

Surface INTERNATIONAL



Email - info@surfaceint.com Website:- www.surfaceint.net Telefax :- 0291-2721779/778/904

INDUSTRIAL BLASTING AND PAINT SPRAY ROOM

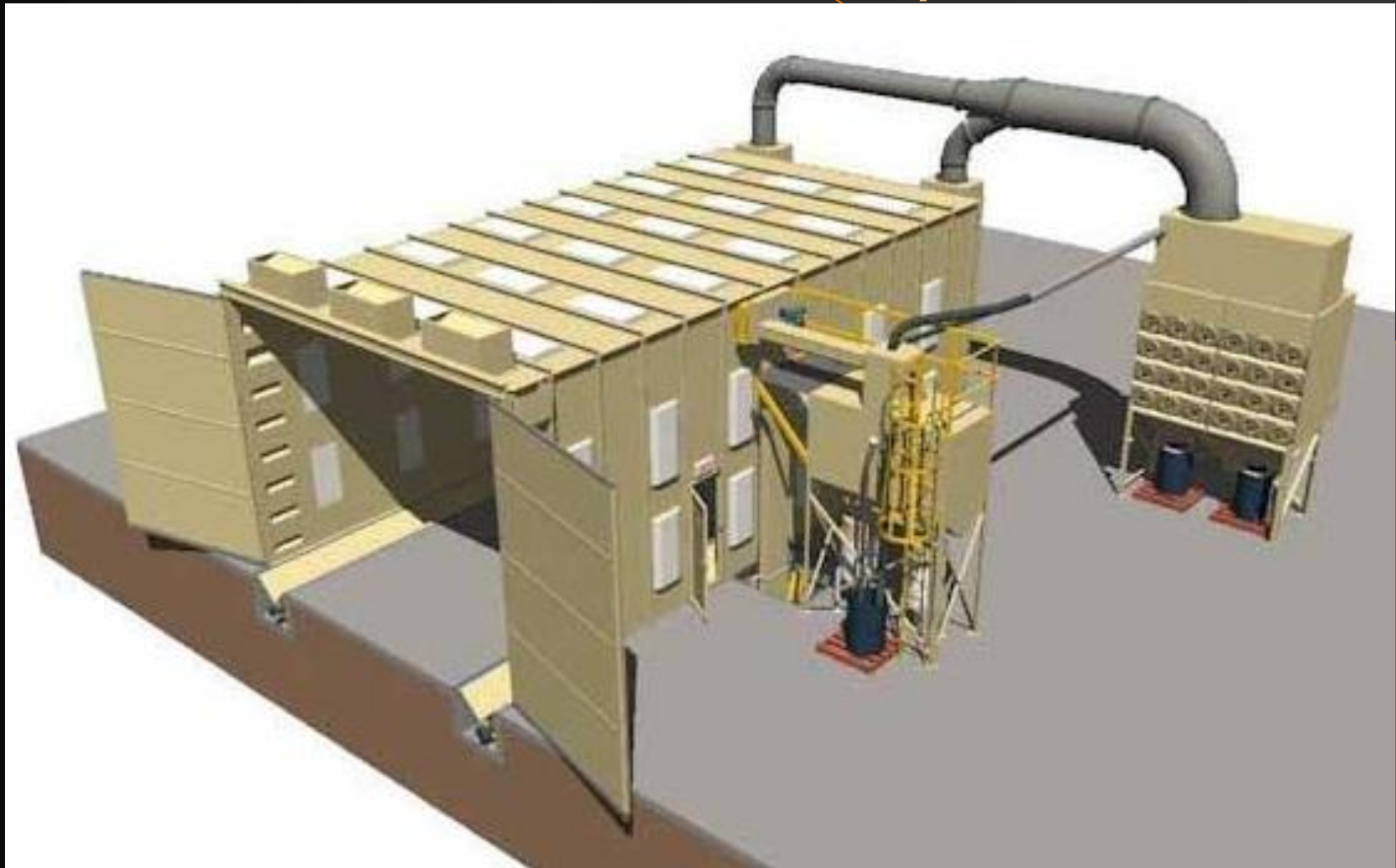


Introduction

The layouts of complete Plants are always different from one user to another, hence every Blasting room must be designed differently.

