



Safe Operation of Industrial Vacuum Equipment



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**Details about the
event can be found
on page 21.**



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The year 2008 is the 25th anniversary of the WaterJet Technology Association. Send your ideas to the WJTA office on how to commemorate this significant event. Email: wjta@wjta.org or Fax: 314-241-1449.

Factors That Improve Service Life Of Hose

By: Paul Webster, Engineering Manager, Parker Hannifin Corp., Polyflex® Business Unit
Stephen Johns, Marketing, Parker Hannifin Corp., Polyflex® Business Unit

Ultra high-pressure (UHP) hoses are a key component in today's waterjetting systems. In this series of articles, we have discussed field practices to assist users in maximizing hose life and determining when a hose should be replaced.

As there are many factors that can decrease the life expectancy of a hose assembly, we have covered the advancements in hose and fitting development along with the descriptions and use of hose accessories and how each can enhance connection technology, service life and safety.

In the past two articles, we have presented factors that can reduce and improve service life of high-pressure hose. This month, we'll begin a discussion on manufacturing techniques and accessories used to build a safe and reliable product.

Safety Shields

Safety shields are used to protect the user in the event of a hose fluid leak. In many cases, inadequate shields are used on UHP hoses, or abrasion shields are expected to provide operator safety from a high-pressure fluid leak.

A properly rated shield will resist a burst and the resultant waterjet at the system's rated working pressure. A safety shield can run the entire length of the hose assembly, or it can be a short 5- to 6-foot whip that is affixed to one or both fittings. A whip may also serve as a bend restrictor, lessening the bending moment behind the fitting.

Abrasion shields offer no resistance to a hose burst and are only used to protect the hose from abrasion. Never let the hose come in contact with any part of the body unless a safety shield is installed on the hose assembly. Make sure the equipment manufacturer has approved the safety shield based on the hose size and working pressure.

Do not use an unapproved safety shield or protective shields that have pulled away from the fitting exposing the hose.

Containment Grips, Support Grips, Bend Restrictors

Containment grips are used to reduce hose "whipping" in the event the hose separates from the fitting under pressure. Additionally, it can act as a support grip. Containment grips bite into the hose as the grip is pulled. The harder the grip is pulled, the tighter it grips the hose.

In laboratory tests, the containment grip can crush the hose if pulled with

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Factors Which Affect The Power A Waterjet Delivers

Part 1 – The Affect of Turbulence

High pressure waterjet tools have been used with excellent results for several years, but the science and technology behind these tools continues to evolve. This first article in the Waterjet Power Series aims to simplify some of the concepts behind waterblast tool technology and make you more familiar with how these tools work most effectively. When it comes to delivering the most power, there are three concepts that are most important: 1) Controlling turbulence, 2) Optimizing stand-off distance, and 3) Optimizing dwell time.

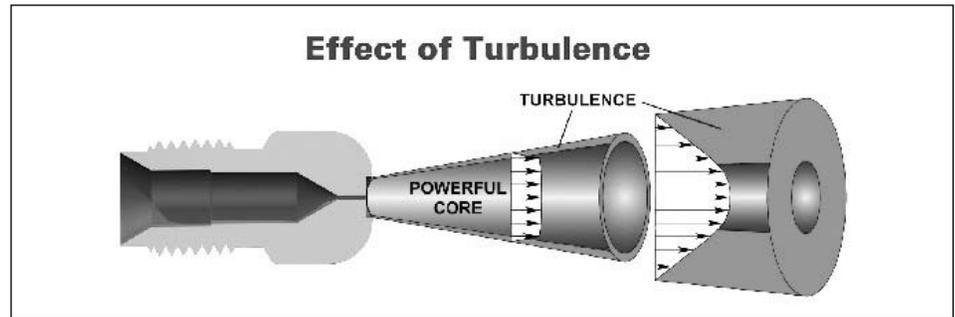
At the exit of the nozzle, the high pressure water becomes a high velocity waterjet. The surrounding

air begins to break down the jet into droplets, first occurring at the edges, leaving a powerful core that continues to carry the power of the jet. With increasing distance traveled through the air, the core is ultimately broken down to the point of being ineffective for cleaning.

