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INTRODUCTION

Thank you for your interest in an IDS Blast® abrasive blast room solution. This brochure will provide an overview of the types of blast rooms available and to their configuration options. Blast rooms are a complex subject, but remember, the IDS Blast experts are just a phone call away.

THE ADVANTAGES OF BLAST ROOM OWNERSHIP

Compared to open air blasting, the controlled environment of a blast room has many advantages that justify the investment. Confining abrasive blast operations to a controlled, clean environment enables efficient abrasive recycling which has huge cost savings over using single-use abrasive. Blasting doesn’t have to wait for good weather so your production will increase. Well planned abrasive blast room designs include details such as an amply lit work area, an abrasive reclaim floor, an abrasive/trash separation system and a dust collector for keeping the environment clean and contaminant free. The bottom line is blast rooms are a more efficient and productive way to blast.

THE IDS BLAST APPROACH TO BLAST ROOM DESIGN

GUIDANCE The decision to invest in a blast room is a major one in which proper guidance and expertise will make the difference between a profitable success and a potential disaster. IDS Blast takes the time to understand your objectives and will design a solution with you that is best for your needs, highly efficient, and within budget. We will explain what you can expect from blast room ownership and what the true ongoing costs will be so there are no surprises.

DESIGN Anybody can throw together a blast room, but will it be the right solution for your needs? With our many years of experience, the veteran team at IDS Blast have the up-to-date knowledge and real-world exposure necessary to build the right solution for you. Under-engineering or over-engineering a blast room solution can have disastrous results, we dial it in just right.

IMPLEMENTATION Installation of a blast room can be a complex process but we make it as painless as possible. From planning the physical location of the blast room all the way through final assembly and start-up, we stay involved to ensure the everything goes according to plan. We see the implementation of a blast room at your facility as the beginning of our relationship, not the end.

SUPPORT When you get a blast room from IDS Blast, you get more than just a piece of equipment, you get ongoing support that is second to none. Of course, this all starts during initial start-up when we make sure your new blast room is running efficiently and explain the systems to you and your staff. We also provide ongoing services such as abrasive sales, replacement parts & consumables sales, repair services, training & efficiency evaluations.
MECHANICAL RECOVERY BLAST ROOMS

Nobody can offer you more complete guidance and a better selection of mechanical blast room systems than IDS Blast. Mechanical blast rooms are typically preferred because they can handle more volume, use any type of media, slowly convey the abrasive resulting in less equipment wear, and are generally the more heavy duty option.

When you choose to pursue a mechanical blast room with IDS Blast, you receive individualized attention and we work to save you every possible dollar without cutting quality or production efficiency. It is our cost effective, common sense, personalized approach that has allowed us to be at the top of the blast room industry for over 2 decades.

Learn more about the specific systems that make up a mechanical recovery blast room on the following pages.

WHEN IS A MECHANICAL BLAST ROOM THE RIGHT CHOICE?

Mechanical recovery blast rooms use augers and lift buckets to physically move used abrasive from the blast room to the abrasive recovery system. The slower speed of abrasive through the recovery system results in less wear and tear. They are typically the right choice for medium to heavy production facilities.
BLAST ENCLOSURE The blast room enclosure is the structure which encloses the area in which blasting will take place. (See pages 6-9)

RECLAIM FLOOR SYSTEM The reclaim floor system is a mechanical system that moves debris and abrasive away from the blast room enclosure. (See pages 10-13)

ABRASIVE RECOVERY The abrasive recovery system separates reusable abrasive from the broken down abrasive and debris produced during blasting. (See pages 14-17)

DUST COLLECTION The dust collector is a filtration system that is responsible for cleaning airborne dust from the blast room enclosure to ensure good visibility. (See pages 18-21)

ABRASIVE BLAST POTS An abrasive blast pot is the pressurized tank that contains abrasive and uses several valves to start and stop the flow of abrasive. (See pages 28-31)
Blast enclosures are very customizable and have many options that can make your operation more efficient. They are engineered to ensure you have adequate space to blast, lighting, and ventilation for dust removal. By getting to know your operation and goals, IDS Blast will be able to recommend the enclosure and options that will make your operation the most efficient and keep your costs down.

The engineered panels, doors and other components that make up our blast room enclosures are made of high quality materials designed to stand up to the punishing environment of abrasive blasting. Calling these enclosures “high quality” or “heavy duty” is really understating their ruggedness. These are not “bolt” together booths, but are engineered systems specifically designed for abrasive blasting.

INCLUDED FEATURES (TYPICAL ENCLOSURE)

• 10 gauge roof and wall panels
• Baffled air exhaust plenums
• Baffled air inlet plenums
• Panic type OSHA approved man escape doors with vision window and shield
• Dimmable LED lights (277 volt)
• OSHA approved LED exit light assemblies with battery backup
ROOM SIZE

The right room size is dependent on the size of the largest piece you are trying to blast. The blast room should be large enough to accommodate the largest work piece and provide ample room for the blasting personnel to work. We recommend 3’ - 5’ of workspace around the object being blasted.

