ICM

ABRASIVE BLAST ROOMS

TYPICAL BLAST ROOM OPERATION

BLAST ROOM

ICM blast rooms are a complete re-circulating blast system.

Parts to be cleaned are placed in the room. The operator, wearing Bureau of Mines approved protective clothing, blast cleans the parts. The abrasive from the blast gun and dirt removed from the parts fall to the air swept floor. At this point, they meet a moving air stream that carries all particles to a cyclone reclaimer. Dirt and broken abrasive is carried to a dust collector where it is trapped. Clean re-usable abrasive is retained and automatically recirculated back to the blast gun.

TYPICAL BLAST ROOM OPERATION

In order to give you a closer look at the blast room and how it is operated, take a look at the diagram on the opposite page. This little diagram is to give you some idea of the mechanical functions in each stage. Looking at side view "F", you can see where the blast hose is located, it's marked "A". Underneath, we have what is called an air swept floor, marked "B", the blast comes out of the nozzle, the abrasive hits the part and falls on the floor. Now, there are ducts in this floor which carry the abrasive to a common transition duct, marked "C", which, in turn, carries up and goes into what we call a cyclone separator — that's item "D" on the diagram.

This cyclone separator collects usable abrasive and stores it in a hopper "E". On demand through an automatic valve arrangement abrasive flows from the hopper to the pressure blast generator "F". Air flows from the top of the cyclone to the dust collector "G". Fines the cyclone will not collect are trapped for disposal in the dust collector. The blower on top of the dust collector "H" draws air through the system from the room, through the floor, then the cyclone and last, the dust collector. Only clean air comes out of the blower.

Air Swept Duct: The process is the same except the blast media lying on the room floor must be manually swept into the Air Swept Duct, Figure 2.

Sweep and Shovel (not shown): All abrasive must be manually swept and shoveled into the Blast Generator.

ABRASIVE RECOVERY SYSTEMS

BLAST ROOM

ABRASIVE RECOVERY SYSTEM

- (A) BLAST NOZZLE
- (B) BLAST ROOM FLOOR
- (C) AIR SWEPT DUCT
- (D) CYCLONE RECLAIMER
- (E) ABRASIVE STORAGE HOPPER
- (F) BLAST GENERATOR
- (G) DUST COLLECTOR
- (H) EXHAUST BLOWER
- (J) DEBRIS CONTAINER

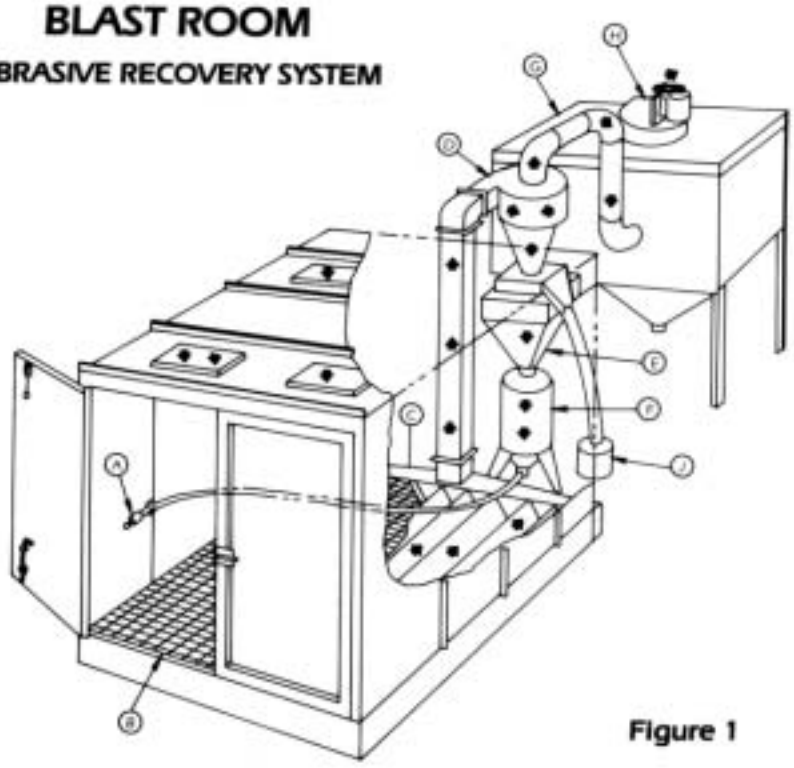


Figure 1

AIR SWEPT FLOOR

AIR SWEPT FLOOR

Items to be cleaned are placed in the Blast Room enclosure.

The operator, wearing comfortable Bureau of Mines approved protective clothing, blast cleans the items in the room. All material removed from the items being cleaned and all spent abrasive falls to the Air Swept Floor.

