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## StoneAge, Inc. Demonstrates Balanced Waterjets At 2007 American Waterjet Conference And Expo



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#### **Recommended Practices**

Effective January 1, 2008, prices for the *Recommended Practices for Waterjetting Equipment* and *Vacuum Equipment* will increase. Buy now and **SAVE 40%**. For your convenience, an order form is inserted with this *Jet News*.

## Forrest Shook Receives 2007 WJTA Pioneer Award

he 2007 WJTA Pioneer Award was presented to Forrest Shook, NLB Corp., Wixom, MI, in recognition of his significant contributions to the advancement, development, and application of waterjet technology. Lydia Frenzel, Ph.D., presented the award to Mr. Shook at the WJTA Awards Presentation held on August 20, 2007, in conjunction with the 2007 American WJTA Conference and Expo in Houston, Texas. The Pioneer Award is the highest recognition and honor presented by the WJTA. The text of Mr. Shook's acceptance speech appears below.

I would like to begin by thanking the members of the WJTA, and specifically the awards committee for presenting me with this award. I also want to thank Dr. Lydia Frenzel for nominating me. It is truly an honor and I want all of you to know how privileged I feel right now.

Some of you may know that NLB has been in business for 36 years. And while many of you are probably aware of what the company has become, there are some of you who probably do not know anything about my history or NLB's beginning.... After a couple of years of college, I had a summer job in a car wash.... I realized that there were places to get your car washed, but nowhere to get your truck washed. This was in the 1963 timeframe.

So my idea was to build a portable wash unit for trucks. But I had a big problem. I had what I thought was a great idea, but I had no money. It took me three months to convince my Mother and Father to sign a loan for me for \$5,000. After I built



**Forrest Shook** 

this first portable truck wash I had \$67.00 left, and I quickly realized that I better find someone that would pay me cash to wash a truck or I was going to be done before I got started. I had no place to live when I drove my mobile wash unit to Flint, Michigan. I found a bedroom in a house in the middle of a junkyard and that was my office and bed. There were many many days in the first couple of years when I wanted to quit, but I could not let down my parents, so I charged forward no matter what. Mostly living on hot dogs.

Some of you may be asking yourselves how in the world is any of this related to the current day NLB. Well, soon after starting my business I realized that the quality of the pumps that were available at the time

was poor.

Growing up on a farm, I learned quickly that it's hard to get work done if you are constantly fixing equipment, and I was spending an awful lot of time repairing my



#### pump. I believed that there had to be a better way, and after doing a lot of searching, and redesigning, I eventually came up with a pump unit that was far more reliable than anything I had found.

So in 1963 I started at 600 psi. By the time I started NLB in 1971 I was at 10,000 psi and had built several machines for myself and was working in chemical plants, power plants, automotive plants, etc. Soon people and companies were interested in buying their own machines, and that was when I started NLB. The money to build the first NLB unit came from refinancing my house. You have heard of businesses starting in a two-car garage. NLB started in a three-car garage. That first NLB pump was soon followed by a number of other pumps, and in 1971 I had what I thought was a banner year, making \$14,303.39 on sales of \$82,942.39. There were only two employees at this time, myself, and one other person. How it worked for a long time was that I would hit the road and sell something and then I would come back and help this other gentleman build it, then we would deliver it and show the customer how to use it.

(continued on page 15)

#### Correction

The caption for the August 2007 *Jet News* cover photograph, Abrasive Jet Cutting In Texas, incorrectly referred to the flow rate for the cutting process pictured as 12 gpm. The correct rate is 1.2 gpm. The HydraJet Accura 610 System was incorrectly identified as the HydroJet Accura 610 system.

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## Letter To The Editor

5517 Newport Houston, Texas 77023

Dear Jet News:

Over 20 years ago a fellow gave a talk at the WJTA Conference on the sad state of U.S. bridges and how waterblasting can be used to renovate concrete decks. Since that time, steel structures have been waterblasted, too.

With the collapse of the bridge in Minneapolis, attention will finally be focused on the condition of bridges. The problem will be on where to get the money to do the work.

I suggest that all of the earmarks in the 2008 budget be cancelled and the money put into our bridges and highways. Every senator and congressman has bridges in their districts so the money will be spent at home and that is what earmarks are all about. Everybody, including the construction industry, will be safer and better off.

Let's be sure to keep our school buses and cars on top of, rather than under, the bridges.

