

Vacuum Excavator Maintenance



Some departments of transportation (DOTs) specify vacuum excavation on road construction jobs to expose buried utility lines. The Vactor HXX uses high-pressure water to loosen soil, and the residual spoils are extracted directly into the debris tank. *See article on page 2.*

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“Keeping your vacuum excavator in top working order will lead to longer life, higher levels of productivity and better retained value,” says Ben Schmitt, product manager at Vactor Manufacturing, a leading provider of vacuum excavation equipment used by contractors and municipalities across the country for non-destructive digging in a wide range of applications.

According to Schmitt, there are slight modifications in maintenance between the two forms of vacuum excavation — air and hydro. Air vacuum excavators use compressed air to loosen the soil and positive displacement blowers to vacuum the spoils into a tank. Hydro vacuum excavators use high-pressure water to loosen soils, and the residual slurry spoils are easily extracted into the debris tank.

“Air vacuum excavators will need to have the compressor oil checked and changed according to the manufacturer’s manual,” Schmitt says. “Hydro-excavation trucks require maintenance of the water pump system.”

Major Check Points

Maintenance items can vary from daily checks of hoses, drain points and oil levels, to semi-annual inspections of probes, sensors and bolts.

“To determine your maintenance regimen, start with the operator’s manual that each manufacturer provides,” Schmitt says. “Each moving joint needs to be periodically greased to prevent binding. Wear items—such as vacuum hoses and tubes—require frequent inspection

due to the highly abrasive nature of vacuum excavation.”

According to Schmitt, it’s crucial to conduct daily checks of any components that might impact the safety of the vacuum excavator if compromised. “Inspect guards and vacuum protection devices before using the equipment,” he says.

Hydraulic System

Vacuum excavators rely on hydraulics to power the moving parts, so a clean and well-maintained hydraulic system is essential to keep the equipment operating properly.

Filtration System

With both air vacuum excavators and hydro-excavators, the filtration system should always be inspected and cleaned prior to – and at the completion of – each shift. This will prolong the life of the components and ensure proper protection of the vacuum source.

“Filters should be inspected, cleaned and replaced to protect foreign matter from entering and damaging the blower lobes, which operate on tight tolerances,” Schmitt says. “Handguns and water lances should also be inspected to ensure they are in proper and safe working order.”

Any abuse on the filtration system will allow material to carry over through the blower, which reduces blower performance. Schmitt says changing the filters per the manufacturer’s recommendations is key to a long lasting vacuum excavator. “Additionally, follow your manufacturer’s recommendations for oil changes and greasing,” he says.



Hoses and fittings should be inspected on a daily basis.



The handguns and water lances on a hydro excavator should be inspected to ensure they are in proper and safe working order.



Maintenance items vary from daily checks of drain points, hoses and oil levels, to semi-annual inspections of probes, sensors and bolts. Each manufacturer will provide a comprehensive list of recommended scheduled maintenance.

Maintenance Timetables

As with other equipment, vacuum excavators follow a timetable for routine maintenance. “Your product supplier should provide you with a

(continued on page 4)

AUTOMATED SHELL SIDE CLEANING

“

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- Andrew Dobson  **VEOLIA**

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Updated Spanish-Language Translation of Orange Book Released

Nueva Traducción Española de Prácticas Recomendadas

WJTA-IMCA's *Recommended Practices for the Use of High Pressure Waterjetting Equipment*, 5th Edition, has received its Spanish-language translation—*Prácticas Recomendadas Para el Uso de Equipos de Chorro de Agua a Alta Presión*. The new edition contains all the updates and revisions of the English-language 5th edition, including the new and expanded recommendations on color coding, design criteria, estab-

lishment of a hydroblasting zone, hose inspections and testing, safety shrouds, and more.

The new translated manual is ideal for sharing the safety recommendations of WJTA-IMCA with Spanish-speaking employees, colleagues, and customers.

The new 5th edition is in stock now. Place your order online through

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Vacuum Excavation Maintenance, from page 2

comprehensive list of recommended scheduled maintenance and operator and safety manuals tailored to your machine," Schmitt says.

Contractors should always refer to the operator's manual for proper maintenance intervals. Seals, hoses, filters and all safety devices should be checked daily, prior to each shift.

Product Support

"The same team that aided in the buying process can be a great resource in after-sale needs like service and maintenance," Schmitt says.

He emphasizes the importance of selecting an equipment manufacturer that offers training and 24-hour service support. "Contractors need peace of mind that the equipment will be adequately supported by the manufacturer," Schmitt says.

For example, Schmitt says that Vactor Manufacturing is supported by FS Solutions service centers across the United States. These centers provide industry expertise and a unique breadth of environmental cleaning equipment, parts, rental, service and training to meet the needs of vacuum

excavation contractors. "FS Solutions locations are staffed with skilled, factory-trained technicians and provide a range of services and product offerings, including high-performance parts for most makes and models of vacuum excavators, and a large selection of refurbished vacuum excavation trucks," he says.

Quick parts availability and access to technical support is essential to keep both the contractor and the machine productive on the job.

For more information, visit: www.federalsignal.com. ■



The air filtration system needs to be checked and maintained to protect the vacuum system and prolong the life of the components.



Keeping the vacuum excavator in top working order will lead to longer life, higher levels of productivity and better retained value.



The equipment dealer can provide ongoing service, factory-trained technicians and OEM replacement parts required to keep vacuum excavators operating at peak performance.

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StoneAge Celebrates 35 Years of Engineering the Power of Water

Waterblast equipment manufacturer's guiding principles of practical engineering and dedicated service drive success in industrial cleaning's automation age

With many plants taking active steps to implement “hands-free” policy, it is clear that the automated waterblasting movement has finally taken hold in the industrial cleaning world. While the dangers of manipulating high pressure water have long been recognized, necessary technology has not always been accessible or affordable and the movement was slow to spread.

Over decades, more and better tools and equipment for cleaning industrial apparatus have become available. The waterblast industry has at last reached a turning point where the availability and economic feasibility of safer alternatives is changing the way work is done. Industrial cleaning contractors are competing to deliver results that are productive and cost-efficient, restoring revenue-producing equipment back online at maximum capacity – quickly and safely. The right tooling and equipment is key to achieving effective results for a successful turnaround. As a leading manufacturer of waterblast tools and equipment, StoneAge is responding quickly to meet the needs of an industry evolving faster than ever before.

StoneAge began advancing the industry in the early days of waterblasting with the introduction of rotary coupling technology. “One of the key things that the waterblast industry was missing,” recalls John Wolgamott, founding engineer and company chairman, “was a useful water swivel.” The rotation of waterjets for effective cleaning coverage was typically performed manually by twisting the hose back and forth. Wolgamott and StoneAge co-founder, Jerry Zink, first invented the rotary swivel as a component for water-assisted rock drill-

ing for the mining industry. The powerful technology was adapted to industrial cleaning after a demonstration proved effective in removing hardened plastic from heat exchanger tubes.

Controlled rotation tools for pipe and vessel cleaning followed, along with a rotary rigid lancing system for cleaning tube bundles that was controlled remotely. One of the first introductions of “automation” to the waterblast industry, the Rigid Lance Machine, was met skeptically because the cost of a mechanized system to do the manual work of twisting hose seemed too high at the time. Eventually, people began to see its merit. “It could do the job not only safer because it put the man away from the splashback and got the jet out of his hands, but it was more efficient,” says Wolgamott.

Ironically, one obstacle to providing technological alternatives for safer waterblasting has been technology itself. Computerized, robotic, or otherwise automated solutions often require a larger initial capital investment but are also more complicated to set up and operate. Moreover, the industrial cleaning environment is highly variable and presents many constraints to applying one piece of equipment to multiple purposes. According to Doug Wright, chief engineer at StoneAge, “Every plant has different applications and a lot of different ways to use waterjets. Even in sister plants that are very similar, there’s going to be differences. I see the operators interacting



StoneAge co-founder, Jerry Zink, using the original rotary “water drill.”

with the equipment being the key.”

If achieving proper balance between performance, operational safety and the ease and flexibility of operation determines the usefulness of waterblasting equipment, StoneAge’s long-time engineering focus and depth of experience afford them a level of expertise that’s hard to match. Engineers continue to devote much of their energy to researching the basic science of what makes an efficient jetting system—such as friction losses, jet cohesiveness and standoff distance—all the way up to the practical applications. Bill Shires has worked at StoneAge for almost twenty years and is the acting director of business development. He has seen the rewards of concentrated effort. “Developing these tools and working with people around the world is what we do every day,” says Shires. “And because we’re not just centered on one geographical area that has a particular way of doing things, we are able to learn from the best practices of contractors in every country in the world.”

StoneAge works at building mutually beneficial relationships with plants

(continued on page 20)



The New Age of Automation

As a leader in the industrial cleaning industry for over 70 years, HydroChem has made it our responsibility to bring the future to you. Last year we made a pledge to be 100% automated by the end of 2014 and we are moving in that direction thanks to a number of customers who see the value in going this direction. With hundreds of automated tools and robotics at our disposal, a state-of-the-art corporate technology center and distribution offices across the United States, we are getting closer to achieving our goal.

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Fall Protection – The Difference Between Life and Death

Safety continues to be a major concern in the hydroblasting industry. With the pressure reaction of turning the stream on and off, possible surges in the hose line, and workers being on raised platforms, one important area of concern for employers is fall protection.

Safe work practices and ongoing training are crucial when protecting waterjetting workers. By knowing what equipment is needed on the job site, providing that equipment to the crew, and training them how to use it, employers can help prevent injuries and deaths.

The first step is to identify fall hazards and decide how to provide the best protection. There are many ways to protect your workers from falls, including using guardrail systems, safety net systems, and personal fall arrest systems (PFASs).

The basics of every PFAS can be described as the ABCs of fall arrest:

A – Anchorage: A secure point of attachment (structure) for the fall arrest system.

B – Body Support: Full body harnesses provide a connection point on the worker for the personal fall arrest system.

C – Connectors: Devices used to connect the worker's full body har-



ness to the anchorage system (e.g. shock absorbing lanyard, self-retracting lifeline, etc.). Self-retracting lifelines (SRLs) keep you safe at any height. Most SRLs stop falls within two feet. You don't have to calculate your fall distance when using an SRL, as opposed to a lanyard.