Typical blast room sizes range from a small single operator booth to massive enclosures several stories high capable of enclosing huge objects. There is nothing too small or large for us to engineer.

DOORS

In addition to one or more personnel entrance/exit doors, the main doors where the objects to be blasted enter and exit the blast enclosure are an important consideration. Typically two methods are used. The first is a single "in/out" door that is used as both entrance and exit. The second is a flow-through design with doors on both ends of the blast room where objects enter from one end, and exit through the other. Depending on your type of operation, flow-through designs can be a major improvement on work flow.

Other door systems can be incorporated when necessary for production efficiency such as a pneumatic side door. The style of the door is also an option. Door styles include:

- Swing Manual Doors
- Rubber Roll-Up Doors
- Custom Doors

Blast room with rubber roll-up door.
BLAST ENCLOSURE
(MECHANICAL RECOVERY BLAST ROOMS)

MATERIAL HANDLING

One of the most important considerations when designing a blast room is how the objects being blasted are going to be moved in and out of the blast room. When it comes to material handling, there are several options that can speed up moving objects in and out of the enclosure.

Monorail - Monorail systems can be installed inside the blast room or outside with a brush seal providing containment of abrasive within the room. Monorails allow objects to be hung below them and moved in and out of the room and can be motorized.

Overhead Crane - When blasting heavier items, an overhead crane is a great option for material handling. The crane is installed above the blast room and uses a brush seal to keep abrasive from escaping during blasting.

Work Cart (rails in the floor) - Rolling work carts are also a great solution for heavier items. The object to be blasted is placed on the work cart outside of the room and rolled in to be blasted. The wheeled work cart stays in the room during blasting and can be mounted on tracks or rails when required.

ACCESSIBILITY

Accessing all sides of an object can start to be an issue when it is very large. There are options available that are far superior and safer than using ladders.

Catwalks - Catwalks can be installed in taller blast rooms to allow access to taller items from a stable platform. They can run the entire length of the blast room or only a portion of it. They can be installed on one side of the enclosure or more.

3-Axis Man-Lift - When you need to get at an object from both sides and different heights, we can configure a blast enclosure with a 3-axis man-lift that can place the operator virtually anywhere in the blast room.

LIGHTING

Poor visibility results in poor blasting personnel performance and missed spots that are hidden in shadow. The lighting in our blast enclosures is both ample and durable. A typical lighting set-up in one of our blast rooms includes fixtures in both the ceiling and walls. Lights are protected from abrasive impact using replaceable 1/4” thick polycarbonate lenses.
BLAST ENCLOSURE
(MECHANICAL RECOVERY BLAST ROOMS)

Blast room with monorail material handling system.

Work cart on rails in a blast room.

Blast room with dual catwalks and a tank ventilation hoses.

Blast room with dual 3-axis man-lifts.
The purpose of the reclaim floor system is to collect abrasive and debris, such as removed paint/rust, from the floor of the blast room and transport it to the abrasive recovery system. These systems are installed below the floor in the abrasive blast room and are covered with grates.

The basic rule of a reclaim floor system is the more floor space that is occupied by the reclaim system, the less manual labor required to move all abrasive into the system. There are five basic types of reclaim systems that vary in the amount of floor space they occupy from only a small corner to the entire floor.

It is important to know your production goals and budget when considering the type of recovery floor you will need. We will help you understand the “true” cost of processing the abrasive through the recovery system.

All our mechanical reclaim floor systems feature 1-1/4” floor grating rated at 500# per sq. ft. All of the floor systems, except for corner sweep-in systems, use heavy duty 9” diameter return augers with 3/8” thick flighting to move abrasive to the abrasive recovery system. The augers are protected from overload by metering shed plates resulting in a highly reliable system.
RECLAIM FLOOR SYSTEMS
(MECHANICAL RECOVERY BLAST ROOMS)

FULL FLOOR RECLAIM SYSTEM

Full floor reclaim systems recover more of the abrasive automatically than any other reclaim system because the entire floor space acts as one big collector. Anywhere abrasive falls, it goes through the grates and is transported to the abrasive recovery system via augers below the floor. These systems are best suited for high production operations and save cost by eliminating the need for additional “clean up” time.

Full floor systems require material handling of the work piece to be designed into the configuration of the room as the standard floor grates cannot support heavy loads. Options include a work car/track system, an overhead monorail crane, an overhead bridge crane, or heavy duty floor grating and support steel to allow a forklift to drive onto the reclaim floor.

H-SHAPED PARTIAL RECLAIM SYSTEM

H-Shaped partial reclaim systems are similar to U-Shaped systems except they run along 2 of the 4 sides of the blast room are typically used with 2 door flow-through setups. Heavy work pieces can be moved in one end of the blast room and out the other never needing to travel over the reclaim system floor grates.

Since the majority of the abrasive falls along the walls of the blast room, the H-Shaped system (like the U-Shaped system) requires only minimal “clean up” to push the abrasive in the center of the room to the edges. Augers below the floor grates are used to move abrasive to the abrasive recovery system. Abrasive from the far side of the room travels under the floor using an auger covered by heavy steel plates.
U-SHAPED PARTIAL RECLAIM SYSTEM

U-Shaped partial reclaim systems run along 3 of the 4 sides of the blast room are typically used with single door (in/out) setups. Heavy work pieces can be moved in and out of the room never needing to travel over the reclaim system floor grates.