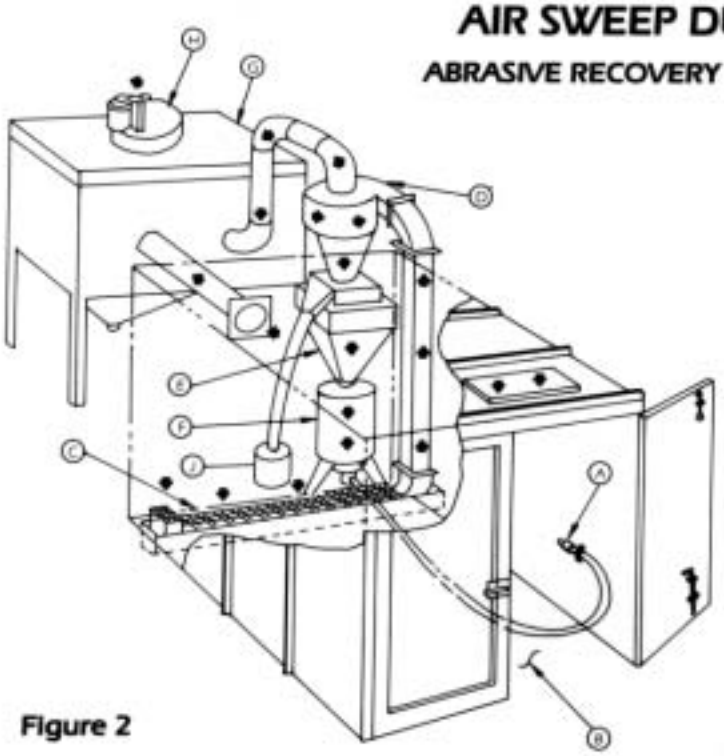
The floor is a system of ducts. High velocity air, 5,000 to 7,000 lineal feet per minute, carries all particles through the floor ducts to a transition duct then to the reclaim system. The reclaimer separates dust and broken abrasive from reusable abrasive. Reusable abrasive is contained in a storage hopper. Broken abrasive and material removed from items being cleaned are automatically carried to the dust collector where they are trapped and stored for disposal. The reclaimed abrasive is recirculated automatically from the storage hopper to the blast generator and back again to the blast nozzle.

This is our most efficient system and is completely automatic. The operator can blast without stopping until he has exhausted the supply of abrasive.

HOW TO CHOOSE THE PROPER BLAST ROOM

AIR SWEEP DUCT

ABRASIVE RECOVERY SYSTEM



- AIR FLOW
- (A) BLAST NOZZLE
- (B) BLAST ROOM FLOOR
- (C) AIR SWEPT DUCT
- (D) CYCLONE RECLAIMER
- (E) ABRASIVE STORAGE HOPPER
- (F) BLAST GENERATOR
- (G) DUST COLLECTOR
- (H) EXHAUST BLOWER
- (J) DEBRIS CONTAINER

Figure 2

A blast room with the air swept floor is without question the most efficient design. A decision must be made to determine if the additional investment is justified.

- **Air Swept Floor:** Blasting can be continuous as long as a part is in the room. No down time for abrasive recovery.
- **Air Swept Duct:** Blasting can be continuous until blast generator is empty. Operator must then stop blasting and sweep abrasive into the Air Swept Duct. This will reduce blasting production by about 25%.
- **Sweep and Shovel:** Approximately 50% of the operator's time is spent recovering abrasive and recharging the blast generator.

SIZE OF ROOM

- A blast room should be chosen to accommodate the largest part to be cleaned. At least three feet (3') clearance around the part is necessary for operator accessibility.
- A monorail hoist inside the room should be considered. The hoist frequently can be justified because of the part accessibility offered to the operator, thus causing increased production. The shape and size of parts is a determining factor.

FEATURES

Air Swept Floor

- Automatic abrasive recovery.
- 100% more production than manual method.
- Low profile floor 9" overall height.
- Floor may be installed in 9" deep pit or installed on existing floor with 9" high ramp.

Air Swept Duct

- Semi-automatic abrasive recovery.
- 50% more production than manual method.
- Two models: (A) Install in 9" deep pit; (B) Install at floor level.

Sweep and Shovel

- To reclaim abrasive, sweeping then shovelling into blast generator is the only method of reclamation.
- Air Swept Floor or Air Swept Duct can be added when production warrants.

Construction

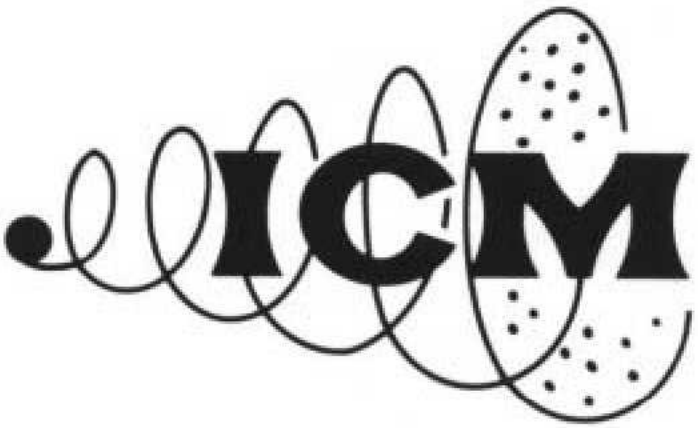
- Blast room walls and roof 12 gauge HRS flanged and gasketed panels bolted on 7" centers.
- Simplicity: Only one moving part in the system, the exhause blower blade.
- Ducting connections flanged and gasketed, radiused elbows. (Note: Ducting from particle separator slip joint type). All flanged ducting 12 gauge HRS 100% welded.
- Doors 100% welded, extra heavy duty hinges.
- Lighting: Incandescent, 100 ft. candles in work area.

Protective Clothing and Operator Breathing Air

- A Bureau of Mines approved protective clothing and breathing system will be provided. This system to include, helmet, clothing, approved filter for breathing air, all operator controls, all hose fittings and connections. The breathing air for the system is supplied from plant compressed air.

Pressure Blast Generator

- A pressure blast generator will be supplied that meets all A.S.M.E. codes.
- The blast generator will be equipped with dead man controls. When the operator releases the dead man control located on the blast nozzle, the air flow to the nozzle will automatically close.
- The blast generator will be located under the abrasive storage hopper and will automatically fill each time the dead man control is turned off.



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