Even though the laws of physics make the waterjet less effective the

further it gets from the tool, there are some things that can be done to minimize that effect. The two things that affect the power of the jet are upstream conditions before the nozzle and the design of the nozzle itself. The ideal upstream condition before the nozzle is a straight, smooth bore pipe with no elbows, bends, or adapters. The optimum

(continued on page 11)



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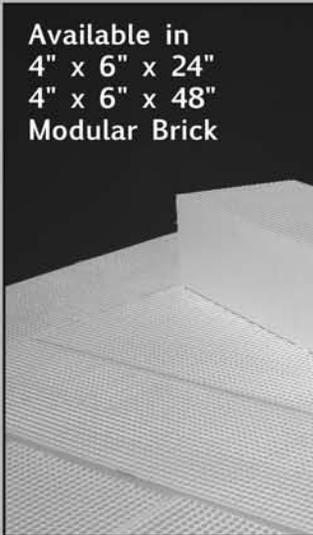
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Hourly Fuel Consumption For Equipment Used On Waterjet Jobs

In order to predict the cost of waterjetting operations, it is necessary to have a good estimate of the hourly fuel consumption of the equipment used on the job. The table below, provided courtesy of Pat DeBusk of DeBusk Industrial Services Company, gives such data.

Equipment	Hourly Fuel Consumption (gallons per hour)
Hydroblast Equipment	
275 horsepower	12.70
300 horsepower	15.30
425 horsepower	20.10
600 horsepower	29.30
30,000 - 40,000 PSI	10.20
Vacuum Service	
Vacuum Truck - Jetter	17.00
Vacuum Truck - Wet/Dry Vacuum	15.00
Miscellaneous	
Pick-Up Truck, Passenger Van	5.00
Service Truck - Box Van, Roll-Off Truck	6.00
Tractor	12.00

Pat DeBusk gives the following rules of thumb for the rate of consumption of diesel fuel:

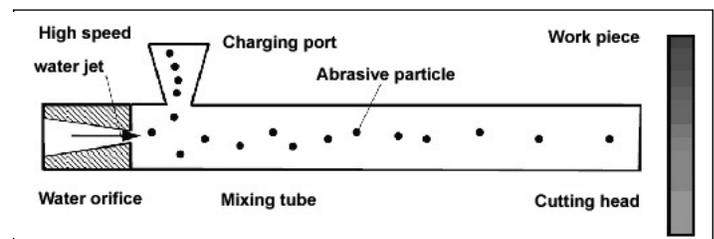
- 5 gallons per hour for 100 horsepower
- 10 gallons per hour for 200 horsepower
- 20 gallons per hour for 400 horsepower

The figures provided in this article are approximate and may vary slightly depending on your equipment/vehicles.

Simulation Of Particle Acceleration In An AWJ Cutting Head

Computational Fluid Dynamics (CFD) has become a preferred development tool for engineering problems associated with fluid dynamics. Cui* used a commercial CFD package Fluent6.2.1 to study the abrasive acceleration within an abrasive waterjet cutting head. Here are the highlights.

A multiphase mixture model was first used to model the turbulence of a water-air two phase flow. Abrasive particles were then introduced into the two-phase flow using a discrete phase model to study the particle motion and trajectory.



The diagram above is a schematic of a typical abrasive waterjet cutting head. The diagram on page 8 shows the velocity vector of the two-phase (water and air) flow. Two vortices are indicated. The first vortex is located

(continued on page 8)





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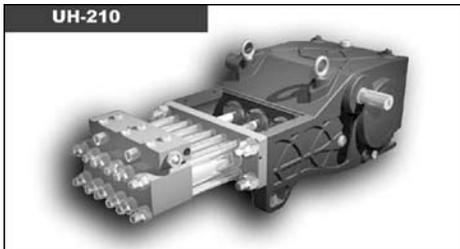


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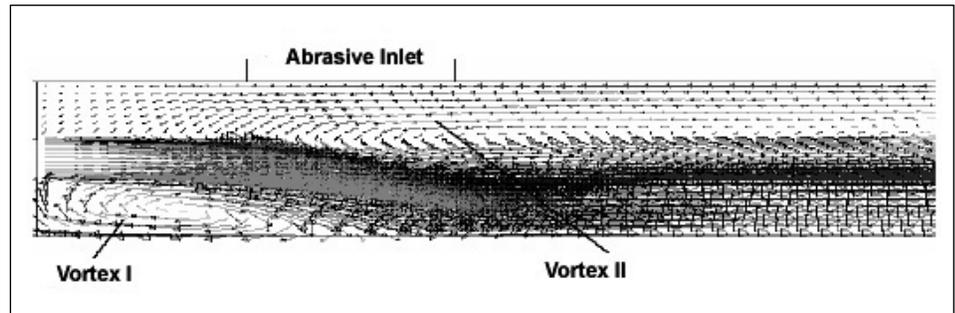
OH Precision, a ultra-high-pressure pump specialist in Taiwan, has announced the availability of the UH-210 triplex pump for customers worldwide. The UH-210 pump offers better performance-to-cost efficiency, long service hours, and it requires low maintenance down time. Features include a triplex plunger pump, incorporated gear box, drive shaft available on both sides, and easy field maintenance. It is ideal for water blasting, surface preparation (paint removal), runway cleaning, and concrete demolition.

