

Pratt & Whitney Removes Coatings



PurePulse waterjet technology is a versatile coating removal service for a variety of applications. It saves time and minimizes maintenance and energy costs and down time associated with other high-pressure systems. *See article on page 2*

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2012 WJTA-IMCA Expo



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Pratt & Whitney Removes Coatings

Pratt & Whitney Automation, Inc., a wholly owned subsidiary of United Technologies Corporation, is changing the game with PurePulse™ waterjet technology – and customers will see a number of benefits. Removal of chrome plating and other hard coatings has been a significant challenge for businesses with those needs. Cost, imprecision and the threat of hazardous debris have made coatings stripping a perilous process. That's why Pratt & Whitney Automation offers the marketplace this revolutionary forced pulse waterjet service.



Pratt & Whitney Automation's new waterjet technology provides large companies with an innovative way to remove chrome and other hard coatings quickly while putting less stress on equipment thereby lowering operational cost.

This technology ends the need for toxic dipping and grinding by stripping parts quickly and efficiently. High-frequency electrical pulses are converted into mechanical vibrations that transform high-pressure streams of water into pulsed jets of individual water slugs. The technology creates a pulse wave effect, which in turn fractures the coating through water-eroding fracture. Despite the sophistication of this technology, it gives our customers a simple, easy to use solution that did not exist in this form before.

Pratt & Whitney's new waterjet service was developed with three key focuses in mind: raising the bar for technology and innovation, saving time and money, and respecting and protecting the environment.

This next-generation waterjet technology is designed as a safe, efficient, sustainable alternative for chemical stripping, grit blasting and machining. Without PurePulse, it would be very difficult to remove the toxic coatings when needed without potentially damaging the part.

Specific to saving time and money, Pratt & Whitney Automation developed PurePulse with an eye toward

customization for a variety of applications. This technology improves turnaround time and reduces costs by decreasing maintenance and energy expenses – as well as the downtime associated with other high-pressure waterjet systems that are more complicated.

PurePulse technology is an environmentally friendly removal method for hard coatings. Customers can trust this technology for its environmental impact because it is a safer alternative to toxic chemical dipping and grinding – PurePulse has a closed-loop system that reuses filtered water. This technology does not require the use of abrasives or chemicals to remove hard and soft coatings.

Previously, some hard coated flanges on jet engine parts were unable to be stripped and repaired due to a combination of how the parts are built and mechanical or chemical process limitations. Through Pratt & Whitney's PurePulse technology, these repairs are now achievable and able to be completed in a fraction of time – and with less damage to the substrate of the part or equipment.

(continued on page 6)

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It utilizes a 2-port jetting pattern and has 2 inlet options, either 1/2 NPT for up to 15k psi, or 9/16 MP for 22k psi. This new tool requires little maintenance, reducing down time.

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U.S. Patent 7,635,096, 8,006,920 & 8,016,210
Other U.S. and International Patents Pending



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Rotation Speed	3000-5000 rpm	3000-5000 rpm
Inlet Connection	1/2 NPT	9/16 MP
Nozzles	2 x AP2™	2 x AP2™
Diameter	1.7 in. 43 mm	1.7 in. 43 mm
Length	4.8 in. 120 mm	4.8 in. 120 mm
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European Researchers Work on Control Systems for 3D Waterjet Milling

By: Peter Wright, WJTA-IMCA

A multidisciplinary European research team, ConforM-Jet, led by Prof. Dragos Axinte from the University of Nottingham is developing a self-correcting control system for 3D waterjet milling to work at high degree of accuracies without any additional part masking. Milling 3D parts would provide similar benefits to waterjet cutting, including the ability to work on hard materials, no heat affected zone and low cutting forces on the part. Controlled-depth waterjet milling has long been possible using the same principles as waterjet cutting but the researchers expect that with their advanced control system the process will be valuable in fields such as aerospace, medical devices, optics and more.



The ConforM-Jet research team uses 5-axis waterjet cutting machines operating at pressures ranging from 20-30 kpsi. So far the team has machined 3D parts in various workpiece materials including titanium and nickel based superalloys, engineered ceramics and optical glasses.