Contact your congressman and senators to support this idea.

I am Dick Paseman. 1-713-921-7181

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

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## Low Pressure (5-20 kpsi) AWJ Cutting

ow pressure AWJ cutting may be preferred in some applications when other factors (such as system size) are more important than cutting speed. Taggart et al.\* conducted an experimental study in the range of 35-140 MPa (5-20 kpsi) to characterize low pressure AWJ cutting.

One problem associated with low pressure AWJ cutting is that the nozzle may not generate enough vacuum to suck in abrasive. A series of tests were done to determine the vacuum levels of the nozzle as well as the maximum abrasive flow rates that were allowed by the vacuum condition. The graphs show the allowable abrasive flow rates at different pressures and nozzle sizes.

An empirical cutting model (below) was developed based on 28 tests with different orifice diameters, mixing tube diameters, abrasive flow rates, and pressures (34-103 MPa).

$$h = 0.477 P^{1.68} d_0^{1.91} d_n^{0.77} m_a^{0.1} u^{-0.77}$$

where h: depth of cut, mm; P: pressure, MPa; do: orifice, mm; dn: mixing tube, mm; ma: abrasive flow rate, g/min; u: cutting speed, mm/min.

\* Taggart, D.G., Nanduri, M., & Kim, T.J. (1999) Characterization of low pressure AWJ cutting, in Mohamed Hashish Ed.), Proceedings of the 10<sup>th</sup> American Waterjet Conference, Houston, Texas, August 14-17, Paper 11.

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Figure 4(b). Abrasive flow rate as a function of water pressure  $(d_n=1.09 \text{ mm})$ 



Figure 5. Abrasive flow rate as a function of water pressure  $(d_n=0.74 \text{ mm})$ 

## Dr. Axel Henning Appointed Head Of OMAX R&D

MAX Corporation, a leader in innovative abrasive waterjet technologies, is pleased to announce the appointment of Dr. Axel Henning as its head of Research and Development. Dr. Henning brings a wealth of knowledge and expertise to the field of abrasive waterjet technology, with an extensive background in production and quality engineering.

Dr. Henning was among the first to develop techniques for precision machining, with special emphasis on increasing both cutting performance and cutting quality for various types of materials.

Since 1991, Dr. Henning has been working with abrasive waterjets, gaining his initial experience at the Hanover Waterjet Laboratory carrying out research on precision cutting heads and turning with abrasive waterjets. After earning his Mechanical Engineering degree at the University of Hanover in 1995, he joined Stuttgart University where he headed the Stuttgart Waterjet Laboratory performing contractual research work. Working with the renowned Fraunhofer Institute for Production Automation Engineering, Dr. Henning pioneered an improved modeling approach for automatically determining angular adjustments of the cutting head to control both lag and taper as, e.g. a function of speed (feed rate), in 5-axis waterjet machining. Over a decade ago, Dr. Henning implemented this approach into a then standard commercial CAD/CAM package, to significantly improve edge quality from 5-axis waterjet cutting. In 2001, Dr. Henning moved to the Fraunhofer Institute full time, to lead the research group for Flexible Production Technologies, including functional printing devices for live science applications, new production concepts with Rapid Manufacturing, and high pressure waterjet machining.

As the new Manager of R&D at OMAX, Dr. Henning's goals include introduction of further enhancements and innovations to abrasive waterjet cutting performance and cutting qualities and upholding the OMAX reputation for meeting customer's needs and expectations for evolving technologies suited to their particular cutting applications. He looks forward to continuing the establishment of abrasive jet machining as an accepted method of conventional machining, with great advantages for many users.

"Abrasivejet technology continues to mature by speaking the language of conventional machining technologies," Dr. Henning states. Already now, users find it offers almost unlimited potential, with always new and exciting opportunities to be discovered."

Dr. Henning joins a distinguished



Dr. Axel Henning

"think tank" of experts in abrasive jet technology at OMAX which consists of six PhD's who are among the leading minds in the field. They include the founders of OMAX, Drs. John Olsen and John Cheung, as well as Drs. Jay Zeng, Larry Zhang, Scott Veenhuizen, and Peter Liu.

