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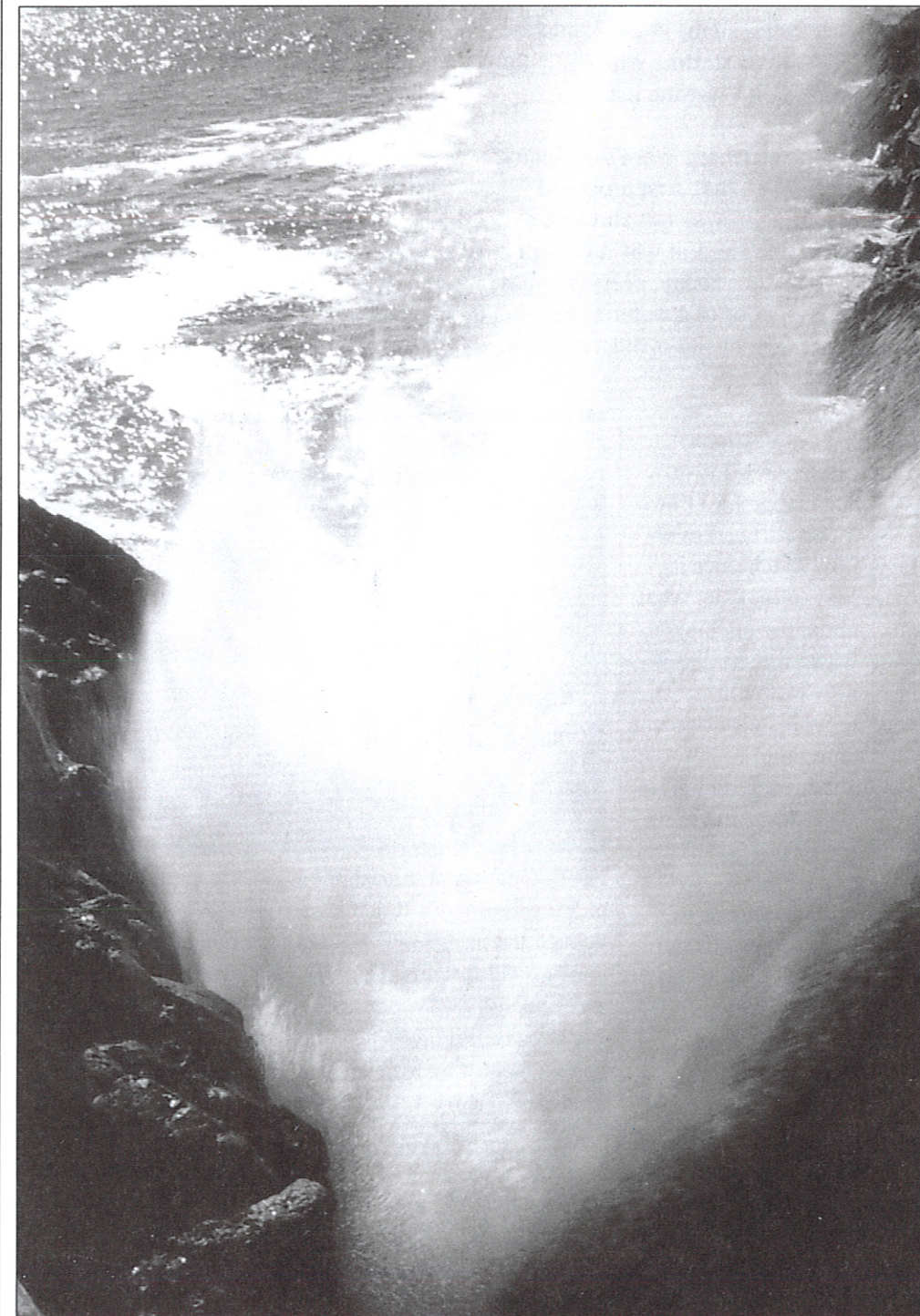
**Jet News**

MARCH 2002

*Published by the  
WaterJet Technology  
Association  
for the benefit of its  
members*

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## La Bufadora



**L**a Bufadora is a blowhole located on Encinita Bay, 17 miles south of Encinita in Baja California, Mexico. A blowhole is a nearly vertical hole in the roof of a sea cave or a wave-formed tunnel, through which incoming waves and rising tides force air to rush upward or water to spout intermittently. Blowholes are common along coasts with cliffs. Columns of spray are often emitted from the holes with a noise resembling the outburst of a geyser.

At La Bufadora an underwater canyon leads to a cave in a cliff. The surge of the ocean swells is channeled through the narrow entrance to the cave. The incoming wave compresses the air occurring in the cave. For an instant the cave is filled with a mixture of compressed air and water. Then the compressed air and water spouts through a hole in the roof. The spout sometimes reaches a height of 80 feet above sea level.

Other blowholes occur along the coasts of New South Wales, Australia, Tahiti, and the South Island of New Zealand.

*Photograph provided courtesy of  
Margaret Savanick.*

A New Abrasive Recycling System

WARDJet, Inc. now offers two models of recycling systems, the WARD and the WARD 2, the latter designed to service the 96% of waterjet companies not previously able to utilize or justify the bigger WARD unit. (WARD is an acronym for Waterjet Abrasive Recycling Dispenser.) The WARD 2 sells for a fraction of the cost of the WARD!

The WARD 2 is specifically designed for smaller users, but still has the potential drying capacity of up to 18,000 pounds per month depending on the options selected. It is simple and convenient: plug the WARD 2 into a 110 volt outlet, connect an air and water hose and removal and recycling starts.

"The WARD 2 has been designed to fill the void the larger WARD unit passed over," says Richard Ward, CEO of WARDJet, Inc., designer and manufacturer of the WARD systems.

The WARD 2 is 40" x 40" and can be mounted with wheels to be moved easily around on a shop floor. It can be used with multiple waterjets even at different geographic locations and can be transported on the back of a pick-up truck. Another feature is the option to produce two different grades of recycled abrasive at the same time. This allows the owner to recover a much greater percentage of abrasive.

American Express backs the introduction of the WARD 2 with instant financing available for qualified applicants and a very easy payment plan. If a company has been in business over two years and meets a few other minor requirements, financials are not required either.

A limited time launch incentive by WARDJet, Inc., offers buyers a choice

of discount or refund of several monthly payments. "We want companies to be able to own and operate and generate instant savings from the WARD 2. In effect, recycling is the same as securing another profitable contract, the profits being generated through savings instead of income," points out Ward.

