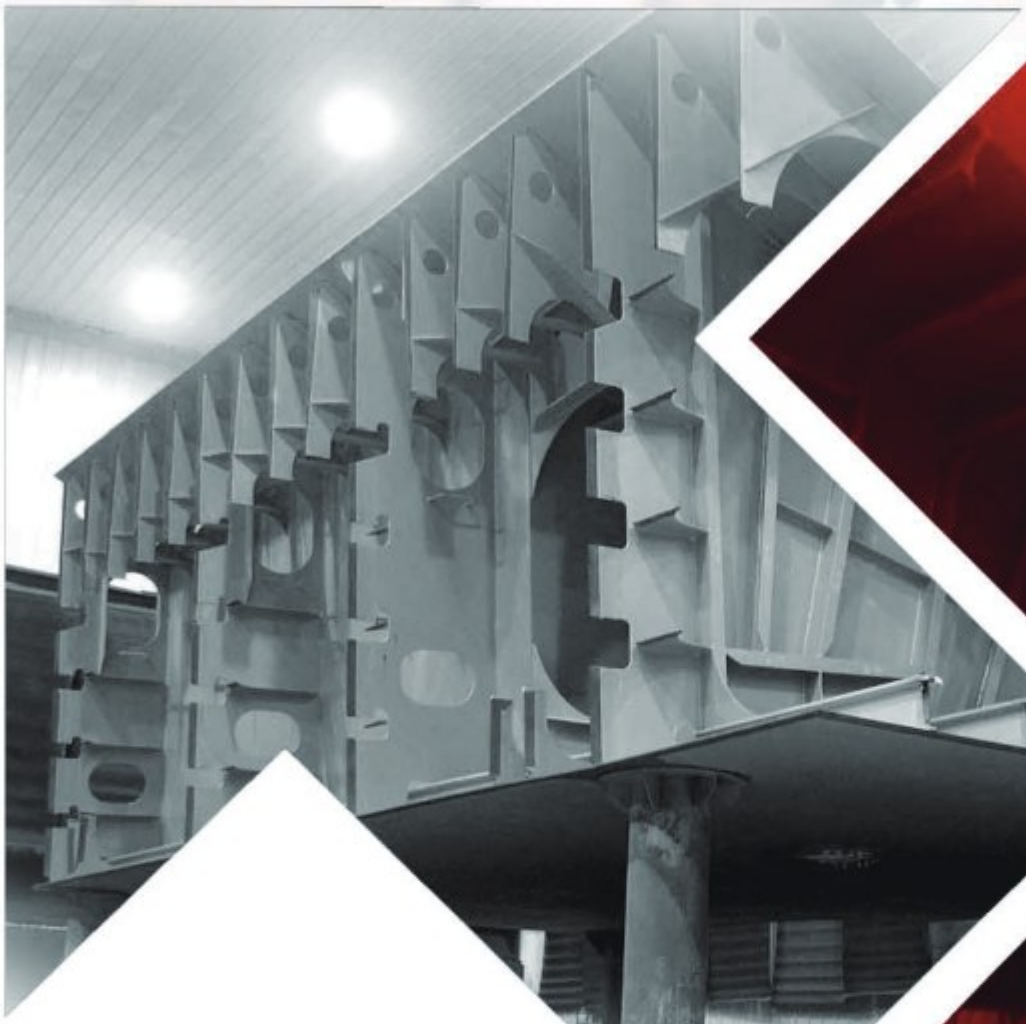
Blastechnik Blastrooms



SHIPYARD BLAST AND PAINT

Lowest Cost Per Square Meter Blasted.

Environmentally Friendly Non-polluting Facility.

Operator Friendly and Safe Working Environment.

High Quality Surface Preparation and Finishing.

With increasingly stricter environmental regulations, and with the introduction of new IMO guidelines for the production of double skin hull vessels, it is becoming more difficult and uneconomical to open blast ship blocks with expendable abrasives and to paint them dockside in the open air.

The Blastechnik range of ship block combination blasting and painting facilities makes it more economical than ever to move surface preparation and painting operations inside into an environmentally friendly climate controlled atmosphere where blasting and painting can be conducted around the clock 365 days a year without being at the mercy of the weather, or producing vast amounts of pollution. Blasting and painting inside a climate controlled facility will result in higher productivity and higher quality work with substantial cost savings.

