

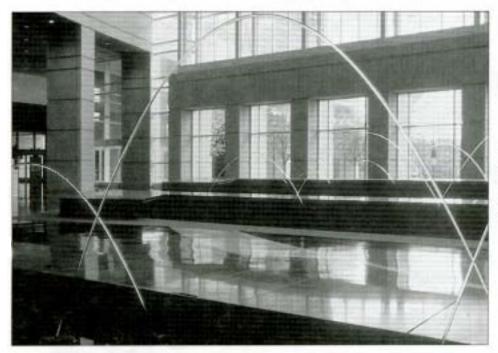
**Jet News** 

APRIL 2000

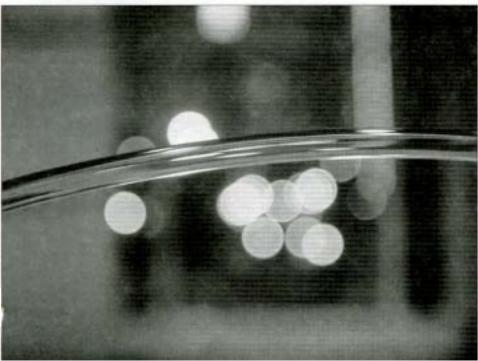
Water.let Technology Association for the benefit of its members

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## **Beautiful Waterjets**



Laminar Jets in Chicago, Illinois, by WET Design®. Photograph by Ira Kahn, courtesy of WET Design.



Close-up view of Laminar
Stream – A parabolic arch
of water designed by
WET Design for
McCormick Place in
Chicago. Photograph by Ira Kahn,
courtesy of WET Design.

(see article on page 2)

### Beautiful Waterjets, from page 1

WET Design® of Universal City, California, has a talent for displaying the beauty of waterjets. WET Design has created works of art that showcase the beauty of moving water in many famous fountains around the world.

WET Design had its genesis in Mark Fuller's University of Utah thesis on "axisymmetric laminar fluid flow." Mark, WET's cofounder and CEO, investigated turbulence-free water behavior for his undergraduate civil engineering honors thesis. Published in 1976, and followed up during his graduate thesis work in design at Stanford University, this work

results in an arch of

rapidly flowing water that seems to be motionless. The laminar stream technology subsequently became a pivotal tool in many of WET Design's projects.

An example of this technology is displayed at McCormick Place in Chicago, Illinois, and is shown on the cover of this issue (Figures 1 & 2).

While with the Walt Disney
Company for a period of five years,
Mark led a team that created many
other special effects. Among these,
the LeapFrog™ at EPCOT Center in
Walt Disney World, Florida, is one of
the Center's most celebrated
attractions. Based on his thesis, this

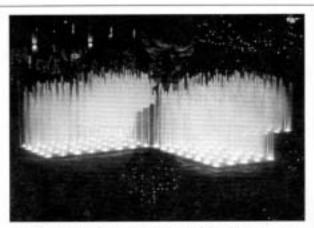


Figure 3. The Los Angeles Music Center. Photographby Ita Kalm, contrast of WET Draign.



Figure 4. The Watercourt at California Plaza in Los Angeles. This fountain was the subject of an article in the December 1997 issue of Jet News Photograph by Ira Kalm. countrie of Will Design.

fountain was the first of its kind to present rod-like, glassy segments of water that fly through the air and delight onlookers. Combining water with technology in innovative forms led to other invitations and the formation of WET Enterprises in 1983, which later was renamed WET Design.

Among WET's installations are the Los Angeles Music Center (Figure 3); "the Watercourt" at California Plaza in Los Angeles (Figure 4); McCormick Place and Navy Pier in Chicago; the "Rose Garden Arena" (incorporating fire) in Portland, Oregon; the Seattle International Center Fountain in

(continued on page 4)

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### Beautiful Waterjets, from page 2

Seattle, Washington; Crown Casino in Melbourne, Australia; and the International Fountain at EPCOT Center.

Recently completed WET Design projects include Expo '98 in Lisbon, Portugal; the World Trade Center in Barcelona, Spain; a fountain for Denver City Park donated to the City by the Gates Foundation; and Burj Al Arab in Dubai, UAE.

In 1998 WET Design completed its most enterprising project to date with the Fountains of Bellagio in Las Vegas, Nevada. The result of a collaboration between Mr. Steve Wynn, creator of the new Bellagio Resort, and WET Design, the Fountains of Bellagio fill the eight-acre lake in front of the Bellagio Hotel (Figures 5 and 6).







