Shipyard Industry Solutions

AIRBLAST

Surface Treatment Solutions

Index

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Introduction

Welcome to "Shipyard Industry Solutions".

This guide features the most effective and efficient equipment in improving the blasting and painting process inside your shipyard.

The impetus to invest in Airblast Equipment may be driven by the desire to gain a competitive edge over your competitors, to better control the quality achieved, or by environmental legislation. Whatever the reason the move to utilizing Airblast Equipment ensures that each process is undertaken in the most efficient and effective manner.

Each section features a different range of equipment designed to be used in the shipyard environment.






As this guide features only the main pieces of equipment required there may be items which you wish to purchase which are not mentioned within these pages – please consult with your local Airblast representative to receive details of the full range of products.

For more than 40 years Airblast has been the world leader in providing blasting and painting solutions to the anticorrosion industries. With an unparalleled network of offices around the world Airblast works closely with our customers and distribution partners providing tried and tested equipment as well as developing customized solutions for specific applications.

Airblast is dedicated to maintain a profitable organization on a long term basis through ethically and morally sound business practices. By investing in the long term future of our organization, and those with whom we conduct business, Airblast believes that we can share sustained mutual success.

Our manufacturing facilities in Europe and the Far East produce fit for purpose quality products with region specific certification. All Airblast equipment is manufactured according to the highest relevant safety standards and passes our rigorous quality controls before dispatch.

Mindful of the environmental responsibilities faced by our generation Airblast is committed to a programme of research and development into technologies facilitating zero emission blasting and painting along with an education programme promoting planet friendly operations.

Blasting

Airblast recognises the needs of the shipyard industry and our abrasive blast equipment offers all the features that the professional user requires. Our core range of open blasting pots all feature a well designed and proven single piece remote control & dead-man handle system and silencer ensuring reduced labour costs, high efficiency of abrasive utilisation, as well as operator safety.

All machines are designed to be used with a wide range of accessories including an extensive choice of nozzles, wet blast attachments, and internal pipe cleaning devices. Numerous metering valve options are available depending upon the application including Micro Valve, Flat Sand Valve, Steel Grit Valve, and Thompson Valve.

A wide range of high production single or double chamber and multiple outlet machines are available, manufactured to cover all possible requirements of the industry. All equipment is designed to facilitate fast filling, unrestricted airflow, as well as easy access for inspection and maintenance. The portable range from 17 liters to 300 liters features the same high quality construction, security and performance as our 3400 liter and 4500 liter bulk blast systems.

Airblast offers numerous dust free blasting solutions which provide onsite flexibility as well as high performance including: mobile wheel blast machines, vacuum blasting machines, wet blast nozzle attachment, Aquastorm slurry blasting system, and UHP.

Products

Blast Pots

Bulk Blasters

Vacuum Blast Machines

Aquastorm

Ultra High Pressure

Blast Pots

Airblast has a comprehensive range of open blasting pots available as either stand alone units or as complete systems including all the accessories required to blast such as Personal Protection Equipment, hoses, etc. Each blast pot is manufactured to be fit for purpose and is supplied with region specific certification.

Bulk Blasters

Designed to supply up to eight blasters operating independently bulk blast systems are designed to be easily transported around the ship yard being supplied as either skid mount or on a yard trailer. As each blaster operates independently down time is minimized and production optimized.

Vacuum Blasting Machines

This range of equipment has the flexibility to provide dust free blasting on complex substrates due to the system of easily interchangeable blast heads. Totally dust free and easy to use the system has the possibility to utilize hose lengths up to 45 meters whilst removing rust or old / failed coatings.

Aquastorm

The Airblast Aquastorm slurry blast system provides a fast, dust free, hot spark proof slurry blasting operation. Rust inhibitor can be added to the water to avoid flash rust and any non metallic abrasive can be used.

Ultra High Pressure

Multiple Ultra High Pressure units are available to suit all applications where the steel to be cleaned does not require a new profile.