The facilities are designed to permit abrasive blasting of large fabricated steel items using recyclable steel grit. This tough angular abrasive can be recycled hundreds of times, resulting in the lowest possible abrasive cost per square meter. After blasting the spent abrasive is manually recovered from inside the ship block or on the chamber floor and deposited into a recessed screw conveyor from where it is transported to the abrasive cleaning and storage station to be processed prior to reuse.

During blasting, and prior to primer painting, the humidity level within the blasting chamber is maintained at approximately 50% RH. This low humidity level will greatly slow down the corrosion rate of the freshly blasted steel surface and will prevent rust bloom occurring. This low humidity level is achieved by using a combinaton of Blastechnik TDF ventilation dust collectors and high efficiency dehumidifires.

With our focus on productivity many of our facility designs utilise a shared machinery concept. This is applicable to facilities with two or more blasting and painting chambers. Commonly not all chambers are used at the same time so the abrasive blasting system and blasting ventilation system can be shared amongst two chambers which greatly reduces the capital investment needed.

During spray painting the ventilation air flow is exhausted directly to atmosphere, after over spray filtration, and is not recycled to the painting chamber. Fresh and dehumidified air is constantly introduced into the painting chamber in order to maintain a maximum concentration of vapors and mists not exceeding 25% of the lower flammable limit, as required by NFPA33.

BLASTECHNIK SYSTEM ADVANTAGES:

- **Shared machinery room concept reduces capital investment in equipment but maintains productivity levels.**
- **Low power European made dehumidifiers maintain relative humidity levels within the chambers to prevent flash rust bloom.**
- **TDF ventilation dust collectors with high efficiency automatic cleaning system maintain excellent blastroom visibility and meet all dust emission standards.**
- **Abrasive clean up time is reduced to a bare minimum with the Blastechnik Abrasive Vacuum Recovery Unit fitted with German manufactured high efficiency rotary vacuum producer.**

We welcome your enquiry and look forward to working with you to satisfy your surface preparation and painting requirements.








Belt Conveyor

In large blastrooms the transportation of large amounts of abrasive during clean up can be time consuming due to the distances it must be moved. A time saving practical solution to this is to position belt conveyors along one or two sides of the blastroom. The abrasive is then manually pushed onto the belt conveyor. The Blastechnik belt conveyor is capable of transporting up to 25 metric tonnes of steel abrasives per hour and is available in various lengths to suit the blastroom size.

The belt conveyor is fitted with an anti flooding feed hopper to prevent overloading. A motorised pulley ensures no moving parts are exposed to the abrasive grit and provides maintenance free reliable service. In case of breakdown the complete conveyor belt assembly can be simply lifted from the recess pit for repair.