WET Design is located at 90 Universal City Plaza, Universal City, California, 91608, phone: 818-7696200, fax 818-763-8559, web site: www.WETDESIGN.com

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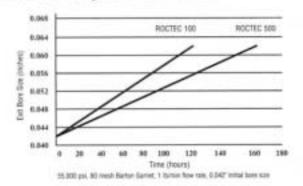
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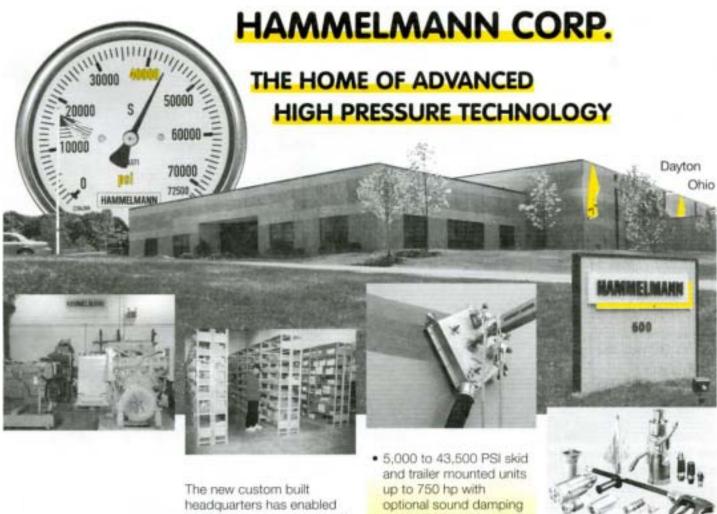
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## Jetframes for Hydrodemolition

onjet Jetframe 102 & 122 hydrodemolition systems allow the selective removal of concrete in confined spaces or areas inaccessible to standard Conjet hydro-demolition robots. The Jetframe is remotely operated (Figures 1 and 3) up to 100 meters from the computer control system. The operational parameters can be set

and monitored on the display screen on the remote control console (Figure 4).

Jetframe 122 is designed to work with high pressure pumps operating up to 260 liters per minute and pressure of 1000 bar, while the Jetframe 102 operates with pumps up to 200 liters per minute and pressure of 1000 bar.

The jetframes can be bolted on a concrete surface, mounted on a tool carrier (such as an all-wheel-drive forklift truck or skylift platform) or supported from winches. The Jetframe 102 is specifically designed to

operate where space is limited, such as between a building and scaffolding. The Jetframe 102 can be quickly dismantled into components small and light enough to be carried by a man. It can operate on a variety of horizontal, vertical and angled surfaces, including dam faces and the undersides of bridge decks.

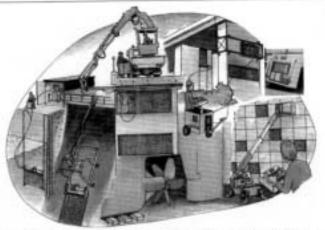


Figure 1. To help ensure the safety of operators working in the immediate vicinity of the cutting area, all functions are set, controlled and displayed on a hand portable remote control console.

The Jetframe system has been successfully used on numerous projects including bridge pillars, bridge bearing foundations, bridge joints, dam surfaces, spillways, canals, dry docks, quay docks and underwater applications.

Safety is of paramount importance. To protect operators working in the immediate vicinity of the jet cutting area all operator functions are controlled from a hand portable, remote control console.

(more pictures on page 7)



Figure 3. Renovation of dam at a water power plant.

#### Figure 2. Technical Data

Technical data on the jetframes and the computer control unit.

#### Jetframe 102

Length: 6000 mm

(19 ft. 8 in.)

Width: 3000 mm (9 ft. 10 in.)

Cutting width: 1600 mm

(5 ft. 3 in.)

Height 500 mm (1 ft. 8 in.)

Weight: 300 kg (660 lb.)

#### Jetframe 122

Length: 4000 mm (13 ft. 2 in.)

Width: 2000 mm (6 ft. 2 in.)

Cutting width: 2140 mm

(7 ft.)

Height: 1400 mm

(4 ft. 7 in.)

(2 ft. 4 in.)

Weight: 650 kg (1430 lb.)

#### Computer Controlled Unit, CCU 156

Length: 1400 mm (4 ft. 7 in.)

Width 700 mm

Height: 1250 mm

(4 ft. 1 in.)

Weight: 300 kg (660 lb.)

#### Valve Cabinet for CCU 156

Weight: 38 kg (85 lb.)

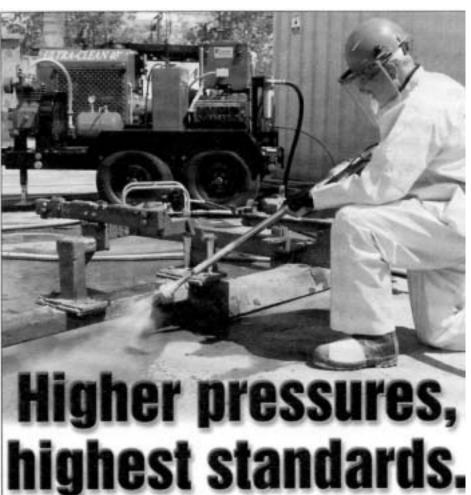
#### Jetframes for Hydrodemolition, from page 6



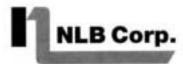
Figure 4. Computer Controlled Unit (CCU) 156



igure 5. Repair of a high rise pillar.