Painting

Airblast is proud to be a longstanding Graco Gold Distributor certified to market and support exclusively Graco products throughout specific regions of the world.

Graco is the world leader in industrial airless spray technology and continues to develop new and innovative solutions to apply the demanding coatings available now and in the future.

Graco equipment is robust, easy to maintain and has proved highly popular with multi-unit and single-unit users alike. Airless atomization provides the optimum blend of reliability, versatility and speed of operation required by the modern shipyard and can be used to apply a wide range of single and plural component anti-corrosive coatings.

In addition to the traditional single component coatings plural component coatings are becoming more and more popular due to their high performance characteristics. Graco offers a full range of plural component spray units designed to apply coatings with different mix ratios and cure times.

In addition to the spray units Graco manufactures a full range of accessories including:

- Spray Guns, Pole Guns, Extensions, Gun Service Kits
- Spray Tips, Tip Guards
- Airless Hoses (single and twin braided), Adapters, Couplings
- Swivels, Unions, Filters, Valves, Regulators, Lubricators, Gauges
- Agitators, Pump Repair Kits, Pressure Cups, Tanks, Air / Fluid Hoses

Products

Xtreme NXT
High Performance
Airless Sprayer

X-Force
Powerful Cordless
Sprayer

XP70
Plural Component
Sprayer

XM Plural Component Sprayer

XM PFP Application System

NXT Xtreme: High-Performance, High-Pressure, Airless Sprayers
The Xtreme Airless sprayers set the industry standard in airless spraying. The are proven to outperform and outlast all other sprayers in the market. The Extreme sprayers are designed to withstand the harshest environmental conditions and easily handle the toughest protective coatings and corrosion control applications.

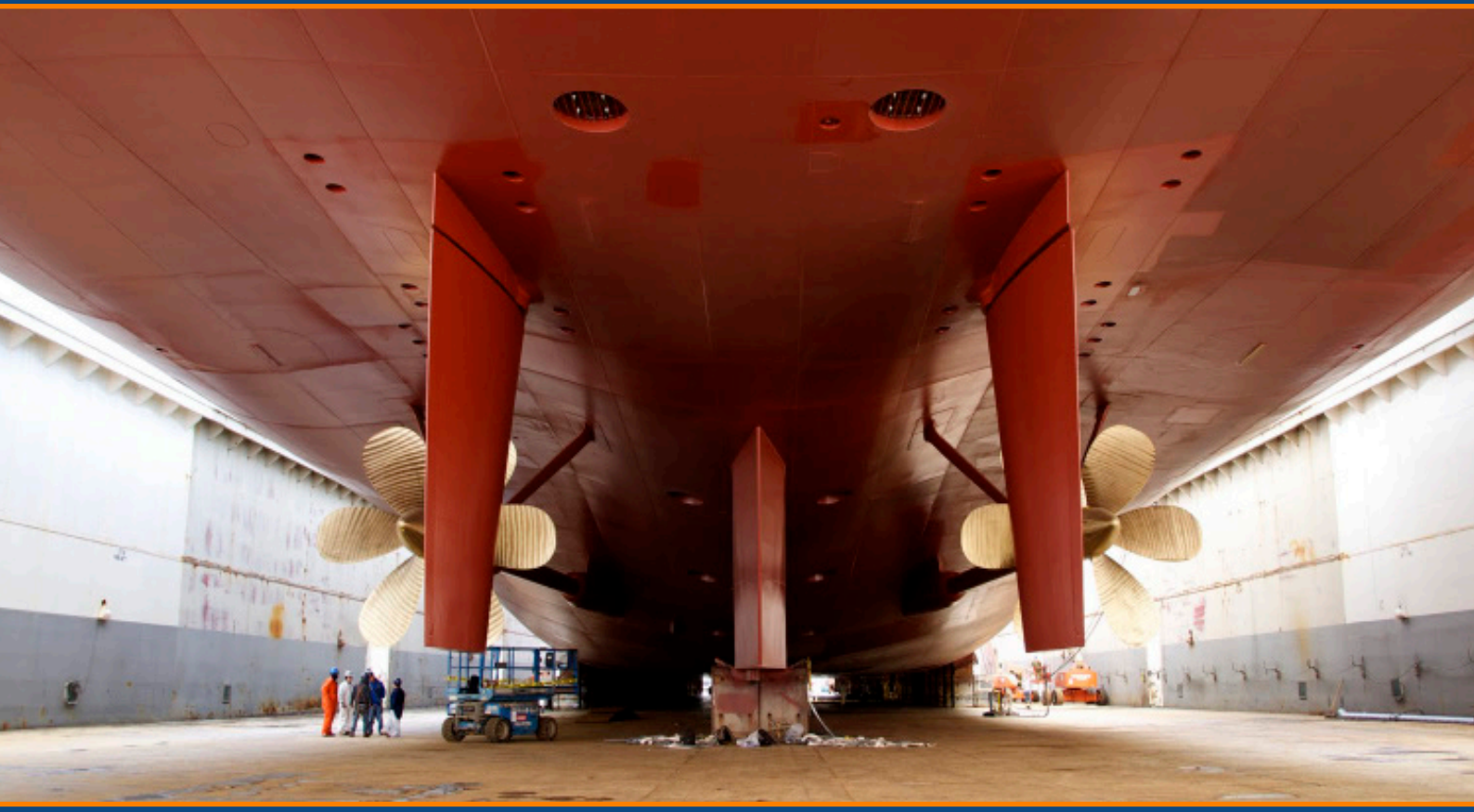
X-Force: Handheld Airless Sprayer
Designed to be used as a quick and easy method of touching up completed jobs the X-Force does not require a power source and can be quickly and easily moved to complete emergency repairs. Powerful batteries ensure that this hand held gun can applied coatings originally sprayed by an Xtreme Sprayer.