Since the majority of the abrasive falls along the walls of the blast room, the U-Shaped system requires only minimal “clean up” to push the abrasive in the center of the room to the edges. Augers below the floor grates are used to move abrasive to the abrasive recovery system.

SINGLE SCREW PARTIAL RECLAIM SYSTEM

Single screw partial reclaim systems typical run along the end of a single door blast room setup. This way, heavy work pieces can be moved in and out of the room never needing to travel over the reclaim system floor grates. If necessary, single screw reclaim systems can be installed in positions other than the back wall.

More “clean up” time is required to push the abrasive to the floor grates. A single auger below the floor grates is used to move abrasive to the abrasive recovery system. For this reason, this type of system is appropriate for low to medium production.
Sweep in systems are the most economical abrasive reclaim system but are only appropriate for low production operations. Almost all abrasive must be manually moved to the corner of the blast room where a chute directs the abrasive to the recovery system.

This is the simplest reclaim system available but can increase operating costs due to the time needed for “clean up.”

Also available in a shovel in version located entirely above the floor requiring no concrete work.
The purpose of the abrasive recovery system is to separate usable abrasive from debris, dust and broken down abrasive returning from the blast room. Usable abrasive is collected and stored in an abrasive hopper while trash is moved to a drum/bin. The abrasive recovery system is custom engineered based on your production goals.

Abrasive separation is achieved using a rotating drum and an air wash separator ensuring only good clean abrasive makes it through to the abrasive hopper. This system is very efficient for both ferrous and non-ferrous dry abrasives, and ensures the maximum recycles of the abrasive.

Magnetic separators are available for removing wire welding pig tales from non-ferrous abrasives or for separating abrasives in dual systems that would use, for example, steel grit & glass bead.

Good abrasive is stored in an abrasive hopper which feeds it directly to the abrasive blast pots located below.

**STANDARD FEATURES**

- Bucket elevator assembly, including cast ductile iron buckets, 1/2” thick belting
- Gravity type air wash separator with perforated plate rotary drum assembly (a.k.a. scalping drum)
- “Free standing” abrasive hopper with required support steel and shut off gates
- Caged ladder and access work platform with hand railing for abrasive storage hopper
- Easy and safe access to air wash separator and elevator head section
- Pre-wired and interlocked NEMA 12 electrical control panel
ABRASIVE RECOVERY
(MECHANICAL RECOVERY BLAST ROOMS)

STEP 1: RECLAIM FLOOR / BUCKET ELEVATOR

Abrasive and other debris collected by the reclaim floor system arrives at the base of a mechanical bucket elevator where it is moved to the top of the abrasive recovery tower. At the top, the abrasive/debris mixture is moved with an auger horizontally to the trash separation step.

STEP 2: TRASH SEPARATION

Using a perforated plate rotary drum assembly (a.k.a. scalping drum), larger trash is separated from the abrasive/dust mixture and is delivered to a trash drum/bin. The abrasive/dust mix then proceeds to the air wash.
At this point in the recovery process, reusable abrasive is still contaminated with dust, broken down/undersized abrasive particles, and material that was removed during blasting like paint and rust particles. This mixture is fed through an air wash where it falls in a precisely metered curtain while a controlled volume of air is drawn through it separating it into the following 3 classifications:

I) **Dust:** Super fine debris is separated out and carried away by duct to the blast room dust collector.

II) **Undersized Abrasive:** Abrasive that has broken down enough to no longer be productive (typically 100 grit or finer) is separated out and falls down a chute to a receptacle. This spent abrasive is then available to be sold as scrap, recycled or disposed of.

III) **Reusable Abrasive:** After the dust and undersized abrasive is separated out, what’s left is good abrasive that is ready to be used again. It is deposited into the abrasive storage hopper located below the air wash.
STEP 4: ABRASIVE IS REUSED

Once the reusable abrasive falls from through the air wash into the abrasive hopper, it is stored there until needed. The abrasive hopper is located above the abrasive blast pots and delivers clean abrasive directly to them during their refill cycle.

Air wash/magnetic separator/abrasive hopper feeding two abrasive blast pots with trash & undersized abrasive collection drums.
The dust collector provides several crucial functions in a blast room system which include:

1. Ventilate and move dust out of the blast enclosure to maintain visibility.

2. Filter/collect airborne dust produced in the abrasive recovery process.

To do the job properly, a dust collection system must be sized properly for the blast room it will serve. An inadequately sized dust collector will have a devastating effect on your productivity and operating costs. IDS Blast has the know-how and experience to ensure your blast room is equipped with a properly matched dust collector.