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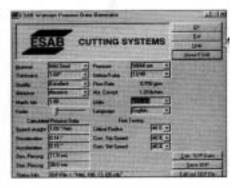
#### ESAB Vision PC Control Retrofit Adds Powerful, Operator-Friendly Features to Existing Waterjet Cutting Machines

ESAB Cutting Systems' Vision PC Controller "Data Generator Program" sets waterjet cutting parameters automatically.

ESAB Cutting Systems offers end users a simple, cost-effective means of enhancing the productivity and ease-of-use of their current waterjet cutting systems. By retrofitting the new vision PC CNC controller for waterjet cutting to these machines, ESAB maximizes their performance with technologically advanced control features and powerful software tools.

Exclusive to the Vision PC waterjet controller is ESAB's automated Process Parameter Programming. An operator simply enters the type and thickness of material to be cut and desired cut quality. The controller's unique Data Generator Program, a 32bit Windows® application that runs on the Vision PC in the background, sets process parameters for optimized cutting speed and cornering. Kerf, speed, dynamic axial piercing, corner deceleration and acceleration are all set automatically. These settings are saved as a file that can be recalled at will, greatly reducing set-up time on repeat runs at a future date.

Operator-friendly features of the Vision PC controller for waterjet cutting include menu-driven operation,



color LCD display, 8-position joystick, hand wheel, 4 Gigabyte hard drive, 3.5-inch diskette drive and speed potentiometer. Station and process control are integrated in a single ergonomic operator's panel. Ease of operation is further enhanced by such powerful software tools as real-time

(continued on page 12)

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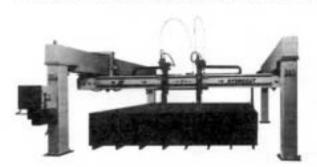
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ESAB's **Vision PC** CNC controller for waterjet cutting combines remarkable ease of operation with powerful software tools like real-time tool path display and kerf-on-the-fly with kerf-override to offer the most technologically advanced control in the industry. This Windows-based controller features menu-driven operation, color LCD display, 8-position joystick, hand wheel, hard drive, 3.5" floppy drive, and speed potentiometer

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Rugged gantry design and AC brushless digital motors on ESAB's HydroCut provide precise motion control and positioning accuracy. operator's panel. A 333 mHz processor and advanced features such as multi-level return, zoom while running, and program continue after power failure further add to the power of this control.

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## Hydrodemolition Of A Bomb Damaged Overpass in the UK

In April 1992 a terrorist's bomb damaged 120m<sup>3</sup> of concrete in North London's A5 Edgware Road flyover (overpass). The 305 meter long, seven span continuous prestressed concrete box girder deck flyover, supported on reinforced concrete piers carries the A5 Edgware Road over the Staples Corner roundabout (traffic circle). This principal roundabout junction provides a vital interchange linking the major A5 trunk road at the main A406 North Circular Road, which is carried across the A5 and the Staples Corner roundabout on another higher level flyover.

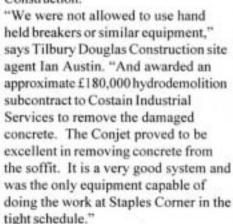
The blast from the bomb, which was left in an abandoned vehicle on one of the A406 sliproads (entry ramps), directly underneath the A5 Edgware Road flyover, punched holes through the bridge deck's bottom slab and damaged much of the remaining soffit and part of the top slab. The force of the explosion apparently lifted the 18.5 meter wide deck off its supporting concrete piers and the high dynamic compressive forces generated as it dropped back down damaged the tops of the piers.

Consulting engineer WS Atkins, responsible for supervising the flyover's original construction, was appointed by the Department of Transport to assess the damage and design and supervise the repairs. About 120m³ of damaged concrete had to be removed in a very tight reconstruction schedule.

W.S. Atkins specified that high pressure waterjetting had to be used for the concrete removal as the consulting engineer identified that the hydrodemolition method selectively removes damaged concrete while leaving reinforcement clean, intact and undamaged. The system also has the major advantage over conventional hydraulic impact breakers by considerably reducing the risk of propagating cracks into the adjacent sound, healthy concrete.

W.S. Atkins awarded the main A5 flyover rehabilitation contract to the contractor, Tilbury Douglas

Construction.



However Austin believes the damaged concrete in the soffit could have been cut out with hand lances, which were used to remove a relatively small amount of concrete on the less damaged desk. "But hand lances are about ten times slower, and the job would have taken considerably longer than the Conjet," says Austin.