XP70: Plural Component Airless Sprayers
The trend in the coatings industry is towards plural component high solids content. Formulated with less solvent, these coatings reduce VOC emissions and speed up production with faster cure times. Utilizing Xtreme technology the range of fixed ratio XP70 Plural-Component Sprayers are designed to pump, mix and atomize high-viscosity materials with a pot life of approximately 10+ minutes with superior results.

XM: Plural Component Airless Sprayers
Utilising Xtreme Technology the range of variable ratio XM Plural Component Sprayers are designed to pump, mix and atomise high viscosity materials with superior results. Featuring advanced features such as ratio accuracy control, ratio assurance, and data down load the XM range is ideally suited to today demanding shipyard environment.

XM PFP: Passive Fire Protection Application System
The protection of steel from the effects of fire requires a coating of Passive Fire Protection (PFP) material. This high performance material requires exacting standards to be adhered to in each application to ensure that the system will work as designed.

Inspection



Each stage in the process of surface treatment is critical in guarding against premature coating failure. There are many tests and safeguards which can be put in place to ensure that the interaction of the substrate to the coating is as intended. The Airblast Inspection Equipment range breaks down the process of inspection into six distinct steps – each step requiring certain pieces of equipment.

Step 1: Climatic Conditions
The prevailing climatic conditions during blasting and painting are critical in achieving a successful coating application and must be monitored to avoid condensation forming on the substrate.

Step 2: Surface Cleanliness
After blasting it is important to assess the cleanliness of the steel. Most high performance coating systems require the steel to be cleaned to a recognised standard such as: S.S.P.C., N.A.C.E., or SA.

Step 3: Surface Profile
As well as cleaning – the blasting process also achieves a profile which allows the coating to adhere correctly.

Step 4: Coating Thickness
High performance coating systems require that each application is of a specified thickness when dry.

Step 5: Adhesion
If the coating does not adhere correctly to the substrate the coating may suffer premature failure.

Step 6: Inspection
The coating applied to the substrate should protect against premature corrosion. The integrity of the coating can be assessed with respect to porosity and remedial work carried out if required.