WARDJet, Inc. expects to provide over 200 systems in 2002, into the USA alone, starting with companies already on a waiting list.

When Richard Ward's company, WARDJet, Inc., first proposed recycling of waterjet abrasive over three years ago, it was met with skepticism. Today, every purchaser and operator of a waterjet desiring a successful business must consider recycling.

The questions, often bordering on accusations, of "how much will I recover, how much does it cost to recycle, what about the undersize waste material and how fast will recycled abrasive cut compared to new abrasive?" no longer seem to be the main issues.

"We believe we have accomplished the goal of proving to hundreds of companies that recycling of used waterjet abrasive does work and can pay handsome dividends. The only

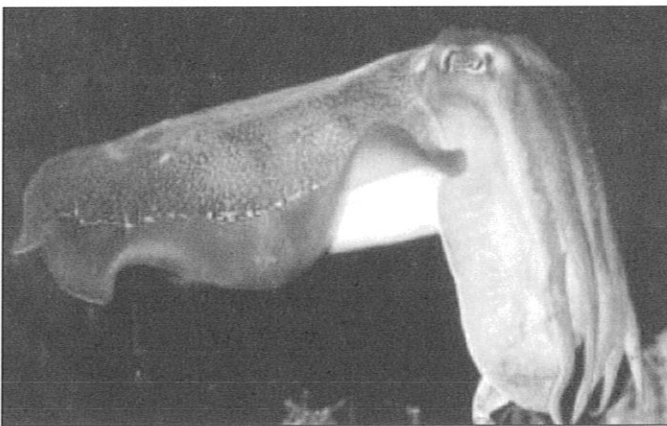
real issue at hand has, and always will be, the need to purchase a system at a price that allows the financial viability calculation to show an instantaneous positive contribution to cash flow and profits. The WARD 2, at its greatly reduced price, should do this for most smaller operators of waterjet systems," says Ward.

With close to 50 WARDS supplied by WARDJet, Inc. operating in the USA, Canada and Europe, and with one corporation purchasing four units over 18 months, one for each of their main locations, abrasive recycling is definitely here to stay.

WARDJet, Inc. was so confident in the WARD that nearly nine months were dedicated to giving free live demonstrations to any waterjet operator nationwide in the USA. A

(continued on page 6)

Cuttlefish



For fast movement through the water, the cuttlefish uses a form of "jet propulsion." It draws water into the mantle cavity through the mantle opening and then contracts the mantle muscles which forces the water back out through the siphon. The cuttlefish then shoots away. The siphon is flexible and can be swivelled into different directions in order to steer. Photo reprinted by permission from the web site "Amazing Cuttlefish..." at [www.windspeed.net.au/~jenny/cuttlefish/](http://www.windspeed.net.au/~jenny/cuttlefish/)

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## FLOW Introduces Latest Technology Advancements At WESTEC 2002

Flow International Corporation introduced several of its latest technology advancements at WESTEC 2002. The show was held March 18-21, at the Los Angeles Convention Center in Los Angeles, California.

In addition to showcasing its new, state-of-the-art Dynamic Waterjet Technology, FLOW introduced FlowLink™, a remote diagnostic technical support system, and the HyPlex UHP pump.

### Dynamic Waterjet

Dynamic Waterjet helps manufacturers cut parts up to four times faster than traditional waterjet cutting, while eliminating taper to produce higher quality parts. By using sophisticated computer models to control a small, articulated "wrist" cutting head, Dynamic Waterjet automatically adjusts cutting angles to cut parts at high accuracy and speed.

### FlowLink

FlowLink is FLOW's web-based support service that delivers faster service to help customers reduce downtime and improve their productivity. FlowLink remotely links FLOW technicians and experts to a customer's waterjet system, almost as if the technician were standing in front of the machine console. From FLOW's corporate headquarters outside Seattle, Washington, or from anywhere in the world, technicians perform real-time diagnostics, remote troubleshooting, data analysis, software upgrades, and monitor machines for periodic maintenance — all without having to set foot on the customer's site.

### HyPlex Ultrahigh-Pressure Pump Technology

The HyPlex is the next evolution in ultrahigh-pressure pump technology. FLOW's HyPlex technology provides users with fast cutting speeds using 55,000 psi pressure, easy maintenance, and very low operating costs because of its high energy and water use efficiency. HyPlex pumps are integrated with FLOW's FlowMaster PC-based controller to make them easy to use and self-monitoring for trouble-free operation.

"Now, more than ever, the manufacturing industry demands cost-effective methods for parts production," said Ron Tarrant, president and CEO of Flow International. "Despite the downturn of the U.S. manufacturing sector, FLOW continues to grow through aggressive development of products designed to help our customers be more competitive."

FLOW develops and manufactures ultrahigh-pressure waterjet technology for cutting, cleaning and food-safety applications, as well as isostatic and flexform presses. FLOW provides total system solutions for various industries, including automotive, aerospace, paper, job shop, surface preparation and food production.

For more information, visit [flowcorp.com](http://flowcorp.com) or contact FLOW, 23500 64th Avenue South, Kent, Washington 98032-2618, phone: (253)850-3500, fax: (253)813-3285. FLOW is a WJTA corporate member.

## Member News

**HydroChem Industrial Services Inc.**, a WJTA corporate member, recently was honored by the Association of Chemical Industry of Texas (ACIT) as a Division 1, South Texas Region Supplier of the Year for 2001. HydroChem is one of 11 companies recognized by the ACIT as outstanding service providers in the state of Texas.

In July 2001 **Craig L. Anderson** assumed the leadership of the Multitube® Business Unit of Parker Hannifin's Parflex Division headquartered in Ravenna, Ohio. The Multitube Business Unit focuses on custom-designed and engineering products for the chemical process, power generation and oil and gas markets. Mr. Anderson continues his responsibility of the Polyflex Business Unit in Houston. Parker Polyflex is a WJTA corporate member. Craig Anderson currently serves on the WJTA board of directors.

**Dr. Thomas J. Kim**, after serving eleven years as dean of the University of Rhode Island College of Engineering, has stepped down to return to the classroom. Dr. Kim, a WJTA member and emeritus member of the WJTA Board of Directors, has been with University of Rhode Island for 34 years.