For more information, contact QualJet by email: info@qualjet.com or by telephone 1-866-782-5538 (US/Canada).

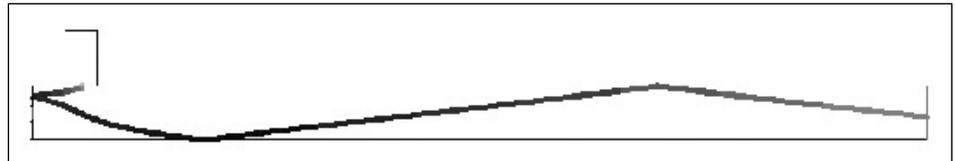


Simulation Of Particle Acceleration In An AWJ Cutting Head, from pg. 6

between the orifice and the abrasive inlet, on the opposite side of the abrasive inlet. It revolves clockwise. It is also found that pressure in vortex I is below atmosphere. Vortex II is located below and near the abrasive inlet. It is much larger and revolves counter-clockwise.



The diagram below shows the trajectory of a particle after it is introduced into the two phase flow. It shows that the particle first travels upstream, hitting the bottom of the orifice, and then collides with the mixing tube wall twice before exiting.



*Cui, L. (2006) Study on abrasive particle acceleration in the mixing tube of abrasive water jet based on the CFD models, Proceedings of the 8th Pacific Rim International Conference on Water Jet Technology, Oct. 10-12, 2006, Qingdao, China, Paper 10.

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Factors That Improve Service Life Of Hose, from page 2

enough force. Like the safety shield, the containment grip must be properly rated to the hose by specifying its breaking strength.

Support grips are much shorter and have a lower breaking strength than containment grips. They are used to support the weight of the hose assembly such as a hose hanging from scaffolding. They should not be expected to contain whipping of the hose assembly.

Bend restrictors are used to prevent the hose from bending behind the fitting. Bend restrictors are semi-rigid and allow the hose to bend gradually. They typically do not offer burst protection.

Relief Holes

UHP hose fittings, high-pressure adapters, and even some quick connect

couplers have relief holes. Relief holes are used principally as a leak indicator and to vent fluid leakage. If the leaking fluid is not vented, then pressure may build up in the connection and may cause separation.

Relief holes are found on Type M swivel nuts, female high-pressure ports, all large bore UHP hose fittings, and 40,000 through 55,000 psi hose fittings.

In the case of a swivel nut or a gland nut and collar assembly, simply tightening the fitting may stop the leak. If the male or female cone is too damaged or worn, then no amount of tightening will stop the leak.

At ultrahigh pressures, even a microscopic leak will quickly wear and become enlarged to the extent that the relief hole may not be able to fully

dissipate the fluid and pressure. It is strongly recommended to replace the part at once if a leak is observed at a relief hole.

In the August issue of *Jet News*, we'll cover flex lances and evaluation of hose for service.

For more information about Parker Polyflex, call (281) 530-5300 or visit www.parker.com.

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This article is part three of a series of articles. In the August 2008 issue of *Jet News*, Paul Webster, engineering manager, and Stephen Johns, marketing, Parker Hannifin Corp., Polyflex® Business Unit, will address keys to high pressure hose safety.



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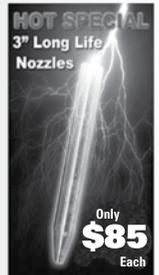


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Factors Which Affect The Power A Waterjet Delivers, from page 4

length of this straight section is fifty times the inner diameter of the tube. Unfortunately, most of the time, this is not possible, such as in small pipe cleaning. Even an extension nipple as small as two inches long will add some improvement to jet performance. Another method of improving the jet power is the use of flow-straightening vanes installed in the nozzle itself. StoneAge Attack Nozzle Tips use a flow-straightening vane behind the orifice that recovers about half the power lost to upstream turbulence.



