



## A Better Way To Clean Heat Exchanger Tubes



Operator inserts dual lance assembly powered by Jetstream UNx™ to hydroblast tubes.

### **Jetstream, Stone Age, Chemical Transportation Partner in Improved Solution for Hydroblasting Tube Sheets**

Cleaning heat exchanger units is a challenge for even the most experienced industrial contractor. In the southwest where Phoenix-based Chemical Transportation, Inc., operates, it is even more challenging due to the hot weather.

According to Kofi Barkoh, Jetstream of Houston's regional sales manager for the western United States and Canada, there are many variables involved that can adversely affect quality. "Some contractors can do this operation quickly with minimum setup time. But it is very difficult for them to control the quality of work they are accomplishing," said Barkoh. "Due to operator fatigue, the speed that the hose is fed into each tube is inconsistent, and they can only clean the tube in one direction."

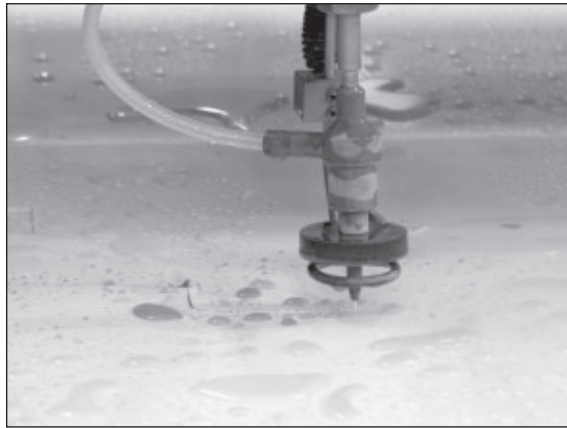
### **Three-way development team**

An improved technology is being tested by Chemical Transportation that promises to significantly improve the way heat exchangers are cleaned.

(continued on page 6)

# Innovative Waterjet Cutting By Stainless Steel Fabricator

**D**eep in southwest Missouri is a success story based on building food processing equipment and conveyors—and using waterjet cutting. FBN Metal Products Inc. and sister company Snap Lock Inc., Battlefield, Missouri, specialize in those products and operate a growing, fast-paced machine shop that performs about 90 percent of its cutting using waterjet.



**Cutting Process**

After founding FBN in 1986 as a stainless steel cutting and fabrication job shop, owner Frank Norton found customers asking him to make more and more parts for food processing equipment. Soon he was building entire machines and production lines. Using his experience and creativity, Norton was able to devise custom solutions for companies, carving out a solid market position for FBN.

Norton soon spotted demand for a modular conveyor line. “During visits to customers, I noticed that production lines were changed often,” he said. “Each time a line was changed, complete conveyor lines had to be disassembled and discarded. So we created Snap Lock, a modular, sanitary conveyor line for food processing plants that provides the ability to change the production line by quickly adding or removing sections.”

Snap Lock was an immediate success. To keep up with growing demand, Norton purchased a waterjet machine five years ago equipped with a high-pressure pump from KMT Waterjet Systems (at the time Ingersoll Rand Waterjet). The waterjet table measures 6 feet x 12 feet, and the machine has a special stone-mode setting for cutting stone and a sensor that touches the workpiece material and changes the

cutting head’s Z-axis so it’s close enough to cut the material, typically from 1/8-inch to 1/4-inch, but not too close.

“Waterjet is the best way to cut stainless and leave a clean, square edge without any heat-affected zone,” Norton said. Because waterjet is a cold-cutting process, the edge of the cut material is not hardened. This allows FBN to tap holes easily and consistently using a roll tap.

The waterjet machine proved to be more than just a cutting machine for making stainless conveyor parts; it became a draw for new business. FBN began receiving requests for quotes for products made from other materials, including ceramics, plastic, aluminum, reinforced rubber, stone and glass. According to Norton, the versatility of the waterjet machine has helped FBN diversify beyond the food industry.

To help companies choose and design custom parts, FBN uses a cut-quality scale that demonstrates the trade-off between price per cut and edge quality. The scale allows customers to choose a faster cutting speed and

lower part price when edge quality is less important, and a slower cutting speed and a higher price for a part with demanding edge requirements. Customers can also choose different cutting speeds for different sections of the same part.

## Continuous Improvement

FBN continuously improves its waterjet cutting operations. The shop regularly performs test cuts and brackets cutting speeds on new materials supplied by customers, working to speed up parts production. John Stoelting, waterjet machine operator, experiments with speeds, pressures and feed rates for various workpiece materials, shapes and thicknesses to achieve superior results.

Recently, FBN was one of the beta testing sites for KMT Waterjet’s Autoline II abrasive cutting head. Stoelting provided extensive feedback on the Autoline II’s head performance, and he noted that the new design reduces clogging and has an inlet that allows him to easily connect the abrasive feed hose by sliding it over a

**(continued on page 4)**



**Frank Norton, owner of FBN Metal Products Inc., left, discusses parts production with John Stoelting, waterjet machine operator.**



# Jetstream ... for a true conversion

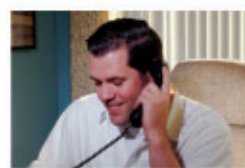


Contractors who use Jetstream waterblasters tell us they're converts for life. Because we've given them reason to believe.

- The industry's only true fully convertible unit (10K, 20K, 40K).
- Pressure-specific components so an operator can't accidentally connect low-pressure fittings to higher pressure components.
- Proven durability.
- Easy maintenance, with cartridge-based design.
- Experts who can show you the path to productivity and profitability.

*We want to make a believer out of you.*

*For a demonstration, call 1-800-231-8192 or go to [www.waterblast.com](http://www.waterblast.com)*



barbed, carbide fitting. This enables him to see that it is firmly connected. In addition, the inlet confines wear to the wear insert, eliminating wear on the cutting head body. The cutting head also simplifies the process of changing the abrasive mixing chamber, which is positioned on top of the insert body for easy access, and includes a weephole to indicate when the orifice is seated correctly against the nozzle tube. Also, T-screw retains the focusing tube, which can be used without tools like the cutting head itself.

Stoelting and Norton are also interested in the new KMT IDE abrasive cutting head, which simplifies

(continued on page 5)

### Conference Provides Technical, Practical Information

Waterjet machine suppliers work directly with companies like FBN Metal Products Inc. to help them learn how to use waterjet technology to its fullest potential, but information on technology, best practices and safety is also available from the WaterJet Technology Association at its biennial American Waterjet Conference, held in Houston. This year's conference, which takes place August 19-21 at the Marriott Westchase Hotel, also includes a boot camp to help shops win new business. A preconference workshop starts the event August 19 with a review of the basics of waterjet equipment and safety.

The conference's exposition will be August 20-21 and will consist of displays of abrasives and abrasive waterjet accessories, nozzles, pumps, valves, hoses, fittings, lances, orifice inserts and CNC robotics. The displays will include equipment for cutting, shaping, surface preparation, hydroblasting, tank cleaning, industrial vacuuming/air moving and sewer/pipe cleaning.

Along with the exposition will be on-site demonstrations of various waterjet applications. Demonstrators will teach conversion of pressures, preventive maintenance and field repair.

For more information on the conference, visit [www.wjta.org](http://www.wjta.org).



**VISIT OUR WEB SITE WITH OVER 400 PRODUCTS, INSTALLATION PROCEDURES, EXPLODED VIEWS AND SERVICES**

- PARTS FOR ALL MAKES OF MACHINES
- SAME DAY SERVICE
- UNSURPASSED QUALITY
- VALUE PRICING
- SATISFACTION GUARANTEE

**ADDITIONAL 5% DISCOUNT ON PARTS ORDERS FROM OUR WEB SITE**

INTERNATIONAL WATERJET PARTS INC.  
A Division of WGI

1299 A STREET SE  
EPHRATA WASHINGTON 98823



Phone: 509-754-3284  
Toll Free: 866-302-3284  
Fax: 509-754-3292  
Toll Free: 866-883-3292  
Email: [iwp@iwpwaterjet.com](mailto:iwp@iwpwaterjet.com)

Additional 5% discount on parts orders from our web site.

We offer Ceratizit brand nozzles to fit most cutting heads.

**Don't settle for less when you can have the best!!!!**



**WANT TO CUT YOUR GARNET USAGE UP TO 30%?  
CALL US TO ASK US HOW.**



## Innovative Waterjet Cutting By Stainless Steel Fabricator, from page 4

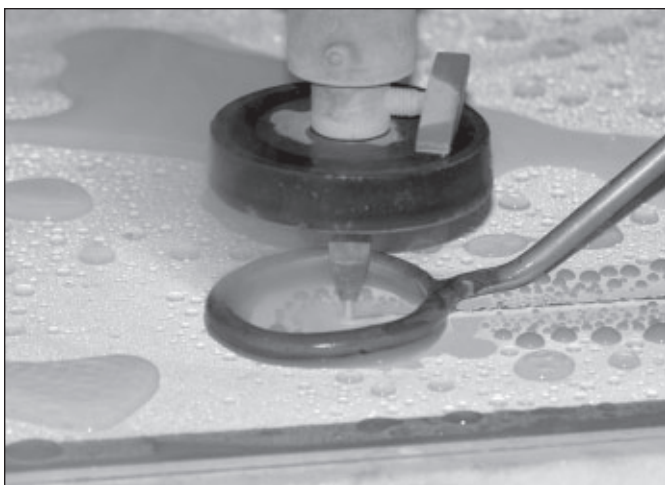
abrasive cutting heads because it has the diamond orifice, wear insert and body integrated as one piece. The KMT IDE, due to be introduced in June, will eventually replace the Autoline II.



**Loading Material**



**Material Aligned**



**Material Sensor**

*Photo credit: All photographs in this article, KMT Waterjet Systems*

With waterjet cutting, companies like FBN have been able to gain valuable experience by creatively using the technology and pushing machines to their limits. Innovation is one of the key ways for U.S. companies like FBN to compete against manufacturers down the block—and across the ocean.

For more information about FBN Metal Products Inc. and Snap Lock Inc., call Frank Norton at (800)538-2830 or visit [www.fbnmetal.com](http://www.fbnmetal.com).

### About the Author

John Dedic is marketing manager, KMT Waterjet Systems, Baxter Springs, Kansas. Contact him at (620)856-2151, ext. 239, or by email at [john.dedic@kmtgroup.com](mailto:john.dedic@kmtgroup.com). For more information, visit [www.kmtgroup.com](http://www.kmtgroup.com).