Products

Step 1 **Step 2** **Step 3** **Step 4** **Step 5** **Step 6**

DPM-120
RH% Dewpoint Meter

SSM-200
Soluble Salt Meter

TXT-300/TXG-320
Testex Tape
Testex Gauge

DFT-441
Dry Film Thickness Gauge

CHC-520
Cross Hatch Cutter

HOD-600
DC Holiday Detector

Each of the steps includes numerous pieces of equipment which can be used in conjunction with each other to monitor the complete process. The key pieces of equipment required for each stage of the process are detailed below. For further information please refer to The AIE Guide.

DPM-120 Dewpoint Meter
The DPM-120 constantly measures the surface temperature of the substrate, the air temperature, and the relative humidity in order to calculate the dew point temperature. Internal memory make this unit essential for blasting operation.

SSM-200 Soluble Salt Meter
The SSM-200 is a hand held, automatic method for detection of salts on magnetic surfaces and can be used instead of the Bresle Test. Up to 1000 measurements can be stored in the internal memory for down load and analysis.

TXG-320 Testex Gauge
The TXG-320 when used in conjunction with the TXT-300 Testex Tape accurately reads the depth of the profile recorded from the blasted surface. The tape can be retained for records and future reference.

DFT-400, DFT-420, DFT-440, DFT-441 Dry Film Thickness Gauges
The Airblast range of DFT gauges features a range of capabilities to suit the most demanding applications. The range features integral and separate probes, measurement storage and download capabilities, and the unique wireless probe option!

HAT-500 Hydraulic Adhesion Tester
The HAT-500 can be used for destructive and non-destructive adhesion testing using dollies which are glued to the substrate before being tested, the dollies can be removed or left in place and retested as part of a scheduled maintenance programme.

HOD-600 DC Holiday Detector
The HOD-600 passes as voltage through a brush electrode which is moved over the coated surface – the voltage will spark through a pin hole or flaw to the substrate identifying the area for closer inspection.

Vacuum Recovery

L'un des nombreux défis auxquels fait face le chantier naval moderne est la gestion des abrasifs utilisés dans le nettoyage par essorage. Un nouvel abrasif doit être chargé dans des silos prêts à être déposés dans des machines à explosion, et les abrasifs usés doivent être
retiré de l'emplacement de dynamitage pour l'élimination. L'équipement Airblast offre la solution idéale pour la gestion de vos abrasifs. Chaque système de récupération sous vide est conçu pour fonctionner et est fourni avec une certification spécifique à la région.

Les systèmes de récupération sous vide Airblast sont conçus pour déplacer un abrasif d'une pile de stockage ou d'une zone de dynamitage dans un silo pour une utilisation dans l'opération de dynamitage. Après le dynamitage, le même équipement peut être utilisé pour déplacer les abrasifs usés humides ou secs de la zone de dynamitage dans un silo pour l'élimination dans une trémie de déchets.

Après avoir déposé l'abrasif dans le silo, le flux de vide contenant de l'air et de la poussière continue sur l'unité d'aspiration, où les particules de poussière sont retirées par des cartouches filtrantes à haute performance avant d'évacuer l'air dans l'atmosphère.

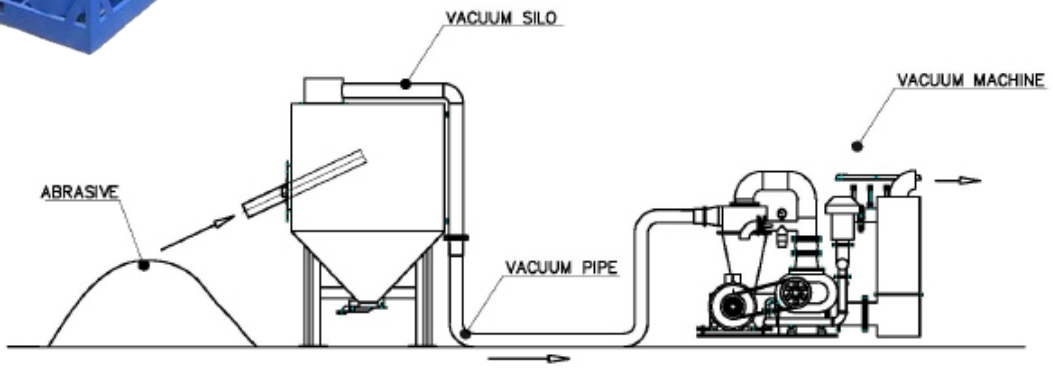
L'équipement de récupération par aspiration d'airblast est une construction solide avec des portes d'accès de maintenance robustes qui contiennent la section de filtre équipée d'une soupape de sécurité et d'un système de nettoyage par filtre à impulsions inversé séquencé automatiquement, d'un moteur de commande électrique et d'une pompe à vide avec silencieux d'échappement. Les unités sont également équipées d'un panneau de commande électrique.