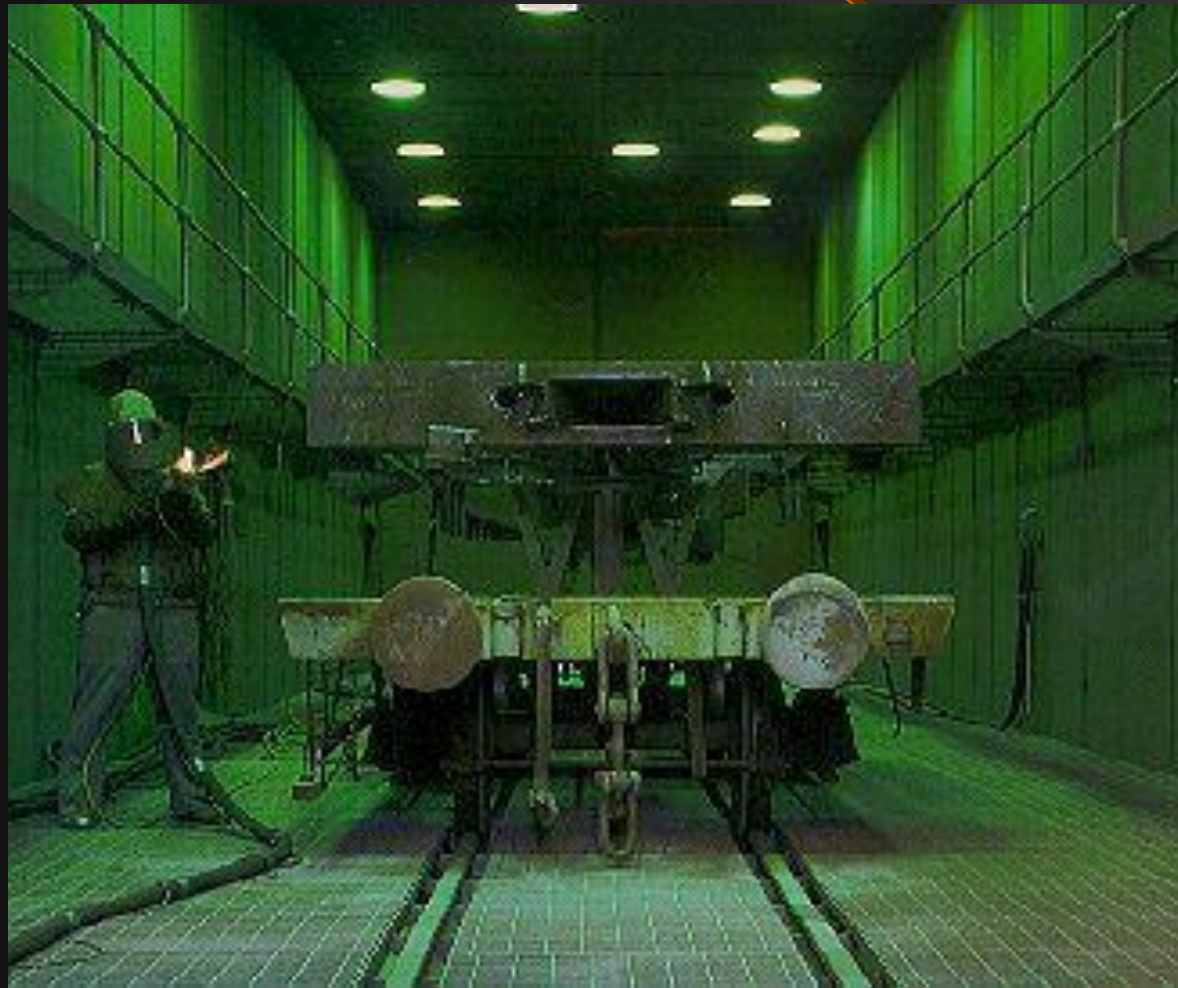
Surface International offers a variety of reclaim floor designs and room configurations which allow us to design a room facility uniquely tailored to meet the economic production, safety & environmental concerns of each customers

3D of essential components





Inside View





Essentially an efficient Blast Room System consists of :

- 1 Enclosure
- 2 Job conveying system
- 3 Gun manipulation system
 - Manual
 - Semi-automatic
 - Fully automatic
- 4 Blasting machine
- 5 Operator safety equipment
- 6 Dust collector
- 7 Optional equipment

The Enclosure

The modular blast room is specially ventilated and illuminated for enclosed abrasive blasting, and is a fully sealed, dust tight, all steel structure.

The size of the enclosure depends on

1. The size of the job
2. Number of operators &
3. Adequate working space around the job.





RECOVERY AND CONVEYING

ABRASIVE RECOVERY SYSTEM

All abrasive recovery system include three basic functions :

1. Delivering the abrasive which rebounds off the work piece to a central recovery point.
2. Transporting the abrasive from that central point to an abrasive cleaner.
3. Removing dust, fines & other unwanted material from the abrasive before it enters the blast machine for re-use.

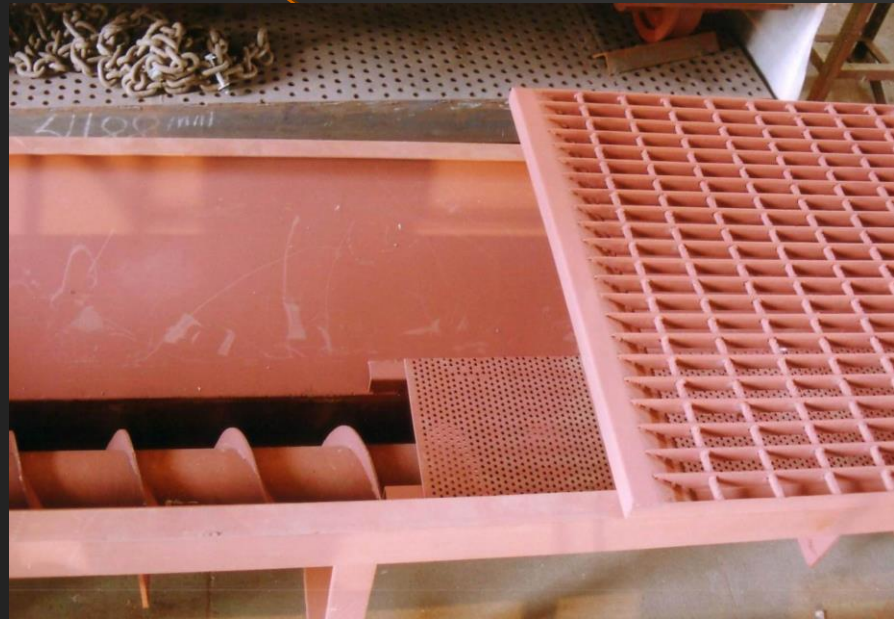
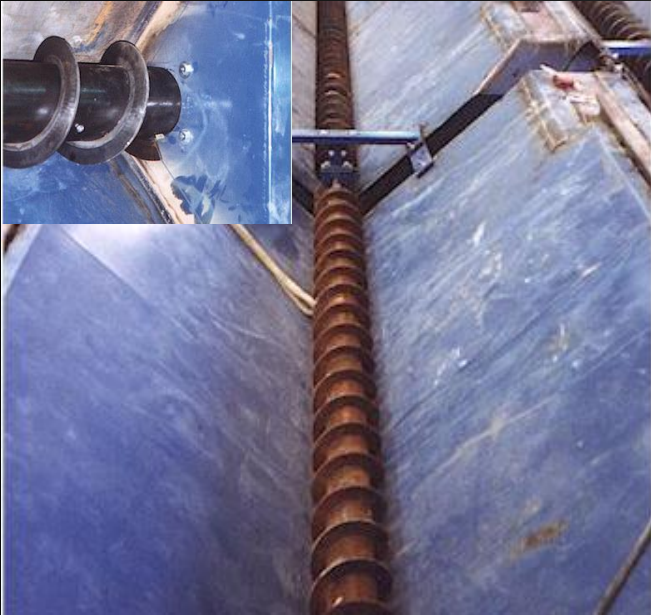
MECHANICAL RECOVERY SYSTEM

