

Interview

The Ultimate Solutions for User Efficiency, Comfort, and Safety in Modified Automated Abrasive Blasting and Manual Abrasive Blasting Systems.

The MFN team recently met with Geoff Moore, Director of Sales of Langhorne, PA (USA) based Empire Abrasive Equipment Co. to learn about their Pro-Finish® line of manual abrasive blast cabinets and re-engineered modified systems.

(?) MFN: What are the benefits of a Pro-Finish® system and how can Empire Modified Pro-Finish® Cabinets be tailored to meet individual work piece and process requirements?

(!) G. M.: We are very proud of our Pro-Finish® line of products thanks in part to their durability and long history in the industry. Some benefits of the Pro-Finish® system include the ability to achieve consistent surface finish quality, reduced finishing time, increased production rates, and reduced maintenance costs. In addition to our standard line of Pro-Finish® Cabinets is our Modified Pro-Finish® Cabinets. "Modified" is Empire's term for customizing our incredibly durable and productive Pro-Finish® cabinets to meet a customer's individual work piece or process requirements by blasting either manually or with a certain degree of automation. Modified Pro-Finish® cabinets offer a solution that's affordable and ideally suited for lower production volume environments requiring a robust product. The growth and sophistication that we have seen in this segment have blurred the lines between manual cabinets and automation!

(?) MFN: Can Empire's modified cabinets be a solution for unique applications or to accelerate production rates through partial automation?

(!) G. M.: Absolutely. This is always at the forefront of our thought process as we begin the collaboration process with our customers. Empire's modified cabinets can be a solution for unique applications or to accelerate production rates through partial automation. They can be designed to accommodate a wide range of finishing needs and offer flexibility for handling different workpieces, which can lead to more efficient production processes.

(?) MFN: You mentioned the importance of ergonomics earlier in our discussion. Why emphasize the importance of this in the overall design of Empire's equipment?

(!) G. M.: The comfort and ease of use for the operators of our equipment is a priority for our design team. Ergonomically designed blasting cabinets can help to reduce worker fatigue and injury, improve productivity, and enhance the overall user experience.



Geoff Moore, Director of Sales of Langhorne, PA (USA) based Empire Abrasive Equipment Co.

By prioritizing ergonomics, Empire ensures that their customers are able to achieve optimal performance and efficiency from their finishing equipment.

(?) MFN: How do Ergo-Blast cabinets complement the scope of Empire's Pro-Finish® line?

(!) G. M.: With our continued focus on overall ergonomics and operator comfort the Ergo-Blast cabinets accentuate Empire's Pro-Finish® line by focusing on operator performance and give manufacturers an edge in many hands-on processes. Empire's Ergo-Blast cabinets range from our ERGO 2636 to the larger ERGO 6060, which permits blasting of larger workpieces. noise and a front mounted pressure regulator - all aimed at improving operator comfort and performance during long, repetitive blast cycles.

(?) MFN: What specific features make Ergo-Blast cabinets suitable for sit-down blasting and contribute to improving operator comfort and performance during long, repetitive blast cycles?

(!) G. M.: The overall design of the Ergo-Blast cabinets have the operators safety, comfort, and ergonomic positioning in mind. They are specifically designed for sit-down blasting and include features such as a padded armrest, elevated footrest for treadle control, top-entry piping for less arm stress, a sound dampener to reduce noise, and a front-mounted

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pressure regulator to improve operator comfort and performance.

(?) MFN: Apart from supporting operators, what other features do Ergo-Blast cabinets offer?

(!) G. M.: In addition to supporting operators, Ergo-Blast cabinets include all Pro-Finish® features, such as a tunable media reclaimer which adjusts to recover a wide range of abrasives. They offer a choice of pressure or suction blast system, three methods of dust collection, and many options to fit specific applications. Other options available include manual or automatic controls, custom lighting, and different gun types to suit various abrasive materials.

(?) MFN: Can you tell me about any other Empire abrasive blasting cabinets that prioritize operator comfort and can be customized to fit the needs of different operators?