D – Descent/Rescue: Rescue and retrieval of a fallen worker is a required component of any fall protection program.

Individually, these components won't provide protection from a fall. However, when they're used properly and in conjunction with each other, they form a PFAS that becomes vitally important for safety on the job site.

In addition, fall protection equipment must be inspected regularly and taken out of service if it shows signs of wear, or if it has been involved in a fall. Using equipment past its useful life is a potentially deadly mistake.

A few signs to look for are fraying, cuts,

and deformed metal hardware. Exposure to heat and chemicals can cause additional damage, as well.

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Safety Corner



By Luis Garcia, President, Gulf Coast Region, Northern Safety & Industrial, and a member of the WJTA-IMCA Board of Directors.

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For more information, call (800)922-8553, email techsupport@northernsafety.com, or visit www.northernsafety.com.

Comments Solicited on Improvements to Recommended Practices

Comments are solicited regarding improvements to the WJTA-IMCA publications, Recommended Practices for the Use of High Pressure Waterjetting Equipment and Recommended Practices for the Use of Industrial Vacuum Equipment. While both publications are reviewed periodically at the WJTA-IMCA conferences and throughout the year, your comments and suggestions for improving the publications are invited and welcome anytime.

Please address your comments and suggestions to: WJTA-IMCA, 906 Olive Street, Suite 1200, St. Louis, MO 63101-1448, phone: (314)241-1445, fax: (314) 241-1449, email: wjta-imca@wjta.org. Please specify which publication you are commenting on.

Jetstream's hands-free waterblast solutions deliver improved operator safety, productivity


Provides broadest offering of hands-free cleaning solutions and training in the industry

Jetstream of Houston, LLP, a leading manufacturer of industrial high-pressure waterblasting equipment, parts and accessories, continues to invest and grow in providing industrial cleaning contractors with the most productive hands-free solutions available. By partnering with the leading manufacturers of automated tools and robotics – including Aquajet Systems, Peinemann, StoneAge and Terydon, Jetstream offers the industry's best total equipment solutions for such hands-free, high-pressure waterblasting applications as hydrodemolition, pipe cleaning, surface cleaning and preparation, tank and vessel cleaning and tube cleaning.

"These strategic partnerships enhance Jetstream's product offering and provide customers with greater access to category-leading specialty equipment and accessories that enhance operator safety and productivity and help contractors perform their jobs more profitably," said Joe Varca, business unit director at Jetstream. "The collaboration with these well-known automation partners, combined with our nine FS Solutions authorized retail support and rental centers across the United States, enables Jetstream to better meet our customers' needs for total hands-free solutions, including the purchase and/or rental of Jetstream waterblasting equipment, parts, accessories, training and service support."


With the goal of reducing the number of workplace fatalities and injuries related to improper use of high-pressure waterblasting and providing a safer environment for equipment operators, Jetstream is developing and delivering hands-free waterblasting solutions and training to industrial cleaning contractors. As part of the initiative, Jetstream's experts consult with customers, visiting job sites to identify the right hands-free waterblasting solutions for the location.

"Jetstream and FS Solutions can demo, sell and rent the broadest offering of hands-free cleaning solutions in the industry, including automated and robotic tools and accessories." Varca said.



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Jetstream's Hands-free Waterblast Solutions

Jetstream manufactures high-pressure waterblasting equipment operated at pressures up to 40,000 psi for a wide range of applications, including industrial cleaning and surface preparation. Backed by strong after sales service and support, Jetstream product offerings include a complete line of skid- and trailer-mounted pump units, control guns, valves, hoses, replacement parts and nozzles.



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Letter to the Editor

Safety by default is the practice of certain protocol we all follow in the face of a job: Personal Protective Equipment, designated danger zones, and even environmentally safe practices. Safety practices make us aware of our surroundings, promote awareness of inherent concerns in our industry, and educate us on how to prepare for hazardous encounters. Without safety practices, the very value of and respect for human life would be negligible at best. Hence, safety is a requirement, an enforced practice, a “no option” mandate.

But how safe is “safety?” Let us look closer at the hands free surge in our waterjetting industry today. Hands free, by intent, is an absolute solution to removing the end user from potential injury by high pressure water. Take the tool out of his hand, and the “potential of injury” is removed.

This notion echoes the old cliché “You can’t see the forest because of the trees.” As a mandate, “hands free” certainly reduces risk of cuts to the operator—particularly in flex lancing areas. No hands on the lance, no over-travel on withdrawal, no cuts from leaks and bursts of fatigued flex lance. End of story. Or is it? Consider a live lance fed into and out of a tube by machine (hands free), and controlled by means of a pendant type control station. Tools exist in the market today that perform this task in a variety of ways, and certainly take the lance out of the operator’s hands. Manufacturers have made this a “practice of safety” for years. Unfortunately, this practice has ignored the presence of high pressures after the flex lance has withdrawn from the tube. Current practice accepts the lance, energized with high pressure water, to lay randomly about the work area uncontrolled, uncontained, and unrestricted – even to the point of

being unnoticed by the operator as he focuses on the task at hand. These chaotic conditions allow for the hose to meander about the operator, potentially entangling everything in the work area. Of course, common safety practice is to incorporate another worker to manually control the flow of the live hose in its desired path, at risk of holding high pressure lance in his hand, thus recreating the same hazard. Remarkable!

The forest continues as this environment increases the risk of slips, trips, and falls. Statistics from the Occupational Safety and Health Administration (Department of Labor) indicate:

- 15% of all accidental deaths in the workplace are caused by slips trips and falls
- \$70,000,000,000 estimated annual cost of worker’s compensation and medical bills are associated with slips trips and falls
- 33% of all work injuries result from slips trips and falls – the single most common injury

So what is the solution? The quest begins to find a safe tool that takes the operator out of harm’s way; away from high pressure water completely, even from air lines, hydraulic lines, and electrical lines; even from slips, trips, and falls.


Terydon, Inc. has committed its focus to creating a safe tool, more importantly a safe system. The patent-pending wireless/lunchbox technology incorporates simple wireless tablet control with sophisticated inherent features, enabling the operator to remain safe at all times. The wireless control removes ALL hoses from the operator’s work space, hence greatly reducing the chance of slips, trips, falls, AND high pressure water trauma.

Moreover, Terydon, Inc. has mated the lunchbox with truly safe flex lancing systems, the SHR-39 and NHR-1000. Both systems provide “hands free” controlled feed of flex lances with complete hose containment. That means “zero” chance of operator trauma due to high pressure water, and nearly zero chance of injury due to slips, trips, and falls. Quite simply, with no hose on the ground – no operator danger is imminent. Again, complete high pressure lance containment. Productivity advantages of controlled feed, controlled rotation, and accurate digital feedback to a tablet-sized data logging data system, are a few of the enhancements to these truly SAFE tools.

The inherent safety features of the tablet control system include a fail-safe deadman switch, strategically engaged by the most important part of the operator’s hand: his/her thumb. The company is so convinced of the safety that it has incorporated the control into its renowned Jack Track abrasive waterjet cutting system. Already known as the best system in the world, the Jack Track system is now truly the simplest, yet most advanced, and safest available. Patent pending features include gas sensing, free fall automatic shutdown, and of course, the deadman switch. Digital feedback, data collection, logging, and reporting are included as conveniences to promote productivity, cost/performance evaluation, and customer relations.

Terydon, Inc. tablet-based technology, as user friendly as a common touchscreen cell phone, accomplishes the three main objectives in our industrial waterjetting world: cost efficiency, productivity and foremost, a safe operator.

Terry Gromes, Terydon, Inc.
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StoneAge Bundle Blaster™ Portable Shell Side Heat Exchanger Cleaning Systems for Fall Turnaround Season

Industrial cleaning contractors regularly faced with difficult applications in the field know that challenge drives innovation. They must deliver results that are productive and cost-efficient, restoring revenue producing equipment back online at maximum capacity – quickly and safely. The right tooling and equipment is key to achieving effective solutions for a successful turnaround.

Cleaning large tube bundles, such as those found in industrial heat exchangers and evaporators, is one such application where opportunities for improved safety and efficiency have been recognized. Traditional methods of external bundle cleaning fall along the opposite extremes of dangerous manual shotgun blasting or expensive robotic trailer-mounted systems. To better meet the demands of these types of jobs, environmental services leader Veolia presented StoneAge with a design challenge to build an automated system for high pressure waterjetting heat exchangers in a wash bay environment. “We asked StoneAge to design a fully automated system that removed operators from high-risk activities, improved productivity, and increased mobility while demonstrating financial savings by reducing downtime,” states Andrew Dobson, regional business manager with Veolia’s UK industrial services operation.

Building on industry-proven Blastrack™ drive and rail technology, StoneAge answered Veolia’s challenge with the Bundle Blaster, a portable yet powerful automated system engineered specifically for external heat exchanger cleaning. “When designing the Bundle Blaster we had several goals: maximum cleaning power, long-term durability, easy portability, and affordable price,” describes Jeff Hensley, product manager at StoneAge.

“The Bundle Blaster was designed to be heavy-duty enough for industrial cleaning applications, yet it only costs a quarter to a third as much as other tube bundle cleaners.”

The Bundle Blaster system consists of a rotary package with a cleaning head that’s driven back and forth along a slotted rail supported by a sturdy, adjustable frame. A bundle is set on hydraulic rollers beneath the rail and is rotated as the cleaning head makes its passes from above.

The rotary package can handle anywhere from 2,000 to 40,000 psi and up to 110 gallons of flow. There are several head options available with one to four jets. Fewer jets provide more hard-hitting power, while more jets deliver a wider cleaning path. The basic simplicity of this modular design allows for easy transport, setup and maneuverability at the job site yet the Bundle Blaster is strong enough to easily withstand the 500 pounds of force that can be generated during shell side cleaning. Operation of the Bundle Blaster is controlled remotely, allowing the operator to remain safely outside of the blast zone while maintaining precise control over both the traverse speed of the tractor and the rotation speed of the head.

When asked if he could squeeze the work of a 10-day shutdown into 6 days, Shawn Barker, owner and operator of Shawn Barker Construction in Trona, CA, rented two Bundle Blaster units from the FS Solutions rental fleet. The operation – cleaning 16 tube bundles measuring 25 feet in length and 5 feet in diameter – was completed in 5 days with less equipment than had been previously required. “These are more portable units,”



Bundle Blaster automated system for external cleaning of heat exchangers and tube bundles.