*Article reprinted by permission from Cutting Tool Engineering, June 2007.*

## Your Source for Ultra High Pressure Hose

### Servicing both the Waterblast & Coatings Removal Industries with Hose & Accessories



- Hoses for working pressures 10,000 to 50,000 psi
- NPT 15K rated fittings and adapters
- Complete range of medium and high pressure valves and fittings
- Blast Pro® Flexlances with Duralife™ outer cover
- Supply Hoses up to 1" ID

**From the pump to the gun, we have the hose and fittings to get the job done.**



10002 Sam Houston Center Drive • Houston, TX 77064  
281-664-7800 • 800-890-7827 • Fax: 281-664-7850  
[www.spirstar.com](http://www.spirstar.com)

## A Better Way To Clean Heat Exchanger Tubes, from page 1

“The relationship started approximately 18 months ago when Jetstream supplied Chemical Transportation with new fluid-end conversions for their existing water blasting units,” said Barkoh. “Chemical Transportation selected the Jetstream 20,000 psi UNx™ because it is easier to operate and the UNx fluid end allows them to change valves and packing in five-to-30 minutes, while on site and without the need for a certified mechanic or specialized tools. Previously it took four or five hours with their old equipment.”

Barkoh explained that, once Chemical Transportation’s immediate concern regarding pump downtime was solved by adding the Jetstream UNx™, the next issue was to consider other ways to improve their operation. One obvious consideration was the difficult heat exchanger cleaning operation.

“We’ve partnered with Stone Age on other projects and thought they would be an excellent fit for developing the solution,” said Barkoh.

Stone Age is committed to advancing current practice. They were enthusiastic about partnering with Chemical Transportation and Jetstream to develop a new tool to make it easier to clean large numbers of evaporator tubes in the safest, most efficient manner possible.

The initial design was dubbed the HRS. It’s a pneumatically driven hose reel system that feeds a single lance and hose into an evaporator tube. When this version proved successful, Stone Age added a second lance, effectively doubling productivity.

Stone Age dubbed the new product “Sabertooth.” It feeds two lances and their hoses simultaneously into small evaporator tubes. The Sabertooth gives the operators the ability to clean

in both directions when working and to clean all the way to the top of the tubes while eliminating dangerous splash-back.

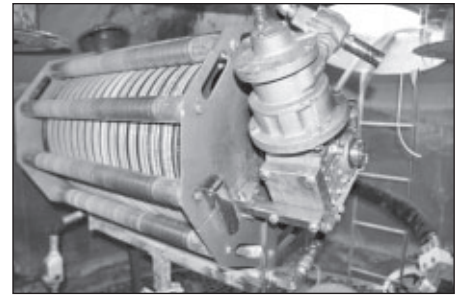
“The dual-lance system, with its improved heat-resistant drum, has proven itself to be more robust than its predecessor,” said Barkoh. “This is especially important in an area like Phoenix where the ambient temperatures are high and being in a small, confined metal space on a hot day doesn’t help.”

“Sabertooth is an example of an outstanding customer proactive solution,” said Dan de la Torre, Vice President of Chemical Transportation. “Jetstream took the initiative to pull the project together and spent several days on our site to help develop ways to make the initial product work better. Stone Age improved the tool with input from Chemical Transportation operators and Jetstream. Both companies worked together to make this a very cost-effective and productive effort on our behalf. It truly has been a unique relationship of three companies working together.”

### Easy to operate

The typical application for which Chemical Transportation uses the Sabertooth involves a vertical heat exchanger with as many as 2,400 tubes, each about 30 to 50 feet long and 2 inches in diameter. The tubes usually are partially or completely blocked.

To access the tubes, the operator has to climb to the top of the vertical exchanger while carrying the hose and lance equipment and then enter a small opening at the top. There isn’t much room to work, and the heat, especially in the Phoenix area, can be intense.



**Sabertooth hose reel assembly keeps hose organized and safely away from operator.**

The operator typically would sit on a bucket with the lance and nozzle in hand and control pressure with a foot pedal, according to Barkoh.

“When you clean 2,400 tubes, you run into the human element where some tubes are cleaner than others,” reported de la Torre. “The Sabertooth eliminates this variability because it’s more consistent and you don’t get so tired. Every tube is cleaned right.”

Barkoh agreed, saying that the operator gets consistent travel times up and down the tube, making for a thorough cleaning and making the work safer.

“The Sabertooth cut our clean time in half, and it is safer to use,” said de la Torre. He emphasized that the Sabertooth eliminated the risk of the operator handling the lance and, in effect, shielded the operator from the work. It also eliminated a common safety concern when the operator allows hoses to gather at his or her feet.

The Sabertooth keeps the operator farther away from the action, eliminating handling. It requires less labor and so is less fatiguing on the operator, according to de la Torre. It also is expected to reduce repetitive motion injuries.

Barkoh reported that the Sabertooth is relatively easy to carry and fits

**(continued on page 9)**

**Are you tired of slow production?**

**Looking to get more return on your equipment investment?**

# PROBLEM SOLVED.



524 Tindall Avenue • Trenton, NJ 08610  
609-396-1577 • 877-AMGATTI • Fax : 609-695-4339



**GATTI orifices OUTLAST  
and OUTPERFORM any  
other orifice on the market.**

- GATTI nozzle designs are recognized as the industry standard
- Our core business is manufacturing waterjet orifice assemblies and has been for 26 years
- We are specialists in sapphire processing
- Same day shipping, excellent service, unmistakable quality

**Maximize your waterjet  
productivity. Choose to use  
GATTI sapphire orifice assemblies  
in your waterjet system.**

**Call Today And We Will Ship You FREE Samples To Try In Your Own System!**

**[www.gattiam.com](http://www.gattiam.com)**



## 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](mailto:wjta@wjta.org), web site: [www.wjta.org](http://www.wjta.org).

### WJTA Administration

<b>Chairman of the Board</b>	<b>President/<i>Jet News</i> Editor</b>	
John Wolgamott (970)259-2869	George A. Savanick, Ph.D. (952)432-7594	
<b>Vice-President</b>	<b>Treasurer</b>	<b>Secretary</b>
Pat DeBusk (281)842-8000	Larry Loper (800)289-7447	Hugh B. Miller, Ph.D. (520)621-4689

#### 2005-2007 Directors

Lydia M. Frenzel, Ph.D. (512)392-2210	Bill McClister (713)307-2142
Mohamed Hashish, Ph.D. (253)850-3500	Carl Olsen (253)872-2300
Forrest Shook (248)624-5555	

#### Emeritus Members

Andrew F. Conn, Ph.D. (410)532-3452	Thomas J. Labus (262)245-9702
Thomas J. Kim, Ph.D. (401)874-5991	Fun-Den Wang, Ph.D. (303)279-9415

#### Association Managers

Mark S. Birenbaum, Ph.D. • Kenneth C. Carroll  
(314)241-1445

## Sheree Paramore, Kent Maddie Join Advanced Pressure Systems

Advanced Pressure Systems has announced that Sheree Paramore and Kent Maddie have joined the partnership. Sheree Paramore has extensive experience in manufacturing and materials resource planning for the water blasting industry gained with American Aero, CRS Power Flow and Gardner Denver. She will be the partner in charge of production and inventory control. Kent Maddie has a wealth of water blasting knowledge acquired during more than 30 years of service with such major companies as Hydro-Chem, Jetting Systems & Accessories, and Gardner Denver. He will be the partner in charge of sales and marketing. Both of these new partners will ensure that Advanced Pressure Systems is able to provide the best service to an expanding customer base needing high quality water blasting parts and accessories. Contact Advanced Pressure Systems toll free at 877-290-4277 or via e-mail at [kmaddie@advancedpressuresystems.com](mailto:kmaddie@advancedpressuresystems.com). Dave Mitchell, senior partner, is available at the same location.



Sheree Paramore



Kent Maddie

## Pre-Conference Workshop on August 19 At The 2007 American WJTA Conference And Expo

August 19-21, 2007, Marriott Westchase Hotel, Houston, Texas

### WATERJET TECHNOLOGY – THE BASICS

8:00 a.m. – 9:00 a.m.

#### Registration

9:00 a.m. – 9:30 a.m.

#### History

9:30 a.m. – 10:10 a.m.

#### Equipment

10:10 a.m. – 10:20 a.m.

#### Break

10:20 a.m. – 11:10 a.m.

#### Applications

11:10 a.m. – Noon

#### Safety

Noon – 1:00 p.m.

#### Lunch

### WATERJET TECHNOLOGY – BEYOND THE BASICS

1:00 p.m. – 3:00 p.m.

#### Concurrent Sessions

- Hydroexcavating
- Surface Prep Applications
- Cleaning Applications
- Cutting Applications

3:00 p.m. – 3:20 p.m.

#### Break

3:20 p.m. – 5:00 p.m.

#### “Ask the Experts” Panel

- Hydroexcavating
- Surface Prep Applications
- Cleaning Applications
- Cutting Applications

(preliminary schedule as of 6/20/07)



## A Better Way To Clean Heat Exchanger Tubes, from page 6

easily into the confined space of the heat exchangers.

According to de la Torre, the Sabertooth is easy to operate. There is a lockout safety trigger or lever. Move the lever one way and the tool moves up. Move the lever the other way and the tool goes down. The Sabertooth delivers the lance at a consistent speed with a predictable result. It stops at preset points so you avoid damage to the tube sheets. It also makes it easier to retrieve the hose reel.

When the operator is ready to move to the next tube, he or she releases the throttle and safely moves the lance.

"I particularly like the addition of a safety shield to protect the operator's legs and body with a metal barrier," said de la Torre. The previous system involving a hand-fed lance and foot pedal mechanism to initiate the cleaning blast simply was not as safe as the Sabertooth solution. With Sabertooth, if you pull the shield up, you automatically release the trigger.

"With Sabertooth, Chemical Transportation can compete with contractors who may have a larger crew because Chemical Transportation's operators can work so much faster. The time-savings add up to better productivity and customer satisfaction," said Barkoh.

### Sabertooth to replace Stone Age HRS system

The Sabertooth is a product upgrade and replacement for the Stone Age HRS system that fed one hose at a time. The Sabertooth not only offers two hoses at a time, which doubles productivity, but it is also designed with a simple gearbox motor with a direct drive for the rotation of the drum.

Bill Shires, sales and marketing manager for Durango, Colorado-based

Stone Age Inc., reported that in tests conducted with Chemical Transportation, Sabertooth is working effectively when hooked up to a Jetstream unit.

"As regional sales manager, it's not often I get a chance to witness the

development of new technology firsthand," said Barkoh. "I wanted to be onsite to support the testing of the prototype and witnessed a substantial gain in productivity for Chemical Transportation."