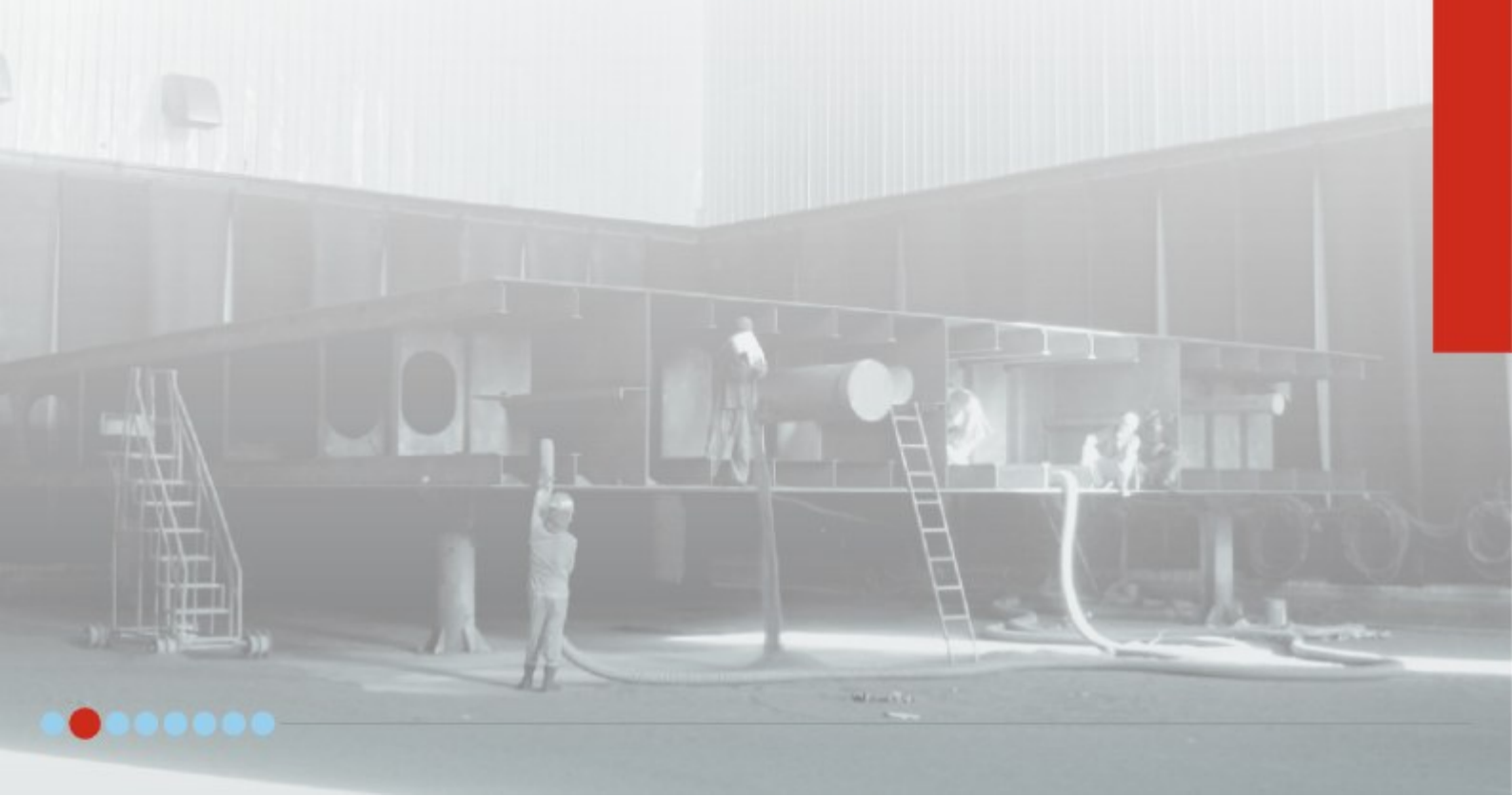
Abrasive Vacuum Recovery Unit

Due to the containerised shape of ship block sections huge quantities of blasted abrasive end up inside the block after blasting. In order to achieve high productivity blasting and painting through put rates it is essential that all the blasted abrasive is removed from the ship block as quickly as possible.

The most effective way to remove this is with the Blastechnik Abrasive Vacuum Recovery Unit which has been developed specifically for the application. This high capacity unit is capable of comfortably recovering 8-10 metric tonnes of steel grit per hour. The heart of the unit is a German manufactured positive displacement vacuum pump which provides high vacuum recovery rates whilst requiring minimal electrical power.

This high powered vacuum unit offers unparalleled recovery rates and will not stall or plug recovery hoses when blocked. The vacuum pump is also fitted with an automatic over pressure safety relief valve to prevent damage in case of complete blockage of the system.

The recovered abrasive is automatically deposited into the mechanical abrasive recovery system for treatment to separate good reusable abrasive from dust and oversize waste.



