

Surface INTERNATIONAL



Automatic Abrasive Blasting & Peening (Air / Airless) Systems, Dust Collector and Blast Room



FOR WIND MILLS, RAIL ENGINE, WAGONS /
COACHES, TRUCK, BUS, CAR, HELICOPTER,
OIL TANK, WATER TANKER, STEEL
STRUCTURES & BIG COMPONENTS/JOB



ABRASIVE / SHOT BLAST ROOM

Smooth Treatment for Metal Surface

BLAST ROOM SYSTEM

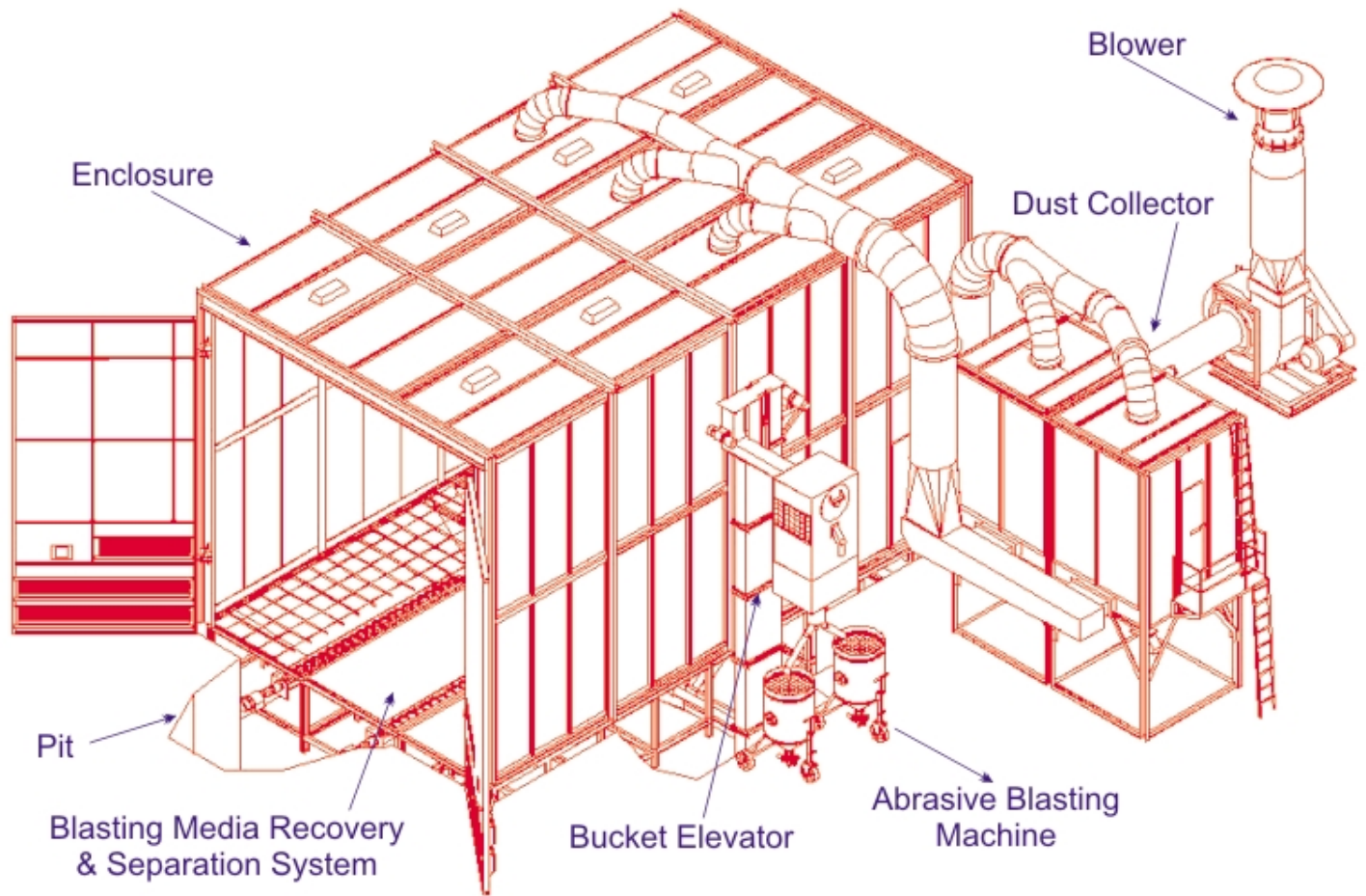
Blast room equipment is used in a wide variety of industries that require surface preparation prior to the application of a protective coating. The surface of the work piece is cleaned by a mixture of abrasive and high pressure compressed air being directed onto the work piece by blast nozzle. The blast room contains the abrasive being shot at the work piece, as well as providing lighting and ventilation for the operator's safety.