Les systèmes de récupération du vide Airblast sont conçus pour répondre à la législation environnementale actuelle et proposée en matière de poussière

Products

ABVR90

VRS



The Airblast range of Vacuum Recovery Equipment incorporates various units to cater for all applications, the most popular unit for shipyard applications is our 90 KW unit, but units as small as 7.5 KW and as large as 120 KW can be supplied.

Each Vacuum Recovery System comprises of the following key components:

Suction Tool
The suction tool introduces air to fluidise the abrasive to be recovered facilitating the smooth flow of abrasive into the suction hose.

Suction Hose
Specially designed and reinforced 4” or 6” suction hose is designed to be both flexible yet strong for optimum performance.

Silo
The standard silos are 5 tons and 8 tons each supplied with a valve to control the flow of abrasive out into the blast vessels or disposal skip.

Blower
Airblast uses only the highest quality blowers to generate the vacuum within our recovery units.

Motor
Airblast uses only the highest quality motors to convert the power within our recovery units.

Dehumidification

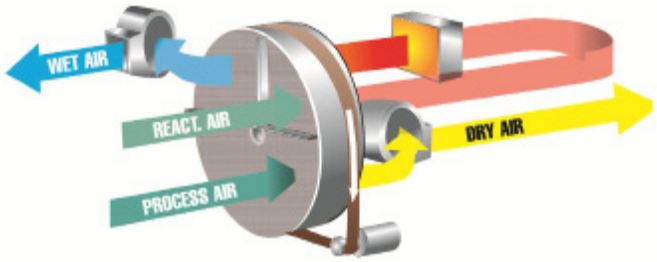
Rust is the enemy of newly blasted steel - high atmospheric humidity coupled with low steel temperatures provide the optimum conditions for the condensation of moisture onto the newly blasted surface. Condensation rust is one of the leading causes of premature coating failure. The Airblast range of dehumidifiers are designed to provide the optimum climatic conditions for blasting by reducing the relative humidity.

Dehumidification is the removal of water from the air. Airblast dehumidifiers process the ambient air before exhausting it into the area to be dehumidified, for example the tank of a ship. The Airblast range of dehumidifiers incorporates units capable of processing different amounts of air per hour, and units utilizing different technology to achieve the same goal.

Each dehumidification challenge is unique: space constraints, access constraints, multiple tanks to dehumidify, and extreme climatic conditions all conspire against the successful coating application. For those reasons Airblast has small mobile dehumidifiers starting with a processing capacity of 500 Cubic Meters per Hour (CMH) which are ideally suited to smaller tanks or applications where space or access is a concern, as well as large dehumidifiers with a processing capacity of 24,000 CMH or more for when maximum performance is the only consideration.

Climatic conditions around the world vary dramatically from cold and humid in Western Europe, warm and humid in the Far East, to hot and humid in the Middle East. Different types of technology can be used in the dehumidification process – certain specific dehumidification technologies deal more effectively with a particular climatic condition than others. Airblast therefore has developed specific dehumidifier ranges optimized for use in the different climatic conditions, a separate range of dehumidifiers for Western Europe, the Far East and the Middle East.