The ConforM-Jet system uses acoustic emissions monitoring to correct the waterjet as it mills the part. Basically, acoustic emissions sensors work by measuring the high frequency waves produced when the waterjet impinges on the surface of the material being machined. A major goal of the research has been to create a model connecting the jet penetration and the acoustic emissions.

Prof. Axinte explains, “The acoustic emission (AE) signal captured by a sensor mounted on the workpiece,

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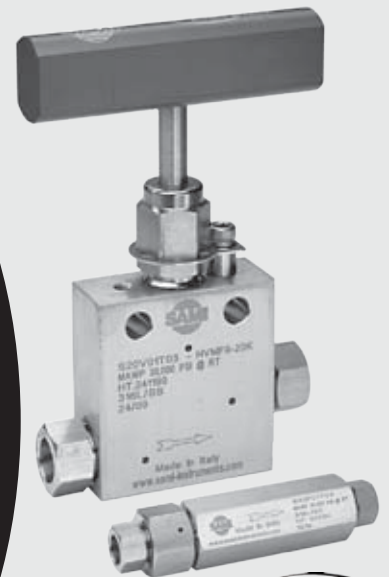
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depends on energy parameters of the jet (such as pump pressure and mass flow of the abrasives) but not on the jet travel speed (that also influences the jet penetration). To unify these aspects, a new parameter, Transfer Rate of Energy (TRE) has been introduced, linking AE energy, jet feed speed and area of abraded footprint. As TRE should remain constant for particular parameters, any deviation on AE signal can be regarded as a disruption of the process and, hence, the jet feed speed is adjusted to keep the jet footprint at the required values.”

The self-learning control system, based on jet footprint models and monitoring techniques, allows the process to be corrected in real time using a control loop so it adjusts the kinematic parameters of the jet when deviations from the expected pattern are detected.

The European ConforM-Jet research team aims to use this radically novel control strategy for high energy fluid jet milling that, supported by adequate machine learning algorithms, will lead to the development of next-generation production systems capable of freeform generation in various working scenarios and with little human intervention.

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Minnesota Governor Mark Dayton Visits Jet Edge

Jet Edge, Inc. was honored on March 22, 2012, by Minnesota Governor Mark Dayton, who presented the St. Michael, Minnesota waterjet manufacturer with a 27th Annual Governor's International Trade Award during a ceremony in Minneapolis.

Each year, Minnesota's governor honors a select group of Minnesota businesses that have shown exceptional progress and success in international trade by conferring the Governor's International Trade Award. In addition to honoring individual recipients, the award also recognizes the tremendous positive effect that exports and trade have on the state's economy and job growth.

"We are truly honored to be recognized by Governor Dayton for our international business efforts," Nancy Lauseng, Jet Edge marketing manager, says. "During the past several years, Jet Edge has worked tirelessly to increase our international sales and enter new markets, including Asia, Eastern Europe and the Middle East. We have



Nancy Lauseng accepts the award from Governor Mark Dayton on Jet Edge's behalf.

benefitted tremendously through our participation in Governor's trade missions to Japan, China and Israel, and through the outstanding support of the Minnesota Trade Office and U.S. Commercial Service."

Jet Edge has sales offices throughout the United States and in Shanghai, China, as well as distributors in Canada, Mexico, Europe, Asia/Pacific, South America and the Middle East/Africa. The company derives approximately 26% of its total revenue from

international sales and has seen three consecutive years of growth in machine tool export sales. The waterjet manufacturer broke an all-time record month for shipments in June 2011, including first-time shipments to new export markets in China and Poland.

Jet Edge's recent international endeavors include opening a sales, service and training office in China, establishing an R&D partnership with waterjet manufacturer Tecnocut S.p.A. in Italy and establishing new export sales for Jet Edge in Japan, China, South Korea, Poland, Italy, and the Middle East. The company also has established a rigorous training program for all international distributors to ensure they are equipped to provide optimum service and support to Jet Edge's overseas customers.

Pratt & Whitney Removes Coatings, from page 2

Another example of where this technology is essential is when removing coatings from circular or cylinder-shaped parts such as drive shafts. The geometry of these parts creates an even more difficult threshold for removing coatings for necessary servicing. These types of parts would have been discarded at a relatively early stage in their life cycle in the past without this revolutionary technology.