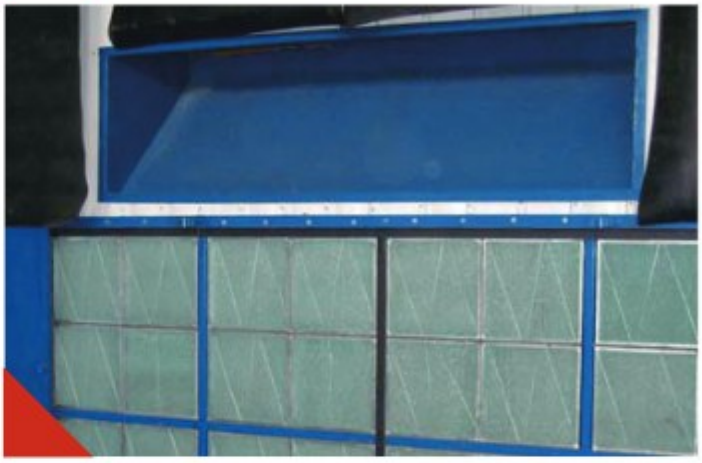
Painting Ventilation

During the spray painting process large amounts of explosive and toxic chemicals and gases are generated within the blasting/painting room. These vapors represent a safety risk of explosion and fire as well as being dangerous to workers health if inhaled.

The Blastechnik paint over spray exhaust plenum provides a powerful method to adequately ventilate the blasting/painting room to prevent excessive build up of the vapors. Fitted with disposable filter pads, to capture paint over spray solids, the filters will ensure the ventilation air exhausted to atmosphere does not pollute the surrounding environment.

Axial fans are fitted with non ferrous, non sparking blades to prevent an explosion in the unlikely event a blade comes into contact with the fan casing. Inlet silencers are positioned in front of the fan to reduce operators noise exposure and self sealing, non restrictive weather proof caps permit the free flow of the ventilation air to atmosphere but restrict the entry of rain water into the duct.

Infrared flammable/explosive gas detectors are fitted to the chamber to detect the build up of dangerous saturated hydrocarbons and gasses beyond 25% of the lower explosive limit (LEL). If the safe threshold limit is exceeded warning alarms are activated and, if required, further spray painting is prevented until the gas level reaches a safer level.



Dehumidifier

Due to the size of the item being processed it can take many hours or even days to fully blast a ship block prior to the application of the primer coating. In areas of high relative humidity this can cause the freshly blasted steel surface to flash rust prior to the application of the first layer of paint. Once the steel has started to rust it no longer meets the quality standard required for painting and will require reblasting.

The relative humidity level of the air surrounding the part determines how fast the part will corrode. Higher relative humidity levels produce faster corrosion rates. Lower relative humdity levels will extend the time taken for the part to start to rust. Dust on the product surface will also accelerate the corrosion rate.

The Blastechnik controlled environment blastroom uses a combination of high efficiency TDF ventilation dust collectors, to provide a clean dust free environment, and desiccant type dehumidifiers to dry the air and maintain relative humidity levels at 50% during blasting and clean up. With a relative humidity level of just 50% the risk of flash rusting is almost completely eliminated, negating the need to immediately paint after blasting.

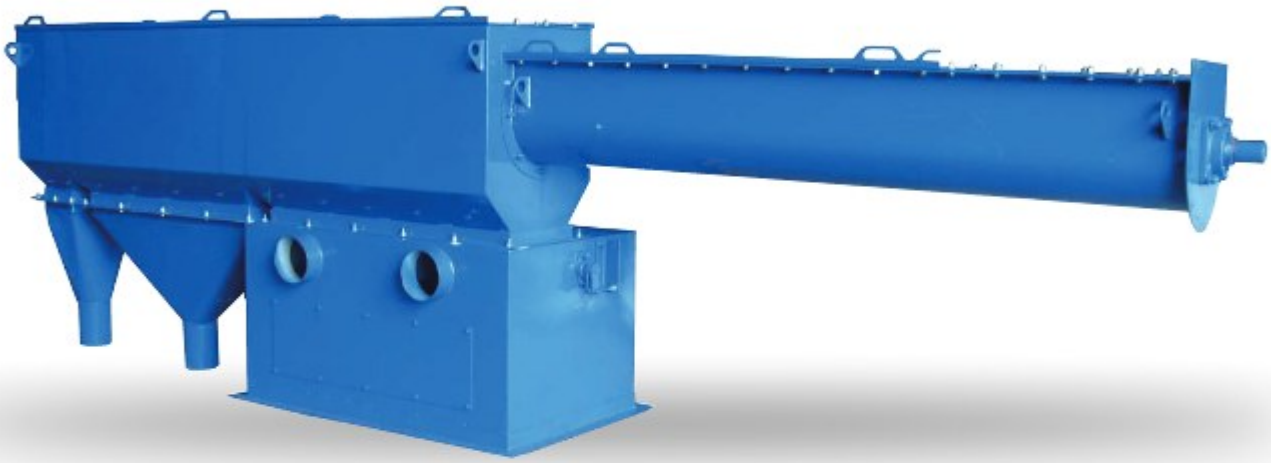
A series of recirculation ducts fitted with automatic volume control dampeners provide various operating modes of the dehumidifier to suit the required conditions.