#### 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.



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## **StoneAge Equipment Conversions**

#### 40K To 20K psi Barracuda Conversion



#### **Converting The StoneAge Lancing System Into A Pipe Cleaner**



Several StoneAge customers have applied the 40K psi Barracuda (BC-H9-C) to their 20K psi pump, which has several advantages, including the StoneAge OS7 sapphire nozzle inserts for better jet quality and the replaceable cartridge seal design. The 40K psi Barracuda can be adapted to 20K psi applications with the AF 074-H9M9 adapter. The operating range for this conversion is 15K psi to 20K psi, and 5 to 8 gpm.

A StoneAge lancing system can be converted into a highly productive pipe cleaner. The standard StoneAge lancing system allows for the cleaning of multiple small diameter tubes. With the addition of a few components, the lancing system can also be used to clean drill pipe or larger diameter tubing with the same system. The main components needed for this conversion are available from StoneAge and include a more rugged gearbox, a larger diameter rigid lance, and a vice to secure the system to the pipe being cleaned.

For more information, visit www.stoneagetools.com or call (970)259-2869.

### 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, Inc. Advanced Pressure Systems All Jetting Technologies, Inc. Aqua Dynamics Inc. **BIC Alliance** Barton Mines Company, LLC **Bingham Manufacturing** Boatman Industries Inc. Burnv/AMC BuTech (Haskel International, Inc.) Cleaner Times Magazine Enz USA, Inc. FS Solutions Fluid Logic/Parker Hannifin -Hydraulic Valve Division 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. Hydrajet Technology Hydro-Engineering, Inc. **IDROJET** IGEMS Software/Hagen International IVS Hydro Inc. International Waterjet Parts JGB Enterprises Inc. Jetstream of Houston/Guzzler Manufacturing KMT Waterjet Systems, Inc. Kennametal Boride Abrasive Flow Products LaPlace Equipment Company Maxpro Technologies, Inc. Microlap Technologies, Inc. NLB Corporation OMAX Corporation Opta Minerals, Inc. Parker Polyflex Peinemann Equipment B.V.

Perfect Technology Phygen Coatings, Inc. Powertrack International Inc. QualJet LLC/OH Precision **Reliable Pumps Consultants** S.M.T. SPIR STAR Sprague Products StoneAge, Inc. Stutes Enterprise Systems, Inc. Super Products, LLC SUPER-WATER 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

## Exhibits At 2007 American WJTA Conference and Expo

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October 2007

#### Exhibits At 2007 American WJTA Conference and Expo • August 19-21, 2007 • Houston, Texas, from pg. 9



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WJTA on the web: www.wjta.org

## **Guzzler Announces Availability Of Extendable, Telescopic Boom Options On Vacuum Loaders**

G uzzler Manufacturing, a leader in industrial vacuum loaders, has announced the availability of extendable and telescopic booms on select models of Guzzler CL<sup>®</sup>, Guzzler ACE<sup>®</sup> and Guzzler NX<sup>®</sup> trucks.

The telescopic and extendable booms available on the Guzzler trucks extend the hose out even further than a standard boom, enabling the operator to work over certain obstacles, such as ditches, walls and fences. In freezing conditions and in certain applications, extendable booms are more effective and reliable. However, a telescopic boom is more productive than a standard or extendable boom as it allows the operator to dig deeper without the need to add hose sections for shallow depth applications.

The Guzzler CL features an optional telescopic or extendable boom. The telescopic boom extends from 14.5 to 19.5 feet, and the extendable boom

extends from 15.5 to 20.5 feet. The Guzzler ACE features an optional telescopic boom that extends from 13 to 18 feet. The Guzzler NX features an optional extendable boom that extends from 10 to 15 feet. An optional telescopic boom for the NX is currently in design and will be available at a future date.

The Guzzler CL is a powerful and efficient industrial vacuum system that can operate

effectively in remote or inaccessible locations more than 1,000 feet away. Featuring the industry's quietest blower, the Guzzler NX industrial vacuum loader can tackle the toughest cleaning and offloading applications. With the widest selection of off-



loading options, the Guzzler ACE can handle the full spectrum of wet and dry material, from remote or inaccessible locations.

For more information, visit www. guzzler.com or call 1/800-627-3171.



#### Exhibits At 2007 American WJTA Conference and Expo • August 19-21, 2007 • Houston, Texas, from pg. 10



WJTA on the web: www.wjta.org

## **OMAX<sup>®</sup>** Releases Version 11 Of Its Patented Control Software

MAX Corporation, a leading manufacturer of abrasive waterjet machining systems, has released the latest version of its innovative, patented control software – making it the first waterjet manufacturer to release control software that runs on the Microsoft<sup>®</sup> Windows Vista operating system.