Costain Industrial Services opted to use hand held waterjetting lances, working at pressures up to 14,500 psi (987bar, 100N/mm<sup>2</sup>), to remove the approximate 20m<sup>3</sup> of damaged concrete on the deck slab. But for the



Conjet Robot 360 equipped with boom extension arm

majority of the more difficult and controlled removal of the damaged concrete in the soffit, the specialist contractor chose to use the Conjet Robot 360 Hydrodemolisher.

"We ordered the Conjet Robot 360, the first one in the UK, after Tilbury Douglas Construction awarded us the hydrodemolition contract," says Costain Industrial Services hydrodemolition manager Hugh Gilhespie. "The approximately £250,000 package from Conjet included providing an engineer on site to initially train our operators. Conjet has been extremely helpful and provided excellent support and back up," says Gilhespie.

The versatile Conjet equipment, which is remotely controlled by a single operator, is powered by a separate powerpack housing a 450hp Caterpillar diesel engine driving a Hammelmann high pressure water pump. The powerful pump produces a flow of 140 liters per minute at

(continued on page 11)

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#### Hydrodemolition Of A Bomb Damaged Overpass In The UK, from page 10

pressures up to 16,000 psi (1100 bar) and is fed through a 20 mm diameter lose to a specially mounted single nozzle, where it exits at supersonic velocity.

The nozzle is mounted on an oscillating cassette, which, attached to a traversing cradle running back and forth along a feed beam, enables the jet to operate with a sweeping action to cut away concrete behind reinforcement. The entire nozzle assembly is attached to the end of the Conjet Robot 360's multi-positioning arm and covered by a protective shroud.

This articulating boom enables the equipment to be used in a wide variety of hydrodemolition tasks on horizontal and vertical surfaces, ceilings and soffits. The boom can also reach nder a bridge deck soffit while the machine stays on the deck above.

Costain Industrial Services was able to use the robot's flexibility to site the machine at ground level at Staples Corner and work on the damaged deck soffit directly above in a series of programmed and sequential repairs. "The robot worked extremely well and by keeping ahead of schedule we were able to temporarily move the equipment to another hydrodemolition job in Liverpool without interrupting our progress at Staples corner," says Gilhespie.

The areas of the A5 flyover soffit for repair, each covering pproximately 8m<sup>2</sup>, were partitioned with a protective screen and included inserting a shield inside the box to prevent any concrete being jetted out of the soffit damaging the deck's upper membrane.

"As a general rule of thumb jetting pressure needs to be about two to three times the compressive strength of concrete to be cut," says Gilhespie. "We were using pressures between 1050 bar to 1100 bar and cutting right through the 150mm to 350mm thick

soffit slab and removing an average of 3m3 of damaged concrete in a typical ten-hour-shift. Conjet's predictions of machine performance proved to be accurate and the reliable equipment performed as expected. There were no problems and WS Atkins and Tilbury Douglas Construction were pleased with our hydrodemolition job, which went very smoothly."



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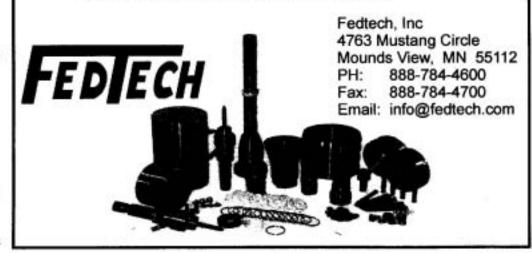
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tool path display, kerf-on-the-fly with kerf override, zoom while running, and program continue after power failure.

Vision PC's automated process parameter programming, software tools and simple operation combine to maximize the performance of any manufacturer's waterjet cutting machine. For increased productivity, ESAB's abrasive cutting head with standard Z-axis slide, programmable Z-axis or Z-axis with height control can be combined with a Vision PC retrofit. The cutting nozzle's diamond orifice technology provide maximum cutting speeds with reduced operating costs and extremely simple maintenance.

For more information on retrofitting waterjet cutting machines with the Vision PC CNC controller, contact ESAB Cutting Systems at (843)664-5618.

#### HIP Launches Web Site

High Pressure Equipment Company has recently introduced an expanded web site — www.highpressure.com — that offers an easier-to-use and more informative format. The new site includes complete product data, as well as company information, product selection guidance, design, ordering information, e-mail and literature request sections.

HIP has incorporated all of the information found in their color full-line catalog into the new web site. Visitors can find extensive details regarding all



of HIP's products including valves, fittings, tubing, pumping systems, pressure boosters, pressure vessels and reactors. Technical information regarding these products and sales representative listings are also included. The Quick Selector Guide included with each product offering features a simple and straightforward

(continued on page 14)



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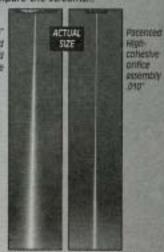


#### **High-Cohesive**

Use our high-cohesive assembly for better and faster cutting and coating removal

Compare the streams.