The WJTA congratulates **Dr. Ryoji Kobayashi** on his promotion to the presidency of Ishinomaki Senshu University, School of Science and Engineering in Ishinomaki, Japan.

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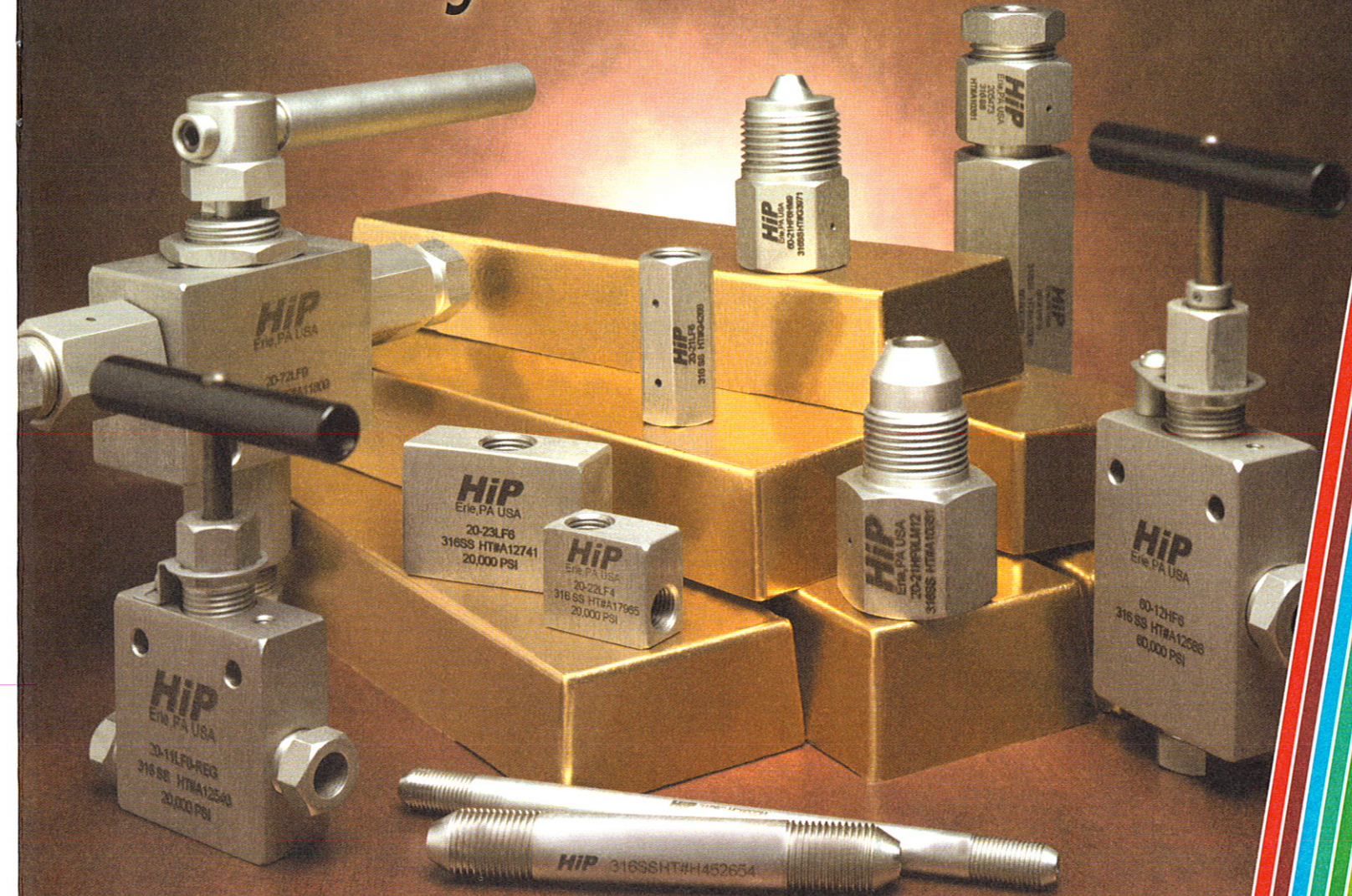
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# A New Soft Abrasive

Universal Minerals, Inc. has introduced **MaxxStrip™**, a new alternative to garnet, copper slag, coal slag and other traditional abrasives. MaxxStrip is kieseite, a naturally occurring mineral, being used in low, high and ultra high water blasting systems. Cost effective and quick, MaxxStrip is a soft abrasive that is capable of removing coatings, mill scale and medium-to-heavy rust scale without harming the substrate. It is safe to use around rotating equipment, bearings and sliding mechanisms. It cleans, de-paints and de-greases in one step without shutting down process streams.

MaxxStrip is environmentally safe, easy to clean up, and it will not damage or kill vegetation. MaxxStrip will not corrode copper, brass or



Cleaning a concrete surface.

aluminum substances. Worker-safe, MaxxStrip is non-sparking, non-toxic, non-irritating and silica free. There are no solvents or caustic chemicals in MaxxStrip.

MaxxStrip is a pH neutral, water-soluble blasting abrasive similar in weight to silica sand. Beige to almost

white in color, MaxxStrip is available in fine, medium and coarse graduations. UMI also offers Sofstrip, its 60 mesh baking soda. Spent abrasive cleanup is minimized with MaxxStrip and Sofstrip.

## Bigger Abrasive Feeders and Nozzles

Universal Minerals' **MaxxClean™ Induction System** is designed for use on pressure washers/water blasters in the 1,000 psi to 20,000 psi range. MaxxClean is a user-friendly, one-man-operated system. The induction head is extremely light and fits any standard cleaning wand. The nozzle is a 15-degree fan tip and is capable of

(continued on page 12)



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Brian Becker  
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Phone: (315)583-6111  
Fax: (315)583-5807

## Individual

**Bob Burns**  
Hydro-Blast, Inc.  
PO Box 527  
359 Miller Road  
Medford, NJ 08055  
Phone: (609)654-6161  
Fax: (609)654-1404

**Tom Butler**  
Ormond, LLC  
1505 Central Avenue South  
Kent, WA 98032  
Phone: (253)852-1298  
Fax: (253)852-3803

**Steve Clough**  
A & A Safety Inc.  
1126 Ferris Road  
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Fax: (513)943-6106

**Lester C. Elmore**  
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**Doug Jacob**  
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**Michael C. LaRocco**  
U.S. Liner Company  
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Phone: (724)266-1229  
Fax: (724)266-5181

**Robert K. Meek**  
Wellhead Inc.  
3912 Gilmore Avenue  
Bakersfield CA 93308  
Phone: (661)325-5026  
Fax: (661)325-4089

**Troy Niloff**  
Kenny Industrial Services  
141 141st Street  
Hammond, IN 46237  
Phone: (219)836-7118  
Fax: (219)937-8296

**Johnny Steger**  
A & A Safety Inc.  
1126 Ferris Road  
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Phone: (513)943-6100  
Fax: (513)943-6106

**Paul Thomarios**  
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Akron, OH 44308  
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# Waterjet Symposium, from page 14

## Live Demonstrations

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## Dates

The WATERJET SYMPOSIUM is scheduled for April 14 and 15, 2002.