Consistently ahead of the curve on software technology, OMAX tested Windows Vista on its machines for over a year, perfecting the application to ensure that it worked at peak efficiency for machine tool motions and tool path execution.

Version 11 supports OMAX's exclusive Intelli-MAX<sup>®</sup> technologies and includes a host of fresh enhancements such as new DWF and PDF file importing, updated DWG, DXF, and IGES, as well as other file import filters designed to provide maximum compatibility with additional software. It is now also available in Spanish, French, Italian, German, Japanese, Chinese and Polish. In addition to running on Windows Vista, Version 11 will maintain compatibility with Windows 2000 and Windows XP operating systems, allowing users to choose whichever operating system they prefer.

Like all OMAX software upgrades, Version 11 is free to OMAX customers. The official software release of Version 11 was on July 2, 2007, and can also be downloaded from the OMAX customer service website.

For more information on OMAX products and accessories, contact

Sandra McLain at 800-838-0343 or visit www.omax.com.

## New Fitting And Adapter Catalog

**S***PIR STAR* has announced the release of its new Fittings and Adapters catalog. The catalog displays the full range of NPT, JIC, medium pressure and high pressure fittings and adapters that *SPIR STAR* offers along with a large variety of stainless steel quick disconnects and valves. The new catalog is available in both print and CD form. You can request a copy of the catalog by e-mail at info@spirstar.com or by calling your sales representative at 1-800-890-7827.

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KMT 2957

## **OMAX<sup>®</sup> V Pumps Use Direct Drive Technology For Industrial Use**

The OMAX V Pump (V for Variable Speed), represents the 2<sup>nd</sup> generation of OMAX pumps designed specifically for tough industrial use. Operating at full power with a very low noise level (< 75dba at 3 feet), these direct drive plunger pumps never experience hydraulic pump whine or hydraulic system power losses. Because the V pump operates at efficiencies of 95% or higher, this enables it to deliver 86% of input electric power to the nozzle, providing more cutting power per kilowatt than pumps using intensifier technology.

With three plungers on a crankshaft running at 600 RPM, OMAX's direct drive plunger pumps deliver thirty small discharges per second, whereas intensifier pumps offer only one or two large discharges in the same time period. The high plunger speed allows for a smooth pressure output, eliminating surface defects on the cut surface. No additional accumulator vessel is required.

All V Pumps are based on a single design platform, making each model economical, reliable and easy to maintain. The pumps are driven by a variable speed electric motor for variable output pressure. Pump packages include a charge pump, a pressure safety blow down valve, a variable frequency drive and a 110 VAC auxiliary power supply. With added design and part tolerance enhancement, these 2<sup>nd</sup> generation pumps have an extended seal life in excess of 500 hours.

OMAX V Pumps are available in two power levels with features for meeting CE standards in Europe and UL508 standards in the USA.



OMAX's line of direct drive plunger pumps is designed for tough industrial use, low vibration and quiet operation.

To learn more about the difference between direct drive plunger pumps and intensifier pumps, read "A Comparison Between Intensifier and Crank Drive Pumps" by Dr. John Olsen in the product section of OMAX's website at www.omax.com.

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#### Forrest Shook Receives 2007 WJTA Pioneer Award, from page 2

Over the next few years NLB gradually continued to grow by finding new applications, and doing demos to show people what water could do.

One of my first patents was for the SPINJET, which was used to clean floor grates. I now have eight patents and the company has several more patents.

Today we sell products across the entire United States and in over 40 countries around the world. And it all began by simply wanting to build a pressure washer to wash trucks.

I feel I also need to speak briefly about this great country that I was lucky enough to be born in. NLB's international business has provided me with an opportunity to travel around the world. And while I have visited many wonderful places, and met a number of incredible people, I firmly believe that there is nowhere else in the world that provides people with the opportunities that the United States does. If you have a dream....and the drive to make that dream come true.....this country will give you that chance.

The past 36 years have been amazing, and have brought incredible growth for our entire industry, and I believe today it is still in its infancy. There is so much more that can be done with waterjets. Today we have greater acceptance from more industries around the world, and we are still finding new applications every day. And with individuals like all of you, and a great organization like the WJTA behind it, the future looks very very bright for the waterjetting industry. It is still an endless frontier.