(continued on page 10)

# Quality & Reliability

## Now Availability **DIRECT**



### GMA Garnet USA Corp.

*the most popular **Waterjet** cutting  
abrasive, worldwide — near you!*

**U.S. Warehouses**  
Worcester, MA  
Baltimore, MD  
Lake George, NY  
Chicago, IL  
Atlanta, GA  
Tampa, FL  
St. Louis, MO  
Kansas City, KS  
Tulsa, OK  
Dallas, TX  
Houston, TX  
Philadelphia, PA  
*New locations coming!*

480 N. Sam Houston Pkwy.  
E., Suite # 130  
Houston, Texas 77060  
**832-243-9300**

[www.GARNETsales.com](http://www.GARNETsales.com)

# Jet Edge Exhibiting Technology At The 2007 Oshkosh AirVenture, July 23-29

## *Jet Edge Waterjets For Cutting Aircraft Components*

Jet Edge, Inc., a leading manufacturer of ultra-high pressure waterjet systems, will demonstrate its latest waterjet cutting technology at the Experimental Aviation Association's Oshkosh AirVenture, July 23-29 at Wittman Regional Airport in Oshkosh, Wisconsin. Jet Edge will be in Fly Market Booth #770.

During AirVenture, Jet Edge will showcase its versatile Abrasive Machining Center (AMC) and discuss waterjet's many applications in the aviation industry. Jet Edge's AMC produces complex parts out of virtually any material. It is ideal for producing high-volume, short run, or prototype parts.

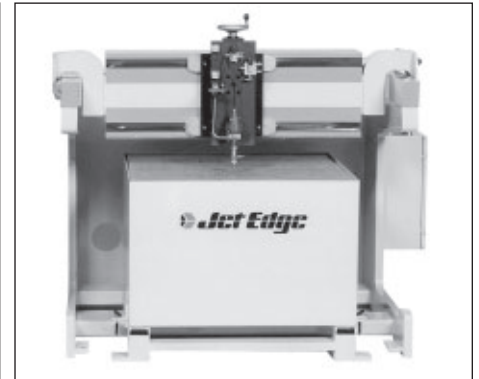
Jet Edge also will introduce special guest, pilot Dave Willcock of St.

Catharine's, Ontario. Willcock has built a successful business manufacturing aircraft parts with a Jet Edge waterjet system. His business, Profile Waterjet Cutting, has been featured in Canadian MetalWorking, Modern Application News and Canadian Industrial Machinery magazines.

Waterjet cutting is ideal for machining aviation parts, Willcock said, noting that aircraft are a compilation of flat, thin parts.

"There are hundreds or even thousands of parts," he said. "The number of parts you can make will just stagger you."

Willcock, who owns 10 aircraft, contends that home-built aviation enthusiasts could greatly increase their productivity by using waterjet instead of conventional cutting tools.



"Most of these parts are made with band saws, hacksaws and files," he said. "If you were building an aircraft from scratch, you would save months of work in constructing a project."

Aircraft enthusiasts also could save money by making their own specialty tools at a fraction of their retail cost, Willcock added.

For more information, visit [www.jetedge.com](http://www.jetedge.com) or call (800)JET-EDGE.

## **A Better Way To Clean Heat Exchanger Tubes,** from page 9

"Chemical Transportation is a great customer who is willing to try out new technologies and provide feedback about performance," said Shires. "New product development is often difficult to manage for many reasons. Typically, water blast contractors do not have the time or flexibility to try new technologies because they are under great stresses to meet the demands and deadlines of their customers."

Shires reported that Chemical Transportation has been very generous in allowing its employees the opportunity to try this new technology. "Input from contractors like Chemical Transportation allows

manufacturers the ability to make better equipment through field testing results," he said.

Stone Age hopes to announce a release date for the new product later in 2007 after additional evaluation and testing.

"The Sabertooth design, in combination with a Jetstream UNx, gives our customer a consistent result controlled by a preset control. The customer receives a cleaner tube sheet. It's very consistent," said de la Torre. "Sabertooth, in combination with Jetstream, represents best practices, delivers an excellent return on investment and is economical."

De la Torre stated that his customers are happy with the results. "We spend less time on site. We can reduce our cost to the customer, and they are receiving a more consistent result not possible before Jetstream's involvement. It's also safer, so it reduces liability issues."

"Chemical Transportation wanted a complete solution that requires less setup time, less maintenance, and in the end, is more productive. This is exactly what the Jetstream UNx combined with the Sabertooth delivers," said Jetstream's Barkoh.



# Tailoring With High Pressure Waterjets

Cutting fabrics with waterjets presents some obvious advantages over metal cutters. Metal cutters wear out while waterjets are always sharp. Metal cutters need to be orientated to the tangent of the contour, but waterjets need not. Waterjets have a narrow kerf and can cut complex contours with sharp turns. Its heatless characteristic also lends itself to cutting high strength textile like synthetic fibre. A research study by Luo\* provided some technical data for tailoring with waterjets.

A waterjet tailoring machine requires a multifunctional vacuum table to support, draw, fix, and compress the multilayer textile materials. A Nylon-fur type of vacuum table is good in avoiding wetting the fabrics, but it is expensive. A grid-box type table is less expensive but tends to wet the fabrics. One solution to prevent the wetting is to use mylar film as the top and bottom layers. Because of the low cutting force of waterjets, the machine can be constructed as light as possible and still has sufficient precision.

The cutting is best with the highest operating pressure that the pump will allow. The nozzle size is between 0.15 and 0.35 mm. Larger nozzles can cut faster but also have a higher chance of wetting the materials. Typical feedrates are showed in the table above.

Waterjet tailoring is specially useful in cutting leather, felt, and high strength chemical fibre materials, but not so good for cutting wool and silk materials because the edge of the

Textile Type	No. of Layers	Compacted Thickness, mm	Feedrate in m/min	Water Pressure, MPa	Diameter of nozzle, mm
Linen & wood	50-75	13-15	0.5-1.5	380	0.2
Rayon	100	17-19	1.0-2.0		
Gauze	100	17.5	0.5		
Cotton	75	24.0	1.0		
Silk	30-40	8-16	2.0		
Nylon	72	12.0	2.0		

bottom layer tends to get wet. The cut edge is precise and clean, free of remaining links. Compared to traditional mechanical tailoring machines (GGT), the productivity of waterjet tailoring is lower (1-2 m/min vs. 3-4 m/min), but with less auxiliary time. The equipment cost and operational cost are also lower. These

two technologies complement, but not replace, each other.

*\* Luo, X. (1996) Study of tailoring with high-pressure waterjet, in Colin Gee (ed.) Proceedings of the 13<sup>th</sup> International Conference on Jetting Technology, Sardinia, Italy, October 29-31, pp 643-648.*

*Reprinted by permission from Quality Waterjet Newsletter, June 5, 2007.*

Quality Parts • Affordable Price • Online Payment



QualJet LLC

www.qualjet.com • info@qualjet.com  
USA/Canada: 866-782-5538 • Fax: 425-378-7776

## Live Demonstrations At The 2007 American WJTA Conference And Expo

August 19-21, 2007  
Marriott Westchase Hotel  
Houston, Texas

- ANT Applied New Technologies AG
- Aqua Dynamics, Inc.
- GapVax, Inc.
- Gardner Denver Water Jetting Systems, Inc.
- Hammelmann Corp.
- Jetstream of Houston, LLP/Guzzler Manufacturing
- Peinemann Equipment B.V.
- Reliable Pumps
- StoneAge, Inc.
- Super Products LLC
- TurtleSkin WaterArmor by Warwick Mills
- Wastequip Cusco

### 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.

## Finishing An Artificial Joint With Waterjets

Finishing of artificial joints is very critical because it can reduce wear of the joint components and extend their service life. Wear of joint components causes functional deterioration of the joint as well as other problems associated with wear debris. For this reason the metallic sliding surface of an artificial knee joint is required to have a surface roughness under 10 nm Ra. This is currently achieved only by hand lapping, a labor intensive, costly, and inconsistent process. Seeing the need of an automatic finishing process for artificial joints, Sawano et al.\* experimented with an innovative finishing method by using a waterjet and a CAD-model-guided motion system.

To achieve a surface finish better than 10 nm Ra, ultra fine abrasive particles (under 1 micron) should be used. A traditional entrainment-type abrasive waterjet has a problem of feeding fine abrasive without getting clogged. In their method, the part to be polished was submerged in water with suspended fine abrasive particles (Fig.1). A pure water jet at 200 MPa was shot at the target surface tangentially (Fig. 2). The whole finishing process was automated by rotating the part and moving the nozzle simultaneously, guided by a CAD model of the part.

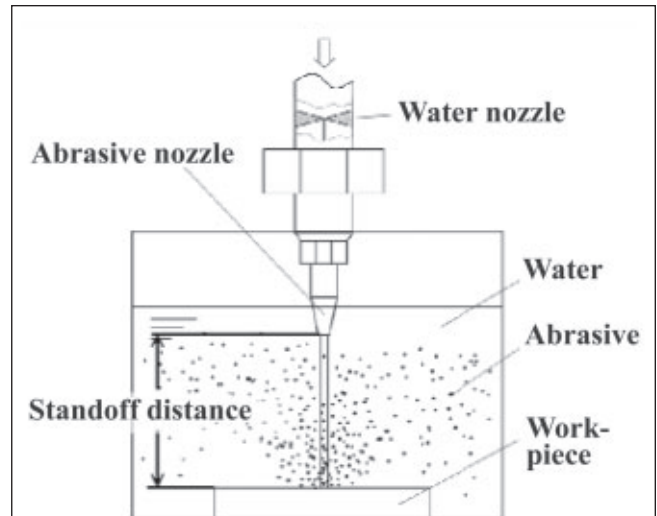


Fig. 1 Proposed abrasive introduction method.

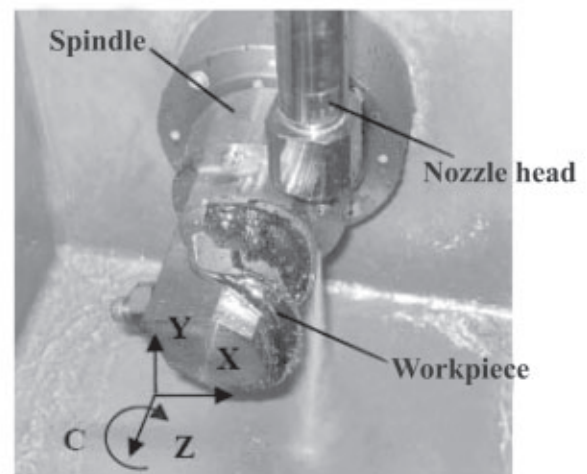


Fig. 2 Spindle system for controlling the orientation of workpiece.

Their experiment was successful. A metal implant of an artificial knee joint, made of Co-Cr-Mo alloy, was finished to 8.5 nm Ra with 1 nm variation.

\* Sawano, H., Warisawa, S., & Mitsuishi, M. (2006) Ultra-precision finishing for an artificial knee joint by means of abrasive waterjet, in *Proceedings of the 8<sup>th</sup> Pacific Rim International Conference on Water Jet Technology*, Oct. 10-12, Qingdao, China, pp 308-315.

Reprinted by permission from *Quality Waterjet Newsletter*, May 8, 2007.