Abrasive Grit Cleaner

Utilising recyclable steel grit as the blasting abrasive ensures high quality blasted surfaces and minimal abrasive cost. As this abrasive is so durable it is able to be recycled hundreds of times, resulting in an extremely low abrasive breakdown rate of <0.3 - 0.5kg/m2. This results in a fraction of the waste being generated, and needing to be disposed of, when compared to expendable abrasives.

Critical to achieving this efficiency is the effectiveness of the abrasive recycling plant. Poorly designed or manufactured abrasive recycling systems will not correctly recycle the abrasive and are unable to maintain the correct abrasive working mix.

The Blastechnik abrasive grit cleaner consists of an extended rotary separator drum that will totally remove all oversize waste, scrap and paint chips etc. The abrasive is then fed through a gravity airwash separator where all dust, degraded abrasive and undersize waste is drawn out of the good abrasive by an air current. Only good, correctly sized abrasive is fed back to the abrasive storage hopper and blast pots for reuse. The effectiveness of the Blastechnik abrasive grit cleaner ensures maximum recyling rates of the abrasive and high quality surface finishing is achieved.



Blast Pot

alpha-blast blasting pots are available in a variety of sizes and configurations. All blasting pots are manufactured to ASME/PED/AS approved designs. A variety of valving configurations are used to suit operating requirements.

When continuous blasting is required the double chamber blast pot will provide a continuous flow of abrasive to the blast nozzle without having to stop for refilling. Multiple outlet blast pots allow 2-6 operators to blast from the same blast pot. Each operator has a deadman remote control handle to start and stop the blasting, independent of all other operators.

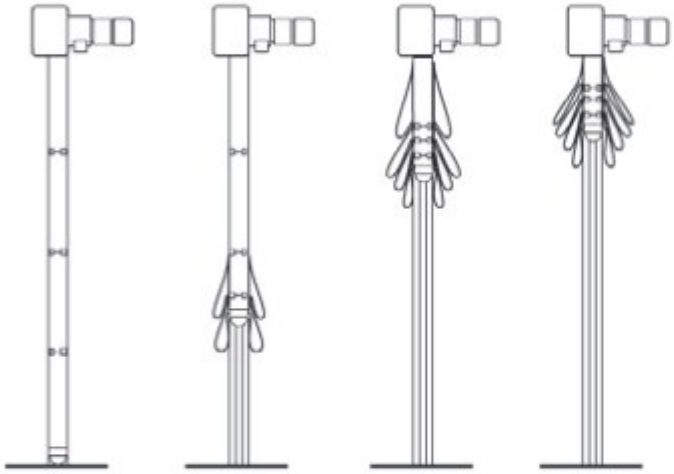
One of the fastest ways to clean up the blasted abrasive is to use a nozzle blow down. If the blast pot is fitted with the Dual Switch remote control handle this is easy to accomplish from the nozzle. After blasting the operator merely pushes the deadman handle control lever to an up position which then permits only air supply to the blast nozzle to perform abrasive blow off. This time saving feature can save hours of wasted production time in abrasive clean up.