My wife tells me I must have water in my veins, because of the way I love this business. The greatest part of this business is the customers; they are the greatest people in the world.

In closing, I want to thank all of you for being here tonight. I also want to thank my friends, family and all of NLB's customers for their support over the years. And finally, I want to thank all the employees of NLB. I could not have done it without them.

Thank you all.

- Forrest Shook



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## Awards Ceremony Of The 2007 American WJTA Conference and Expo

August 19-21, 2007 • Houston, Texas



WJTA on the web: www.wjta.org

October 2007

## 87,000 psi Now Available With Flow's WMC2 Waterjet Machining Center

Flow International Corporation's WMC2 Waterjet Machining Center is now available with 87,000 psi waterjet cutting.

Flow's 87,000 psi HyperPressure technology enables faster, more costeffective cutting. Waterjet cutting at 87,000 psi provides a host of benefits to manufacturers including:

- Faster cutting, lower part cost and higher production, including cutting speeds that are 30-50% faster than 60,000 psi
- 20-30% lower part cost than 60,000 psi
- Lower abrasive consumption, with 0-50% less abrasive used than 60,000 psi
- Reduced part taper
- Simpler, faster maintenance than conventional, lower pressure waterjet systems

Conventional waterjet systems operate at pressures between 40,000 psi and 60,000 psi. Flow's HyperJet pumps are the first pumps to operate at 87,000 psi. Higher pressure means the waterjet water stream's power density are increased — up to 40%. As a result, each particle of abrasive is moving faster, with more energy. With HyperJet pumps, users can cut faster and more efficiently than waterjet systems operating at lower pressures.

The WMC2 delivers all the benefits of an abrasive waterjet cutting system such as the ability to cut parts out of almost any material — metal, stone, plastics, composites, glass, ceramics, or rubber — up to eight inches thick with no heat-affected zone and superior edge quality.

WMC2 benefits include:

• Highly accurate, taper free parts as a result of Dynamic Waterjet technology

- Highest possible productivity with the fastest cut speeds and a field proven, reliable design
- Lowest operating cost through optimal abrasive usage
- Modular design can adapt as your needs change
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### **Demonstrations At The 2007 American WJTA Conference And Expo**

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#### Live Demonstrations/Static Displays By:

- ANT Applied New Technologies AG
- Aqua Dynamics, Inc.
- GapVax, Inc.
- Gardner Denver Water Jetting Systems, Inc.
- Hammelmann Corp.
- Hydro-Designs
- Jetstream of Houston
- NLB Corporation
- Peinemann Equipment B.V.
- Reliable Pumps Consultants
- StoneAge, Inc.
- Super Products, LLC
- Terydon Inc.
- TurtleSkin WaterArmor by Warwick Mills
- Vacuum Truck Rentals, LLC
- Wastequip Cusco



WJTA on the web: www.wjta.org

## Flow Reduces Prices On Most Popular Spare Parts

Flow International Corporation, a leading developer and manufacturer of ultrahigh-pressure (UHP) waterjet technology, recently announced price reductions on many popular spare parts products.

"Flow is constantly working to reduce our supply and production costs, even as energy and raw material prices escalate, while maintaining our high quality requirements and standards," says Mark Powell, Flow Aftermarket product manager. "We are excited to share these savings with our customers on selected parts. We understand the challenges our customers face in decreasing operational costs, and will continue to search for ways to help our customers improve productivity and increase profitability."

In addition to maintaining reasonable pricing while delivering the best value to customers, Flow has introduced additional ways for customers to reduce costs and downtime including:

- Quarterly promotions on selected parts as a member of Flow Advantage.
- Increased benefits and Flow Advantage discounts when ordering online at www.flowparts.com.
- Added tools and guides on www. flowparts.com, including best practices guidelines, click and order diagrams, and technical tips that help customers

operate their Flow systems more productively.

- Additional system, pump retrofits and upgrades that will provide lower acquisition costs and improve performance and component life.
- Service and Repair Center offering numerous component remanufacture programs.

For more information, visit www. flowcorp.com or www.flowparts.com.

### Jet Edge Posts Used Waterjet Equipment For Sale On Website

Jet Edge, Inc., a leading manufacturer of ultra-high pressure waterjet and abrasivejet systems for precision cutting, coating removal and surface preparation, is now posting used waterjet equipment for sale on www.jetedge.com.