**STANDARD FEATURES**

- Cartridge style dust collector
- 99.999% efficiency filters down to particle size of .5 micron; Merv-15 rating
- Abrasive inlet plenums, fan, and premium efficiency motors
- All required duct work to tie the full system together
- Exhaust fan silencer (if required)
- Return air duct work (if required)
- Interlocked into the supplied control panel
- Slide gates for dust/waste drums
The preferred method of moving air through a blast room is cross-draft ventilation. Air is drawn in through intake plenums, moves across the entire room, and is drawn out at the other end. This method provides the best visibility and dust evacuation for a blast room because the sweeping motion ensures the entire volume of the blast enclosure is well ventilated and there are no "dead spots" for dust to collect in.

To achieve optimal results, cross-draft ventilated blast rooms require air to move at a certain speed through the room. This is referred to as "Cross Sectional Air-Speed Feet Per Minute" and depends on the type of blasting being performed. The following chart shows the optimal flow rates for common types of blasting.

<table>
<thead>
<tr>
<th>Min. Required Cross Sectional Air Speed For Abrasive Blast Rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-steel abrasives such as Aluminum Oxide, Garnet, Etc.</td>
</tr>
<tr>
<td>60 (FPM)</td>
</tr>
<tr>
<td>Steel Shot/Steel Grit</td>
</tr>
<tr>
<td>50 (FPM)</td>
</tr>
</tbody>
</table>

Dust collectors are rated in terms of the air CFM (Cubic Feet per Minute) they can move. To calculate the CFM required from the cross sectional air-speed and room size, the following formula is used:

\[
\text{Room Width (ft) x Room Height (ft) x Cross Sectional Air-Speed (FPM) + 600 = CFM}
\]

So for example, the minimum dust collector CFM for a blast room that is 20' wide x 16' high x any length using Aluminum-Oxide calculates as follows:

\[
20(\text{ft}) \times 16(\text{ft}) \times 60(\text{FPM}) + 600 = 19,800 \text{CFM required}
\]

*The length of the blast room does not affect the CFM requirement.* The 600 is added to account for the dust collection requirement for the abrasive air wash. In certain cases where the material/coating that is being blasted creates excessive dust, higher cross sectional air speeds may be necessary.
FILTRATION

The dust collectors we provide feature cartridge filters with a high efficiency rating of 99.999% to particle size of .5 micron (Merv-15 rating). These collectors meet the most stringent guidelines for particle emissions and ensure the discharged air is clean and virtually dust free.

Keeping the filters clean is important to maintaining air flow. The pulse jet cleaning system automatically cleans the filter elements while the dust collector is in operation, eliminating any production down time for a filter cleaning cycle. The cartridge filters are easily accessed from outside the dust collector by removing a single wing nut per row of two elements. Ease of maintenance means increased productivity.

One common mistake in sizing dust collectors is trying to force too much CFM of air through too few filter cartridges. The intent is to save money by purchasing a smaller dust collector but forcing too much air through the filter cartridges has a detrimental effect. A proper “air-to-cloth” ratio is necessary to maintain filter cartridge efficiency and filter cartridge life. IDS Blast sizes all blast room dust collectors to be within the recommended “air-to-cloth” range of 1.7 to 2.0 meters per minute ensuring proper dust collector performance.

EXHAUST / RETURN AIR

Blast room dust collectors can be very large and take up significant space when CFM requirements are high. The good news is dust collectors can be constructed either inside your facility or outside near an exterior wall saving valuable interior floor space.

Your dust collector can be engineered to exhaust the filtered air outside your facility or back into your facility creating a closed loop system. Returning the air back to your facility can help save of facility HVAC costs. Optional HEPA filters are available for returned air.
DUST COLLECTION
(MECHANICAL RECOVERY BLAST ROOMS)
PNEUMATIC RECOVERY BLAST ROOMS

In addition to mechanical blast rooms, IDS Blast has vast experience in supplying pneumatic recovery blast rooms tailored to your exact needs. While mechanical blast rooms physically move abrasive using augers and bucket elevators, pneumatic recovery blast rooms convey media through the system using controlled high velocity air flow and ducting.

Mechanical recovery blast rooms will often be the better choice for heavy duty, full day production & heavy abrasive blasting. IDS Blast will guide you through the choice between pneumatic and mechanical recovery blast rooms.

WHEN IS A PNEUMATIC BLAST ROOM THE RIGHT CHOICE?

Pneumatic recovery blast rooms use ducting to physically move used abrasive from the blast room to the abrasive recovery system. The faster speed of abrasive through the recovery system results in more wear and tear than in mechanical recovery blast rooms. Pneumatic recovery blast rooms are typically an appropriate choice for light to medium production facilities when using lighter abrasives such as glass beads, plastic media, aluminum oxide, etc. They are a lower cost alternative to a mechanical recovery blast rooms and typically require less concrete work to install.
**BLAST ENCLOSURE**  
(PNEUMATIC RECOVERY BLAST ROOMS)

**BLAST ENCLOSURE**

The pneumatic blast room enclosures we supply are specially ventilated and illuminated for abrasive blasting. They are fully sealed, and an all steel structure. The highly engineered components are prefabricated for simple bolt-together assembly with little or no welding required.