Customers from all across the industry spectrum including aerospace, marine, oil and gas, mining, land-based power and heavy industry may benefit from PurePulse technology.

Visit www.pwpurepulse.com to view a video about Pratt & Whitney Automation and learn more about PurePulse waterjet technology.



PurePulse™ is an environmentally friendly removal method for hard coatings. It can replace chemical dipping and grinding.

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Parker Brothers Concepts Selects FlowJet

Flow International Corporation announces that Parker Brothers Concepts, featured on Syfy's high-octane reality series *Dream Machines*, has added a Flow Mach 3 abrasive waterjet machine tool as a key element in their fabricating process.

"The FlowJet gives us outstanding flexibility in both design and materials. And Flow's Dynamic Waterjet allows us to cut parts very accurately, saving us a lot of time because we rarely need to do any secondary processing," states Marc Parker.



Shanon Parker, Marc Parker, and Jon Conner

The 4 meter by 2 meter system includes Flow's patented Dynamic Waterjet® cutting technology and a HyperJet® pump rated at 94,000 psi. Flow invented Dynamic Waterjet to

eliminate stream lag and taper errors, bringing accuracy and speed to 2D cutting. By incorporating SmartStream™ technology, mathematical models that predict jet behavior and compensate for taper and stream lag, cut speed is increased 2 to 4 times faster than conventional abrasive waterjets while producing parts with far higher precision.

Just as increased wattage allows lasers to increase cut speed, HyperJet pumps generate significantly higher pressure and, therefore, cut as much as 50% faster or more than conventional waterjets. Parts are cut faster, with a lower cost per part, and production runs are shorter.

A large graphic for Barton Waterjet Abrasives. It features a large, curved, red and white shape that resembles a stylized 'B' or a waterjet cut. The background is a blue, rippling water surface. The text 'BARTON' is in large, bold, red letters. Below it, 'Global Leader in Garnet Abrasives Since 1878' is in smaller, grey text. To the right, 'Waterjet Abrasives' and 'Waterjet Parts & Accessories' are in bold, blue text. At the bottom left, '800-741-7756' and 'www.barton.com' are in white text.

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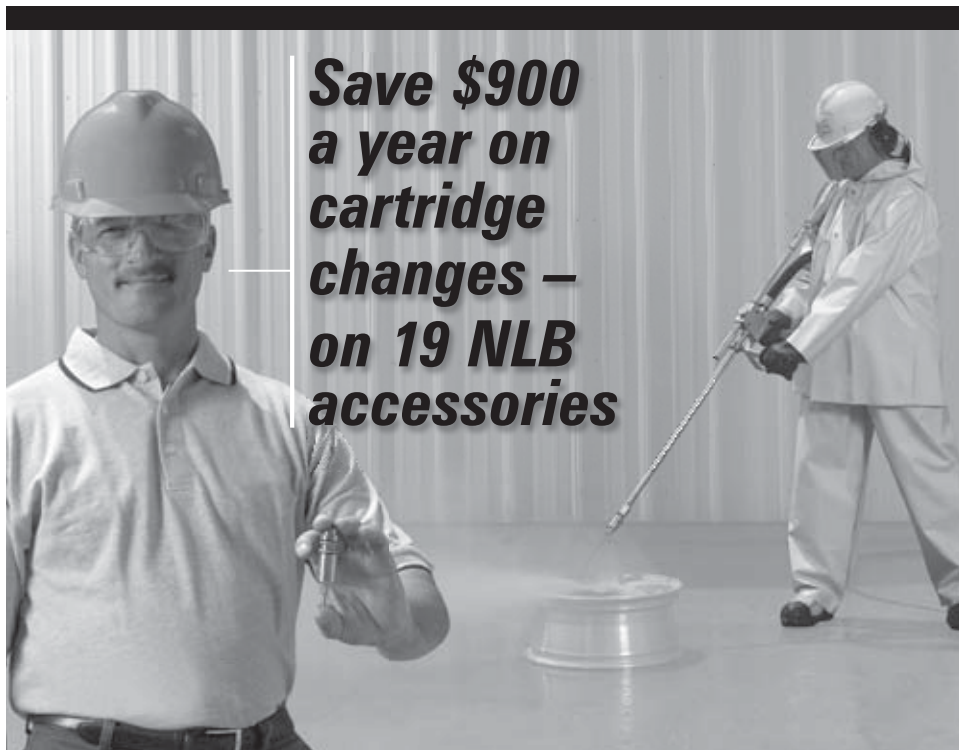
Jet Edge Ships Equipment to South Korea Following Free Trade Agreement