## Interested?

Interested in coming to one place to hear these companies' presentations and have the opportunity to ask them questions? Plan on joining us. For costs and registration please contact RICHEL, Inc., phone: 330-677-9100; fax: 330-677-9121; E-mail: [Richel@richel.com](mailto:Richel@richel.com); [www.richel.com](http://www.richel.com). RICHEL, Inc. is a WJTA corporate member.

# WJTAListServ Now Available To Members

Take advantage of prompt e-mail interaction with your colleagues!

WJTAListServ is an e-mail broadcast system developed by the WaterJet Technology Association (WJTA). WJTAListServ is designed to help you communicate and network with other WJTA members.

How does WJTAListServ work?

Forward your question, comment or request via e-mail to WJTAListServ. Your e-mail will be forwarded to other WJTAListServ participants who then

have an opportunity to respond. Everyone on the WJTAListServ receives the questions, comments and/or requests made by other participants. You are not required to submit questions and/or comments in order to participate in the WJTAListServ. WJTAListServ is a benefit of WJTA membership and is **FREE** to members in good standing.

To participate in WJTAListServ, simply fill in the information requested below and return to the WJTA office.

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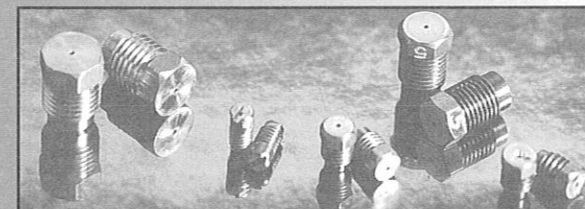
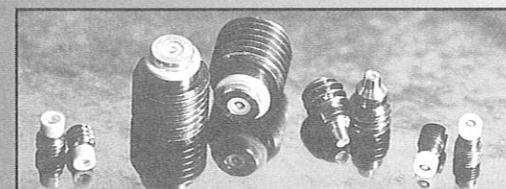
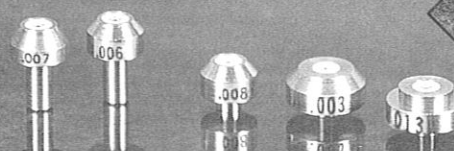
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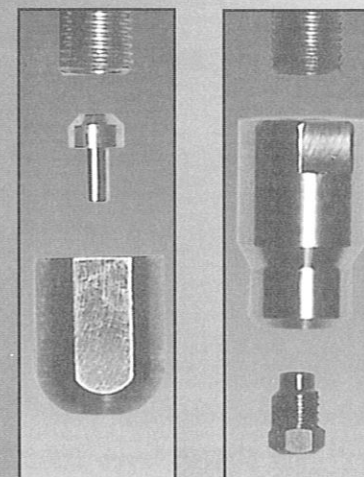
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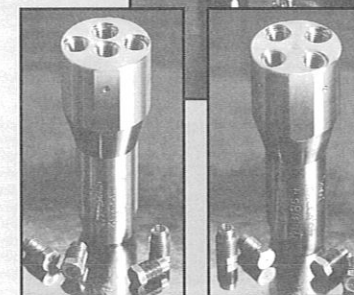
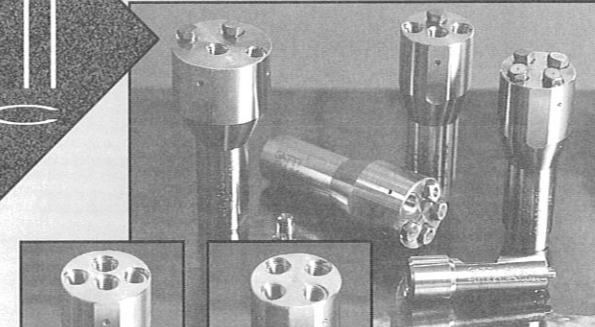
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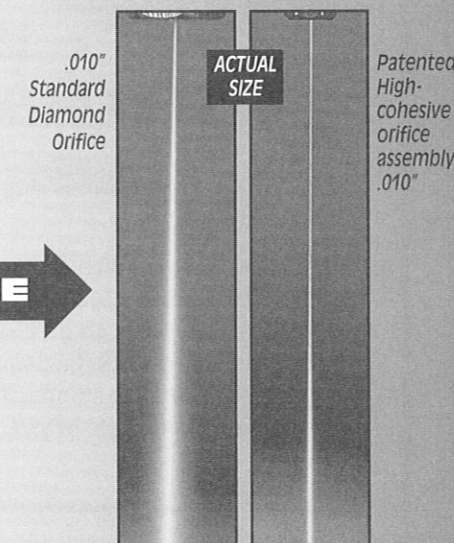
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## A New Abrasive Recycling System, from page 2

WARD unit was installed in a 34 foot truck with a generator, water supply and all the goods necessary to recycle abrasive instantly, on-site for a company or even in a parking lot of a hotel if need be.

The result was almost always the same: skepticism quickly melted into respect and amazement as within three minutes the WARD, operating as an abrasive removal and recycling system, delivered good, ready to use, dry abrasive.

WARDJet, Inc., along with the hard earned reputation and granting of the Technology Award by WJTA at the 2001 Conference in Minneapolis, continues to bring the cost of operating a waterjet unit down, making it a more competitive and versatile choice of cutting machine and process.

There is no getting away from it, recycling could one day be a standard part of every waterjet system.

For more information: [sales@wardjet.com](mailto:sales@wardjet.com), [www.wardjet.com](http://www.wardjet.com), phone: (330)677-9100. WARDJet, Inc. is a WJTA corporate member.