Consists of Screw Conveyor System, Bucket Elevator & Abrasive Cleaner.

PNEUMATIC RECOVERY SYSTEM

Consists of Mini Hopper, Plenum, Reclaimer & Dust Collector.

MECHANICAL RECOVERY



Screws

The reclaim floors utilize a heavy duty screw to return the abrasive to the separator/classification system. The standard screw is 9" in diameter, which consists of a 5" diameter schedule – 40 pipe wrapped with 1/4" thick flight.



The Floor

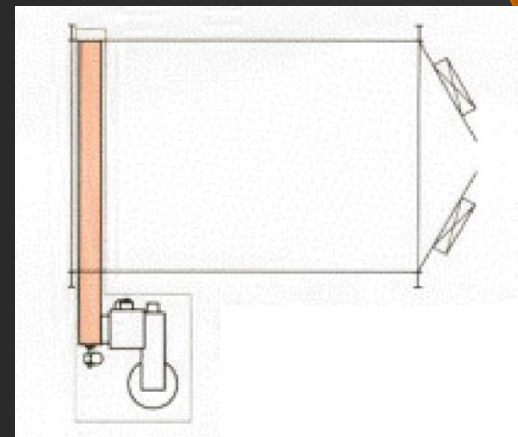
The floor design selected by the user will determine the capabilities of the room, the degree of labour involvement, cost of purchase & installation and return on the investment.



The Floor

Single Screw Partial Reclaim

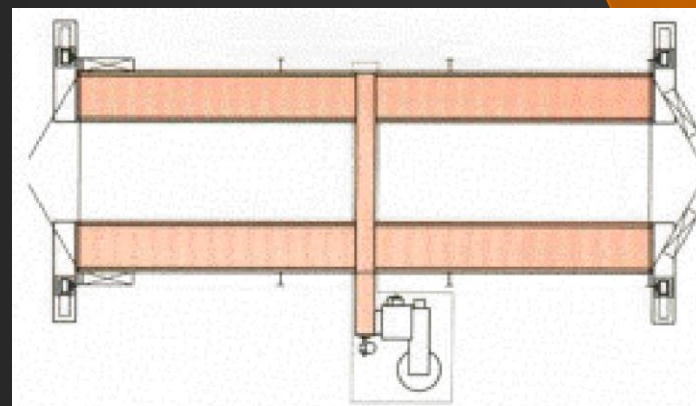
This is the most economical floor design available. The system contains the major components found in all Surface International Room Equipment Reclaim Systems, including metering shed plates, heavy-duty screw, belt & bucket elevator, air-wash separator, perforated plate rotary drum separator and oversized abrasive storage hopper with a caged man ladder & handrail. This is a basic "automatic reclaim package that can be expanded to an "H", "U" or Full Floor reclaim system. It is best suited for low to medium productive levels.



The Floor

“H” Shaped Partial Reclaim

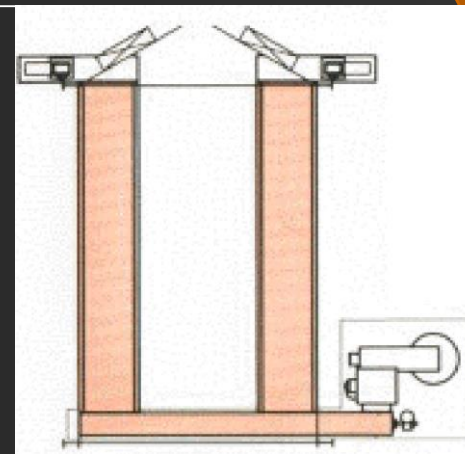
The “H” shaped partial reclaim system adds two longitudinal metered screw assembly along each side wall of the blast room. The position of the screw assembly allows the abrasive delivered from the blasting nozzle, which is either blown or rebounded of the work piece, to strike the side walls and fall into the screws, automatically reclaiming approx. 60 – 90% of the blast media. The H shaped floor design is typically utilized in a “flow-through” room configuration where heavy work piece can drive into the room. This is best suited for medium to high production.



The Floor

“U” Shaped Partial Reclaim

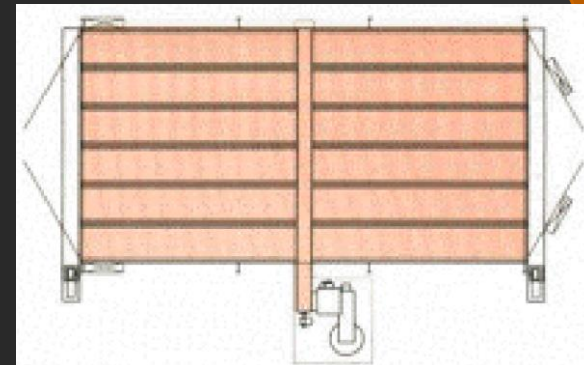
The “U” shaped partial reclaim system adds two longitudinal metered screw assembly along each side wall of the blast room & positions the cross screw along the back wall of the blast room. A “U” shaped floor design will automatically reclaiming approx. 60 – 90% of the blast media & remaining abrasive on the floor is pushed into the metered shed plate screw assembly at the end of the work shift. The “H” shaped floor design is typically utilized in a “flow-through” room configuration where heavy work piece can drive into the room. This is best suited for medium to high production.