These enclosures stand by their own structural support without connections to the surrounding facilities. Length, width, height, lighting, entry/exit doors & man doors are customizable and will be configured specifically for your application. We can fully explain and guide you through all the options available so you end up with exactly what you need.
RECLAIM FLOOR SYSTEMS
(PNEUMATIC RECOVERY BLAST ROOMS)

The reclaim floor system captures spent abrasive and conveys it through ducts away from the blast room to the blast media cleaning and classification system. The system consists of modular recovery channels and can be installed either above the floor or into the floor (requires concrete work). There are several configurations available which are outlined below.

FULL FLOOR RECLAIM SYSTEM

Full floor reclaim systems recover more of the abrasive automatically than any other reclaim system because the entire floor space acts as one big collector. Anywhere abrasive falls, it goes through the grates and is transported to the abrasive recovery system below the floor without the need to manually sweep abrasive into it. Each modular section of the floor is cycled on and off one-at-a-time to maintain the efficiency of the recovery system.

Full floor systems require material handling of the work piece to be designed into the configuration of the room as the standard floor grates cannot support heavy loads. Options include a work car/track system, an overhead monorail crane, an overhead bridge crane, or heavy duty floor grating and support steel to allow a forklift to drive onto the reclaim floor. “In-Floor” and “Above-Floor” systems are available.
TWO WALL RECLAIM SYSTEM

Two Wall partial reclaim systems run along the two longest walls of the blast room. Since the majority of the abrasive falls along the walls of the blast room, the two wall reclaim system requires only minimal “clean up” to push the abrasive in the center of the room to the edges. “In-Floor” and “Above-Floor” systems are available.

SINGLE WALL RECLAIM SYSTEM

Single Wall partial reclaim systems run along one wall of the blast room (typically the back wall.) More time is required for “clean up” and to sweep the abrasive to the collection point than with full floor or two wall reclaim systems. “In-Floor” and “Above-Floor” systems are available.

SWEEP/SHOVEL IN RECLAIM SYSTEM

Sweep in partial reclaim systems provide a single point of abrasive recovery on the blast room floor. The most time is required for “clean up” since all the abrasive that must be moved to the collection point. “In-Floor” and “Above-Floor” systems are available.
ABRASIVE RECOVERY

(PNEUMATIC RECOVERY BLAST ROOMS)

Simply put, the abrasive recovery system cleans the used abrasive prior to being recycled back into the blasting system. Proper reclamation and classification of the recovered abrasive is important to the efficiency and repeatability of the blasting operation. The pneumatic reclaim and classification systems we provide have been developed over many years of research and field experience. They efficiently recover reusable media and separate out broken-down media, dust & debris.

**Step 1:** Abrasive, dust & debris are carried from the collection points in the blast room floor through ducting and reach the reclaimer inlet.

**Step 2:** The abrasive, dust & debris are spun at high speeds inside the reclaimer separating the heavier materials from the dust an fines. The dust and fines are carried away to a dust collector while the heavier materials fall through to the next step. When set correctly, only 1% to 3% of usable abrasive is lost.

**Step 3:** The remaining abrasive and debris mixture fall through a screen to separate out larger pieces of trash and debris.

**Step 4:** The reusable media is now clean and is stored in a hopper. From the hopper, it flows into the abrasive blast pot(s) and is reused providing savings over using media once and throwing it away.
To maintain visibility in the blast room enclosure and collect the dust/fines from the abrasive recovery system, every pneumatic recovery blast room is equipped with a cartridge type dust collector. The filters are kept clean by an automatic pulse jet cleaning system. Collected dust and other fines are deposited into collection drum for easy disposal.

Dust collectors are a key component in the blast room as they contribute greatly to the overall productivity and efficiency of the blasting operation. IDS Blast has the knowledge and experience to ensure you get a properly sized dust collector for your room.

**Dust Collector Sizing:** To achieve optimal results, cross-draft ventilated blast rooms require air to move at a certain speed through the room. This is referred to as “Cross Sectional Air-Speed Feet Per Minute” and depends on the type of blasting being performed. The following chart shows the optimal flow rates for common types of blasting.

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<th>Dust Collector Sizing</th>
<th>Non-steel abrasives such as Aluminum Oxide, Garnet, Etc.</th>
<th>Steel Shot/Steel Grit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. Required Cross Sectional Air Speed for Abrasive Blast Rooms</td>
<td>60 (FPM)</td>
<td>50 (FPM)</td>
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</table>

Dust collectors are rated in terms of the air CFM (Cubic Feet per Minute) they can move. To calculate the CFM required from the cross sectional air-speed and room size, the following formula is used:

\[
\text{Room Width (ft) x Room Height (ft) x Cross Sectional Air-Speed (FPM) = CFM}
\]

So for example, the minimum dust collector CFM for a blast room that is 20’ wide x 16’ high x any length using Aluminum-Oxide calculates as follows:

\[
20(\text{ft}) \times 16(\text{ft}) \times 60(\text{FPM}) = 19,200 \text{ CFM required}
\]

*The length of the blast room does not affect the CFM requirement.* While steel grit is not the typical abrasive media used in pneumatic recovery blast rooms, pneumatic rooms optimized for steel grit capability are available.
ABRASIVE BLAST POTS

Blast pots may be the smallest component of a blast room but they affect the productivity of your room greatly. We understand the importance of supplying the right blast pot setup to prevent a production bottleneck.