Barker reports. “The setup time was a lot better and you can actually move them around a lot better. With the rollers, you can have one crane doing the work of two, because one crane usually has to just sit there and roll the bundles.”

“The Bundle Blaster has been within our business for 24 months,” attests Andrew Dobson of Veolia. “It has proven to meet the original design criteria and offers reliability and low maintenance providing minimum downtime to our clients. This equipment operates in the most difficult conditions predominantly on petrochemical refineries running consecutive shift patterns on time driven critical projects and performs consistently to a high standard without failure.”

StoneAge is offering a special promotion on the sale of Bundle Blaster shell side cleaning systems. Orders placed between August 1 and October 31, 2014 will receive free standard worldwide shipping (some restrictions apply – contact local StoneAge dealer for details). Visit the StoneAge waterblast tools website to learn more: <http://www.stoneagetools.com/bundle-blaster>.

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Hammelmann: A Powerful Presence in the Worldwide High Pressure Waterjetting Industry

By Adia Walker

In the Beginning

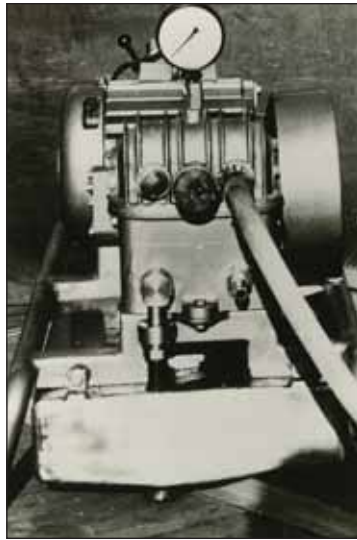
Sixty five years ago, in the town of Oelde, Germany, Paul Hammelmann embarked on a business venture that would change the lives of many throughout the world. He named his company Hammelmann, and when it started out in 1949, it was a light engineering concern, manufacturing construction and agricultural equipment. By 1958 production had switched to pumps and water blasting tools catering to the industrial cleaning sector. Paul Hammelmann eventually built his company into an internationally known manufacturer of high pressure products and systems, remaining actively engaged in the firm right up to his death in 1995.

From the beginning, it was a family business, with Paul's wife Gertrud handling the bookkeeping and other clerical functions. In 1985 their daughter Gisela took over the commercial management of the company. When the founder died, Gisela's husband, Hermann Frye-Hammelmann, took over the technical management and a couple of years later the youngest daughter Petra joined the company as controller and human resources manager. In 2004 the company became a fully owned member of the Interpump Group, Italy. Today, Hammelmann has over 300 employees that work in a new state-of-the-art facility in Oelde.

Wolfgang Leifeld, General Manager, Hammelmann

In 1963, Wolfgang Leifeld began working as an apprentice for Hammelmann. Soon he became a key player, working as sales manager for the growing company. Leifeld has remained a company leader for the past 51 years; in his own words, he "never had a reason to go somewhere else."

Over the years, Leifeld watched the industry grow from its infancy to what it is today. "When I started in 1963 the maximum pressure was 350 bar (5,000 psi)," says Leifeld. "When I



One of the first pumps manufactured by Hammelmann for the industrial cleaning market.



Wolfgang Leifeld presented with his "50 years" of service award. Paul Hammelmann is pictured in the background.

Hammelmann's Major Milestones

1958 - The idea of using water pressurized by a plunger pump as an industrial cleaning agent was the foundation of the business as we know it today. The DP60 was the first pump manufactured. It had an operating pressure of 60 bar (900 psi) with a flow rate of 60 l/min. (16 gpm) and was sold to the paper industry for general cleaning.

The 60s opened up a host of opportunities in many areas. Armed with ideas that would transform into practical solutions, Hammelmann entered new markets and organized an international sales and service network.

1969 - The Wilton shipyard in Rotterdam was the setting for a very special premiere. For the first time ever, a ship was high pressure water blasted by a semiautomatic system, the Hammelmann DockMaster.

1974 - No breakthrough revolutionized high pressure pump technology more than the development of the "Friction free plunger seal" in combination with a "stress reversal free" pump head. This metallic seal achieved for the first time relatively long component life at ultra-high operating pressures. Another example of Hammelmann ideology was the introduction of "Small footprint" vertical pump design.

1981 - The first pumps were supplied to manufacturers of concrete demolition robots. This opened up a whole new market for a wide range of accessories in the concrete renovation industry.

1982 - The AquaBlast surface blaster added a completely new perspective to the use of high pressure water. Ease of handling and high rates of surface treatment soon made it an irreplaceable tool in a whole range of industrial applications.

1983 - Extending the product range to include five-cylinder plunger pumps enabled the company to offer higher flow rates with reduced pulsation.

1984 - With the introduction of the RotorJet, Hammelmann revolutionized manual water blasting.

1985 - The first 2,000 bar (30,000 psi) pumps were built and introduced into the waterjetting market.

(continued on page 30)

(continued on page 30)



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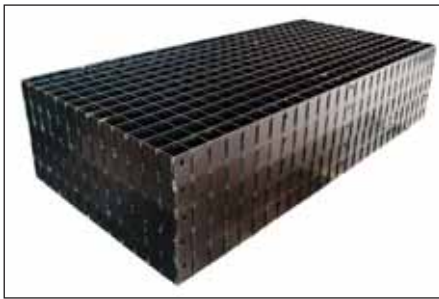
Booth #910

Which Waterjet Support Option is Best for My Application?

Excerpted with permission from the *WARDJet Newsletter*, February 2014

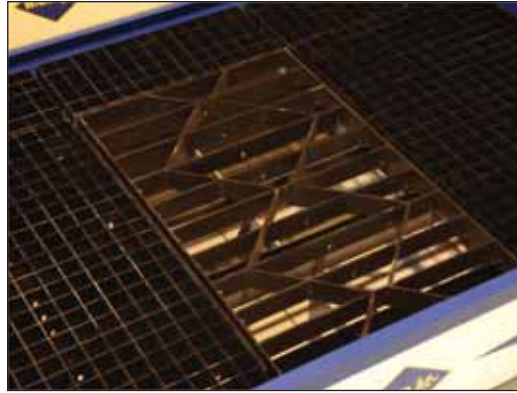
Your waterjet cutting is only as good as the supports holding your material. Sturdy, rigid supports provide the ideal foundation for accurate and repeatable cutting. In the waterjet industry, there are a number of support options, including Job Shop Grates™, slats, water bricks, heavy duty grates and custom fixtures. So how do you know which grating option is the best for your application? Following is information about each of the support systems and their recommended applications.

Job Shop Grates™



WARDJet's Job Shop Grates provide the ideal platform for cutting and clamping on your waterjet.

WARDJet Job Shop Grates are a versatile, reliable support system and are ideal for cutting a wide variety of materials. Waterjet owners are able to easily clamp a part anywhere on the table with Job Shop Grates, even while another part is being cut. Job Shop Grates also provide a flat surface parallel to the travel of the cutting head over the entire cutting envelope. Job Shop Grates employ 16 gauge steel which reduces horizontal surface that could cause kick-back as the stream passes over the support. Designed in a grid structure with 5" of depth, Job Shop Grates offer a durable surface that can be used in any location on the table and then rotated and flipped over



Waterjet set up with both Job Shop Grates and heavy duty grates for cutting versatility.

for reuse before needing any replacement. Job Shop Grates have a modular design to allow for multiple grating options on one waterjet table. WARDJet is able to design custom Job Shop Grates to fit any size cutting table and any brand waterjet.

Tips for cutting with Job Shop Grates:

- A wide variety of materials can be cut successfully on Job Shop Grates. If you often cut large parts at 2-3 ipm or less, you might consider including a section of Heavy Duty Grates in your tank to prevent cutting through a section of grates.
- If you cut materials in very small sizes and you don't want to tab your parts, you might consider using water bricks on top of the Job Shop Grates to prevent your material from falling through the openings in the grates.

After many years of practical experience in waterjet cutting, WARDJet developed Job Shop Grates as the ideal support solution. Owners see an improvement in the final cost per part as well as an increase in cutting speed by using Job Shop Grates, therefore improving profitability.

Slats

Slat supports are standard in most waterjet manufacturer's machines. WARDJet also offers slats as a support option, but produces all standard abrasive machines with Job Shop Grates. Slats are designed to be removable so that they can be replaced individually when worn and also to allow for adjustable spacing. Since slats are not often permanently secured in the support structure, it can be difficult to keep them flat relative to each other and they may vibrate or resonate independently. Even when securely clamping material to slats, vibration could cause issues like inconsistent cuts, scarring, or frosting which may force the operator to reduce the cutting speed. Sacrificial material can be used to deflect the jet and prevent scarring and frosting of material if necessary. To maximize the life of your slats, cut in different areas of the waterjet table to spread the wear around.

Tips for cutting with Slats:



Slats

- Waterjet owners cutting with slats often clamp their material to the front edge of the tank as this should not be vibrating and should hold the part still. Be aware if the tank wall is not sturdy and the water is raised during cutting, it could pull the part forward and affect the geometry of the finished cut part.

(continued on page 39)

NLB 225 Series: the most flexibility yet in a convertible water jet unit



225 Series
up to 300 hp



With a simple conversion you can use the same pump unit for many different jobs.

Choose from 38 combinations of pressure, flow and horsepower

If you need one water jet pump unit to handle many different jobs, you can't beat the NLB 225 Series. Its seven convertible models cover a pressure range from 4,000 to 40,000 psi, with flows from 6 to 82 gpm. You also get a choice of diesel engines: 200, 235, 275, or 300 hp.

Built on the same platform as the NLB 125, 325, 605, and 1005 Series, these workhorse units have all the same advantages: reliability, fast conversion, easy maintenance, and low operating costs.

With the NLB 225 Series, you can be more versatile — and more productive. For details, visit www.nlbcorp.com, or call at 1-800-441-5059.