# THE PROVEN LEADER IN WATERJETTING EQUIPMENT

## PUMPS & UNITS

- From 100 to 750 HP
- Pressures from 5,000 to 50,000 PSI
- Trailer or Skid Mounted
- Diesel or Electric

## ENGINEERED PRODUCTS

- Shellside Machines
- Rotary Line Cleaners
- Cutting Equipment
- Air Preheater Tools

## WATER JETTING TOOLS

- Nozzles
- Control Guns
- Valves
- Fittings
- Waterblast Hoses
- Rigid & Flex Lances

## GARDNER DENVER WATER JETTING SYSTEMS INC.

281-448-5800

FAX: 281-448-7500

**1-800-231-3628**

[www.waterjetting.com](http://www.waterjetting.com)

[mktg.wjs@gardnerdenver.com](mailto:mktg.wjs@gardnerdenver.com)

See us in  
Houston  
at booth  
12 & 20

## 2007 American WJTA Conference And Expo

Preliminary Schedule Of Events (as of 6/20/07)

### Saturday, August 18, 2007

9:30 a.m. - 4:30 p.m.

Optional Trip to Space Center  
Houston, NASA's Johnson  
Space Center

### Sunday, August 19, 2007

8:00 a.m. - Noon

Noon - 1:30 p.m.

1:30 p.m. - 5:00 p.m.

7:00 p.m. - 9:00 p.m.

Pre-Conference Workshop\*

Luncheon For Workshop Participants\*

Workshop (continued)

Welcoming Reception In The Exhibit  
Hall -- Exhibit Officially Opens\*

*Sponsored by Jetstream of  
Houston, LLP*

### Monday, August 20, 2007

8:00 a.m. - 10:00 a.m.

Live Demonstrations

*Beverages sponsored by  
Vacuum Truck Rentals, LLC*

Break

*Sponsored by Terydon, Inc.*

10:00 a.m. - 5:00 p.m.

Exhibits Open

10:00 a.m. - 12 Noon

Waterjet Boot Camp

11:30 a.m. - 1:00 p.m.

Lunch In Exhibit Hall\*

*Sponsored by GMA Garnet*

1:00 p.m. - 4:00 p.m.

Waterjet Boot Camp

1:30 p.m. - 5:00 p.m.

Research and Development Paper  
Presentations

Break

*Sponsored by AccuStream*

5:00 p.m. - 6:00 p.m.

WJTA Membership Meeting

7:30 p.m. - 10:30 p.m.

Awards Presentation/Party\*

*Sponsored in part by Parker Polyflex,  
TurtleSkin WaterArmor by Warwick Mills  
and High Pressure Equipment Company*

### Tuesday, August 21, 2007

8:00 a.m. - 10:00 a.m.

Live Demonstrations

*Beverages sponsored by Vacuum Truck  
Rentals, LLC*

Break

*Sponsored by Gardner Denver  
Water Jetting Systems, Inc.*

10:00 a.m. - 1:30 p.m.

Exhibits Open

9:30 a.m. - 1:30 p.m.

Waterjet Boot Camp

11:30 a.m. - 1:00 p.m.

Luncheon In Exhibit Hall\*

1:00 p.m. - 1:30 p.m.

Waterjet Boot Camp

1:30 p.m. - 5:30 p.m.

Research and Development Paper  
Presentations

\*Ticket will be required

## StoneAge Redesigns Lance Positioner

**S**toneAge, Inc., has completely redesigned its Lance Positioner for horizontal and vertical applications. Benefits of the new design include:

- **Stainless Steel Cross Tubes.** The cross tubes are now made of corrosion resistant stainless steel for use in the toughest environments.
- **Slotted Rails.** Slotted aluminum rails allow for a direct gear drive to move the carriage in the X and Y axis. The anodized rails can be made to any length like the cross tubes to cover all bundle sizes.
- **Tilt Function.** A hand-powered tilt function allows the operator easy adjustments to match tube bundle rows.
- **Steering Control.** The front set of wheels pivot and lock into position to provide maneuverability on the job site.
- **Pneumatic Drive.** Air motors and gearboxes drive gears that index the carriage in the X and Y axis. An air motor upgrade will be the standard package.

For more information, visit [www.stoneagetools.com](http://www.stoneagetools.com) or call (970)259-2869.

## 2007 American WJTA Conference And Expo August 19-21, 2007

**Marriott Houston Westchase, Houston, Texas**

- **Live, Onsite Demonstrations** of a variety of waterjet applications, including cleaning, paint/coating removal, concrete preparation, and testing the durability 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.
- **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 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.

**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 **1-800-452-5110** or contact the Marriott directly at **1-713-978-7400**. Be sure to identify yourself as attending the WaterJet Technology Association Conference to receive the special group rates of **\$109 single/\$119 double occupancy**. You can also register online with the hotel by going to the WJTA web site at [www.wjta.org](http://www.wjta.org) and clicking on "2007 American WJTA Conference And Expo." On the next page click on "register online with the Marriott Houston Westchase and get the group rate." **August 10, 2007**, is the deadline for guaranteed room availability. Reservations received after **August 10, 2007**, will be confirmed on a space available basis. Rooms may still be available after August 10, but not necessarily at the rates listed above.

**The Hilton Garden Inn**, an alternate hotel, is located approximately two miles from the Marriott at 6855 W. Sam Houston Parkway South, Houston, Texas 77072. **Smoking and non-smoking rooms are available.** For reservations, call 1-713-270-6100 or go online at [www.hiltongardeninn.com](http://www.hiltongardeninn.com). Be sure to identify yourself as attending the WJTA Conference to receive the group rate of \$109 single or double occupancy.

**Visit WJTA's website, [www.wjta.org](http://www.wjta.org), for updated Conference information or contact: WJTA, 906 Olive Street, Suite 1200, St. Louis, MO 63101-1434, phone: 314-241-1445, fax: 314-241-1449, email: [wjta@wjta.org](mailto:wjta@wjta.org)**



# Forrest Shook, Featured Entrepreneur

The BIC Alliance, the Baton Rouge, Louisiana-based publisher of Business and Industry Connection (BIC) magazine, recently announced the release of "Energy Entrepreneurs, Vol. 1," a collection of inspiring stories about individuals who own and operate 20 successful energy-related service companies. The book was written by BIC Alliance CEO & Founder Earl Heard and Brady Porche, editor for BIC Publishing and associate editor for BIC magazine.



**Forrest Shook**

Among the individuals featured is Forrest Shook, founder of the Wixom, Michigan-based NLB Corp., a leading manufacturer of high-pressure and ultrahigh-pressure waterjetting equipment. Shook, who started his first cleaning business in the middle of a junkyard in his early 20s, is widely regarded as a trailblazer in his industry. He was named Manufacturer/Entrepreneur of the Year for the state of Michigan by his peers in 1991 and continues to spearhead NLB Corp.'s innovations in waterjetting equipment.

The entrepreneurs featured in the book followed many different paths to peace, happiness and success. Many worked alongside their fathers, mothers and other family members in

their youth and early adulthood before becoming leaders in their industries. Some earned advanced degrees from prestigious American universities.

Others rose from poverty to achieve success beyond their wildest dreams. All, however, share a common bond — the desire to "work hard and

(continued on page 17)

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

225D: 200-300 hp      605D: 475-600 hp

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](http://www.nlbcorp.com).

**NLB. The Contractor's Choice.**

29830 Beck Road, Wixom, MI 48393  
MI: (248) 624-5555, TX: (281) 471-7761  
NJ: (856) 423-2211, LA: (225) 622-1666  
CA: (562) 490-3277  
e-mail: nlbmtg@nlbusa.com

**NLB 125 Series: Available Configurations**

Model	GPM	PSI
<b>Model 145 (145 HP)</b>		
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
<b>Model 125 (125 HP)</b>		
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
<b>Model 115 (115 HP)</b>		
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

# KMT Introduces The IDE™ Assembly Abrasive Waterjet Cutting Head

**K**MT Waterjet has introduced the new IDE™ (Integrated Diamond Eductor) a, which features advances in cutting head simplicity, performance and quality. The IDE™ Assembly cutting head is designed with the fewest possible parts. The head body, orifice and mixing chamber are combined into one piece, which eliminates guesswork on individual piece wear and tear, reduces inventory of multiple parts and simplifies the head mounting. The longer life, permanently mounted diamond orifice has 0% chance for mis-alignment or

breakage making it nearly indestructible.

The design is based on a “coalescing plenum” for effective and efficient mixing of water and abrasive, thereby minimizing jet stream disruption for maximum energy in the waterjet stream resulting in 10-20 times greater performance (when compared to ruby cutting head assemblies) and guaranteed to last beyond 500 hours.

The IDE™ Assembly delivers a superior edge quality by providing a more consistent stream for a longer

amount of time, extending the focusing tube life and providing a better, more consistent edge reducing scrap and eliminating waste.

For more information, visit [www.kmtgroup.com](http://www.kmtgroup.com) or call (800)826-9274.



## Conference Exhibitors At The 2007 American WJTA Conference And Expo

August 19-21, 2007, Marriott Westchase Hotel, Houston, Texas

ANT Applied New Technologies AG  
AccuStream  
Advanced Pressure Systems  
All Jetting Technologies, Inc.  
Aqua Dynamics Inc.  
Barton Mines Company, LLC  
Bingham Manufacturing  
Boatman Industries, Inc.  
Burny/AMC  
Business & Industry Connection (BIC) Magazine  
BuTech (Haskel International, Inc.)  
Cleaner Times Magazine  
Enz USA, Inc.  
FS Solutions  
Flow International Corporation  
GMA Garnet (USA) Corp.  
GT/Waterblast Technologies  
GapVax, Inc.  
Gardner Denver Water Jetting Systems, Inc.  
General Pump

Giant Industries, Inc.  
Great Lakes - Eglinton  
Hammelmann Corp.  
Heintzman Corporation  
High Pressure Equipment Company  
HoldTight Solutions, Inc.  
Hydro-Engineering, Inc.  
IGEMS Software AB  
IVS Hydro Inc.  
IWP (International Waterjet Parts)  
Jetstream of Houston LLP/Guzzler Manufacturing  
KMT Waterjet Systems, Inc.  
Kennametal Boride Abrasive Flow Products  
LaPlace Equipment Company  
Microlap Technologies, Inc.  
NLB Corporation  
OMAX Corporation  
Parker Polyflex  
Peinemann Equipment B.V.  
Perfect Technology

Powertrack International Inc.  
QualJet LLC  
Reliable Pumps Consultants S.M.T.  
SPIR STAR  
Sprague Products  
StoneAge, Inc.  
Stutes Enterprise Systems, Inc.  
Super Products LLC  
Terydon, Inc.  
Tiger Industrial  
Turtleskin WaterArmor by Warwick Mills  
Under Pressure Systems, Inc.  
Universal Minerals, Inc.  
VLN Advanced Technologies Inc.  
Vacuum Truck Rentals, LLC  
Wastequip Cusco  
Water Line Co. Ltd.  
Wilco Supply L.P.  
WOMA Corporation

(exhibitor list as of 6/20/07)



## Forrest Shook, Featured Entrepreneur, from page 15

assume risk in order to be successful, benevolent and, above all, happy,” according to Heard’s introduction.