Part 2 – Optimizing Stand-Off Distance

In the first installment of this three-part series, we looked at the effect of turbulence on waterjet power delivery. In this second installment, we examine how the number of jets and the size of those jets affect cleaning effectiveness. Directly related to the size of the jets as they contact the surface is the distance from that surface to the nozzle. This stand-off distance has a profound effect on cleaning effectiveness. As we explained in Part 1 of this series, the further the waterjet is from the surface, the more likely that its effectiveness will be compromised due to the effect of turbulence. It is important to try to achieve an optimum distance from nozzle to surface. This means that the nozzle end should be far enough away from the surface that damage to

the tool doesn't occur from impact by either the nozzle itself or the residual material as it is removed from the surface.

In addition to the optimum stand-off distance, the orifices should be kept as small as possible while maintaining the desired pressure and flow. In other

words, the tool needs to have orifices sized such that the impact from them will clean and flush the material with as few orifices as possible and maintaining an optimum stand-off distance. In our final installment of this series on Waterjet Power, we

(continued on page 13)

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Flow Announces Establishment Of Advanced Waterjet Systems Manufacturing And Technology Center

Flow International Corporation has announced plans to establish a single facility for designing and building its advanced waterjet systems, which include large aerospace systems and robotic waterjet cutting cells.

The Advanced Waterjet Systems Center will be located in Jeffersonville, Indiana and will be an expansion of Flow's existing facility there. The facility will include engineering, production, and an interactive customer demonstration center.

As part of this plan, Flow will close its manufacturing facility in Burlington, Ontario, Canada. The company's robotic waterjet cells and slitter systems production will be moved from Burlington to Jeffersonville. Flow will maintain its Ontario-based sales and technical services team in order to continue offering local support to its Canadian customers.

"By concentrating our advanced systems development expertise in a single location, Flow will be able to service our customers more efficiently and drive the technology forward faster," said Charley Brown, president and CEO, Flow International. "The establishment of a center of excellence dedicated to advanced waterjet systems will represent a single source for all technology development in this field."

TurtleSkin WaterArmor UHP WaterJet Protection



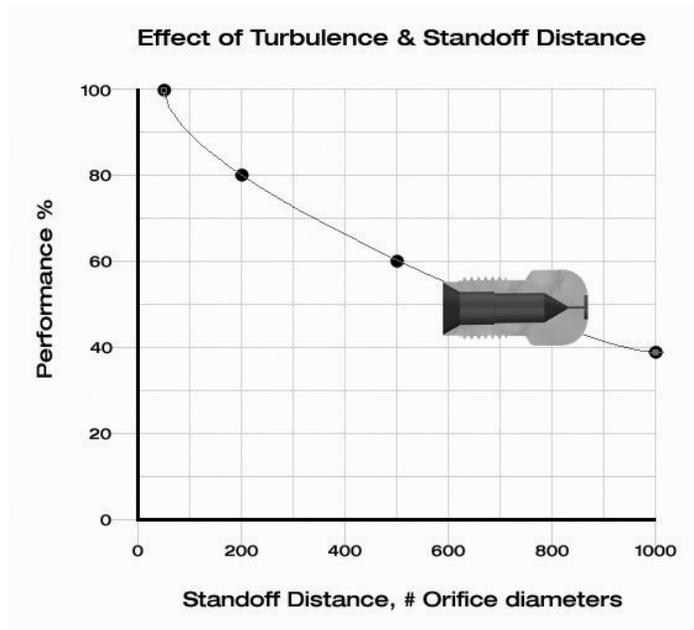
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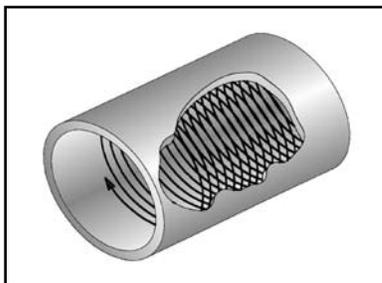
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Factors Which Affect The Power A Waterjet Delivers, from page 11



will look at the importance of correct jet velocity. For a given stand-off distance, a larger diameter jet will produce the greatest impact. At a 12 inch (305mm) stand-off distance, a .032 inch (.8 mm) orifice will have a ratio of 375, resulting in 40% performance, while a .063 (1.6 mm) orifice will have a ratio of 190, with 55% performance. There are two ways to allow increasing the orifice size – the obvious way is to increase the flow rate. The other is to use fewer nozzles in the jetting tool without increasing the flow rate. This is why rotating tools are so effective – they allow complete coverage with a fewer number of larger jets that hit harder. In our final installment of this series on Waterjet Power, we will look at the importance of correct rotation speed when using rotary tools.



Watch for the third installment of the StoneAge “Waterjet Power Series” in the August 2008 *Jet News*.

For more information, visit www.stoneagetools.com, email: sales@stoneagetools.com, or call 970-259-2869.