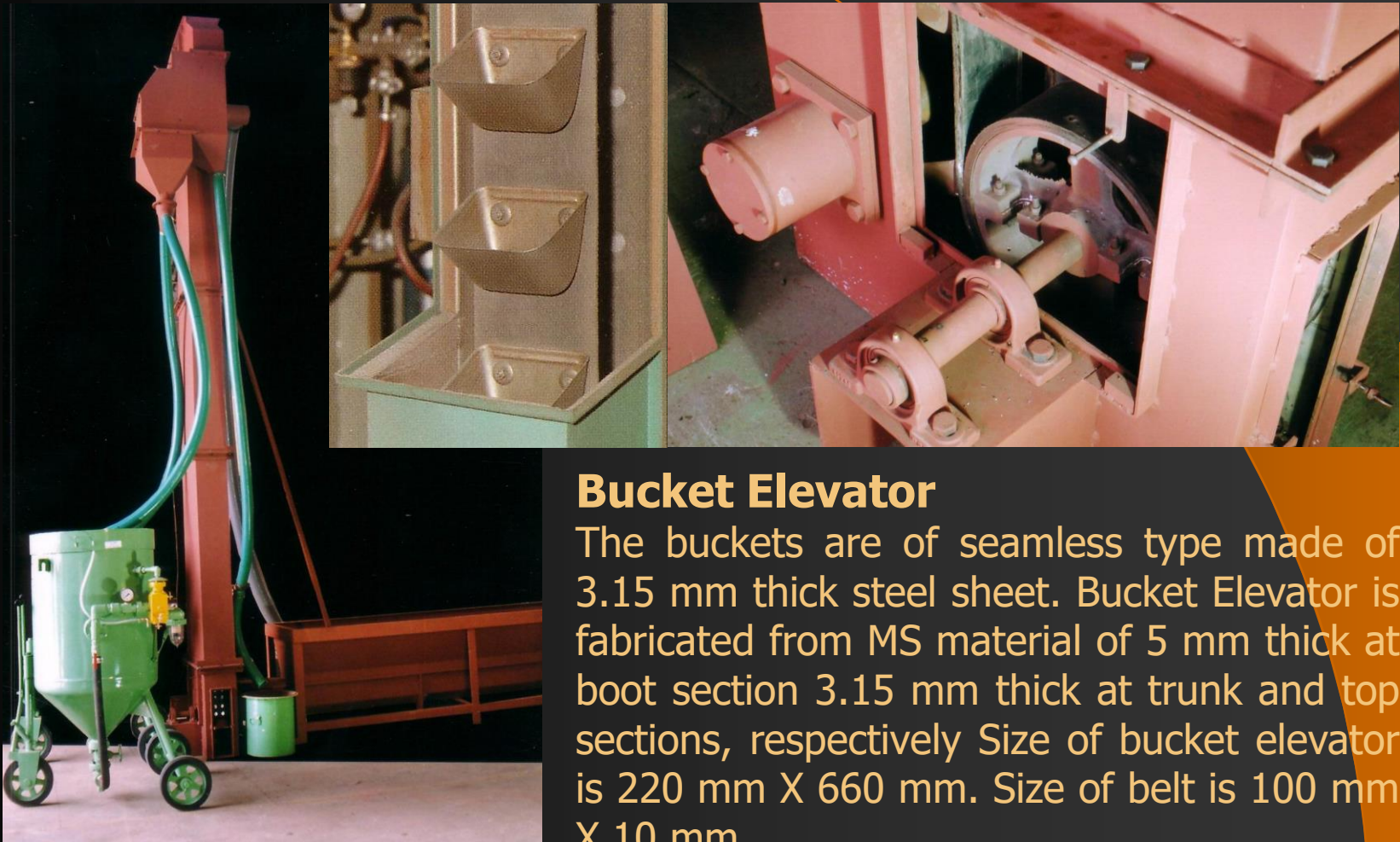
The Floor

Full Floor Reclaim

The full floor reclaim system utilizes multiple screw assembly to create a fully automatic abrasive reclaim system, where 100% of the blast media is returned to the separator system during the blasting operation. The full floor reclaim design requires that the material handling of the work piece be intricately designed into the configuration of the room. The full floor reclaim design can be used with any room configuration. This system is best suited for high production requirement.