BIC Publishing is now offering a special package for those who wish to order the new book in conjunction with its first book, “It’s What We Do Together That Counts: The BIC Alliance Story.” The latter, published in 2005, is Earl Heard’s personal testimony of the role that faith, hard work and perseverance play in achieving greater peace, happiness and success in life. Hardcover copies of both books can be purchased for \$50. Individual prices for each book are as follows: Hardcover: \$30 plus shipping and handling; Paperback: \$20 plus shipping and handling.

A portion of the book’s proceeds will be donated to charitable organizations providing aid to victims of the 2005 Gulf Coast hurricanes.

For more information on ordering “Energy Entrepreneurs, Vol. 1” or “It’s What We Do Together That Counts: The BIC Alliance Story,” please contact Brady Porche at (800) 460-4242, send e-mail to [brady@bicalliance.com](mailto:brady@bicalliance.com) or visit [www.bicpublishing.com](http://www.bicpublishing.com).

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

©2007 *Jet News*. All rights reserved. Reproduction in any form forbidden without express permission.

# UHP WaterJet Protection

*Safe at 40,000 psi*

## TurtleSkin WaterArmor

PPE system prevents injuries and keeps workers on the job. The rugged patented material is flexible, yet has been proven to stop injuries at UHP flow rates as high as 11 gpm at 20,000 psi or 5.5 gpm at 40,000 psi.



## Proven Safe In The Field

1.603.878.1565

*turtleskin.com*

## Jet Edge Appoints New Sales Manager For North Central Region

**J**et Edge, Inc., has announced the appointment of Dirk Barrett as its new North Central regional sales manager. Barrett is responsible for sales of Jet



**Dirk Barrett**

Edge systems in Minnesota, Western Iowa, Northern Wisconsin, Michigan's Upper Peninsula, North Dakota, South Dakota, Montana, Wyoming and Manitoba. He brings to Jet Edge nearly 20 years of experience in sales

and marketing in the floor coverings industry. Barrett has held sales and marketing positions at Mohawk Industries, Royal Scot Distributing, Cottage Industries and Carpet City. He is a member of the National Association of Home Builders, the Builders Association of the Twin Cities; ASID, Minnesota and BNI, Minnesota. He is a graduate from the University of Minnesota.

Barrett can be reached at Jet Edge corporate offices in St. Michael, Minnesota. Visit [www.jetedge.com](http://www.jetedge.com) or call 800-JET-EDGE for more information

## 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](http://www.tsmoly.com)  
under waterjet products.

## Waterjet Boot Camp At The 2007 American WJTA Conference And Expo

*Preliminary Schedule (6-20-07)*

August 19-21, 2007, Marriott Westchase Hotel, Houston, Texas

*How to buy smart, improve efficiency, and generate profitable new business*

30-minute presentations by industry experts packed with helpful information. Attend presentations of interest to you while visiting the WJTA 2007 Conference Expo. Located in the exhibition hall.

TIME	MONDAY, AUGUST 20	TIME	TUESDAY, AUGUST 21
10:00 a.m.	<b>Proper Inlet Pump Suction Conditions</b> By: Jamie Forrest, NLB Corp	9:30 a.m.	<b>Hose Fittings, Pressure Testing</b> By: Ryan Hocevar and Paul Webster, Parker Polyflex
11:00 a.m.	<b>DOT Regulations for Trucks and Trailers</b> By: "DOT Dan" Hoffman, DOT Commercial Vehicle Enforcement Officer, LaPorte Police Dept., Texas	10:15 a.m.	<b>Introduction to Industrial Vacuum Trucks/Air Movers</b> By: Tony Fuller, Jetstream of Houston, LLP Gary Toothe, Thompson Industrial Services
1:00 p.m.	<b>Cutting Edge Quality in Abrasive Waterjet Cutting</b> By: Axel H. Henning, OMAX Corporation	11:15 a.m.	<b>Hydroexcavation</b> By: Neil McLean, Hydro Excavation Consultant, Houston, Texas
2:00 p.m.	<b>Safety First In Waterjetting: A Review of Best Practices</b> By: Jenny Houston, TurtleSkin WaterArmor by Warwick Mills	12:30 p.m.	<b>Static Electrical Hazards and Grounding</b> By: Mark Briggs, Compliance Specialist OSHA South Houston Office
3:00 p.m.	<b>Introduction to High Pressure Waterblasting</b> By: Gary Toothe, Thompson Industrial Services		

# Seven Easy Ways To Attend The 2007 American WJTA Conference And Expo

## 1. FULL CONFERENCE

Includes admission to all research and applications sessions (except Pre-Conference Workshop on Sunday, August 19), onsite live demonstrations, pass to Welcoming Reception in Exhibit Hall (Sunday, August 19), exhibits, luncheon on Monday, August 20, and Tuesday, August 21, coffee breaks, and WJTA Party on Monday, August 20.

**Each full registration also receives one copy of the Conference Proceedings on CD-ROM.**

## 2. COMBO

Includes everything listed under Full Conference **PLUS** a Pre-Conference Workshop on Sunday, August 19.

## 3. SAVE \$ ON MULTIPLE EMPLOYEE FULL/COMBO REGISTRATIONS

Companies that purchase three or more full or combo registrations receive a special discount for each additional employee registered after the first two. To take advantage of the special discount, register the first two (2) employees from your company at the regular FULL/COMBO rates and receive the discounted rate for the third and subsequent employee registrations.

## 4. DAILY ATTENDANCE

Includes admission to all research and applications sessions, onsite live demonstrations, exhibit hall, coffee breaks, and luncheon on that day. Register for one day and receive a "50% off" coupon for the 2007 Conference Proceedings on CD-ROM. Register for two days and the Proceedings are included. **NOTE:** Admission to the WJTA

Party on Monday is **NOT** included in the daily registration fee, and tickets for this event must be purchased separately.

## 5. PRE-CONFERENCE WORKSHOP

### **Waterjet Technology - Basics and Beyond**

Includes handout materials for workshop, coffee breaks, luncheon, and August 19 Welcoming Reception in Exhibit Hall.

## 6. EXHIBIT HALL and/or LIVE DEMO PASS

A \$25 exhibit hall and/or live demonstration pass for one day includes admission to the WJTA Exhibit Hall where you'll see waterjet equipment, supplies, and services, onsite live demonstrations between the hours of 8:00 a.m.-10:00 a.m., and designated contractor programs. Passes do **NOT** include luncheon in the exhibit hall. Tickets for lunch can be purchased separately.

You must purchase a ticket to attend the Welcoming Reception in the Exhibit Hall on Sunday, August 19, if you are not registered as a Full or Combo, or you are not registered for the Pre-Conference Workshop.

## 7. STUDENTS

The registration fee for WJTA student members is \$20. Student registration includes admittance to technical programs, onsite live demonstrations, and the exhibit hall on Monday and Tuesday, but does **NOT** include copies of the Proceedings, Welcoming Reception in Exhibit Hall on Sunday, August 19, or admittance to any food/social functions. **NO** discount is available for students that are not members of the WJTA. WJTA student members must be enrolled **full-time** in a university graduate or undergraduate program.

## **WJTA members and early-bird registrants SAVE up to \$120!**

WJTA members receive a special discount off the regular registration fees. You will also receive a discount if your registration is postmarked or received in the WJTA office by **August 1, 2007**. Total Savings: Up to \$120!

## **OPTIONAL TRIP - NASA'S JOHNSON SPACE CENTER**

An optional trip to NASA's Johnson Space Center is scheduled for Saturday, August 18, from 9:30 a.m.-4:30 p.m. Buses will begin boarding a half-hour prior to departure times listed. Trip includes bus transportation, entrance to the space center and 1-1/2 hour tram tour. Lunch is not included and will be on your own.



## **2007 AMERICAN WJTA CONFERENCE PROCEEDINGS**

The *Conference Proceedings* for 2007 will be on CD-ROM only. The two-volume books that were available in past years will not be produced.

## **HOTEL RESERVATIONS**

It's not too early to make hotel reservations for the 2007 American WJTA Conference and Expo to be held August 19-21, 2007. For room reservations at the central location of the Conference, call the **Marriott Houston Westchase Hotel** in Houston, Texas, toll free at 800-452-5110 or call the hotel direct at 713-978-7400. Be sure to identify yourself as attending the WJTA Conference to receive the special group rate of \$109 single/\$119 double occupancy. You can also register online with the hotel by going to the WJTA web site at [www.wjta.org](http://www.wjta.org) and clicking on "2007 American WJTA Conference And Expo." On the next page click on "register online with the Marriott Houston Westchase and get the group rate." The Marriott is a smoke-free facility.

The **Hilton Garden Inn** is an alternate hotel that provides smoking and non-smoking rooms. For room reservations at the rate of \$109 single/double, call (713)270-6100 or go online at [www.hiltongardeninn.com](http://www.hiltongardeninn.com).

## **CANCELLATION POLICY**

Fees will be refunded in full for cancellations received at least four weeks prior to the Conference. Cancellations received more than 10 days and less than four weeks prior to the Conference will be subject to a \$50 charge. No refund will be made for cancellations received less than 10 days prior to the Conference. However, substitutions may be made at anytime. Refunds will not be processed until after the Conference.



# 2007 American WJTA Conference And Expo Registration Form

Name \_\_\_\_\_ Member # \_\_\_\_\_

Company \_\_\_\_\_ Title \_\_\_\_\_

Address \_\_\_\_\_ Mailing Address: ☐ Home ☐ Work

City \_\_\_\_\_ State \_\_\_\_\_ Country \_\_\_\_\_ Postal Code \_\_\_\_\_

Telephone # [ ] ( ) \_\_\_\_\_ Fax # [ ] ( ) \_\_\_\_\_

E-mail Address: \_\_\_\_\_

Information for name tag \_\_\_\_\_

*Print name as you wish it to appear on your name tag*

## THREE EASY WAYS TO REGISTER

**By Phone:** Just call (314)241-1445 and have your credit card information ready. (MC/VISA/AMEX/Discover ONLY).

**By Fax:** Fill out the registration form with your credit card information and call our 24-hour fax number at: (314)241-1449.