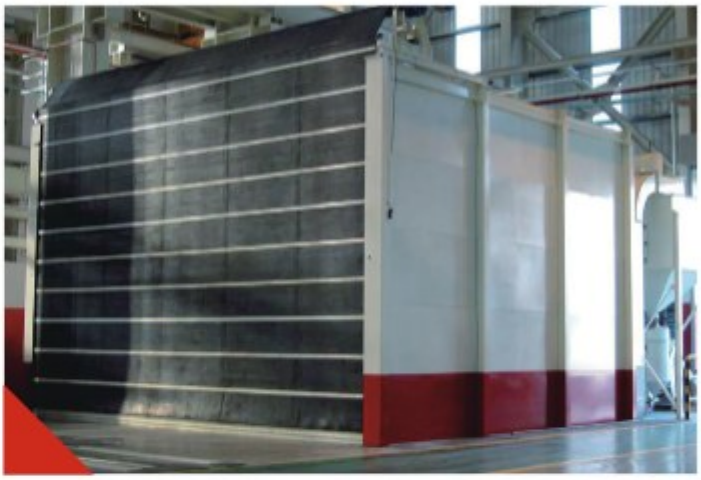
The alpha-blast FatBoy series of blast pots are designed specifically for use with garnet abrasive. A low loading height and over capacity sizing allows the pot to be filled with 1, 2 or 4 tonnes of abrasive.

Access Door

Costing no more than fabricated steel doors the Megadoor series of fabric fold up vertical access doors provide a space saving reliable alternative to traditional steel doors. Built tough for the application the Megadoor will provide millions of cycles of trouble free service with little or no deterioration. Manufactured from aluminum frames and a polyester skin the Megadoor is lightweight yet able to withstand high wind loadings and is corrosion resistant.

For smaller blastrooms an alternative is the Blastechnik Rubber Roll Up Door. This door will eliminate a lot of wasted space, as well as reduce and dampen the blasting noise coming from the blast room. The Blastechnik Rubber Roll Up Door is produced from a tough, wear resistant SBR material, manufactured specifically for the application to provide years of trouble free service.





Moisture Separator

Always a problem for blasting operations is the presence of moisture in the compressed air supply. This will lead to flash rusting on the blasted surface and clogging of the abrasive inside the blast pots.

The alpha-blast moisture separator will remove a large amount of the moisture from the compressed air stream and prevent a lot of these problems. Containing no moving or replaceable parts this moisture separator will provide years of trouble and maintenance free service.

The moisture separator is fitted with auto drain valve for automatic discharge of the collected moisture. Available in 3 sizes of 400, 800 and 1200 cfm capacities, all are ASME U stamped.

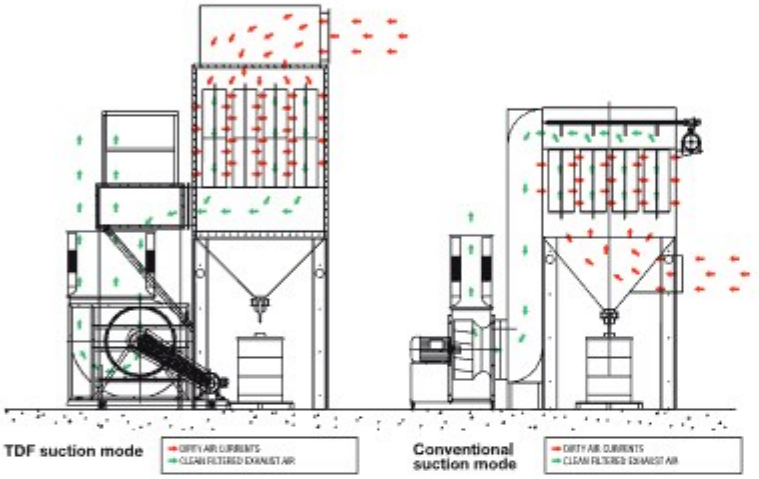
All Blastechnik blastrooms are supplied with TDF (true down flow) dust collectors to produce the blasting ventilation airflow.