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WJTA-IMCA Expo

Booth #507

Visit WARDJet for the Second Annual Open House

On Wednesday, October 8, 2014, WARDJet is hosting the second annual Open House event to showcase the latest developments in waterjet cutting. Tour the recently updated production floor and get a behind the scenes look at both custom and standard systems as they are assembled in the Tallmadge, Ohio, facility. Lunch will be included for all Open House guests, and special guests from Hypertherm, Motoman, and others will be on hand for one-on-one discussions.

WARDJet will also be announcing the release of the WARDKit line of waterjets, which start at \$65,000. Featuring the same high quality construction and engineering that makes the Emerald Series regularly score with the best tolerances and accuracies, the WARDKit is an affordable option for those looking to add a waterjet to their shop. Available in universally ideal sizes like 5' x 5', 5' x 10' and 2' x 2' ft. sign, the WARDKit offers a small footprint with extraordinary flexibility. What makes the WARDKit unique is that you build it yourself using easy instructions following training at WARDJet facilities.

During the October Open House, WARDJet will have stations set up so that visitors can see how simple it is to

assemble their own waterjet. There will also be a special show savings for those who purchase a WARDKit during the Open House – \$1,000 towards waterjet consumables purchased through WARDJet.



Guests at WardJet's 2013 Open House enjoyed demonstrations from the Multipurpose Abrasive Waterjet Robot.

Check out the latest and greatest advancements in waterjet cutting, or get more information about the WARDKit and place an order. The team at WARDJet is looking forward to meeting new contacts as well as reconnecting with previous customers at the October 2014 Open House. Start planning your trip to Tallmadge, Ohio, for October 8th today! Check www.wardjet.com for more information in the upcoming weeks and to register to attend.

Jet Edge Named Finalist for 2014 Minnesota Manufacturing Awards

Minnesota Business magazine recently named Jet Edge a finalist for the 2014 Minnesota Manufacturing Awards.

Jet Edge is one of three manufacturers contending for the Best in Class: Small Company award, which recognizes a small company (1-50 employees) for overall excellence in the manufacturing industry in Minnesota. Award winners will be announced at a Sept. 23 ceremony in Minneapolis and finalists will be featured in the October issue of Minnesota Business.



Based in St. Michael, MN, Jet Edge is celebrating its 30th anniversary in 2014.

For more information, visit www.jetedge.com, e-mail sales@jetedge.com or call 1-800-JET-EDGE or +1 763-497-8700.



OPEN HOUSE



October 8, 2014
TALLMADGE OHIO

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Robotic Waterjet Demo • Meet the WARDJet Team

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Booth #501

and contractors by openly offering their high level of expertise coupled with service that is unsurpassed in the industry. StoneAge's guiding philosophy that every employee is an important member of the customer service team is evidenced by their commitment to carrying a large amount of stock, meaning there are tools and spare parts on the shelf ready to ship same day. StoneAge offers live, knowledgeable technical support during business hours and makes their engineering staff readily available to customers. Richard Bombard, account manager at PSC, a leading national industrial cleaning contractor, describes the benefits of partnering with the manufacturer of his equipment: "My customers are very happy. When we're doing research and development along with StoneAge, they think it's a big plus to have engineers that can get out in the field and work right along with us."

Unsurprisingly, StoneAge's customer-centric focus allows them opportunities for further improvement by developing higher caliber tools that solve real-world challenges and address true to scope requirements. "StoneAge's equipment operates in the most difficult conditions, predominantly in petrochemical refineries running consecutive shift patterns on time-driven critical projects and performs consistently to a high standard without failure," reports Andrew Dobson of Veolia. As regional business manager for industrial services in Veolia's UK division, Dobson has partnered with StoneAge on several projects, resulting in the development of new technologies engineered specifically for the distinct requirements of the service provider's industrial customers. "Veolia recognizes StoneAge as a long term business partner."

Terry Walters, owner of Innovative Cleaning Solutions in Houston, TX, has been working in the waterblast industry for over 30 years and is devoted to improving worker safety through adopting zero manipulation of high pressure water practices. His goal is to help "create a culture of giving customers what they're paying for and giving employees a safe, competitive living. That therefore requires us to have people like you [StoneAge] supplying us quality equipment." Walters recalls far too many stories of work-related injury. "With waterblasting, if it's not really built very well, even with your best efforts something can fail and you or somebody will get hurt. Just the act of pressurizing a piece of waterblast equipment can injure somebody. I vote with my dollars. It either works and I buy it or it doesn't work and I don't

buy it and that's always been a good relationship with StoneAge."

StoneAge rotary tools are utilized for waterjet delivery by equipment manufacturers throughout the industry. For specific applications, StoneAge offers industrial cleaning solutions built around our core technologies. StoneAge automated equipment products include:

Rigid Lance Machine

In the 1980's, StoneAge Rigid Lance Machines were among the earliest introductions of automated equipment in waterblasting. Since their release, they have become the industry standard for both horizontal and vertical rigid lance cleaning of heat exchanger tube IDs, offering rotary cleaning, integrated positioning and multiple lance drive options. In addition to the safety merits of remote operation, motorized lance drive produces more efficient results since all jets can face forward to deliver the most power to target surfaces. These large systems are available with up to 60 feet of stroke and are best suited for pad operations.



Proven solution for automated rigid lance cleaning of heat exchanger tube IDs.

Bundle Blaster™

The Bundle Blaster shell side cleaning system offers a powerful and affordable automated solution for external cleaning of heat exchangers and tube bundles. Built on industry-proven Blastrack™ drive and rail technology, the Bundle Blaster adjusts to accommodate most commonly sized bundles. The entire assembly is modular and can be taken apart for easy transportation. Rotation and traverse speeds are independently remotely adjustable. This system is ideal for contractors and plants interested in low maintenance, cost-effective, easy to use equipment.

(continued on page 22)

HYDROBLASTING MADE SIMPLER AND SAFER

Tired of blown packing? Constantly replacing rupture discs? Having to work on your pump in the field?

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Booth #309

HAMMELMANN®

AutoBox™ ABX-500

The AutoBox ABX-500 is a lightweight and simple to use hose control device for hands-free cleaning operations. Any StoneAge rotary pipe or tank cleaning tool can be connected to the hose depending on the application. It accommodates a wide range of hose sizes and passes couplings up to 1.75 inches OD. The rotary tool pulls the hose forward and the AutoBox controls the forward and reverse speed for consistent feed rate and dwell time.



AutoBox ABX-500 Hands-free hose handling for pipe cleaning applications.

Boiler Tube Cleaner

StoneAge's boiler tube cleaning system is designed for safe and productive cleaning of radial tubes found in mud drums of package boilers. These tubes emerge radially from a drum in rows and are particularly challenging to clean due to their configuration and confined space entry specifications. Utilizing a Blastrack drive rail coupled with proprietary armored hose technology and a suitable rotary pipe cleaning tool, the Boiler Tube Cleaner can effectively navigate the system of tubes inside the mud drum and deliver powerful waterblasting with exceptional results. *Available in Fall of 2014!*



StoneAge Boiler Tube Cleaner safely cleans radial tubes found in mud drums of package boilers.

AutoBox ABX-2L

Following the success of the ABX-500 in larger pipe cleaning applications, the AutoBox ABX-2L is designed

for hands-free heat exchanger tube cleaning. It is intended to be used with flex lances ranging from 0.25 to 0.5 inches OD and StoneAge's Banshee line of self-rotary waterblast tools. The system is simple, reliable and portable. It can be used modularly for flex-lancing of multiple tube IDs and is easy to set up and configure to a variety of tube bundle flange types and pitch specifications. *Coming in early 2015!*



AutoBox ABX-2L Hands-free flex-lancing with Banshee rotary nozzles.

At the heart of every piece of StoneAge automated equipment is the speed-controlled swivel. "We haven't diluted ourselves by trying to manufacture pumps, fittings, dump valves, and such," states Kerry Siggins, CEO of StoneAge. "This allows us to truly be the industry specialists in tools and automated equipment."

That focus coupled with a culture of providing world-class customer service is what gives StoneAge competitive advantage. "Our customer service paired with our innovative engineering is hard to copy," continues Siggins. "We're here to solve industrial cleaning problems. As the industry changes, we too change. This push for automation adds more products to our wheelhouse, it requires us to develop new skills, but we're still hooking our products up to the end of the hose, and that's what StoneAge is recognized for. We provide hands-free solutions built around the world's best waterjet technology."



StoneAge stocks a large inventory of tools and parts for immediate shipment.

For more information, visit www.stoneagetools.com or call (970)259-2869/Toll Free (866)795-1586. ■

Hughes Pumps Helps Maintain Sri Lankan Oil Refinery

Two Hughes Pumps high-pressure waterjetting systems have recently been delivered to the Ceylon Petroleum Corporation (CEYPETCO) for use at its CEYPETCO Refinery in Sapugaskanda, Sri Lanka. The oil refinery, opened in 1969, is the country's importer, exporter, seller, supplier and distributor of petroleum products, and now processes approximately two million metric tons of light crude oil each year.

The two HPS2200 DST systems, each with a performance of 75 lpm at 1,000 bar, will be used for heavy duty waterjetting applications across the refinery site, including the descaling heat exchanger tubes, the cleaning of process lines, cleaning of tanks and general plant housekeeping.

Hughes' high pressure waterjetting technology is particularly suited to

this type of cleaning application, as it leaves a polished finish in the heat exchanger tubes making it more difficult for scale to build up. Such thorough cleaning also improves heat transfer in the heat exchangers, allowing the process to operate more efficiently and cost effectively.

High-pressure waterjets at 1,000 bar travel in excess of 400 m/sec (900 mph), which is faster than the speed of sound (Mach 1)! Impact from such a waterjet will shatter and remove the toughest scale that builds up on the inside of heat exchanger tubes, without damage to the tubes themselves.

Mechanical methods are slow and can damage the heat exchanger tubes; chemical cleaning too is slow and produces large amounts of chemical waste that requires costly disposal.



The two pump sets prior to dispatch.

UK high-pressure waterjetting/pumping systems manufacturer Hughes Pumps manufactures waterjetting pumps and equipment for sensitive cleaning applications that operate at pressures up to 2,750 bar (40,000 psi). Hughes has supplied CEYPETCO with a number of similar systems over the past 20 years.

For more information, visit www.hughes-pumps.co.uk or telephone +44 (0)1903 892358 or email sales@hughes-pumps.co.uk.