**By Mail:** Fill out the registration form and mail with applicable payment to: **WJTA, 906 Olive Street, Suite 1200, St. Louis, MO 63101-1434.**

**Payment Method:** ☐ Enclosed is my check, payable to **WaterJet Technology Association** (U.S. DOLLARS ONLY).  
☐ Please charge my ☐ MasterCard ☐ VISA ☐ AMEX ☐ Discover

Credit Card # \_\_\_\_\_ Expiration Date \_\_\_\_\_

Print name as it appears on card

Cardholder's signature

**Join the WaterJet Technology Association now and receive a substantial discount off Conference registration fees.**

### WJTA MEMBER

By 8/1/07 After 8/1/07

### NONMEMBER

By 8/1/07 After 8/1/07

☐ **OPTIONAL TRIP to NASA's Johnson Center** ..... \$ 30 ..... \$ 30 ..... \$ 30 ..... \$ 30 ..... = \$ \_\_\_\_\_

## Seven Ways To Register

☐ **Full Conference ONLY** ..... \$ 495 ..... \$ 555 ..... \$ 555 ..... \$ 615 ..... = \$ \_\_\_\_\_

☐ **Combo** (Full Conference PLUS Pre-Conference Workshop) ..... \$ 665 ..... \$ 725 ..... \$ 725 ..... \$ 785 ..... = \$ \_\_\_\_\_

### ☐ Daily

☐ Sunday - Pre-Conference Workshop (includes lunch) ..... \$ 280 ..... \$ 340 ..... \$ 340 ..... \$ 400 ..... = \$ \_\_\_\_\_

☐ Monday (includes Luncheon in Exhibit Hall) ..... \$ 265 ..... \$ 295 ..... \$ 295 ..... \$ 325 ..... = \$ \_\_\_\_\_

☐ Tuesday (includes Luncheon in Exhibit Hall) ..... \$ 265 ..... \$ 295 ..... \$ 295 ..... \$ 325 ..... = \$ \_\_\_\_\_

### ☐ Exhibit Hall/Live Demo Pass

☐ Monday (does NOT include Luncheon in Exhibit Hall) ..... \$ 25 ..... \$ 25 ..... \$ 25 ..... \$ 25 ..... = \$ \_\_\_\_\_

☐ Tuesday (does NOT include Luncheon in Exhibit Hall) ..... \$ 25 ..... \$ 25 ..... \$ 25 ..... \$ 25 ..... = \$ \_\_\_\_\_

☐ **Student** (WJTA members ONLY) ..... \$ 20 ..... \$ 20 ..... N/A ..... N/A ..... = \$ \_\_\_\_\_

### MULTIPLE CORPORATE REGISTRATIONS (Applies to third and subsequent registrants from same company)

☐ **Full Conference ONLY** ..... \$ 445 ..... \$ 505 ..... \$ 505 ..... \$ 565 ..... = \$ \_\_\_\_\_

☐ **Combo** (Full Conference PLUS Preconference Seminar) ..... \$ 615 ..... \$ 675 ..... \$ 675 ..... \$ 735 ..... = \$ \_\_\_\_\_

### WJTA MEMBERSHIP (US, Mexico, Canada)

☐ \$60 Individual ☐ \$20 Student ☐ \$400 Corporate ..... = \$ \_\_\_\_\_

### WJTA MEMBERSHIP - International (all other countries)

☐ \$80 Individual ☐ \$40 Student ☐ \$460 Corporate ..... = \$ \_\_\_\_\_

☐ **Conference Proceedings** \_\_\_\_\_ Copies x \$89.00 ..... = \$ \_\_\_\_\_

2007 American WJTA Conference registrants may purchase extra copies of the Conference Proceedings on CD-ROM for only \$89. Regularly priced at \$109, you will **SAVE \$20**. Offer valid through 8/31/07.

**SPECIAL OFFER!**

→ **EXTRA TICKETS** — The Full and Combo registrations include one ticket per registration for the Exhibit Hall Luncheons (Monday and Tuesday), Welcoming Reception in Exhibit Hall (Sunday evening) and Awards Presentation/Party (Monday evening). Each Daily registration includes a luncheon ticket for the day registered: Sunday, Monday and/or Tuesday. Sunday daily includes Welcoming Reception in Exhibit Hall. Additional tickets may be purchased as follows:

☐ **Welcoming Reception in Exhibit Hall** - Sunday ..... \$ 60 ..... \$ 60 ..... \$ 60 ..... \$ 60 ..... = \$ \_\_\_\_\_

☐ **Luncheon in Exhibit Hall** - Monday or Tuesday or both (\$70) ..... \$ 20 ..... \$ 20 ..... \$ 20 ..... \$ 20 ..... = \$ \_\_\_\_\_

☐ **WJTA Awards Presentation/Party** - Monday ..... \$ 75 ..... \$ 75 ..... \$ 75 ..... \$ 75 ..... = \$ \_\_\_\_\_

**TOTAL ENCLOSED**

\$ \_\_\_\_\_

# Jetstream Introduces 3040 Unx Fluid End

## *Pioneering UNx Technology Now Available for a Compact UHP Pump*

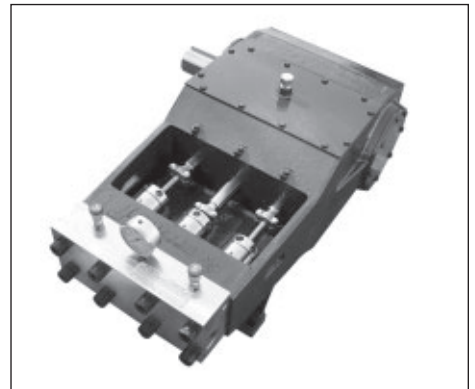
Jetstream of Houston, manufacturer of high-quality waterblasters, parts and accessories, has introduced the 3040 UNx™ fluid end. Available for use in 125 hp waterblast systems – either as a bareshaft pump or as an add-on fluid end to compliment an existing 3000 Series system – the 3040 delivers 5.2 gpm of flow at 36,000 psi.

“Jetstream offers a wide variety of pumps to meet our customers’ pressure and flow needs,” said Mike Bullard, parts marketing specialist, Jetstream. “With the introduction of the 3040 model, Jetstream now has fluid ends available at all pressures for each pump size, from 125 to 500 hp.” Bullard added that Jetstream has also

introduced the 3040WZ fluid end designed to convert a Woma Type 150 Z pump to the UNx design.

“Jetstream UNx fluid ends feature simplified wear components combined into a cartridge form for easier maintenance,” Bullard said. “With all UNx fluid ends – including the new 3040 model – operators can perform maintenance on their waterblast unit right on the job site, eliminating the need for back-up equipment or shop maintenance.”

Jetstream manufactures industrial high-pressure waterblasting equipment operated at pressures up to 40,000 psi for a wide range of applications, including industrial cleaning and surface preparation. Product offerings include a complete line of skid- and trailer-mounted pump units, control



guns, valves, hoses, replacement parts and nozzles.

Jetstream of Houston, LLP, is a division of Federal Signal Corporation's (NYSE:FSS) Environmental Solutions Group, which includes Elgin Sweeper, Guzzler Manufacturing, RAVO International and Vactor Manufacturing. For more information, visit [www.waterblast.com](http://www.waterblast.com).

## **Your Accessories Specialists**

**Visit [www.stoneagetools.com](http://www.stoneagetools.com) for**



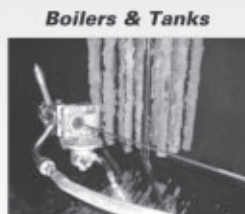
**Surface Prep**  
15k, 20k, 40k psi



**All Sizes  
of Pipes**



**Exchangers and  
Tube Lancing**



**Boilers & Tanks**



**Rotary Couplings**  
2k - 40k psi

### • **Complete Product Catalog**

*Download the latest info on all of our tools*

### • **Information Center**

*Industry Leading Research Papers*

### • **Access Literature**

*Catalogs, Flyers, & Newsletters*

### • **Specialty Products**

*Unique Solutions for Difficult Applications*

**While at our site  
check out the  
new Banshee tube  
cleaner!**



**NEW**

**STONEAGE**  
**WATERBLAST TOOLS**

**P. (970) 259-2869 F. (970) -259-2868**

# WJTA Welcomes New Members

## Corporate

### Advanced Pressure Systems

*Peter Goldsmith*

*Kent Maddie*

Phone: (281)290-9950

Fax: (281)290-9952

*David Mitchell*

Phone: (713)826-6244

Fax: (281)807-4473

701 S. Persimmon, Suite 85  
Tomball, TX 77375

### Aqua Dynamics, Inc.

*Daniel Garman*

*Michael Domingue*

*Ron Shavor*

721 E Hwy 108

Sulphur, LA 70665

Phone: (337)558-6956

Fax: (337)558-6965

### Aqua Energy

#### International Limited

*David Lafferty*

St. James Business Centre

Linwood Road

Paisley PA3-3AT

United Kingdom

Phone: [44](141)889-6888

Fax: [44](141)848-5777

*Shane Ruffin Saldin*

PO Box 18086

Manama Bahrain

Phone: [973](3)925-7720

### Blastworks Pty Ltd.

*Terry Wells*

*Cameron Gordon*

*Brad Cummins*

P.O. Box 2081 Rodangham

Kwinana, WA 6967

Australia

Phone: [61](08)94379900

Fax: [61](08)94379988

### CR Industrial

#### Services Co., Ltd.

*Pakdee Kamhaegpol*

15/1 M.3 Bankoh-Mabkha

Road, Nikompattana Sub

T. Mabkha

Rayong 21180 Thailand

Phone: [66](038)637778-85

Fax: [66](038)637786-7

*Abu Yazid Idris*

PT 5585, Mukim Sungai

Karang

29 KM Kuartan, Kemaman

Kuantan 26080 Malaysia

Phone: [007](609)582-1333

Fax: [007](609)582-1327

*Phil Gallarcher*

Room No. 609

Seip Tower No. 201

Mu Hua Road

Shanghai Chemical Industry  
Park

Shanghai 200 001 China

Phone: [0086](21)67721139

Fax: [0086](21)67121136

### Coroc Oilfield Services, Ltd.

*Corey Robinson*

Box 11, Site 5, RR #2

Rocky Mountain House

AB T4T-2A

Canada

Phone: (403)845-4484

Fax: (403)845-5970

### Flint Energy Services, Ltd.

*Nora Barnett*

*Corey Pinske*

*Char Tompkins*

5701 59th Avenue

Box 10470

Lloydminster, AB T9V 3A6

Canada

Phone: (780)808-4545

Fax: (780)872-5084

### Formosa Petrochemical Corporation

*Alvin You*

Phone: [886](5)681-5810

Fax: [886](5)681-2093

*Wen-Ju Tseng*

Phone: [886](5)681-6320

Fax: [886](5)681-2374

*Jeng-Chuan Wang*

Phone: [886](5)681-5102

Fax: [886](5)681-5079

Formosa Industrial Park No. 1

Mailiao, Yunlin County

Taiwan, Republic of China

### GMA Garnet (USA) Corporation

*Aaron Williams*

*Carl Borgh*

*Pete Mitchell*

480 N. Sam Houston Pkwy E.

Suite 130

Houston, TX 77060

Phone: (832)243-9300

Fax: (832)243-9301

### GapVax, Inc.

*Gary Poborsky*

*John Snedden*

*Bernard Blazosky*

575 Central Avenue

Johnstown, PA 15902

Phone: (814)535-6766

Fax: (814)539-3617

### J PATRICK, LLC

*James P. Shea*

*Rich Buerge*

*Brian Cichocki*

1965 Barrett Drive

Troy, MI 48084

Phone: (248)640-3619

Fax: (248)362-1529

### Nanjing Jete

#### Machinery Co. Ltd.

*Dong Xiang Wei*

*Wang Dong Feng*

*Shi Ying Shah*

21st Floor A Building

Tai Ping S. Rd. No. 1 Nanjing

Nanjing 21000 China

Phone: (86)25-66671853

Fax: (86)25-6671850

### Norse Cutting & Abandonment

*Joseph Rush*

5535 Brystone Drive

Houston, TX 77041

Phone: (832)369-3671

### Peinemann Equipment B.V.

*Sean Baker*

Infinity Trading Co.