Orion Standard Diamond Orifice



50,000 psi - No Additives to Water

#### INCREASE PERFORMANCE

A.M. GATTI INC. 524 TINDALL AVE., TRENTON, NJ 08610 1-800-882-0105

609-396-1577 · FAX: 609-695-4339

process for selecting the correct product for any application.

For more information, contact High Pressure Equipment Company, 1222 Linden Avenue, Erie, PA 16505, phone: 814-838-2028, fax: 814-838-6075, e-mail: sales@highpressure.com, web site: www.highpressure.com

#### HydroPrep™ System Makes Surface Prep Versatile

NLB Corp.'s
HydroPrep™ system
lets users do either
automated or manual
waterjet surface
preparation to
quickly remove
coatings, scale, rust,
and other tough
adherents from metal
or concrete surfaces.
The system includes
an NLB ULTRA-



CLEAN® pump, to provide 40,000 psi (2,800 bar) water pressure and a variety of accessories.

The automated HydroPrep system used the Model SRT-10 Crawler to quickly strip vertical and horizontal surfaces, directed from a control console. The SRT-10 Crawler uses a rotating center hub design, eliminating the need to re-rig the system in order to clean both up-anddown and side-to-side.

The manual systems incorporate the VertaJet™ Model SRT-6, designed specifically for large, vertical surfaces, and the Ship Bottom Cleaner.

The VertaJet Model SRT-6 is a hand-held system attached to a vacuum recovery system for removal of wastewater and debris. The six-inch (15 cm) cleaning path, which uses NLB's patented SPIN JET® rotating waterjets, leaves surfaces dry and clean in a single pass.

The Ship Bottom Cleaner allows a single user to remove coatings from ship bottoms. Mounted on a cart and using SPIN JET rotating nozzles, operators can adjust the height from 40.5 inches (1.03 m) to 70.5 inches (1.79 m). Vacuum recovery of water and debris is optional.

(continued on page 16)

#### Your Source for Ultra High Pressure Hose



Spir Star. . . Outstanding Quality Outstanding Service Servicing the **Waterblast** Industry with hose and accessories for:

- Heat Exchanger Tube Cleaning
- Line Moleing
- Surface Cleaning & Preparation
- Storage Tank & Vessel Cleaning
- Hydro Demolition
- Waterjet Cutting
- Automated Cleaning Systems

#### SPIR STAR

11983 FM 529 . Houston, Tx 77041 . 713 856-8989

Fax 713 856-8999

800 890-STAR (7827)

## SURPLUS EQUIPMENT AUCTION

#### HydroChem Industrial Services, Inc.

May 3, 2000 • 9:00 a.m.

City of Deer Park Jimmy Burke Activity Center 500 West 13th Street Deer Park, TX

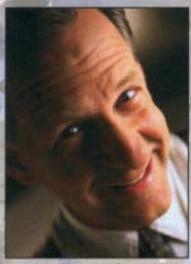
For more information, call
Pat DeBusk — (713)393-5815
or
Dave Hanson — (330)854-4526

# Under Pressure Lately? Nake Autoclave your solution!



## Typical Supplier ...

- Technical Support Slow to No Response
- · Delivery in Weeks
- · Quality Inconsistent
- · Product Innovations Neverl



## **Autoclave Customer...**

- Technical Support in Hours
- . Delivery in Days
- Quality Repetitive & Consistent
- Product Innovations -Continuously!

## **HCT Supertube**

- . Tubing for High Cycle Application
- 95,000 psi Working Pressure
- 3 times the life of standard tubing

Increases Component Life!

## N-Dura Coating

· Harder than Tungsten Carbide

More durable than Stellite against erosion

## Autoclave A Engineers

Fluid Components
Division of Snap-tite, Inc.

2930 West 22nd Street

Erie, Pennsylvania 16506-2302 USA PH: 814-838-5700 FAX: 814-838-5811

e-mail: ae\_sales@snap-tite.com www.autoclaveengineers.com

ISO-9001 Certified

Value Goes Beyond the Product... Autoclave Engineers... The High Pressure Experts.

NLB pumps come with diesel or electric power, flows from 1 to 10 gpm (3.8-38 lpm), and engines from 30-250 hop (22-186 kw). With the simple design of an ULTRA CLEAN pump, wear and operating costs are minimal.

For more information, contact NLB Corp., 29830 Beck Road, Wixom, MI 48393-2824, phone: (248)624-5555, fax: (248)624-0908

#### Total Waterjet Cutting Flexibility

PaR Systems, Inc., an industry leader in overhead high precision processing systems, has introduced a 3-axis high precision waterjet cutting system that will react to the ever changing waterjet cutting market. You can now purchase a PaR Vector 3axis waterjet cutting system with the option to upgrade to a full integrated 5axis system weeks, months or years from the initial installation. Cut with 2 or 3-axis today with the confidence that your system can be upgraded to 5axis without the investment of an additional or replacement waterjet cutting system. This will allow customers to prepare for the growing multi-axis waterjet cutting market.