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NLB Introduces 400 hp Convertible Waterjet Unit

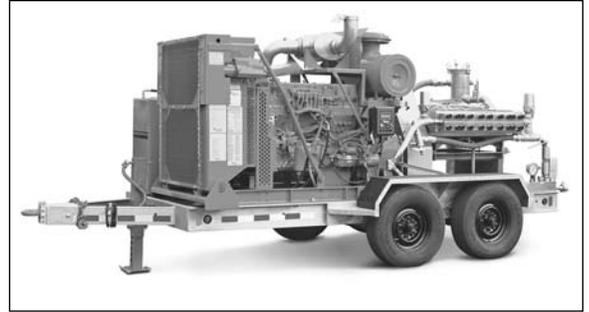
NLB Corp. has introduced the NLB 325 Series convertible water jet units, which operate at up to 400 hp at any of six pressures up to 24,000 psi. The new models — the first NLB convertible quintuplex pumps — have many features and parts in common with the popular NLB 225 Series. This simplifies operation, maintenance and inventory for water jetters who use NLB 225 units.

Two diesel-powered models are available, each with a low-wear quintuplex pump and a convenient swing-out manifold that makes conversion easy. Model 405 (400 hp) can be converted to run at 8,000 psi, 10,000 psi, 12,000 psi, 15,000 psi,

20,000 psi, and 24,000 psi. Flows range from 25 gpm to 74 gpm. Model 365 (365 hp) can run at 8,000 psi, 10,000 psi, 12,000 psi, 15,000 psi, 20,000 psi, and 24,000 psi. Flows range from 22 gpm to 64 gpm.

NLB now has 22 convertible high-pressure water jet units, more than any other manufacturer, and offers users the widest range of pressures, flows and horsepower to suit their applications.

For more information, visit www.nlbcorp.com or call 248-624-5555.



NLB 325 Pump

Mitsubishi Heavy Industries Awards Flow International B787 Excellent Suppliers Award

Flow International Corporation, a leading developer and manufacturer of ultrahigh-pressure (UHP) waterjet technology, has been awarded Mitsubishi Heavy Industries' (MHI) prestigious B787 Excellent Suppliers Award. This is the first time an American company has been presented this award.

Citing its successful delivery of the first wing box for the new Boeing 787, which was produced using Flow's waterjet technology, MHI lauds Flow's innovative composite waterjet capabilities and commitment to serving the dynamic needs of the aerospace industry as basis for the award.

"We are honored to receive this award from Mitsubishi Heavy Industries," said Dick LeBlanc, executive vice president, Flow International. "The reputation Flow holds in the aerospace industry is strong and now even further supported by an award such as this."



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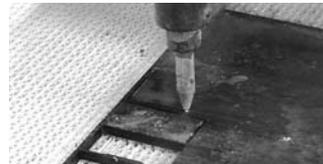
- Provides smooth level cutting surfaces
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Jerry Carter New SPIR STAR Sales Manager

SPIR STAR a manufacturer of high pressure thermoplastic hose is pleased to announce the promotion of Jerry Carter to Sales Manager. Jerry joined the SPIR STAR team in 1997 and worked his way up to the position of Shop Foreman. With his dedication to service and broad product knowledge, he was promoted to Inside Sales in January 2002 and then to Senior Sales Coordinator in May 2005.

As Sales Manager, Jerry is responsible for overseeing the Sales staff and also developing and implementing new ideas to enhance the high standards of quality and customer service that SPIR STAR proudly represents. When asked about his perspective on his promotion, Jerry's reply was, "As Sales Manager I am committed to upholding our company's motto of Outstanding Quality and Outstanding Service with customer satisfaction being the first and foremost priority."

Safety Committee Solicits Comments On Improvements To Recommended Practices

The WJTA Safety Committee hereby solicits comments regarding improvements to the publication, Recommended Practices for the Use of Manually Operated High Pressure Waterjetting Equipment. While Recommended Practices is reviewed periodically at the biennial conferences of the WaterJet Technology Association, your comments and suggestions for improving the publication are invited and welcome anytime.

Please address your comments and suggestions to: Safety Committee, c/o WJTA, 906 Olive Street, Suite 1200, St. Louis, MO 63101-1434, phone: (314)241-1445, fax: (314)241-1449, e-mail: wjta@wjta.org, web site: www.wjta.org.

IMPORTANT NOTICE REGARDING SPAM

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

The WJTA 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 membership.

New Coning and Threading Tool Kit

MAXPRO Technologies introduces a new product tool kit for the Coning and Threading of medium and high pressure tubing.