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Hughes Pumps' flange mounting option makes the pumps very simple to install and more compact than other like-for-like units, but still powerful enough for the most arduous water-jetting applications. Pumps available in 10K, 20K and 40K PSI.

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HPS650

WJTA-IMCA Expo

Exhibitors

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ANT Applied New Technologies AG	Keith Huber Corporation
Advanced Pressure Systems	LaPlace Equipment Co., Inc.
American Liquid Waste Magazine	Ledwell & Son Enterprises, Inc.
Amesbury Bandlock	Lemasa Ind. E Com. Ltda.
AquaFlow (Aqua-Dyne and Flow International)	Lianyugang Longmai Mining Co., Ltd.
Ascentium Capital LLC	Maxpro Technologies
Autoclave Engineers/Parker Hannifin	NLB Corp.
BIC Alliance	Newson Gale, Inc.
Blast Environmental & Industrial Services, Inc.	Northern Safety & Industrial
Blasters, Inc.	PSI Pressure Systems International
CESCO/Aquamiser	Parker Hannifin-EPD
CRP Industrial	Peinemann Equipment B.V.
Cat Pumps	Polston Applied Technologies
Cleaner Times/IWA	Powertrack International Inc.
D&S Professional Services	Presvac Systems
DeBusk Services Group, LLC	Ramvac Vacuum Excavators
Diesse Rubber Hoses S.p.A.	Reliable Pumps Consultants, Inc.
Dragon Products, Ltd.	Safety Lamp of Houston, Inc.
ENZ USA Inc.	SPIR STAR
ERS Industrial Cleaning Equipment/Reliant Industrial Staffing	Stewart R. Browne Manufacturing Co.
FS Solutions	StoneAge, Inc.
Fruitland Manufacturing	Stutes Enterprise Systems, Inc.
GHX Industrial, LLC	Sugino Corp.
GapVax, Inc.	Terydon, Inc.
Gardner Denver Water Jetting Systems, Inc.	The Blast Bag Company, Inc.
General Pump	Trillium Industrial Services
Giant Industries, Inc.	TurtleSkin by Warwick Mills, Inc.
Global Vacuum Systems, Inc.	US Jetting, Inc.
Guzzler Manufacturing	Udor USA
Hammelmann Corp.	Under Pressure Systems, Inc.
Heintzmann Corp.	United States Environmental Services
High Pressure Equipment Co.	Vac-Con, Inc.
Hydra-Flex, Inc.	Vac-Tron Equipment LLC
HydroChem	Vacall
Idrojet S.R.L.	Vactor Manufacturing
JGB Enterprises, Inc.	Vacuum Truck Rentals, LLC
Jack Doheny Companies, Inc.	Veolia Environmental Services
	Waterblast Technologies
	Wilco Supply, LP
	WOMA Corporation

As of 9-15-14

Live Demos



Tuesday, October 14

Waterblast Track

10:40 a.m.-11:25 a.m.	Busting Waterblast <i>Bill Shires, StoneA</i>
11:30 a.m.-12:15 p.m.	Nozzle Selection <i>Bill Shires, StoneA</i>
12:20 p.m.-1:05 p.m.	Hose Fabrication, I <i>Jeff Davis, GHX In</i>

Vacuum/HX Track

10:35 a.m.-11:35 a.m.	Hydroexcavation in <i>Neil McLean, Hydr</i>
11:40 a.m.-1:40 p.m.	Power of Vacuum <i>Phil Stein</i>
1:10 p.m.-1:40 p.m.	The Hidden Danger Vacuuming Operati <i>Mike O'Brien, New</i>

NEW: Panel Discussion

1:45 p.m.-3:00 p.m.	Hands Free Hydrob Featuring panelists Services. Moderate
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Wednesday, October 15

11:00 a.m.-11:45 a.m.	Robotics in Hydrod <i>Patrik Andersson, A</i>
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Hotels are F

Astor Crowne Plaza - New Orleans French Quarter - The double occupancy.

Hampton Inn & Suites - New Orleans Convention Center single/\$225 double occupancy.

Hilton Garden Inn New Orleans Convention Center - The occupancy.

Visit the WJTA-IMCA website at <http://www.wjta.org/wjta/Acc>

Scan to register NOW or see the registration form on page 43 in this newsletter.



October 14-15, 2014

Ernest N. Morial Convention Center New Orleans, Louisiana

Exhibits



Education



Boot Camp Preliminary Schedule

Myths
ge, Inc.

ge, Inc.

Inspection and Documentation
dustrial, LLC

a Growing and Changing Marketplace
o Excavation Consulting

rs of Static Electricity in HAZLOC
ons
son Gale, Inc.

plasting
s from BASF Corporation, Dow Chemical, DuPont, HydroChem, PSC Industrial Services, Veolia Environmental
ed by Kathy Krupp, The Dow Chemical Company.

emolition
Aquajet Systems AB

Preliminary Schedule of Events

Tuesday, October 14, 2014

8:00 a.m.-10:30 a.m.
Live Demonstrations

10:30 a.m.-5:00 p.m.
Exhibit Hall Open

10:30 a.m.-3:00 p.m.
Boot Camp

3:00 p.m.-5:00 p.m.
Reception in Exhibit Hall

Wednesday, October 15, 2014

8:00 a.m.-10:30 a.m.
Live Demonstrations

10:30 a.m.-1:00 p.m.
Exhibit Hall Open

11:00 a.m.-11:45 a.m.
Boot Camp

Live Demonstrations by: CESCO/Aquamiser; Hammelmann Corp.; Jetstream of Houston, LLP; NLB Corp.; PSI Pressure Systems Corp.; Peinemann Equipment B.V.; StoneAge, Inc.; Stutes Enterprise Systems, Inc.; Terydon, Inc. and TurtleSkin by Warwick Mills, Inc.

Filling Up Fast - Make Your Reservations Soon!

Astor Crowne Plaza is located at 739 Canal Street at Bourbon Street, and the room rate is \$189 single/

- The Hampton Inn & Suites is located at 1201 Convention Center Boulevard, and the room rate is \$215

Hilton Garden Inn is located at 1001 S. Peters Street, and the room rate is \$209 single/\$219 double

ommodations.asp. for more information on how to reserve your room and reservations deadline dates.

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Automation in Waterblasting Applications

High pressure waterblasting is becoming an increasingly automated process due to the potential hazards of working with precision equipment of destructive potential. Each year, the number of options users have in the tools they choose from grows along with the types of applications needed to meet new challenges in an expanding industry. By working closely with suppliers and customers, companies like Advanced Pressure Systems (APS) and StoneAge Tools are using decades of industry experience to create effective solutions needed to reduce the hazards faced by operators in the field. In some cases, emerging technologies have made it possible to remove the operator from harm's way altogether. Some solutions to making waterblasting less hazardous are simple and effective. Others are more complex, but offer increased productivity for use in a greater range of applications.

The Articulated Flex Lance Safety Stop, more commonly known as the "Chicken Wing," was designed at APS to reduce the risk to an operator working with a pressurized nozzle in a tube bundle. This anti-withdrawal de-



The APS-designed Articulated Flex Lance Safety Stop also known as the "Chicken Wing."

vice clamps directly to the tube sheet, allowing for use in a vertical or horizontal applications. The Chicken Wing is easily adjustable between tubes and includes a splash guard. Stops for six sizes of lance are included to switch between jobs quickly and easily.

The ABX-500, or Autobox, was developed by StoneAge Tools as a safe hose handling option for pipe cleaning with a variety of tools. This automatic flex lance feeding device is a safer alternative to hand feeding hoses, which poses an increased risk to the operator and reduces efficiency. Hand feeding a tool directly into pipe puts an operator closer to the pressurized tool, causes inconsistency in cleaning of the pipe and puts more strain on the operator. The Autobox also detects when a

tool becomes impeded by stoppages, and pulls back enough to correct its orientation and productivity. It accepts hoses or couplings with a maximum OD of 1.75" to accommodate a variety of flow rates.

Automation is even more useful in larger applications, where tube lancing machines and bundle blasters have been the standard for years. Such systems are made of multiple components based on user's need and are controlled remotely to offer maximum productivity with minimal risk. StoneAge has recently developed automated systems such as the Sabertooth Tube Lancing System and Blackhawk Hydro Demolition System to make automation an option in applications where it was previously not possible.

The success of product lines like these are indications the industry is looking for "hands off" solutions for waterblasting applications. Customers are coming to depend on the reliability, safety and efficiency of automated systems. This technology will continue to expand into new applications, making waterblasting the best solution for more applications every year.

For more information, visit www.waterblast.pro or call 281-290-9950.

Booth #809



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is modular in design for easy installation with little plumbing involved. It is designed for safe operation with remarkably low noise and vibration. Boasting a compact low-weight design, the Liquid Ring Eliminator series weighs less than 2400 lbs. empty, while only requiring 60" of truck frame space. This leaves the passenger side frame rail empty for placement of your other equipment. Renowned for reliability, efficiency, and ease of installation, Fruitland's line of Liquid Ring Vacuum Pumps are designed with state-of-the-art technology for maximum performance and low-life cycle costs. Fruitland Pumps... the standard for quality, performance, and reliability.

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New Warthog® WGR Magnum Sewer Jetting Tool

The WGR Magnum is the first tool in a new line of Warthog sewer nozzles specifically designed for extended life, increased work time between maintenance intervals and optimal handling of dirty or recycled water. Magnum series tools feature innovative speed control and seal technology for improved tool life. Built on two decades of experience, these tools operate at least four times longer before requiring maintenance while upholding the high caliber performance that Warthog sewer tools are known for.

The WRG Magnum effectively retains jet quality under poor water conditions and its streamlined design



allows for better forward and reverse movement through pipe. Hardened steel centralizer fins can be replaced individually as wear occurs, further protecting the

tool and enabling longer operation in the field.

John Pujol is owner and operator of Advanced Infrastructure Technologies, LLC, a major equipment provider in Torrance, CA. "The City of Los Angeles manages one of the largest wastewater collections systems in the country, with over 6,600 miles of pipe," says Pujol. "They have a fleet of 50 combination machines to help them with this huge task." When the City of LA began the formidable process

of upgrading their fleet of tools, Pujol recommended the top of line Warthog WGR Magnum. "Their management is progressive, always alert to new technologies that will either perform better or use the available funds money more wisely, or both," continues Pujol. "The City of LA benchmarked the new WGR Magnum against competitive alternatives and confirmed that it was the best cleaning tool available. They were also impressed by the longer duty cycle and considered the fact they could service the units themselves, on site, as critical factors in evaluating their options. They validated these results by issuing their opening purchase order for 38 units in June of this year."