For more information, contact PaR Systems, Inc., 899 Highway 96 West, Shoreview, MN 55126, phone: (651)484-7261, fax: (651)483-2689, e-mail: ckoliha@par.com

#### Abrasive Recycling

EasiJet, Inc., the distributor of the WARD 24 abrasive recycler, officially launched the sales of the system in March 2000 and in the first month had orders approaching 20 systems. It is expected over 100 systems will be sold in the USA this year.

Although WARD 24 units have been in operation through 1999, these sites were considered as beta sites, allowing EasiJet to gather information from 11 different sites nationwide. Every operator has different products, cutting systems and criteria. The live on-site testing throughout 1999 has resulted in several changes to the system, making it more user friendly and automated.

The system is compact, can be fitted with wheels allowing it to be used with several machines. It is easy to use, and only takes three minutes from the time the abrasive is pumped to the top of the washing screen to the time the dry abrasive is ready to be used again. Only the good abrasive is dried.

Options now available with the WARD 24 include:

- Using heat from the waterjet pump/intensifier to be incorporated with the drying
  - with the drying process. By introducing hot air into the dryer, the electric energy consumption of the WARD 24 is reduced.
- 2. Separating out several different grades of abrasive from the recycled product. This allows a user to "make" their own finer abrasive and determine the actual mesh size they want for a specific application. It is now easy to

- make your own 120, 100 and 80 mesh abrasive after starting with 50 mesh for example.
- Removing all dust from the process, ensuring the system is clean.
- Full automation and monitoring.
   It is possible to leave the system unattended and have the unit connected to a paging system that will notify the plant manager if the WARD 24 needs attention.
- Automatic switching of the system to operate out of several different waterjet tanks. This means that one WARD 24 can easily service several waterjet cutting systems unattended.

(continued on page 17)

#### "WATERJET ORIFICES"

Sapphire - Ruby - Diamond

Micro-Rolled Edge Produces Superb Stream Quality

Mechanically drilled to insure optimum material integrity, eliminating possible fatigue due to laser drilling.

Orifices manufactured in the USA to fit your design requirements.

I.D. Sizes: .002" through .100" O.D. Sizes: Your choice Thickness: Your choice

Rework capabilities eliminate scrapping of poor stream quality crifices. Give your used orifices a second life for a fraction of the cost of replacement.

Liberal order policy allows you to place a blanket order without committing to orifice size until released.

Assemblies available, sapphire or diamond, to fit most any system, tested and ready for installation.

> Microlap Technologies/Langer Plant 213 1st Street N.W. Rolla, ND 58367

Telephone: (701)477-3193 Fax: (701)477-6579 Email: microlap@utma.com Web site: www.microlap.com

For more information, contact RICHEL, Inc., 200 Northeast Avenue, Tallmadge, OH 44278, phone: (330)633-7698, fax: (330)633-7670, e-mail: richel@richel.com, web site: www.richel.com

#### LAI Orders Abrasive Recycling Equipment

In 1999, LAI, one of the largest independent contract waterjet cutting companies in the United States, installed a Waterjet Abrasive Recycling Dispenser (WARD 24) at one of their branches to evaluate performance. The results were so dramatic and beneficial that they have ordered two more WARD 24s. Three of their five locations, LAI East (Maryland), LAI Midwest (Minnesota) and LAI Southwest (Arizona) will now use the WARD 24 with their waterjet cutting machines. Tom Meyers of LAI, having tracked the performance of the WARD 24 and verified its financial viability, states that the cost and time savings generated are remarkable and, therefore, an integral part of their company's future.

(continued on page 18)

#### WANTED

Individual with strong mechanical, electrical and computer skills with knowledge of high pressure waterjet stripping. Fax resume and cover letter to Human Resources, (256)721-5550 or (256)721-2529. An Equal Opportunity Employer.

#### FOR SALE

- Water Filtration Skid designed for UPH continuous operation @ 15 gpm for closed loop system.
- Abrasive Jet Cutting Equipment.
- Hydrodemolition assembly for vertical, overhead, and horizontal operation 20 k @ 16 gpm min.
- Beam System continuous motion for boiler cleaning, can operate two projects simultaneously.

Telephone: (252)672-0260 Fax: (252)672-0262



REMEMBER WHEN COMPARING APPLES TO APPLES...
AN EXPENSIVE APPLE IS STILL JUST AN APPLE, AND EXPENSIVE APPLES CAN HAVE WORMS. WHY TAKE A CHANCE ON BITING INTO A WORM. TRY OUR PARTS AND LET THEM SPEAK FOR THEMSELVES...

#### PRODUCTS:

- HIGH LIFE ABRASIVE NOZZLES
- HIGH PRESSURE SEAL KITS
- ON OFF VALVE REPAIR KITS
- CHECK VALVE ASSEMBLIES
- ORIFICES ASSEMBLIES
- THE LIST GOES ON WITH MORE PARTS BEING ADDED EVERYDAY.