The kit contains:

- Coning Tool
- Coning Blades
- Bushings
- Complete Deburring Tool
- Suflo (Cutting Oil)
- Instruction Manual
- Threading Tool
- Collets
- Threading Dies

All items are conveniently packaged in a sturdy tool box. Three versions of the tool kit are available. One

to prepare tubing ends for Medium Pressure, one for High Pressure and one that contains items to repair both.

Manual coning and threading tools are designed to thread up to 9/16" OD tubing. One size coning and threading tool with interchangeable bushings and thread dies eliminates the need for multiple tool inventories. Internal needle bearings and high strength materials offer ease of operation and extended tool life. The coning blades are designed to cut both the angle and straight areas of the tube to insure good concentricity between the sealing surfaces.

Maxpro Technologies offers a complete line of high pressure valves,



fittings and tubing as well as a complete line of air driven pumps, air amplifiers and gas boosters.

For more information, visit www.maxprotech.com or contact MAXPRO Technologies, 7728 Klier Drive South, Fairview, PA 16415, phone: 814-474-9191, fax: 814-474-9391.

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Jet Edge Appoints New Corporate Sales Manager

Jet Edge, Inc., a leading manufacturer of ultra-high pressure waterjet and abrasivejet systems for precision cutting, coating removal and surface preparation, announced today that it has appointed Robert Bangasser as its new corporate sales manager.



Robert Bangasser

Bangasser is responsible for Jet Edge's worldwide sales activities. He has previous experience in various sales management roles at all levels of the selling process, and in business development. He most recently provided custom fabricated capital equipment solutions to major OEM manufacturers as a manufacturer's representative. He is a graduate of St. Mary's University in Winona, Minnesota.

For more information about Jet Edge, visit www.jetedge.com, e-mail: sales@jetedge.com, or call 1-800-JET-EDGE (538-3343).

Yellow Lube



A waterjet thread anti seize and thread lubricant that stays on the threads longer and will not stain your clothing or hands. Proven in some of the harshest Precision Cutting and Portable Waterjet environments. Available in the larger 6 oz. tubes.

Come see us at www.tsmoly.com under waterjet products.

LAI Adds Corporate Officers To Senior Management Team

LAI International, Inc., a leading supplier of precision components and sub-assemblies for original equipment manufacturers has named Vinnie Caliendo chief financial officer and Eric Nelson vice president and chief technology officer.



Vinnie Caliendo



Eric Nelson

Caliendo was CFO at Rich Technology International, which LAI International acquired in 2007. Caliendo joined RTI in 1999, holding the top financial position for the company while also serving as the Chief Operating Officer for two years during a crucial time of change for the company 2001-02. In addition to the last nine years with LAI and RTI, he spent two years at a small, 24-employee clothing manufacturer, running the accounting, I.T. and operations departments. Previously, he has 14 years of experience in large, international, high-tech manufacturing businesses with progressive experience in accounting, finance and management. He was the manufacturing controller for Orion Research, part of Analytical Technologies International, Boston, when the company was sold to Thermo Electron. Before joining Orion, his last position held at Electronics Corporation of America, Boston, was cost accounting supervisor when the company was sold to Allen-Bradley. Caliendo was the lead contact for RTI's sale to LAI, was part of the due diligence team for Orion's sale to Thermo Electron, as well as serving on the integration steering committee and was dedicated to the integration team when ECA was sold to Allen-Bradley. He holds a bachelor's of

science degree in management studies from Boston University, a certificate in accountancy from Bentley College, Waltham, Mass., and an APICS MRP certification.

Nelson has more than 25 years experience in management and process development for aerospace and power generation markets. As a senior methods engineer and foreman at Pratt & Whitney, Nelson was responsible for evaluating new technologies for material processing and developed laser machining specifications for advanced electron beam and laser welding processes for the PW5000 engine, YF22 STOL nozzle, J58, RL10 rocket engine and numerous other engine components. He later joined Chromalloy as a manager and developed laser-drilled effusion combustors for Allison, G.E. and Rolls Royce. Nelson was the chief operations office at Rich Technology International, responsible for sales, marketing, engineering, operations and new product and process development. Nelson studied music at the Boston Conservatory of music and U.S. Army School of Music. He has completed numerous engineering and management training programs, along with attending the University of Maine for Industrial Technology and MBA undergraduate courses.

NLB Adds Long-Life Seal To Rotating UHP Lance

The new NCG8450A-3 rotating waterjet lance from NLB Corp. has a UHP seal that lasts an average of 40 hours — five times as long as previous seals. The field-repairable lance delivers UHP water (up to 40,000 psi) with a rotating action, widening the spray pattern and making product removal more productive.