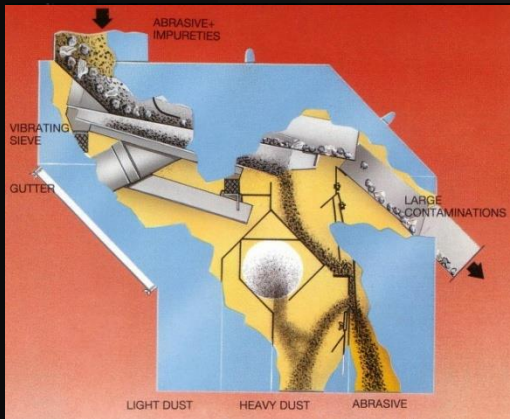
RECOVERY AND CONVEYING



Bucket Elevator

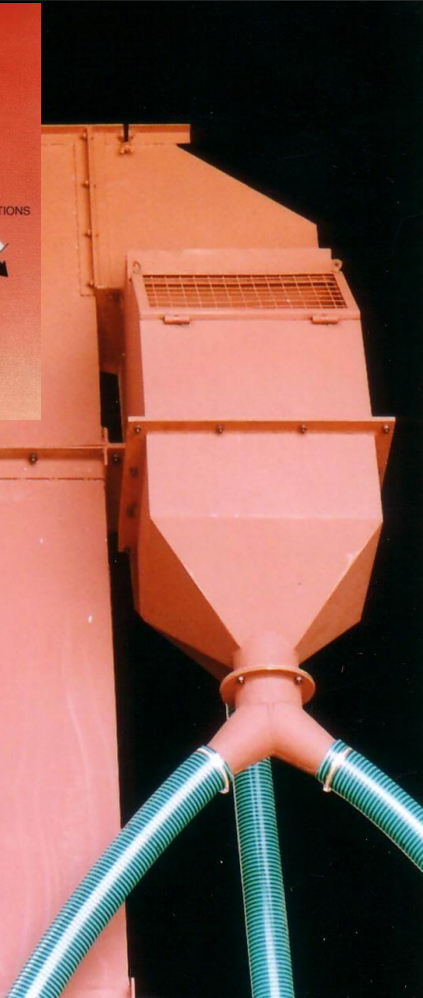
The buckets are of seamless type made of 3.15 mm thick steel sheet. Bucket Elevator is fabricated from MS material of 5 mm thick at boot section 3.15 mm thick at trunk and top sections, respectively Size of bucket elevator is 220 mm X 660 mm. Size of belt is 100 mm X 10 mm.

ABRASIVE CLEANING



Abrasive Cleaner

The media separation unit is an air wash rotary screen separator which receives all media and debris from blasted work piece by the bucket elevator. Contaminants are removed by rotary screen and are discharged through a chute. The finer contaminants of abrasive that pass through the screen then cascade over the air wash where fine contaminants and small abrasive particles are removed. Reusable abrasive falls in the machine.



RECOVERY AND CONVEYING



Abrasive Storage Hopper with Caged Ladder

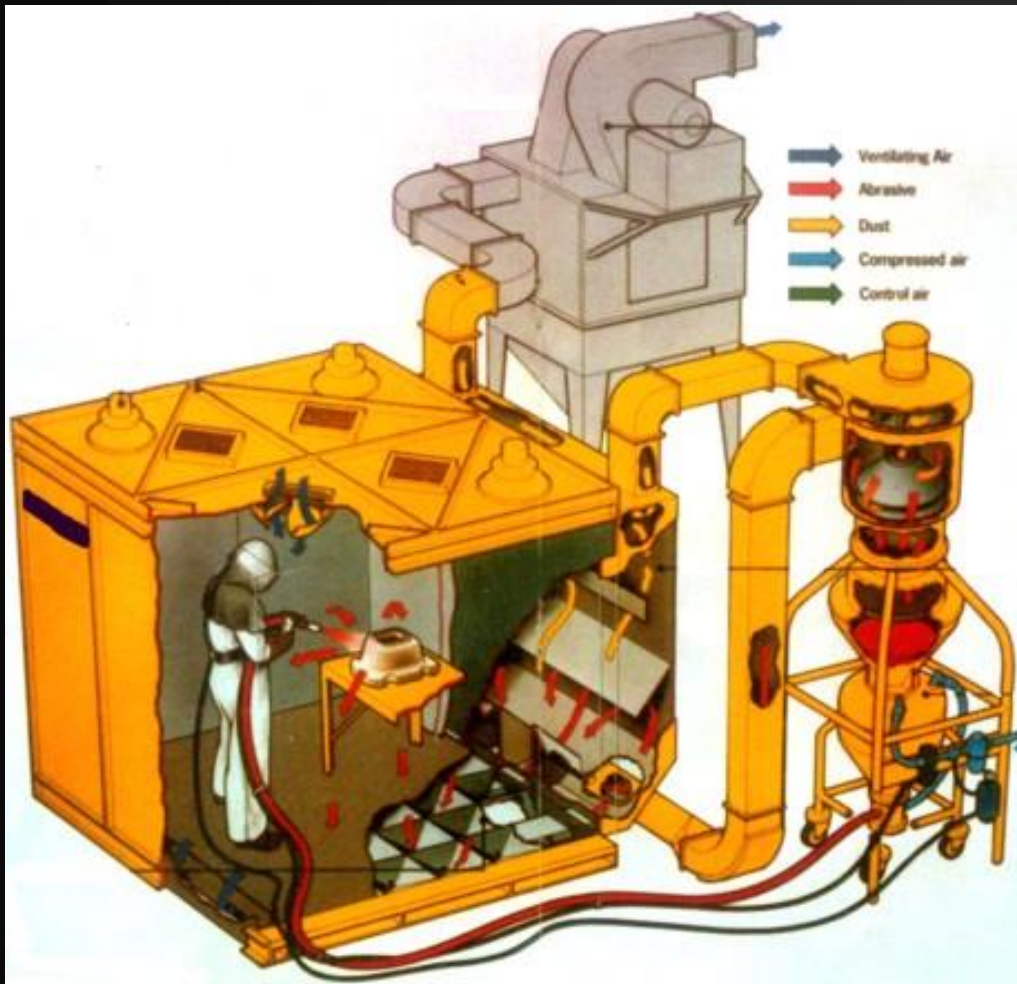
The storage hopper is a free standing hopper which is reinforced with structural steel. The hopper positions above the blast tank assemblies to provide easy access to the blast tanks for maintenance. A caged ladder and handrail assembly is standard on all storage hoppers to allow access to the air-wash separator which is positioned on the top of the storage hopper.