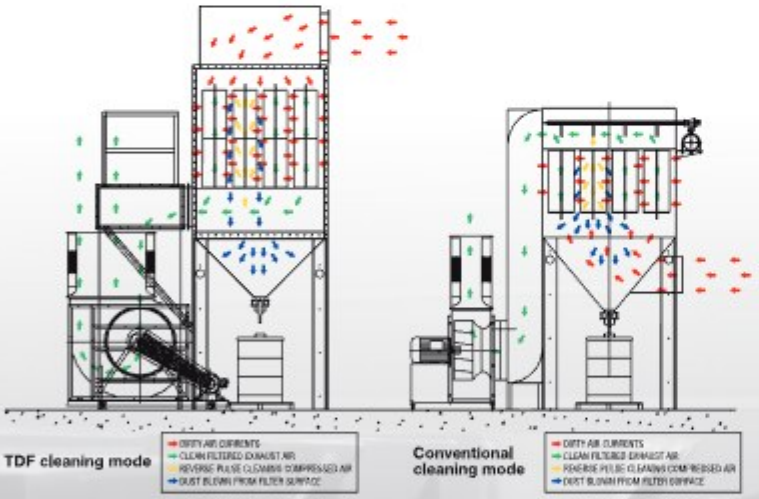
The TDF dust collector is uniquely designed. Unlike conventional cartridge type dust collectors, in which dust pulsed from the filter cartridges is falling downwards into an incoming up-flow air stream, our design is the total opposite. The dust laden incoming air flow is from the top of the collector and the filter cartridges are pulsed clean directly into the outlet collection hopper. The airflow through the dust collector and the direction of the dust pulsed from the filter cartridges is the same direction. This unique feature greatly increases the filter cleaning efficiency and prevents the filter cartridges becoming clogged with dust.
This results in the dust collector providing constant performance and extends the life of the filter cartridges.

Vital to running an efficient blast cleaning operation is the performance of the dust collector. If this is either designed incorrectly or not functioning correctly the consequences are serious;

- **The blastroom is excessively dusty, dust leaks out of the blastroom and contaminates surrounding areas and workers.**
- **The work piece is dirty and coated with a layer of black dust.**
- **Dust is emitted to atmosphere causing environmental damage.**

Our TDF dust collectors are designed specifically for use in the harsh environment associated with blast cleaning operations, and will eliminate all of the above issues. The TDF dust collector is also available as an upgrade to existing blasting equipment fitted with inefficient, under capacity or badly designed dust collectors.





Blastroom Optimisation & Ancillary Equipment

We produce a range of ancillary equipment to complement blastroom facilities and improve productivity and ease of use

CONTROL PANEL

All Blastechnik blastrooms are supplied with an intelligently designed electrical control panel. During the panel design stage emphasis is placed on making the control panel and running of the blasting, recovery and painting equipment as simple and user friendly as possible. A maintenance over ride function permits supervisors or maintenance personnel to operate the equipment independent of the interlock controls. Monitoring of the status of all motors and drives is illustrated on a graphical LCD screen display.

COVERCAT SPRAY SYSTEM

Covercat 452 Plural Component Bulk Supply Spray System, high solids paint spraying with multigun capabilities supplies up to 6 spray guns on individual hoses to 500feet (150 meters) from the unit.

OPERATOR SAFETY EQUIPMENT

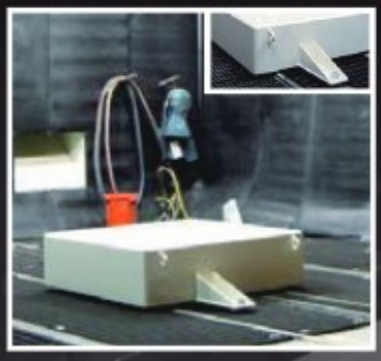
NOVA2000 helmet. Radex breathing air filter. Blasting suits. Lenses and ancillary equipment.

BLASTING LIGHT

The perfect solution for blasting in areas with poor visibility is the alpha-blast Blasting Light. Powered by a 12VDC LED lamp this cost effective solution will make a huge difference in productivity. The alphablast Blasting Light is ideal for blasting inside and under ship blocks and inside tanks or areas where visibility is reduced due to enclosed part shape.

AIRBLAST ACCESSORIES

Remote control valves & handles. Abrasive metering valves.Blast hose, Couplings & Nozzle Holders.



WORK HANDLING

In order to assist in processing the workpiece through the blastroom we supply a variety of work handling methods including trolleys, monorails, turntables etc. Options include wireless remote controlled cable and winch systems. Our designs permit work pieces up to 50 tonnes to be shifted with ease.

ABRASIVES

Steel Shot. Steel Grit. Garnet. Crushed Glass

Blastechnik Blastrooms

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