The NCG8450A-3 can be used with any of NLB's multi-orifice heads, which are designed to suit a variety of applications. Its rotation speed is variable up to 3,000 rpm, and is provided by a reliable, air-driven swivel. The ergonomic lance enhances operator protection in several ways, including dual-trigger operation



NLB NCG8450A-3 Lance

and instant pressure dump. It comes with a 36-inch barrel; another model, the NCG8450LA-3, has a 48-inch barrel.

Operation of an NLB rotating lance requires an NLB 8488 Bi-Mode™ valve and a hose assembly. The NLB 8488 minimizes downtime with two disposable cartridges (like those used in NLB lances and foot controls) that can be replaced in just 60 seconds.

For more information, visit www.nlbcorp.com or call 248-624-5555.

New Air Driven Liquid Pumps Featured In Updated Catalog

Maxpro Technologies announces the release of a new 24-page catalog that details the company's complete line of liquid pumps and packaged power systems.

The catalog features a new LC pump series from Maximator, small, sturdy units that have the option for a field replaceable hand lever. Maxpro's custom designed line of power packs, pump skids, portable test carts and test benches are detailed in this publication as well.

Maximator high efficiency pumps are air driven with pressure ranges from 60 to 60,000 psi, and are ideal for a broad variety of oil, water, and chemical applications.

Maxpro Technologies offers a complete line of air driven pumps, air amplifiers, gas boosters, and a complete line of high pressure valves, fittings, and tubing.

The PDF version of this catalog is available under the Literature link at www.maxprotech.com, or request print copies by emailing jjpytlarz@maxprotech.com, or calling 814-474-9191.

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The *Jet News* is published by the WaterJet Technology Association (WJTA) and is a benefit of membership in the Association.

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Accustream Moves Offices To New Headquarters

Accustream officials have relocated to a new site in New Brighton, Minnesota. The move will help the company adapt to recent expansion within the business and will enable Accustream to better serve their developing market in waterjet parts.

The new building will allow Accustream to handle more orders and to produce more pumps, cutting heads, nozzles, valve parts, orifices, filters and more. Since the amount of orders has been doubling each year for the last few years, Accustream knew they needed to grow with their customers.

The new headquarters is located at 309 5th Ave NW New Brighton, MN 55112. This is just a few miles from their previous location; however the 25,000 square foot building is significantly larger than the last.

Accustream specializes in supplying customers with the highest quality waterjet parts, all of which are manufactured in the United States. They are known world-wide for their ultra-high pressure intensifier pumps,

as well as their newly-released cutting head, the DiaLine.

For more information, visit www.accustream.com, or contact John Hennessey at (763) 717-7099.

Small footprint **NLB 125D** **Quick-change fluid end**

All your favorite convertible features, at under 150 hp: the new NLB 125.

WJTAListServ - A Free Service To WJTA Members

The **WJTAListServ** enables you to take advantage of prompt e-mail interaction with your colleagues. **WJTAListServ** is a **FREE** e-mail broadcast system developed by WJTA to help you communicate and network with other waterjet professionals.

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



With the debut of the NLB 125 Series, NLB has the industry's most complete line of convertible water jet pump models: 20 in all. No other manufacturer offers such a range of horsepower, pressure and flow.

The 125 Series packs all the great NLB features — 20-minute conversion, fewer parts, 5-minute packing change, etc. — into a compact package that is easy to tow. It's a scaled-down version of our popular 225 and 605 models, and just as easy to work on.

Come in for a free demo. Once you try, you'll want to buy... or rent-to-own. For details, call **1-877-NLB-7988** or www.nlbcorp.com.

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NLB 125 Series: Available Configurations

Model	GPM	PSI
Model 145 (145 HP)		
24145D	8	24,000
20145D	10	20,000
15145D	13	15,000
10145D	19.5	10,000
8145D	24.5	8,000
6145D	32.5	6,000
Model 125 (125 HP)		
24125D	7.5	24,000
20125D	9	20,000
15125D	12	15,000
10125D	17.5	10,000
8125D	22	8,000
6125D	29	6,000
Model 115 (115 HP)		
24115D	6.5	24,000
20115D	8	20,000
15115D	10.5	15,000
10115D	15.5	10,000
8115D	19.5	8,000
6115D	26	6,000

WJTA Industrial Vacuum Equipment Seminar

Over 40 participants representing companies from the U.S., Canada, and the Republic of Korea attended the WJTA's first seminar on vacuum equipment, **Safe Operation of Industrial Vacuum Equipment**, held Thursday, June 5, 2008, at the Marriott Houston Westchase in Houston, Texas.