Blast Tank Assembly

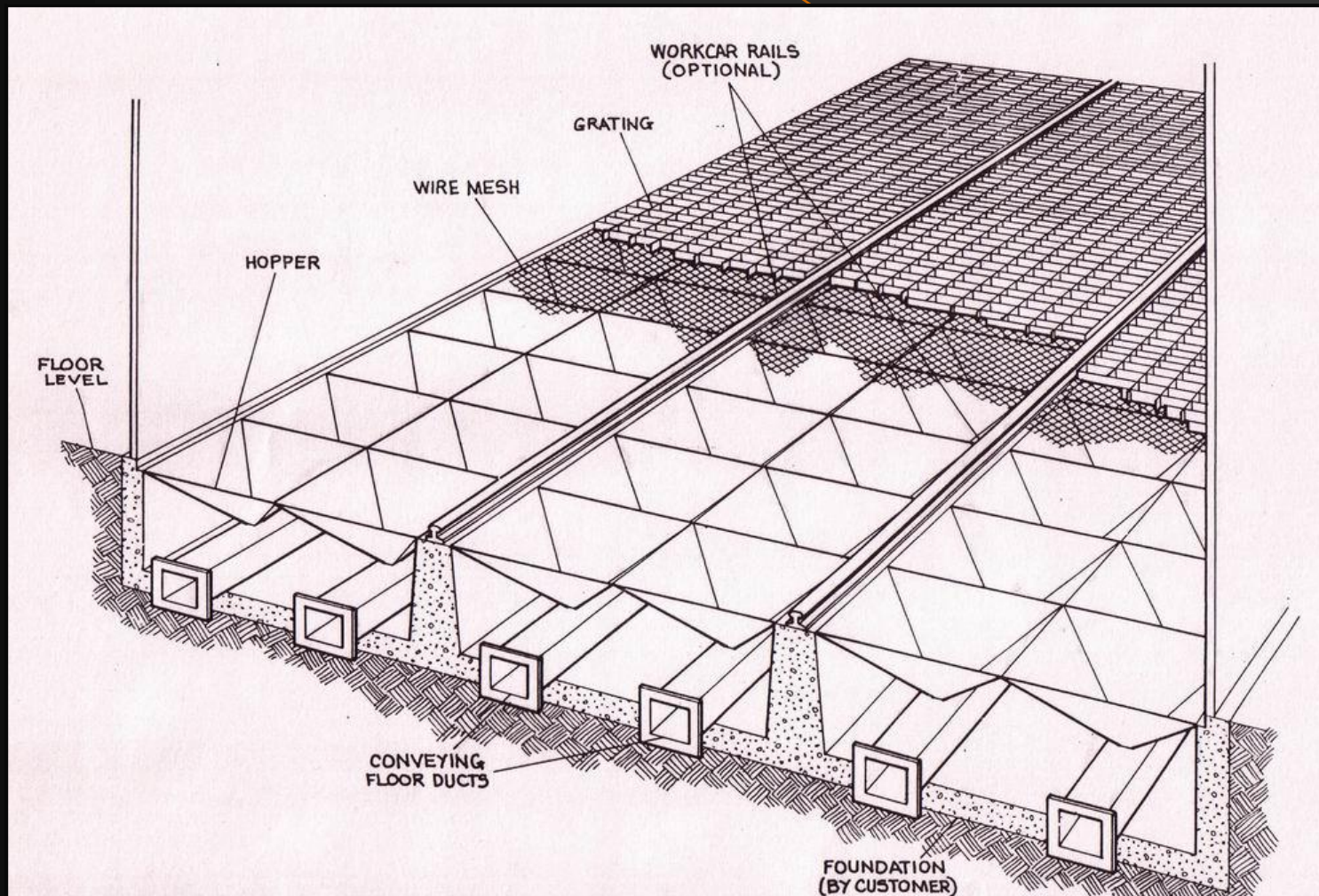
Blast tanks are positioned directly under the abrasive storage hopper & gravity feed. A covered riser assembly filters the abrasive through a perforated plate screen and contains the abrasive when the tanks exhaust, preventing abrasive leakage that may collect in the area.