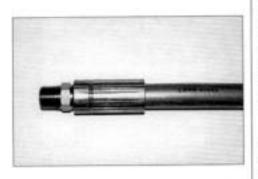
#### BENEFITS:

- LOWER YOUR OPERATING COST.
- NO LONGER IS THERE ONLY ONE SOURCE.
- NOZZLES AND SPARES AT A MINIMUM OF 30% LESS THAN OEM'S.
- DEALING WITH PERSONNEL THAT HAVE MORE THAN 10 YEARS OF EXPERIENCE IN THE ABRASIVE WATERJET CUTTING INDUSTRY.

PARTS YOU GET QUICKLY AND ECONOMICALLY, WITH FAST, DEPENDABLE SERVICE, WHILE HOLDING THE HIGHEST QUALITY STANDARDS.

INTERNATIONAL WATERJET PARTS 2060 BASIN ST. SW EPHRATA WA 98823 PH# (509) 754-3284 FAX# (509) 754-3292 EMAIL iwpwater@televar.com WEB PAGE www.iwpwaterjet.com

#### New Silver Mongoose<sup>TM</sup> Hose for Waterblast Industry



SPIR STAR, Inc. now offers the Silver Mongoose™ extreme service hose. The hose was designed to take the punishment of today's demanding waterblast applications while being extremely lightweight and flexible.

The Silver Mongoose had to meet a stringent set of developmental standards before being released to the market place. From these standards, the new Tiger Claw<sup>TM</sup> end fitting was born, designed to stay on the hose while being submitted to a three-ton external pulling force. Another feature is Super-Urethane, an outer cover that sets the standard for abrasion resistance and will out last rubber hose.

With a half-inch ID hose diameter, working pressure of 15,000 psi, and a total weight of only .40 pounds per foot, Silver Mongoose is the new standard when it comes to service life and durability.

For more information, contact SPIR STAR, Inc., 11983 FM 529, Houston, TX 77041 (800)890-7827.

#### 3000-bar (44,000 psi) high-pressure gun

WOMA Apparatebau GmbH, Duisburg, Germany, is introducing a modular 3000-bar (44,000 psi) highpressure gun for industrial cleaning and maintenance. The guns can be applied to the following applications: cleaning, decoating, decontamination, derusting, exposing reinforcement, material removal, and paint stripping.

Two guns are offered: the Series HP 1500 (for operating pressures up to 1,500 bar; 22,000 psi) and HP 3000 (for operating pressures up to 3,000 bar; 44,500 psi). Both guns can be equipped with rigid nozzle holders, self-propelling turbo nozzles, externally driven nozzle carriers in various

(continued on page 19)

www.

## usedwaterjets

.com

- we buy, sell, strip, ship, install, commission and train on quality used waterjet systems
- · new waterjet accessories, bulk feed hoppers, software
- waterjet abrasive recycling dispensers

phone: (330) 633-7698 fax: (330) 633-7670 email: richel@richel.com www.usedwaterjets.com



configurations, and abrasive blasters. Additionally, the guns can be equipped with either an electrical (24-volt) or pneumatic

itrol system to interface with the pump unit. are guns can also be used in explosive environments. The modular parts - handgrip, nozzle pipe, hand protection, nozzle carrier, controller - can be combined according to the customer's requirements. The new modular high-pressure gun features the highest safety standards. On request, any gun can be equipped for two trigger operation.

For more information, contact WOMA Corporation, P.O. Box 6793, Edison, NJ 08818-6793, phone: (800)258-5530, fax: (732)417-0015, email: womacorp@bellatlantic.net

#### "Clean Water-Safe Harbor" Workshops On Recommended **Business Practices For Blasting**

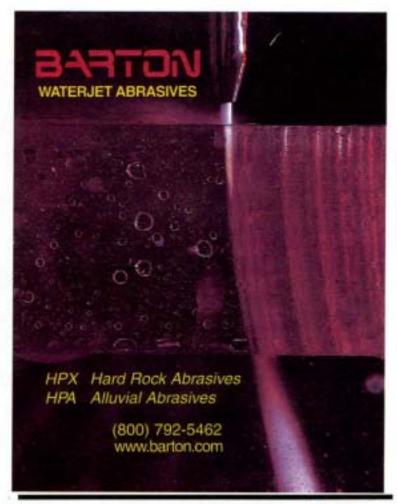
Learn from the experiences of others at the "Clean Water-Safe Harbor" Workshops that will take place in May in both Texas and Louisiana.

he one-day workshops will be hosted by the as Natural Resource Conservation Commission (TRCC), Louisiana Department of Environmental Quality (LADEQ), EPA Region 6 Pollution Prevention Round Table and the Advisory Council. The workshops will feature presentations on coatings operations by state agencies, shipyards, contractors, and paint experts who have researched traditional dry blasting processes, waterjetting, and wet abrasive blasting.