Jet Edge, Inc. recently became one of the first U.S. companies to take advantage of the United States' new free trade agreement with South Korea, shipping two containers of industrial ultra-high pressure waterjet equipment valued at more than \$700,000 USD to the Republic of Korea.

Under the United States-Korea Free Trade Agreement (KORUS FTA), which went into effect March 15, 2012, some 80 percent of U.S. industrial and commercial exports to Korea are now duty free, nearly 95 percent of trade will become duty free within five years, and most remaining tariffs will be eliminated within 10 years. The KORUS FTA is the United States' most significant trade deal since the North American Free Trade Agreement with Mexico and Canada in 1994. It is expected to add \$10-12 billion to the annual U.S. Gross Domestic Product.

Jet Edge estimates that under the FTA's stepped tariff reduction schedule for waterjet systems, its Korean customer will save almost \$19,000 USD. By year three of the agreement, the same size order would make Jet Edge's American-made equipment approximately \$56,000 USD more competitive than similar goods imported from Europe or other Asian countries without similar free trade agreements between the two countries.

"The U.S.-Korea FTA is a tremendous opportunity for Jet Edge and other U.S. manufacturers to be



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more competitive and increase industrial manufacturing exports to South Korea," says David Anderson, Jet Edge international sales manager. "As you may recall, Gov. Mark Dayton's first trade mission as Minnesota's governor was to South Korea, and Jet Edge was awarded the Korean contract

at the same time as the governor's trade mission, so Jet Edge's export is a significant milestone for our state's economy. The FTA also is a huge success story for the U.S. Commercial Service and President Obama's 5-year National Export Initiative."

Just how easily and precisely does PurePulse™ waterjet technology strip chrome plating and other hard coatings?



Until now, removal of chrome plating and other hard coatings has been a costly, imprecise and potentially hazardous process. Pratt & Whitney Automation's revolutionary PurePulse™ waterjet technology ends the need for toxic dipping and grinding by stripping parts quickly, effectively and without damaging the substrate. Discover the appeal of next-generation precision at PWPurePulse.com. PurePulse waterjet technology – **Unparalleled power. Pure precision.**



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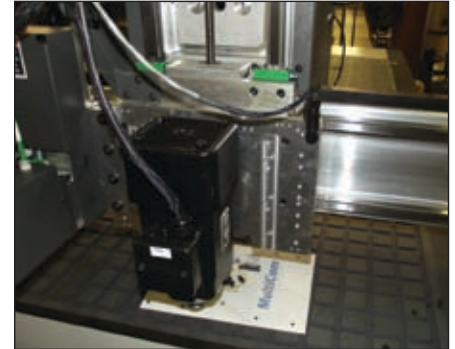
Focusing on economy, MultiCam® Inc. introduces the manual Value Vision system for low-volume digital finishing without the cost of registration equipment designed for major industrial users. The global CNC cutting machine manufacturer created this innovative new product offering to facilitate router registration without a camera. (Router registration aligns the target with the cutting jet so that the cutting occurs exactly where desired.)

“MultiCam continues to develop products that help customers maximize value and production in their shops,” says President and General Manager Kris Hanchette. “We’re excited to

offer this high-value product at a low price.”

Value Vision prompts the operator to locate at least the first two fiducials, using the laser pointer. Then it extrapolates the position of the remaining fiducials based on the orientation and distances between the initial few. The image of the cut file appears on the graphical keypad before the operator starts the cutting sequence.

With the proper mechanical setup, the Value Vision system can make registration available to all MultiCam Router operators. To learn more, visit www.multicam.com, email sales@multicam.com or call (972) 929-4070.