All blast rooms include one or more abrasive blast pots which provide the actual abrasive blasting capability. In simplest terms, the abrasive blast pot is the pressurized vessel which contains the abrasive and mixes it with compressed air. That mixture is sent out through a blast hose where it is accelerated through a venturi blast nozzle at the other end.

Blast pots are highly customizable and we will make recommendations for cost saving options and accessories based on your specific needs.

CAPACITY / BLAST TIME

How much abrasive your blast pot holds determines how long you can blast before stopping to refill. The standard blast pot capacities we recommend for most blast rooms will be 6.5 or 10 cu. ft. but we can go far beyond that for when longer blast sessions are necessary. When extra high capacity is needed, 120 and 160 cu. ft. bulk blast pots are an option. Plan accordingly and spend more time blasting and less time filling.

<table>
<thead>
<tr>
<th>Capacity</th>
<th>1 hour</th>
<th>2 hours</th>
<th>3 hours</th>
<th>4 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5 cu. ft.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 cu. ft.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.0 cu. ft.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dual Chamber</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chart data and percentages above based on real-world observations when blasting with a single #8 or dual #6 nozzles. Data represents the “best case” scenario as the total filling time may actually be longer if the operator starts blasting before the vessel is full or is idle for a time after it is full. To put it another way, 20% is a very low estimate of how much time is wasted on filling in a real-world environment. Times may vary depending on type of abrasive, nozzle & PSI.
DUAL-CHAMBER BLAST POTS

The ultimate in abrasive capacity. When it comes to productivity dual-chamber blast pots are the top-of-the-line. They continuously refill while under pressure so your operation never has to stop blasting to wait for more abrasive. What makes this possible is a second pressure chamber above the primary chamber which cycles between a unpressurized state where it refills from the abrasive hopper, and a pressurized state where it moves abrasive into the primary chamber. They are less expensive and take up less space than a high capacity bulk pot.

HOW MANY OUTLETS DO YOU NEED?

Blast rooms can be equipped with a single blast pot with a single blasting outlet or multiple blast pots with multiple outlets each. Multiple blast outlets are used when more than one operator is blasting simultaneously or in larger blast rooms where different areas of the room have dedicated outlets. The chart below shows available outlet options based on blast pot capacities.

<table>
<thead>
<tr>
<th>Blast Pot Capacity</th>
<th>Standard Outlets</th>
<th>Maximum Outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5 ft³</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10 ft³</td>
<td>1-2</td>
<td>3</td>
</tr>
<tr>
<td>8 ft³ Dual Chamber</td>
<td>1-2</td>
<td>3</td>
</tr>
<tr>
<td>120/160 ft³ Dual Chamber</td>
<td>2-4</td>
<td>16</td>
</tr>
</tbody>
</table>
BIG-GUN™ FULL FLOW SYSTEM

We use Pirate Brand® blast pots that feature the BIG-GUN™ full flow system. These blast pots are designed with high productivity in mind. The more air and abrasive you can flow, the less time it takes to complete the job. BIG GUN blasters are designed to have the lowest restriction possible to achieve higher blasting rates. They feature 1-1/2” ID piping, full port blast hose connections, lower restriction moisture separators, and larger air valves for blast pots with abrasive cut-off systems.

The complete BIG-GUN™ system also includes blast hose with larger ID, full port couplings, and faster accelerating nozzles.

All of this adds up to less pressure drop throughout the system and significant performance gains resulting in the best possible productivity.

SHORT-CYCLE™ SYSTEM SAVER

Short-Cycle™ Blasters are designed to withstand the punishing effects of quick on-off blasting while retaining the convenience of a pressure release system. Standard pressure release (SPR) blasters are great for blast rooms because when paired with an overhead abrasive hopper, they can be refilled by simply releasing the control handle and allowing the blaster to depressurize and automatically fill. Unfortunately, when blasting frequently for less than 10 minutes at a time with an SPR system, abrasive can overfill the blaster, damaging the pop-up and causing it to not seal properly. This causes abrasive to “burp” from around the pop-up and eventually ruin the metering valve.

Pirate Brand® Short-Cycle™ blasters overcome this issue by remaining pressurized when the control handle is released but feature a remote blow-down button to allow you to depressurize/refill your blaster without leaving the blast room.

Note: Dual-Chamber abrasive blast pots are inherently short-cycle proof by design.
ABRASIVE BLAST POTS

ABRASIVE CUT-OFF

Adding the abrasive cut-off option to your blast pot(s) allows the operator to switch off just the abrasive flow and clean off the object being blasted with compressed air. Abrasive cut-off systems are available for blast pots with either pneumatic or electric controls. The switch can be mounted on the blast hose near the blast nozzle and deadman control handle or wall mounted.

REGULATOR OPTION

Regulating the pressure of the compressed where it enters the blast pot is an often overlooked option that greatly effects blast pot performance. There are 2 important reasons to regulate the air pressure at the blast pot.