## Floor Cleaner



The VORTEX™ model 36-9950-15A from NLB Corp. removes floor coatings and other build-up at rates of up to 2,000 square feet per hour. Using nothing but ultra-high pressure water (up to 40,000 psi, or 2,800 bar), the VORTEX™ cleans without the hazardous chemicals, dust or spent media associated with other techniques.

NLB's patented SPIN JET® technology directs ultra-high pressure waterjets through rotating nozzles to quickly and completely remove epoxies, mastics, membranes, and other coatings. This model includes a vacuum recovery system to collect water and debris, leaving a clean, dry surface that is ready for immediate recoating.

Constructed primarily of aluminum, the VORTEX™ weighs just 138 pounds (62.7 kg), yet is rugged enough for industrial use. Its hard rubber wheels simplify movement over a variety of surfaces, while the adjustable handle maximizes operator comfort. The rotational motion is air-powered for consistent speed.

NLB is a WJTA corporate member and a member of the Polymer Coatings and Surfacing Institute. NLB manufactures a full line of quality water jetting systems and accessories for contractor and industrial uses, including surface preparation, paint removal, tank cleaning, concrete hydrodemolition, concrete and pipe cutting and more.

For more information, visit [www.nlbcorp.com](http://www.nlbcorp.com), call (248)624-5555, fax: (248)624-0908 or write: NLB Corp., 29830 Beck Road, Wixom, MI 48393-2824.

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AccuBrick™'s durability, smoothness and consistency offer accuracy for an industry that relies on precision.

With its superior performance, AccuBrick™ sets the standard for all other water jet bricks.



## AccuBrick™ Features

- Unique internal flute design easily drains water away from cutting area, preventing splash-back for a cleaner, unmarked piece.
- Smooth, flat cutting surface increases accuracy and consistency for cutting parts of all sizes.
- Corrugated flute design prevents small parts from falling through brick and into the holding tank.
- AccuBrick™ is designed for abrasive or straight water jet cutting.
- Corrosion-free cutting surface is made from high density polyethylene (HDPE) for long-lasting performance and reduced noise.

1-800-828-6114

[www.diversi-plast.com](http://www.diversi-plast.com)

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7425 Laurel Ave.  
Minneapolis, MN 55426

## Waterjet Symposium

Over the past six years RICHEL, Inc. has successfully conducted nearly 40 waterjet seminars. Over 200 companies have sent hundreds of people to these seminars, resulting in sales of over 50 waterjet units that we can account for. Based on our experience we believe that there exists an opportunity and need to hold a different kind of seminar.... a **WATERJET SYMPOSIUM**.

The goals of the symposium are to provide a platform for existing users of waterjets and prospective buyers to learn about:

- Different waterjet systems available directly from various manufacturers
- Deionization and water treatment associated with waterjet cutting
- Abrasive removal and recycling systems with all associated costs, savings and performance in cutting
- Different abrasives used for waterjet cutting with their associated performance and results
- Retrofits of controllers onto older waterjet systems
- High pressure plumbing fittings and associated pressure losses and efficiencies
- Relationships between pressure, pump hp, orifice, nozzle, stand off height and abrasive consumption with cut speed, tolerances and edge quality
- Various accessories now available to waterjet operators
- Software that helps to optimize and simplify the use of a waterjet

As much as we would like to invite all manufacturers to attend, there is limited time available. For this reason, the following companies have been invited and all are planning on presenting their products and services: Jet Edge, PaR Systems, ESAB, Ingersoll Rand, BARTON, EBBCO, WARDJet, and Cleveland Motion Controls.

### Lectures

This symposium will be held over a 2-day period, structured to allow each of the above named participants lecture time in a professional environment at the Sheraton Suites Hotel in Akron, Ohio.

(continued on page 17)

## You get more than a pump from NLB.


Before we sell you a water jet pump, we make sure it's right for tomorrow's needs, as well as today's. And we provide the accessories and support you need, whether you're starting up or looking at new markets. It's simple: as you grow, so do we.

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- top-quality parts and service, available when you need them;
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- convenient regional sales/service/rental centers.

NLB has helped countless contractors become more successful... and we'd like to do the same for you. Before you settle for just a pump, call **1-877-NLB-7988**.

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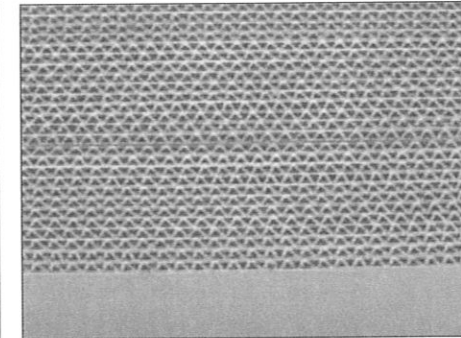
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 e-mail: nlbmktg@nlbusa.com, website: www.nlbcorp.com

## AccuBrick: Waterjet Brick For Cutting Accuracy

AccuBrick™ is manufactured by Diversi-Plast® of Minneapolis, Minnesota, using heavy-walled, laminated high density polyethylene (HDPE) for maximum durability. Each of the three layers of HDPE is individually extruded and laminated in the molten state to produce a quality brick that will last. Corrugated sheets are cut and unitized under strict quality-assurance procedures to ensure consistency from brick to brick for a flat, even bed. The smooth, flat cutting surface increases accuracy and consistency for cutting parts of all sizes.

AccuBrick's design and laminated flute pattern minimize splash-back while draining water and debris away quickly and effectively, unlike bricks made with profile board that experience significant splash-back, which can hinder the cutting process and impact overall cutting accuracy. Less splash-back results in a cleaner, unmarked piece. The corrugated flute design also prevents small parts from falling through the brick and into the holding tank.