1544 Sawdust Road

Suite 606

The Woodlands, TX 77380

Phone: (281)931-8000

Fax: (281)931-8139

*Niko Bolyn*

*Joost Ballieux*

Nieuwe Langeweg 40

Hoogvliet 3194 DB

Netherlands

Phone: [31](10)2955000

Fax: [31](10)2955049

(continued on page 23)

## Waterjet Products

Complete on-line catalog at [www.barton.com](http://www.barton.com)

# BARTON

**High Performance Abrasives and  
Replacement Parts for  
Waterjet Systems**

*It's all here!*



**TRIDENT™**

**HydroBloc™**



**HYPERION™**  
ROCTEC®

**One Source for  
Waterjet Abrasives  
and Spare Parts**

Barton Mines Company, LLC

1557 State Route 9 • Lake George, NY 12845

USA/Canada: 800-741-7756 • Fax: 518-798-5728 • [www.barton.com](http://www.barton.com)



Corporate

**Performance Contracting Inc.**

*Esley Hall*

220 S. Kingston Ave.  
Rockwood, TN 37854  
Phone: (865)354-6730  
Fax: (865)354-6732

*Bo Loeffel*

1877 Vanderhorn Drive  
Memphis, TN 38134  
Phone: (901)377-3289  
Fax: (901)388-7234

*Randy Powel*

85 Satellite Lane  
Calvert City, KY 42029  
Phone: (270)395-0093

**Ring Power Corporation**

*Roger Adkins*

Phone: (904)493-7074  
Fax: (904)281-0831

*Micah Hughes*

Phone: (904)493-8285  
Fax: (904)281-0831

500 World Commerce  
Parkway  
St. Augustine, FL 32092

*Jim Huber*

10421 Fern Hill Drive  
Riverview, FL 33569  
Phone: (813)671-3700  
Fax: (813)671-2957

**TNT High Pressure Waterworks, Ltd.**

*Mike Tomkins*

*Jason Ritter*

9451 49th Street  
Edmonton, AB, T6B 2L8  
Canada  
Phone: (780)469-4073  
Fax: (780)463-2077

*Tom Crawford*

1360 Barker Ave.  
Sioux City, IA 51108  
Phone: 712-258-6833

**Tops Co., Ltd.**

*Myung-Hun Yeo*

*Tae-Il Cho*

*Chang-Hoon Choi*

1192 Naesam-ri,  
Juchon-myon, Gimhae,  
Gyoungnam 621-841  
Korea, Republic of  
Phone: [82](55)328-1570  
Fax: [82](55)328-1574

**Universal Service Inc. (USI)**

*Shannon Ramey*

Phone: (904)757-8440  
Fax: (904)757-8441

*Mike Balcita*

Phone: (904)874-6193  
Fax: (904)757-8441

1571 Eastport Road  
Jacksonville, FL 32218

*Tommy Freeman*

506 Gibson Pond Road  
Chattanooga, TN 37421  
Phone: (423)892-8335  
Fax: (423)899-4203

**Wastequip Cusco**

*Stan Jones*

*Steve Godwin*

*Jennifer Heyink*

305 Enford Road  
Richmond Hill ON L4C-3E9  
Canada  
Phone: (905)883-1214  
Fax: (905)883-4473

**Water Line Co. Ltd.**

*Won Seob Yang*

*Dong Seog Seol*

*Young Jin Um*

3 ra 311, Siwha Ind. Complex  
Jongwang - Dong  
Siheung 429-450  
Korea, Republic of  
Phone: (82)31-488-8412  
Fax: (82)31-488-8304

**Western Refinery Services**

*Bill VanZanten*

*Jim Smith*

*Craig VanZanten*

2380 Grandview Road  
Ferndale, WA 98248  
Phone: (360)384-8304  
Fax: (360)384-8451

Corporate Alternate

**Carolyn Rutherford**

Super Products LLC  
17000 W. Cleveland Ave.  
New Berlin, WI 53151  
Phone: (262)784-7100  
Fax: (262)784-9561

Corporate Individual

**Bryan Fischer**

Eveready Industrial Services  
Corp.  
15715 - 121A Avenue  
Edmonton, AB T5V 1B1  
Canada  
Phone: (780)451-6969  
Fax: (780)451-8284

**William Gaff**

Jetstream of Houston  
1621 S. Illinois Street  
Streator, IL 61364  
Fax: (815)672-4310

**Kelly Ker**

J PATRICK, LLC  
1965 Barrett Drive  
Troy, MI 48084  
Phone: (248)640-3619  
Fax: (248)362-1569

**Herman Meloche**

J PATRICK, LLC  
1965 Barrett Drive  
Troy, MI 48084  
Phone: (248)640-3619  
Fax: (248)362-1569

**Bryce Mulligan**

Jetstream of Houston  
1947 Holland  
Birmingham, MI 48009  
Phone: (419)727-8368  
Fax: (419)727-0960

**Sheree Paramore**

Advanced Pressure Systems  
701 S. Persimmon  
Suite 85  
Tomball, TX 77375  
Phone: (281)290-9950  
Fax: (281)290-9952

(continued on page 24)



**Individual**

**M.A. Ansari**

Poly-Tech Operations & Maintenance  
P.O. Box 36101  
Al-Jubail Industrial City  
Al-Jubail 31961 Saudi Arabia  
Phone: [966](3)340-0829  
Fax: [966](3)340-0834

**Ren Baolin**

Jinrun Technology Co., Ltd.  
16 Chuqiao Road  
Economic Development Zone  
Yixing, Jiangsu 214200  
China  
Phone: [86](13)801-533-600  
Fax: [86](510)570-29555

**Brent Black**

High Tec Industrial Services Inc.  
P.O. Box 533  
Tippcity, OH 45371  
Phone: (973)667-1772

**Andre Boyer**

Stock Machine Tools Company Ltd.  
1639 Nornan-Bethune  
Laval, QC H7M-4B5  
Canada  
Phone: (514)326-7006  
Fax: (514)329-2599

**Bobby Bradley**

Franklin Offshore Americas, Inc.  
1325 South Creek Drive #300  
Houston, TX 77084  
Phone: (281)578-3828  
Fax: (281)578-2938

**Francois Cenac**

Jedo Technologies  
Rue du chene vert BP 78204  
31682 Labège Cedex  
France  
Phone: [33](0)561-000-450  
Fax: [33](0)609-213-307

**Craig Cloutier**

Mid Valley Industrial Services, Inc.  
P.O. Box 108  
Dale, WI 54931  
Phone: (920)677-4222  
Fax: (920)677-4224

**Virginia Cobb**

Eagle Construction & Environmental, Svc  
1700 North E Street  
LaPorte, TX 77571  
Phone: (281)867-9131  
Fax: (281)867-9150

**Michael F. Flaherty**

APC  
120 High Street  
Bridgewater, MA 02324  
Phone: (781)843-8881  
Fax: (508)697-5909

**Guenter Hufe**

Wurmflakstr 29  
Wesel 464850  
Germany  
Phone: [49](281)206-2696  
Fax: [49](287)206-2879

**Patty Kownacki**

CTC Pressure Products  
4514 West 12th Street  
Erie, PA 16505  
Phone: (814)835-3600

**Mark Krymsky**

Lubrijet, Inc.  
223 Latrobe Hall  
3400 N. Charles Street  
Baltimore, MD 21218  
Phone: (410)516-8525  
Fax: (410)516-4316

**Glenn Larson**

Enviro Pump-Plus  
P.O. Box 376  
Balaton, MN 56115-0376  
Phone: (507)734-4661

**Marco Linde**

ANT-Applied New Technologies  
Hinter Den Kirschkatzen 32  
Lubeck 23560  
Germany  
Phone: [49] (451) 58300  
Fax: [49](451)583-80-99

**Mark McInnis**

Southeast Industrial  
P.O. Box 8527  
Tampa, FL 33674  
Phone: (813)247-2780  
Fax: (813)248-2120

**Ronald E. Mullinax**

RSMS  
P.O. Box 858  
Ogden, KS 66517  
Phone: (785)239-2109  
Fax: (785)239-8625

**Matthew Pattom**

Flowserve  
2300 E. Vernon Ave.  
Vernon, CA 90058  
Phone: (323)587-6171  
Fax: (323)586-4192

**Shaun Peoples**

Parker Hannifin  
203 Pine Street  
Forest City, NC 28043  
Phone: (828)248-4331  
Fax: (828)248-9733

**Hans-Ulrich Poort**

ANT- Applied New Technologies AG  
Hinter de Kirschkatzen 32  
Luebeck 23560 Germany  
Phone: [49](451)58380-0  
Fax: [49](451)58380-99

**John Price**

Heartland Water  
2162 East Lake Drive  
Union, NE 68455  
Phone: (402)670-8440  
Fax: (402)263-4910

**Brian Storie**

Nortech Systems Ltd.  
Greenbank Place  
East Tullos Ind Est  
Aberdeen, Scotland AB123BT  
United Kingdom  
Phone: [44](1224)249424  
Fax: [44](1224)249496

**James Swofford**

American Surface Removal, Inc.  
1961 Irvine Blvd.  
Tustin, CA 92780  
Phone: (714)866-9777  
Fax: (714)676-2744

**Colin Tedman**

Jetting Systems General Trading  
P.O. Box 103813  
Dubai  
United Arab Emirates  
Phone: [971](50)368-9095  
Fax: [971](4)333-3291

**Chayna Wilson**

Clean Harbor Environmental Services  
3 Sutton Place  
Edison, NJ 08817  
Phone: (732)248-1997  
Fax: (732)248-4414

**Chen Ximing**

Jinrun Technology Co., Ltd.  
16 Chuqiao Road  
Economic Development Zone  
Yixing Jiangsu 214200  
China  
Phone: [86](510)570-29558

**Student**

**Veljko Samardzic**

Apt. 44  
292 Lawton Avenue  
Clift Side Park, NJ 07010

**The WJTA Conference & Expo is supported in part by**

**AccuStream**

**GMA Garnet (USA) Corp.**

**Gardner Denver Water Jetting Systems, Inc.**

**High Pressure Equipment Company**

**IGEMS Software AB**

**Jetstream of Houston, LLP/Guzzler Manufacturing**

**KMT Waterjet System Inc.**

**Parker Polyflex**

**Terydon, Inc.**

**TurtleSkin WaterArmor by Warwick Mills**

**VLN Advanced Technologies Inc.**

**Vacuum Truck Rentals, LLC**

# NLB Introduces 125 Series, Bio-Mode™ Valve

## *NLB 125 Series Offers Convertibility At Under 150 hp*

The NLB 125 Series, the latest convertible high-pressure water jet pump units from NLB Corp., combine economical, low-horsepower engines with the ability to change operating pressures in just 20 minutes. They are smaller than other convertible units and easily towed to jobsites.