1. Better functionality: The more consistent the air supply pressure is, the smoother and better the abrasive blast pot will function. Swings up and down in supplied pressure will diminish productivity and can even result in premature wear of several blast pot components. This is especially important for dual-chamber systems.

2. Profile control: By adjusting the blasting pressure with the regulator, you have total control over the level of profile created during abrasive blasting. When you can control both the abrasive flow and the air flow precisely, the quality and repeatability of your work will be much better.

5 YEAR / 10 YEAR WARRANTY

Pirate Brand® abrasive blast pots include a standard 5 year warranty on the complete abrasive blast pot and a 10 year warranty on the pressure vessel. See the complete warranty documentation for details.
In addition to the blast room there are several pieces of support and personal protective equipment that will be necessary for a successful and productive blasting operation.

**ABRASIVES**

It is important to understand all your abrasive options. We want to be sure to educate you on the cost of the abrasive versus the recyclability of the abrasive. We are a stocking distributor of all commonly used abrasives and maintain a large warehouse of inventory. IDS Blast® is your connection for abrasives.

**BLAST HOSE & COUPLINGS**

There are several varieties of blast hose that are available in many sizes. IDS Blast® can make recommendations that will help you get the best performance and life from your blast hose as well as some suggestions for how to minimize user fatigue. We also supply all the necessary couplings and nozzle holders you will need.

**BLAST NOZZLES**

Straight bore, venturi, high performance big-gun, urethane jacket, aluminum jacket, tungsten-carbide, boron-carbide, SiAlON... When it comes to blast nozzles, there are hundreds of options. Let IDS Blast® be your guide and make recommendations for your operation. Compressed air HP and CFM determines the size of the nozzle to use in your blast room.

**REPLACEMENT PARTS**

With our massive inventory, the distance between you and the replacement part you need is never far. IDS Blast® stocks everything from filter cartridges, to valves, to control handles, to fittings and everything in between. Keeping you up and running at peak performance is our priority and commitment.
IDS Blast® is a stocking distributor of abrasives, parts & supplies and is here to support all of your needs from air compressors to replacement parts.

**RESPIRATORS**
To protect the operator from airborne dust and flying abrasive, you will need a protective respirator for each operator. We stock a complete line of respirators for the abrasive blasting industry as well as accessories, like climate control tubes, that keep the operator comfortable and productive.

**BREATHING AIR FILTERS & CO MONITORS**
Your respirators must be supplied with clean/safe air for your operators to breathe. Airline filters remove moisture, particulates & odor providing clean air to the respirator. Carbon monoxide is a serious concern when it comes to operator safety/health. CO monitors are available and highly recommended.

**PERSONAL PROTECTIVE EQUIP.**
Rely on IDS Blast® to stock all the personal protective equipment you will need to operate your blast room. From durable protective blast suits, to hearing protection, to comfortable protective gloves, we literally have you covered. We take blasting safety seriously and can advise you on what you will need.

**COMPRESSORS & AIR PREP.**
IDS Blast® has the knowledge & experience to supply you with properly sized and reliable air compressor(s) for your abrasive blasting setup. Cool, clean & dry compressed air is the key to better abrasive blasting. IDS Blast® supplies air dryers and filtration systems to minimize compressed air quality related down time.
YOUR RELATIONSHIP WITH IDS BLAST® ISN’T OVER ONCE YOUR BLAST ROOM IS INSTALLED, IT’S ONLY BEGINNING. Our trained technicians are ready to serve you from initial startup, through proper maintenance and repairs. We are here to support your blasting operation in every way and make sure your investment continues to perform at its peak year after year. Blast room services we commonly perform include:

• INITIAL STARTUP INSPECTION & CHECK OUT.
• EXPLANATION AND PROPER USE OF SYSTEMS.
• EFFICIENCY EVALUATIONS / OPTIMIZATION.
• EQUIPMENT REPAIR / REPLACEMENT PARTS.
• FUTURE UPGRADES & EXPANSION.

To get the best productivity and long term reliability, we highly suggest setting up a preventative maintenance program for your blast room. Improperly maintained blast equipment costs you money due to lower productivity and break downs. Let IDS Blast® maintain your equipment for you. Our factory trained technicians will come to your location on a regularly scheduled basis to make sure your blast equipment is running at peak performance!

AVAILABLE PREVENTATIVE MAINTENANCE PLANS

SILVER PLAN  Yearly Inspection & Maintenance
GOLD PLAN  Semi-Annual Inspection & Maintenance
PLATINUM PLAN  Quarterly Inspection & Maintenance
DIAMOND PLAN  Monthly Inspection & Maintenance
Most abrasive blast equipment requires a minimum pressure of 100 PSI in order for the control system to function properly. To maintain the 100 PSI minimum and lower the CFM requirement of blasting, a pressure regulator can be installed downstream of the control air connection. Example: if blasting with a #5 nozzle, the CFM requirement can be lowered from 140 to 115 by regulating the pressure to 80 PSI.