The art of maintaining economic prosperity while meeting environmental regulations is one of the most important keys to success. Panel discussions will allow time for brainstorming and questions and answers from the audience. Demonstrations will give attendees a first-hand look at the latest and best available technology.

The workshops will focus on Gulf Coast shipyards, boat yards, and the ship repair industry. Not only for marine, but also for offshore, highways, bridges, dams and petrochemical industries or environmental engineering, these workshops will provide you with the skills you need for compliance assistance, pollution prevention, and interpreting new trends with help for TNRCC and LADEQ.

or more information, see the "Calendar of ents" on page 20.



### Welcome WJTA New Members

#### Corporate

#### National Gasket

Conover Able Jr. Gary Able 3802 Leeland Street Houston, TX 77003 Phone: (713)222-0220

Fax: (713)222-0272

#### Power Jet Systems Ltd.

Brett Cooper David Hornby Allison Black 34 Churchill Way Lomeshaye Ind. Estate Nelson, Lancashire BB9 55P United Kingdom Phone: [44](1282)61996 Fax: [44](1282)611878

#### Individual

#### Geoff Cohen

Pulse Digital Media Corporation 4708 Commercial Street Vancouver, BC V5N 4G6 Canada

Phone: (604)961-4071 Fax: (604)709-9968

#### Titus Garnett

All American Waterjet Co. Inc. 8120 Industrial Way Covington, GA 30014 Phone: (770)788-6777 Fax: (770)788-6644

#### Grant Gillette

Nifty-Bar, Inc. 450 Whitney Road Penfield, NY 14526 Phone: (716)381-0450

Fax: (716)381-4712

#### Calendar Of Events

#### MAY 9 AND MAY 17, 2000

Clean Water-Safe Harbor workshops will take place May 9, 2000, in Houston, Texas, and May 17, 2000, in Louisiana. For details contact: Sue Phillips, TNRCC, (512)239-6327, www.tnrcc.state.tx.us (Austin, TX) or Dr. Lydia Frenzel, Advisory Council, info@advisorycouncil.org, www.advisorycouncil.org or Louisiana Department of Environmental Quality, www.deg.state.la.us

#### **SEPTEMBER 6-8, 2000**

15th International Conference on Jetting Technology, Ronneby, Sweden. This Conference provides the forum to present and discuss the many industrial applications of jetting technology, the very latest in research and development, and the new issues and challenges for suppliers and users. For further information, please contact: Loma Brooker, Conference Organizer, BHR Group Limited, The Fluid Engineering Centre, Cranfield, Bedfordshire MK43 0AJ, UK, telephone: [44](0)1234 750422, fax: [44](0)1234 750074, email: [brooker@thrgroup.co.uk]

#### OCTOBER 9-11, 2000

The CMTE with its co-hosts the Australian High Pressure Water Jetting Association (AUSJET) and The Water Jet Technology Society of Japan (WJTSJ) are hosting the 6th Pacific Rim International Conference on Water Jetting Technology in Sydney, Australia.

The Conference will focus on the development and implementation of new technologies that contribute to improved productivity, health and safety in the waterjetting industry.

For more information contact: Water Jetting Technology Conference, c/o CMTE, PO Box 883, Kenmore Q 4069, telephone: +61 7 3212 4420, fax: +61 7 3212 4683, email: cmte@cat.csiro.au, web site: www.cmte.org.au/hews/ waterjet.html

#### CORRECTION/REMINDER

The recent cover letter forwarded to you along with the new 2000 WJTA Membership Directory incorrectly referred to the 2001 WJTA Conference year as 2000. Our apologies for the error.

The correct date is August 18-21, 2001!

Plan now to attend the 2001 American Waterjet Conference, August 18-21, 2001, at the Hyatt Regency Hotel in Minneapolis, Minnesota.

Watch for the June issue of Jet News for details!

## For the highest quality valves, fittings and tubing . .



## that will reduce your waterjet costs, there's only

When you "turn up the pressure" on your waterjet system, you need to know you're working with the highest quality, most dependable fluid products. And in today's competitive environment you need to save money wherever possible. To do both, you need High Pressure Equipment Company.

Our ISO 9001 certified design and manufacturing operations are part of a quality focus that has helped us gain the trust of many new customers. And our on-time delivery has made us an integral part of our customers inventory reduction efforts.

We stock an extensive line of valves, fittings and tubing in pressures ranging from 10,000 psi to 150,000 psi to satisfy your waterjet application. In addition, our technical staff is available to answer questions and custom design a solution to your problem.

There is a choice in high pressure valves, fittings and tubing ... HiP. To find out more, give us a call at 800-289-7447.

> High Pressure Equipment Company

P.O. Box 8248, 1222 Linden Avenue Erie, Pennsylvania 16505 U.S.A. Phone: (814) 838-2028 + 800-289-7447 Fax: (814) 838-6075 E-Mait: sales@highpressure.com Web Site: www.highpressure.com

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