



BARRIER SYSTEMS

Single Source Isolation Technologies

MILLING INTERFACE
ISOLATOR

MIXING ISOLATOR

REACTOR CHARGING
ISOLATOR



MILLING INTERFACE ISOLATOR



The Walker Barrier Systems Milling Interface Isolator is designed to enable operators to manipulate and mill hazardous materials in a contained manner, protecting both the operator and the surrounding environment.

Process Description:

Equipment and process materials are placed in the Isolator via the large hinged and gasketed door, which is mounted on the left hand side of the Isolator. The potent compounds that are to be milled enter the Isolator through a RTP beta container which is connected to the RTP alpha flange mounted in the right hand wall of the Isolator. The operator is then able to perform the operation through the three oval gloveports provided on the front window of the Isolator. Milled product can then be transferred out of the isolator through the RTP. Once the milling process and product transfer is complete, the operator while working through gloves can clean the mill and Isolator without breaking containment.

Design Advantages:

- Fully welded 7 gauge 316L stainless steel construction, with 5/8 inch corner radiuses, and anti-static Lexan or laminated safety glass.
- Operating in negative pressure mode with HEPA filtered turbulent airflow.
- Automatic "Breach Mode" designed to provide 100-FPM inward airflow through an open gloveport.
- PLC with password protection to automatically maintain the constant pressure in the Isolator within high and low set points, with a visual alarm back up.

Milling Options:

- A wide range of mills can be utilized on the same interface plate in one isolator to minimize on validation cost, complexity, and streamlines facility process.

Options:

- Supply of the beta container.
- Spray wand with a utility hook
- An automated CIP system
- Full validation services available including IQ/OQ protocols.



MIXING ISOLATOR



The Walker Barrier Systems Mixing Isolator is designed for charging pre-weighed potent powdered compounds into the liquid held in the integrated mixing tank. This tank is fully welded into the base of the Isolator. Our experience with such projects would show that operator protection significantly below $1\mu/m^3$ TWA can be achieved when defined SOP's are followed.

Process Description:

Pre-weighed bags of potent powdered compounds are brought into the Isolator through the Rapid Transfer Port (RTP) positioned in the left hand wall of the Isolator. After opening the bags, the product is charged through the Isolator base and directly into the mixing vessel. Liquids can then be added through the facility piping, and the waste bags and ties are removed from the isolator through the RTP. This design included the integration of a mixer to mix the solids into the liquid. When mixed sufficiently, the liquids are pumped out of the isolator via an external pump system.

The ventilation system maintains the correct negative pressure regime under a nitrogen blanket, with airborne particulate and solvent vapour being removed via the exhaust flow and HEPA filtration system.

Design Advantages:

- Ergonomically designed oval gloveports are now specified as standard, with neoprene gloves.
- Fully welded 7 gauge 316L stainless steel construction, with 5/8 inch corner radiuses, and laminated safety glass.
- Operating in negative pressure mode with HEPA filtered turbulent airflow.
- The HEPA filters are "push-push" type with a safe change facility.
- PLC with password protection to automatically maintain the constant pressure in the Isolator within high and low set points, with audible and visual alarm back up, and full CIP control.
- Nitrogen purge system for explosion-proof classification, Class 1, Div 1, Group C & D.
- An 80 liter mixing tank is an integral part of the system, welded into the isolator base.
- A 20 liter polypropylene solvent tank for the CIP system is mounted on the side of the Isolator.
- CIP System with Spray Nozzles and Wand.
- An integrated mixer

Options:

- PLC based control systems with automated valves.
- Various tank styles and connection methods available.
- Full validation services available including IQ/OQ protocols.

REACTOR CHARGING ISOLATOR



The Walker Barrier Systems Reactor Charging Isolator is designed for the charging or transfer of potent powdered or liquid compounds into reactors, vessels or similar receivers. Our experience with such applications would show that operator protection significantly below $1\mu/m_3$ TWA can be achieved when defined SOP's are followed.

Process Description:

Prior to the charging operation commencing, the pre-weighed bags of product or liquid containers are loaded into the Isolator through the Rapid Transfer Port (RTP) usually

positioned in the Isolator base or side wall. After opening the potent compound bags or container, the product is charged via a funnel through the Isolator wall and directly into the receiving reactor or vessel below. Liquid to make up the batch can then be added through the facility piping as required for the process. The waste bags and ties are removed from the isolator through the RTP.

The included ventilation system maintains the correct operating negative pressure regime, with airborne particulate being removed via the safe change HEPA filtration system.

Design Advantages:

- Ergonomically designed oval gloveports are now specified as standard, with Hypalon gloves.
- Fully welded 7 gauge 316L stainless steel construction, with laminated safety glass, and 5/8 inch corner radiuses.

- The digital pressure controller allows the Isolator to maintain a constant pressure within high and low set points, with a visual alarm back-up.
- Purge system for explosion-proof classification, Class 1, Div 1, Group C & D.
- Negative pressure system with safe change HEPA filtration.
- An 80 liter Hastelloy Reactor is an integral part of the system shown.

Options:

- RTP beta container lift platform.
- Washdown balance (specified according to required capacity and accuracy).
- Automatic CIP system.
- Nitrogen purge system.
- Operator access platform allowing easier reach for all operators.
- PLC based control systems with automated valves.
- Full validation services available including IQ/OQ protocols and dust in air/containment testing.

Our Sales and Engineering staff will work closely with you to design the optimum system to meet your needs. Walker Barrier Systems offers complete in-house design, mock-ups, engineering, fabrication, installation and onsite start up services.



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