Jet Edge's used equipment inventory includes ultra-high pressure intensifier pumps, motion systems, accessories and mobile cleaning and cutting equipment. For more information about Jet Edge's new and used waterjet equipment, visit www.jetedge.com, call 1-800-JET-EDGE (538-3343) or e-mail sales@jetedge.com.



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## New Multi-Gun Valve Is Field-Repairable

N LB Corp. has introduced the MGV15-3000, a multi-gun valve for high-pressure water jetting that operates at high flow and can be repaired in the field in less than five minutes. A multi-gun valve allows the use of two or more waterjet lances from a single high-pressure pump unit.



The MGV15-3000 is designed for operating pressures from 4,000 psi to 15,000 psi (276 to 1,050 bar) and flows up to 30 gpm (113 lpm) per side. It features a disposable, screw-in cartridge seal that can be replaced at a job site in under five minutes. This is the same cartridge used in the latest NLB lances and foot control valves, helping users minimize inventory.

The new multi-gun valve can be used with any dump-style waterjet lance. Each operator independently controls the loading and dumping of his own lance, and the nozzles in the lances can be different sizes. The MGV15-3000 comes complete with mounting plate, guard, pressure gauge, and NPT couplers for inlet/outlet connections.

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

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

## Flow International Introduces 55,000 PSI Tube Lancing System

Flow International has introduced its new 55,000 psi tube lancing system for the industrial cleaning market.

Flow's tube lancing system is capable of operating at pressures up to 55,000 psi and a flow rate of 6.5 gpm. This system is a pneumatically driven dual lance system for the cleaning of fouled heat exchangers. The system is powered by the field proven Flow 55,000 psi Husky pump and comes complete with positioner, lance rails, control station and a variety of lances and nozzles.



To date, lancing systems have been limited to 40,000 psi. The new 55,000 psi system offers improved productivity even on the hardest to remove materials.

For more information contact Flow International at 800-446-3569 or visit www.flowcorp.com.

#### 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.



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Charles Driesbach Randy Powell PO Box 1555 Deer Park, TX 77536-1555 Phone: (281)867-9116 Fax: (281)867-9738

#### Arthur Products Company

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#### B.C. Master Blaster, Inc.

Ewen Cameron Richard Newton Susan Ingram #4-19585 96 Avenue Surrey, BC V4N 4C5 Canada Phone: (604)888-8776 Fax: (604)881-2585

#### Global Vacuum Systems, Inc.

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#### (continued on page 22)



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#### Individuals, continued

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## SMT Water Jet Nozzles







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Round Jet SP Nozzle 3/8"-24UNF



Round Jet TC Nozzle 8/12/24



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## WARDJet's Multiple 5-Axis Waterjet

ARDJet is now offering the X-Series waterjet in addition to the broad range of waterjet systems they already build. In line with WARDJet's policy of never leaving a customer behind, any company already operating a WARDJet system can upgrade their waterjet to full, multiple head, 5-axis cutting.

The X-Series is considered one of the easiest to use, yet most advanced waterjets on the market. Almost every possible



tool of technology has been put into the hands of the operator and owners.

The X-Series waterjet comes with two touch screen controls and a fully expandable control panel that allows you to grow as your company expands. The multiple screens allow one screen to be focused on the operation of the waterjet – monitoring the cutting head, pump and all components, while the other screen is a 100% fully compatible Windows® system. So anything you can do or load onto a computer, can be loaded onto this controller. For example, CAD/CAM software and access to the internet and any sites that you need to access – are all a touch of the screen away.

The X-Series waterjets come with so many built-in features, that the best way to understand them is to visit the website at www.wardjet.com

Most exciting of all the features, the X-Series comes with a minimum of eight programmable axes – expandable up to 64 axes. WARDJet has developed an easyto-use five axis cutting head, which with their CAD/ CAM software, allows, for example, a bevel to be cut into the shape with seconds of programming time. The software has full 3D viewing capability so you can see what your part will look like prior to cutting.

The X-Series system can be purchased with any of the 14 standard size waterjets that WARDJet supplies, from 4' x 5' to 40' x 15', and of course with any custom built machine. WARDJet offer waterjets that are 100% ball screw driven or helical rack with split pinion units and/or ultra high speed linear motion systems. All waterjets are built to run multiple cutting heads and take multiple grate support systems.

For more information contact sales@wardjet.com, visit www.wardjet.com or call (330) 677-9100.

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