For more information, visit <http://www.sewernozzles.com/wgr> or call 1-970-259-2869 or toll free 1-866-795-1586.

Tank Cleaning Made Easy

Woma offers a versatile range of tank cleaning heads for the rinsing or cleaning of tanks and containers. The TankMaster range features a gear unit that directs the waterjet in a dense pattern for maximum coverage of the container's interior. This ensures thorough, even cleaning and reduces the time input. Containers and tanks are turned around quickly, which increases efficiency and capacity utilization.

The tank cleaning heads are inserted into the container, where they start to rotate and clean the interior. This requires considerably less work than manual cleaning methods. The TankMaster can also be used to clean areas that are hard to access or inaccessible to other methods. The system can either be attached to a hose or installed telescopic lance inside the tank. To control the waterjet, the user can regulate the rotors' speed of rotation to suit

the amount of build-up. Two additional factors are pressure and water flow rate. For rinsing tanks and containers, the TankMaster 1250S with its maximum flow rate of 250 litres (66 gal.) per minute would be the model to choose. For removing dirt and deposits, a higher pressure is advisable, as provided by the TankMaster 1500SL (up to 1,500 bar [21,750 psi]). In volatile areas where there may be a risk of explosion, WOMA offers the new TankMaster 500/200 EX, which is ATEX-certified for use in areas up to Zone 0 at 500 bar (7,250 psi) pressure.

A robust sealing system and hardened gears ensure long service life and continuous operation. Housings and high-pressure components are made of stainless steel, which make them very stable and rust-free. The WOMA TankMasters can be equipped with a variety of rotors and extension arms, making them suitable for different sizes of container.



The TankMaster 500/200 EX is suitable for cleaning container interiors in areas where there is a risk of explosion.

Containers and tanks often play an important production role in the chemicals and plastics industry. Their state of cleanliness has a crucial impact on product quality and process effectiveness. This calls for systems that make it possible to clean containers in an uncomplicated way. WOMA's TankMaster tank cleaning heads facilitate this process.

For more information, visit www.woma.de or email info@woma.de.

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Booth #201

3XLTC on Flexframe

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PEINEMANN
EQUIPMENT

Hammelmann: A Powerful Presence in the Worldwide High Pressure Waterjetting Industry, from page 14

retire, the pressure for Hammelmann plunger pumps will be 5,000 bar (72,500 psi)." Over half a century after he started his first and only job, Wolfgang Leifeld will be retiring from Hammelmann on December 31, 2014.

Though Leifeld admits that at times, "it was a great challenge to work for a small company on the international market," he says that he has "met a lot of very pleasant people all over the world" during his time with the company. He has gathered "a lot of unique and unusual waterjetting stories" over the decades and is impressed by the industry's ability to continually find new applications. "That's why working in this industry is so exciting," he says.

Denny Mesarvey of Hammelmann Corporation reflects upon the retirement of the company's general manager. "I know every show I attend with Wolfgang he honestly knows everyone who walks into the booth," Mesarvey says. "It does not matter if it's a president of a company or the guy on the end of the gun. His personality and 50 plus years of experience in the industry cannot be replaced."

Mike Goecke, Consultant, Hammelmann

In the 1980's, Mike Goecke worked for Hammelmann's U.S. representative, Elliott Tool, selling tools used in the automotive market. Goecke saw that Hammelmann could enter the machine tooling market using high pressure water for de-burring of parts in place of machine tools. He persuaded Hammelmann Germany that it would be to their advantage having their own location in the U.S. for sales and service. In



Mike Goecke who started Hammelmann Corp. in the U.S. standing beside a chemical injection pump package.

1987, Goecke started Hammelmann Corp., in Dayton, Ohio, with five employees. Today there are two locations (Dayton, OH and Houston, TX) with over 30 employees. Goecke's drive is one of the attributes that helped him achieve this success and overcome challenges along the way. "Mike is the most driven person I have ever met. He sees an opportunity and will not stop until he has succeeded," says Mesarvey.

Goecke recalls one of the challenges he faced in the industry: to prove that Hammelmann, a foreign pump company, could supply and service pump packages and accessories for the U.S. automotive market. "This was a challenge because some other foreign pump manufacturers were giving high pressure water a bad reputation due to lack of performance and service in the U.S. automotive sector," explains Goecke.

(continued on page 32)

Hammelmann's Major Milestones, from page 14

1993 - High tech solutions are necessary when the cleaning operations need to be integrated with plant production processes. Hammelmann introduced fully automatic gas tight, programmable telescopic cleaning systems for autoclaves, etc.

1997 - The continuous trend towards higher operating pressures was met by the compact mobile and stationary "AquaJet" ultra-high pressure pump units. This series of diesel driven units was designed at the time for 2,500 bar (36,000 psi) operation.

2002 - The revolutionary ErgoBlast® blasting gun was introduced.

Development of a new generation of pumps was commenced with increased power and incorporating common components in each individual power class. The dynamic seal set design was introduced at this time and was capable of generating much higher pressures than previously achieved with plunger pumps.

The invention of the bellows hermetic seal between fluid and power ends of the pump was another advance; the company also produced its first 4,000 bar (58,000 psi) plunger pumps for jet cutting table applications.

2003 - This year saw the introduction of the most powerful Hammelmann pump to date, the HDP 750 enabling flow rates up to 1,760 l/min (465 gpm) and operating pressures to 3,000 bar (44,000 psi) with a power rating of 750 kW (1,000 HP).

2005 - The handgrip design on standard dry shut off and bypass guns was completely changed to reduce the trigger force by over 80% greatly reducing operator fatigue and hopefully eliminating dangerous practices, such as taping or jamming triggers in the pressure on position.

2011 - Pump power ratings increased at the top end of the range to HDP 380 (520 HP), HDP 500 (680 HP) and 800 kW (1,100 HP) and Hammelmann built the first 7-cylinder high pressure pump type MC rated to 1,100 kW (1500 HP), for max. 3,000 l/min. (800 gpm) and max. 3,000 bar (43,500 psi)

The "Telematic" system was introduced to locate Hammelmann units via GPS and provide permanent access to the operating parameter data in the ES2 controller, regardless of the location of the units.■



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HDP-MC (1500 hp) pump manufactured for industrial cleaning and chemical injection.

“Since Hammelmann had such a different fluid-end design, which did not use HP packing and was internally geared, it was well accepted due to its performance and longevity. Today, Hammelmann supplies pumps and accessories to all the major car manufacturers for various applications throughout the world.”

On December 31, 2013, Goecke, then the general manager and VP of Hammelmann Corp., officially retired from his job. However, he still remains an active consultant for Hammelmann Corp. When asked who he admired within the industry, Goecke named Leifeld and Dave Summers. Leifeld was a link to Hammelmann Germany that helped him move forward into new markets and share his vision and ideas abroad. “Wolfgang always was receptive to moving in to new markets where Hammelmann could supply existing or new designed pumps and accessories,” says Goecke. “I admire Dave Summers for his approach of promoting waterjetting practices and safety.



Hammelmann Corp., Dayton, Ohio, a 40,000 square foot facility. This new location will allow Hammelmann to grow its current pump packaging capabilities.

Hammelmann Corp., Dayton, Ohio

1987 – Started in the automotive industry for general cleaning and de-burring of engine and transmission blocks.

2000 – Moved to second location in Dayton, Ohio.

Started supplying complete pump packages for offshore injection of various chemicals up to 40,000 psi. This opened up an entire new market with many different applications for Hammelmann’s pressure pumps. The unique design of the fluid-end (no packing) was well accepted due to its reliability and leak tight design.

2007 – Began producing U.S. designed and built diesel pump packages. Allowing Hammelmann to custom build units for customers to their specifications.

2014 – Moved to new location in Miamisburg, Ohio. Thirty people are currently employed at this location. Pump packages (electric and diesel) for various market sectors are manufactured here.

Hammelmann Houston

2003 – Started Hammelmann Houston to service the industrial contracting market, sales and rentals location. Started as a one man operation with one rental pump and a handful of 3D tank cleaners.

2008 – Moved to the second location in LaPorte, TX, with up to a four-person staff as sales and rentals (pumps and accessories) steadily grew.

2013 – Moved to the third and current location in LaPorte, TX. Currently employs eight people at this location with continual growth of the sales and rental market. Hammelmann maintains one of the largest high horsepower fleets in the Houston area with complementary tooling.

Hammelmann Today



Hammelmann Germany’s new location. This location is state of the art and will allow Hammelmann to grow its current pump and accessories manufacturing capabilities.

As waterjetting developed rapidly over the past few years to become an increasingly global business, Hammelmann stayed on the forefront of the industry, striving to anticipate demand, rather than to adapt to the changes in the industry. Today, many of the major players in industrial

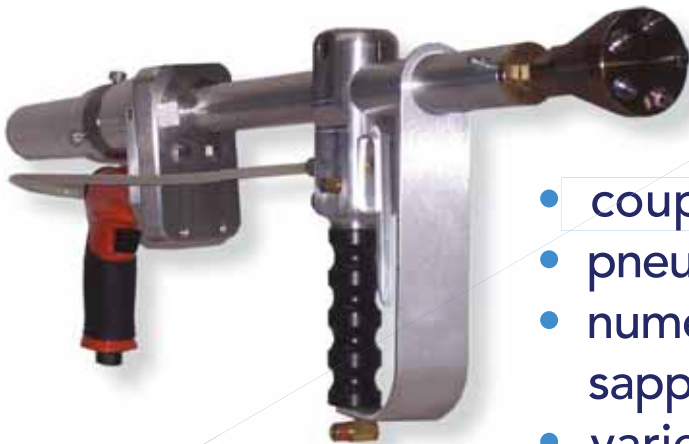
(continued on page 34)



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cleaning, maintenance, and waste management operate on a worldwide basis.

Hammelmann plans to continue to build its network of subsidiary companies and strategic partnerships to ever widen the range of the company's sales and service capabilities throughout the world.