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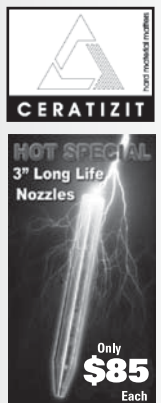


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OMAX® Appoints New Regional Manager for China to Support Growth

OMAX Corporation, a global leader in abrasivejet machining, recently appointed James Fikse to the position of regional manager for China. Fikse will use his more than 30 years of project management experience to further enhance OMAX's market position in China.

According to Steve Ulmer, vice president of international sales for OMAX, the company has seen increased demand for its precision-engineered multi-axis abrasive systems in China since first entering this marketplace four years ago, making it critical to increase its support network within the country.



James Fikse

The OMAX distribution partner for China, Simeco Limited/Cowin Welding Equipment & Consumable Co., Limited, which has demo centers in Shanghai and Nanjing, is providing excellent support to hundreds of OMAX customers, but in order to keep up with demand and maintain high levels of service in China, OMAX is strategically adding more employees to its global support team, including Fikse. In addition to the Simeco/Cowin demo centers, manufacturers in China can also experience OMAX machines at the Association of Manufacturing Technology demo center in Pudong.

Fikse, a graduate of Western Washington University, has spent his entire professional career specializing in project management, which includes participation in functions such as sales and marketing as well as product design and development. He has a high level of understanding when it comes to various manufacturing processes, including waterjet cutting, casting, forging, flowforming, CNC milling, liquid and powder coating and metallurgy. Additionally, he has experience working with CAD/CAM technology, lean manufacturing principles, manufacturing optimization processes and quality control disciplines.

Over the years, Fikse has been involved in the design and development of products that have secured U.S. patents, including an automotive wheel (D376,125), a manual resin extruder for effecting glass repair (5,407,338), a glass crack repair tool (D351,543) and a log yarding skyline carriage (4,238,038).

"We are thrilled to have Jim join the OMAX team," says Ulmer. "With his proven project management experience, solid manufacturing background and strong communication skills, he will most definitely be able to increase our presence in China, expand distributor knowledge and grow our company's overall market share."

Prior to joining OMAX, Fikse worked as a technical consultant for Formula 43 Company in Detroit, Michigan, where he completed several design and development projects involving a line of high-performance forged aluminum automotive wheel products. He was also the co-founder of USA Wheel Technology Inc. where he created a high-performance motorsport brand and world championship winning product line.

In addition to its growth in China, OMAX is experiencing increased demand all over the world, prompting the company to add more technical support employees

(continued on page 21)

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Five Axes Broaden MultiCam® 8000 Series CNC Router Applications



MultiCam® Inc. has unveiled the versatile 8000 Series Five-Axis Router, a high-performance CNC machining solution for high-speed, heavy-duty routing in the woodworking, plastics, non-ferrous metals and composites industries.

“Five-axis CNC machining opens up a world of new capabilities for

MultiCam,” says Director of Sales and Marketing John Harris. “Applications include edge trimming of molded wood, plastic and composite parts, deep-cavity mold making and machining of spiral staircase components.”

In addition to the standard X, Y and Z axes, the end of the Z axis features a 440-degree rotational axis and a 150-degree swing axis. Visualize a hemispherical work envelope (the lower half of a basketball) on the end of the Z axis. MultiCam can put the tool at any point on this surface under full CNC program control.



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- Hydro-Excavation
- PSC's Hose Integrity and Reliability Program
- Reduction of Hydroblasting Manual Labor
- Strong Safety Management Systems...A Customer Perspective
- Safe Use and Care for Ultra High Pressure Hose
- Safety in Waterjetting
- Scrubbing Vapors – Vapor Filtration Equipment
- Nozzle Selection – Pressure Loss, Jet Quality, and Other Technical Aspects
- Understanding the Power of Vacuum and How Industrial Vacuum Loaders Work
- High Pressure Waterblasting Applications



WJTA-IMCA Night at the Ballpark
Houston Astros vs. Chicago Cubs

Tuesday, September 11, 7:00 p.m.