Industries that require this process before Painting / Coating includes :

- STEEL FABRICATIONS
- TRAILERS
- CONSTRUCTION EQUIPMENT
- RAIL CARS
- OIL FIELD EQUIPMENT
- SHIP BUILDING
- WIND MILL STRUCTURE
- STEEL TANKS

SURFACE INTERNATIONAL offers a variety of blast room designs and room configurations. We design a blast room facility uniquely tailored to meet the economic production, safety and environmental concerns of each customers.



A systematic Blast Room essentially consists of :

- ENCLOSURE
- ABRASIVE BLASTING MACHINE
- DUST COLLECTOR (FABRIC/PLEATED/CARTRIDGE)

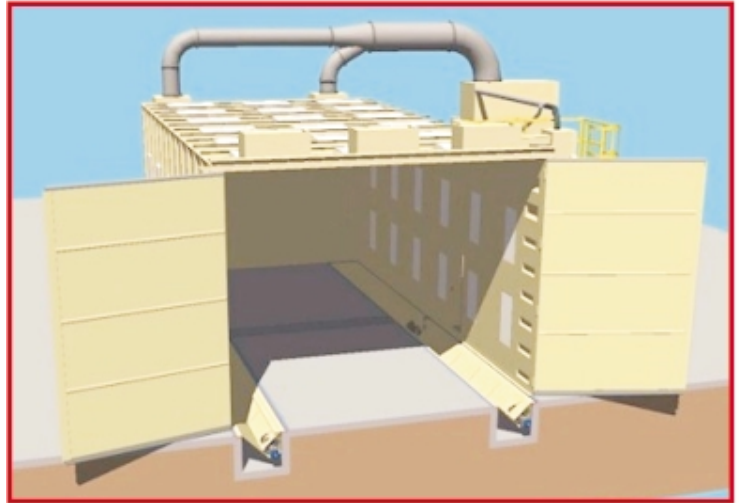
- BLASTING MEDIA RECOVERY & SEPARATION SYSTEM
- OPERATOR SAFETY WEARS
- OPTIONAL EQUIPMENT / ACCESSORIES

ENCLOSURE

The modular blast room is specially ventilated and illuminated for abrasive blasting, and is a full sealed, dust tight, all steel structure. The components are prefabricated for simple bolt-together erection, with little or no site welding required. The **ENCLOSURE** stands by its own structural support without connections to the surrounding facilities. The size of the enclosure depends on

- a) The size of the job
- b) Number of operators
- c) Adequate working space around the job.

The size of the enclosure influences the size of the dust collector and reclaimer installation costs.



OPTIONAL EQUIPMENTS

Several additional equipments are available to increase efficiency of Blast Room System. A few are:

- A) WORK CAR OR TROLLEY FOR LOADING OF JOB.
- B) OVERHEAD BEAM OR CRANE.
- C) MORE NUMBER OF BLAST NOZZLES TO INCREASE PRODUCTION OUTPUT.
- D) AUTOMATIC MOVEMENT OF BLAST NOZZLE OR JOB OR BOTH (FOR SMALL BLAST ROOM).
- E) VACUUM RECOVERY UNIT FOR COLLECTION OF ABRASIVE FROM INTRICATE PARTS / PORTION OF THE JOB.



ABRASIVE BLASTING MACHINE

Blast Rooms are generally provided with **SP7-501R** and **SP7-1001R** models. During the blasting process, the mushroom valve and exhaust valve are closed, the vessel 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 provided 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.

BLASTING MEDIA RECOVERY & SEPARATION SYSTEM

All abrasive recovery system include three basic functions :

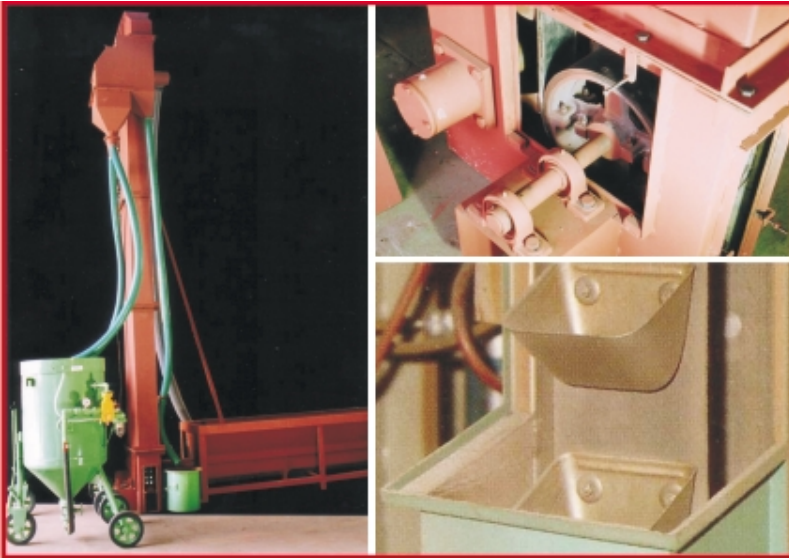
- 01 Delivering the abrasive which rebounds off the workpiece to a central recovery point.
- 02 Transporting the abrasive from that central point to an abrasive cleaner.
- 03 Removing dust, fines and other unwanted material from the abrasive before it enters the blast machine for re-use.

