/8” radiused corners
- Fully welded 316L stainless steel fabrication

**Available Options**

As a provider of total containment solutions we can tailor High Containment Isolators to your exact requirements. However, you will find a summary of some of the main options below:

- Multiple chambers
- Drum/product manipulation devices
- Integration of proprietary contained transfer devices e.g. Rapid Transfer Ports, Split Butterfly Valves etc
- Controlled environment re: temperature, humidity and oxygen content
- Fully integrated WIP/CIP clean systems including wash lance, rotor spray balls and solvent atomizing devices
- Raise/lower systems
- Dispensing equipment including scales, displays, printers and dispensing management systems.
EXTRACT’S CONTAINMENT PYRAMID IS SET TO CREATE A STANDARD WITHIN THE INDUSTRY

DEFINING THE CONTROL STRATEGY

The selection grid at the heart of the Control Strategy Pyramid permits the exposure potential rating and operator exposure band to intersect at the recommended Control Strategy selection. This is a simple cross reference to identify the correct equipment to be used to control and handle a specific process.

FOR MORE INFORMATION ON CONTAINMENT SOLUTIONS PLEASE VISIT OUR WEBSITE OR CONTACT US DIRECTLY:

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Designed to satisfy both current and projected industry standards it provides pharmaceutical and chemical companies with a clear guide to assessing the level of containment required to safely handle differing hazardous materials.