(!) G. M.: This was an opportunity we discovered many years ago and one where we were at the forefront in the industry. In the various customer sites I have visited there are usually multiple operators for the various Empire Pro-Finish® cabinets in operation and obviously they vary in height. Empire's Pro-Lifter Style series of Pro-Finish® cabinets eliminate operator stress

caused by uncomfortable glove height by providing the ability of adjusting up or down by five inches from the standard 44 inches.

(?) MFN: How does Empire's Pro-Lifter Style series of Pro-Finish® cabinets modify ergonomic systems to enhance operator performance and comfort?

(!) G. M.: The Pro-Lifter cabinets from Empire's Pro-Finish® line offer a ten-inch vertical glove adjustment that requires minimal effort, and an electric motor provides the power. The cabinets come with a variety of options and features, allowing users to customize their capabilities to their needs. These cabinets come in three different models and can be used with material handling helpers and automated accessories. They also offer a variety of dust collectors and heavy-duty components to work with harsh media.

(?) MFN: Can you give an example of a modified system that utilized the design principles of the Ergo-Blast and Pro-Lifter cabinets?

(!) G. M.: An industry leader and manufacturer of aerospace components required a Modified Pro-Finish cabinet with an adjustable cabinet height and dust collector capable of removing toxic particles that are produced dur-

ing the etching of aircraft components. Our solution was a modified PF2636 SRC-6 ERGO Pro-Lifter blasting system, featuring a 14-gauge steel cabinet equipped with a pneumatic vertical door, a viewing window, and the Kleensweep air inlet design. The Pro-Lifter package included an electrically controlled hydraulic power lifting cylinder, electric movable foot treadle, and suction blast media delivery. The equipment included various components that were specifically designed for efficient media recovery and effective removal of toxic dust.

(?) MFN: Did this system include specific part handling features?

(!) G. M.: Yes, the system had a low-profile 18" diameter turntable and small parts door between the gloves with spring return hinging and an electric blast interlock, measuring approximately 4" x 5".

(?) MFN: What Ergo-Blast features were included?

(!) G. M.: The Ergo package consisted of knee-hole indentation in the cabinet front for sit-down operation, a movable foot treadle operated electrically, independent adjustable padded armrests, a top-entry blast hose, and a front-mounted pressure regulator.



ERGO 2636



ERGO Pro-Lifter 2626



Pro-Lifter 2630



MFN Headquarters Switzerland
Contact: Rosanne Baiker
Tel. +41.44.831.2644, Fax 831.2645
E-mail: info@mfni.li



MFN France Office West
Contact: Samuel Kaj
Tel. +33.687.05.7611
E-mail: kaj@mfni.li



MFN Germany Office
Contact: Andreas Figge
Tel. +49.2352.9281-22, Fax 9281-40
E-mail: figge@mfni.li



MFN North Europe Office in Netherlands
Contact: Marco Kljisen
Tel. +31.162.748.010, Fax 748.011
E-mail: marco@mfni.li



MFN United Kingdom Office
Contact: Paul Huyton
Tel. +44.7891.127-932, Fax 8320384
E-mail: paul@mfni.li



MFN Italy Office
Contact: Giovanni Gregorat
Tel. +39.33.3840.2478
E-mail: giovanni@mfni.li



MFN Poland Office
Contact: Andrzej Wojtas
Tel. +48.885.200993 or +31.653.240331
E-mail: andrzej@mfni.li



MFN Brasil Office
Contact: Reiner Heinrich Forler
Tel. +55.11.3321.9540
E-mail: reiner@mfni.li



MFN Singapore Office
Contact: Jess Tan
Tel. +65.6863.4555, Fax 6863.9021
E-mail: jess@mfni.li



MFN Taiwan Office
Contact: Tingli Yeh
Tel. +886.968.515.559
E-mail: tingli@mfni.li



MFN Mexico Office
Contact: Virginia Gomez Vargas
Tel. +52.777.3151714, Fax 777.3153055
E-mail: virginia@mfni.li



MFN Spain Office
Contact: Ramon Estrade
Tel. +34.94.4801299, Fax 94.4801272
E-mail: ramon@mfni.li