MECHANICAL RECOVERY SYSTEM

Consists of Bucket Elevator, Abrasive Cleaner & Screw Conveyor System

PNEUMATIC RECOVERY SYSTEM

Consists of Mini Hopper, Plenum, Reclaimer & Dust Collector



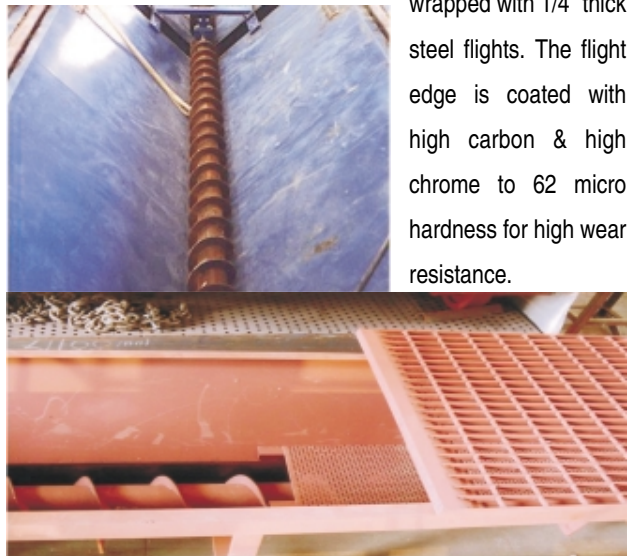
BUCKET ELEVATOR

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 section, respectively. A one piece cast iron pulley; which has been crowned for tracking and rubber lagged to prevent slippage, are located in the boot and head section of the elevator to drive the belt.

SCREW CONVEYOR

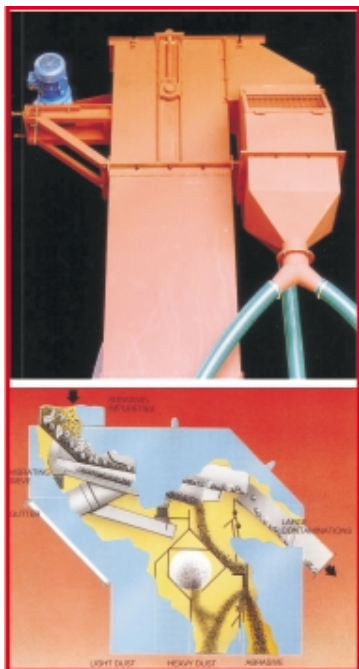
The reclaim floors utilize a heavy duty screw to return the abrasive to the separator/classification system. The standard screw is 9" in diameter, which consists of a 5" diameter schedule - 40 pipe

wrapped with 1/4" thick steel flights. The flight edge is coated with high carbon & high chrome to 62 micro hardness for high wear resistance.



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 and abrasive that passes through the screen then cascade over the air wash where fine contaminants and small abrasive particles are removed. Reusable abrasive falls in the machine.



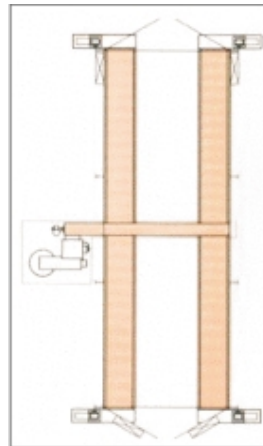
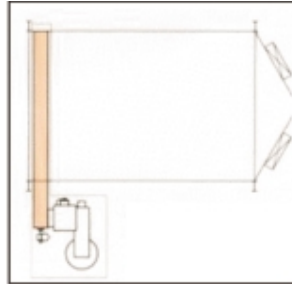
FLOOR DESIGN

(For Mechanical Recovery)

THE FLOOR DESIGN YOU SELECT WILL DETERMINE THE CAPABILITIES OF THE ROOM, DEGREE OF LABOUR INVOLVEMENT, COST OF PURCHASE & INSTALLATION AND RETURN ON YOUR INVESTMENT.