Buy tickets online: www.wjta.org

Preliminary Schedule of Events

Monday, September 10, 2012

5:30 p.m.-7:30 p.m.
Industry Appreciation
Reception – Exhibits Open

Tuesday, September 11, 2012

8:00-10:00 a.m.
Live Demonstrations
10:00 a.m.-4:00 p.m.
Exhibit Hall Open
10:00 a.m.-5:00 p.m.
Boot Camp Sessions

Wednesday, September 12, 2012

8:00-10:00 a.m.
Live Demonstrations
10:00 a.m.-1:00 p.m.
Exhibit Hall Open
12:00 Noon-3:00 p.m.
Boot Camp Sessions

Clean Harbors Receives Syncrude Safety Award

Clean Harbors, one of North America's leading providers of environmental, energy and industrial services, has received the President's Award for Top Safety Performance by a Small Contractor (<400,000 hours) from Syncrude Canada Ltd.

Awarded to the Clean Harbors InSite Team deployed to the Syncrude operations at the Mildred Lake and Aurora North mines, the award recognizes the Team's outstanding safety record in 2011 resulting from:

- Three years of Lost Time Injury (LTI) free service (Four years as of March 18, 2012);
- A Total Recordable Incident Rate (TRIR) of 0.00;
- The implementation of employee behavior-based safety programs;
- The Team's exemplary Field Level Risk Assessment (FLRA) engagements;
- Clean Harbors' front line management and leadership;
- The Team's outstanding relationship with its Syncrude Buddy Manager;
- Clean Harbors' commitment to continuous improvement of its already proactive Health, Safety and Environment (HSE) program.

Clean Harbors, a leading provider of services to the energy sector in Western Canada, has approximately 150 employees who support Syncrude's operations with steamer, hydrovac, potable water and septic systems, mine dewatering, wash bay services for cleaning heavy transport and mining equipment, wash cart rentals, and other support services.

"Safety is a core value at Syncrude, for both employees and the contractor workforce on site. Our award program is intended to recognize sustained good performance as well as improvements in safety management on site," says Murray Jamieson, Syncrude vice president of maintenance. "We are pleased to recognize our contractors who demonstrate the commitment to safety that Syncrude expects across our operations."

"This is an outstanding achievement for our team at Syncrude," says Brian Adams, Clean Harbors director, insite operations, oil sands. "It is gratifying to have our rigorous programs and constant attention to safety receive this kind of recognition from a partner that places such importance on the daily attention to safety programs that encourage and support this kind of workplace performance."


WJTA-IMCA ListServ - A Free Service To WJTA-IMCA Members

The **WJTA-IMCA**ListServ enables you to take advantage of prompt email interaction with your colleagues. **WJTA-IMCA**ListServ is a **FREE** email broadcast system developed by WJTA-IMCA to help you communicate and network with other waterjet and industrial cleaning and vacuuming professionals.


Participation is limited to WJTA-IMCA members in good standing. You must sign up in order to participate. To sign up for the **WJTA-IMCA**ListServ, contact Pete at the WJTA-IMCA office by email: wjta-imca@wjta.org, phone: 314-241-1445, or fax: 314-241-1449.



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Fax: (832)201-9743

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Maxpro Technologies Names Don Nixon to Field Sales Engineer

Maxpro Technologies announces the promotion of Don Nixon to the position of Field Sales Engineer. This newly created position will provide customers in the states of Pennsylvania and West Virginia with strong, personal field support.



Don Nixon

Nixon's promotion is reflective of Maxpro's commitment to build and maintain continued growth in the high pressure industry. The PA/WV area is home to many industries that will now have a local rep to offer individual service to waterjet cutting facilities from manufacturing to granite cutting. Pennsylvania customers are utilizing Maxpro's counter service options for quick turnaround on repairs and fast shipment of tubing orders of any size.

Nixon graduated in 1985 with a Bachelor of Science degree in Marine Engineering Systems from the United States Merchant Marine Academy. In 2004 he became a registered professional engineer in the state of Pennsylvania. He has over twenty years of experience in operating, field service and design engineering, including the last six with Maxpro as a mechanical engineer.

For more information, visit www.maxprotech.com or call (814)474-9191.

OMAX® Appoints New Regional Manager for China to Support Growth,

from page 15

to its team to cover India, Asia, and the Western and Eastern regions of Canada. Furthermore, manufacturers around the world can experience OMAX at various international demo centers, including the Association of Manufacturing Technology demo center in Chennai, India and the Elblag Professional Tech Facility in Poland owned by OMAX's distribution partner, Jet System.