MFN China Office (1)
Contact: Ruwei Liu
Tel. +86.13616407190
E-mail: ruwei@mfni.li



MFN China Office (2)
Contact: Cindy Zhou
Tel. +86.13761576632
E-mail: cindy@mfni.li



MFN Canada Office
Contact: Branko Cvetkovic
Tel. +1.519.739.0733, Fax 888.792.3593
E-mail: branko@mfni.li



MFN Korea Office
Contact: Ki O. Youu
Tel. +82.2.522.1023 Fax 522.1024
E-mail: youu@mfni.li



MFN Thailand Office
Contact: Abu Samah Yusoff
Tel. +662.197.6700-4, Fax 6705-6
E-mail: abu@mfni.li



MFN India Office
Contact: Rishabh K Shah
Tel. +91.9833971319
E-mail: rishabh@mfni.li

All of the listed MFN offices offer FAA approved on-site shot peening, flap peening or mass finishing training and can organise local workshops. Training in 10 languages!

(?) MFN: How was the toxic dust removed from the blasting process?

(!) G. M.: Empire's SEM-2 Cartridge Dust Collector was essential in the removal of toxic particles from the air. The SEM-2 included a 4" diameter media recovery hose, a 600 cfm externally tunable, cyclonic reclaiming with internal ultrawear lining, and an 11' dust hose with a 6" diameter. In addition, a 600 cfm cartridge dust collector (SEM-2) with a 1 ½ hp blower on the clean air side and a HEPA filter on the exit of the SEM-2 blower are also included. These features were essential for safe and effective removal of toxic dust. Furthermore, the electronic timed door interlock ensured that doors cannot be opened until a set time has elapsed after the foot treadle is released, providing an extra layer of safety.

(?) MFN: Where do you see the industry going and particularly for Empire?

(!) G. M.: This is one of the things I'm most excited to discuss. As much as we touched on our Pro-Finish® family of products, at Empire we see growth in almost all sectors of our business but particularly in our family of Automation solutions. We all understood the benefits of automation from a standpoint of reliability, consistency, and repeatability but now with the challenges in the labor force this is just adding to the benefits of considering automation solutions with blasting applications. More often we are being asked by our clients to engineer fully automated and robotic air-blast room systems to process large families of parts formerly manually blasted in a room. We had the foresight to invest in these technologies early on which has positioned us to be the industry leader in providing these types of solutions. Our automation is split into standard and custom/advanced automation. The standard line has seen continuous and healthy growth. This includes products such as our flexible Cell Machines (CM), Indexing Turntables (TT), and the ever-popular Rotary Head style machines. These machines continue to lead us into projects that one wouldn't readily anticipate the application of

such equipment. That's the trend we are noticing - new applications for existing standard automated equipment. To us, this indicates an increase in awareness of the process of cleaning and peening in particular, use of new types of blast media, and general acknowledgement of the benefits of the process.

Custom automation is the reason our engineers stay challenged. Custom automation is not just restricted to aerospace and automotive shot peening applications. Empire has seen remarkable growth in automated grit blasting projects in the Power Generation, Medical, Oil & Gas and such advanced manufacturing sectors. The reasons, as we see them, are several - repeatability, productivity, accuracy and speed to highlight the most critical on the list. Aerospace customers demanding all the above features in their equipment is quite common. This has now spread to other sectors too. As a result, it is not unusual for us to build grit blasting equipment with closed loop process control for air pressure, media flow, monitoring the condition of blast media, and reporting all these variables real-time, just as it were a peening application.

We certainly invite the MFN readership to experience Empire by visiting us either in person at our State-of-the-Art facility in Langhorne, PA or online at empire-airblast.com to see how we can help to engineer your competitive edge.

MFN would like to thank Geoff Moore for this interview!

For Information:
Empire Abrasive Equipment
2101 W. Cabot Blvd.
Langhorne, PA 19047-1893, USA
Tel. +1.215.752.8800
Fax +1.215.752.9373
E-mail: snangle@empire-airblast.com
www.empire-airblast.com