Hammelmann was awarded the German Environment Prize for Industrial Eco-concept for the DockMaster semi-automatic ship surface treatment vehicle. The eco-friendly advantage of the unit and all subsequent designs is that the waste material and the polluted waste blasting water is vacuum collected for further safe disposal. No polluted waste escapes into the atmosphere to be windborne to surrounding areas.

The company also received the German Safety at Work Prize in the Innovative Concept category for the design and functionality of the ErgoBlast® blasting gun. This piece of equipment employs a combination of user friendly ergonomics and advanced transponder technology. The whole basis of the design was to produce a user friendly, less tiring way to operate the gun, incorporating a number of safety features to greatly reduce the risk of an accident.

As the industry forges ahead, the leadership at Hammelmann has no doubt that advances in engineering capabilities and materials will lead to even higher pressures; but they also believe that even more pertinent is the continuation of the move to automate more and more industrial waterjetting processes in the search for safer, cleaner and more efficient operation.

Hammelmann plans to continue its existing philosophy of training its own engineers, designers and technicians to enable the company to produce innovative products of the highest quality.

Visit www.hammelmann.com for more information. ■

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The WJTA-IMCA 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-IMCA membership.



Curent pump line manufactured by Hammelmann. Hammelmann designs and manufactures the complete pump (drive-end and fluid-end).



Smallest pump HDP-10 (5 hp) to largest HDP-MC (1500 hp) Hammelmann currently manufactures.



Hammelmann Corp. chemical injection pump package.

15% of all accidental **DEATHS**

in the workplace are caused by trips, slips, and falls. - www.osha.gov (Department of Labor)

\$70,000,000,000

Estimated annual cost of worker's compensation and medical bills associated with employee trip-and-fall accidents. - National Safety Council (NSC)

33% of **ALL** work injuries result from slips, trips and falls, the **SINGLE MOST COMMON** injury. - Health & Safety Executive (HSE)



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Booth #706

Jetstream QuadraBlast™ Control Gun Enhances Productivity and Operator Safety

Jetstream of Houston, LLP, has introduced the Jetstream QuadraBlast™ 40,000 psi air-powered water-blast control gun for surface cleaning and coating removal. Featuring a simplified rigid lance construction, the light-weight control gun is easy to operate and maintain. The telescopic shoulder stock, spring-loaded trigger safety and remote-style dump cartridge enhances operator safety and limits exposure to hazardous conditions.

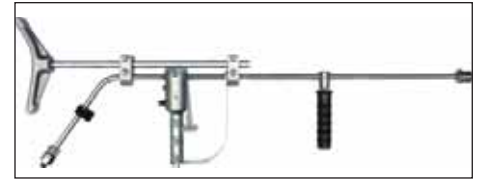
“Surface cleaning can be a very dangerous and time-consuming job, especially when working with pressures of 40,000 psi,” says Anthony Washington, product manager at Jetstream. “The QuadraBlast is designed to provide a high level of operator productivity and safety on the job, while also allowing multiple gun operations.”

Available with a single-trigger configuration – weighing 13 lbs.

(5.9 kg) – or a dual-trigger configuration – weighing 16 lbs. (7.25 kg) – the durable control gun features a 32-in. (813 mm) stainless steel lance barrel and a ¼-in. (6.35 mm) nylon tubing air hose. For best results, the control gun can be combined with the optional StoneAge® 40K Barracuda self-rotating nozzle and the optional Jetstream Tumble Box Multi-Mode Valve.

“The QuadraBlast will last longer than other 40,000 psi air spinning guns,” Washington says. “The gun provides 40,000 psi surface preparation via a self-propelled rotating nozzle, which eliminates the need for an external air driver. All portions of the gun body remain stationary, so there are fewer moving parts requiring maintenance or replacement.”

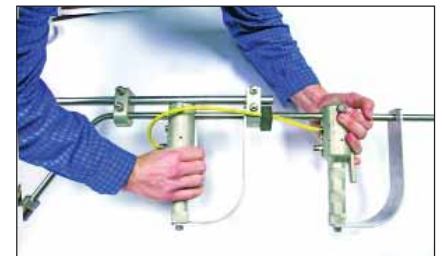
For more information, call 800/231-8192 or visit www.waterblast.com.



Quadra Blast Control Gun



Trigger Safety



Dual Trigger

Hydra-Flex Introduces New Line of Hydro-Excavation Nozzles

Hydra-Flex has announced the release of nozzles designed specifically for the hydro excavation industry – the Switchblade™ Linear and Ripsaw™ Rotating Nozzles. With improved impingement and stream quality, these nozzles allow the operator to dig faster while using less water, ultimately ensuring greater efficiency on the jobsite.



Designed for durability, these heavy-duty, high-impact nozzles operate at up to 3,200 psi and are constructed with stainless steel housings and tungsten carbide wear surfaces to withstand harsh environments and provide longer life than ceramic nozzles. Non-conductive urethane coating on the nozzle body extends the life of the nozzle while protecting the safety of the user and sensitive underground utilities.

During development, special focus was placed on optimizing the stream quality of the nozzles, resulting in their superior digging/cutting ability. In lab tests, Hydra-Flex's Ripsaw Rotating Nozzle was run alongside competitor nozzles to measure impingement and digging speed. On average,

the Ripsaw nozzle cut through the test substrate 67.25 times faster than the competition. (Videos of the tests are available online.)

“While it seems like just a small component on the truck, your nozzle can play a huge role in your overall job performance,” says Justin Jovle, Hydra-Flex product line manager. “A range of flow rates and spray patterns are available for different applications like potholing or trenching. Choosing the right nozzle is like having the right tool in your toolbox.”

Hydra-Flex will feature their hydro excavation nozzles in booth #219 at the WJTA-IMCA Expo. For more information, visit www.hydraflexinc.com.

Peinemann XLTC With Pipe Cleaning Adaptor



Utilizing cleaning equipment for more than one application is always a welcome alternative, and this is what Peinemann is trying to achieve with both their existing and new types of cleaning equipment.

Peinemann looked closely at its XLTC equipment (single lance equipment) and created a pipe cleaning adaptor that could easily be connected to it. By changing the air motor to a remote controlled version, the XLTC can now be operated from a safe distance.

The new adaptor will now allow for the XLTC to be used for 'basic' pipe cleaning jobs up to 8" maximum diameter.

The simple, but effective, pipe adaptor is now available and can be used with earlier purchased XLTC equipment.

For more information, visit www.peinemannequipment.com.

Jet News is published by the WaterJet Technology Association (WJTA)-Industrial & Municipal Cleaning Association (IMCA) and is a benefit of membership in the Association.

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Booth #217

New, Mobile-Friendly WJTA-IMCA Website with Enhanced Content

WJTA-IMCA has launched a new, mobile-friendly, redesigned website.

Key features of the new site:

- Anonymous Incident/Near Miss Reporting Form
- Research Papers
- Technical Articles
- and more...

Take a look and let us know what you think! New content will continue to be added, so check back for news and updates. To suggest or contribute new content, please contact Peter Wright in the WJTA-IMCA office by email: wjta-imca@wjta.org or phone: 314/241-1445.

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Keith Huber Corporation Introduces Knight™ PD Vacuum Truck

Keith Huber Corporation has introduced the Knight™ PD (Positive Displacement) Vacuum Truck. The newly designed Knight PD is a 6100 CFM air mover available both code and non-code. Incorporating many of the design features of the original Knight, first introduced in 2008, the Knight PD is ideal for moving heavy sludges and dry product (baghouse isolation valve).



"This unit truly takes Keith Huber to a place it has never before been. The Knight PD will broaden our product line exponentially, thus increasing our footprint in the industry. We now have the ability to reach a market that we've never infiltrated before, and that's exciting. It's a challenge, but it's one we're looking forward to," says Charles Felsher, general manager for Keith Huber Corporation.

Keith Huber, Inc. was founded in 1982 after discovering a need in the market to build vacuum trucks in a modular concept. After more than thirty years since opening its doors, The Holder family of Bay Springs, Mississippi acquired Keith Huber, Inc. in April 2013. Under a new name, Keith Huber Corporation joined the Hol-Mac Family of companies which includes Hol-Mac Corporation of Bay Springs and Anel Corporation of Winona.

Hol-Mac Corporation recently celebrated fifty years of superior manufacturing and engineering excellence. Originally founded as Southern Welding and Machine by Charles B. Holder, the company provided welding and machine shop services to the local timber, oil field, construction

and farming industries. As Charles' resources grew so did his vision. Led by a sound financial base, technical expertise and the drive to expand into a world-class manufacturer, Hol-Mac Corporation grew from two employees in one facility to four modern facilities

with over 500 skilled craftsmen and professionals. Each plant specializing in specific applications, Hol-Mac Corporation's dedicated manufacturing space now totals approximately 600,000 square feet and includes the production of two proprietary products; Pac-Mac® Refuse Equipment and Hammerhead Armor™.

Based in Gulfport, Miss., Keith Huber Corporation offers over 13 dedicated models with seven registered trademarks, not including custom units. Keith Huber Corporation employs more than 60 manufacturing professionals.

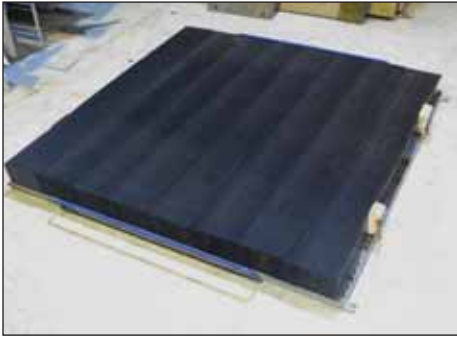
As a Hol-Mac Company, Keith Huber Corporation is dedicated to providing customers with the type of service and attention to quality that can only be expected from a world class manufacturer. All of us at Keith Huber Corporation are committed to listening to our customer's needs; after all they're the experts. From our humble beginnings in rural Mississippi, we understand the meaning of hard work and the value of integrity over success... we say what we mean and do what we say.

Come by and see for yourself what sets Keith Huber apart from the rest. The Knight PD will be on display at the 2014 WJTA-IMCA Expo in booth 622.

Which Waterjet Support Option is Best for My Application?, from page 16

- Slats can be placed closer together to form a denser cutting surface if you often cut small parts or further apart for much large parts.