### CFM / PSI / ABRASIVE REQUIREMENTS

<table>
<thead>
<tr>
<th>NOZZLE# ORIFICE SIZE</th>
<th>AIR &amp; ABRASIVE RATES</th>
<th>50 PSI (3.5 BAR)</th>
<th>60 PSI (4.1 BAR)</th>
<th>70 PSI (4.8 BAR)</th>
<th>80 PSI (5.5 BAR)</th>
<th>90 PSI (6.2 BAR)</th>
<th>100 PSI* (6.9 BAR)</th>
<th>125 PSI (8.6 BAR)</th>
<th>140 PSI (9.7 BAR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2 1/8 inch (3.2 mm)</td>
<td>AIR</td>
<td>12</td>
<td>13</td>
<td>15</td>
<td>18</td>
<td>19</td>
<td>21</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ABRASIVE</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
<td>110</td>
<td>120</td>
<td>135</td>
<td></td>
</tr>
<tr>
<td>#3 3/16 inch (4.8 mm)</td>
<td>AIR</td>
<td>25</td>
<td>30</td>
<td>35</td>
<td>40</td>
<td>43</td>
<td>45</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ABRASIVE</td>
<td>150</td>
<td>170</td>
<td>200</td>
<td>215</td>
<td>240</td>
<td>260</td>
<td>320</td>
<td></td>
</tr>
<tr>
<td>#4 1/4 inch (6.35 mm)</td>
<td>AIR</td>
<td>50</td>
<td>55</td>
<td>60</td>
<td>70</td>
<td>75</td>
<td>80</td>
<td>95</td>
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</tr>
<tr>
<td></td>
<td>ABRASIVE</td>
<td>470</td>
<td>530</td>
<td>600</td>
<td>675</td>
<td>750</td>
<td>825</td>
<td>1000</td>
<td>1125</td>
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<td>#5 5/16 inch (8 mm)</td>
<td>AIR</td>
<td>80</td>
<td>90</td>
<td>100</td>
<td>115</td>
<td>125</td>
<td>140</td>
<td>190</td>
<td>230</td>
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<tr>
<td></td>
<td>ABRASIVE</td>
<td>900</td>
<td>1000</td>
<td>1200</td>
<td>1300</td>
<td>1400</td>
<td>1510</td>
<td>1800</td>
<td>2540</td>
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<tr>
<td>#6 1/8 inch (9.5 mm)</td>
<td>AIR</td>
<td>110</td>
<td>125</td>
<td>145</td>
<td>160</td>
<td>175</td>
<td>200</td>
<td>275</td>
<td>315</td>
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<tr>
<td></td>
<td>ABRASIVE</td>
<td>1200</td>
<td>1350</td>
<td>1500</td>
<td>17010</td>
<td>1850</td>
<td>2025</td>
<td>2525</td>
<td>3240</td>
</tr>
<tr>
<td>#7 7/16 inch (11.1 mm)</td>
<td>AIR</td>
<td>150</td>
<td>170</td>
<td>200</td>
<td>215</td>
<td>240</td>
<td>255</td>
<td>315</td>
<td>405</td>
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<td>1000</td>
<td>1200</td>
<td>1300</td>
<td>1400</td>
<td>1510</td>
<td>1800</td>
<td>2540</td>
</tr>
<tr>
<td>#8 1/2 inch (12.7 mm)</td>
<td>AIR</td>
<td>200</td>
<td>225</td>
<td>250</td>
<td>275</td>
<td>300</td>
<td>340</td>
<td>430</td>
<td>540</td>
</tr>
<tr>
<td></td>
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<td>1200</td>
<td>1350</td>
<td>1500</td>
<td>17010</td>
<td>1850</td>
<td>2025</td>
<td>2525</td>
<td>3240</td>
</tr>
<tr>
<td>#10 5/8 inch (16 mm)</td>
<td>AIR</td>
<td>300</td>
<td>350</td>
<td>400</td>
<td>450</td>
<td>500</td>
<td>550</td>
<td>700</td>
<td>880</td>
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<tr>
<td></td>
<td>ABRASIVE</td>
<td>1900</td>
<td>2200</td>
<td>2400</td>
<td>2700</td>
<td>3000</td>
<td>3300</td>
<td>4000</td>
<td>5200</td>
</tr>
<tr>
<td>#12 3/4 inch (19 mm)</td>
<td>AIR</td>
<td>430</td>
<td>500</td>
<td>575</td>
<td>650</td>
<td>700</td>
<td>800</td>
<td>1100</td>
<td>1255</td>
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<tr>
<td></td>
<td>ABRASIVE</td>
<td>2700</td>
<td>3100</td>
<td>3500</td>
<td>3900</td>
<td>4300</td>
<td>4700</td>
<td>5700</td>
<td>7375</td>
</tr>
</tbody>
</table>

This table is to be used as reference only. Actual results may vary depending on specific abrasive media used. This table is based on abrasive with a bulk density of 100 pounds per cubic foot.

*100 PSI MIN/REDUCE CFM REQUIRED

When calculating your CFM requirements, the air used by each respirator must be taken into account. A general rule is each respirator will require an additional 6-16 CFM. PSI and type of control device will affect the CFM used. Consult the owners manual for your respirator for more on specific PSI and CFM requirements.