AccuBrick's corrugated design, durability and efficient drainage make it an excellent foundation for a variety of materials, including: aluminum, brass, copper, fabric, foam, gaskets,

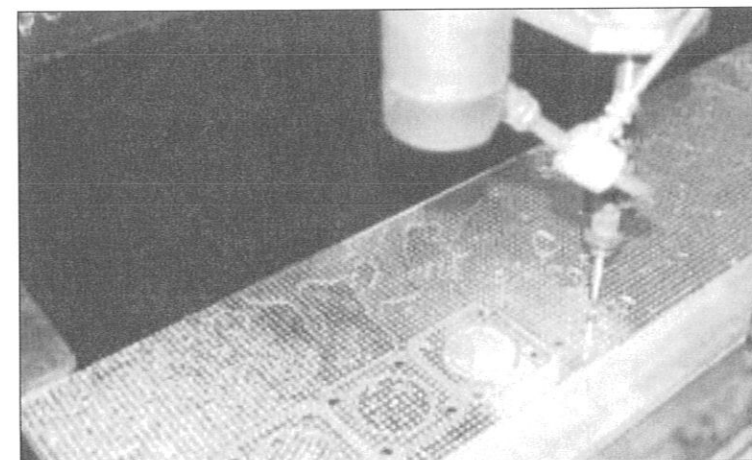


Close-up of corrugation.

glass, granite, limestone, marble, plastics, steel, titanium and wood. AccuBrick is designed for abrasive or straight waterjet cutting. The high density polyethylene cutting surface is corrosion-free and made for long lasting performance. The HDPE material reduces the noise generated when waterjet cutting and HDPE is 100% recyclable.

Diversi-Plast is an industry leader in the innovation, design, marketing and manufacturing of products utilizing corrugated plastic. For more information about AccuBrick, visit [www.diversi-plast.com](http://www.diversi-plast.com) or contact Diversi-Plast by phone: 1-800-828-6114, e-mail: [info@diversi-plast.com](mailto:info@diversi-plast.com) or mail: Diversi-Plast, 7425 Laurel Avenue, Minneapolis, MN 55426. Diversi-Plast is a WJTA corporate member.

Photographs provided courtesy of Diversi-Plast.



Bed in action.

## Hydrodemolition In New York State

Specialist US hydrodemolition contractor IVS Hydro Inc. has successfully used the first diesel powered Conjet Robot 432D high-pressure waterjetting machine in the U.S. to carry out vital concrete surgery during essential repairs to two sets of dual carriageway bridges on Route 15 near the town of Painted Post, New York State.

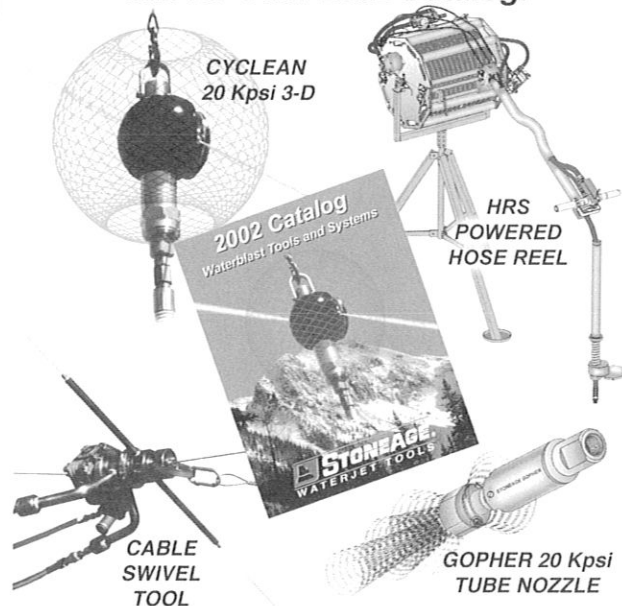
IVS Hydro, working as the specialist hydrodemolition sub-contractor for bridge renovation prime contractor LC Whitford, used its new diesel powered Conjet Robot 432D hydrodemolition machine to selectively remove concrete, that did not meet the New York DOT standards, from the bridge decks prior to LC Whitford replacing with a new concrete overlay.

LC Whitford, based in Wellsville New York, is carrying out the approximate US 1.4 million dollars of improvements to the bridges for client and bridge owner New York DOT. LC Whitford removed approximately 35 mm of concrete deck with a milling machine down to just above the steel reinforcing prior to IVS Hydro following on behind to complete the removal.

IVS Hydro, based in Waverly, West Virginia, won the US\$83,000 specialist hydrodemolition work, which involved removing about 164m³ of concrete from the bridge decks with its high pressure waterjetting Conjet Robot 432D. IVS Hydro used its hydrodemolition robot to remove the remaining average 2.5 inches (64mm) of the damaged slab in a single pass and to a level of 25mm below the bottom of the exposed reinforcing bars. The robot, supported by a single

(continued on page 11)

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## Calendar of Events

October 7-10, 2002

7th International Symposium on Environmental Issues and Waste Management in Energy and Mineral production, Hotel Setar, Cagliari, Sardinia, Italy. Mining and environmental issues, among other topics, will be addressed during the Conference program, which includes the presentation of selected papers in oral and poster sessions, three half-day technical trips, an exhibition and optional post-congress tours. For more information, contact the web sites [www.swemp.com](http://www.swemp.com) or <http://geoing.unica.it/digita/swemp/index.htm> or write Kassiopea Group Srl, Via S. Satta, 47 09128, Cagliari, Sardinia, Italy.

October 16-18, 2002

BHR Group 16th International Conference on Waterjetting: New Developments, Applications, Technologies, Centre de Congres, Aix-en-Provence, France. Technical papers and case studies are invited for presentation on all aspects of waterjetting in a variety of areas. Contact Emma Abson, Conference Organizer, BHR Group Limited, The Fluid Engineering Centre, Cranfield, Bedfordshire MK43 0AJ, UK, phone [44](0)1234-750422, fax: [44](0)1234 750074, e-mail: [eabson@bhrgroup.com](mailto:eabson@bhrgroup.com), web: [www.bhrgroup.com](http://www.bhrgroup.com)

November 3-7, 2002

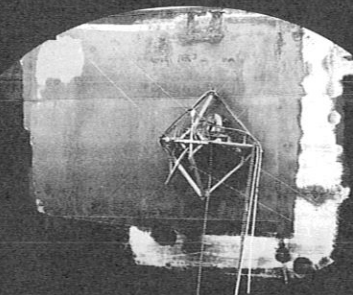
SSPC 2002, the Industrial Protective Coatings Conference and Exhibit sponsored by The Society for Protective Coatings, Tampa Convention Center, Tampa, Florida. Visit [www.sspc.org](http://www.sspc.org), call 412-281-2331 or write 40 24th Street, 6th Floor, Pittsburgh, PA 15222-4656.