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Friday, August 17, 2012, is the deadline for guaranteed room availability. Reservations received after August 17 will be confirmed on a space available basis. Rooms may still be available after August 17, but not necessarily at the rates listed above.

Alternate Hotel

The Hyatt Regency Houston, 1200 Louisiana Street, Houston, TX 77002, is a 15-minute walk from the George R. Brown Convention Center. The room rates are \$146 single/\$156 double occupancy. Reserve your room online at www.wjta.org or call (888)421-1442. When calling, mention the group code G-WAJJ to receive the group rates.

August 9, 2012, is the deadline for guaranteed room availability. Reservations received after August 9 will be confirmed on a space available basis. Rooms may still be available after August 9, but not necessarily at the rates listed above.

Jet News is published by the WaterJet Technology Association (WJTA)-Industrial & Municipal Cleaning Association (IMCA) and is a benefit of membership in the Association.

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Super Products Expands Equipment Support Team, New Midwest and Gulf South Regional Sales Managers

Super Products LLC, a leading manufacturer of truckmounted vacuum equipment, has expanded its field support team with the addition of two new industrial regional sales managers, Mike Drott and Russ Coaliron.

After spending the last several years serving as president of Tierra Environmental, Mike Drott has rejoined Super Products to represent its product lines and serve the industrial markets throughout the Midwest. Drott had previously been with Super Products for more than 20 years in various product sales and support roles.



Mike Drott

Russ Coaliron is Super Products' new industrial sales manager for the Gulf South Region. Having solid background experience in sales management and technical service, Coaliron will be focused on promoting and supporting all of the company's product lines.



Russ Coaliron

For more information, visit www.superproductsllc.com or call (800)837-9711.

Comments Solicited on Improvements to Recommended Practices

Comments are solicited regarding improvements to the WJTA-IMCA publications, *Recommended Practices for the Use of High Pressure Waterjetting Equipment* and *Recommended Practices for the Use of Industrial Vacuum Equipment*. While both publications are reviewed periodically at the WJTA-IMCA conferences and throughout the year, your comments and suggestions for improving the publications are invited and welcome anytime.

Please address your comments and suggestions to: WJTA-IMCA, 906 Olive Street, Suite 1200, St. Louis, MO 63101-1448, phone: (314)241-1445, fax: (314) 241-1449, email: wjta-imca@wjta.org. Please specify which publication you are commenting on.

Howard McCollom is Ebbco's Waterjet Sales Manager

Ebbco Inc., New Baltimore, Michigan, announces the return of Howard McCollom as Ebbco's waterjet sales manager. McCollom is responsible for all of Ebbco's waterjet filtration equipment sales and applications worldwide. He originally served as Ebbco's waterjet manager from January of 2008 through June of 2009 and worked closely with OEMs and many end users during that time.



Howard McCollom

McCollom will be based out of Ebbco Inc. in New Baltimore, Michigan. Contact him by telephone at (586) 716-5151 or email hmccollom@ebbcoinc.com.

IMPORTANT NOTICE REGARDING SPAM

Email addresses and other member contact information published in the WJTA-IMCA Membership Directory are meant to encourage helpful, informative communication between members. The information is not provided to circulate spam or junk mail.

The WJTA-IMCA leadership requests that members respect the contact information of fellow members and not use that information for the dissemination of spam or junk email. Membership information is not meant to be circulated beyond the WJTA-IMCA membership.

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Jet Edge, Inc. introduces the ECO-JET Waterjet Pump. Eco-friendly and budget-friendly, the 55 ksi 30 hp ECO-JET features an efficient direct drive pump design that consumes up to 40% less electricity than a 50 hp pump, but produces the same output.

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In addition to the ECO-JET, Jet Edge offers 30-280 hp waterjet intensifier pumps in 36 ksi, 60 ksi and 90 ksi models, electric and diesel. Jet Edge also manufactures precision waterjet cutting systems, mobile waterjet cutters, UHP surface preparation equipment and water jet parts. Jet Edge waterjets are made in U.S.A.

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