Pneumatic Recovery





Pneumatic Recovery





Pneumatic Recovery

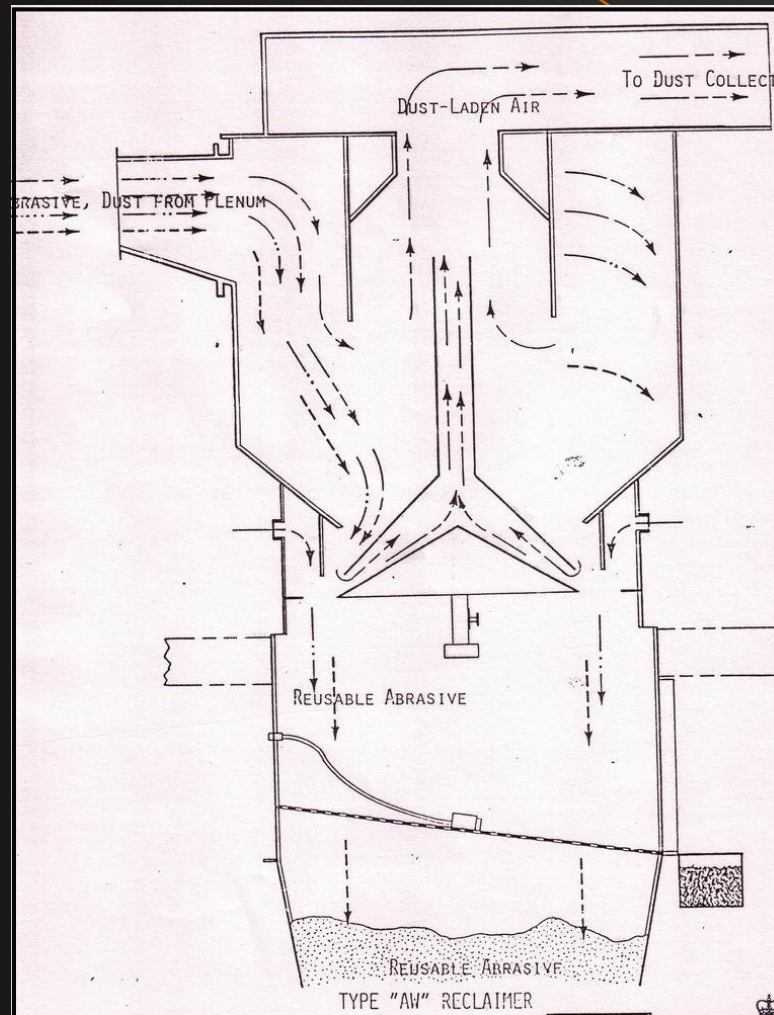
Mini Hopper Floor & Pick up Ducts

The mini hopper floor is the heart of the system. It consists of a multitude of small hoppers, each having an outlet in the bottom. The hoppers which cover the entire floor area of the room are overlaid with perforated plate to form the actual working surface of the room floor.



Integral with the floor hoppers is a series of ducts running along the room length. Abrasives and debris falling through the hoppers and into the floor ducts are picked up by ducts and conveyed into the reclaiming system. Mini hoppers, pick-up ducts and plenum are fabricated from 3.15 mm thick steel sheet. Duct elbows are provided with abrasion resistant, replaceable wear plates.

Pneumatic Recovery



Pneumatic Recovery

Reclaimer (Separator System)

The purpose of the reclaimer is to receive contaminated media from the mini hoppers and to remove dust and large debris particles while allowing reusable media to pass on into the generator system for reuse. The reclaimer is fabricated from steel sheet and of welded construction. The reclaimer is circular in cross section with a conical hopper bottom to collect cleaned media for return by gravity to the pressure vessels below. The large debris particles are collected on a vibrating screen located at the bottom of the reclaimer. This screen is vibrated by means of an air driven eccentric ball type vibrator.



Blasting Machine

Blast Rooms are generally provided with P7-501R and P7-1001R models. During the blasting process, the dump valve and exhaust valves are closed, the vessels is pressurized and the media is forced out through the feed valve to the nozzle. When the blasting ceases, the vessel is depressurized by opening the exhaust valve. The vessel remains depressurized except when blasting is in process.



The remote control valve provide in the system releases the pressure, stopping the blasting process thereby ensuring safe working conditions for the operator in case the hose & nozzle drops accidentally.



Operator's Safety Equipment

Rugged, canvas-weave jacket

Air-Fed Helmet

Gloves

Nozzle with Remote Control

Air Conditioner

Canvas Pant

Hoses

Gum Boot



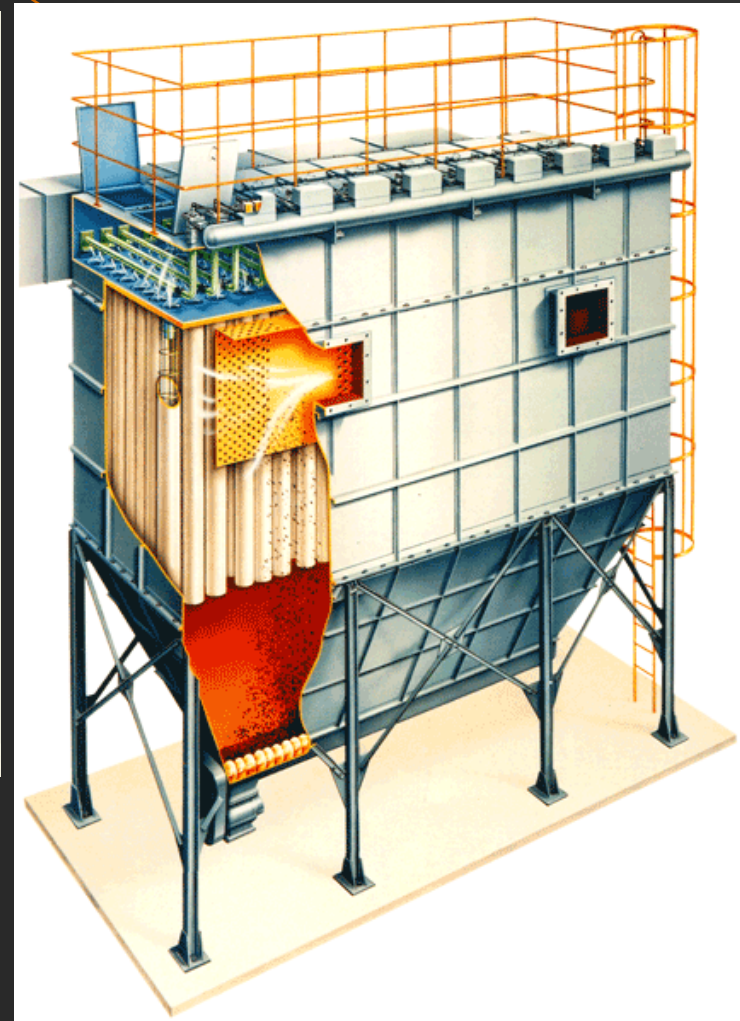
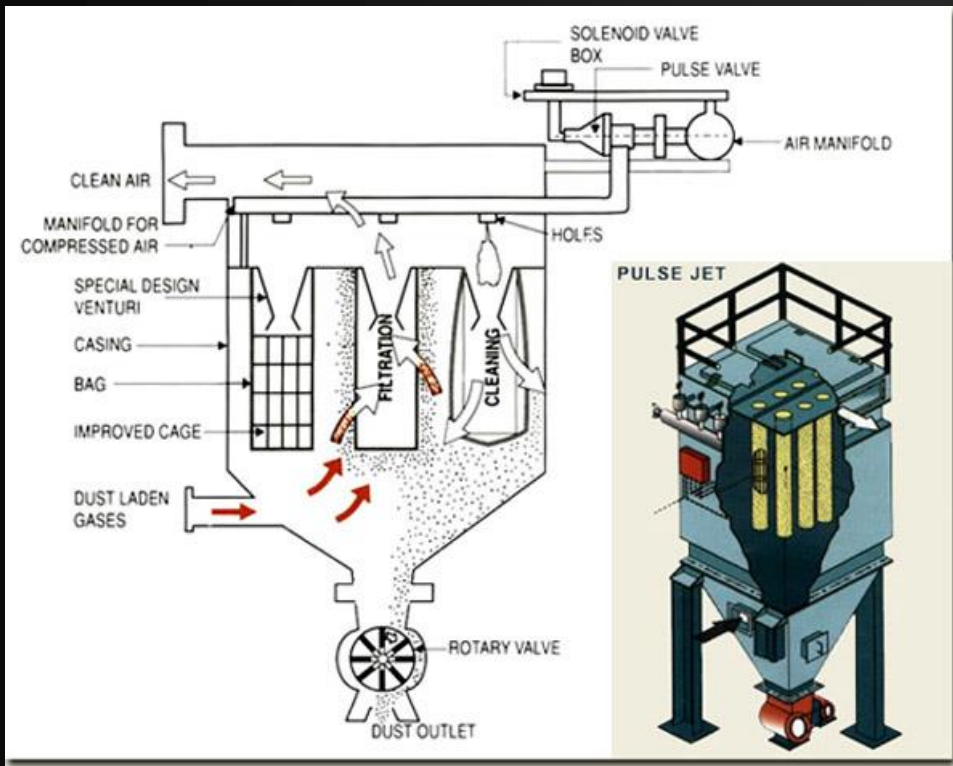
Dust Collector