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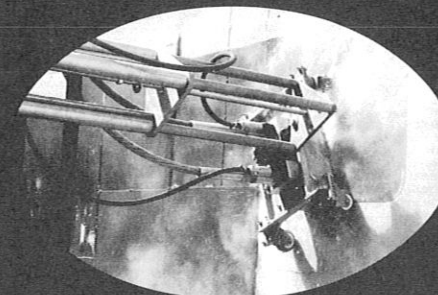
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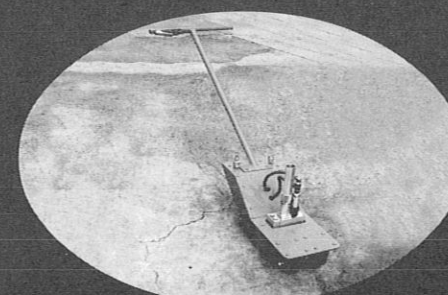
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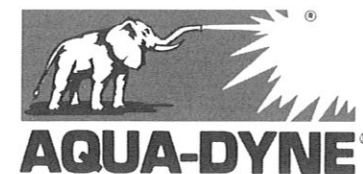
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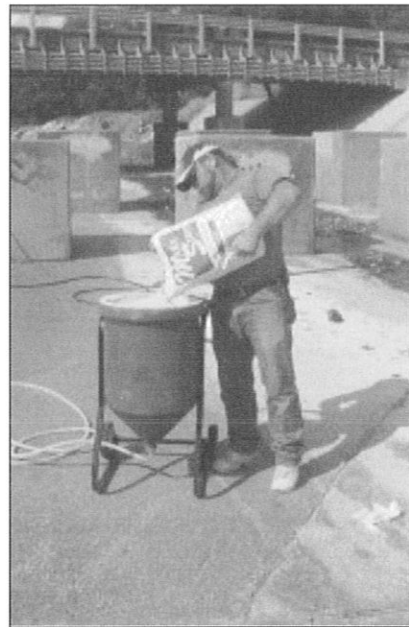
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feeding hard and soft abrasives. The induction pot utilizes a unique new abrasive metering device that provides a steady flow of abrasive to the induction head. The user will increase production utilizing the most efficient media flow of 2-3 pounds per minute. The metering device eliminates media clogging or slugging and reduces material consumption through its consistent flow design.



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The **RIP 3000 Rotary Nozzle and Low Pressure Abrasive Feed Pot** is designed by blasters for the growing wet abrasive blasting industry. Its unique patented design incorporates the best of dry air blasting, high pressure water blasting and portable cutting heads. The rotary nozzle fits on the end of any rotating gyro gun. The RIP 3000 nozzle offers full 360-degree rotation for broader coverage and faster cleaning times. A consistent 6-degree angle of attack lifts coatings off at a rate of 5-6 square feet per minute with traditional hard abrasives. MaxxStrip can be used in the RIP 3000 when a profile is not needed or specified. Use of MaxxStrip through the RIP 3000 should deliver a coatings removal rate of 3-3.5 square feet per minute. The 3,000-rpm nozzle rotation is driven by 18 psi through the abrasive feed pot.

Universal Minerals, a WJTA corporate member, continues to offer to industry its traditional silica safe slag and garnet abrasives for the cutting, blasting, cleaning, and surface preparation industry. For more information visit [www.watersolubleabrasive.com](http://www.watersolubleabrasive.com) or [www.waterjetsupply.com](http://www.waterjetsupply.com) or contact Harry Richmond at Universal Minerals, (877)633-9692 or Christa Olsen in Universal Minerals headquarters, Tucson, Arizona, 800-528-7086, ext. 11.

Photographs provided courtesy of Universal Minerals.

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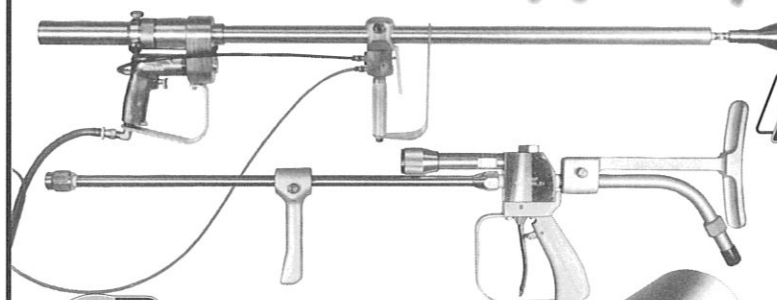
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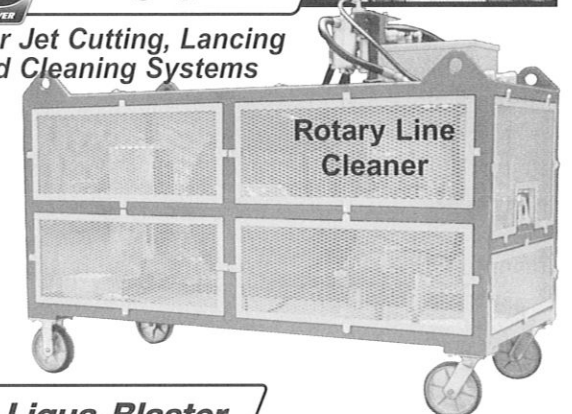
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Pumps



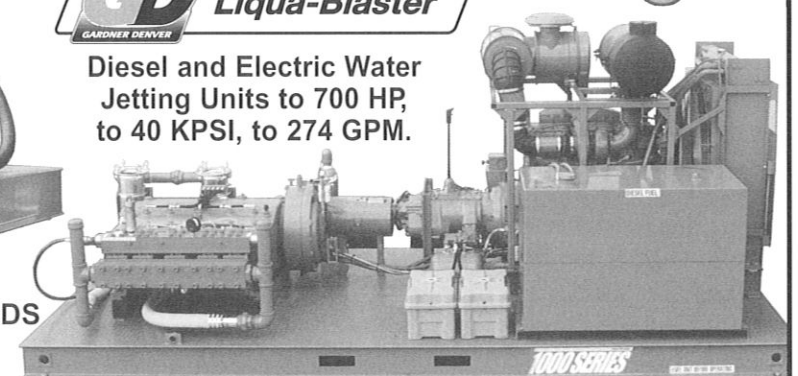
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## Ingersoll-Rand Waterjet Productivity Solutions

Have you ever wondered why the number of fabricators and job shops that buy waterjet systems is rapidly increasing? There are probably as many reasons as there are respondents to this question. However, the majority of our seasoned contract cutters and end users seem to identify the four most compelling reasons for this trend. These include but are not limited to - *cost savings, versatility, precision cutting* and waterjet's unique *ability to compliment* other processes.