Single Screw Partial Reclaim System

A single screw partial reclaim system is the most economical floor design available. The system contains the major components heavy-duty screw, belt and bucket elevator, air-wash separator, perforated plate rotary drum separator and oversized abrasive storage hopper with a caged man ladder and handrail. This is a basic "automatic" reclaim package that can be expanded to an "H", "U" or full floor reclaim system. **This system is best suited for low to medium production.**

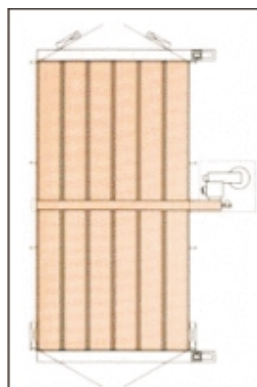
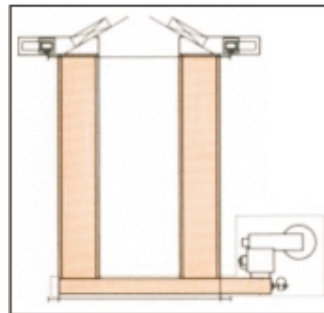


"H" Shaped Partial Reclaim System

The "H" shaped partial reclaim system adds two longitudinal screw assemblies along each side wall of the blast room. The position of the screw assemblies allows the abrasive delivered from the blasting nozzle, which is either blown or rebounded off the work piece, to strike the side walls and fall into the screws, automatically reclaiming approx. 60 - 90% of the blast media. **This system is best suited for medium to high production.**

"U" Shaped Partial Reclaim System

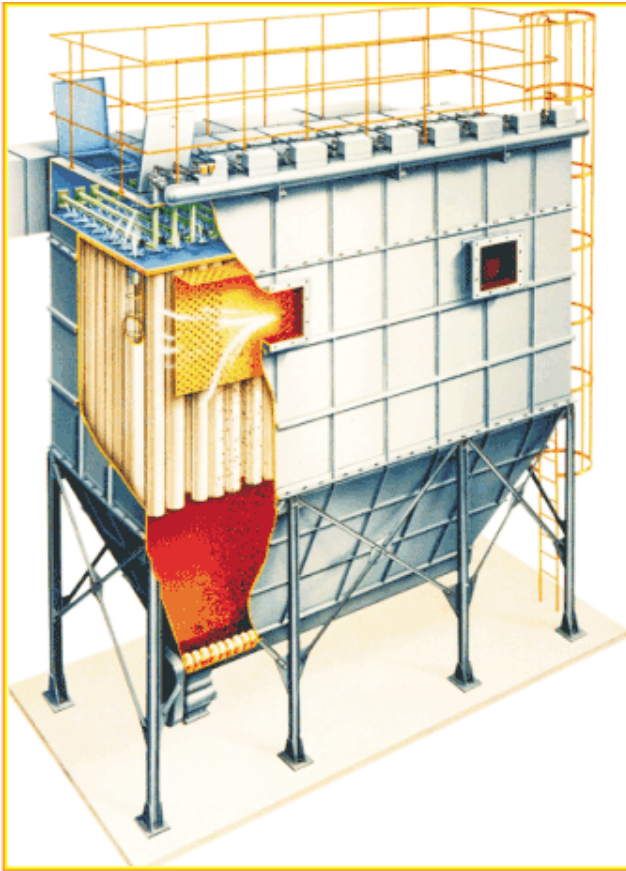
The "U" shaped partial reclaim system adds two longitudinal metered screw assemblies along each side wall of the blast room. The position of the screw assemblies allows automatically reclaiming approx. 60 - 90% of the blast media. This floor design is typically utilized in a "flow-through" room configuration where heavy work pieces and/or material handling devices can drive into the room & position the work piece on the steel covered concrete floor located between the longitudinal screws. **This system is best suited for medium to high production.**



Full Floor Reclaim System

The full floor reclaim system utilizes multiple screw assemblies to create a fully automatic abrasive reclaim system, where 100% of the blast media is returned to the separator system during the blasting operation. **This system is best suited for high production requirements.**

DUST COLLECTOR / EXTRACTOR UNIT



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 its efficient operation.

The Dust Collectors are broadly classified into three types :

- Cyclone Type
- Fabric Bag Type (Plain / Pleated Bags)
- Cartridge Filter Type



In operation, the exhaust fan on the clean air side of the dust collector draws dust laden air from the blast room through the tubular filter bags. Dust collects on the inner side of the bags and when the exhaust fan is turned off, the bag shaker mechanism cleans the filters by shaking most of the caked dust from inside of the bags into a dust collecting hopper.

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, Pleated Bag, has been developed with following advantages :

- No steel, top & bottom in polyurethane.
- Low pressure drop because of large surface filtration.
- Very easy to install.
- Very compact, 2 - 3 times greater filter area than traditional bags.
- Low consumption of air (cleaning process).
- VERY COST EFFICIENT.

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