Phil Stein, Guzzler/Vactor Manufacturing Inc., Streator, IL, opened the program with his specialized "science lab" presentation. Stein conducted several "lab" experiments to help participants understand the vacuum concept and how industrial vacuum loaders work. He explained how pressure works and how it is used; how to measure the vacuum and pressure and why it is important; the importance of hose diameter and length; problems associated with friction and thick and viscous materials; the air mover configuration; how things can go wrong; and major safety concerns.

Gary W. Toothe, CET, CIT, Thompson Industrial Services, LLC, Sumter, SC, shared tips on getting the most out of an air mover. Toothe discussed setting up the job, calculating hose size and type and why it is important, loading the truck, heat issues in connection with material being vacuumed, cycle times, safety and injury issues, static electricity, and troubleshooting.

Ravel Ammerman, Colorado School of Mines, Golden, CO, focused on electrical safety issues. Ammerman discussed electrical safety hazards, including arc flash and related hazards; shock; static electricity charge generation and storage; ignition energy and mitigation; static electricity and combustible materials; conductors of electricity; bonding and grounding; inspection checklist for bonding

and grounding systems; power line incidents; and electrical safe work practices.

Stein and Toothe continued instruction outdoors with a review of industrial vacuum trucks located on site. Thanks to **Guzzler/Vactor Manufacturing Inc., Super Products LLC, and Vacuum Truck Rentals, LLC**, for supplying the trucks.

Congratulations to **Brad Krewusik**, Eveready Industrial Services Ltd., Edmonton, AB, Canada, and **Sam Moak**, Master Vac Industrial Services, LLC, Prairieville, LA, winners of a

drawing for two \$50 Home Depot gift cards.

A preliminary review of program surveys indicates an overwhelmingly positive response from participants. Comments included: *Great program for the first year...Exceptional conference, content very relevant, very well covered...A very good, thoughtful and well put-together presentation... Phil's demonstrations are very helpful in seeing how the trucks work...Very knowledgeable instructors...This class is going to be very helpful on training for my operator...Thank you all for everything – it helped me a lot.*



2009 American WJTA Conference and Expo

Tuesday-Thursday, August 18-20, 2009

Marriott Houston Westchase, 2900 Briarpark Drive, Houston, Texas 77042

- **Live, Onsite Demonstrations** of a variety of waterjet applications (including cleaning, paint/coating removal, concrete preparation and testing of the effectiveness of safety equipment) and industrial vacuum/air moving operations.
- **Waterjet Expo** featuring displays of waterjetting equipment, systems and supplies and industrial vacuum/air moving vehicles.
- **Safe Operation of Industrial Vacuum Equipment Seminar.**
- **Waterjet Boot Camp**—Industry experts offer information and suggestions on ways to help contractors buy smart, improve efficiency and generate profitable new business. Sessions are presented in the exhibit hall so participants can alternate between viewing exhibits and catching sessions of interest.
- **Waterjet Technology: Basics and Beyond Pre-Conference Workshop**—Start with the basics and follow up with an in depth look at these waterjet applications: Surface Preparation, Cleaning Applications, and Cutting Applications.
- **Emerging Technology, New Applications**—Hear some of the world's foremost engineers and researchers share new developments in applications, mechanics, equipment, and procedures.

The **WJTA Conference and Expo** is unique in that the program is dedicated to high pressure waterjet technology and related industries. If you are involved in high pressure waterjetting for cleaning, surface preparation, industrial vacuuming/air moving for industrial cleanup/recovery, waterblasting or cutting, or if you are interested in finding out more about the industry, the **WJTA Conference and Expo** is an ideal resource for information and an excellent meeting for networking with other professionals in the field.

Hotel Reservations at the Marriott Houston Westchase. The Marriott Houston Westchase, 2900 Briarpark Drive, Houston, Texas 77042, is the central location for the WJTA Conference and Expo activities. The Marriott is a **smoke-free** facility. For reservations, call toll-free **800-452-5110** or contact the Marriott directly at **713-978-7400**. Be sure to identify yourself as attending the WaterJet Technology Association Conference to receive the special group rates of **\$149 single/double occupancy. August 2, 2009**, is the deadline for guaranteed room availability. Reservations received after **August 2, 2009**, will be confirmed on a space available basis. Rooms may still be available after August 2, but not necessarily at the rates listed above.

Visit www.wjta.org for Conference information or contact:
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