Each Airblast dehumidifier is manufactured to the highest quality standards and is supplied with region specific certification.



The Airblast range incorporates different types of technology to optimize the performance in specific climatic conditions.

Desiccant Wheel
The air to be dehumidified is passed over a revolving wheel which contains moisture absorbent chemicals. As the wheel turns moisture is absorbed from the air into the chemical which is then heated resulting in the release of the moisture as water, before being used to absorb moisture from the air again in a continuous cycle. The air which has been dehumidified is released from the dehumidifier into the tank to be dehumidified.

Refrigerant
The temperature of the air to be dehumidified is reduced and then passed over evaporator coils onto which the moisture from the air condenses. The air is then passed over numerous reheat coils to increase the temperature before exiting the dehumidifier at a reduced temperature, dew point, and absolute humidity.

Combined
Airblast has combined these two separate technologies into one range of dehumidifiers in order to optimize performance in certain specific climatic conditions. If the challenge is extreme the Airblast combined unit can handle the job.

Blast Room

Each Airblast Blast Room is tailor made for the specific requirement of each individual customer – your operational demands are unique… Why should you compromise with a standard solution…?

Each element of an Airblast Blast Room is engineered to be in balance with the other elements – this ensures that the flow of products, the flow of abrasive, and the flow of dust is smooth and uniform.

After an extensive investigation and analysis of the objectives and goals of the blast room our team of engineers draw upon years of experience and a long established installed base of blast rooms in operation around the world to ensure that the Airblast Blast Room proposal satisfies all of the criteria as well as allowing opportunities for future development.

As each Airblast Blast Room is designed specifically on a project by project basis the possibilities for customization are endless: multiple blasters operating on one room; product access through one end or both ends of the blast room; abrasive recovery options including: sweeping pit, cross conveyor, U shape, H shape, and complete floor automatic recovery with conveyor system or scrappers; down draft or cross draft dust extraction; automatic grit recycling incorporating magnetic separation.

For additional flexibility Airblast can provide a combined blast and paint room: once the blasting is completed and the abrasive recovered a separate paint extraction system is activated and painting of the product can begin. The reduced product handling provides additional quality control benefits as well as cost savings.

Airblast has an extensive reference list of installed blast rooms around the world working with companies such as Keppel Fells Singapore, Gdansk Shipyard in Poland, and many others.

Each Airblast Blast Room is engineered to the highest quality standards and is supplied with region specific certification. The key elements and processes in a blast room are detailed below.

Abrasive Management
After impacting the substrate abrasive falls to the floor and through the grating into the recovery system, or remains of the floor to be manually moved into the recovery system in the case of sweeping pit, cross conveyor, U & H shape recovery systems. The abrasive is guided onto the recovery system by a V-hopper section designed to ensure that overload is impossible. Airblasts scrapper and conveyor recovery systems both utilse totally enclosed, sealed for life, maintenance free motors. The recovery system transports the abrasive to the bucket elevator (which utilizes Columbus buckets to ensure that overload is impossible) which delivers the abrasive into the cascade cleaning system with double air wash and vibrating screen abrasive classification. From the cascade cleaner the abrasive is deposited in a silo ready for return to the blast pot and reuse.

Dust Management
Dust laden air is extracted from the room through wall mounted ducts and enters the inlet plenum of the collector where heavy particles fall immediately into the hopper. As the air flows through the filter cartridges dust is deposited on the outside of the filtering media. Solenoid valves introduce jets of high-pressure air into each pair of cartridges alternately - the resulting reverse airflow cleans the filter cartridges. Dust removed from the filter surface settles into the hopper. As each pair of filter cartridges is cleaned in succession the operation is uninterrupted. Air inlet grids return 80% - 90% of the air back into the blast room, this is critical especially in climate controlled blast rooms.

Electrical Panel
The Electrical Panel is the central point from which each of the elements of the blast room can be controlled and monitored. Pre-loaded start up and shut down sequence programs ensure ease of use and the inclusion of the Star-triangle starter guards against electric overload.

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