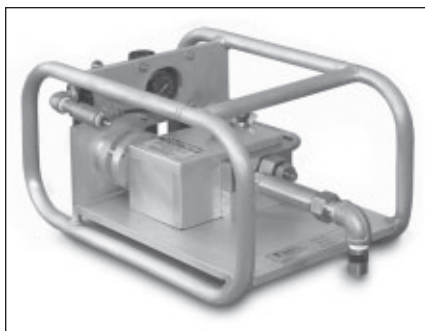


The NLB 125 Series can be converted without a manifold change to run at six different pressures: 6,000 psi, 8,000 psi, 10,000 psi, 15,000 psi, 20,000 psi, and 24,000 psi. Flows range from 6.5 gpm to 32.5 gpm. Engines can be specified to suit the user's needs — 115 hp, 125 hp or 145 hp — and both diesel and electric models are available.

With the introduction of the new 125 Series, NLB now offers 20 convertible models, more than any other water jet manufacturer. All feature conversion kits with very few parts, simple maintenance, and a five-minute packing change.

## *New Bi-Mode™ Valve Improves Productivity*

NLB has introduced the first field-repairable Bi-Mode™ valve for rotating ultra-high-pressure (UHP) water jet lances. The NLB 8488 minimizes downtime with two disposable cartridges that can be replaced in just 60 seconds. The



cartridges are similar to those used in NLB lances and foot controls.

This latest Bi-Mode™ valve, rated at up to 40,000 psi (2,800 bar), is a companion to the NCG8400A-3 rotating UHP lance. It facilitates the use of a rotating lance at ultra-high pressure and lets users operate two lances (with two valves) simultaneously from a single UHP pump unit. Two-lance operation requires a simple nozzle change. The NLB 8488 is rugged and durable, with a rounded frame for easy carrying.

NLB Corp. is a leader in high-pressure and ultra-high pressure water jet technology. NLB manufactures a full line of quality water jetting systems and accessories for contractor and industrial uses, including surface preparation, coatings removal, tank and tube cleaning, concrete hydrodemolition, concrete and pipe cutting, and more.

For more information, visit [www.nlbcorp.com](http://www.nlbcorp.com) or call (248)624-5555.

## One of the best, Diamond Cutting Head 'S5000'



The clear cutting edge and 1,000 hours\* of usage is guaranteed, as long as it is properly used.

\* We even have a customer that has used 2,000 hours.

**S M T**  
[www.smttool.com](http://www.smttool.com)  
[admin@smttool.com](mailto:admin@smttool.com)

MEMBER  
**WJTA**  
Waterjet Technology Association



# WaterJet Technology Association's Order Form for Publications/Products

Name \_\_\_\_\_ Member # \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Country \_\_\_\_\_ Postal Code \_\_\_\_\_

Phone # [ ]( ) \_\_\_\_\_ Fax # [ ]( ) \_\_\_\_\_

Email \_\_\_\_\_  
(to receive shipping confirmation)

**Billing Address** (if different from above):

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Country \_\_\_\_\_ Postal Code \_\_\_\_\_

## Payment Method

☐ Check or Money Order payable to **WJTA**  
(U.S. DOLLARS ONLY)

☐ PO # \_\_\_\_\_ (Enclose PO)

☐ Please charge my ☐ MC ☐ VISA  
☐ American Express ☐ Discover

Credit Card # \_\_\_\_\_

Exp. Date \_\_\_\_\_ / \_\_\_\_\_

\_\_\_\_\_

Print name as it appears on card

\_\_\_\_\_

Cardholder's signature

## THREE EASY WAYS TO ORDER

**By Phone:** Just call (314)241-1445 and have your credit card information ready. (MC/VISA/Am. Exp./Discover ONLY).

**By Fax:** Fill out the order form with your credit card information and call our 24-hour fax number at: (314)241-1449.

**By Mail:** Fill out the order form and mail with applicable payment to:  
**WJTA, 906 Olive Street,  
Ste. 1200, St. Louis, MO  
63101-1434.**

	WJTA Member Price	Non Member Price	Shipping & Handling	
____ Proceedings CD-ROM of The 2005 WJTA American Waterjet Conference (2005)	@ \$ 109.00	\$ 129.00	\$ 8.00	= \$ _____
____ Proceedings CD-ROM of The 2003 WJTA American Waterjet Conference (2003)	@ \$ 35.00	\$ 55.00	\$ 8.00	= \$ _____
____ Proceedings CD-ROM of The 2001 WJTA American Waterjet Conference (2001)	@ \$ 10.00	\$ 30.00	\$ 8.00	= \$ _____
____ Proceedings Book & CD-ROM of The 10th American Waterjet Conference (1999)	@ \$ 10.00	\$ 30.00	\$ 8.00	= \$ _____
____ Proceedings Of The 9th American Waterjet Conference (1997)	@ \$ 10.00	\$ 25.00	\$ 8.00	= \$ _____
____ Proceedings Of The 8th American Waterjet Conference (1995)	@ \$ 0.00	\$ 0.00	\$ 8.00	= \$ _____
____ Proceedings Of The 7th American Waterjet Conference (1993)	@ \$ 0.00	\$ 0.00	\$ 8.00	= \$ _____
____ Waterjet Technology: Basics and Beyond 8/21/05 PowerPoint presentations in printed format	@ \$ 20.00	\$ 25.00	\$ 8.00	= \$ _____
____ An Overview of Waterjet Fundamentals And Applications, Fifth Edition (2001)	@ \$ 55.00	\$ 70.00	\$ 8.00	= \$ _____
____ An Overview of Waterjet Fundamentals And Applications 8/17/03 PowerPoint presentations in printed format	@ \$ 30.00	\$ 35.00	\$ 8.00	= \$ _____

Minimum charge of \$8 per order. \$8 for 1-3 items purchased; \$16 for 4-7 items purchased; for 8 or more items purchased, contact the WJTA office.

## Recommended Safety Practices, English Edition

1 - 10 copies _____ # of copies	x	\$ 5.00 ea.	\$ 10.00 ea.	= \$ _____
11 - 99 copies _____ # of copies	x	\$ 4.00 ea.	\$ 8.00 ea.	= \$ _____
100 - or more copies _____ # of copies	x	\$ 3.00 ea.	\$ 6.00 ea.	= \$ _____

## Recommended Safety Practices, Spanish Edition

1 - 10 copies _____ # of copies	x	\$ 7.00 ea.	\$ 12.00 ea.	= \$ _____
11 - 99 copies _____ # of copies	x	\$ 6.00 ea.	\$ 10.00 ea.	= \$ _____
100 - or more copies _____ # of copies	x	\$ 5.00 ea.	\$ 8.00 ea.	= \$ _____

## Shipping and Handling

1 - 10 copies .... \$0.50 per book, 11 - 99 copies .... \$0.40 per book, 100 - or more copies .. \$0.25 per book # of copies x \$ \_\_\_\_\_ = \$ \_\_\_\_\_

## Recommended Safety Practices Video, Available In VHS Video or CD-ROM.

Specify: ☐ VHS Video or ☐ CDROM

1 - 4 copies _____ # of copies	x	\$ 49.95 ea.	\$ 99.95 ea.	\$ 6.00*	= \$ _____
5 - 10 copies _____ # of copies	x	\$ 39.95 ea.	\$ 89.95 ea.		= \$ _____
11 - or more copies _____ # of copies	x	\$ 29.95 ea.	\$ 79.95 ea.		= \$ _____

Shipping and Handling ..... = \$ \_\_\_\_\_

\*Contact the WJTA office for the shipping and handling charge of more than one Safety Video.

Baseball Cap _____ # of caps	x	\$ 7.95 each	\$ 7.95 each	\$ 6.00 ea.	= \$ _____
WJTA Navy Blue Polo Shirt _____ # of shirts	x	\$ 30.00 each	\$ 35.00 each	\$ 7.00 ea.	= \$ _____

Size \_\_\_\_\_ (S, M, L, XL, 2X)

Safety Cards ..... 1-10 safety cards	_____ # of cards	x	.30 each	.50 each	= \$ _____
Specify: <input type="checkbox"/> English 11-99 safety cards	_____ # of cards	x	.25 each	.45 each	= \$ _____
<input type="checkbox"/> Spanish 100-249 safety cards	_____ # of cards	x	.20 each	.40 each	= \$ _____
250+ safety cards	_____ # of cards	x	.17 each	.35 each	= \$ _____

## Shipping and Handling

Safety Cards: 1-50 cards ..... FREE (For the purchase of more than 50 safety cards, call the WJTA office for the shipping and handling charge.) = \$ \_\_\_\_\_

For shipping and handling charges outside the USA, contact the WJTA Office.

TOTAL ENCLOSED \$ \_\_\_\_\_



# KMT + Aqua-Dyne = Water Intensified

KMT, known worldwide for their reliable, high precision and quality high pressure pumps, brings their standard of excellence to the Aqua-Dyne family of high pressure water jetting products.

The KMT Aqua-Dyne team is committed to delivering professional customer service and experienced technical support to keep our customer loyalty *second-to-none*.

KMT Aqua-Dyne products offer the reliability and power for most cleaning, surface preparation and hydro-demolition applications.

***KMT. Creating value through precision.***

KMT Aqua-Dyne Inc.  
[www.kmtgroup.com](http://www.kmtgroup.com)  
713-864-6929







# Your pathway to high pressure... leads to HiP

What's in a name? In our case it clearly states the total focus and dedication of our organization ... unwavering for more than 50 years.

HiP... High Pressure Equipment Company. For you HiP offers:

- Complete line of valves, fittings and tubing
- Six pressure classes from 10,000 to 150,000 psi
- Quality you can count on, proven by our ISO9001 certification
- Responsive engineering support
- Extensive inventory for same day shipment of many products
- Short lead times for special materials and custom manifolds

*Whether you're working in waterjet, oil and gas, chemical/petrochem or general industry – your pathway to high pressure leads to HiP.*

**HiP...our name is High Pressure**

Call 814-838-2028 or 1-800-289-7447 or visit  
[www.highpressure.com](http://www.highpressure.com)

ISO 9001  
CERTIFIED

**High Pressure  
Equipment  
Company**