Water Bricks



Use a tray of water bricks when cutting small parts or water-only materials.

A water brick is made of dense corrugated plastic to support material while being cut on the waterjet table.

They are most often used when machining tiny parts that could fall into the tank. Water bricks are also useful when cutting scratch-prone materials where splash back from the slats might frost or scar the underside of the material. The unique design of these plastic bricks drains water away from the cutting area while reducing back-spray during cutting. The specially designed polypropylene materials resist delamination or loss of shape. Water bricks from WARDJet can either be used as individual pieces (4"H x 6"W x 48"L typically) or can be offered in conjunction with a frame made of expanded steel mesh for support, extending the life of the bricks substantially. The frame makes it possible to use a forklift to remove the entire frame out of the tank or to load it on top of your existing grates, hence allowing you

to switch from abrasive to water-only cutting in just minutes. Water bricks are often used on top of slats or Job Shop Grates to allow for greater durability. The primary disadvantage is that water bricks wear very quickly if used for abrasive cutting. Water bricks also tend to fill the catch tank with gooeey plastic powder as they wear.

Tips for cutting with Water Bricks:

- Water bricks wear quickly when used with abrasive so they should be used primarily when cutting with water-only to extend life.
- Water bricks are also ideal when cutting brittle materials like glass, marble or granite because the surface of the material is supported evenly when cutting.

(continued on page 41)



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HPP High Pressure Plunger Pumps

HPP is a Comet brand specialized in designing and making plunger pumps for water, able to satisfy demands that go from 21 to 190 HP (15 to 140 kW) with pressures up to 1,500 bar (22,000 psi). HPP pumps are realized with state-of-the-art technologies as regards to materials, mechanical workmanship and thermal treatments and are mainly intended for municipal services: sludge pumping, washing solid waste containers, street cleaning, but also for a lot of other applications for the industrial sector. Professionalism is synonymous with a dynamic and modern company, aimed at facing and solving the issues of a constantly evolving market. Through HPP, Comet has been able to penetrate new sectors and conquer key markets which have a very promising potential for high pressure pumps.

The new EF and ES series will complete the upper-end of the HPP product range, with powers up to 80 HP (60 kW) and pressures up to 1,500 bar (22,000 psi). Both series obtained highly positive responses from clients and visitors when presented at the latest edition of IFAT in Munich (Germany), the most important European trade show of the sector.

Available versions:

- **EF:** 88 > 183 l/min (23 > 48 USgpm) 120 > 250 bar (1,700 > 3,600 psi)
- **EFH:** 32 > 68 l/min (9 > 18 USgpm) 280 > 600 bar (2,100 > 8,700 psi)
- **EFV:** 13 > 24 l/min (3 > 6 USgpm) 1,000 > 1,500 bar (14,500 > 22,000 psi)
- **ES:** 106 > 220 l/min (28 > 58 USgpm) 138 > 250 bar (2,000 > 3,600 psi)
- **ESH:** 38 > 82 l/min (10 > 22 USgpm) 310 > 600 bar (4,500 > 8,700 psi)
- **ESV:** 21 > 29 l/min (5 > 8 USgpm) 1,000 > 1,400 bar (14,500 > 20,300 psi)

Main technical features:

- Stainless steel one-piece manifold
- Highly efficient stainless steel suction and delivery valves (conical seat, spherical plate, stainless-steel cage)
- Solid ceramic plungers
- Long-life plunger packing design with double sealing and cooling system
- Reversible anodized aluminum crankcase (crankshaft easy change from right to left)
- Oversized premium quality taper roller bearings
- High mechanical strength forged crankshaft
- Special aluminum alloy connecting-rods with bronze bushings
- Heat treated stainless steel guide pistons
- Available with gearbox for electric motors and engines

These new pump series will help to strengthen the interest of the industrial sector in the HPP brand, that is increasingly working at international level. In terms of innovation, Comet's mission is to understand the needs of the market and its customers, in order to stay ahead of the evolutions in demand and supply the best solutions as quickly as possible.

For more information, visit www.comet-spa.com.



Which Waterjet Support Option is Best for My Application?, from page 39

- Cutting exclusively on water bricks can cause a buildup of plastic residue in your waterjet tank. They are not recommended for use with an abrasive removal system like the AROS due to clogs in the tank plumbing.

Heavy Duty Grates

Made from sturdy 1/2" thick steel, heavy duty grates can support your heaviest materials. The wide spread spaces in heavy duty grates reduce the number of slats that can be sliced while cutting a waterjet cutting part.

One advantage of heavy duty grates is that deep cuts in the grates can easily be repaired, which gives the heavy duty grates a virtually unlimited life. For repetitive work with heavy



Heavy duty grates are designed to withstand prolonged cutting of heavy materials.

duty grates, many waterjet owners create custom jigs so that the majority of cutting is done over an open space to allow them to cut in the same spot again and again without wearing into their grates.

Heavy duty grates have been designed for daily, intense work and are

by far the most rugged support system available. Heavy duty grates can be used with a combination of other supports to maximize machine capability. WARDJet is able to provide heavy duty grates in any size to fit any brand waterjet.

Tips for cutting with Heavy Duty Grates:

- Heavy duty grates are ideal for large parts cut out of thick material. The openings in the grates might cause smaller parts to fall into your tank if you aren't careful.
- If you are doing a lot of cutting at speeds lower than 2 ipm, you might need to have the floor of the tank reinforced to prevent cutting through the bottom of your tank on long cutting jobs. ■

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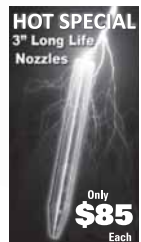
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New 1-1/2" Medium Pressure Fittings and Tubing from HiP

High Pressure Equipment Company (HiP) has expanded its medium pressure line with the addition of a 1-1/2" OD line of fittings, couplings, tubing and nipples that accommodate pressures up to 15,000 psi. The 15/16" orifice LF24 line is compatible with existing 1-1/2" valves, allowing users to plumb their existing systems with reliable and safe HiP components.



HiP's fittings in the 1-1/2" line include a complete range of elbows, tees and crosses as well as union couplings (slip type), bulkhead couplings, and caps. These fittings are produced with high tensile strength 316 stainless steel and feature HiP's compact coned-and-threaded connection to facilitate the larger bore sizes and increased flow rates characteristic of this pressure class.

Tubing and nipples in the 1-1/2" size are available in various lengths to meet your system needs. Tubing is

cold drawn, seamless, and is supplied in the 1/8 hard condition (not annealed).

HiP's LF24 line of fittings, couplings, tubing and nipples are engineered to assure safe and easy plumbing with reliable performance.

For more information, visit www.HighPressure.com.

Write for Us

Jet News accepts original industry-related articles that have not already been submitted to other publications. All submissions are subject to editorial review prior to acceptance. Once accepted, articles become the property of *Jet News* and cannot be reproduced elsewhere without permission.

What to Submit:

- Case studies detailing implementation of a new product or technique
- Articles about new and innovative applications and equipment
- Articles related to total quality management, management trends, marketing, state and federal legislative and regulatory issues, and safety issues
- Articles specific to any specialty area
- Career and student focused features

Jet News also welcomes letters to the editor.

Preparing the Manuscript

Articles should be approximately 1,000-1,500 words long and submitted via email as a Word document. Illustrations, photographs, graphics and charts are encouraged to complement the article. All accompanying materials should be labeled to provide appropriate originator credit. Suggested captions are required.

Degrees and accreditations, professional titles and current position should be included. All statements based on published findings should be referenced appropriately. References should be listed numerically within the text and at the end of the article. Articles not meeting submission criteria may be returned for reformatting at the editor's discretion.

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Barton Names Waterjet Market Manager and Appoints Central Regional Sales Manager

Barton® International, supplier of garnet abrasives for waterjet cutting and blast media, has announced the promotion of Thomas H. Riggs to market manager for waterjet products and the appointment of Brian Joyce as regional sales manager for the Central U.S. Territory.

Riggs has been a regional sales manager at Barton since 2010 and has worked in the waterjet cutting industry for more than 22 years.

"It is a privilege to represent Barton International," says Riggs. "Thanks to a talented and dedicated team, Barton sets the highest standard in the waterjet cutting industry. I am pleased to have been given the opportunity to serve as market manager for waterjet products and I look forward advancing Barton's success in the waterjet industry."

R. Randolph Rapple, president of Barton International, says "I am excited about the future of Barton's Waterjet Products Division under the direction of Tom Riggs. Tom brings the full complement of skills in leadership, industry experience, and market knowledge to the post."

As a newly appointed regional sales manager, Joyce has sales responsibility for Barton's Central Territory, which includes Illinois, Indiana, Kansas, Missouri, Nebraska and Oklahoma. His responsibilities include maximizing customer satisfaction and educating the waterjet and blast media markets in the value of Barton garnet abrasives.

Joyce brings more than 19 years of progressive industrial sales experience to Barton. Previously he served as director of U.S. sales with ITW Buehler. Joyce will be based in Schaumburg, Illinois.

"Brian Joyce's experience in both account management and technical service makes him an important addition to our sales team. I am confident Brian will advance our mission to bring value to our customers in the Central U.S. Territory," Rapple says.

For more information contact Barton at info@barton.com or visit www.barton.com.



Thomas H. Riggs



Brian Joyce

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If you are currently a WJTA-IMCA member, please pass this application on to a colleague.

New CNC Capabilities from All Jetting Technologies

All Jetting Technologies (AJT) added new CNC technology this year to keep up with demand for the company's UHP sapphire nozzles, rotating jetlances, UHP parts, and hose accessories. AJT put a new generation STAR SR-32J into operation, which offers power with maximum rigidity and high output drives that are engaged for large diameter components. The STAR was chosen for the machine's high productivity which is enhanced by the advanced CNC unit for faster processing and the servo motor for tool selection. With a high rapid feed rate of 24 m/min and a power driven tool capability for the sub-spindle, complex machining productivity is further enhanced with a remarkably shorter process time.

All Jetting has been in operation in Florida for 14 years with over 30 years of experience in the waterjetting field. An article regarding AJT's providing economical alternatives to the mobile waterjetting industry appears in the September 2014 issue of *Cleaner Times* magazine.



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