### Cost Savings

The part shown at right (A) used to go through two production processes before shipping to a customer. This piece is fabricated for the aerospace industry, which is known for zero tolerance when it comes to parts with heat-affected zones (HAZ).

This contract cutter now has and continues to maintain its competitive edge in the aerospace industry. Why? Because their parts are now cut with Ingersoll-Rand's waterjet systems, and no longer have heat affected zones.

### Versatility

Waterjet has proven itself over and over again, to be the most versatile cutting technology in many industries today. Simply put, "... waterjet is by far, the most flexible and desirable technology in our business that delivers results with amazing reliability," says one of Ingersoll-Rand's many successful and proud waterjet, punch press and laser job shop owners.

You do not have to lose business or engage in costly processes just because you are limited as to the range of materials you can cut. No-holds-barred anymore. You are now free to cut from titanium, to aluminum, to composites to stone to automotive headliners and door panels, to rubber and gaskets to food and many other materials using the same tool and process.

### Precision Cutting

Cutting complex shapes such as depicted in the image on the right (B) requires absolute precision cutting.

Many fabricators and job shops have resorted to Ingersoll-Rand powered waterjets for precision when cutting laminates, glass, marble, bulletproof plastic and other fragile materials.

### A complimentary tool

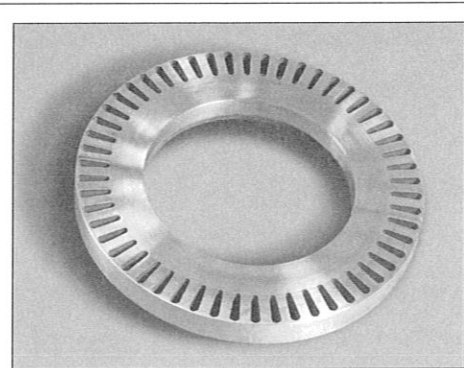
Since a waterjet has the ability to cut many kinds of materials at precise and unique angles, it serves as a great complimentary tool to other processes. Punch pressing forming, welding, laser machining, plasma cutting and die cutting are a few examples of technologies that benefit from waterjet's unique capabilities. No other cutting technology can claim this.

### Why you should consider Ingersoll-Rand Powered Systems

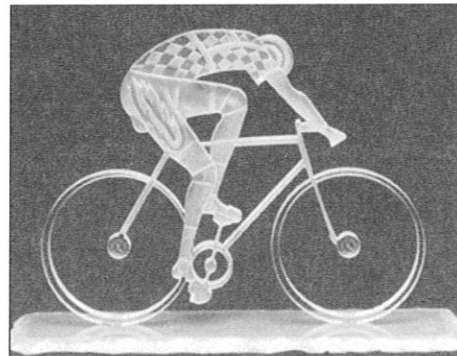
Ingersoll-Rand is known for making and packaging solid and extremely productive ultra-high pressure solutions.

Given all the cutting processes available today, Ingersoll-Rand's waterjet technology is your quickest way to the bank. It is a relatively inexpensive investment, saves substantial operating costs, is quick to set up, has the ability to cut virtually anything and cuts even very intricate shapes.

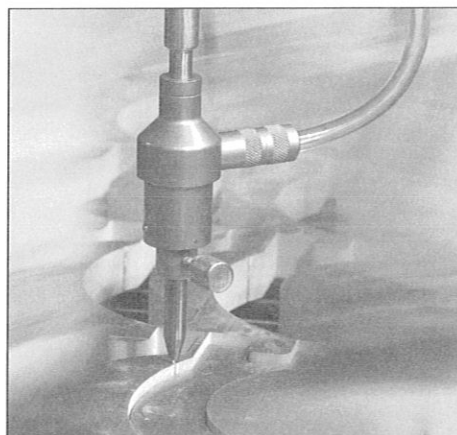
For more information, visit: [www.irwj.com](http://www.irwj.com), call: (800)-826-9274 or (620)856-2151, fax: (620)856-5050 or write Ingersoll-Rand, 635 West 12th Street, PO Box 231, Baxter Springs, KS 66713. Ingersoll-Rand is a WJTA corporate member.



One-inch deep, 18-inch diameter copper round part with intricate slots cut with an Ingersoll-Rand waterjet. The customer reduced cutting costs for this part by 93% — all simply by employing the capabilities of waterjet technology. (A)



Glass product cut with a waterjet system powered by Ingersoll-Rand high pressure solutions. (B)



Cutting one-inch titanium using an 80 mesh of Ingersoll-Rand Hydroabrasive™ garnet. (C)

Photographs provided courtesy of Ingersoll-Rand.

## Hydrodemolition In New York State, from page 7

pump delivering 52USgal/min (196litres/min) at a pressure of 20,000 psi (1360bar), selectively removed concrete at the average rate of 0.5 m<sup>3</sup>/high pressure hour. The 432D can work with two 750hp (550kW) high pressure pumps, rated up to 20,300 psi (1400 bar) and 51USgal/min (194litres/min).

"I like the diesel powered 432D, especially its mobility as you don't need a generator for it on the site," says IVS Hydro Supervisor Lyle Moore. "You can just start it up, and you're ready to go. It's very easy to move around and did a good job on the bridges. The concrete was moderate to extremely hard, but the 431D coped with it very well and cleaned away all the concrete to leave an inch clearance under the steel reinforcing."

IVS Hydro carried out the hydrodemolition repairs in two separate visits, which included concrete removal on the entire surface of one set of the dual carriageway bridge decks and patchwork removal on the other set. After hydrodemolition LC Whitford followed on placing a new 140mm thick layer of concrete prior to a return to traffic.

For more information, contact Lars-Goran Nilsson, Conjet AB, PO Box 507, S-136 25 Haninge, Sweden,

phone: 46-8-5565-2240, fax: 46-8-5565-2260, e-mail: [conjet@conjet.se](mailto:conjet@conjet.se), web: [www.conjet.com](http://www.conjet.com) or Stephen Toms, National Hydro Inc., 5643 Warner Road, Fowlerville, MI 48836, phone: (517)223-0915, fax: (517)223-9525, e-mail: [toms@ismi.net](mailto:toms@ismi.net). Conjet AB is a WJTA corporate member.



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