Choice of the correct model of dust collector is integral to any closed environment blasting system. It is very essential to remove dust and fine abrasive particles from the environment of the blast chamber to maintain the efficient operation. The dust collectors are broadly classified into three types (1) Cyclone Type (2) Fabric Bag Type & (3) Cartridge Filter Type.

In operation, the exhaustor fan on the clean air side of the collector draws dust laden air from the blast room through the tubular filter bags.



Dust Collector



TYPICAL LAYOUT OF DUST COLLECTOR

Dust Collector

PLEATED BAGS

Latest Innovation in Filter Bag Technology

High efficiencies upto 99.999% of 3 microns, and very easy release characteristics with a high tolerance to moisture and temperature. Latest design, the Pleated Bag, has been developed with the following advantages

- No Steel, top & bottom in polyurethane.
- Low Pressure drop because of surface filtration.
- Very easy to install.
- Very compact, 2-3 time greater filter area than traditional bags.
- Low consumption of air (cleaning process)
- Very capacity of (of air-to-cloth ratio & dust load)
- **VERY COST EFFICIENT**



Dust Collector



TYPES OF FILTERING MEDIA
(BAGS / CARTRIDGE)



Optional Equipment



Work Car (Manually or Electrically Driven)

We offer a wide range of sizes and load capacities in work cards. The cars can be manually or pneumatically driven.

Turntable can also be mounted over the work car.



Optional Equipment



Overhead Material Handling

Monorail cranes can be opted as material handling device in a blast room.

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Cabinet & Portable Blaster



SSB-150150100





Dry Type Paint Spray Booth





Essentially an efficient Paint Spray Booth consists of :

- 1 Enclosure
- 2 Job conveying system
- 3 Air Intake Filtration
 - Pre Filter
 - After Filter
- 4 Paint Trap Filter
- 5 Operator Respiratory Wear
- 6 Exhaust System
- 7 Optional equipment

TYPES OF DRAFT SYSTEM

DOWN DRAFT TYPE SPRAY BOOTH

The design allows fresh air to enter into the booth from roof and is directed towards pit where paint trap filters are provided for the collection of over sprayed paint particles. The booth demands for pit and interconnecting tunnel to exhaust fan. The booth collection efficiency is 100% and requires more space.





SEMI-DOWN DRAFT TYPE SPRAY BOOTH

The design allows fresh air to enter into the booth from roof and is directed towards suction hood provided on side walls. The design is pit less and requires less space comparison to down draft. The booth collection efficiency is more than 95%.





END DRAFT TYPE SPRAY BOOTH

The design allows fresh air to enter into the booth from front door and is directed towards suction hood provided on the back wall.



TYPE OF FILTERS

AIR INTAKE PRE FILTER:

- Multiple Layer of Mesh.
- Filtration Efficiency 75% down to 10 microns.
- Filter Class – EU2



AIR INTAKE AFTER FILTER:

- Polyester Graded.
- Thermal Bonded Non-woven Synthetic Media.
- Filter Class – EU4.
- Specially treated with non-migrating and non-drying adhesive treatment for maximum retention of dust particles.
- Free from solvent vapour & silicon.





PAINT TRAP FILTER:

- Glass Fiber Progressive Structured.
- Colour – Yellow/White.
- Filter Class – EU4.
- Thickness – 100 mm.
- Filter Media Confirms to Class 1 Norm.

